LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

BOARD MEETING

APRIL 6, 1993

BERT H. JONES
CHAIRMAN

BATON ROUGE, LOUISIANA

The following constitute minutes of the Commission Meeting
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Louisiana Department of Wildlife and Fisheries
2000 Quail Drive
Baton Rouge, Louisiana 70808
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AGENDA
LOUISIANA WILDLIFE AND FISHERIES COMMISSION
BATON ROUGE, LOUISIANA
APRIL 6, 1993

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MINUTES OF THE MEETING

OF

LOUISIANA WILDLIFE AND FISHERIES COMMISSION

Tuesday, April 6, 1993

Chairman Bert H. Jones presiding.

James H. Jenkins, Jr.
Perry Gisclair
Joseph B. Cormier
Jeff Schneider
Pete Vujnovich
Tee John Mialjevich

Secretary Joe L. Herring was also present.

Chairman Jones called for a motion for approval of the February 25, 1993, **Commission Minutes**. A motion for approval was made by Commissioner Jenkins and seconded by Commissioner Vujnovich. Commissioner Mialjevich stated there was a mistake in the Resolution that was passed and sent to the Legislature with the statement "Whereas, by Acts 1991, No. 157, the Louisiana Legislature permanently established red drum as a gamefish, and". In reviewing this legislation, he noted that Act 1991 does not do this action. Commissioner Jenkins asked Commissioner Mialjevich if there was a mistake in the resolution; and also asked Mr. Don Puckett how would a mistake in the resolution be resolved. Then Commissioner Mialjevich asked Mr. Puckett to review the Act and correct any mistakes if any are found for the next meeting. Chairman Jones stated a review of the resolution would be made and then called for a vote on approving the minutes. The motion passed unanimously.

Chairman Jones called for a motion for approval of the March 4, 1993, **Commission Minutes**. A motion for approval was made by Commissioner Cormier and seconded by Commissioner Schneider. The motion passed unanimously.

The February **Aircraft Report** was presented by Mr. Lee Caubarreaux. This report showed four pilots flew a total of 127 hours for the month, then stated the estimated cost was $15,656.83 and the actual cost for operating the aircraft was $13,528.67. Also included in the report was a breakdown of the flights that occurred during the month. Chairman Jones asked if non-hired pilots were allowed to log time from Department airplanes; how many pilots are there; if these are the only people that do log time from the aircraft; and about the eagle survey flights with the 210. Secretary Herring provided the Commissioners with a map of the 120 nest sites for the eagles and stated approximately 90 were active. Commissioner Jenkins noted the poor utilization of the Float-MW and

asked Mr. Gene Rackle if he felt this was poor usage of the aircraft, if the eagle flights were a Rockefeller function and why not use the Float-MW, then suggested putting the least used planes to use in other areas if possible. He then questioned the flight in the Partenavia that left Baton Rouge, went to Toledo Bend and back to Baton Rouge. Secretary Herring gave a brief explanation of the flight. Commissioner Jenkins then asked who the passengers were on the flight; the flight on 2/12/93 with the Float-DC that was a rescue. Commissioner Gisclair made a motion to accept the report and was seconded by Commissioner Mialjevich.

Public Comments on the 1993-94 Resident Game Hunting Season Proposals was the next topic for discussion. Chairman Jones mentioned he had received a number of comments concerning all areas.

Mr. Gary Ridgdell from Livingston Parish presented the Commission with a petition to get back the 44 days of dog hunting in the area north of the interstate in Livingston Parish instead of the 28 days being proposed.

Mr. Watson Gauthreaux, President of McElroy Hunting Club, representing Hunters Against Poachers (HAP), asked that the season in Area 6 be changed to December 4 through January 23 for hunting with or without dogs.

Chairman Jones gave a summary on a FAX he received from Mr. Warren King with HAP of the following days for hunting in Area 6: November 20-28, still hunting only; November 29-December 3, muzzleloader only and December 4-January 23, with or without dogs.

Mr. Charlie Duhe from St. James Parish and a member of HAP requested an extension of one week for hunting in Area 6 because of the rutting season and the mild winters in southern Louisiana.

At this point, Mr. Danny Timmer gave an update on the wild turkey. Mr. Timmer began by stating that 305 turkeys were trapped and relocated throughout the State, and another 90 birds were trapped and released on-site which gave a total of about 400 birds. The 13 scheduled releases have been completed. Then Mr. Timmer stated the 1993 hunting season in Area B got off to a slow start because of poor weather, unfavorable hunting conditions and poor gobbling activity. Toward the end of the first week and the beginning of hunting in Area A (March 27), the harvest of turkeys was really good and this continued until the weather turned bad again. On the most popular spot for hunting turkeys, Three Rivers-Red River WMA, an estimated 125 turkeys were killed. Other areas that saw a good harvest of turkeys were the Big Lake area, Grassy Lake area and Boeuf area. Commissioner Schneider asked what was the cost associated with the trappings.

Mr. Tommy Prickett mentioned that the Wildlife Division had received an additional 24 letters from the HAP organization recommending the extended season. Chairman Jones stated with the recommendation for the new Area 7 and this season being the longest running, the biologists in that area felt the season should be earlier than the other areas. Such an early season could possibly have the following dates: October 30-November 14, still hunt only; November 20-28, still hunt only; December 6-10, muzzleloader only; and December 11-January 17, with or without dogs.

Commissioner Cormier commented he received 2 letters concerning the muzzleloader season. The letters from Mr. George Bel from Lafayette and Mr. Jimmie Myers from Opelousas requested the muzzleloader season include the weekend.

Mr. Carl Gremillion suggested the dove hunting season for morning hunting should be on the opening weekends after the Saturday. Chairman Jones reminded Mr. Gremillion that the setting for the Migratory Game Bird Hunting Season would be set in June and stated his comment would be taken under consideration at that time. Then Mr. Gremillion stated the law on goose creeping should not be on the books, it can not be enforced and asked the Commission to seek what could be done to get the law taken off the books.

Chairman Jones mentioned he received a call relative to the use of primitive weapons and flint chipped arrowheads and asked what the regulations were on this subject. Mr. Prickett asked Chairman Jones to restate the proposed Area 7 season dates. Mr. Kerney Sonnier from the Opelousas District noted the proposed dates brings this area more in line with Area 6 and accommodates the archery season.

The **National Fishing Week and Free Fishing Day Resolution** was presented by Mr. Paul Jackson. The reason for the resolution is to introduce the sport of fishing to the public and provide them with an opportunity to participate free of charge. Chairman Jones asked Mr. Jackson to read the resolution in its entirety. Commissioner Mialjevich made a motion to accept the Resolution and was seconded by Commissioner Vujnovich. The motion passed unanimously. Chairman Jones asked why not get this set the same day as when your license expires. Commissioner Mialjevich mentioned the unique fact that a commercial person would put up a motion for this resolution but noted that facilities that service recreational fishermen also service commercial fishermen.

(The full text of the Resolution is made a part of the record.)

RESOLUTION

WILDLIFE AND FISHERIES COMMISSION
DEPARTMENT OF WILDLIFE AND FISHERIES

WHEREAS, sportfishing provides recreation for more than sixty million Americans of all ages, giving families a healthy, shared outdoor activity, and

WHEREAS, sportfishing, through the payment of millions of dollars annually for licenses, taxes and fees, has provided the funding for federal and state programs that contributes significantly to the preservation and protection of our natural environment, and

WHEREAS, the estimated 800,000 plus sportfishermen in Louisiana spend in excess of one billion dollars annually to our economy, and

WHEREAS, Act 301 of the 1987 Louisiana Legislature, Title 76:VII.151 and 76:VII.339 of the Louisiana Administrative Code authorizes the Louisiana Wildlife and Fisheries Commission to declare no more than two free recreational fishing days each year, and

WHEREAS, Free Fishing Days during National Fishing Week would provide an excellent opportunity to introduce additional individuals to the wholesome outdoor activity of fishing.

NOW THEREFORE BE IT RESOLVED, that we the undersigned members of the Louisiana Wildlife and Fisheries Commission do hereby officially declare the week of June 7-13, 1993 as

FISHING WEEK

in the State of Louisiana, and

BE IT FURTHER RESOLVED, that June 12 & 13, 1993 are hereby declared free recreational fishing days, during which residents and non-residents may exercise the privileges of a licensed recreational fisherman without purchase of any otherwise necessary recreational fishing license.

DATE: April 6, 1993

Bert H. Jones, Chairman	Peter Vujnovich, Vice Chairman
James H. Jenkins, Jr.	Joseph B. Cormier
Jeff Schneider	Tee John Mialjevich
Perry Gisclair	Joe L. Herring, Secretary

Chairman Jones asked Mr. Rick Kasprzak to provide an **Update and Report on Inshore Artificial Reefs.** He began the discussion with a brief explanation of how the program was started. This program began in 1986 when Governor Edwards signed The Louisiana Fishing Enhancement Act law. A single oil and gas platform could create about 1 1/2 acres of hard-bottom habitat in 120 feet of water and the potential for harvesting 50% to 70% more reef fish. In the inshore reef program, the first step was to determine what structures were already acting as artificial reefs. Thus far, over 6,000 items such as wrecks, hazards, oil and gas platforms, and shell pads have been identified as artificial reefs. A series of 6 maps covering the coastline is being produced to identify these reefs; the first map in this series was completed last fall and the second map is in the makings. The Department's program was accelerated when it realized we were owed shell for enhancement of the marine environment due to shell dredging activities. In 1991, two reefs in the Vermilion Bay area were constructed and no real evaluation has been made on these reefs to date. However, usage ranges from fairly extensive use to occasional usage. Also in 1991, notice was given of two more reefs to be constructed in the Terrebonne-Timbalier Bay area. Future reef sites will be determined by the availability of mitigation shell and the success of the already established reefs.

Chairman Jones asked what was the inventory of the mitigated shell as of now; how are the inshore reef projects prioritorized; what is the priority for the future reefs; and what other possibilities are being looked at for the future. A question from Commissioner Mialjevich consisted of what the safeguards for water clearance will be with the projects in the Terrebonne-Timbalier Bay area. Commissioner Jenkins commented to Commissioner Mialjevich that one of the areas was an island 6 to 7 years ago and the trawlers from the area should be familiar with the reefs.

Mr. Karl Turner began his discussion by giving a synopsis on the **Louisiana Gulf Shrimp Video.** The Seafood Promotion and Marketing Board put some money into a program which will "reposition Louisiana shrimp". Approximately 65% of the shrimp sold in the country is imported from Mexico, China and Indonesia. The video is the first step in trying to position Louisiana shrimp as being the premium tasting shrimp in the world. This video would be sent to the top restaurants to show why Louisiana shrimp is better than the imported shrimp. Chairman Jones asked if you can really tell the difference in the shrimp. At this point in the meeting, the video was shown. Commissioner Mialjevich complimented Mr. Turner and the Promotion Board for a good video. Chairman Jones asked how will the shrimp be tagged to denote it is Louisiana shrimp. Commissioner Jenkins asked how much the video cost and what will be the budget for the program. Commissioner Mialjevich informed about a restaurant he has frequented where two different

varieties of shrimp were served and feels the value of a good shrimp will bring customers back.

A report on the **Location of Sanctuaries for Shrimp** and how the Department was doing with this program was requested by Chairman Jones. Mr. Brandt Savoie showed the Commission a map which highlighted 12 areas along the coast that are closed to trawling and another line that showed nursery areas. There are about 3.4 million acres of waterbottoms coastwide; and within this area, the 12 sanctuaries represent approximately 286,980 acres of waterbottoms. Also there is an additional 360,000 acres leased to oyster growers and these areas are also closed to trawling when properly marked. The shrimp plan, pages 40 through 42, describes each of these areas and explains why they are closed. The Department has looked into sanctuaries and nursery areas for a number of years and Mr. Savoie mentioned some research papers that dealt with shrimp nursery areas and sanctuaries along the coast. Also, the Marine Fish Division has asked its biologists along the coast to remark a map showing the areas that they consider are nursery areas to date.

Then Mr. Savoie answered the question on the shrimp management plan by noting the stated objective for the plan was to "maximize the economic benefit which is derived from the resource by Louisiana and the region". In order to accomplish this, the plan proposed to develop conservation and management options. The Department is currently working with the Governor's Task Force on Shrimp Management and the Louisiana Cooperative Extension Service to determine the feasibility of establishing sanctuaries along the coast. The concept of sanctuaries was the initial topic for discussion at the task force meetings and the first recommendation by the task force was to hold public hearings along the coast so the local fishermen could address the possibilities of sanctuaries for their own region.

Commissioner Jenkins inquired as to the time frame for the shrimp plan to be approved and asked for a copy to be given to each member. Commissioner Vujnovich asked if samples were taken in the Barataria Bay Estuary after the recent cold spell and what possible effects that might have and then explained his reason for asking the question. Commissioner Schneider asked if numbers were going to be put together to show the economic benefits for the areas to be sanctuaries or what the overall effect would be; how would the program be evaluated if the numbers could not be produced; and what would be the time table with the public hearings on this. Commissioner Jenkins asked, with the equipment used today to get into shallow waters, does it affect other types of fish besides shrimp and mentioned that other sectors and factors have to be considered also. Mr. Perret agreed that the shallow waters need to be closed to commercial or recreational trawling. Commissioner Mialjevich feels the Shrimp Task Force will do a comprehensive, indepth study on the feasibility of sanctuaries, and suggested the

Commissioners maintain contact with the Task Force. Commissioner Gisclair noted that the figure for the oyster leases could not be added to the total figure for closed areas.

The announcement of the **Wild Louisiana Stamp Competition** was given by Mr. Gary Lester. On March 25, 1993, the 1st Annual State Competition was held and the winning painting of a Louisiana black bear was drawn by Mr. Ron Hooper from Shreveport. Mr. Hooper was introduced to the Commission and received the Commission's congratulations.

Mr. John Roussel began the discussion on **Fish Farm Mariculture Procedures & Enforcement** by reminding the Commission of a report they had already received and proceeded to provide some of the highlights of the program. In Louisiana there are two different fish raising programs and these include the mariculture program and the fish farmers program. The mariculture program, established in 1987, was authorized to issue up to 10 permits. Of the 10 permits issued, only 4 permits are still effective; and of these 4 permits, only 3 have active operations. The active operations are using some type of enclosure to contain their species. Two of the permittees are permitted to raise red drum and hybrid striped bass; one permittee is authorized to raise red drum, hybrid striped bass and black drum; and the other permittee is authorized to raise red drum, hybrid striped bass and oysters. Detail records on the fish bought and sold, feeding rates, growth rates, mortality rates and hydrological information on water quality are required to be kept by each permittee. This information is submitted to the Department on a monthly basis and annual basis. Some on-site monitoring by the Department is performed; however, no specific person is dedicated to this program. Certification notification procedures regarding harvesting and shipment are required for permittees to follow.

Commissioner Jenkins asked what the 3 active permittees are actually raising; and does the Department monitor the stocking and harvesting of the fish. Mr. Roussel noted the Marine Fish Division has monitored 17 stockings, 6 harvest operations and spent 8 days taking samples from permitted operations over the past few years. Continuing, Commissioner Jenkins inquired if the Department was doing what we are suppose to be doing in accordance with the permits. Chairman Jones asked Secretary Herring exactly what Mr. Watson's position is with the Department. Commissioner Jenkins asked how many biologists work in the fisheries areas that could check on the harvesting, shipment, stocking of the fish, etc. Secretary Herring commented that an initial check was made when the permit was given, but when renewals are issued, the different divisions are not notified of the renewals. Commissioner Jenkins restated his question to ask how does the Department monitor the day to day stocking and harvesting of fish. Secretary Herring explained that the permits could not be monitored on a day to day basis by the personnel in the Department, but stated monitoring was

performed occasionally. Commissioner Jenkins remarked that the program was not being administered correctly, there was a need for the people to monitor the program, and he will continue to ask every month what was being done to satisfy the requirements of the program. Then he noted the fees for the permits do not cover the administrative costs, and asked if there was any effort going on now to raise the fees for the permits to cover the administrative costs. Commissioner Gisclair asked Commissioner Jenkins if an agent or a biologist should be called out every time fish were harvested, then asked how many times should contact be made. Commissioner Jenkins commented the Department was not doing their job, not paying enough attention to the permit requirements, and that the Department needed to do a better job. Chairman Jones inquired as to how the Department will handle the monitoring of the permits in the future. Secretary Herring stated he would get the Enforcement Division and Marine Division together and work on this problem.

Commissioner Jenkins then asked personnel from the Enforcement Division to explain how they handle the monitoring of the permits. He then said that if the fish are not looked at until they are on the trucks, you do not know the origin of those fish. Chairman Jones requested better monitoring of the program and asked Secretary Herring to explain how this would be done. Commissioner Cormier suggested making spot checks on these facilities if an agent was in an area. Commissioner Jenkins reminded that unless the farmer was harvesting the fish on such an unannounced visit, there would not be anything to check. Commissioner Mialjevich noted he can not see farmers taking the chance of buying illegally caught fish to sell and agreed with Commissioner Cormier on spot checking the facilities.

Commissioner Jenkins asked Mr. Bennie Fontenot to report on the Fish Farmers. Mr. Fontenot explained the requirements for the Domestic Fish Farming Program. The Inland Fish Division has issued 2 permits to fish farmers that are raising redfish and hybrid striped bass. Under the Domestic Fish Farming statutes, the farmer is required to call 24 hours prior to the fish being shipped and not required to notify the Department when harvesting the ponds. The fish farms in Louisiana belong to Mr. Walter Landry with Westover Farms and Perilliat Michoud Farms. Commissioner Jenkins asked what was the cost for a Fish Farmers Permit and stated he hoped an attempt would be made to at least recover some of the costs associated with these permits. Continuing, he asked if contact with the Department was made when harvesting and stocking occurred, and was the harvesting of the fish monitored. He then suggested modifying the permit regulations, and asked Enforcement Division if there has ever been an occasion where illegal nets were found near a fish farm, and what was the proximity to the farm. Commissioner Mialjevich asked if the owners of the illegal nets were connected with the fish farms in any way. Commissioner Jenkins requested the Department make an effort to confirm where

the fish are coming from and if they are going where they are suppose to be going on a regular basis and not necessarily daily. Commissioner Mialjevich agreed with Commissioner Jenkins.

Mr. Fontenot introduced Mr. Alex Plaisance and asked if he could speak to the Commission. Mr. Plaisance explained how Lafourche Realty Company and their association with Lafourche Mariculture works and remarked of the horror at hearing rumors and innuendos of outlawing redfish to take care of the farm. He also mentioned a dilemma they have been fighting with poachers on their property. Then he explained the problems he was facing with Perilliat Michoud Farms and the effects of Hurricane Andrew and stated he has decided he would not be able to continue with this operation. Mr. Plaisance assured the Commissioners that this was a legitimate business with legitimate businessmen who were not members of what was becoming known as the Redfish Mafia. Chairman Jones asked Mr. Plaisance if he would let the Commission know who owns the illegal nets found on his property. Commissioner Mialjevich stated Mr. Plaisance verified what he was saying about the farmers buying illegal fish and selling them. Commissioner Jenkins again stated he was not referring to the farmers when talking about the job not being monitored properly, it was the Department not doing their job.

A report on **Which Divisions Handle Habitat Species** was a topic of interest for Chairman Jones who requested this information. Secretary Herring first noted all divisions in the Department do some type of habitat work and the Natural Heritage Section was still a Section but was within the Wildlife Division. None of the work performed by this Section has been cut out; and there are a number of studies going on in the Department that overlap the division lines. He then explained how the Fur & Refuge Division handles different projects that may overlap with some of the other divisions in the Department; how some of the divisions work on the endangered and/or threatened species in Louisiana. The main thing to make all the programs work was cooperation.

Secretary Herring mentioned the combining of the Habitat Conservation Division into the Wildlife Division has been made without a step being missed. This action took place in an effort to save some money for the Department. Then Secretary Herring turned the discussion to the pelican and the eagle and explained the history behind bringing the pelicans back to Louisiana. He stated the pelican program has been very successful and then provided the Commissioners with reports on the pelicans from personnel in the Fur and Refuge Division.

Discussion followed with Secretary Herring talking about the eagle program. The eagle program was started in 1954 by a private citizen with four active nests being recorded; and that same person continues working with the Department even today. In 1984 personnel from the Rockefeller Refuge were instrumental in bringing

the eagle program into the Department. As of today, there are approximately 120 nests with 30 being inactive.

Commissioner Schneider asked Secretary Herring how the money was going to be spent that was allocated in this year's budget. Secretary Herring stated the money appropriated for the Natural Heritage Section has not been used anywhere else in the Department. When the budget was being cut, Secretary Herring asked that two programs, the Information and Education Section and the Natural Heritage, Scenic Stream and Ecological Studies Section not be touched. Commissioner Schneider asked about next year's budget. Secretary Herring provided some history on how he and some fellow employees helped get some of the programs within the Department started, then asked the Commission, if they thought he wanted to cut out a program he helped get started?

Chairman Jones asked if the brown pelican and the bald eagle were being handled by the Fur and Refuge Division and if these programs are obligated by law to be handled under the Natural Heritage Program. He then expressed his appreciation and commended the Department for the work done on the bald eagles and brown pelicans. Commissioner Mialjevich asked Secretary Herring if the wood duck would fall under the Natural Heritage program also. Commissioner Jenkins asked about the packet of information provided to the Commissioners, and specifically the article from the Louisiana Conservationist on whales.

An update on **Grass Carp and the Commission's Approval for New Permit Regulations** was presented by Chairman Jones. He stated he had received correspondence about the introduction of grass carp into public and private waterbodies and was eager to hear what has been happening with this program. Mr. Bennie Fontenot mentioned this program was a new program for the use of triploid grass carp. The triploid grass carp is a sterile fish that can not reproduce. The permitting program in place now was for use by commercial catfish farmers only for the control of grasses. Mr. Fontenot then discussed the possibility of using this fish in private ponds with his staff and others and they felt it was time to allow such. He assured that the fish would not be put in every public waterbody, but only in those waterbodies where the control of grass is not working. The new rule also allows Louisiana Fish Farmers be a distributor for sales of the triploid grass carp. Mrs. Janice Little gave a slide presentation explaining the grass carp, the triploid grass carp, how it made its way to this country, and how it is produced.

Commissioner Mialjevich asked how long triploid grass carp live, and are they good to eat. Chairman Jones asked about the tilapia, and if there was anyone in this business. Commissioner Mialjevich asked where is the tilapia farm located; why do you not want the triploid grass carp to escape; and do you check every fish for sterility. Commissioner Schneider wondered what the budget

would be in order to monitor this program because this program was very scary to him; and then asked if the Department had money for the program. Commissioner Jenkins asked if existing personnel could not be used that already handle the mariculture or fish farming permits. Commissioner Schneider asked if the permit industry was going to blossom, then commented he should start a permit consultant firm and get a contract with the Department. Chairman Jones asked if there were any plans to put grass carp into Caney Lake; what criteria would be used to determine whether or not to put the fish into Caney Lake. Then he restated his original question to ask if there was a formal consideration to introduce triploid grass carp into Caney Lake; are there any other bodies of water that are being considered; are there any public waterbodies the Department has released any of these fish into as of today; how many private ponds do you expect to issue permits to; and will there be an administrator for this program and will he coordinate with the district biologists and get the information he needs from these people. Commissioner Schneider wondered if the costs for the permits were sufficient to cover the administrative fees. Commissioner Cormier asked about the inspection fee. Commissioner Jenkins asked if the triploid grass carp would eat water hyacinths. Commissioner Mialjevich asked if these fish would eat anything that would interfere as a food source for other native fish; then asked if anyone was at the meeting that would speak for or against it.

Secretary Herring informed he was opposed to the grass carp a few years back; but with the research that has been done, he has changed his opinion on these fish and would rather see regulations put into place for the triploid grass carp and not for diploids. Commissioner Mialjevich asked how would the Department be able to stop the bringing in of illegal fish; does this rule have to be passed at this meeting; and what would happen when this rule was passed. Chairman Jones asked if this fish could be crossed with the walking catfish so they could mow the lawn, who in the Department has done the monitoring and science to figure out how many to put in a lake, will the Department regulate how many would be put in a particular waterbody. Then Chairman Jones asked the pleasure of the Commission. Commissioner Jenkins asked what did Mr. Fontenot need. Commissioner Cormier made a motion to approve the rules and was seconded by Commissioner Schneider. Chairman Jones asked for public comments.

Mr. Henry Truelove informed the Commission he served on the Grass Carp Task Force and noted what was being proposed did not come from the task force. He then asked the Commissioners to wait 30 days to vote on this rule to give them more time to look at the information from the task force. Commissioner Jenkins wondered what would waiting 30 days do, and what did the task force recommend. Commissioner Cormier asked, if we hold this up for 30 days, what would it do for the farmers in Louisiana that want to

buy them? Commissioner Mialjevich asked how many farmers would be participating in receiving the fish and then reselling them.

Dr. Greg Lutz with the LSU Cooperative Extension Service and speaking for the Louisiana Aquaculture Association stated if these fish are bought out of state, there would be a tremendous amount of money going out of state. Then speaking as an extension agent, with the calls they receive from pond owners, these fish could serve as a biological alternative to chemicals in controlling weeds.

Chairman Jones asked Mr. Fontenot if there were plans to develop the triploid grass carp in the state. Commissioner Schneider then called for the question. The Commissioners agreed to vote on the Triploid Grass Carp rules. Then Chairman Jones called for approval of the rules. Commissioner Mialjevich abstained from voting stating he did not have enough information.

Secretary Herring told the Commission about some of the honors that Mrs. Janice Little has brought to the state. Then he proceeded to mention other employees of the Department that have also brought honor to the state.

(The full text of the Rule is made a part of the record.)

RULE

Department of Wildlife and Fisheries
Office of Fisheries

The Secretary of the Department of Wildlife and Fisheries does hereby amend the rule governing the importation, transportation, possession, disposal and sale of live triploid grass carp for aquatic plant control in private and public waters.

TITLE 76

WILDLIFE AND FISHERIES

Part VII. Fish and Other Aquatic Life

Chapter 9. Aquaculture - Exotic Species

Section 901. Triploid Grass Carp

A. Triploid Grass Carp Possession and Transportation for Aquatic Plant Control; Permit Required

1. No person, firm or corporation shall at any time possess, sell or cause to be transported into this state, triploid grass

carp (Ctenopharyngodon idella), except in accordance with a permit issued under and in compliance with the following regulations.

The following regulations govern the importation, transportation, possession, disposal and sale of live triploid grass carp for aquatic plant control in private and public waters, including ponds on public golf courses, municipal water treatment plants, parks and zoos. Nothing contained herein shall be construed to restrict or prevent the Department from conducting bona-fide research studies and fish and aquatic plant management programs as authorized by law or regulation.

2. Definitions:

a. Department - the Louisiana Department of Wildlife and Fisheries or an authorized employee of the Department.

b. Secretary - the Secretary of the Louisiana Department of Wildlife and Fisheries.

c. Triploid grass carp - refers to Ctenopharyngodon idella fingerlings and larger individuals that are certified as triploid carp (3N chromosomes) by the U.S. Fish and Wildlife Service or a qualified agent or contractor approved by the Department.

d. Triploid grass carp possession and transportation permit - the official document that identifies the terms of and allows for the importation, transportation and possession of live triploid grass carp in Louisiana as approved by the Secretary or his designee.

e. Permittee - organization that possesses a valid Louisiana triploid grass carp permit. A permittee can only be a natural person. A permittee may represent himself, a business, corporation or organization. The permittee is responsible for compliance with all stipulations in the permit.

3. Triploid Grass Carp Habitat Management Request Procedures

a. Individuals wishing to import, transport or possess live triploid grass carp in Louisiana must first request a permit from the Department through an application form furnished by the Department.

b. The completed applications must be returned to the Department, after which, Department personnel will review the application and make an on-site inspection of the water body.

c. Upon completing the on-site inspection, the Department personnel will make a final determination as to whether

the applicant is in full compliance with all rules for the triploid grass carp management permit.

d. The secretary, or his designee, will notify the applicant in writing as to whether or not the permit has been granted and if not, the reasons therefore. In the event of disapproval, applicants may re-apply after meeting department requirements.

4. Rules on Transport of Triploid Grass Carp for Habitat Management

a. For each occurrence whereby the permittee wishes to import, transport or possess live triploid grass carp, the permittee must obtain prior written approval from the Department using the following procedures.

i. Requests shall be made to the Permits Supervisor, Inland Fish Division, Louisiana Department of Wildlife and Fisheries, P. O. Box 98000, Baton Rouge, Louisiana 70898-9000.

ii. Requests shall include:

(a) Louisiana triploid grass carp permit number or a copy of the permit

(b) Route of transport

(c) Date of transport

(d) Time(s) of transport

(e) Destination

(f) Owner of transport vehicle

(g) Total number of fish

(h) Identification of seller and buyer

b. A bill of lading must accompany those individuals in possession of living triploid grass carp during transportation and shall include:

i. Copy of the permittee's written approval as described in paragraph a above

ii. Date and approximate time of shipment

iii. Route of shipment

iv. Source of triploid grass carp (hatchery)

v. Name, address and phone number of seller

vi. Name, address and phone number of buyer

vii. Copy of triploid certification

viii. Total number of fish

ix. Destination

x. Display the words "TRIPLOID GRASS CARP" prominently on at least two sides of the vehicle or hauling tank with letters that are no less than 4 inches high.

5. Rules Applicable to Triploid Grass Carp Stocking

a. Only approved waters may be stocked.

b. Site must not have any direct connections with any other stream or lake. Any site containment measures must be approved by Inland Fish Division biologists.

c. Site must have a vegetation problem documented by the Department that interferes with either access, esthetics, recreation, health, drainage, agriculture, municipal or industrial utilization or management of the water body.

6. General Rules for Triploid Grass Carp Habitat Management

a. Prior to introductions, fish to be introduced must be certified as triploid grass carp by the U.S. Fish and Wildlife Service or a qualified agent or contractor approved by the Department. Such certification must be furnished to and approved by the Department prior to introduction of any fish into any waters of this state.

b. No fingerlings under 6 inches in total length or eggs or fry shall be imported, transported or possessed in Louisiana.

c. Permits are not transferable from person to person or from site location to site location.

d. No person may permit the release of live triploid grass carp into waters of Louisiana without the written approval of the Secretary or his designee.

e. Applicant shall provide an adequate number of triploid grass carp to the Department, at no cost to the Department, upon request, to verify triploidy. Cost of any test deemed necessary by the Department shall be borne by the permittee.

f. The applicant must agree to allow Department officials or a Department approved contractor to conduct unannounced random inspections of the transport vehicle, property, water body site and fish. Additionally, Department officials may request other officials to accompany them during these inspections. Additionally, those individuals performing these inspections may remove or take fish samples for analysis and/or inspection.

g. The Department shall approve final stocking rates for each applicant.

h. The Department reserves the right to disapprove any permit application if, in the determination of the Department, escape of triploid grass carp into the wild is a risk. If an escape incident occurs through either a meteorological event or structural failure, permit reapplications will receive a more critical review by the Department.

i. Except in cases of mortality or unavoidable loss, restocking will be permitted only at intervals of 2.5 years following the initial stocking.

j. The cost of an initial triploid grass carp permit shall be $50.00 plus an additional fee for on-site inspection. The initial permit will be issued to cover a period of time ending with the calendar year following the date of the permit. Permits shall be renewed annually thereafter at a cost of $25.00. No site inspection or site inspection fee shall be required for permit renewals.

k. A permittee will be charged an administrative fee of $25.00 for each importation occurrence beginning with the second occurrence.

l. Qualified universities conducting research approved by the Department shall be exempt from fee charges.

m. If a permittee terminates the use of triploid grass carp in the permitted waterbody, the permittee shall notify the Department immediately and dispose of the triploid grass carp according to methods approved by the Department.

n. In addition to all other legal remedies, failure to comply with any of the provisions herein shall be just cause to immediately suspend and/or revoke the permittee's permit. All triploid grass carp shall be destroyed at permittee's expense under the Department's supervision within 30 days of permit revocation. Violation of any of the provisions of the permit constitutes a class four violation in accordance with R.S. 56:319(E).

o. Any permittee charged with violation of the above rules has a right to make a written response to the alleged violation(s) to the Secretary requesting a hearing to review the alleged violation(s).

B. Sale of Live Triploid Grass Carp for Aquatic Plant Control; Permit Required

1. Definitions

a. Triploid grass carp sales permit - the official document that allows for the importation, transportation, possession and sale of live triploid grass carp in Louisiana as approved by the Secretary or his designee.

b. Triploid grass carp seller - a properly licensed fish farmer who possesses a triploid grass carp sales permit.

2. Rules

a. Individuals wishing to sell live triploid grass carp must first obtain a Triploid Grass Carp Sales Permit.

b. A triploid grass carp seller must be a properly licensed fish farmer.

c. A triploid grass carp seller is bound by the triploid grass carp possession and transportation regulations as stipulated in Section A above; except that:

i. The holder of a Triploid Grass Carp Sales Permit may sell live triploid grass carp.

ii. The Triploid Grass Carp Sales Permit serves in lieu of the Triploid Grass Carp Possession and Transportation Permit.

d. The holders of a Triploid Grass Carp Sales Permit may only sell triploid grass carp to holders of a valid Triploid Grass Carp Possession and Transportation Permit or a Triploid Grass Carp Sales Permit.

e. The initial Triploid Grass Carp Sales Permit will be issued to cover a period of time ending with the calendar year following the date of the permit. Permits shall be renewed annually thereafter. The cost of a Triploid Grass Carp Sales Permit is $250.00.

f. An additional fee for the initial inspection of facilities will be assessed and charged.

g. In addition to all other legal remedies, failure to comply with any of the provisions herein shall be just cause to immediately suspend and/or revoke the permittee's permit. All triploid grass carp shall be destroyed at permittee's expense under the Department's supervision within 30 days of permit revocation. Violation of any of the provisions of the permit constitutes a class four violation in accordance with R.S. 56:319(E).

AUTHORITY NOTE: Promulgated in accordance with R.S. 56:318, 56:319 and 56:319.1.

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Office of Fisheries, LR 17:806 (August 1991); Amended LR (April 1993).

Joe L. Herring
Secretary

The **Monthly Law Enforcement Report for March** was given by Col. Winton Vidrine. The following numbers of citations were issued during the month of February.

Region I - Minden - 23 citations.

Region II - Monroe - 77 citations.

Region III - Alexandria - 60 citations.

Region IV - Ferriday - 27 citations.

Region V - Lake Charles - 112 citations.

Region VI - Opelousas - 114 citations.

Region VII - Baton Rouge - 82 citations.

Region VIII - New Orleans - 204 citations.

Region IX - Thibodaux - 174 citations.

Oyster Strike Force - 70 citations.

Statewide Strike Force - 69 citations. Commissioner Mialjevich asked what the law on triggerfish was.

Offshore Boats - 27 citations.

The grand total of citations issued statewide for the month of March was 1,039.

Col. Vidrine answered Commissioner Jenkins' question on a rescue from the Enforcement plane. Then, on the case in Winn Parish, he provided that 2 men went to Federal court and were given

a $500 fine, and put on probation for one year. Chairman Jones asked if the men pled guilty to their charges. Commissioner Jenkins inquired if the owners of the illegal nets that are picked up are usually found, and would you have to stake these nets out to find the owners.

Mr. Bennie Fontenot provided information on the new **Freshwater Mussel** program. The harvest of mussels has been closed for about the last 7 years. In 1990, a Senate Concurrent Resolution was passed to put together a Task Force to develop a fisheries management plan to harvest mussels for the shell only. The Department was given the authority to enact the rules that were being provided to the Commissioners for their review and information. In the future, if possible, the Department may implement a 5 cent a pound severance tax on the mussels. Commissioner Gisclair mentioned a good article on mussels that appeared in the Louisiana Conservationist magazine. Chairman Jones asked how the Department would monitor the mussels as being clean. Commissioner Schneider asked what animals feed on the mussels. Chairman Jones asked how can mussels get into an area and asked if any action was needed on this agenda item.

An **Update on Budget Cuts** was requested by Chairman Jones because of all the financial problems being talked about in the news. Mr. Fred Prejean provided a handout and noted a cycle which the Department's budget has gone through since first submitted to Division of Administration. A budget of $42,616,000 was submitted but has been adjusted to $38,737,000. The cut comes from the State General Funds and Lottery Funds the Department had been receiving. Acquisitions, major repairs, uniform cleaning allowances and supplies were the primary categories cut in the budget. The process of cutting the budget is continuing daily. There is expected an additional $30,000,000 in federal monies for aid in restoring damages caused by Hurricane Andrew which should double the budget when received.

Commissioner Jenkins asked with the federal monies expected to be received, aren't they already designated for specific programs; will the Enforcement Division have to lay off personnel because of the cuts; when the Division of Administration tells you to cut, do they tell the Departments where to cut; who decides where to cut; do you know what the cuts will eliminate in each category; then requested a look at what the cuts would be. Commissioner Vujnovich asked if the Oyster Strike Force received some dedicated money from the State and mentioned the oyster industry would be willing to help with the budget cuts. Commissioner Mialjevich asked, if personnel would be cut, how long would it take to train new personnel if situations got better; then agreed in not cutting personnel; and requested some way to verify people who buy resident licenses actually do live in this state. Chairman Jones asked if the Department is looking at other ways to

get permanent financing and if there was a formal group looking at securing funds.

A **Red Drum Resolution** was presented by Commissioner Mialjevich. He began by stating he did not discuss the Resolution with any other Commission member except Commissioner Gisclair in order to test their open mindedness and the fairness and equity issue. Then he read an excerpt from a newspaper article by Mr. Bob Marshall and noted misinformation the public was receiving about the resolution; reiterated the events that have occurred over the past 2 months; read and explained what his resolution was asking and made a motion for the Commission to accept the resolution. Commissioner Gisclair seconded the motion.

Commissioner Jenkins made a motion "to table for an indefinite period of time Commissioner Mialjevich's motion". Commissioner Schneider seconded the motion. Commissioner Jenkins explained his reasons for the motion he made, namely, this issue has been dealt with two or three times this year, it has to be discussed every year according to the law, and stated it was not fair to the Commissioners and the people of the state to have to listen to the same thing over and over again.

Commissioner Mialjevich commented gamefish status on red drum was not being discussed for a second or third time, the discussion was not to send anything to the legislature, and advised Commissioner Jenkins he resented what he was trying to do. He continued by saying he saw no harm with the Department developing a plan for the commercial harvest of red drum to have it in place when the time was right for that harvest, then asked for sensitivity for the people represented to share in the harvest.

Commissioner Vujnovich stated he would like to see the resolution passed so the commercial fishermen would be ready to harvest red drum when the time was right.

Chairman Jones then called for the vote on the substitute motion made by Commissioner Jenkins. The substitute motion passed four to three with Commissioner Jenkins, Commissioner Schneider, Commissioner Cormier and Chairman Jones voting for the substitute motion; while Commissioner Vujnovich, Commissioner Mialjevich and Commissioner Gisclair voted against the substitute motion.

(The full text of the Resolution is made a part of the record.)

WHEREAS, the Louisiana Wildlife and Fisheries Commissions 1993 "Red Drum Report" submitted to the legislature shows that red drum populations has and will continue to rapidly improve; and

WHEREAS, the minimum of 20% S.S.B.R./30% escapement was set as the safe standard for the red drum fishery; and

WHEREAS, the 1993 Red Drum Report shows under Scenario One approximately 32% S.S.B.R./42% escapement and under Scenario Two approximately 38% S.S.B.R./48% escapement has been achieved; and

WHEREAS, under Scenario One will increase to approximately 44% S.S.B.R./54% escapement and under Scenario Two approximately 52% S.S.B.R./62% escapement by 1994; and

WHEREAS, 81% of Louisiana voters surveyed in a 1991 statewide poll indicated a preference for a redfish management policy based on a commercial harvest that would enable them to buy Louisiana redfish in restaurants and grocery stores.

THEREFORE BE IT RESOLVED, that we the Louisiana Wildlife and Fisheries Commission hereby request that the Louisiana Department of Wildlife and Fisheries:

a. develop a plan on or before January 1, 1994 to implement a commercial harvest of red drum;

b. that the plan provide for no reduction in the current recreational bag limit and for the equitable allocation of the available harvest between the commercial and recreational fisheries based upon the historical distribution of the catch; and

c. that this plan incorporate recommendations for strict controls and regulation which may include, but not be limited to the establishment of a permit system, a limited entry system and/or tagging system.

A Declaration of Emergency for **Black Bass Regulations in Eagle Lake** was explained by Mr. Bennie Fontenot. A Notice of Intent was passed at the March meeting to begin the process of putting a 14 inch minimum length limit on black bass in Eagle Lake in Madison Parish. The State of Mississippi has already implemented their size regulation for this border lake and the Declaration of Emergency will close the gap that would exist if not put into place. Commissioner Jenkins made a motion to approve the Declaration of Emergency and was seconded by Commissioner Vujnovich. The motion passed with Commissioner Mialjevich opposing the motion.

(The full text of the Declaration of Emergency is made a part of the record.)

DECLARATION OF EMERGENCY

Department of Wildlife and Fisheries
Wildlife and Fisheries Commission

The Louisiana Department of Wildlife and Fisheries and the Mississippi Department of Wildlife, Fisheries and Parks initiated a management program on Eagle Lake in Madison Parish in 1992. The first step of the management plan, a controlled drawdown, was successful in producing a large number of fingerling black bass (Micropterus spp.). In order to ensure and accelerate the recovery of black bass in Eagle Lake, and, in accordance with the emergency provisions of R.S. 49:953(B) and R.S. 49:967(d), the Administrative Procedure Act, and under the authority of R.S. 56:326.3, the Wildlife and Fisheries Commission does hereby enact the following emergency rule:

> It shall be unlawful to take or possess, while on the water or while fishing in the water, black bass less than 14 inches total length on Eagle Lake, located east of the Mississippi River in Madison Parish, Louisiana.

Bert H. Jones
Chairman

The final ratification for **King and Spanish Mackerel and Cobia Daily Creel Limits** was given by Mr. Harry Blanchet. The rule will change the bag limits on charter vessels for king mackerel to two per person not including the captain and crew and also changes the commercial and recreational bag limit for cobia to two fish per person. Commissioner Mialjevich asked if this rule was a federal regulation; do these fish occur in Louisiana's state waters; are there different regulations in place now; were there any meetings held to discuss biological reasons to make these changes and not just because the Gulf Council requests it be done; will all the other Gulf states follow the same regulations; what biological problems are anticipated if this rule is not approved and who would the problems be with, the state or feds; then commented maybe sending a message to the Federal Government, when they start working with us, we will work with them.

Commissioner Jenkins made a motion to accept the rule and was seconded by Commissioner Cormier. The motion passed with Commissioner Mialjevich opposing the motion.

(The full text of the Rule is made a part of the record.)

RULE

Department of Wildlife and Fisheries
Wildlife and Fisheries Commission

The Louisiana Wildlife and Fisheries Commission does hereby amend the regulations concerning bag limits for king mackerel, spanish mackerel and cobia.

TITLE 76

WILDLIFE AND FISHERIES

Part VII. Fish and Other Aquatic Life

Chapter 3. Saltwater Sport and Commercial Fishery

Section 327. Daily Take and Possession Limits of King and Spanish Mackerel and Cobia

A. The recreational bag limit for possession of Spanish mackerel (Scomberomorus maculatus) whether caught within or without the territorial waters of Louisiana shall be 10 fish per person, per day.

B. The recreational bag limit for possession of king mackerel (Scomberomorus cavalla) whether caught within or without the territorial waters of Louisiana shall be 2 fish per person, per day.

C. A person subject to a bag limit for Spanish or king mackerel may not possess during a single day, regardless of the number of trips or the duration of a trip, any king or Spanish mackerel in excess of such bag limit, except that a person who is on a trip that spans more than 24 hours may possess no more than two daily limits, provided such a trip is aboard a charter vessel or headboat, and (1) the vessel has two licensed operators aboard as required by the U.S. Coast Guard for trips over 12 hours, and (2) each passenger is issued and has in possession a receipt issued on behalf of the vessel that verifies the length of the trip.

D. The recreational and commercial bag limit for possession of cobia (Rachycentron canadum) whether caught within or without the territorial waters of Louisiana shall be 2 fish per person.

AUTHORITY NOTE: Promulgated in accordance with R.S.56:325.1 and R.S.56:326.3.

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Wildlife and Fisheries Commission, LR 15:868 (October 1989), amended LR 17:207 (February 1991), amended LR (April 1993).

Bert H. Jones
Chairman

Commissioner Jenkins requested an update on the Speckled Trout Season from Mr. Blanchet. He then asked if Secretarial authority to close the season was given by the Commission to Secretary Herring.

Mr. John Roussel asked the Commissioners if they had any questions on a **Report on the Marine Finfish Panel** he provided on the subject. Commissioner Mialjevich asked if any Commission action was needed to put the panel back into action.

Civil Restitution and Class 1 Update computer printouts were provided by Ms. Wynnette Kees to the Commission. The printout showed a recap of the year's activities with the number of cases issued, amounts and collections. The other material provided was information on the redfish case and the Winn Parish case. Chairman Jones asked who the hearing officer was for the redfish case, where is he from, and how long will it take for him to make a decision. Commissioner Gisclair asked whose authority was the hearing officer acting under. Chairman Jones noted the redfish case was earmarked in December 1991; in May 1992, a notice for the amount due was sent; then a final notice was sent two months later; now 8 months later it has been turned over to the Attorney, then asked if we were waiting to hear from the attorney and the hearing officer. Commissioner Vujnovich asked if there was any information on the Mississippi redfish case.

Secretary's Report to the Commission was next given by Mr. Joe Herring. Dr. Don Hines, a former Commission Member, was elected to the Senate.

The building at 410 Chartres Street in New Orleans had been sold for $600,000 and this money is expected to go into the Conservation Funds.

The Yakey Family property sale was finalized with a total of 7,722 acres bought for $3,100,000. Management of this land would fall in conjunction with the Red River WMA. Also, 9 smaller tracts of land totalling 713 acres were finalized which would lock up privately owned land inside and on the boundary of Sicily Island Hills.

The Information & Education Section has sent out 80 News Releases and 20 News Features during the first three months of 1993. Also, scenic photographs are being accepted for the July-August calendar issue of the Louisiana Conservationist Magazine.

The Department personnel attended over 60 different meetings with many organizations throughout the State.

The Aquatic Plant Section sprayed a total of 834 acres and with the mild winter, predict more complaints to be received. Also, with the cut backs this Section has received in the past,

there will be a lot of problems throughout the State over the next year with water hyacinths, and other noxious weeds.

Personnel still continue with clearing areas affected by Hurricane Andrew. A lot of work done by the Wildlife Division and Marine Fish Division has been in the lower Atchafalaya Basin.

An agreement with LSU Extension Service was signed for a five year period in cooperation with the Department's Aquatic Education program called "Marsh Maneuvers". This work with the Extension Service and 4-H Clubs will include marsh educational work and aquatic educational work.

Chairman Jones went back to his question to Secretary Herring on the formal committee established to look at finding permanent financing for the Department and if a Commission member was to be elected, then asked when the committee would convene.

Notice of Intent to **Amend the By-Laws** was put on the agenda by Commissioner Jenkins. The By-Laws require a months notice before any changes in the by-laws can be made and so this was to serve as that notice. Also a written notice was given to each of the Commissioners. Commissioner Gisclair asked if a copy of what the change will be would be received in advance. Commissioner Jenkins noted the By-Laws require the Commissioners receive the information four days prior to the meeting. Commissioner Mialjevich asked if another Commissioner wanted to amend the By-Laws, would it have to be done in writing or would verbal notice be okay; and would the notice have to be acted upon at the next meeting.

The **July 1993 Meeting Date** was scheduled for July 8, 1993 in the Baton Rouge office, beginning at 10:00 a.m. This action passed unanimously.

Next, Chairman Jones called for **Public Comments**.

Mr. Charles Fuller, Public Affairs Consultant to the Louisiana Alligator Farmers and Ranchers Association, handed out a resolution to the Commissioners. The resolution is to request the cutting of the $4.00 alligator tag fee to $2.00. Reasons for this request include: in 1991, alligators were selling for $35-$40 per foot and today, they sell for $10-$12 per foot and this is $8-$10 below production costs; legislation passed in 1991 set up the Louisiana Alligator Resource Fund and agreed to the alligator tag fee to assist in funding the Louisiana Alligator Program, and as it stands now, the Alligator Resource Fund has provided the total funding for the alligator program. The farmers and ranchers in the state are picking up approximately 75% of the total cost of the program. There have been excess funds generated from the tag fee in the amount of $169,000. Relief by the Commission was being asked from this group to lower the tag fee effective September 1, 1993.

Commissioner Schneider asked what kind of fees does Florida have with their alligator program. Commissioner Gisclair inquired if any legislative bills would be proposed. Chairman Jones asked if it was known what dollar impact this action could have on the Department; is there a consensus in the alligator industry to pass this action; how large is the group you represent; how many ranches and farms are in Louisiana.

Mr. Glen Delaney, a private consultant who represents 30% of the total stock of alligator farmers and an alligator dealer spoke next. The people he represents are opposed to the approach suggested by the resolution. The farmers and dealers recognize that without the revenues, there would not be a program; and reducing it 50% would possibly eliminate the program. Then the question arises of what would happen to the alligator as a use resource and federal criteria for exporting the alligator and its products. Alternative funding for the Alligator Program does not exist and the resolution does not propose any alternatives. With the fact the people he represents have never seen the resolution, the question of legitimacy should be asked. Mr. Delaney feels the tag fees are a major cash flow burden for the industry. The Department is working on an alternative for the budget that will preserve the program and will shift the burden of the tag fees off the farmers and trappers and put the fee on those who export the alligator skins, or tan them or taxidermy them. The Louisiana Trappers and Alligator Hunters Association is opposed to the resolution and supports the Department's work of shifting the tag fees. Also, Mr. Delaney felt major landowners associated with the program would be opposed to the resolution. Commissioner Gisclair asked, of the 30% mentioned, how many clients or farmers does that represent.

Mr. Wayne Sagrera, President of the Louisiana Alligator Farmers and Ranchers Association, objects to the legitimacy of the resolution being questioned. The resolution is legitimate and the organization is a viable organization in Louisiana. To say that the tag fee will be directed to the exporters and taken off the farmers, hunters and trappers does not mean that this fee will revert back to the producer. Commissioner Mialjevich asked if the $4 tag fee was to promote the industry; who gets the money; and then does the money go to the people who manage it. Commissioner Gisclair asked Mr. Sagrera if he knew what percent the paid membership he has represents in the industry. Chairman Jones asked if the resolution was something for the Commission to act upon.

Commissioner Schneider made a motion to **Adjourn** the meeting and was seconded by Commissioner Jenkins.

Joe L. Herring
Secretary

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Corrections made
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MINUTES OF THE MEETING

OF

LOUISIANA WILDLIFE AND FISHERIES COMMISSION

Tuesday, April 6, 1993

Chairman Bert H. Jones presiding.

James H. Jenkins, Jr.
Perry Gisclair
Joseph B. Cormier
Jeff Schneider
Pete Vujnovich
Tee John Mialjevich

Secretary Joe L. Herring was also present.

Chairman Jones called for a motion for approval of the February 25, 1993, **Commission Minutes.** A motion for approval was made by Commissioner Jenkins and seconded by Commissioner Vujnovich. Commissioner Mialjevich stated there was a mistake in the Resolution that was passed and sent to the Legislature with the statement "Whereas, by Acts 1991, No. 157, the Louisiana Legislature permanently established red drum as a gamefish, and". In reviewing this legislation, he noted that Act 1991 does not do this action. Commissioner Jenkins asked Commissioner Mialjevich if there was a mistake in the resolution; and also asked Mr. Don Puckett how would a mistake in the resolution be resolved. Then Commissioner Mialjevich asked Mr. Puckett to review the Act and correct any mistakes if any are found for the next meeting. Chairman Jones stated a review of the resolution would be made and then called for a vote on approving the minutes. The motion passed unanimously.

Chairman Jones called for a motion for approval of the March 4, 1993, **Commission Minutes.** A motion for approval was made by Commissioner Cormier and seconded by Commissioner Schneider. The motion passed unanimously.

The February **Aircraft Report** was presented by Mr. Lee Caubarreaux. This report showed four pilots flew a total of 127 hours for the month, then stated the estimated cost was $15,656.83 and the actual cost for operating the aircraft was $13,528.67. Also included in the report was a breakdown of the flights that occurred during the month. Chairman Jones asked if non-hired pilots were allowed to log time from Department airplanes; how many pilots are there; if these are the only people that do log time from the aircraft; and about the eagle survey flights with the 210. Secretary Herring provided the Commissioners with a map of the 120 nest sites for the eagles and stated approximately 90 were active. Commissioner Jenkins noted the poor utilization of the Float-MW and

asked Mr. Gene Rackle if he felt this was poor usage of the aircraft, if the eagle flights were a Rockefeller function and why not use the Float-MW, then suggested putting the least used planes to use in other areas if possible. He then questioned the flight in the Partenavia that left Baton Rouge, went to Toledo Bend and back to Baton Rouge, ~~to which~~ Secretary Herring gave a brief explanation of the flight, ~~and~~ then asked who the passengers were on the flight; the flight on 2/12/93 with the Float-DC that was a rescue. Commissioner Gisclair made a motion to accept the report and was seconded by Commissioner Mialjevich.

Public Comments on the 1993-94 Resident Game Hunting Season Proposals was the next topic for discussion. Chairman Jones mentioned he had received a number of comments concerning all areas.

Mr. Gary Ridgdell from Livingston Parish presented the Commission with a petition to get back the 44 days of dog hunting in the area north of the interstate in Livingston Parish instead of the 28 days ~~as~~ being proposed.

Mr. Watson Gauthreaux, President of McElroy Hunting Club, representing Hunters Against Poachers (HAP), asked that the season in Area 6 be changed to December 4 through January 23 for hunting with or without dogs.

Chairman Jones gave a summary on a FAX he received from Mr. Warren King with HAP of the following days for hunting in Area 6: November 20-28, still hunting only; November 29-December 3, muzzleloader only and December 4-January 23, with or without dogs.

Mr. Charlie Duhe from St. James Parish and a member of HAP requested ~~the~~ extension of one week for hunting in Area 6 because of the rutting season and the mild winters in southern Louisiana.

At this point, Mr. Danny Timmer gave an update on the wild turkey. Mr. Timmer began by stating that 305 turkeys were trapped and relocated throughout the State, and another 90 birds were trapped and released on-site which gave a total of about 400 birds. The 13 scheduled releases have been completed. Then Mr. Timmer stated the 1993 hunting season in Area B got off to a slow start because of poor weather, unfavorable hunting conditions and poor gobbling activity. Toward the end of the first week and the beginning of Area A (March 27), the harvest of turkeys was really good and this continued until the weather turned bad again. On the most popular spot for hunting turkeys, Three Rivers-Red River WMA, an estimated 125 turkeys were killed. Other areas that saw a good harvest of turkeys ~~were from~~ the Big Lake area, Grassy Lake area and Boeuf area. Commissioner Schneider asked what was the cost associated with the trappings.

Mr. Tommy Prickett mentioned that the Wildlife Division had received an additional 24 letters from the HAP organization recommending the extended season. Chairman Jones stated with the recommendation for the new Area 7 and this season being the longest running, the biologists in that area felt the season should be earlier than the other areas. Such an early season could possibly have the following dates: October 30-November 14, still hunt only; November 20-28, still hunt only; December 6-10, muzzleloader only; and December 11-January 17, with or without dogs.

Commissioner Cormier commented he received 2 letters concerning the muzzleloader season. The letters from Mr. George Bel from Lafayette and Mr. Jimmie Myers from Opelousas requested the muzzleloader season include the weekend.

Mr. Carl Gremillion suggested the dove hunting season for morning hunting should be on the opening weekends after the Saturday. Chairman Jones reminded Mr. Gremillion that the setting for the Migratory Game Bird Hunting Season would be set in June and stated his comment would be taken under consideration at that time. Then Mr. Gremillion stated the law on goose creeping should not be on the books, it can not be enforced and asked the Commission to seek what could be done to get the law taken off the books.

Chairman Jones mentioned he received a call relative to the use of primitive weapons and flint chipped arrowheads and asked what the regulations were on this subject. Mr. Prickett asked Chairman Jones to restate the proposed Area 7 season dates. Mr. Kerney Sonnier from the Opelousas District noted the proposed dates brings this area more in line with Area 6 and accommodates the archery season.

The **National Fishing Week and Free Fishing Day Resolution** was presented by Mr. Paul Jackson. The reason for the resolution is to introduce the sport of fishing to the public and provide them with an opportunity to participate free of charge. Chairman Jones asked Mr. Jackson to read the resolution in its entirety. Commissioner Mialjevich made a motion to accept the Resolution and was seconded by Commissioner Vujnovich. The motion passed unanimously. Chairman Jones asked why not get this set the same day as when your license expires. Commissioner Mialjevich mentioned the unique fact that a commercial person would put up a motion for this resolution but noted that facilities that service recreational fishermen also service commercial fishermen.

(The full text of the Resolution is made a part of the record.)

RESOLUTION

WILDLIFE AND FISHERIES COMMISSION
DEPARTMENT OF WILDLIFE AND FISHERIES

WHEREAS, sportfishing provides recreation for more than sixty million Americans of all ages, giving families a healthy, shared outdoor activity, and

WHEREAS, sportfishing, through the payment of millions of dollars annually for licenses, taxes and fees, has provided the funding for federal and state programs that contributes significantly to the preservation and protection of our natural environment, and

WHEREAS, the estimated 800,000 plus sportfishermen in Louisiana spend in excess of one billion dollars annually to our economy, and

WHEREAS, Act 301 of the 1987 Louisiana Legislature, Title 76:VII.151 and 76:VII.339 of the Louisiana Administrative Code authorizes the Louisiana Wildlife and Fisheries Commission to declare no more than two free recreational fishing days each year, and

WHEREAS, Free Fishing Days during National Fishing Week would provide an excellent opportunity to introduce additional individuals to the wholesome outdoor activity of fishing.

NOW THEREFORE BE IT RESOLVED, that we the undersigned members of the Louisiana Wildlife and Fisheries Commission do hereby officially declare the week of June 7-13, 1993 as

FISHING WEEK

in the State of Louisiana, and

BE IT FURTHER RESOLVED, that June 12 & 13, 1993 are hereby declared free recreational fishing days, during which residents and non-residents may exercise the privileges of a licensed recreational fisherman without purchase of any otherwise necessary recreational fishing license.

DATE: April 6, 1993

Bert H. Jones, Chairman	Peter Vujnovich, Vice Chairman
James H. Jenkins, Jr.	Joseph B. Cormier
Jeff Schneider	Tee John Mialjevich
Perry Gisclair	Joe L. Herring, Secretary

Chairman Jones asked Mr. Rick Kasprzak to provide an **Update and Report on Inshore Artificial Reefs.** He began the discussion with a brief explanation of how the program was started. This program began in 1986 when Governor Edwards signed The Louisiana Fishing Enhancement Act law. A single oil and gas platform could create about 1 1/2 acres of hard-bottom habitat in 120 feet of water and the potential for harvesting 50% to 70% more reef fish. In the inshore reef program, the first step was to determine what structures ~~was~~ were already acting as artificial reefs. Thus far, over 6,000 items such as wrecks, hazards, oil and gas platforms, and shell pads have been identified as artificial reefs. A series of 6 maps covering the coastline is being ~~planned~~ produced to identify these reefs; the first map in this series was completed last fall and the second map is in the makings. The Department's program was accelerated when it realized we were owed shell for enhancement of the marine environment due to shell dredging activities. In 1991, two reefs in the Vermilion Bay area were constructed and no real evaluation has been made on these reefs to date. However, usage ranges from fairly extensive use to occasional usage. Also, in 1991, notice was given of two more reefs to be constructed in the Terrebonne-Timbalier Bay area. Future reef sites will be determined by the availability of mitigation shell and the success of the already established reefs.

Chairman Jones asked what was the inventory of the mitigated shell as of now; how are the inshore reef projects prioritorized; what is the priority for the future reefs; and what other possibilities are being looked at for the future. A question from Commissioner Mialjevich consisted of what the safeguards for water clearance will be with the projects in the Terrebonne-Timbalier Bay area. Commissioner Jenkins commented to Commissioner Mialjevich that one of the areas was an island ~~back~~ 6 to 7 years ago and the trawlers from the area should be familiar with the reefs.

Mr. Karl Turner began his discussion by giving a synopsis on the **Louisiana Gulf Shrimp Video.** The Seafood Promotion and Marketing Board put some money into a program which will "reposition Louisiana shrimp". Approximately 65% of the shrimp sold ~~industry~~ in the country is imported from Mexico, China and Indonesia. The video is the first step in trying to position Louisiana shrimp as being the premium tasting shrimp in the world. This video would be sent to the top restaurants to show why Louisiana shrimp is better than the imported shrimp. Chairman Jones asked if you can really tell the difference in the shrimp. At this point in the meeting, the video was shown. Commissioner Mialjevich complimented Mr. Turner and the Promotion Board for a good video. Chairman Jones asked how will the shrimp be tagged to ~~that will~~ denote it is Louisiana shrimp. Commissioner Jenkins asked how much the video cost and what will be the budget for the program. Commissioner Mialjevich informed about a restaurant he

has frequented where two different varieties of shrimp were served and feels the value of a good shrimp will bring customers back.

A report on the **Location of Sanctuaries for Shrimp** and how the Department was doing with this program was requested by Chairman Jones. Mr. Brandt Savoie showed the Commission a map which had highlighted 12 areas along the coast that are closed to trawling and another line that showed nursery areas. There are about 3.4 million acres of waterbottoms coastwide; and within this area, the 12 sanctuaries represent approximately 286,980 acres of waterbottoms. Also there is an additional 360,000 acres leased to oyster growers and these areas are also closed to trawling when properly marked. The shrimp plan, pages 40 through 42, describes each of these areas and explains why they are closed. The Department has looked into sanctuaries and nursery areas for a number of years and Mr. Savoie mentioned some research papers that dealt with shrimp nursery areas and sanctuaries along the coast. Also, the Marine Fish Division has asked its biologists along the coast to remark a map showing the areas that they consider are nursery areas to date.

Then Mr. Savoie answered the question on the shrimp management plan by noting the stated objective for the plan was to "maximize the economic benefit which is derived from the resource by Louisiana and the region". In order to accomplish this, the plan proposed to develop conservation and management options. The Department is currently working with the Governor's Task Force on Shrimp Management and the Louisiana Cooperative Extension Service to determine the feasibility of establishing sanctuaries along the coast. The concept of sanctuaries was the initial topic for discussion at the task force meetings and the first recommendation by the task force was to hold public hearings along the coast so the local fishermen could address the possibilities of sanctuaries for their own region.

Commissioner Jenkins inquired as to the time frame for the shrimp plan to be approved and asked for a copy to be given to each member. Commissioner Vujnovich asked if samples were taken in the Barataria Bay Estuary after the recent cold spell and what possible effects that might have occurred and then explained his reason for asking the question. Commissioner Schneider asked if numbers were going to be put together to show the economic benefits for the areas to be sanctuaries or what the overall effect would be; how would the program be evaluated if the numbers could not be produced; and what would be the time table with the public hearings on this. Commissioner Jenkins asked, with the equipment used today to get into shallow waters, does it affect other types of fish besides shrimp and mentioned that other sectors and factors have to be considered also. Mr. Perret agreed that the shallow waters need to be closed and not allow any commercial or recreational trawling. Commissioner Mialjevich feels the Shrimp Task Force will do a comprehensive, indepth study on the feasibility of

sanctuaries, and suggested the Commissioners maintain contact with the Task Force. Commissioner Gisclair noted that the figure for the oyster leases could not be added to the total figure for closed areas.

The announcement of the **Wild Louisiana Stamp Competition** was given by Mr. Gary Lester. On March 25, 1993, the 1st Annual State Competition was held and the winning painting of a Louisiana black bear was dawn by Mr. Ron Hooper from Shreveport. Mr. Hooper was introduced to the Commission and received the Commission's congratulations.

Mr. John Roussel began the discussion on **Fish Farm Mariculture Procedures & Enforcement** by reminding the Commission of a report they had already received and proceeded to provide some of the highlights of the program. In Louisiana there are two different fish raising programs and these include the mariculture program and the fish farmers program. The mariculture program, established in 1987, was authorized to issue up to 10 permits. Of the 10 permits issued, only 4 permits are still effective; and of these 4 permits, only 3 have active operations. The active operations are using some type of enclosure to contain their species. Two of the permittees are permitted to raise red drum and hybrid striped bass; one permittee is authorized to raise red drum, hybrid striped bass and black drum; and the other permittee is authorized to raise red drum, hybrid striped bass and oysters. Detail records on the fish bought and sold, feeding rates, growth rates, mortality rates and hydrological information on water quality are required to be kept by each permittee. This information is submitted to the Department on a monthly basis and annual basis. Some on-site monitoring by the Department is performed; however, no specific person is dedicated to this program. Certification notification procedures regarding harvesting shipment are required for permittees to follow.

Commissioner Jenkins asked what the 3 active permittees are actually raising; and does the Department monitor the stocking and harvesting of the fish. Mr. Roussel noted the Marine Fish Division has monitored 17 stockings, 6 harvest operations and spent 8 days taking samples from permitted operations over the past few years. Continuing, Commissioner Jenkins inquired if the Department was doing what we are suppose to be doing in accordance with the permits. Chairman Jones asked Secretary Herring exactly what Mr. Watson's position is with the Department. Commissioner Jenkins asked how many biologists are there that work in the fisheries areas that could check on the harvesting, shipment, stocking of the fish, etc. Secretary Herring commented that an initial check was made when the permit was given, but when renewals are issued, the different divisions are not notified of the renewals. Commissioner Jenkins restated his question to ask how does the Department monitor the day to day stocking and harvesting of fish. Secretary Herring explained that the permits could not be monitored on a day

to day basis by the personnel in the Department, but stated monitoring was performed occasionally. Commissioner Jenkins remarked that the program was not being administered correctly, there was a need for the people to monitor the program, and will continue to ask every month what was being done to satisfy the requirements of the program. Then he noted the fees for the permits do not cover the administrative costs, and asked if there was any effort going on now to raise the fees for the permits to cover the administrative costs. Commissioner Gisclair asked Commissioner Jenkins if an agent or a biologist should be called out every time fish was harvested, then asked how many times should contact be made. Commissioner Jenkins commented the Department was not doing their job, not paying enough attention to the permit requirements, and that the Department needed to do a better job. Chairman Jones inquired as to how will the Department handle the monitoring of the permits in the future. Secretary Herring stated he would get the Enforcement Division and Marine Division together and work on this problem.

Commissioner Jenkins then asked personnel from the Enforcement Division to explain how they handle the monitoring of the permits. He then said that if the fish are not looked at until they are on the trucks, you do not know the origin of those fish. Chairman Jones requested better monitoring of the program and asked Secretary Herring to explain how this would be done. Commissioner Cormier suggested making spot checking on these facilities if an agent was in an area. Commissioner Jenkins reminded that unless the farmer was harvesting the fish on such an unannounced visit, there would not be anything to check. Commissioner Mialjevich pointed he can not see farmers taking the chance of buying illegally caught fish to sell and agreed with Commissioner Cormier on spot checking the facilities.

Commissioner Jenkins asked Mr. Bennie Fontenot to report on the Fish Farmers. Mr. Fontenot explained the requirements for the Domestic Fish Farming Program. The Inland Fish Division has issued 2 permits to fish farmers that are raising redfish and hybrid striped bass. Under the Domestic Fish Farming statutes, the farmer is required to call 24 hours prior to the fish being shipped and not required to notify the Department when harvesting the ponds. The fish farms in Louisiana belong to Mr. Walter Landry with Westover Farms and Perilliat Michoud Farms. Commissioner Jenkins asked what was the cost for a Fish Farmers Permit and stated he hoped an attempt would be made to at least recover some of the costs associated with these permits. Continuing, he asked if contact with the Department was made when harvesting and stocking occurred, was the harvesting of the fish monitored. He then suggested modifying the permit regulations, and asked Enforcement Division if there has ever been an occasion where illegal nets were found near a fish farm, and what was the proximity to the farm. Commissioner Mialjevich asked if the owners of the illegal nets were connected with the fish farms in any way. Commissioner

Jenkins requested the Department make an effort to confirm where the fish are coming from and going where they are suppose to be going on a regular basis and not necessarily daily. Commissioner Mialjevich agreed with Commissioner Jenkins.

Mr. Fontenot introduced Mr. Alex Plaisance and asked if he could speak to the Commission. Mr. Plaisance explained how Lafourche Realty Company and their association with Lafourche Mariculture works and remarked of the horror at hearing rumors and innuendos of outlawing redfish to take care of the farm. He also mentioned a dilemma they have been fighting with poachers on their property. Then he explained the problems he was facing with Perilliat Michoud Farms and the effects of Hurricane Andrew and has decided he would not be able to continue with this operation. Mr. Plaisance assured the Commissioners that this was a legitimate business with legitimate businessmen who were not members of what was becoming known as the Redfish Mafia. Chairman Jones asked Mr. Plaisance if he would let the Commission know who owns the illegal nets found on his property. Commissioner Mialjevich stated Mr. Plaisance verified what he was saying about the farmers buying illegal fish and selling them. Commissioner Jenkins again stated he was not referring to the farmers when talking about the job not being monitored properly, it was the Department not doing their job.

A report on **Which Divisions Handle Habitat Species** was a topic of interest for Chairman Jones and requested this information. Secretary Herring first noted all divisions in the Department do some type of habitat work and the Natural Heritage Section was still a Section but was within the Wildlife Division. None of the work performed by this Section has been cut out; and there are a number of studies going on in the Department that overlaps the division lines. He then explained how the Fur & Refuge Division handles different projects that may overlap with some of the other divisions in the Department; how some of the divisions work on the endangered and/or threatened species in Louisiana. The main thing to make all the programs work was cooperation.

Secretary Herring mentioned the combining of the Habitat Conservation Division into the Wildlife Division has been made without a step being missed. This action took place in an effort to save some money for the Department. Then Secretary Herring turned the discussion to the pelican and the eagle and explained the history behind bringing the pelicans back to Louisiana. He stated the pelican program has been very successful and then provided the Commissioners with reports on the pelicans from personnel in the Fur and Refuge Division.

Discussion followed with Secretary Herring talking about the eagle program. The eagle program was started in 1954 by a private citizen with four active nests being recorded; and that same person continues working with the Department even today. In 1984

personnel from the Rockefeller Refuge ~~was~~ were instrumental in bringing the eagle program into the Department. As of today, there are approximately 120 nests with 30 being inactive.

Commissioner Schneider asked Secretary Herring how the money was going to be spent that was allocated in this year's budget. Secretary Herring stated the money appropriated for the Natural Heritage Section has not been used anywhere else in the Department. When the budget was being cut, Secretary Herring asked that two programs, the Information and Education Section and the Natural Heritage, Scenic Stream and Ecological Studies Section not be touched. Commissioner Schneider asked about next year's budget. Secretary Herring provided some history on how he and some fellow employees helped get some of the programs within the Department started, then asked the Commission, if they thought he wanted to cut out a program he helped get started?

Chairman Jones asked if the brown pelican and the bald eagle were being handled by the Fur and Refuge Division~~,~~ and if these programs are obligated by law to be handled under the Natural Heritage Program. He then expressed his appreciation and commended the Department for the work done on the bald eagles and brown pelicans. Commissioner Mialjevich asked Secretary Herring if the wood duck would fall under the Natural Heritage program also. Commissioner Jenkins asked about the packet of information provided to the Commissioners, and specifically the article from the Louisiana Conservationist on whales.

An update on **Grass Carp and the Commission's Approval for New Permit Regulations** was presented by Chairman Jones. He stated he had received correspondence about the introduction of grass carp into public and private waterbodies and was eager to hear what has been happening with this program. Mr. Bennie Fontenot mentioned this program was a new program for the use of triploid grass carp. The triploid grass carp is a sterile fish that can not reproduce. The permitting program in place now was for use by commercial catfish farmers only for the control of grasses. Mr. Fontenot then discussed the possibility of using this fish in private ponds with his staff and others and they felt it was time to allow such. He assured that the fish would not be put in every public waterbody, but only in those waterbodies where the control of grass is not working. The new rule also allows Louisiana Fish Farmers be a distributor ~~or sale the~~ for sales of triploid grass carp. Mrs. Janice Little gave a slide presentation explaining the grass carp, the triploid grass carp, how it made its way to this country, and how it is produced.

Commissioner Mialjevich asked how long ~~do the~~ triploid grass carp live, and are they good to eat. Chairman Jones asked about the tilapia, and if there was anyone in this business. Commissioner Mialjevich asked where is the tilapia farm located; why do you not want the triploid grass carp to escape; and do you

check every fish for sterility. Commissioner Schneider wondered what the budget would be in order to monitor this program because this program was very scary to him; and then asked if the Department had money for the program. Commissioner Jenkins asked if existing personnel could not be used that already handle the mariculture or fish farming permits. Commissioner Schneider asked if the permit industry was going to blossom, then commented he should start a permit consultant firm and get a contract with the Department. Chairman Jones asked if there were any plans to put grass carp into Caney Lake; what criteria would be used to determine whether or not to put the fish into Caney Lake. Then he restated his original question to ask if there was a formal consideration to introduce triploid grass carp into Caney Lake; are there any other bodies of water that is being considered; are there any public waterbodies the Department has released any of these fish into as of today; how many private ponds do you expect to issue permits to; and will there be an administrator for this program and will he coordinate with the district biologist and get the information he needs from these people. Commissioner Schneider wondered if the costs for the permits were sufficient enough to cover the administrative fees. Commissioner Cormier asked about the inspection fee. Commissioner Jenkins asked if the triploid grass carp would eat water hyacinths. Commissioner Mialjevich asked if these fish would eat anything that would interfere as a food source for other native fish; then asked if anyone was at the meeting that would speak for or against it.

Secretary Herring informed he was opposed to the grass carp a few years back; but with the research that has been done, he has changed his opinion on these fish and would rather see regulations put into place for the triploid grass carp and not for diploids. Commissioner Mialjevich asked how would the Department be able to stop the bringing in of illegal fish; does this rule have to be passed at this meeting; and what would happen when this rule was passed. Chairman Jones asked if this fish could be crossed with the walking catfish so they could mow the lawn, who in the Department has done the monitoring and science to figure out how many to put in a lake, will the Department regulate how many would be put in a particular waterbody. Then Chairman Jones asked the pleasure of the Commission, to which Commissioner Jenkins asked what did Mr. Fontenot need. Commissioner Cormier made a motion to approve the rules and was seconded by Commissioner Schneider. Chairman Jones asked for public comments.

Mr. Henry Truelove informed the Commission he served on the Grass Carp Task Force and noted what was being proposed did not come from the task force. He then asked the Commissioners to wait 30 days to vote on this rule to give them more time to look at the information from the task force. Commissioner Jenkins wondered what would waiting 30 days do, what did the task force recommend. Commissioner Cormier asked if we hold this up for 30 days, what would it do for the farmers in Louisiana that want to buy them.

Commissioner Mialjevich asked how many farmers would be participating in receiving the fish and then reselling them.

Dr. Greg Lutz with the LSU Cooperative Extension Service and speaking for the Louisiana Aquaculture Association stated if these fish are bought out of state, there would be a tremendous amount of money going out of state. Then speaking as an extension agent, with the calls they receive from pond owners, these fish could serve as a biological alternative to chemicals in controlling weeds.

Chairman Jones asked Mr. Fontenot if there were plans to develop the triploid grass carp in the state. Commissioner Schneider then called for the question. The Commissioners agreed to vote on the Triploid Grass Carp rules. Then Chairman Jones called for approval of the rules, ~~and was received by all except~~ Commissioner Mialjevich abstained from voting stating he did not have enough information.

Secretary Herring told the Commission about some of the honors that Mrs. Janice Little has brought to the state. Then he proceeded to mention other employees of the Department that ~~has~~ have also brought honor to the state.

(The full text of the Rule is made a part of the record.)

RULE

Department of Wildlife and Fisheries
Office of Fisheries

The Secretary of the Department of Wildlife and Fisheries does hereby amend the rule governing the importation, transportation, possession, disposal and sale of live triploid grass carp for aquatic plant control in private and public waters.

TITLE 76

WILDLIFE AND FISHERIES

Part VII. Fish and Other Aquatic Life

Chapter 9. Aquaculture - Exotic Species

Section 901. Triploid Grass Carp

A. Triploid Grass Carp Possession and Transportation for Aquatic Plant Control; Permit Required

1. No person, firm or corporation shall at any time possess, sell or cause to be transported into this state, triploid grass

carp (Ctenopharyngodon idella), except in accordance with a permit issued under and in compliance with the following regulations.

The following regulations govern the importation, transportation, possession, disposal and sale of live triploid grass carp for aquatic plant control in private and public waters, including ponds on public golf courses, municipal water treatment plants, parks and zoos. Nothing contained herein shall be construed to restrict or prevent the Department from conducting bona-fide research studies and fish and aquatic plant management programs as authorized by law or regulation.

2. Definitions:

a. Department - the Louisiana Department of Wildlife and Fisheries or an authorized employee of the Department.

b. Secretary - the Secretary of the Louisiana Department of Wildlife and Fisheries.

c. Triploid grass carp - refers to Ctenopharyngodon idella fingerlings and larger individuals that are certified as triploid carp (3N chromosomes) by the U.S. Fish and Wildlife Service or a qualified agent or contractor approved by the Department.

d. Triploid grass carp possession and transportation permit - the official document that identifies the terms of and allows for the importation, transportation and possession of live triploid grass carp in Louisiana as approved by the Secretary or his designee.

e. Permittee - organization that possesses a valid Louisiana triploid grass carp permit. A permittee can only be a natural person. A permittee may represent himself, a business, corporation or organization. The permittee is responsible for compliance with all stipulations in the permit.

3. Triploid Grass Carp Habitat Management Request Procedures

a. Individuals wishing to import, transport or possess live triploid grass carp in Louisiana must first request a permit from the Department through an application form furnished by the Department.

b. The completed applications must be returned to the Department, after which, Department personnel will review the application and make an on-site inspection of the water body.

c. Upon completing the on-site inspection, the Department personnel will make a final determination as to whether

the applicant is in full compliance with all rules for the triploid grass carp management permit.

d. The secretary, or his designee, will notify the applicant in writing as to whether or not the permit has been granted and if not, the reasons therefore. In the event of disapproval, applicants may re-apply after meeting department requirements.

4. Rules on Transport of Triploid Grass Carp for Habitat Management

a. For each occurrence whereby the permittee wishes to import, transport or possess live triploid grass carp, the permittee must obtain prior written approval from the Department using the following procedures.

i. Requests shall be made to the Permits Supervisor, Inland Fish Division, Louisiana Department of Wildlife and Fisheries, P. O. Box 98000, Baton Rouge, Louisiana 70898-9000.

ii. Requests shall include:

(a) Louisiana triploid grass carp permit number or a copy of the permit

(b) Route of transport

(c) Date of transport

(d) Time(s) of transport

(e) Destination

(f) Owner of transport vehicle

(g) Total number of fish

(h) Identification of seller and buyer

b. A bill of lading must accompany those individuals in possession of living triploid grass carp during transportation and shall include:

i. Copy of the permittee's written approval as described in paragraph a above

ii. Date and approximate time of shipment

iii. Route of shipment

iv. Source of triploid grass carp (hatchery)

v. Name, address and phone number of seller

vi. Name, address and phone number of buyer

vii. Copy of triploid certification

viii. Total number of fish

ix. Destination

x. Display the words "TRIPLOID GRASS CARP" prominently on at least two sides of the vehicle or hauling tank with letters that are no less than 4 inches high.

5. Rules Applicable to Triploid Grass Carp Stocking

a. Only approved waters may be stocked.

b. Site must not have any direct connections with any other stream or lake. Any site containment measures must be approved by Inland Fish Division biologists.

c. Site must have a vegetation problem documented by the Department that interferes with either access, esthetics, recreation, health, drainage, agriculture, municipal or industrial utilization or management of the water body.

6. General Rules for Triploid Grass Carp Habitat Management

a. Prior to introductions, fish to be introduced must be certified as triploid grass carp by the U.S. Fish and Wildlife Service or a qualified agent or contractor approved by the Department. Such certification must be furnished to and approved by the Department prior to introduction of any fish into any waters of this state.

b. No fingerlings under 6 inches in total length or eggs or fry shall be imported, transported or possessed in Louisiana.

c. Permits are not transferable from person to person or from site location to site location.

d. No person may permit the release of live triploid grass carp into waters of Louisiana without the written approval of the Secretary or his designee.

e. Applicant shall provide an adequate number of triploid grass carp to the Department, at no cost to the Department, upon request, to verify triploidy. Cost of any test deemed necessary by the Department shall be borne by the permittee.

f. The applicant must agree to allow Department officials or a Department approved contractor to conduct unannounced random inspections of the transport vehicle, property, water body site and fish. Additionally, Department officials may request other officials to accompany them during these inspections. Additionally, those individuals performing these inspections may remove or take fish samples for analysis and/or inspection.

g. The Department shall approve final stocking rates for each applicant.

h. The Department reserves the right to disapprove any permit application if, in the determination of the Department, escape of triploid grass carp into the wild is a risk. If an escape incident occurs through either a meteorological event or structural failure, permit reapplications will receive a more critical review by the Department.

i. Except in cases of mortality or unavoidable loss, restocking will be permitted only at intervals of 2.5 years following the initial stocking.

j. The cost of an initial triploid grass carp permit shall be $50.00 plus an additional fee for on-site inspection. The initial permit will be issued to cover a period of time ending with the calendar year following the date of the permit. Permits shall be renewed annually thereafter at a cost of $25.00. No site inspection or site inspection fee shall be required for permit renewals.

k. A permittee will be charged an administrative fee of $25.00 for each importation occurrence beginning with the second occurrence.

l. Qualified universities conducting research approved by the Department shall be exempt from fee charges.

m. If a permittee terminates the use of triploid grass carp in the permitted waterbody, the permittee shall notify the Department immediately and dispose of the triploid grass carp according to methods approved by the Department.

n. In addition to all other legal remedies, failure to comply with any of the provisions herein shall be just cause to immediately suspend and/or revoke the permittee's permit. All triploid grass carp shall be destroyed at permittee's expense under the Department's supervision within 30 days of permit revocation. Violation of any of the provisions of the permit constitutes a class four violation in accordance with R.S. 56:319(E).

o. Any permittee charged with violation of the above rules has a right to make a written response to the alleged violation(s) to the Secretary requesting a hearing to review the alleged violation(s).

B. Sale of Live Triploid Grass Carp for Aquatic Plant Control; Permit Required

1. Definitions

a. Triploid grass carp sales permit - the official document that allows for the importation, transportation, possession and sale of live triploid grass carp in Louisiana as approved by the Secretary or his designee.

b. Triploid grass carp seller - a properly licensed fish farmer who possesses a triploid grass carp sales permit.

2. Rules

a. Individuals wishing to sell live triploid grass carp must first obtain a Triploid Grass Carp Sales Permit.

b. A triploid grass carp seller must be a properly licensed fish farmer.

c. A triploid grass carp seller is bound by the triploid grass carp possession and transportation regulations as stipulated in Section A above; except that:

i. The holder of a Triploid Grass Carp Sales Permit may sell live triploid grass carp.

ii. The Triploid Grass Carp Sales Permit serves in lieu of the Triploid Grass Carp Possession and Transportation Permit.

d. The holders of a Triploid Grass Carp Sales Permit may only sell triploid grass carp to holders of a valid Triploid Grass Carp Possession and Transportation Permit or a Triploid Grass Carp Sales Permit.

e. The initial Triploid Grass Carp Sales Permit will be issued to cover a period of time ending with the calendar year following the date of the permit. Permits shall be renewed annually thereafter. The cost of a Triploid Grass Carp Sales Permit is $250.00.

f. An additional fee for the initial inspection of facilities will be assessed and charged.

g. In addition to all other legal remedies, failure to comply with any of the provisions herein shall be just cause to immediately suspend and/or revoke the permittee's permit. All triploid grass carp shall be destroyed at permittee's expense under the Department's supervision within 30 days of permit revocation. Violation of any of the provisions of the permit constitutes a class four violation in accordance with R.S. 56:319(E).

AUTHORITY NOTE: Promulgated in accordance with R.S. 56:318, 56:319 and 56:319.1.

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Office of Fisheries, LR 17:806 (August 1991); Amended LR (April 1993).

Joe L. Herring
Secretary

The **Monthly Law Enforcement Report for March** was given by Col. Winton Vidrine. The following numbers of citations were issued during the month of February.

Region I - Minden - 23 citations.

Region II - Monroe - 77 citations.

Region III - Alexandria - 60 citations.

Region IV - Ferriday - 27 citations.

Region V - Lake Charles - 112 citations.

Region VI - Opelousas - 114 citations.

Region VII - Baton Rouge - 82 citations.

Region VIII - New Orleans - 204 citations.

Region IX - Thibodaux - 174 citations.

Oyster Strike Force - 70 citations.

Statewide Strike Force - 69 citations. Commissioner Mialjevich asked what the law on triggerfish was.

Offshore Boats - 27 citations.

The grand total of citations issued statewide for the month of March was 1,039.

Col. Vidrine answered Commissioner Jenkins' question on a rescue from the Enforcement plane. Then on the case in Winn Parish, he provided that 2 men went to Federal court and ~~was~~ given Were

a $500 fine, and put on probation for one year. Chairman Jones asked if the men pled guilty to their charges. Commissioner Jenkins inquired if the owners of the illegal nets that are picked up are usually found, and would you have to stake these nets out to find the owners.

Mr. Bennie Fontenot provided information on the new **Freshwater Mussel** program. The harvest of mussels has been closed for about the last 7 years. In 1990, a Senate Concurrent Resolution was passed to put together a Task Force to develop a fisheries management plan to harvest mussels for the shell only. The Department was given the authority to enact these rules that ~~was~~ were being provided to the Commissioners for their review and information. In the future, if possible, the Department may implement a 5 cent a pound severance tax on the mussels. Commissioner Gisclair mentioned a good article on mussels that appeared in the Louisiana Conservationist magazine. Chairman Jones asked how the Department would monitor the mussels as being clean. Commissioner Schneider asked what animals feed on the mussels. Chairman Jones asked how can mussels get into an area and asked if any action was needed on this agenda item.

An **Update on Budget Cuts** was requested by Chairman Jones because of all the financial problems being talked about in the news. Mr. Fred Prejean provided a handout and noted a cycle which the Department's budget has gone through since first submitted to Division of Administration. A budget of $42,616,000 was submitted but has been adjusted to $38,737,000. The cut comes from the State General Funds and Lottery Funds the Department had been receiving. Acquisitions, major repairs, uniform cleaning allowances and supplies were the primary categories cut in the budget. The process of cutting the budget is continuing daily. There is expected an additional $30,000,000 in federal monies for aid in restoring damages caused by Hurricane Andrew which should double the budget when received.

Commissioner Jenkins asked with the federal monies expected to be received, aren't they already designated for specific programs; will the Enforcement Division have to lay off personnel because of the cuts; when the Division of Administration tells you to cut, do they tell the Departments where to cut; who decides where to cut; do you know what the cuts will eliminate in each category; then requested a look at what the cuts would be. Commissioner Vujnovich asked if the Oyster Strike Force received some dedicated money from the State and mentioned the oyster industry would be willing to help with the budget cuts. Commissioner Mialjevich asked, if personnel would be cut, how long would it take to train new personnel if situations got better; then agreed in not cutting personnel; and requested some way to verify people who buy resident licenses actually do live in this state. Chairman Jones asked if the Department is looking at other ways to

get permanent financing and if there was a formal group looking at securing funds.

A **Red Drum Resolution** was presented by Commissioner Mialjevich. He began by stating he did not discuss the Resolution with any other Commission member except Commissioner Gisclair in order to test their open mindedness and the fair and equity issue. Then he read an excerpt from a newspaper article by Mr. Bob Marshall and noted misinformation the public was receiving about the resolution; reiterated the events that have occurred over the past 2 months; read and explained what his resolution was asking and made a motion for the Commission to accept the resolution. Commissioner Gisclair seconded the motion.

Commissioner Jenkins made a motion "to table for an indefinite period of time Commissioner Mialjevich's motion". Commissioner Schneider seconded the motion. Commissioner Jenkins explained his reasons for the motion he made, namely, this issue has been dealt with two or three times this year, it has to be discussed every year according to the law, and stated it was not fair to the Commissioners and the people of the state to have to listen to the same thing over and over again.

Commissioner Mialjevich commented gamefish status on red drum was not being discussed for a second or third time, the discussion was not to send anything to the legislature, and advised Commissioner Jenkins he resented what he was trying to do. He continued by saying he saw no harm with the Department developing a plan for the commercial harvest of red drum and have it in place when the time was right for that harvest, then asked for sensitivity for the people represented to share in the harvest.

Commissioner Vujnovich stated he would like to see the resolution passed so the commercial fishermen would be ready to harvest red drum when the time was right.

Chairman Jones then called for the vote on the substitute motion made by Commissioner Jenkins. The substitute motion passed four to three with Commissioner Jenkins, Commissioner Schneider, Commissioner Cormier and Chairman Jones voting for the substitute motion; while Commissioner Vujnovich, Commissioner Mialjevich and Commissioner Gisclair voted against the substitute motion.

(The full text of the Resolution is made a part of the record.)

WHEREAS, the Louisiana Wildlife and Fisheries Commissions 1993 "Red Drum Report" submitted to the legislature shows that red drum populations has and will continue to rapidly improve; and

WHEREAS, the minimum of 20% S.S.B.R./30% escapement was set as the safe standard for the red drum fishery; and

WHEREAS, the 1993 Red Drum Report shows under Scenario One approximately 32% S.S.B.R./42% escapement and under Scenario Two approximately 38% S.S.B.R./48% escapement has been achieved; and

WHEREAS, under Scenario One will increase to approximately 44% S.S.B.R./54% escapement and under Scenario Two approximately 52% S.S.B.R./62% escapement by 1994; and

WHEREAS, 81% of Louisiana voters surveyed in a 1991 statewide poll indicated a preference for a redfish management policy based on a commercial harvest that would enable them to buy Louisiana redfish in restaurants and grocery stores.

THEREFORE BE IT RESOLVED, that we the Louisiana Wildlife and Fisheries Commission hereby request that the Louisiana Department of Wildlife and Fisheries:

a. develop a plan on or before January 1, 1994 to implement a commercial harvest of red drum;

b. that the plan provide for no reduction in the current recreational bag limit and for the equitable allocation of the available harvest between the commercial and recreational fisheries based upon the historical distribution of the catch; and

c. that this plan incorporate recommendations for strict controls and regulation which may include, but not be limited to the establishment of a permit system, a limited entry system and/or tagging system.

A Declaration of Emergency for **Black Bass Regulations in Eagle Lake** was explained by Mr. Bennie Fontenot. A Notice of Intent was passed at the March meeting to begin the process of putting a 14 inch minimum length limit on black bass in Eagle Lake in Madison Parish. The State of Mississippi has already implemented their size regulation for this border lake and the Declaration of Emergency will close the gap that would exist if not put into place. Commissioner Jenkins made a motion to approve the Declaration of Emergency and was seconded by Commissioner Vujnovich. The motion passed with Commissioner Mialjevich opposing the motion.

(The full text of the Declaration of Emergency is made a part of the record.)

DECLARATION OF EMERGENCY

Department of Wildlife and Fisheries
Wildlife and Fisheries Commission

The Louisiana Department of Wildlife and Fisheries and the Mississippi Department of Wildlife, Fisheries and Parks initiated a management program on Eagle Lake in Madison Parish in 1992. The first step of the management plan, a controlled drawdown, was successful in producing a large number of fingerling black bass (Micropterus spp.). In order to ensure and accelerate the recovery of black bass in Eagle Lake, and, in accordance with the emergency provisions of R.S. 49:953(B) and R.S. 49:967(d), the Administrative Procedure Act, and under the authority of R.S. 56:326.3, the Wildlife and Fisheries Commission does hereby enact the following emergency rule:

> It shall be unlawful to take or possess, while on the water or while fishing in the water, black bass less than 14 inches total length on Eagle Lake, located east of the Mississippi River in Madison Parish, Louisiana.

Bert H. Jones
Chairman

The final ratification for **King and Spanish Mackerel and Cobia Daily Creel Limits** was given by Mr. Harry Blanchet. The rule will change the bag limits on charter vessels for king mackerel to two per person not including the captain and crew and also changes the commercial and recreational bag limit for cobia to two fish per person. Commissioner Mialjevich asked if this rule was a federal regulation; do these fish occur in Louisiana's state waters; are there different regulations in place now; were there any meetings held to discuss biological reasons to make these changes and not just because the Gulf Council requests it be done; will all the other Gulf states follow the same regulations; what biological problems are anticipated if this rule is not approved and who would the problems be with, the state or feds; then commented maybe sending a message to the Federal Government, when they start working with us, we will work with them.

Commissioner Jenkins made a motion to accept the rule and was seconded by Commissioner Cormier. The motion passed with Commissioner Mialjevich opposing the motion.

(The full text of the Rule is made a part of the record.)

RULE

Department of Wildlife and Fisheries
Wildlife and Fisheries Commission

The Louisiana Wildlife and Fisheries Commission does hereby amend the regulations concerning bag limits for king mackerel, spanish mackerel and cobia.

TITLE 76

WILDLIFE AND FISHERIES

Part VII. Fish and Other Aquatic Life

Chapter 3. Saltwater Sport and Commercial Fishery

Section 327. Daily Take and Possession Limits of King and Spanish Mackerel and Cobia

A. The recreational bag limit for possession of Spanish mackerel (Scomberomorus maculatus) whether caught within or without the territorial waters of Louisiana shall be 10 fish per person, per day.

B. The recreational bag limit for possession of king mackerel (Scomberomorus cavalla) whether caught within or without the territorial waters of Louisiana shall be 2 fish per person, per day.

C. A person subject to a bag limit for Spanish or king mackerel may not possess during a single day, regardless of the number of trips or the duration of a trip, any king or Spanish mackerel in excess of such bag limit, except that a person who is on a trip that spans more than 24 hours may possess no more than two daily limits, provided such a trip is aboard a charter vessel or headboat, and (1) the vessel has two licensed operators aboard as required by the U.S. Coast Guard for trips over 12 hours, and (2) each passenger is issued and has in possession a receipt issued on behalf of the vessel that verifies the length of the trip.

D. The recreational and commercial bag limit for possession of cobia (Rachycentron canadum) whether caught within or without the territorial waters of Louisiana shall be 2 fish per person.

AUTHORITY NOTE: Promulgated in accordance with R.S.56:325.1 and R.S.56:326.3.

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Wildlife and Fisheries Commission, LR 15:868 (October 1989), amended LR 17:207 (February 1991), amended LR (April 1993).

Bert H. Jones
Chairman

Commissioner Jenkins requested an update on the **Speckled Trout Season** from Mr. Blanchet. He then asked if Secretarial authority to close the season was given by the Commission to Secretary Herring.

Mr. John Roussel asked the Commissioners if they had any questions on a **Report on the Marine Finfish Panel** he provided on the subject. Commissioner Mialjevich asked if any Commission action was needed to put the panel back into action.

Civil Restitution and Class 1 Update computer printouts were provided by Ms. Wynnette Kees to the Commission. The printout showed a recap of the year's activities with the number of cases issued, amounts and collections. The other material provided was information on the redfish case and the Winn Parish case. Chairman Jones asked who the hearing officer was for the redfish case, where is he from, and how long will it take for him to make a decision. Commissioner Gisclair asked whose authority was the hearing officer acting under. Chairman Jones noted the redfish case was earmarked in December 1991; in May 1992, a notice for the amount due was sent; then a final notice was sent two months later; now 8 months later it has been turned over to the Attorney, then asked if we were waiting to hear from the attorney and the hearing officer. Commissioner Vujnovich asked if there was any information on the Mississippi redfish case.

Secretary's Report to the Commission was next given by Mr. Joe Herring. Dr. Don Hines, a former Commission Member, was elected to the Senate.

The building at 410 Chartres Street in New Orleans had been sold for $600,000 and ~~expected~~ is expected this money to go into the Conservation Funds.

The Yakey Family property sale was finalized with a total of 7,722 acres bought for $3,100,000. Management ~~for this land would fall~~ of in conjunction with the Red River WMA. Also, 9 smaller tracts of land totalling 713 acres were finalized which would lock up privately owned land inside and on the boundary of Sicily Island Hills.

The Information & Education Section has sent out 80 News Releases and 20 News Features during the first three months of 1993. Also, scenic photographs are being accepted for the July-August calendar issue of the Louisiana Conservationist Magazine.

The Department personnel attended over 60 different meetings with many organizations throughout the State.

The Aquatic Plant Section sprayed a total of 834 acres and with the mild winter, predict more complaints to be received. Also, with the cut backs this Section has received in the past,

there will be a lot of problems throughout the State over the next year with water hyacinths, and other noxious weeds.

Personnel still continue with clearing areas affected by Hurricane Andrew. A lot of work done by the Wildlife Division and Marine Fish Division has been in the lower Atchafalaya Basin.

An agreement with LSU Extension Service was signed for a five year period in cooperation with the Department's Aquatic Education program called "Marsh Maneuvers". This work with the Extension Service and 4-H Clubs will include marsh educational work and aquatic educational work.

Chairman Jones went back to his question to Secretary Herring on the formal committee established to look at finding permanent financing for the Department and if a Commission member was to be elected, then asked when the committee would convene.

Notice of Intent to **Amend the By-Laws** was put on the agenda by Commissioner Jenkins. The By-Laws require a months notice before any changes in the by-laws can be made and so this was to serve as that notice. Also a written notice was given to each of the Commissioners. Commissioner Gisclair asked if a copy of what the change will be would be received in advance. Commissioner Jenkins noted the By-Laws require the Commissioners receive the information four days prior to the meeting. Commissioner Mialjevich asked if another Commissioner wanted to amend the By-Laws, would it have to be done in writing or would verbal notice be okay; and would the notice have to be acted upon at the next meeting.

The **July 1993 Meeting Date** was scheduled for July 8, 1993 in the Baton Rouge office, beginning at 10:00 a.m. This action passed unanimously.

Next, Chairman Jones called for **Public Comments.**

Mr. Charles Fuller, Public Affairs Consultant to the Louisiana Alligator Farmers and Ranchers Association, handed out a resolution to the Commissioners. The resolution is to request the cutting of the $4.00 alligator tag fee to $2.00. Reasons for this request include: in 1991, alligators were selling for $35-$40 per foot and today, they sell for $10-$12 per foot and this is $8-$10 below production costs; legislation passed in 1991 set up the Louisiana Alligator Resource Fund and agreed to the alligator tag fee to assist in funding the Louisiana Alligator Program, and as it stands now, the Alligator Resource Fund has provided the total funding for the alligator program. The farmers and ranchers in the state are picking up approximately 75% of the total cost of the program. There ~~has~~ have been excess funds generated from the tag fee in the amount of $169,000. Relief by the Commission was being asked from this group to lower the tag fee effective September 1, 1993.

Commissioner Schneider asked what kind of fees does Florida have with their alligator program. Commissioner Gisclair inquired if any legislative bills would be proposed. Chairman Jones asked if it was known what the dollar impact of this action could have on the Department; is there a consensus in the alligator industry to pass this action; how large is the group you represent; how many ranches and farms are in Louisiana.

Mr. Glen Delaney, a private consultant that represents 30% of the total stock of alligator farmers and an alligator dealer. The people he represents are opposed to the approach suggested by the resolution. The farmers and dealer recognize that without the revenues, there would not be a program; and by reducing it 50% would possibly eliminate the program. Then the question of what would happen to the alligator as a use resource and federal criteria for exporting the alligator and its products. Alternative funding for the Alligator Program does not exist and the resolution does not propose any alternatives. With the fact the people he represents has never seen the resolution, the question of legitimacy should be asked. Mr. Delaney feels the tag fees are a major cash flow burden for the industry. The Department is working on an alternative for the budget that will preserve the program and will shift the burden of the tag fees off the farmers and trappers and put the fee on those who export the alligator skins, or tan them or taxidermy them. The Louisiana Trappers and Alligator Hunters Association are opposed to the resolution and supports the Department's work of shifting the tag fees. Also, Mr. Delaney felt major landowners associated with the program would be opposed to the resolution. Commissioner Gisclair asked of the 30% mentioned, how many clients or farmers does that represent.

Mr. Wayne Sagrera, President of the Louisiana Alligator Farmers and Ranchers Association, objects to the legitimacy of the resolution being questioned. The resolution is legitimate and the organization is a viable organization in Louisiana. To say that the tag fee will be directed to the exporters and taken off the farmers, hunters and trappers does not mean that this fee will revert back to the producer. Commissioner Mialjevich asked if the $4 tag fee was to promote the industry; who get the money; and then does the money go to the people who manage it. Commissioner Gisclair asked Mr. Sagrera if he knew what percent of the paid membership he has represents in the industry. Chairman Jones asked if the resolution was something for the Commission to act upon.

Hearing no other Public Comments, Commissioner Schneider made a motion to **Adjourn** the meeting and was seconded by Commissioner Jenkins.

Joe L. Herring
Secretary

JLH:sch

COMMISSION MEETING
ROLL CALL

Tuesday April 6, 1993
Baton Rouge, LA
Wildlife and Fisheries Building

	Attended	Absent
Bert Jones (Chairman)	✓	
Jimmy Jenkins	✓	
Perry Gisclair	✓	
Tee John Mialjevich	✓	
Joseph Cormier	✓	
Jeff Schneider	✓	
Peter Vujnovich	✓	

Mr. Chairman:

There are 7 Commissioners in attendance and we have a quorum.

Secretary Herring is also present.

AGENDA

LOUISIANA WILDLIFE AND FISHERIES COMMISSION
BATON ROUGE, LA
April 6, 1993
10:00 AM

1. Roll Call

2. Approval of Minutes of February 25, 1993

3. Approval of Minutes of March 4, 1993

4. Aircraft Report - Lee Caubarreaux

5. Announce Winner of Wild Louisiana Stamp Competition - Gary Lester

6. Public Comments - 1993-94 Resident Game Hunting Season Proposals

7. National Fishing Week and Free Fishing Day Resolution - Paul Jackson

8. Presentation of Louisiana Gulf Shrimp Video - Karl Turner

9. Update and Report on Inshore Artificial Reefs - Bert Jones

10. Report on Location of Sanctuaries for Shrimp - Bert Jones

11. Full Report on Which Divisions Handle Habitat Species - Bert Jones

12. Fish Farm Mariculture Procedures & Enforcement - Bert Jones

13. Update on Grass Carp & Commission Approval of New Permit Regulations - Bert Jones

14. Freshwater Mussel Update - Bert Jones

15. Update on Budget Cuts - Bert Jones

16. Red Drum Resolution - Tee John Mialjevich

17. Declaration of Emergency - Black Bass Regulations in Eagle Lake - Bennie Fontenot

18. Ratification - King and Spanish Mackerel and Cobia Daily Creel Limits - Harry Blanchet

19. Report on Marine Finfish Panel - John Roussel

20. Civil Restitution and Class 1 Update - Wynnette Kees

21. Monthly Law Enforcement Report/March - Winton Vidrine

22. Secretary's Report to the Commission - Joe Herring

23. Notice of Intent to Amend By-Laws

24. Set July 1993 Meeting Date

25. Public Comments

AFS

AGENDA

LOUISIANA WILDLIFE AND FISHERIES COMMISSION
BATON ROUGE, LA
April 6, 1993
10:00 AM

1. Roll Call

2. Approval of Minutes of February 25, 1993 T.J.M. questions

I-131 3. Approval of Minutes of March 4, 1993

I-145 4. Aircraft Report - Lee Caubarreaux

III 340 5. Announce Winner of Wild Louisiana Stamp Competition - Gary Lester

I-394 6. Public Comments - 1993-94 Resident Game Hunting Season Proposals I-394 Turkey Trapping update ~495

II-180 7. National Fishing Week and Free Fishing Day Resolution - Paul Jackson I-123

II-380 8. Presentation of Louisiana Gulf Shrimp Video - Karl Turner

II-198 9. Update and Report on Inshore Artificial Reefs - Bert Jones

II-553 10. Report on Location of Sanctuaries for Shrimp - Bert Jones → III-335

V-000 11. Full Report on Which Divisions Handle Habitat Species - Bert Jones V-514

III-365 12. Fish Farm Mariculture Procedures & Enforcement - Bert Jones → III-

LUNCH

V-514 13. Update on Grass Carp & Commission Approval of New Permit Regulations - Bert Jones

VI-110 14. Freshwater Mussel Update - Bert Jones

VI-150 15. Update on Budget Cuts - Bert Jones

VI-385 16. Red Drum Resolution - Tee John Mialjevich

VI-519 17. Declaration of Emergency - Black Bass Regulations in Eagle Lake - Bennie Fontenot

VI-543 18. Ratification - King and Spanish Mackerel and Cobia Daily Creel Limits - Harry Blanchet

19. Report on Marine Finfish Panel - John Roussel

VIII/80 20. Civil Restitution and Class 1 Update - Wynnette Kees

V-555 21. Monthly Law Enforcement Report/March - Winton Vidrine

VIII-155 22. Secretary's Report to the Commission - Joe Herring

VIII-301 23. Notice of Intent to Amend By-Laws

VIII-350 24. Set July 1993 Meeting Date

VIII-360 25. Public Comments Alligator Burning

x
x
x

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

March 18, 1993

MEMORANDUM:

TO: Joe L. Herring, Secretary

FROM: Lee Caubarreaux, Assistant Secretary LGC 3/19/93

SUBJECT: Aviation Report - February 1993

Total hours listed are:

PILOT		TOTAL HOURS
G. Rackle	-	40.8
B. Stamey	-	18.8
M. Windham	-	3.3
D. Clause	-	64.1
TOTAL HOURS	-	127.00

-0- No Flights

PLANE			FLIGHT HOURS	ESTIMATED[1] COST(TOTAL)	ACTUAL[2] COST(TOTAL)
N61092	Amphib	-	20.4	2,537.96	1,742.67
70365	Float-DC	-	64.1	7,483.68	4,975.36
N2576K	Float-MW	-	3.3	392.87	2,265.82
N9467Y	210	-	23.0	2,221.34	1,888.30
N223MS	Partenavia	-	16.2	3,020.98	2,656.52
N57266	Aero Commander	-	0.0		
TOTALS			127.00	15,656.83	13,528.67

[1]Estimated Cost is based on an historical average per flight hour.

[2]Actual Cost substitutes actual maintenance for the month for the average maintenance costs used in the previous figure. This is the only figure used in the calculation of estimated costs that varies significantly from month to month.

LGC:csg
cc: Debbie Unbehagen, Fiscal

February 1993

PLANE: N223MS (PARTENAVIA)				
DATE	PILOT	DESTINATION & PURPOSE	HOURS	PASSENGERS
02/08/93	Stamey	BR-South Central Coastal Zone-BR: LSU Pintail project	3.4	B. Cox (LSU)
02/09/93	Stamey	BR-South Central Coatal Zone-BR: LSU Pintail Project	3.0	B. Cox (LSU)
02/11/93	Rackle	BR-Sabine River, Toledo Bend-BR: land purchase & survey	5.7	J. Herring D. Lee J. Avault
02/22/93	Stamey	BR-South Central Coastal Zone-BR: LSU Pintail Project	4.1	B. Cox (LSU)
		TOTAL	16.2	

PLANE: N9467Y (210)				
DATE	PILOT	DESTINATION & PURPOSE	HOURS	PASSENGERS
02/01/93	Rackle	BR→Patterson coastal→BR: coastal eagle survey	7.3	T. Hess G. Perry W. Dubuque
02/12/93	Stamey	BR→Florida Parishes→BR: survey of rivers for dredging operation	3.1	J. W. Smith
02/15/93	Stamey	BR→Miss. River→BR: photos	.8	J. W. Smith G. LaBranche
2/18/93	Stamey	BR→N E La. Parishes→BR: survey of rivers for dredging operations	4.4	J. W. Smith P. Lowery
02/26/93	Rackle	BR→Rockefeller Coastal→BR: eagle survey	7.4	T. Hess G. Perry W. Dubuque
		TOTAL	23.0	

PLANE: N70365 (FLOAT-DC)				
DATE	PILOT	DESTINATION & PURPOSE	HOURS	PASSENGERS
02/01/93	Clause	NI→Reg. 6 & 9→NI: gill net, oyster, hunting	3.3	-----
02/02/93	Clause	NI→Reg. 8 to Miss. Line→NI: oysters, fed. violations	6.6	J. Whitehead
02/03/93	Clause	NI→Biloxi Marsh Area→NI: oyster, gill net	4.6	J. Whitehead W. Dufrene
02/08/93	Clause	NI→Court Terrebonne→NI: gill net venue w/SEWP boats	3.0	J. Whitehead
02/09/93	Clause	NI→Venice→NI: gill net	3.0	C. Kimble J. Whitehead
02/10/93	Clause	NI→Venice→NI: gill net	8.0	S. Dares
02/12/93	Clause	NI→Lafitte Area→NI: gill net, catfish, rescue	3.0	A. Adams
02/13/93	Clause	NI→Reg. 6 & 5: shrimp and Reg. 8: gill net→NI	5.6	T. Laviolette B. Clark
02/16/93	Clause	NI→Reg. 6 & 9 & 3→NI: shrimp, oyster, gill net	2.4	-----
02/17/93	Clause	NI→Reg. 6 & 9 & 5→NI: oyster, gill net	7.0	D. Fulmer
02/18/93	Clause	NI→Reg. 9→NI: gill net, fish	1.9	D. Guidry
02/19/93	Clause	NI→Reg. 9 & 6→NI: gill net, hunters	3.4	R. Chauvin
02/22/93	Clause	NI→Miss. coastal to Texas→NI: shrimp	5.5	J. Whitehead W. Dufrene
02/24/93	Clause	NI→Freshwater Bayou to North Island→NI	4.0	W. Dufrene
02/26/93	Clause	NI→Coastal→NI: shrimp, oyster patrol	2.8	W. Torres
		TOTAL	64.1	

PLANE: N61092 (AMPHIB)				
DATE	PILOT	DESTINATION & PURPOSE	HOURS	PASSENGERS
02/02/93	Rackle	NO→Coastal→NO: Eagle Survey	2.7	------
02/10/93	Rackle	NO→Houma Coastal→NO: DNR Permits	3.7	K. Kilgen R. Serpas
02/12/93	Rackle	NO→Coastal→NO: DNR Permits	.9	R. Latapie
02/16/93	Rackle	NO→New Iberia Coastal→NO: Brown Pelican Survey	7.7	L. McNeese T. Hess G. Perry
02/17/93	Rackle	NO→Coastal→NO: Red Snapper opening & camp inspection	4.7	C. Perret J. Roussel J. Sherpard
02/25/93	Rackle	NO→Coastal→NO: DNR Permits MRGO	.7	R. Latapie
		TOTAL	20.4	

PLANE: N2576K (FLOAT-MW)				
DATE	PILOT	DESTINATION & PURPOSE	HOURS	PASSENGERS
02/04/93	Windham	NO→SE Coastal→NO: coastal erosion & restoration	1.8	B. Wright Congressional
02/09/93	Windham	NO→Salvador & Pointe-au-Chien WMAs→NO: coastal restoration projects	1.5	-----
		TOTAL	3.3	

PLANE: N25766 (AERO COMMANDER)				
DATE	PILOT	DESTINATION & PURPOSE	HOURS	PASSENGERS
		no flights		

1993 TURKEY TRAPPING UPDATE

DISTRICT I - MINDEN

RELEASE SITE	TRAP SITE	# & SEX	TOTAL
DeSoto Parish - Ben Johnson Property	Wisconsin	32 Hens	47
	Wisconsin	3 Gobblers	
	Alabama	6 Hens	
	Alabama	3 Gobblers	
	Arkansas	3 Gobblers	
DeSoto Parish - I.P. Property	Point Lookout H.C.	7 Hens	14
	Point Lookout H.C.	7 Gobblers	
Claiborne Parish-Willamette Timber Co. Property	Wisconsin	7 Hens	15
	Wisconsin	5 Gobblers	
	Alabama	2 Gobbler	
	Arkansas	1 Gobbler	
Jackson-Bienville-Willamette	Wisconsin	5 Hens	5

DISTRICT II - MONROE

RELEASE SITE	TRAP SITE	# & SEX	TOTAL
Bayou Macon WMA	Point Lookout H.C.	10 Hens	15
	Sicily Island WMA	5 Gobblers	
Ouachita WMA	Point Lookout H.C.	9 Hens	9
Union Parish - Jim Turner Creek	Sicily Island WMA	15 Hens	21
	Sicily Island WMA	6 Gobblers	

DISTRICT III - ALEXANDRIA

RELEASE SITE	TRAP SITE	# & SEX	TOTAL
Sabine WMA	Fort Polk WMA	17 Hens	22
	Fort Polk WMA	5 Gobblers	
Kisatchie National Forest - Winn Range District	Wisconsin	29 Hens	58
	Wisconsin	9 Gobblers	
	Arkansas	6 Hens	
	Tri-Parish Turkey Chpt.	11 Hens	
	Tri-Parish Turkey Chpt.	3 Gobblers	

DISTRICT IV - FERRIDAY

RELEASE SITE	TRAP SITE	# & SEX	TOTAL
IP Property-LaSalle Ph.	Diamon Island-Madison	18 Hens	25
IP Property-LaSalle Ph.	Sicily Island WMA	7 Gobblers	

DISTRICT VI - OPELOUSAS

RELEASE SITE	TRAP SITE	# & SEX	TOTAL
Thistlethwaite WMA	Red River WMA	18 Hens	24
	Sherburne	6 Gobblers	
St. Landry Parish - Michaud Swamp	Sicily Island WMA	12 Hens	17
	Sherburne WMA	5 Gobblers	

DISTRICT VII - BATON ROUGE

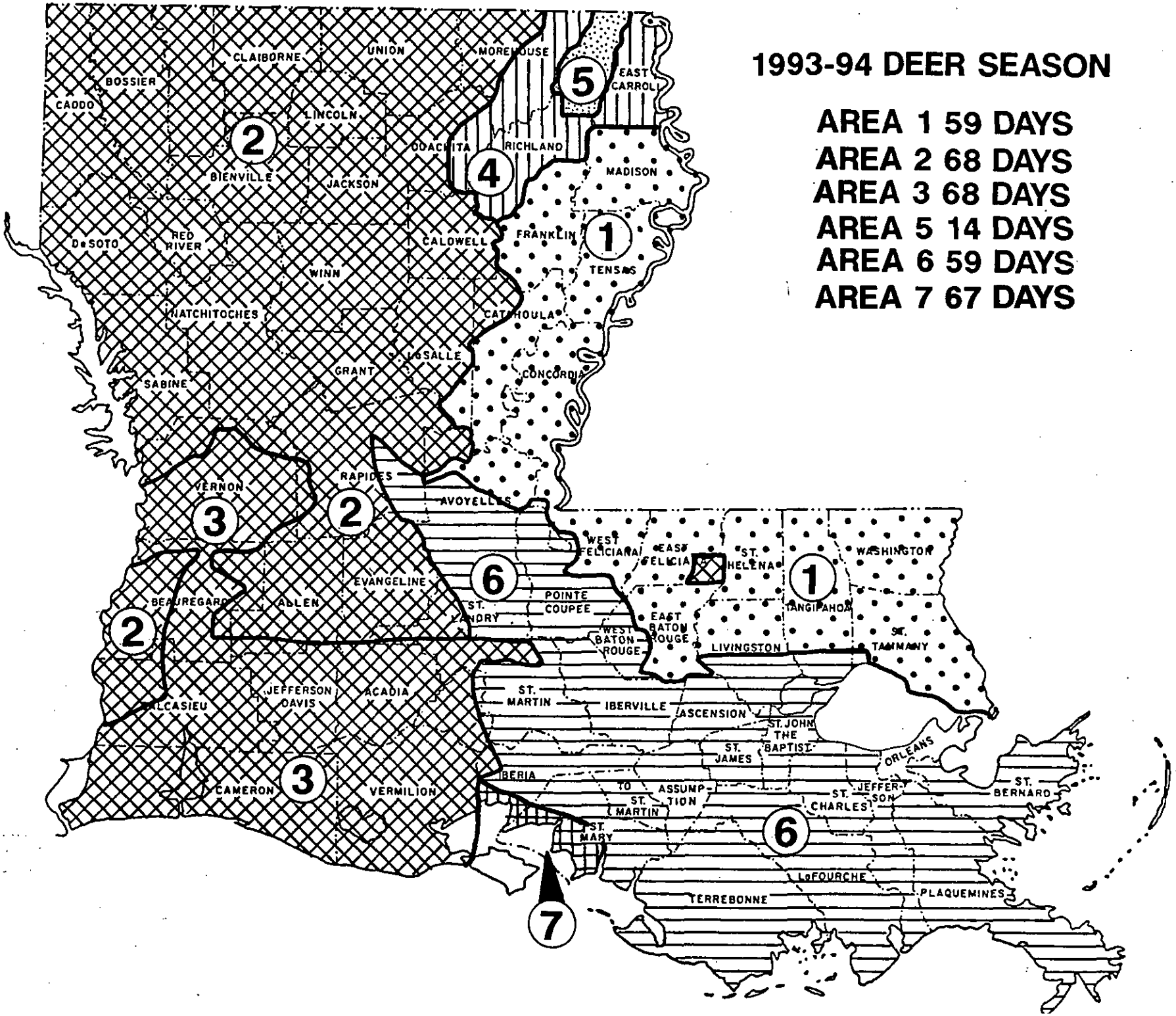
RELEASE SITE	TRAP SITE	# & SEX	TOTAL
Golden Ranch	Nuclear Plant	2 Gobblers	13
	Zemury Park	3 Hens	
	Mosher Hill H.C.	6 Hens	
	Mosher Hill H.C.	2 Gobblers	
Ascension Parish Boyce Property	Zemury Park	1 Hen	19
	Ten Point H.C.	6 Hens	
	Ben's Creek WMA	6 Hens	
	Nuclear Plant	1 Gobbler	
	Avondale Scout Camp	5 Gobbler	
		GRAND TOTAL	304

The following is a list of turkeys trapped and released on site:

CAPTURE SITE	# HENS	# GOBBLERS	TOTAL
Mosher Hill Hunting Club	2	10	12
Ben's Creek WMA	7	19	26
Ten Point Hunting Club	1	12	13
Tri-Parish Turkey Chapter	2	0	2
Sherburne WMA	0	17	17
Grassy Lake WMA & Grand Lake Rod & Gun	0	7	7
Red Dirt	6	0	6
Diamond Island	6	0	6
		GRAND TOTAL	89

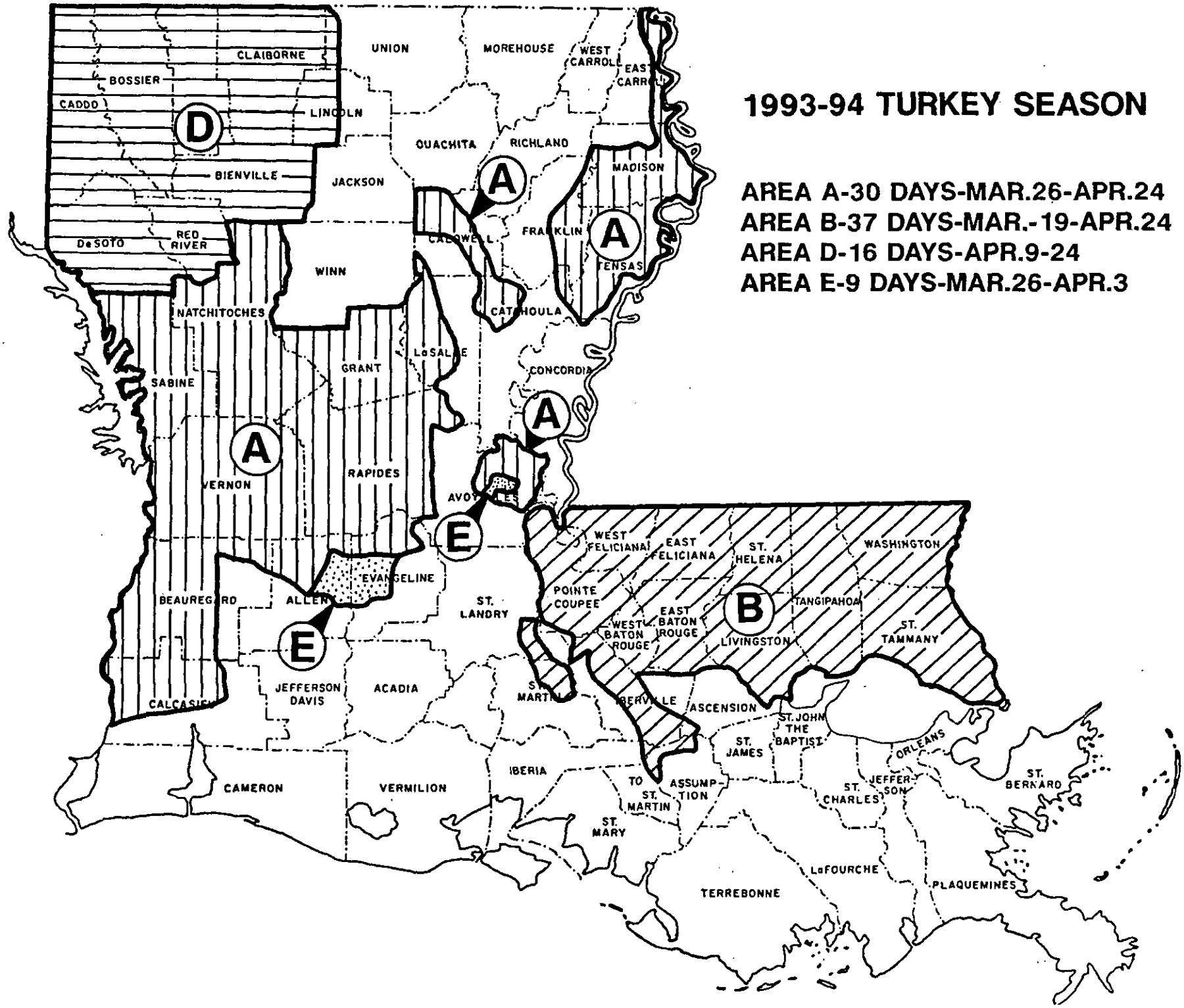
1993-94 DEER SEASON

AREA 1 59 DAYS
AREA 2 68 DAYS
AREA 3 68 DAYS
AREA 5 14 DAYS
AREA 6 59 DAYS
AREA 7 67 DAYS



1993-94 TURKEY SEASON

AREA A-30 DAYS-MAR.26-APR.24
AREA B-37 DAYS-MAR.-19-APR.24
AREA D-16 DAYS-APR.9-24
AREA E-9 DAYS-MAR.26-APR.3



State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

April 6, 1993

M E M O R A N D U M

TO: Tommy Prickett, Assistant Administrator, Wildlife Division

FROM: David Moreland, Deer Study Leader D Moreland

SUBJECT: 1993 Public Comments

Attached is a summary of the public comments obtained from the 1992/93 Harvest Survey. As you know, a random sample of hunters who purchased basic hunting licenses during the 91/92 season were sent a harvest questionnaire and along with the survey were given the opportunity to comment about this past hunting season.

To date we have edited 4,750 surveys and have recorded 1,272 comments. When recording these comments we make a one sentence synopsis of their statement and then place them in the appropriate category. I expect we will probably have about 5,000 surveys returned to us. Once all the surveys are received a final summary report of the comments will be prepared. A complete synopsis of all the public comments will also be available.

DM:jh

cc. Hugh Bateman
Larry Soileau

DEER

409 TOTAL COMMENTS

107 - Still Hunt (72)/Dog Hunt (35)

74 - Less Doe Day (25 from District I)

48 - Season length (36 longer and later)

46 - Tagging system with doe tags

21 - DMAP comments (13 positive)

17 - Kisatchie National Forest (14 longer season)

15 - More doe days, lot of deer

68 - other comments (hunts out-of-state, killed doe with a truck, special hand gun season, etc).

Only one comment about Hurricane Andrew and its impact on deer.

ENFORCEMENT

86 TOTAL COMMENTS

Most comments deal with illegal activities in specific areas of the state. There were a couple of comments about the problem in Winn Parish. One person indicated he had called the 1-800# and no one ever answered. One hunter didn't like agents enforcing no ATVs on roads.

GENERAL HUNTING

247 TOTAL COMMENTS

60 comments - squirrel and rabbit - Many comments concerned Hurricane Andrew and the problems it created for small game in the Basin. Many indicated they chose not to hunt due to the storm and its impact to small game. Some comments about rabbit season too long.

86 comments - could not hunt because of work schedule or health reasons.

23 comments - did not hunt because licenses are too expensive or no place to hunt.

21 comments - do not hunt in Louisiana - hunts out-of-state.

57 other comments - (Hunting is great in Louisiana, no longer an avid hunter, restrict ATVs, too many coyotes, too much land clearing, like to hear the fox dogs, lost interest in killing wildlife, does not hunt or kill anything anymore, etc.).

HUNTING CLUBS AND LAND LEASING

101 TOTAL COMMENTS

The leasing of land for hunting clubs is again a hot item of concern to many hunters this year. Most comments concerned the fact that most land is leased and there is no place to hunt. Many persons indicated they could not afford to join a club. Several persons indicated that clubs should be required to pay extra fees and that timber companies that lease land should not get tax breaks. One person compared land leasing to the way the Indians were run off their land.

LDWF

53 TOTAL COMMENTS

Most were positive comments and indicated the Department was doing a good job.

MUZZLELOADER

29 TOTAL COMMENTS

Most persons indicated a need for a longer season, especially a weekend.

UPLAND GAME BIRDS

39 TOTAL COMMENTS

Most comments indicated low quail and turkey numbers and a need for a longer and later dove season.

WATERFOWL

133 TOTAL COMMENTS

31 comments - longer and later season

29 comments - increase bag limits; many persons suggested having bonus ducks and get the limit up to 5.

15 comments - cost of duck hunting is too high - stamps and steel shot.

5 comments - don't like Catahoula Lake duck season.

12 comments - against steel shot. There was one comment in favor of steel shot.

7 comments - good duck season this year.

34 other comments - (Poor season, not many wood ducks this year, rocket scientists set duck season, close season until duck numbers increase, more days on weekend, buys stamps but doesn't hunt, likes teal season, etc.).

WILDLIFE MANAGEMENT AREAS

115 TOTAL COMMENTS

Several comments about too much doe hunting on specific WMAs (Saline, Three Rivers, Boeuf). There were more positive comments than negative ones about lottery hunts. A lot of persons commented about wanting longer seasons and more opportunities. Several comments about the need for more public lands.

There were some comments about making some WMAs primitive weapons only and some areas trophy deer areas. One person suggested an eight point or better system for bucks.

Several comments about keeping Georgia Pacific as a WMA.

Louisiana Wildlife and Fisheries Commission

Public Comments

DATE: April 6, 1993

NAME: Gary Ridgedell

ADDRESS: 34334 Cane Market Rd.
Walker La. 70785

TELEPHONE: (504) 667-3078

SUBJECT: Dog day Bag. to 44.

Give to Susan for the Commission record.

JAN,1993

SATSUMA HUNTING CLUB

WE,THE (DOG) HUNTERS OF LIVINGSTON PARISH, FEEL THAT IT IS UNFAIR THAT THE WILDLIFE AND FISHERIES COMMISSION HAS CUT THE NUMBER OF DAYS THAT WE CAN HUNT DEER WITH DOGS,ON THE [redacted] North SIDE OF I-12.

WE DO HEREBY PETITION SAID WILDLIFE AND FISHERIES COM. TO GIVE US THE SAME NUMBER OF DAYS AS THE ~~NORTH~~ SOUTH SIDE OF I-12.

Macon McSwain	Judy Thornton
Guy Lee Hoover	Richard Ballard
Guy L. Coatney	Dolores Ballard
[illegible]	Michael Bowen
Charles M Bowen	Rebecca Bowen
Gary Rudgedell	Jimmy Bowen
Jackie Parent	Donny Milton
Michael D. Sibley	Cory Forbes
Danny Palmer	Chris Forbes
Keith Smith	Perry Forbes
Richie Wheat	Kevin Forbes
Nellie R. Wade	Monroe Forbes
Teresa J. Sibley	John [illegible]
Chuck Mercer	Edward Bolton
Clyde Stout	Tony Acom
Johnny Calkins	Jerry Hogan
Cynthia Calkins	Donald L. Graham
Gillian Wascom	Frances Sibley
Estelle Wascom	Myrtle R. Espalade
James Killingsworth	Paul Teston
Thomas Irin	Sheila Graham

Gary Clouatre	Craig Covington
Kalib KELLEY	David Thompson
Larry Epter	Tommy Ortiz
John [illegible]	Brent Jones
Willie Morgan	Jimmy Graham
Randy Graham	Rick Fallen
Thomas A. Morgan	Wesley Ellis Jr
William Holford	Craig Bruno
Richard Covington	James Grant Jr
John Cobb	Susan J. Blount
Hardy Cobb	Guy Bell Hess
Robert K. Berrelin	Nelson F. Ashford Sr.
Kevin D. Benton	Floyd Baker
Ray McDonald Jr.	Curtis Hudson Jeff
David Evans	Danielle Cook
Tessie Cobb	Kathrine Owens
Hardy Cobb	Carmin Thomas
Sunny Cobb	Tony Thomas Sr.
Darrell Burch	David Williams
Kelly Cabral	Julie Kelley
Chance J Frazee	Jackie McLin
Billy M Posey	Jeffrey Moore
Sheila Graham	Laurie Moore
Wanda Armstrong	Crystal Moore
Jackie Menier	Cecil Street
Clifton Frazier	Donald Kelly
[illegible]	Russell Barbary
[illegible]	Joel Lott
Billy Noe	William J. Snyder
Sam Cary	Drew Holmes
Henry Robert R.	Teka McLin

Woodmen Dallas 2

Robert Golden Jr	Curtis R Mizell Sr
Donald Mathern	Martha J. Mizell
Justin Mathern	[illegible]
Cheryl Mathern	Lisa P. Bashan
JoJo Mathern	Albert R. Bashan
Lisa Mathern	Marie Rodhurst
Donna Abbott	Ronnie Poureau
Mavis Owens	Violet Lacoste
Mike Owens	Vicki Woodard
Marandi LeBlanc	Lisa Ann Bashan
Rex LeBlanc Jr	Ed Bashan
Courtney LeBlanc	Jean Woodard
Billy Avents	Louise Bashan
Shirley Avents	Johnnie Bashan
Jami L Jones	Michelle Hill
John Ballard	Dale Hill
Curtis Ballard	Bonnie Hugus
Dale LeBlanc	Glenn Hill
Helen Ware	Nolan Hill
Kenny Ware	Robert Poureau
Beth Ware	Marie Poureau
Amy Ware	Nancy Monk
Carol Ware	Russell LaMent
Terry Ware	Bryan Frosty
Jimmy Green	Tinny Frosty
Ben Wheat	Roger Frosty
Rick Wheat	Jr Frosty
Darrel Wheat	Joe Faure
A.K. Starkey	Geddie Aiguary

Arthur Ballard
Jim Young
Woody Silberg
LOUIS MOORE
LANE CHANEY
Jerry Allen
James Brigans
Kevin Mc[illegible]
[illegible]
Heather Merge
Wayne Calcote
Donna Wainwright
Alvin Wright
Kenny Neblett
Willie Gardner
Jerry Gardner
Randal Gasseau
David W. Fomen
Kelly Palmer
Lorraine P. Messer
Dellitt Wascom
Noel Williams
Hammie Wascom
Joseph Wascom
Glen Dean
Lolan Silver
Dale W. Burrell
Melissa Erwin
Kenny Erwin

Johnnie Kimmell
Danny Matthews
Paul MAYS
Thomas Mack
Pat Sitley
Jadon W. Mercer
Tracey Courtney
Jackie Watts
Jimmy Graham
Jason Wascom
Chandale Wascom
Larry Ridgedell
Dale Ogden
J.D. Arnold
Mark Williams
Ricky Miller
Jeffrey A. Grosse
Kenny Miller
Jane Thomas
Terry Mage
Mitchell Mage

JAN,1993

WE,THE (DOG) HUNTERS OF LIVINGSTON PARISH, FEEL THAT IT IS UNFAIR THAT THE WILDLIFE AND FISHERIES COMMISSION HAS CUT THE NUMBER OF DAYS THAT WE CAN HUNT DEER WITH DOGS,ON THE [redacted] north SIDE OF I-12.

WE DO HEREBY PETITION SAID WILDLIFE AND FISHERIES COM. TO GIVE US THE SAME NUMBER OF DAYS AS THE [redacted] south SIDE OF I-12.

Larry W. Hedgitts	Ottis Prine
Crystal L. Hedgitts	William Anthony
V.W. Hedgitts	Ottis Prine Jr
Trisa McSwain	Paul Thornton
Ricky McSwain	Jerney Prine
Lacey McSwain	Thomas Prine Jr.
Bradley McSwain	Stacy Prine
Stacey McSwain	Floyd Baham
Gene Crane Sr	Blaine Prine
Darrell Crane	George Dupray
Gene Crane Sr	Richard Ranney
Ruby Dell Crane	Jay Andrews
Ray Schenk	David Andrews
Earline Vaisin	Bobby Owens
Carrol Vaisin	Percy Owens
Carol LeBlanc	[illegible] LeBlanc
Vivian LeBlanc	Larry Ware
Dexter LeBlanc	Judy Ware
Randall LeBlanc	Ben Wheat
Kirby LeBlanc	Robert Golden
Thomas Prine	Liz Golden
Judy Thornton	Judy Golden

Kay Lobrechaux	John Hubbard
[illegible]	Wayne Radley
[illegible]	[illegible]
[illegible]	Robert K. Bowlin
Richard Payne	Glenn E. Bowlin
John Sim	Sheila Ellestad
[illegible] Seth Jones	Sherry Clouatre
[illegible]	Thomas Prino
L.J. Moran	Judy Prino
Brad Moran	Steve Bernard
Bryan Moran	Paul Covington Sr.
[illegible]	Hilda Covington
Doug Jones	Richard Covington
Kevin McCleodar	Dan [illegible]
Brian "	Winona Moran
James Sibley	Johnsie Moran
Kim Sibley	Buddy Spears
Jared LaBlanc	Mina L. Palazzo
Ronald McDonald	John Russell Palazzo
Ray McDonald	Catherine Nickles
Karen Christy McDonald	Bobby Morris
Joshua Lee Harwell	Leslie Houze
Rusty McDonald	Marty Houze
Randy Moore	James Wilson
Richard Moore	Hollis Honeycutt
Joe McLain	Dennis Whidden
Jonathan Allison	Dennis Parvis
Richard Allison	Gerald Blackwell
Dawn Easterly	John Cloyd

JAN,1993

WE,THE (DOG) HUNTERS OF LIVINGSTON PARISH, FEEL THAT IT IS UNFAIR THAT THE WILDLIFE AND FISHERIES COMMISSION HAS CUT THE NUMBER OF DAYS THAT WE CAN HUNT DEER WITH DOGS,ON THE ~~SOUTH~~ North SIDE OF I-12.

WE DO HEREBY PETITION SAID WILDLIFE AND FISHERIES COM. TO GIVE US THE SAME NUMBER OF DAYS AS THE ~~NORTH~~ SOUTH SIDE OF I-12.

Tammy Aymond	Arthur [illegible]
Greg Alford	Hardy Cobb
Woodrow Sibley (Jr)	Jerrel Cobb
William Halford	James Cobb
Guy Rumble	James Cobb Jr
Reba Doff	Martha Cobb
Floyd Baker	John Cobb III
Ronald Coates	Vincent Bolt
Timothy Coates	Bowlin / Marty Bowlin
Kenneth Coates	Harry Sullivan
Darrell Burnett	Stanley Sullivan
Samantha Burnett	B.J. Rushing
Connie Evans	Bruce Robertson
Donald Evans	Willie Mays
John Collo	Ron Sartin
Dale Collo	Ron Carlin
Jamie Graham	Randy Graham
Woodrow Sibley (Sr)	Kenneth Graham
Ernest LeBlanc	Charles Chandler
Ralph [illegible]	Orville Chandler
[illegible]	Alvin O. Farris
[illegible]	Tommy Daniels Jr.
	James R. Hardy

JAN, 1993

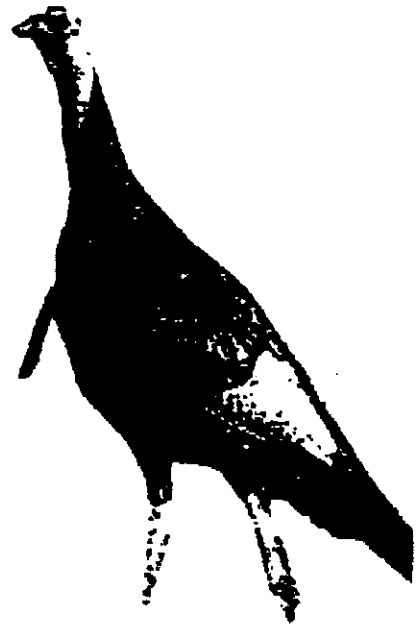
Lamar Duffy
Hog Branch

WE, THE (DOG) HUNTERS OF LIVINGSTON PARISH, FEEL THAT IT IS UNFAIR THAT THE WILDLIFE AND FISHERIES COMMISSION HAS CUT THE NUMBER OF DAYS THAT WE CAN HUNT DEER WITH DOGS, ON THE ~~SOUTH~~ North SIDE OF I-12.

WE DO HEREBY PETITION SAID WILDLIFE AND FISHERIES COM. TO GIVE US THE SAME NUMBER OF DAYS AS THE ~~NORTH~~ South SIDE OF I-12.

[illegible] Jr.	Tommy Daniels Jr.
Jason Odom	Randall H. James
Corey E. Lanier	Mark [illegible] Jr.
Rusty Bass	Ronnie Sibley
Jimmy Robichaux	[illegible]
Jerry Ponder	[illegible]
Diane Pondler	[illegible]
Nelson E. Acord Jr.	Allen O. Wasson
Todd Colquitt	Randy Cook
Jessie McLin	MARTY BOWLIN
Richard McLin	JAMES BOWLIN
Chris Melvin	Roger Graham
Melissa Ellis	Kenneth Graham
[illegible] Williams	Burt Thames
[illegible]	STEVE BOWLIN
[illegible]	MARVIN BAYNES
Michael Thompson	Bill Dickerson
[illegible]	Donnie Robichaux
[illegible]	Jim Stafford (Get you some!!)
Tony Walker	Stephanie Stafford
[illegible]	[illegible]
[illegible]	Bonnie W. Smith
Eric Landreneau	

Linda Radley
Dale Radley
Steve Reese
Daniel Nymel
Jonathan Leggion
Shawn Nymel
Maurice Galloway
Levi Garrett
Tony Lambert
Bryan Lee
Hyde Lin



Date: 3-31-93

To: Tommy Prickett, La. Wildlife & Fisheries

From: HAP - Hunters Against Poachers

Subject: 1993-94 Deer Season For Area 6

HAP held a series of meetings with representatives of its 25 Deer Hunting Clubs with 650 members to discuss the proposed 1993-94 Deer hunting season. The members would respectfully like to request that the Area 6 Deer Hunting season for 1993-94 be set as follows:

Nov. 20-28	Still Hunt only	9 days
Nov. 29-Dec. 3	Muzzle loader only	5 days
Dec. 4-Jan. 23	With or without dogs	51 days

This proposal shows an increase of 6 days of hunting with or without dogs in Area 6, and allows one more weekend of hunting. This is important for hunters with children in school or college. We feel this is feasible and of benefit to hunters in this area who have banded together to assist the Department, Agents, Law Enforcement, Biologists, Judiciary, and the Commission in protecting our resource.

Please contact either of the following if you have any questions.

Warren King (w)504-642-2713, (h)504-622-5697
Mike Gaudet (w)504-869-2453, (h)504-673-3042

Thanks,

Warren King

March 3, 1993

421 Tillou Dr.
Opelousas, LA. 70570

Dear Sir:

This letter is in regard to the Muzzle Loading Hunting Season. I feel that the muzzle loaders are being forgotten when the deer season dates are decided on. For the 1992 season we had only 5 days, Monday through Friday. For those of us who work for a living, the season was not available to us unless we could afford to miss a day of work.

Word is that the reason we are forgotten is because there isn't enough revenue brought in from muzzle license sales. Well sir, with the short season that the commissioners have given the muzzle loading hunters, who would buy a license or a $300.00 gun to hunt for 5 days?

I have talked to several muzzle loading hunters and have encouraged them to write to every commissioner to voice their opinion on this matter.

Seven days before gun season and seven days after gun season would be appreciated. If impossible to have two seasons, nine days before gun season or nine days after gun season would be better than what we have now.

Please give this matter your serious consideration.

Thank you,

Jimmie Myers

Jimmie Myers

George E. Bel
401 Kensington Drive
Lafayette, LA 70508

March 9, 1993

Dear Commission Member:

While I will attempt to be as brief as possible, I would like to take this opportunity to share with you my thoughts in regard to the Louisiana Muzzleloader Deer Season which, as you are aware, was limited to 5 days last year, all of which were week days. Such surely prohibits the every day working man's ability to hunt yet, more importantly, totally eliminates the participation of school age children, not to mention the fact that such a restricted season hinders the sports growth and generation of revenues in Louisiana while interest in muzzleloader hunting in neighboring states is at an all time high.

Example being Arkansas, which has a muzzleloader season prior to regular gun season and after such with both seasons including weekends. Note that three friends and myself hunted the Arkansas seasons last year paying $150.00 per license, etc., etc., and will do so again next season if our home state does not accommodate us, and believe me when I say that we weren't the only Cajuns hunting the Smokestick in Arkansas.

Now I would like to make a recommendation with as little effect on any group as possible, especially the modern gun hunter, specifically the still hunter and dog hunter. That issue got entirely out of hand and is just beginning to head in our hunting community. Please, hands off that issue.

My recommendation is a 3 - 7 day season (including weekend), prior to modern gun season and a 3 - 7 day season (including weekend) after modern gun season to run concurrent with bow season. Both remain primitive weapons even though we all realize the recent advancements in bow technology. Would the sharing of a few days with the bow hunter cause an outcry? I have researched such and the answer is no.

Your consideration in this cause is truly appreciated.

Thank you,

George E. Bel

George E. Bel

GEB/glb

RESOLUTION

WILDLIFE AND FISHERIES COMMISSION
DEPARTMENT OF WILDLIFE AND FISHERIES

WHEREAS, sportfishing provides recreation for more than sixty million Americans of all ages, giving families a healthy, shared outdoor activity, and

WHEREAS, sportfishing, through the payment of millions of dollars annually for licenses, taxes and fees, has provided the funding for federal and state programs that contributes significantly to the preservation and protection of our natural environment, and

WHEREAS, the estimated 800,000 plus sportfishermen in Louisiana spend in excess of one billion dollars annually to our economy, and

WHEREAS, Act 301 of the 1987 Louisiana Legislature, Title 76:VII.151 and 76:VII.339 of the Louisiana Administrative Code authorizes the Louisiana Wildlife and Fisheries Commission to declare no more than two free recreational fishing days each year, and

WHEREAS, Free Fishing Days during National Fishing Week would provide an excellent opportunity to introduce additional individuals to the wholesome outdoor activity of fishing.

NOW THEREFORE BE IT RESOLVED, that we the undersigned members of the Louisiana Wildlife and Fisheries Commission do hereby officially declare the week of June 7-13, 1993 as

FISHING WEEK

in the State of Louisiana, and

BE IT FURTHER RESOLVED, that June 12 & 13, 1993 are hereby declared free recreational fishing days, during which residents and non-residents may exercise the privileges of a licensed recreational fisherman without purchase of any otherwise necessary recreational fishing license.

DATE: April 6, 1993

Bert H. Jones, Chairman

Peter Vujnovich, Vice Chairman

James H. Jenkins, Jr.

Joseph B. Cormier

John F. Schneider

Tee John Mialjevich

Perry Gisclair

Joe L. Herring, Secretary

State of Louisiana

REC'D
NOV 12 92
INFORMATION & EDUCATION DIV

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
1213 North Lakeshore Drive
Lake Charles, LA 70601
(318) 491-2575

Edwin W. Edwards
Governor

November 10, 1992

11-15-92

Janet Can Yes Realle
Pres

M E M O R A N D U M

TO: Bob Dennie, Administrator, I&E Division

FROM: Paul Jackson, Aquatic Education Coordinator

SUBJECT: 1993 National Fishing Week Resolution

National Fishing Week for 1993 will be celebrated June 7-13. I would like for the commission to adopt a resolution declaring the week as National Fishing Week at the April meeting. The resolution would also declare June 12 & 13, 1993, Free Fishing Days. All the legal ground work to enable us to grant free fishing days, through the adoption of a resolution, was enacted in 1991. It is not necessary to file a notice of intent with the state register. The rule was made permanent in 1991.

I have enclosed a draft copy of the resolution. It will be necessary to insert the date the commission moves on the resolution. Also, please update the names of the commission members.

In the past Sharon Bateman handled this for us. The resolution was in her computer.

ENCLOSURE

cc: Al Carver, Asst. Administrator
Bob Penley, Education Manager

DRAFT

RESOLUTION

WHEREAS: Sportfishing provides recreation for more than sixty million Americans of all ages, giving families a healthy, shared outdoor activity, and

WHEREAS: Sportfishing, through the payment of millions of dollars annually for licensed, taxes and fees, has provided the funding for federal and state programs that contribute significantly to the preservation and protection of our natural environment, and

WHEREAS: The estimated 800,000 plus sportfishermen in Louisiana spend in excess of one billion dollars annually, and

WHEREAS: Act 301 of the 1987 Louisiana Legislature authorizes the Louisiana Wildlife and Fisheries Commission to declare no more than two free recreational fishing days each year, and

WHEREAS: Free Fishing Days during National Fishing Week would provide an excellent opportunity to introduce additional individuals to the wholesome outdoor activity of fishing.

NOW, THEREFORE, BE IT RESOLVED: That we the undersigned members of the Louisiana Wildlife and Fisheries Commission do hereby officially declare the week of June 7-13, 1992 as

FISHING WEEK

in the State of Louisiana, and

BE IT FURTHER RESOLVED: That June 12 & 13, 1992 are hereby declared free recreational fishing days, during which residents and non-residents may exercise the privileges of a licensed recreational fisherman without purchase of any otherwise necessary recreational fishing license.

(Insert date of approval)

new comm.

James H. Jenkins, ~~Chairman~~

~~Norman F. McCall~~ Perry Gisclair

John F. Schneider

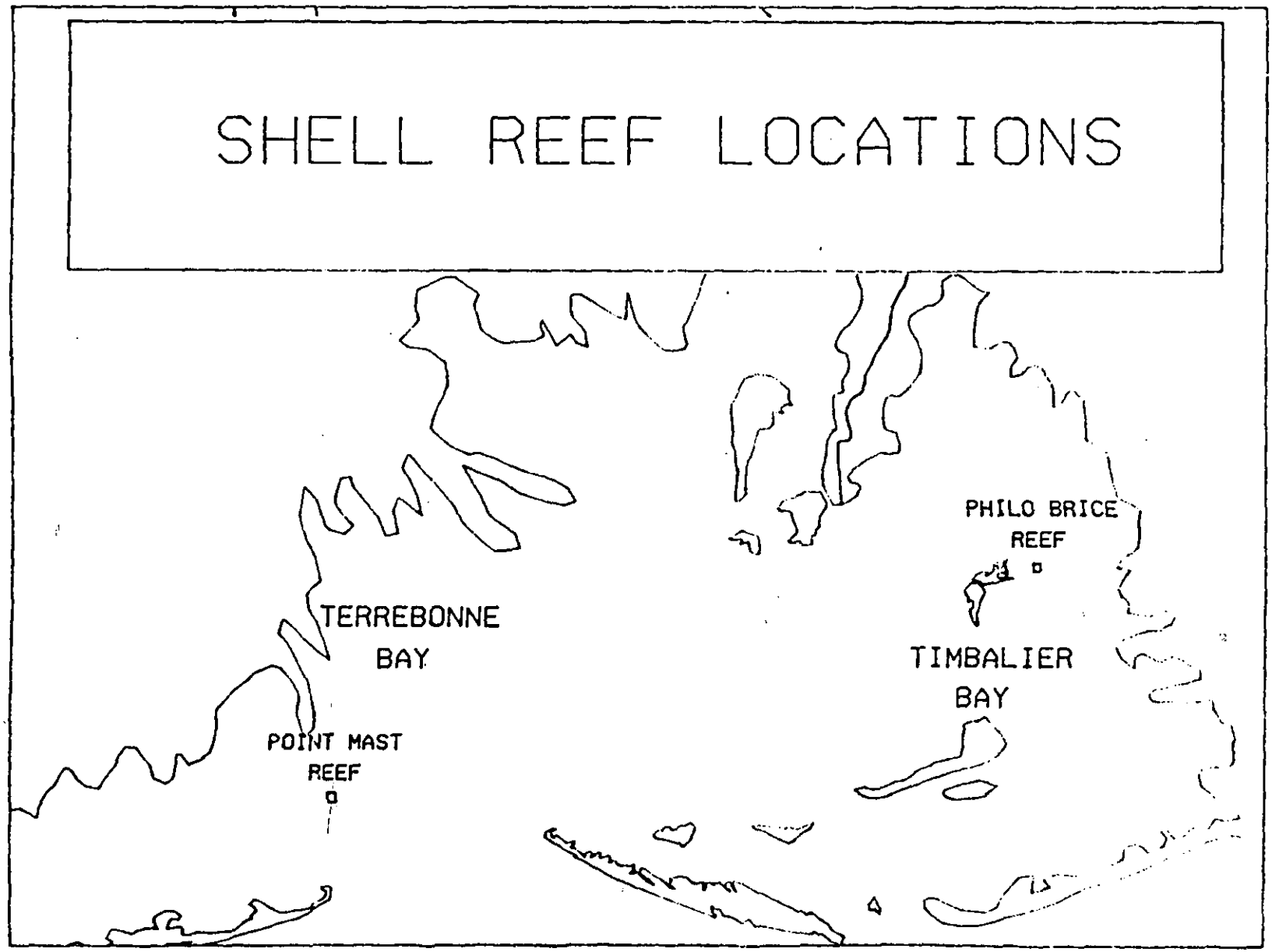
Tee John Mialjevich

Bert Jones, Chairman

Peter G. Vujnovich

~~Warren I. Pol~~ Joseph B. Cormier

Joe L. Herring, Secretary


SHELL REEF LOCATIONS
TERREBONNE BAY
POINT MAST REEF
PHILO BRICE REEF
TIMBALIER BAY

Shrimp Task Force Meeting
February 16, 1993

10:00 A.M.

10:15 A.M. Chairman Kiffe called the meeting to Order

Donald Lirette led the membership is a prayer

Roll was called:

Present:

Steven Charpentier
Calvin Cheramie
Ricky Cradeur
Dickie Curole
Wayne Estay
Pete Gerica (arrived late)
Darcy Kiffe
Donald Lirette
Clarence Reuther III
C. J. Kiffe

Absent:

George Barisich
Tommy Bush
Jimmy Frickey
Tommy Guidry
Charles Lapeyre
Ricky Matherne
Jeff Scott
Johnny Scott

We do not have a quorum

The Chairman removed Johnny Scott from the Task Force since he missed more than three meetings in a row.

Mr. Perret volunteered to have the department staff write another letter to all members of the Task Force on missing three meetings in a row.

The Chairman stated there was no need to do that, that he had spoke with the Governor's office and they told him that as chairman of the Task Force, he could do as he saw fit.

We now have a quorum

The chairman asked if anyone had any changes in the minutes from the January 26, 1993 minutes.

Listed below are the two changes requested:

Motion I - Change minimum mesh size on trawls, butterfly nets and skimmers to (was supposed to be 1 1/2 inch stretched) typing error read 1/2 inch stretched, this has been corrected.

Discussion on Bait Dealer Program regulations - The rule quoted stated 25ft trawls only are permitted to be used, (should read, only 25ft trawls or smaller are permitted to be used) this has been corrected.

The chairman accepted the minutes with the changes.

The minutes of the January 26, 1993, meeting have been corrected to reflect these changes.

Motion I

Adopt the Agenda - Donald Lirette
Seconded - Darcy Kiffe
Carried Unanimously

Jerald Horst read the letters to and from Clyde Kimball requesting that the Enforcement Division of the Department of Wildlife and Fisheries develop statewide enforcement policies where possible:

Letter 1 was addressed to Joe Herring, dated 12-18-92 and was from C.J. Kiffe.

Letter 2 was addressed to C. J. Kiffe, dated 1-19-93 and was from Clyde Kimball.

Letter 3 was addressed to Clyde Kimball, dated 1-29-93 and was from C. J. Kiffe.

These letters are on file if anyone would like copies.

Tommy Candies will prepare an answer to the 4 points raised in the letter to Clyde Kimball, dated 1-29-93 from Mr. Kiffe.

An extensive discussion took place on 100-count shrimp.

The Task Force asked department personnel to write up an interpretation of 100 count. This has been completed and sent to Task Force members, coastal District Attorney's, the Department legal staff and Enforcement Division.

Next topic of discussion was the draft of the First Annual Report to the Governor from the Shrimp Task Force.

Changes suggested were:

ADD: , and that their decision be based on the best technical data supplied by the Department and appropriate public input.

Fall Season

License Programs - Delete marked words.

Shrimper/Crabber Conflict-Delete opinion on night trawling

Shrimp Habitat, Sanctuaries and Mariculture

Page 2. Marked Changes.

Site Clearance -

Page 2. - ADD:

These recommendations have not been adopted by the Department of Natural Resources into the final regulations as of the time of this report, in spite of Mr. Mariano Hinojosa's assurance that they would be.

Fishermen's Gear Compensation Fund - No changes.

Count Size on White Shrimp - No changes.

Shrimp Imports - 5th line - add the word - annually.

Add - 1 1/2" minimum mesh size.

1. Motion - Donald Lirette

Accept the Shrimp Task Force's first annual written report to the Governor as amended.

2nd - Steve Charpentier

Passed Unanimously

12:30 - Break for Lunch

1:45 - Reconvene

Karl Turner, Director of the Seafood Promotion & Marketing Board, gave a presentation about the Board, it's method of operation and where the money to operate the board comes from. Mr. Turner asked the Task Force to endorse the Marketing Board's request to increase all commercial gear license fees by $15.00 to

help with additional funding for the Marketing Board. Mr. Turner also stated that part of the increase would go to funding Habitat Conservation and the reopening of the Marine Lab at Grand Terre.

Mr. Kiffe stated, as chairman of the Task Force he would not endorse Mr. Turner's request and would not allow the request to be submitted to the Task Force for a vote.

An extensive question and answer session took place on what the additional funds would be used for.

LEGISLATION

Mike Wascom - Sea Grant, legal section was introduced to the Task Force and it was stated that he was present at the meeting to help us draw up legislation covering motions made throughout the year by the Task Force on Site Clearance, the Gear Compensation Fund, to create (an optional license) for commercial shrimping license, repeal Act 619, and 100 count on shrimp (Brandt Savoie will compile technical information and present to Mike Wascom for him to draw up legislation).

Add - The mesh size statement to the Governor's Report.

The next meeting, March 16, 1993, the Task Force will discuss Impoundments.

A letter was sent to the following individuals inviting them to come to the next meeting of the Task Force and take part in the discussions on impoundments:

Commissioner Raymond Laborde, State Lands Office
Colonel Michael Diffley, U.S. Army Corps of Engineers
Mr. John Ales, Department of Natural Resources
Richard P. Iyoube, Attorney General
James W. Pullum, U.S. Fish & Wildlife
Lynn Bahr, Governor's Office of Coastal Activities
Mark Davis, Coalition to Restore Coastal Louisiana

Discussion on opening Zones

Motion - Wayne Estay

The Shrimp Task Force requests that the spring inshore brown shrimp season be opened on one date statewide rather than by zones.

Seconded: Ricky Cradeur

Motion Passed 5 to 2

Chairman C. J. Kiffe officially removed from the Task Force, Tommy Bush, Ricky Matherne, Jeff Scott and Johnny Scott.

2 Buyers
1 Broker
1 Fisherman

Motion - Ricky Cradeur - Adjourn the meeting
Seconded - Wayne Estay
Passed Unanimously

Meeting Adjourned

Respectfully Submitted:

Linda Rivet

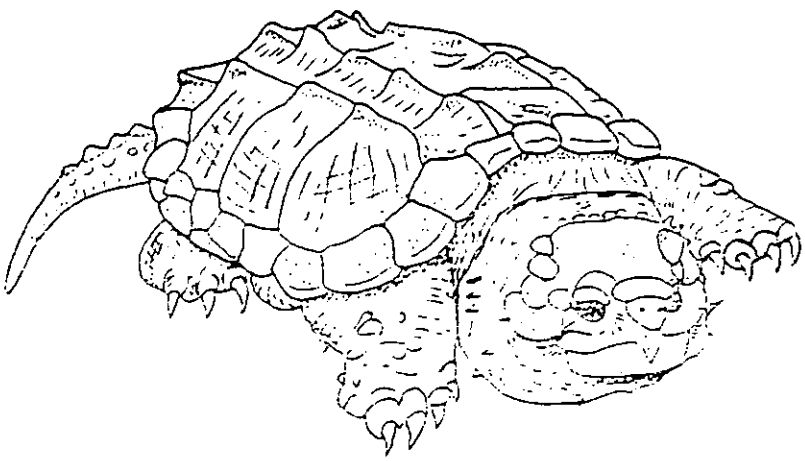
Linda Rivet, Recording Secretary

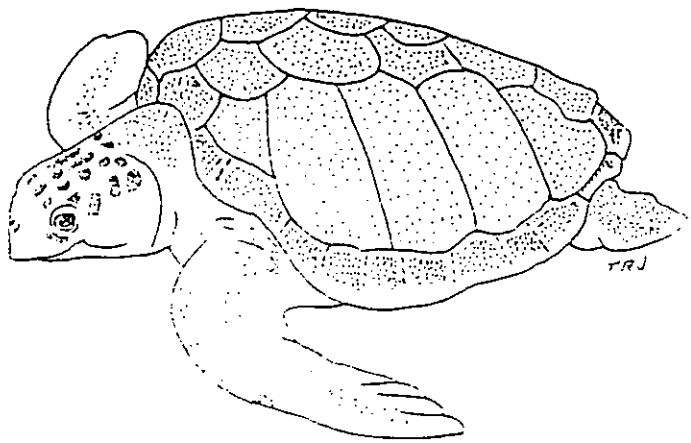
43rd Annual Conference of
Southeastern Association of Fish and Wildlife Agencies

Special Session on the Management of Rare or Endangered Species

October 31, 1989
St. Louis, Missouri

Abstracts





Ralph A. Fourt, Arkansas Game and Fish Commission, 2204 West Ash, Rogers, AR 72756. **PROTECTION OF A THREATENED FISH SPECIES FROM EFFECTS OF A FEDERAL AID CONSTRUCTION PROJECT.**

Abstract: During construction of an 11-hectare fish nursery pond on Beaver Lake in northwest Arkansas, a water-filled sinkhole was uncovered by earth moving equipment. Workers investigating the sinkhole reported seeing a small-white fish which biologists believed might be an Ozark cavefish (*Amblyopsis rosae*), a threatened species. Identification was confirmed using scuba gear. All appropriate authorities were notified. A circular-earthen levee was constructed around the sinkhole to isolate the cavefish from the effects of construction and operation of the pond. Since then, up to 14 cavefish have been seen in the sinkhole at one time. This appears to be one of the largest populations of the species.

*John A. McLemore and Danny J. Ebert, U.S. Forest Service, P.O. Box 1270, Hot Springs, AR 71902. **MANAGEMENT OF SENSITIVE, THREATENED AND ENDANGERED VERTEBRATE SPECIES WITHIN AN ECOSYSTEM FRAMEWORK: CHANGING THE SINGLE SPECIES APPROACH.**

Abstract: Extinction of species is fast becoming a major global problem. Myers (1979) estimates that more than 1,000 species are becoming extinct every year and the rate could increase to 5,000 per year. Thinking along these lines, even currently abundant species may rapidly move toward extinction. The U.S. Fish and Wildlife Service currently lists 1,037 taxa as endangered or threatened and an additional 3,000 or more taxa are listed as category 1 or category 2. Management and monitoring of rare species, while addressing the immediate needs of these species provides little or no framework for the protection and long term management of biological diversity in a community. Sensitive, threatened, and endangered species; and entire natural communities with their associated plants and animals all need protection to ensure future bio-diversity.

The Ouachita National Forest in Arkansas and eastern Oklahoma contains 663,900 ha of federally managed lands. Within Forest boundaries occur 531 species of native vertebrates. Of this number, eight species are federally listed as threatened and endangered and 15 species are federally listed as sensitive. Numerous plant species are federally listed as threatened, endangered and sensitive. There are also approximately 130 state sensitive, threatened, and endangered vertebrate, invertebrate, and plant species. The Forest manages specifically for these species and their habitats. In addition to this "single species" management concept, the Forest is moving to ensure natural diversity and community preservation. Many natural communities on the Forest are managed as natural research and scenic areas. In 1989 the Forest identified six new natural area designations (stunted white oak woodlands, mesic woodlands, novaculite glades, steep rocky escarpments, shale glades, and woodland acidic seeps) to include endemic communities and protect bio-diversity. Through management of these entire communities, that contain many federal and state sensitive, threatened and endangered species, as wholistic habitat units, the Forest is changing the "single species" approach.

*-speaker

Paul E. Moler, Florida Game and Fresh Water Fish Commission, 4005 South Main Street, Gainesville, Florida 32601. **MANAGEMENT NEEDS OF THE AMERICAN CROCODILE: THEN AND NOW - A 10 YEAR PERSPECTIVE.**

Abstract: The American crocodile, Crocodylus acutus, was classified by the U.S. Fish and Wildlife Service as Endangered in 1975. The common wisdom of the time held that crocodile recruitment was extremely low due to heavy predation on nests and hatchlings and further loss of hatchlings as a consequence of their inability to tolerate prevailing salinities near nest sites. The initial recovery plan, released in 1979, sought to address the low recruitment potential of Florida crocodiles through an aggressive program of captive breeding and/or headstarting. Field work initiated in 1977-1978 called into question most of the underlying assumptions on which these recovery recommendations were based. The revised American crocodile recovery plan, released in 1984, deleted recommendations for captive breeding. The crocodile continues a gradual recovery in Florida constrained primarily by low initial numbers, a limited habitat base, and highway mortality of adults.

N.H. Douglas, *J.A. Knesel and G.C. Cascip, Department of Biology and Mathematics, Northeast Louisiana University, Monroe, Louisiana 71209. **STATUS OF THE ALLIGATOR SNAPPING TURTLE (MACROCLEMYS TEMMINCKI TROOST) IN NORTH LOUISIANA, 1984 TO 1988.**

Abstract: Based upon the results of trapping and information from commercial turtle trappers in the area (in a study supported by the Louisiana Department of Wildlife and Fisheries), it appears that substantial populations of alligator snapping turtles are present in Bossier (Lake Bistineau), Caddo (Caddo Lake), Jackson (Caney Lake), Natchitoches (Cane River), Ouachita (Boeuf River), Webster (Lake Bistineau and Loggy Bayou), and Winn (Saline River) parishes. The most productive month for trapping varied from year to year, but generally productive trapping extended from May to October.

At the end of the study period, morphology data from 271 of the turtles was analyzed. In this preliminary analysis, mean weight (WT), carapace length and width (CL, CW), pre-cloacal (PRECL) tail length, and post-cloacal tail length (POSTCL) were determined subsequent to dividing the turtles into sexually immature and sexually mature groups.

*James Cox, Judy Elbert, Terry Gilbert, and Randy Kautz. Nongame Wildlife Program, Florida Game and Fresh Water Fish Commission, 620 S. Meridian St., Tallahassee, FL 32399-1600. **DEVELOPING HABITAT PROTECTION PLANS FOR RARE AND THREATENED SPECIES WITH LARGE AREA NEEDS.**

Species with large area requirements present a special challenge to wildlife managers. Many protected areas are too small to support wide-ranging species, and preventing these populations from becoming extinct requires a synthesis of current theories from population genetics, population biology, and conservation biology. Such efforts also require careful judgement.

The application of special-habitat and population-viability models in defining the habitat-protection needs of many wide-ranging species is currently being pursued in Florida. These models are translated into habit-protection strategies using a geographic information system and a habitat map of the state. The results from many different modeling efforts are then evaluated with adaptive management techniques. Habitat-protection strategies can then be proposed.

Here we present the results of such analyses for two wide-ranging species currently listed as "threatened" species by the state: Sherman's fox squirrel (Sciurus niger shermanii) and black bear (Ursus americanus). The analysis is restricted to a 5-county area comprising the Withlacoochee Regional Planning Council in west-central Florida (though analyses covering more of the state are planned). The present-day system of preserves in this area provides low to moderate levels of protection for these species, and additional areas are likely needed to maintain populations far into the future. Potential additions to the current number of preserves are identified, and the relative benefits and detractions of each are discussed in terms of their enhancing population viability.

Joan E. Diemer, Florida Game and Fresh Water Fish Commission, Wildlife Research Laboratory, 4005 South Main Street, Gainesville, FL 32601. **MANAGEMENT OF THE GOPHER TORTOISE (GOPHERUS POLYPHEMUS) IN FLORIDA.**

Abstract: Recommendations to maintain or enhance gopher tortoise (Gopherus polyphemus) populations in Florida include habitat acquisition and manipulation, public education, law enforcement, restocking, and mitigation on development sites. Legislative protection for uplands, especially sandhills and scrub, is needed. An organized, statewide plan of large ecosystem preserves and smaller habitat preserves (interconnected whenever possible) is warranted in this rapidly urbanizing state. Prescribed burning every 2-5 years, preferably during the growing season, constitutes the preferred habitat management for this species. Mechanical removal of woody plants may be required, particularly in scrub habitats. Broad-scope educational programs should be implemented to rally grass-roots support for conservation of tortoises and upland habitats. Reclaimed mining lands, selected protected lands with depleted tortoise populations, and previously unoccupied habitat types that have been altered (e.g., by drainage) may serve as gopher tortoise restocking sites. Efforts to offset adverse impacts to tortoises on development sites include designation of preserves, contribution of land acquisition funds (mitigation banking) and relocation of tortoises. Expensive and time-consuming, off-site relocation is the least desirable mitigation since it does not preserve habitat and it may potentially adversely impact indigenous tortoise populations.

Tyrrell A. Henwood, NOAA, National Marine Fisheries Service, 9450 Koger Blvd., St. Petersburg, Florida 33702. **CONSERVATION AND MANAGEMENT OF SEA TURTLES IN THE MARINE ENVIRONMENT OF THE SOUTHEASTERN U.S.**

Abstract: Five species of threatened and endangered sea turtles occur in the U.S. waters of the Gulf of Mexico, Caribbean and southern North Atlantic. The loggerhead turtle, Caretta caretta, the green turtle, Chelonia mydas, the hawksbill turtle, Eretmochelys imbricata, and the leatherback turtle, Dermochelys coriacea, have worldwide distributions. The highly endangered Kemp's ridley turtle, Lepidochelys kempi, is distributed throughout the Gulf of Mexico and southern North Atlantic, but nesting is restricted primarily to a single beach at Rancho Nuevo, Tamaulipas, Mexico.

Effective management and conservation of these internationally distributed marine species poses some interesting challenges. Probably the greatest drawback in conserving sea turtles is the lack of basic biological information on life histories, movement patterns, habitat requirements, and man-related activities which impinge on the survival of each species.

Here, I will describe the broad approach taken by the National Marine Fisheries Service to recover sea turtles species in the southeastern U.S., some of the known sources of mortality to sea turtles, suspected sources of mortality which remain undocumented, special regulations to reduce/eliminate sea turtle mortalities, efforts to enhance survival through "headstarting," international cooperative efforts, and the future outlook for the survival of sea turtles.

Nancy B. Thompson, PhD., National Marine Fisheries Southeast Fisheries Center, 75 Virginia Beach Dr., Miami Florida 33149. **MANAGEMENT RELATED RESEARCH: MARINE TURTLES.**

Abstract: The National Marine Fisheries Service (NMFS) is mandated to protect, manage and conserve all species of marine turtles in U.S. waters. The NMFS/Southeast Fisheries Center (SEFC) Endangered Species Research Program is directed at meeting this mandate. All six species of turtles that occur in U.S. waters are listed under the Endangered Species Act, 1973 as either threatened or endangered throughout their ranges or portions thereof. The Kemp's ridley turtle (Lepidochelys kempi) is the most endangered marine turtle and we have estimated that since 1978 the nesting population has been declining at an average annual rate of 3%. Results of NMFS/SEFC research have demonstrated that the incidental capture and drowning of turtles inadvertently in shrimp trawling throughout the southeast is a significant cause of turtle mortality. To reverse this decline, the NMFS has promulgated regulations which require shrimp fishermen in nearshore and offshore waters to place a Turtle Excluder Devise (TED) in each trawl which minimizes turtle mortality and shrimp loss. To improve recruitment into the Kemp's breeding population, the NMFS/SEFC has invested in headstarting since 1978. Hatchlings are reared in captivity until about 8-12 months of age and released into the Gulf of Mexico and given a headstart on survivorship. Proposed research includes: 1) identifying sources of mortality including the impact of entanglement in ghost fishing gear; entanglement and ingestion of plastics, oil and tar; dredging; power plant entrainment; and non-shrimping fishing activities throughout the southeast and 2) identifying critical habitats for juvenile turtles.

Ralph Costa, USDA, Forest Service, Apalachicola National Forest, Route 6 - Box 7860, Crawfordville, FL 32327, and Ron Escano, USDA, Forest Service, Southern Region, 1720 Peachtree Road, NW, Atlanta, GA 30367.
STATUS AND MANAGEMENT OF THE RED-COCKADED WOODPECKER ON THE SOUTHERN NATIONAL FORESTS IN 1986: WITH 1988 UPDATE.

Abstract: In 1986 the U.S. Forest Service (FS) Southern Region Threatened and Endangered Species Program initiated a comprehensive, Region-wide survey to collect information on the endangered Red-cockaded Woodpecker (RCW), *Picoides borealis*. The objectives of the survey were to (1) describe the population status and trends, (2) determine the past and present intensity and quality of population monitoring programs, (3) determine availability, current status, and habitat improvement needs for nesting and foraging habitat, (4) examine the extent of RCW Handbook Chapter implementation and (5) estimate funding needed to achieve Forest population goals. Data were solicited with a questionnaire sent to all Ranger Districts within historic RCW range. Responses indicated that there were 2115 active RCW colonies on 21 National Forests in 1986. Four National Forests in 4 states harbor 73% of the active colonies. Fourteen of the 21 RCW populations contain less than 50 active colonies. Additional findings indicated that (1) colony survey intensity and quality have increased since 1980, (2) several factors, including age class distribution, hardwood mid-story encroachment, and relic or remnant tree availability contribute to suitability of present habitat. , (3) implementation of Handbook guidelines varies widely throughout the Region and (4) improving and maintaining RCW colony, replacement and recruitment stands would cost 4.2 million dollars in the first decade of treatment. A 1988 survey update suggests that the largest populations (greater than 250 clans) are stable or increasing, while many of the smaller populations may be decreasing.

David A. Saugey, U.S. Forest Service, P.O. Box 1270, Hot Springs, AR 71902. **ABANDONED MINING DRIFTS IN THE OUACHITA NATIONAL FOREST: UNIQUE OPPORTUNITIES FOR NON-GAME WILDLIFE HABITAT MANAGEMENT AND RESEARCH.**

Abstract: Abandoned mining drifts represent unique subterranean habitat and afford unusual non-game wildlife management and research opportunities in the essentially caveless Ouachita Mountain region of Arkansas and Oklahoma. Twenty-nine species of vertebrates have been observed to use these abandoned drifts for various reasons including hibernation, night roosting, and as summer refugia. Of special interests are the uses of these excavations for aggregation sites and egg brooding activities by salamanders, particularly the endemic Caddo Mountain salamander (*Plethodon caddoensis*), a Category 2 federal candidate species, whose secretive habits often defy study. These mines may represent larger versions of existing subterranean microhabitats where insights into life histories, otherwise unobservable, may be studied with knowledge gained applied to management of surface populations and timing of resource management activities. The Ouachita National Forest has begun a program utilizing gates, where warranted, to protect this habitat feature and prevent over collection and vandalism of associated wildlife species.

Judy Jacobs, U.S. Fish and Wildlife Service, 1825 Virginia Street, Annapolis, Maryland 21401. **MANAGEMENT OF AN ENDANGERED PLANT, PETERS MOUNTAIN MALLOW (ILIAMNA COREI : ONE STEP BACK FROM THE BRINK.**

Abstract: Peters Mountain mallow, a relative of the hibiscus in the family Malvaceae, is known from only a single population in Giles County, Virginia. It was added to the Federal list of Endangered Species in 1986. Since its discovery in 1927, it has declined from an estimated 50 plants to its present population of only three individuals. To make matters worse, these three are exhibiting flower and fruit abortion prior to seed set. Beginning in 1986, researchers at Virginia Polytechnic Institute and State University (VPI&SU) began managing and studying the species.

VPI&SU researchers found that the few seeds formed by the plants would grow following scarification. Unfortunately, like their parents, these plants also showed flower and fruit drop. At the end of the 1988 growing season, sufficient seed was available to initiate experimental work on the plants' life history and requirements for germination and growth. Preliminary results of this past summer's research and other ongoing management of the species will be discussed.

Judy Jacobs, U.S. Fish and Wildlife Service, Annapolis, MD 21401 and *Anne Hecht, U.S. Fish and Wildlife Service, Newton Corner, MA 02158. **MANAGEMENT OF THE FEDERALLY THREATENED ATLANTIC COAST POPULATION OF THE PIPING PLOVER.**

Abstract: In January 1986, the piping plover was listed as endangered in the watershed of the Great Lakes and threatened in the remainder of its range, including the Atlantic Coast, northern Great Plains, and Gulf Coast. Major factors contributing to the decline of the Atlantic Coast population are: (1) habitat loss and degradation; (2) disturbance by humans and pets; and (3) predation. Management activities to reduce predation have included predator trapping, use of protective predator "exclosures," and education of beach-goers about the hazards of plovers caused by garbage left on the beach. Human disturbance to piping plovers may be diminished by seasonal closures of feeding and nesting areas to off-road vehicles and/or pedestrians, nest fencing, restrictions on pets, wardens, and public information and education. Managing the timing and location of beach nourishment activities constitutes the major effort to reduce habitat loss on the breeding grounds.

*Robert L. Wyatt, Tennessee Wildlife Resources Agency, 6032 W. Andrew Johnson Hwy., Talbott, TN 37877. **AN APPALACHIAN BALD AS A PEREGRINE FALCON HACK SITE.**

Abstract: Previous reintroduction or hack sites for release of peregrine falcons (Falco peregrinus) within the southern Appalachians have been at locations of historic eyries or had physical features of potential nest sites. Big Bald Mountain, located in northeastern Tennessee, is a natural grassy bald where 1 wild caught and 12 captive bred peregrine falcon chicks were hacked in 1987 and 1988. Selection of this site was made by biologists with hopes that returning individuals could select their own eyries from the surrounding vicinity. The treeless terrain proved to be a positive advantage for observation of the fledging birds. Abundant prey species found at this location also helped these aerial predators perfect hunting skills. The use of construction scaffolding at this site was an innovative idea that proved cost effective and less labor intensive than previous tower designs, as well as being a temporary structure on the landscape adjacent to the Appalachian Trail.

*C.E. Couvillion, J.R. Jackson, C.P. McCoy and L.W. Bennett, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS 39762, **AFLATOXIN B1 IN FIELD CORN POTENTIALLY CONSUMED BY MISSISSIPPI SANDHILL CRANES.**

Abstract: The Mississippi sandhill crane (Grus canadensis pulla) is an endangered subspecies with as few as 50 wild birds occurring on the Mississippi Sandhill Crane National Wildlife Refuge (MSCNWR) and contiguous areas in Jackson County, Mississippi. In spite of intensive habitat restoration and management since 1975, the crane population may be declining. Numerous factors jeopardize the continued existence of the cranes; recent attention has focused on the impact of toxins. This study was conducted to determine if certain naturally occurring carcinogenic mycotoxins were present in field corn potentially consumed by cranes. Corn was randomly sampled from small fields on the MSCNWR and adjoining private farms during late summer through winter 1987-88 and 1988-89. Corn samples (N=40) were analyzed for aflatoxin B1 by thin layer chromatography. Aflatoxin B1 was found at concentrations ranging from 10 to 900 ppb in 60% and 57% of corn fields in 1987-88 and 1988-89, respectively. Prevalence of contaminated corn fields varied with sampling month and ranged from 33-75% (1987-88) and 0.43% (1988-89). Based on the toxicity of aflatoxin B1 for other avian species, contaminated corn may be a serious health threat to the sandhill crane population. This study was funded through the Mississippi Cooperative Fish and Wildlife Research Unit under Cooperative Agreement 14-16-0009-1543, Research Work Order No. 19.

Richard Tippit, U.S. Army Corps of Engineers, Nashville District, Environmental Resources Branch, P.O. Box 1070, Nashville, Tennessee 37202. **RELOCATION OF FEDERAL STATUS REVIEW RIVER SNAILS FROM PROPOSED DREDGING SITES IN THE LOWER CUMBERLAND RIVER.**

Abstract: Proposed dredging of rock outcrops and gravel bars in the lower 30 miles of the Cumberland River downstream of Barkley Lock and Dam, Kentucky would have resulted in the destruction of large numbers of at least one Federal status review river snail species, *Lithasia armigera*, common name armored river snail. A second status review species, *Lithasia geniculata*, ornate river snail, is also known to inhabit this reach of river. Both species are on the state of Kentucky's endangered species list. They once occurred throughout much of the Cumberland River and its tributaries, however, pollution, large dams, and other factors have eliminated them from most of their former range. The Cumberland River below Barkley Lock and Dam now supports the last substantial populations of these two species in the Cumberland River basin.

Nashville District embarked upon a program of relocation for snails inhabiting the proposed dredge sites. During November 1988 divers collected approximately 20,000 snails, primarily *Lithasia armigera*, from three of the dredge sites. Of this number, approximately half were returned to the lower Cumberland River and placed in areas of suitable habitat not to be affected by the dredging.

The relocation effort provided a good example of ways construction impacts of dredging may be lessened and species of aquatic fauna conserved in the process.

Christopher J. O'Bara, Tennessee Cooperative Fishery Research Unit, Tennessee Technological University, P.O. Box 5114, Cookeville, TN 38505. **THE BLACKSIDE DACE *PHOXINUS CUMBERLANDENSIS*: A CASE STUDY OF THE PROTECTION AND MANAGEMENT OF A THREATENED FISH.**

Abstract: The blackside dace, *Phoxinus cumberlandensis*, is a small stream cyprinid endemic to the upper Cumberland River system of Tennessee and Kentucky. The species was described in 1978 and has since received considerable attention because of its believed restricted distribution, the potential threats to its continued existence, and the paucity of information concerning its biology and ecology. In response to this concern, a status survey was initiated in 1984 which resulted in the species being known within 30 lotic systems, inhabiting only 27.0 stream kilometers. As the result of a life history study, habitat selection was found to be sexually and age structurally partitioned, and habitat requirements considered more diverse than previously believed. Using life history and ecological attributes, a model using geographic information system technology was developed and will be useful if the species status warrants. Currently, potential impacts on and possible relocation of a blacksided dace population resulting from a proposed coal mining operation are being evaluated using this model.

Michael J. Harvey and *Sam W. Barkley, Department of Biology, Tennessee Technological University, Cookeville, TN 38505, and Arkansas Game and Fish Commission, 2 Natural Resources Drive, Little Rock, AR 72205. **MANAGEMENT OF THE ENDANGERED OZARK BIG-EARED BAT, PLECOTUS TOWNSENDII INGENS, IN ARKANSAS.**

Abstract: The total population of the Ozark big-eared bat numbers ca. 1660, of which ca. 260 (16%) occur in Arkansas caves. The remainder inhabit caves in eastern Oklahoma. Ozark big-eared bats are cave residents year-round. The protection of those few caves inhabited by this endangered bat is thus important to its survival. Two Arkansas caves house hibernating colonies of 200 and 60 individuals, respectively. The Arkansas hibernating population has declined ca. 40% during the past 9 years. The only known Ozark big-eared bat maternity colony in Arkansas numbers ca. 60 individuals (adults and young), having declined from a high of 170 in 1980. The major hibernaculum, housing ca. 200 individuals, and surrounding land have been acquired by the Arkansas Natural Heritage Commission in cooperation with the Nature Conservancy to protect the colony. The cave housing the other hibernating colony of ca. 60 individuals is located in a State Park and will probably be gated or fenced in the near future to protect the colony. The cave housing the maternity colony has been offered protection through a cooperative agreement with the landowner and by a gate constructed in 1987 by the Arkansas Game and Fish Commission utilizing endangered species funds from the U.S. Fish and Wildlife Service.

Michael K. Phillips, U.S. Fish and Wildlife Service, P.O. Box 1969, Manteo, NC 27954. **RESTORATION OF RED WOLVES IN NORTHEASTERN NORTH CAROLINA.**

Abstract: In September 1987, two adult captive-born-and-reared red wolves (*Canis rufus*) were released into the Alligator River National Wildlife Refuge, northeastern North Carolina. This marked the beginning of the first attempt in history to restore a species that was determined to be extinct in the wild. Since then 10 more wolves have been released and a minimum of two animals born in the wild. All of the wolves were fitted with motion-sensitive radio collars, and nine animals were subcutaneously implanted with various gamma-emitting radioactive isotopes. The isotopes permit the assignment of stool samples to individuals. Telemetric monitoring has resulted in over 2,000 relocations. Additionally we have collected data concerning individual food habits, survivability, parasitism, and intraspecific interactions. Data from all of these aspects of the program will be presented, along with a brief account of the events leading up to the release.

Larry M. Mechlin, Missouri Department of Conservation, Fish and Wildlife Research Center, 1110 South College Avenue, Columbia, MO 65201-5299. **IMPROVING HABITAT FOR MISSOURI'S GREATER PRAIRIE-CHICKENS.**

Abstract: Greater prairie-chicken (Tympanuchus cupido) populations in Missouri have been declining since the early 1970's. The decline is likely to be a function of two factors, loss of quality grassland habitats as native grasses were converted to crops and fescue, and the encroachment of trees along fencerows and streams. Loss of quality grasslands have left the birds without suitable nesting, roosting and brood-rearing cover. Encroachment of trees has favored enhancement of woodland edge predators which in combination with low quality cover have resulted in greater losses to predators. Management for prairie-chickens has included applying specific management practices on publicly-owned grasslands. The Missouri Department of Conservation (MDC) has also made efforts to improve private lands by promoting the use of native warm-season grasses and appropriate management of grasslands on private lands that would favor prairie-chickens. Positive impacts are also anticipated from the ten-year set-aside of grasslands associated with the Conservation Reserve Program. If these management efforts do not reverse the declining trend, other unidentified factors such as genetic suppression due to small, isolated populations, detrimental effects of pesticides or herbicides used on agricultural lands, or disease may be responsible for the population decline.

*Gloria Lee, U.S. Fish and Wildlife Service, Caribbean Field Office, PO Box 491, Boqueron, PR 00622, James A. Collazo, U.S. Fish and Wildlife Service, Caribbean Field Office, PO Box 491, Boqueron, PR 00622, John R. Sweeney, Department of Aquaculture, Fisheries and Wildlife, Clemson University, Clemson, SC 29634. **HABITAT USE PATTERNS OF THE SNOWY PLOVER (CHARADRIUS ALEXANDRINUS) IN PUERTO RICO.**

Abstract: The snowy plover is one of the three resident plovers in Puerto Rico and is restricted to the Cabo Rojo Salt Flats. Currently, it is listed by the Puerto Rico Department of Natural Resources as a threatened species. A study was conducted to describe the plover's habitat use patterns. Data obtained were used to examine overall activity budgets, activity budgets of non-attending breeding and non-breeding individuals, and frequency of occurrence on each major habitat type. In addition, cover characteristics of nesting habitat were assessed. Plovers utilized irregularly flooded areas and dikes more frequently than expected for roosting activities. Roosting comprised a high proportion of the observations during morning and afternoon hours, whereas other activities were observed during morning and afternoon hours, whereas other activities were observed in higher frequencies during mid-day hours. Semipermanently and permanently flooded areas were used in higher proportions for locomotion and foraging activities. The immediate vicinity of nests was characterized by open sand with scattered shells or pebbles. In contrast, random sites were characterized by live vegetation. The Cabo Rojo Salt Flats are under pressure for industrial and tourist development. Efforts to safeguard the presence of the snowy plover should include measures to protect this habitat. A better understanding of the species' habitat requirements will aid in the development of management policies and enhance management practices.

Robert M. Hatcher, Endangered Species Coordinator, Tennessee Wildlife Resource Agency, Ellington Agricultural Center, P.O. Box 40474, Nashville, TN 37204. **COMPUTER MODEL POPULATION PROJECTIONS FOR BALD EAGLES IN TENNESSEE.**

Abstract: From 1980 through 1988, 95 bald eagles have been released at three hack sites in Tennessee in order to restore natural nesting. According to computerized projections and actual nesting to date, Tennessee could possibly achieve over 50 successful bald eagle nests by approximately the year 2000. The model is available for application by eagle workers in other states.

*David Richard, La. Dept of Wildlife and Fisheries, Grand Chenier, LA 70634, Wayne Dubuc, Eagle Surveying, Inc., Morgan City, LA 70381, Allan Ensmigner, Wetland and Wildlife Management Co., Belle Chasse, LA 70037. **THE HISTORY AND PRESENT STATUS OF THE SOUTHERN BALD EAGLE IN LOUISIANA.**

Abstract: The historical population of the Southern Bald Eagle in Louisiana has ranged from a carrying capacity of unknown numbers in the early part of this century, to precarious lows in the mid-1960s and 1970s to a present population of 45 active territories.

Historical records and population levels are incomplete. The nesting of Bald Eagles in Louisiana is timed to coincide with the mass migration of wintering water birds in the coastal zone.

Nesting territories are concentrated along the marsh/swamp interface in fresh and intermediate marshes in coastal Louisiana. This habitat supports an increasing number of nests, juvenile birds and non-nesting adults.

In 1983 an intensive survey was initiated to inventory nesting sites and productivity. This effort has documented a two fold expansion of the winter nesting population in coastal Louisiana.

Steven R. Bloemer, Land Between The Lakes, 100 Van Morgan Drive, Golden Pond, KY 42231, Robert M. Hatcher, Tennessee Wildlife Resources Agency, P.O. Box 40747, Nashville, TN 37204, Robert D. Smith, Mid America Conservation Consultants, P.O. Box 1400, Cadiz, KY 42211. **BALD EAGLE HACKING AT THE LAND BETWEEN THE LAKES.**

Abstract: A cooperative bald eagle hacking program was initiated in 1980 at The Land Between The Lakes (LBL) in western Tennessee. Cooperators included the Tennessee Valley Authority, U.S. Fish and Wildlife Service, Tennessee Wildlife Resources Agency, and Tennessee Conservation League. Prior to that time, the last confirmed successful nest in the region was in 1961. At the end of 1988, 44 bald eaglet had been successfully hacked at LBL. In the spring of 1989, there were four known successful eagle nests in the region. All four nests had at least one banded parent. Band numbers have been read at two of the nest sites, positively identifying a parent at each nest as an LBL hacked bird. Eleven eaglets have successfully fledged from these two nests through the 1988 nesting season.

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
2415 Darnall Road
New Iberia, LA 70560
(318)373-0032

Edwin W. Edwards
Governor

M E M O R A N D U M

TO: Ted Joanen

FROM: Noel Kinler

DATE: March 23, 1993

As per your request , I have searched the files relative to a presentation concerning the status of the bald eagle in Louisiana that was presented at the 43rd Annual Conference of the Southeastern Association of Fish and Wildlife Agencies in St. Louis, Missouri, in 1989. I have located a conference agenda, a handwritten report which I utilized to make the presentation and several graphs utilized for the presentation. I have attached all of these items for your review. This presentation was part of a special session entitled "Management of Rare and Endangered Species". This was a first time event for SEAFWA, so it was limited to presentations and did not include publication of a manuscript. Since a formal paper was not published in the proceedings, I only have a handwritten report which was essentially put together for my presentation.

If any additional information is needed, please contact me.

Noel

Noel Kinler
Project Coordinator

NK:ybd

Attachments

43rd Annual Conference

of the

Southeastern Association of Fish and Wildlife Agencies

Sheraton St. Louis Hotel
St. Louis, Missouri
October 29–November 1, 1989

9:00 [5] High School Agriculture Curriculum—Putting Conservation Education on the Land
Paul White, curriculum specialist/Missouri Department of Conservation

10:00 [6] **Working With I & E Sources: A Freelancer's Perspective**
Kathy Etling/freelance outdoor writer, field editor for *Outdoor Life* magazine

11:00 [7] **MDC's Ambitious Television Program**
Mark McCarthy, broadcast writer-producer/Missouri Department of Conservation

12:00 **Lunch**

SESSION 3

Moderator: Mark McCarthy, broadcast writer-producer/Missouri Department of Conservation

1:00 [8] **Conservation Education Through a Cooperative Effort in Tennessee**
Robert L. Wyatt, Unicoi County wildlife officer/Tennessee Wildlife Resources Agency

2:00 [9] **Turning Technical Writing Into Real English**
Spencer Turner, fisheries research biologist/Missouri Department of Conservation

3:00 [10] **Aquatic Education: Fishing for Answers**
Rebecca J. Stout, education researcher/Missouri Department of Conservation

4:00 [11] **The Missouri Aquatic Resources Education Program—Giving It New Life**
Jeanne Pyland, Jack Woodhead, education consultants/Missouri Department of Conservation

5:00 **Adjourn**

Robert E. Lee Room

Wednesday, November 1

SESSION 4

Moderator: Dave Knisley, education consultant/Missouri Department of Conservation

8:00 [12] **Anthropomorphism in the Real World of Conservation**
Ann Rankin, education consultant/Missouri Department of Conservation

9:00 [13] **How-to (and Why-to) on Multi-Media Production**
Tom Troughton, multi-media producer/Missouri Department of Conservation

11:00 **Adjourn**

SPECIAL SESSION: MANAGEMENT OF RARE OR ENDANGERED SPECIES

Robert E. Lee Room

Tuesday, October 31

Moderator: Tom R. Johnson/Missouri Department of Conservation

8:00 [1] **Protection of a Threatened Fish Species from Effects of a Federal-Aid Construction Project**
Ralph A. Fourt/Arkansas Game and Fish Commission, Rogers, Arkansas

8:15 [2] **Management of Sensitive, Threatened and Endangered Vertebrate Species Within an Ecosystem Framework: Changing the Single Species Approach**
John A. McLemore/U.S. Forest Service, Hot Springs, Arkansas

8:30 [3] **Management Needs of the American Crocodile: Then and Now—a 10-Year Perspective**
Paul E. Moler/Florida Game and Fresh Water Fish Commission, Gainesville, Florida

8:45 [4] **Status of the Alligator Snapping Turtle in North Louisiana**
John A. Knesel/Northeast Louisiana University, Monroe, Louisiana

9:00 [5] **Developing Habitat Protection Plans for Rare and Threatened Species with Large Area Needs**
Jim Cox/Florida Game and Fresh Water Fish Commission, Tallahassee, Florida

9:15 [6] **Management of the Gopher Tortoise (*Gopherus polyphemus*) in Florida**
Joan E. Diemer/Florida Game and Fresh Water Fish Commission, Gainesville, Florida

9:30 [7] Conservation and Management of Sea Turtles in the Marine Environment of the Southeastern U.S.
Tyrrell A. Henwood/NOAA, National Marine Fisheries Service, St. Petersburg, Florida

9:45 [8] Management Related Research: Marine Turtles
Jeffrey Brown/NOAA, National Marine Fisheries Service, St. Petersburg, Florida

10:00 Break

10:15 [9] Status and Management of the Red-Cockaded Woodpecker on the Southern National Forest in 1986: With 1988 Update
Ralph Costa/USFS, Crawfordville, Florida

10:30 [10] Abandoned Mining Drifts in the Ouachita National Forest: Unique Opportunities for Non-Game Wildlife Habitat Management and Research
David A. Saugey/USFS, Mount Ida, Arkansas

10:45 [11] Management of an Endangered Plant, Peters Mnt. Mallow (*Iliamna corei*): One Step Back From the Brink
Judy Jacobs/USFWS, Annapolis, Maryland

11:00 [12] Management of the Federally Threatened Atlantic Coast Population of the Piping Plover
Judy Jacobs/USFWS, Annapolis, Maryland

11:15 [13] An Appalachian Bald as a Peregrine Falcon Hack Site
Robert L. Pete Wyatt/Tennessee Wildlife Resources Agency, Talbott, Tennessee

11:30 Lunch

1:00 [14] Aflatoxin B1 in Field Corn Potentially Consumed by Mississippi Sandhill Cranes
John R. Jackson/College of Veterinary Medicine, Mississippi State

1:15 [15] Relocation of Federal Status Review River Snails from Proposed Dredging Sites in the Lower Cumberland River
Richard Tippit/USACE, Nashville, Tennessee

1:30 [16] The Blackside Dace, *Phoxinus cumberlandensis*: A Case Study of the Protection and Management of a Threatened Fish
Christopher J. O'Bara/Tennessee Coop. Fishery Research Unit, Cookeville, Tennessee

1:45 [17] Management of the Endangered Ozark Big-Eared Bat, *Plecotus townsendii ingens*, in Arkansas
Sam W. Barkley/Arkansas Game and Fish Commission, Little Rock, Arkansas

2:00 [18] Restoration of Red Wolves in Northeastern North Carolina
Michael K. Phillips/USFWS, Manteo, North Carolina

2:15 [19] Improving Habitat for Missouri's Greater Prairie-Chickens
Larry M. Mechlin/Missouri Department of Conservation, Columbia, Missouri

2:30 [20] Habitat Use Patterns of the Snowy Plover, *Charadris alexandrinus*, in Puerto Rico
Gloria Lee/USFWS, Boqueron, Puerto Rico

2:45 [21] Computer Model Population Projections for Bald Eagles in Tennessee
Robert M. Hatcher/Tennessee Wildlife Resources Agency, Nashville, Tennessee

3:00 Break

3:15 [22] The History and Present Status of the Southern Bald Eagle in Louisiana
David Richard/Rockefeller Wildlife Refuge, Grand Chenier, Louisiana

3:30 [23] Bald Eagle Hacking at the Land Between the Lakes
Steven R. Bloemer/TVA, Golden Pond, Kentucky

LEGAL SESSIONS

Mark Twain/ Samuel Clemens Room

Monday, October 30

1:00 [1] Age Discrimination
Brooks Garland/Tennessee

2:30 [2] Police Civil Liability
Doug Mays/Arkansas

4:00 Business Meeting

5:00 Adjourn

LOUISIANA Conservationist

LOUISIANA
Conservationist
Published by the Department of Wildlife and Fisheries in the interest of conservation of Louisiana natural resources

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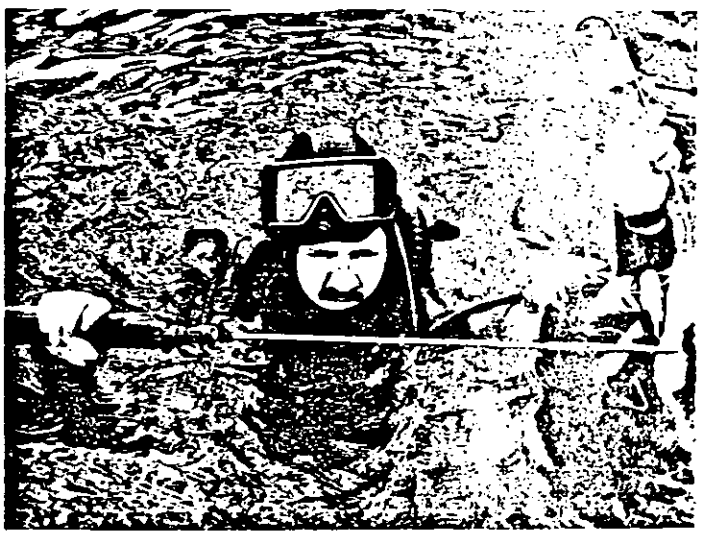

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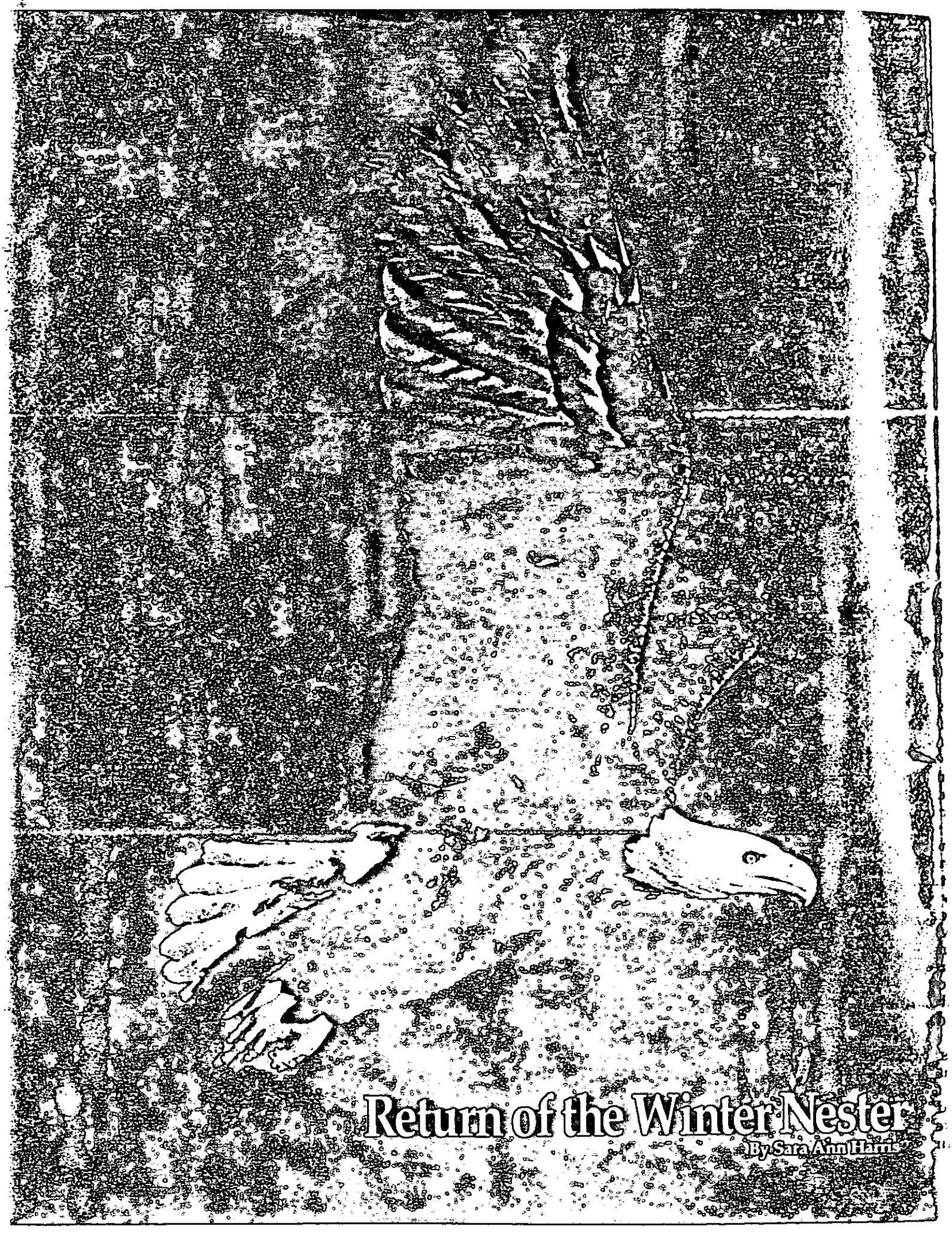


Return of the Winter Nester

By Sara Ann Harris

Bald eagles, which mate for life and mutually participate in all phases of nesting, begin the reproductive cycle by refurbishing their massive nest, atop usually the tallest cypress in the swamp.

AS AN INTEGRAL PART of our American heritage, the bald eagle needs no introduction. Over 200 years ago the Continental Congress adopted our Great Seal with the bald eagle as our national bird. A captivating sight in flight, this nearly largest of raptors (birds of prey) with an incredible wingspan rules the sky in its remote wilderness home. An image of strength and independence, it aptly portrays freedom, the quality most cherished by Americans.

Since 1782, Americans have grown up with the image of the bald eagle. We've seen it perched atop flagpoles, embossed on currency, printed on the cover of history books, and on display in libraries, post offices and federal buildings of all kinds, featured on patriotic posters, worn on patches by scouts, armed services officers, Olympic athletes and astronauts.

As familiar as we are with the image of our national bird, we are probably that unfamiliar with the story behind the symbol. Many may be surprised to hear that its range is all of North America. And, on the flip side of that coin, it is the only eagle species *restricted* to this continent. Its scientific name *Haliaeetus leucocephalus* means white-headed sea eagle. An apt designation, for the adult has a completely white head and tail and the bald eagle is a species of fishers. Always residing near water, they swoop down and with strong talons snatch up their daily take. The common name—bald—was assigned this creature because at one time bald was synonymous with white.

Though we have a strong sentimental association with the bald eagle, few may know the plight of our chosen bird. For decades, it was slowly declining. Water pollution, loss of habitat and human intrusion were threatening its survival and in the lower 48 states the national bird was added to the endangered species list.

As mandated by protective legislation in the 1970s, eagle recovery teams were formed to draw up recovery plans, long term goals and objectives for the restoration of the bald eagle specific to five major eagle habitats in the country. This protective legislation, more substantial than earlier regulations, also prohibited any federal program from jeopardizing recovery efforts of the bald eagle. And it set up severe fines, imprisonment or both to keep the giant bird safe from any interference by individual or commercial ventures.

The eagle's decline was due primarily to agricultural runoff that was contaminating wetlands. Bald eagles are top-chain predators which means as adults they have no enemies in the wild except other eagles competing for territory. It also means they hunt large quantities of fish and so are particularly susceptible to any toxins these have ingested. Before the '70s when we cleaned up our waterways, bald eagles, which essentially are barometers of their environment, were experiencing dramatically decreased reproduction success. In

rivers the toxins of course infected microorganisms that were eaten by fish which in turn were scooped up by eagles. Pesticides cause a thinning of their eggshells and the consequent loss of young.

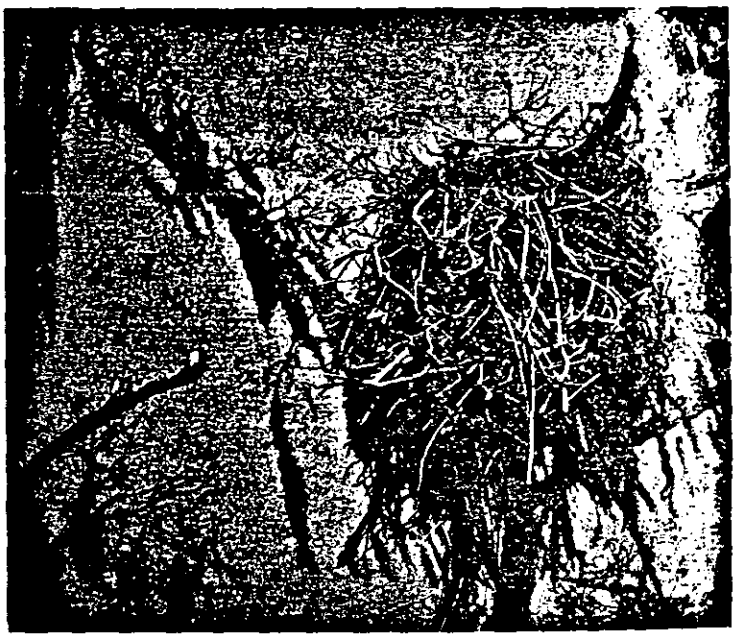
This silent killer as it is sometimes referred to by experts was not the only threat to eagles. Commercial efforts by timber companies, oil and gas corporations and developers in the past have leveled or so severely disturbed eagle habitat, sometimes with no knowledge of the bird's presence, that pairs of nesting eagles have abandoned nest trees and incubating eggs. Even aerial sightseers dipping down too close to a nest tree, on a cool day, for instance, where the parents are unaccustomed to such intrusions, will force a bird off the nest long enough for the eggs to cool—a natural sign to brooders that nest failure is imminent.

In summary and at the risk of oversimplifying matters, in the '70s we amended our non-ecological ways and today many species are experiencing the resulting upswing. With protective laws in place, clean water legislation passed, preservation of wild areas in progress and public education programs on the rise, the comeback of this majestic bird is inching forward. Through the efforts of many people who care, the National Wildlife Federation created four refuges in more northerly parts of the country where eagles can winter.

In Louisiana over the past decade there has been a very impressive rise in the bald eagle's nesting activity. Whereas in 1974 there were only five active nests known, as of 1985 there were 29. And eaglets, or young, which totaled in at four then, last year were up to 38 chicks. This was double the young sighted just one year earlier. More eagles nest in Louisiana than in any other southern state besides Florida. Though the conglomerate of reasons for the restoration of this deserving animal has already been mentioned, area experts point to the relatively high water quality in Louisiana as the single most important factor. The most recent conference of the Southeastern Association of Fish and Wildlife Agencies heard supportive research indicating lower pollutant levels in Louisiana waters than in many other states. And U.S. Fish and Wildlife Service biologists report that bald eagle shells are no longer thinning.

Bald eagles in Louisiana are again finding those conditions vital to rearing their young, the most basic of recovery tasks. They are nesting in the southeastern coastal cypress

Wilderness loving creatures, eagles distance themselves as best they can from civilization.



Eagle pairs build massive stick nests which in Louisiana they pad with moss and shredded cypress bark.

swamps where water is plentiful as is food. The parent eagles dive from tall nest trees for their favorite fish—shad. Here they also feed on waterfowl, especially gallinule and coot, and even furbearers, such as nutria.

An oddity among birds, the southern bald eagle begins its nesting cycle in the fall. The parents, which mate for life and return to the same nest year after year, mutually participate in all phases of nesting. Characteristically, they rebuild their nest or aerie to arrive at a tremendous stick bowl. With moss and shredded bald cypress bark, they lay a soft lining inside the huge construction. Only a downed tree or intrusion by another animal will detour the pair to an alternate nesting site.

The spectacular courting ritual viewed by very few begins at 2,000 or so feet in the air where the female (larger, as with all birds of prey) and male lock talons and tumble in a free fall or "cartwheel display."

Bald eagles usually lay two eggs; in Louisiana they are a dull white or buff. Male and female incubate in shifts with the free bird feeding the nest warmer and the male more frequently taking the hunting role. Temperature is critical to the success of the clutch and disturbance of any kind which forces the guardians away from their keep could be fatal. The parent birds then return to "bury" the unborns under a moss covering. A phenomenon only recently considered significant is the southern bald eagle's capacity for a second attempt at nesting in the *same* season. In the cypress swamps researchers have witnessed many such occurrences.

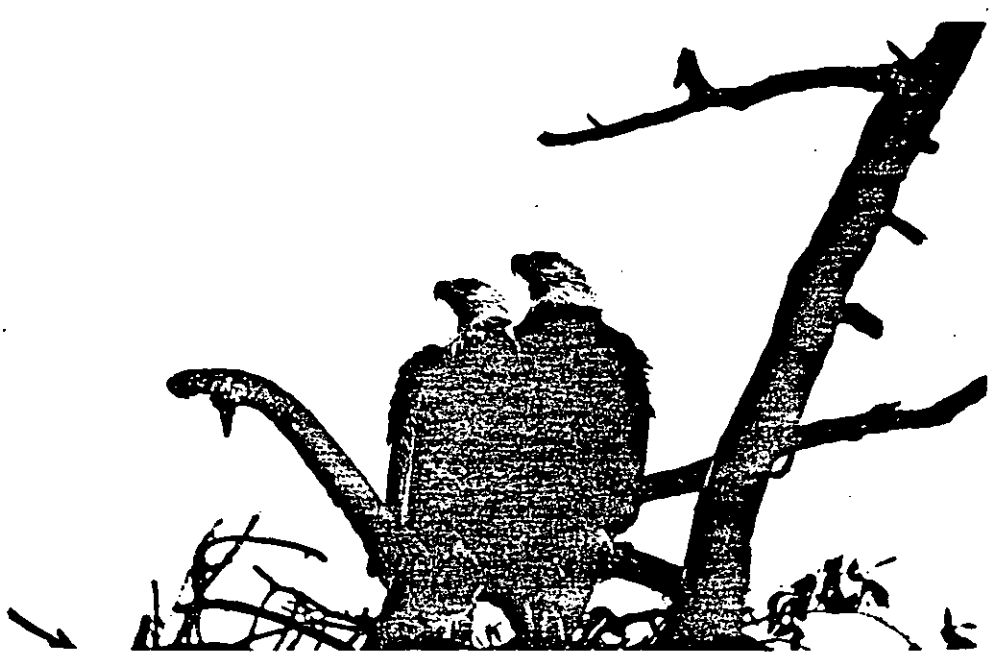
After a successful hatch, the chicks are nurtured for two or three months until growing flight feathers. Unlike many fledglings, after their first flight they do return to the nest for another month or so before the family migrates north. Very few birds then are sighted in Louisiana over the summer months. The nearly all brown juveniles very closely resemble golden eagles, though these are extremely rare here at any time of the year. Somewhat slow to mature, at 4 or 5 years old they acquire the full adult plumage of a totally white head and tail and pair off.

There is also the northern bald eagle to be considered in Louisiana counts. It nests in the spring up north and like the southern bird spends its winters in the south. Though they are slightly larger, not even a trained eye can differentiate between these and the residents. But their distance from any sign of a nest is telling. This northerner has been visiting in increased numbers.

Louisiana Department of Wildlife and Fisheries biologists are concerned for the bald eagle and have taken a particular interest in its nesting success. Fur and Refuge Division's Dave Richard has worked closely with the long time, ardent conservationist Wayne Dubuc, who was appointed to the Eagle Recovery Team. They are optimistic about the eagle's future in Louisiana. A native Louisianan, living in the most heavily nested parish in the state, Dubuc says about the eagle research, "This is my home. If it's here, we want to protect it. We are carrying on a tradition of 'use but don't abuse' and protecting a natural heritage that was meant to be shared with everyone."

The department puts into action the "Management Guidelines" of the *Recovery Plan: Southeastern States Bald Eagle* and contributes to the periodic revisions of these guidelines which protect the bird which is so important to us historically. As the program continues to be refined the chances are heightened for future Americans to actually view their wilderness loving mascot.

We can contribute to this delicate task of preservation by respecting our national bird's privacy to the utmost. Only with undisturbed nest areas can bald eagles survive and rear their young. It's imperative that we continue to support programs that conserve our coastal wetlands and hardwood bottomlands. Celebrate National Bald Eagle Day, June 20 (the day in 1782 that our founders selected the powerful bird for the nation's emblem) by making a commitment to yourself to get informed about conservation issues that impact the eagle's survival.



Guy Fischer

An oddity among birds, eagles mate for life.

These photographs were taken for instructional purposes by a researcher working with the Fish and Wildlife Service. The special permit issued him restricts his observation time to periods when eagles will be the least disturbed.

There are severe fines, imprisonment or both as mandated by federal and state laws for harassing eagles.

The Birthday Bird

1982 is year of the eagle, June 20 is National Bald Eagle Day, and as our national bird celebrates its 200th anniversary as our nation's symbol, Louisiana can be proud to boast of Bald Eagles nesting in our state. Though once plentiful and now an endangered species, Louisiana's Bald Eagle population has stabilized since the declining years a few decades ago.

By Joseph A. Dugoni and Julia Murchison McSherry

Wild and majestic it soars, a wilderness loving bird of striking beauty and fierce independence with size and strength that well represents the nation it symbolizes. Though once bald eagles flew in great numbers from sea to sea, now, throughout most of the country, the eagle is struggling, not to maintain its honor, but to survive as a species. Due to loss of habitat, the ingestion of deadly pesticides, and human disturbance, it is now endangered or threatened in all the lower forty-eight states.

But the bald eagle is beginning a slow recovery from near extinction and 1982 has been proclaimed the "Year of the Eagle" to remind all Americans of the need to preserve this species and all wildlife for future generations. With this in mind, the National Wildlife

Federation proclaimed the theme of 1982 National Wildlife Week "We Care About Eagles" celebrated March 14-20. Along the same lines, President Ronald Reagan and our United States Congress unanimously proclaimed "National Bald Eagle Day" on June 20, the day 200 years ago on which the Continental Congress adopted our Great Seal with the bald eagle as our national symbol.

And though most Louisianians are more accustomed to seeing the great bird on the seal and on our coins and currency, we can all be proud that our state does in fact still have bald eagles nesting here. It is appropriate that we take a close look at this bird, as our national symbol and as an important native species in the state.

"To catch a glimpse of this majestic raptor is to understand why the founding Fathers chose it to represent the strength and courage of our great Nation," says President Reagan in his proclamation. "Its grace and power in flight, its vigilance and loyalty in defending its family group, and, most of all, its courage make the eagle a proud and appropriate symbol for the United States."

On the Great Seal, one talon of the eagle clutches an olive branch symbolizing desire for peace while the other holds thirteen arrows of defense, representing the original colonies and symbolizing our willingness to fight for freedom. The eagle celebrates its bicentennial birthday as the nation's symbol six years after the nation was founded. That's because it took Congress six years, three committees, and several artists to agree on just the right symbol that would lead our nation through centuries of history.

Since the beginning of recorded history, the eagle has been symbolic of power, freedom, and immortality. Ancient astronomers, gazing at the stars, saw the outline of a soaring bird of prey and named the constellation "Aquila", the Latin name for eagles. In Roman mythology, the symbol for Jupiter, king of the gods, was an eagle clutching thunderbolts in its talons.

Many North American Indian tribes considered the eagle sacred. They used eagle feathers to decorate their ceremonial clothing and as rewards for acts of bravery performed in battle. Pacific Northwest Indians carved the figure of an eagle in their totem poles to represent a spiritual relationship between their families and this majestic predator.

Lloyd Poissenot

Photo Courtesy of National Wildlife Federation — Bernie Tesselson

At the time the bald eagle became our national symbol, it nested throughout the country. As the United States expanded from thirteen colonies to fifty states, the population declined. The bald eagle, perhaps more than any other wildlife species, was affected by human expansion. Dwindling habitat was the first major obstacle it faced.

Let us look at interesting facts about the bald eagle itself, nationwide and in Louisiana.

The nation's bird is one of the largest raptors or birds of prey in the world. It is the only eagle species whose distribution is restricted to North America. There are two subspecies, the northern bald eagle and the southern bald eagle most commonly seen in Louisiana and the only species that nests here.

Eagles may live as long as thirty years or more in the wild; in captivity some have been known to live as long as fifty years. The male eagle is smaller than the female. The adult females weighs 10-14 pounds and has a wing span of about eight feet. The adult male weighs 8-12 pounds with a 6½ foot wing span.

The name "bald" is somewhat of a misnomer referring to the eagle's white head. "Haliaeetus leucocephalus", the bald eagle's scientific name, means "white-headed sea eagle."

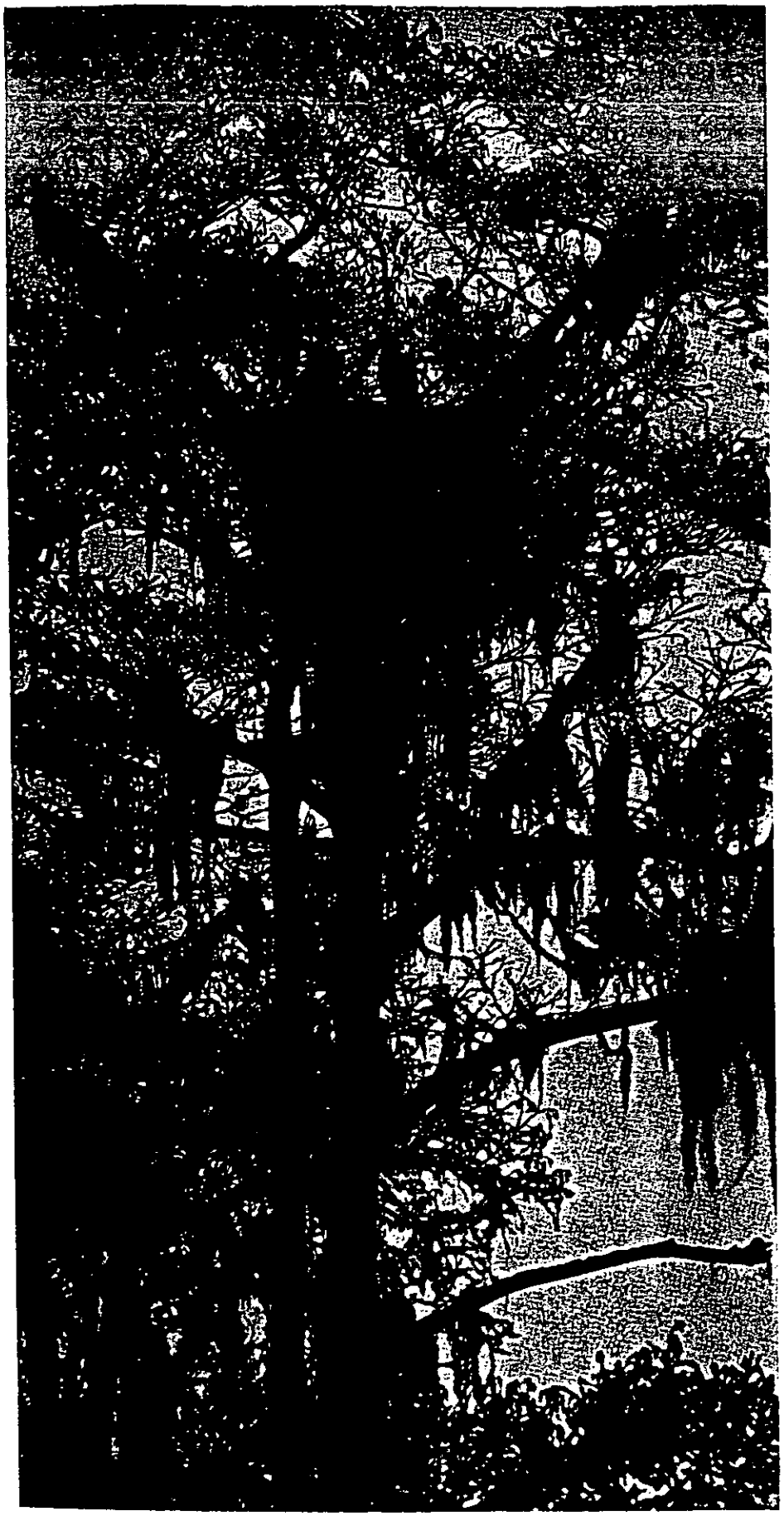
And if you've ever wondered why we use the term "eagle eyes" describing a person who "sees" everything, it comes from the fact that bald eagles have eyesight five to six times sharper than a human's. This extraordinarily keen eyesight enables them to spot prey from more than a mile away.

Eagles typically build extraordinarily large nests close to water, in tall trees, out of large sticks lined with moss or grasses. Louisiana bald eagle nests are located for the most part in permanently and annually flooded marsh and cypress swamps of southeast and south central Louisiana. They live in an odd juxtaposition with nearby offshore oil rigs and other industrial sites; one nest is within two miles of New Orleans International Airport. Primary nesting area is the coastal marsh between Lafayette and the Mississippi state line. Many are located in Terrebonne Parish, an area with excellent food availability and potential nesting habitat. Although it is difficult today, eagles attempt to stay as far from civilization as possible. Human activity greatly disrupts their nesting and reproducing activity.

Louisiana nests are most commonly found in tall cypress trees, often as high up as 70-100 feet, and often in the highest tree in the area. From these heights, eagles command a view for miles around so they can keep a wary watch of their marsh where they catch fish, birds and waterfowl, and small animals that make up their diet. Although eagles can catch moving prey such as a running rabbit, they generally prefer easier catches such as sick or wounded waterfowl and carrion (decaying flesh).

Louisiana bald eagles, which generally migrate north for the summer, return to the vicinity of their breeding territory in September or October. A pair will characteristically return to the same nest year after year while nest building instincts are satisfied by repairing and adding to existing nests which become quite large, perhaps six feet deep, three feet across. Even normal sized nests are giant structures but gargantuan nests have been found weighing more than a ton and up to ten feet in diameter and twenty feet deep (not in Louisiana).

The mating ritual is a spectacular rite, observed by few individuals, in which the male dives at the soaring female who rolls on her back with



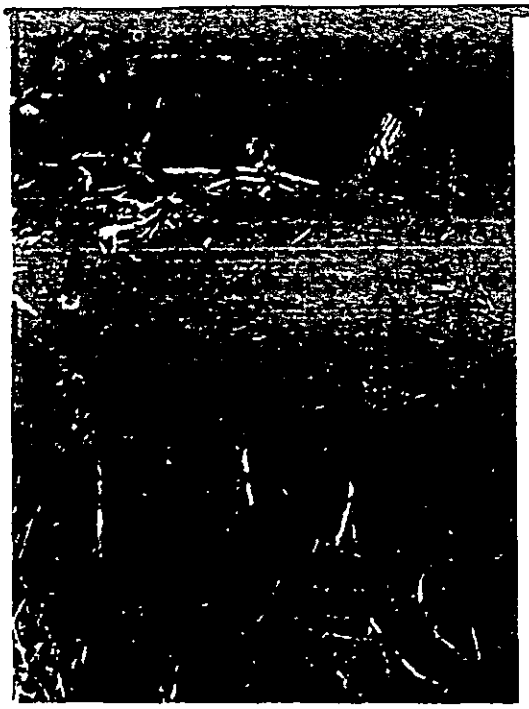
Lloyd Poissenot

Normal sized eagle nests are giant structures averaging six feet deep and three feet across, made from branches and moss. Louisiana nests are typically found in tail cypress trees.

outstretched talons. The two birds clasp talons, lock together, and spiral downward in "cartwheel display." Nesting activity begins in early fall with mating in early November. The female lays one or two eggs, occasionally three. About thirty-five days later, the nest is filled with one or more eaglets. Generally, the female performs incubation, brooding, and parental care, while the male secures food. The young eaglets stay in the nest for three to four months before they fledge (learn to fly), several weeks more before they can feed themselves, and four to six years before they mature into adult birds with full plummage, all-white head and tail feathers. After the young depart the nest site, they are no longer permitted by parents to use the breeding territory. Each eagle pair, which mate for life, usually return to the same nesting site while the young birds return the following year to build a new nest or take over an abandoned existing one. Nesting eagles are territorially exclusive.

Major nesting areas in the United States are: the 12,000 mile long shoreline of southeastern Alaska with unequaled eagle habitat and thriving populations, the San Juan Islands in Puget Sound off Washington and British Columbia, and Oregon. The Great Lakes states of Minnesota, Wisconsin, and Michigan and Maine, Chesapeake Bay region in Maryland, and Florida also support fairly large eagle populations. At one time, as many as 25,000 lived in what is now the lower forty-eight states with even more in Alaska and Canada. Today, the breeding population in the lower forty-eight is estimated at a little more than 1100 pairs or 3,000 total birds. About fifty of this total number, not all breeding pairs, are counted annually in Louisiana by government agencies, the National Wildlife Federation, and interested individuals.

In a 1977-1980 study conducted through the LSU Cooperative Wildlife Research Unit under the leadership of John D. Newsom, thirty nests thought



Lloyd Poissenot

A pair of eagles, which mate for life, will migrate north annually and return to Louisiana to the same nest each fall. A successful mating season results in one to three healthy eaglets per adult pair. It takes four to six years for the young birds to mature into full plummage with all-white heads.

to represent a total of about twenty active and inactive territories were loated and catalogued. During the study, nest success increased 38 percent which is encouraging. Although Louisiana's number of birds has declined, our state still has more nesting eagles than any other southern state except Florida. However, Florida does have substantially more birds with an estimated 950 nests.

The reasons for the eagle's decline in Louisiana can basically be listed in three categories: dwindling fresh water cypress swamp habitat, use of pesticides and contaminates which adversely affect eagle nesting and reproduction and egg survival rate, and human disturbance. Intruding salt water resulting from man's deposit of spoil from dredging and canal building kills trees and destroys potential nesting sites. The greatest threat to eagles today is the encroachment of man and the slow destruction of the territory where they live and feed.

Drastic decline in bald eagle populations nationwide was first noted in the 1950s and '60s when the use of the pesticide DDT was prevalent. Too late, it was discovered that, among other detrimental affects, the pesticide contaminated fish and animals eaten by the bald eagle and thereby impaired reproduction capabilities. Many eagles stopped producing offspring or lost eggs which broke because of a calcium deficiency linked to DDT. Other birds were affected but the bald eagle, long our national symbol, was one of the most seriously afflicted victims. Louisiana eagles were particularly harmed because of our state's location at the lower end of the Mississippi River Valley which was washed by chemicals drained from manufacturing plants and farmland throughout the United States and carried by the Father of Waters to the Gulf of Mexico.

Today, drainage, channelization, and subsequent exploitation of baldcypress tupelogum marshland due to agricultural conversion and oil, gas, industrial, and residential development continue to threaten our eagle populations. The bald eagle is listed as an endangered species in Louisiana and forty-three other states and is listed as threatened in several others.

Will Louisiana's bald eagle population survive? Right now, the population is stable and perhaps slowly growing says Allan Ensminger, chief of the department's fur and refuge division. The department and the U.S. Department of the Interior, through U.S. Fish and Wildlife Service, are doing their best to protect the birds and to discourage encroaching development near eagle nesting sites. U.S. Fish and Wildlife Service and the Corps of Engineers work with companies in such efforts as altering the course of roadway or power line projects or discouraging construction near nesting sites during mating and nesting season.

"We cannot stress enough the danger to existing eagle pairs from human intrusion," Ensminger explains. "Individual intruders, as well as construction or industrial projects can be a severe threat to eagles. We strongly urge individuals who know the location of a nest to stay away."

Even five minutes of disturbance can mean changes in reproductive patterns or the loss of a young bird jumping from the nest before it has learned to fly. And remember, killing a bald eagle is prohibited by federal law and is punishable by a stiff fine. Bald eagles are protected by the Bald Eagle Protection Act, the Migratory Bird Treaty Act, and the Endangered Species Act of 1973.

Protection of Louisiana's bald eagles to a large extent lies in the hands of individuals. Citizens must take an interest in the fate of our national symbol by opposing projects that threaten it and reporting to this department or U.S. Fish and Wildlife Service individuals who harm it.

Although the nesting bald eagle population in Louisiana is small compared to what it used to be, with normal clutch sizes, improved egg hatchability and continued high nesting success, it has the potential to increase to unprecedented modern day levels.

Although some existing nests are presently being threatened by some form of development, the department hopes that they can be saved and that new ones will be built in the future. However, it is doubtful that the population will ever return to its former status when it was not an uncommon sight to see our national bird soaring high and courageous across the horizon.

Editor's Note: Jay Dugoni is a professional wildlife biologist and author of "Habitat Utilization, Food Habits, and Productivity of Nesting Southern Bald Eagles in Louisiana," a thesis published in December 1980 through the Louisiana State University School of Forestry and Wildlife Management. The thesis details Dugoni's intensive eagle study conducted from 1977-1980. It contains the most complete and accurate list of existing eagle nests in Louisiana.

A Bicentennial Special Report

The Bald Eagle

By Murrell Butler

The bald eagle, national emblem of the United States, probably is more familiar to most Americans as an imprint on coins and dollar bills than a creature of the wild. But that's probably because its existence has been woven around bad luck, misunderstanding, and unconcern.

Once common throughout most of the country, especially along sea coasts and larger inland water bodies, the bald eagle today is in serious trouble. Persistent pesticides in the food chain, illegal shooting, loss of habitat — all generally are to blame. Recognizing these threats, man has attempted to do a reversal of circumstance . . . ban serious pesticides, enact significant penalties for eagle killing, provide unmolested habitat. But there are still impasses around that threaten the "king of the skies."

Alaska appears to be the real last stronghold of the bald eagle, and the Everglades National Park in southern Florida also supports a fair population. In Louisiana, however, there are said to be not many more than eight pairs of eagles, found most commonly in the southern part of the state and mostly along the Mississippi River.

Since fish comprise the bulk of the bird's diet, it seldom ventures far from water. The eagle, however, is no connoisseur of fish — it eats dead ones as well as live ones it hunts. Frequently the bird will steal catches of the osprey in a performance that is quite a spectacle to watch.

Rising to great heights on a soar, it looks for hunting ospreys. And when an unsuspecting osprey makes a catch, the eagle attacks in a series of dive-bombing plunges until it forces the osprey to release its meal. Then in a uniquely intricate dive, tallons outstretched, the eagle retrieves the dropped fish before it can hit the ground.

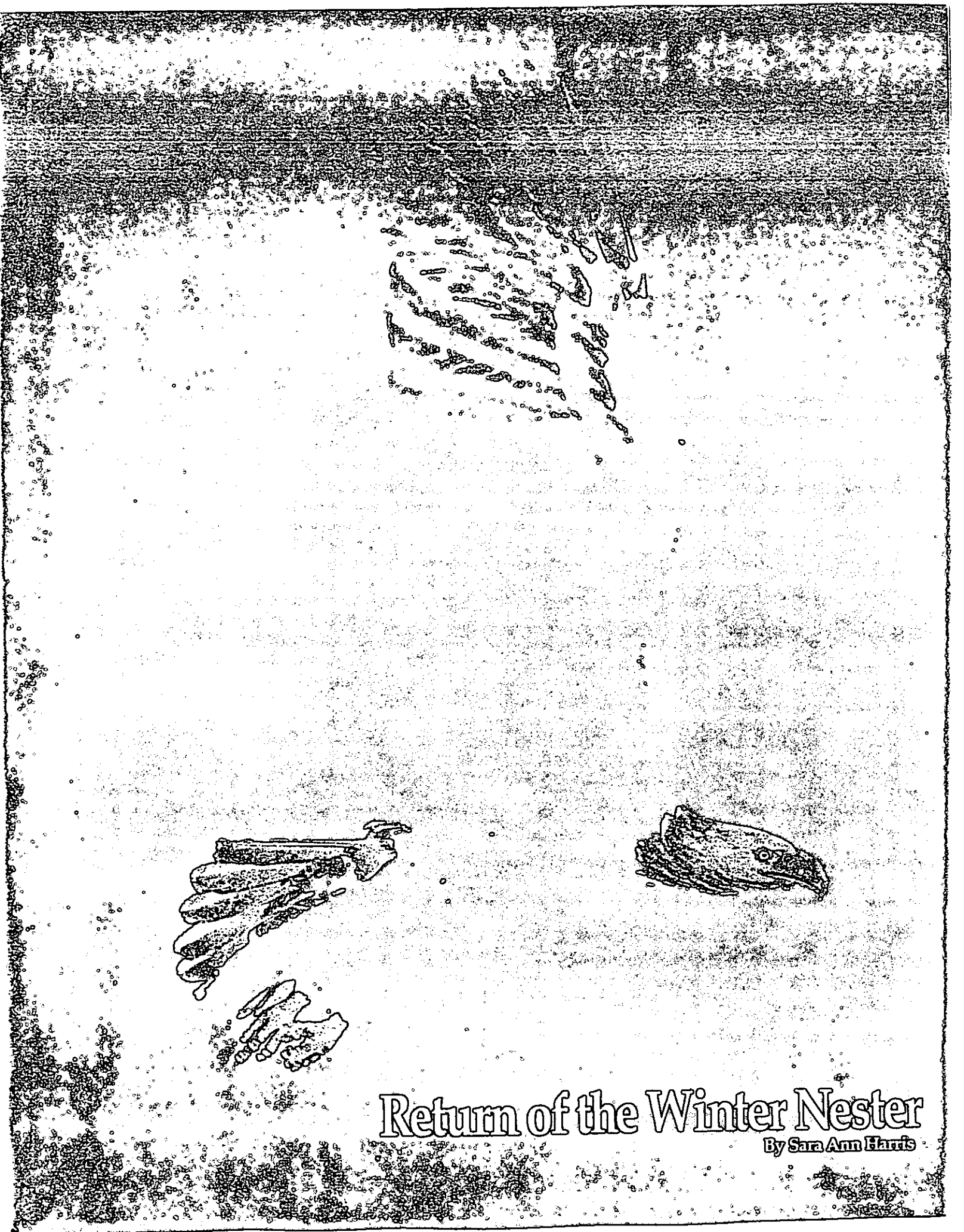
The bald eagle is one of few birds which mate for life. The nest or eyrie, a rather impressive structure, usually is situated in the tallest tree available across the terrain. Year after year, the eagle uses the same nest and adds to it annually, often expanding nesting dimensions to as large as 8-feet by 12-feet. Trees supporting eagle eyries frequently die after continuous use, though. Fish oils from the nest seep through and kill underlying branches.

In Louisiana, the bald eagle usually begins repairing its domicile in the fall. Eggs may be found in the nest as early as December. After the eaglets (usually two) leave the nest they roam free and wide. Not until their fourth year when they acquire white head and tail feathers do they stop resembling hawks and start looking like eagles. During this period of maturation they are most vulnerable to danger.

Ray Aycock of the U.S. Fish and Wildlife Service alleges to have kept an accurate count on eagle nests in the state, and in 1976 he noted activity and occupancy by the eight pairs of birds mentioned previously.

The bald eagle is protected by both state and federal laws, and heavy fines are levied on anyone killing one.

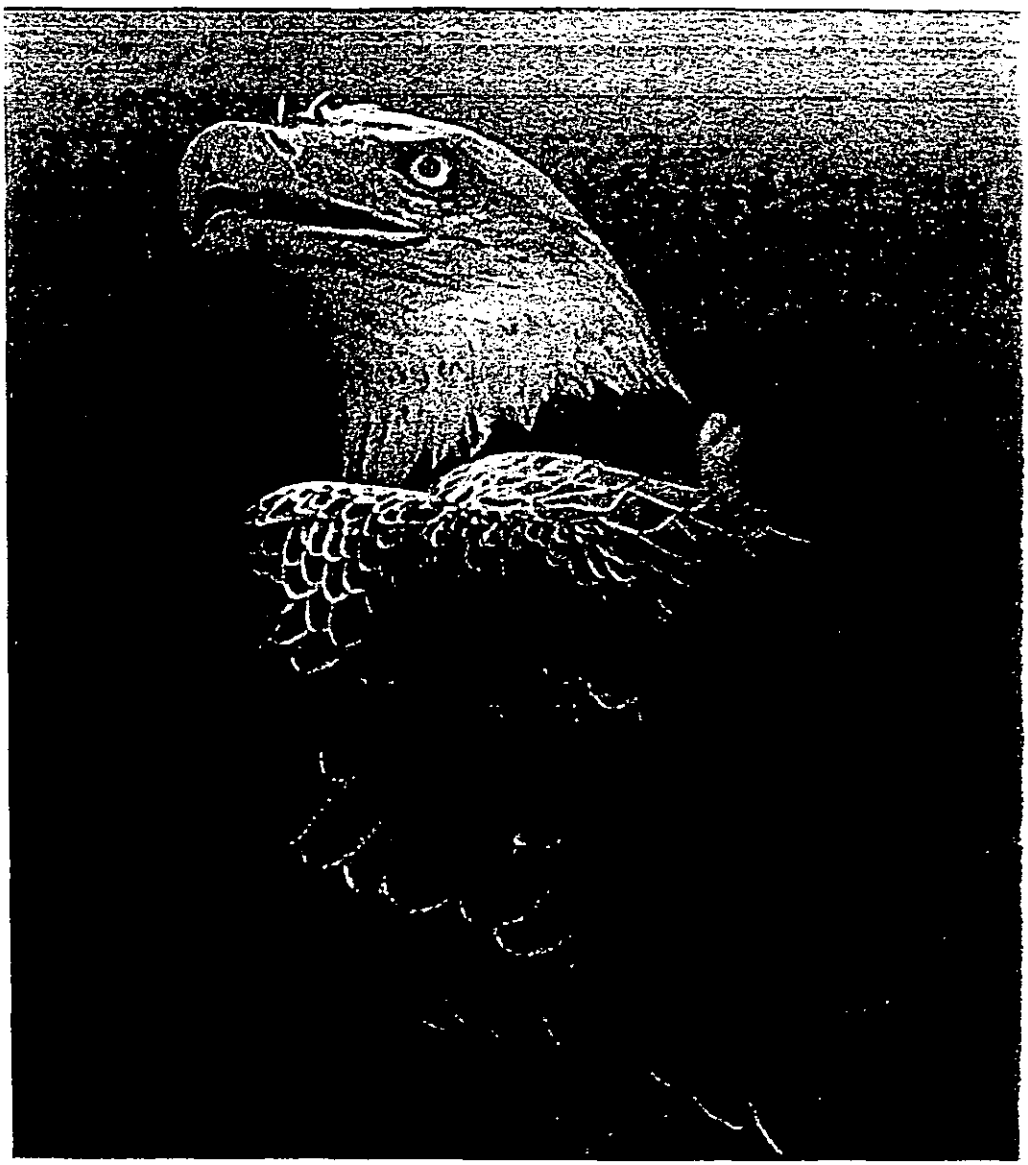
LOUISIANA Conservationist



Return of the Winter Nester

By Sara Ann Harris

Bald eagles, which mate for life and mutually participate in all phases of nesting, begin the reproductive cycle by refurbishing their massive nest, atop usually the tallest cypress in the swamp.



AS AN INTEGRAL PART of our American heritage, the bald eagle needs no introduction. Over 200 years ago the Continental Congress adopted our Great Seal with the bald eagle as our national bird. A captivating sight in flight, this nearly largest of raptors (birds of prey) with an incredible wingspan rules the sky in its remote wilderness home. An image of strength and independence, it aptly portrays freedom, the quality most cherished by Americans.

Since 1782, Americans have grown up with the image of the bald eagle. We've seen it perched atop flagpoles, embossed on currency, printed on the cover of history books, and on display in libraries, post offices and federal buildings of all kinds, featured on patriotic posters, worn on patches by scouts, armed services officers, Olympic athletes and astronauts.

As familiar as we are with the image of our national bird, we are probably that unfamiliar with the story behind the symbol. Many may be surprised to hear that its range is all of North America. And, on the flip side of that coin, it is the only eagle species *restricted* to this continent. Its scientific name *Haliaeetus leucocephalus* means white-headed sea eagle. An apt designation, for the adult has a completely white head and tail and the bald eagle is a species of fishers. Always residing near water, they swoop down and with strong talons snatch up their daily take. The common name—bald—was assigned this creature because at one time bald was synonymous with white.

Though we have a strong sentimental association with the bald eagle, few may know the plight of our chosen bird. For decades, it was slowly declining. Water pollution, loss of habitat and human intrusion were threatening its survival and in the lower 48 states the national bird was added to the endangered species list.

As mandated by protective legislation in the 1970s, eagle recovery teams were formed to draw up recovery plans, long term goals and objectives for the restoration of the bald eagle specific to five major eagle habitats in the country. This protective legislation, more substantial than earlier regulations, also prohibited any federal program from jeopardizing recovery efforts of the bald eagle. And it set up severe fines, imprisonment or both to keep the giant bird safe from any interference by individual or commercial ventures.

The eagle's decline was due primarily to agricultural runoff that was contaminating wetlands. Bald eagles are top-chain predators which means as adults they have no enemies in the wild except other eagles competing for territory. It also means they hunt large quantities of fish and so are particularly susceptible to any toxins these have ingested. Before the '70s when we cleaned up our waterways, bald eagles, which essentially are barometers of their environment, were experiencing dramatically decreased reproduction success. In

rivers the toxins of course infected microorganisms that were eaten by fish which in turn were scooped up by eagles. Pesticides cause a thinning of their eggshells and the consequent loss of young.

This silent killer as it is sometimes referred to by experts was not the only threat to eagles. Commercial efforts by timber companies, oil and gas corporations and developers in the past have leveled or so severely disturbed eagle habitat, sometimes with no knowledge of the bird's presence, that pairs of nesting eagles have abandoned nest trees and incubating eggs. Even aerial sightseers dipping down too close to a nest tree, on a cool day, for instance, where the parents are unaccustomed to such intrusions, will force a bird off the nest long enough for the eggs to cool—a natural sign to brooders that nest failure is imminent.

In summary and at the risk of oversimplifying matters, in the '70s we amended our non-ecological ways and today many species are experiencing the resulting upswing. With protective laws in place, clean water legislation passed, preservation of wild areas in progress and public education programs on the rise, the comeback of this majestic bird is inching forward. Through the efforts of many people who care, the National Wildlife Federation created four refuges in more northerly parts of the country where eagles can winter.

In Louisiana over the past decade there has been a very impressive rise in the bald eagle's nesting activity. Whereas in 1974 there were only five active nests known, as of 1985 there were 29. And eaglets, or young, which totaled in at four then, last year were up to 38 chicks. This was double the young sighted just one year earlier. More eagles nest in Louisiana than in any other southern state besides Florida. Though the conglomerate of reasons for the restoration of this deserving animal has already been mentioned, area experts point to the relatively high water quality in Louisiana as the single most important factor. The most recent conference of the Southeastern Association of Fish and Wildlife Agencies heard supportive research indicating lower pollutant levels in Louisiana waters than in many other states. And U.S. Fish and Wildlife Service biologists report that bald eagle shells are no longer thinning.

Bald eagles in Louisiana are again finding those conditions vital to rearing their young, the most basic of recovery tasks. They are nesting in the southeastern coastal cypress

Wilderness loving creatures, eagles distance themselves as best they can from civilization.

Eagle pairs build massive stick nests which in Louisiana they pad with moss and shredded cypress bark.

swamps where water is plentiful as is food. The parent eagles dive from tall nest trees for their favorite fish—shad. Here they also feed on waterfowl, especially gallinule and coot, and even furbearers, such as nutria.

An oddity among birds, the southern bald eagle begins its nesting cycle in the fall. The parents, which mate for life and return to the same nest year after year, mutually participate in all phases of nesting. Characteristically, they rebuild their nest or aerie to arrive at a tremendous stick bowl. With moss and shredded bald cypress bark, they lay a soft lining inside the huge construction. Only a downed tree or intrusion by another animal will detour the pair to an alternate nesting site.

The spectacular courting ritual viewed by very few begins at 2,000 or so feet in the air where the female (larger, as with all birds of prey) and male lock talons and tumble in a free fall or "cartwheel display."

Bald eagles usually lay two eggs; in Louisiana they are a dull white or buff. Male and female incubate in shifts with the free bird feeding the nest warmer and the male more frequently taking the hunting role. Temperature is critical to the success of the clutch and disturbance of any kind which forces the guardians away from their keep could be fatal. The parent birds then return to "bury" the unborns under a moss covering. A phenomenon only recently considered significant is the southern bald eagle's capacity for a second attempt at nesting in the *same* season. In the cypress swamps researchers have witnessed many such occurrences.

After a successful hatch, the chicks are nurtured for two or three months until growing flight feathers. Unlike many fledglings, after their first flight they do return to the nest for another month or so before the family migrates north. Very few birds then are sighted in Louisiana over the summer months. The nearly all brown juveniles very closely resemble golden eagles, though these are extremely rare here at any time of the year. Somewhat slow to mature, at 4 or 5 years old they acquire the full adult plumage of a totally white head and tail and pair off.

There is also the northern bald eagle to be considered in Louisiana counts. It nests in the spring up north and like the southern bird spends its winters in the south. Though they are slightly larger, not even a trained eye can differentiate between these and the residents. But their distance from any sign of a nest is telling. This northerner has been visiting in increased numbers.

Louisiana Department of Wildlife and Fisheries biologists are concerned for the bald eagle and have taken a particular interest in its nesting success. Fur and Refuge Division's Dave Richard has worked closely with the long time, ardent conservationist Wayne Dubuc, who was appointed to the Eagle Recovery Team. They are optimistic about the eagle's future in Louisiana. A native Louisianan, living in the most heavily nested parish in the state, Dubuc says about the eagle research, "This is my home. If it's here, we want to protect it. We are carrying on a tradition of 'use but don't abuse' and protecting a natural heritage that was meant to be shared with everyone."

The department puts into action the "Management Guidelines" of the *Recovery Plan: Southeastern States Bald Eagle* and contributes to the periodic revisions of these guidelines which protect the bird which is so important to us historically. As the program continues to be refined the chances are heightened for future Americans to actually view their wilderness loving mascot.

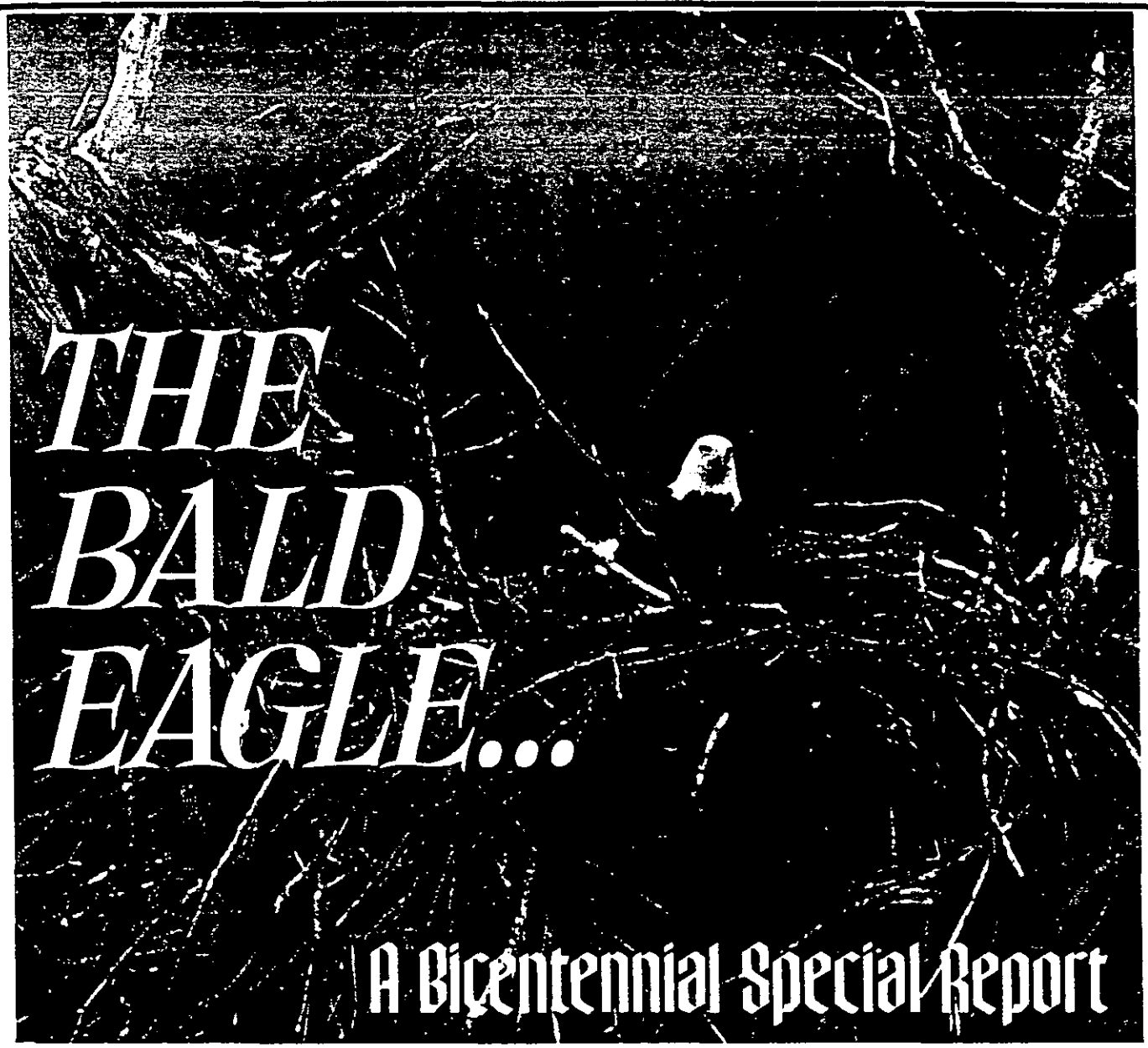
We can contribute to this delicate task of preservation by respecting our national bird's privacy to the utmost. Only with undisturbed nest areas can bald eagles survive and rear their young. It's imperative that we continue to support programs that conserve our coastal wetlands and hardwood bottomlands. Celebrate National Bald Eagle Day, June 20 (the day in 1782 that our founders selected the powerful bird for the nation's emblem) by making a commitment to yourself to get informed about conservation issues that impact the eagle's survival.

Guy Fischer

An oddity among birds, eagles mate for life.

These photographs were taken for instructional purposes by a researcher working with the Fish and Wildlife Service. The special permit issued him restricts his observation time to periods when eagles will be the least disturbed.

There are severe fines, imprisonment or both as mandated by federal and state laws for harassing eagles.



Bob Dennie

By McFadden Duffy

The bald eagle, a stately, powerful, fierce, sharp-eyed bird, is the paradoxical symbol of the United States. Most Americans see it daily on coins and currency. It appears on the official seal of the United States, clutching 13 arrows in one claw which represent the 13 original colonies and an olive branch in the other. Its talons denote strength in peace and war. It carries a streamer with the words E Pluribus Unum (Out of many, one.). Persons see it daily on posters and displays of a patriotic nature. People who can tell the denomination of currency at a glance can't remember offhand if a particular paper bill carries the national symbol. The same is true of coins. And, ironically, most individuals who can tell what appears on the national emblem often have never seen a real bald eagle.

Because Americans are turning back the pages of history and delving into all facets pertaining to the bicentennial celebration of independence they are increasingly interested in the American bald eagle and how it became a national symbol. They want to know the population status of a bird that for 200 years has been

regarded with mixed feelings across a nation. Some have been filled with pride at its regal aura. Others have considered it a renegade and treated it like an outlaw. Bounty hunters slaughtered bald eagles for profit for years.

State and federal laws have caused the penduium to swing back in the other direction during the last quarter-century. It now appears that the future of the bald eagle will be brighter. Its populations should increase in the years ahead. Public interest and concern, spurred by the bicentennial celebration year, will do a great deal to hasten the day when Americans of a generation yet to be born will know what the nation's official bird looks like — not from folding money or a pocketful of change or a patriotic poster.

The bald eagle has been a controversial bird for more than two centuries. When Benjamin Franklin, John Adams, and Thomas Jefferson were named to a committee to choose a seal by the Continental Congress, perhaps the first national disagreement over the qualities of the bald eagle emerged. Franklin wanted the wild turkey to stand as a symbol of America. He deemed the bald eagle a bird of dubious diet and character. He was outvoted by Adams and Jefferson who considered the eagle a bird that symbolizes "a free spirit, high soaring and courageous."

General George Washington, who had a flair for making official documents look even more official, was the first to use the new eagle seal. He affixed it to an order arranging exchange of war prisoners with Great Britain. After that the emblem appeared on proclamations, ratifications of treaties, and other official documents signed by the President. It is not only on currency and coins, but also adorns uniform buttons, federal statuary, and a host of other items.

To better understand Benjamin Franklin's disdain for the bald eagle it might be good to take a look at some of the characteristics of the bird, ones that contributed greatly to its downward plunge in numbers. With the single exception of the California condor, it is the largest bird of prey in North America. With a hooked, gold-yellow beak, used for tearing flesh, and its long curved talons, which grip and kill prey, the strength of the bald eagle is impressive.

The bird that is the national symbol is native only to North America. A few strays wander into extreme eastern Siberia, but the bird is as American as apple pie topped with ice cream. When seen in flight, the American eagle is a thrilling sight. With its gleaming white head thrust forward and its wings outstretched and steady, it can cruise slowly on a level course for a

ONCE NUMBERING HUNDREDS OF THOUSANDS, THE AMERICAN BALD EAGLE IS NOW ON THE ENDANGERED SPECIES LIST. FEW AMERICANS HAVE EVER SEEN THE FIERCE, MAJESTIC BIRD THAT IS THE SYMBOL OF THE UNITED STATES. IN THIS BICENTENNIAL YEAR THERE IS A SURGE OF INTEREST IN THE STATUS OF AMERICA'S OFFICIAL BIRD AND EFFORTS THAT ARE BEING MADE TO REBUILD ITS DWINDLED POPULATIONS.

Bob Dennie

remarkable time, or soar in wide circles high in the sky. Its vision is amazing. It can see for three miles. When an eagle sights prey, it dives with terrific speed — often 60 miles an hour — and then levels off, brakes, and snatches its prey in powerful talons.

Many persons will dispute this but fish comprise 65 to 90 percent of a bald eagle's diet. It also eats waterfowl, seabirds, grebes, loons, herons, small rodents, crows, rats, crabs and carrion. In Alaska and Canada, where bald eagles are most plentiful, salmon and herring comprise the bulk of an eagle's food. It is true that a few fish are taken on their way to upstream spawning areas, but most are captured, dead or dying, after spawning.

Bald eagles do not destroy many valuable animals. The accusations against the birds nesting around muskrat marches, or near lairs of other furbearers are usually unfounded; the animals attacked are often sick, making the bald eagle's role an important one in preventing the spread of disease.

There are many times when the American eagle allows the smaller osprey to gather its groceries. When the osprey catches a fish, its larger and smarter cousin swoops down on it, flustering it until it drops its prey, which then belongs to the eagle. It certainly does not mean that the eagle cannot capture its own food. It's easier to pick it up after the osprey drops it. Sometimes this is done in the air before the potential meal falls to the ground, or the surface of a body of water.

The great eagle's fierce appearance and grand power of flight give many people false ideas about its feeding habits. This is passed along by word of mouth and the eagle is still branded as an aggressive marauder that swoops down from the sky to capture pets, poultry, lambs, and even small children. This is a firm belief that has prevailed over many years. In reality, the eagle weighs from about 10 to 14 pounds and can not possibly carry its own weight in flight.

Unfortunately, the bird's great abundance in Alaska incurred the anger of fox farmers. They claimed their animals were being attacked. Commercial fishermen also complained that too many migrating fish were being killed before they could spawn. The result in Alaska was a bounty on bald eagles from 1917 to 1952, which continued 12 years after the United States passed protective legislation. During this period the Alaska legislature paid more than $100,000 in bounty payments for more than 100,000 bald eagles. In 1959, Alaska finally came under federal law. Today, it is the only state in which the birds are plentiful.

The legends of marauding attacks by bald eagles can be found throughout the country. For generations legends were fanned into raging fires of vengeance by exaggeration and distortion. Sheep herders and cattlemen killed the eagles and paid others to kill them. Certainly vast numbers of bald eagles have been wantonly slain. The tragic thing is that most of the persons who did the killing or paid to have it done were not aware that the bird in question was the national symbol of the United States. Perhaps most ironic in any report on the bald eagle is the fact that the currency or coin paid bounty hunters contained the image of the eagle clutching the symbolic arrows and olive branch. The birds were killed hastily and the money pocketed just as hastily. There was little concern how the mints decorated money.

Protective legislation was enacted in 1940 which made it unlawful to take, possess, sell, purchase, barter, transport, export or import, or shoot any bald eagles.

The eagle populations were on a downward spiral by the time protection was afforded in the contiguous states. An extensive survey conducted in 1966 showed only approximately 600 breeding pairs. This was only half the number of breeders that had existed some 20 years before. The national bird was in trouble. Three major reasons for the decline were given. These were loss of suitable nesting habitat; widespread shooting, particularly

Wayne Dubur

Bob Dennie

of immature birds; and broad use of pesticides.

In Louisiana, as elsewhere in the deep South, there was once a substantial number of bald eagles. Nesting pairs in the state were, and still are, augumented in numbers particularly in January and February by migrant birds fleeing the harsh winters of the midwestern states. The wintering birds like to frequent large water areas such as Toledo Bend and Lake D'Arbonne. They find an adequate supply of fish and other food. Food is plentiful also in the timber-marsh areas where most of Louisiana's present nesting eagles are found. This spring there are eight active nests in Louisiana. These are located in Terrebonne, Jefferson, St. Charles and Assumption parishes, between New Orleans and Morgan City.

The nesting eagles usually arrive back at the eyries or nests in late September and October. By November, the nests are conditioned. In December, nests contain eggs. The period of incubation is just over 30 days. The young eagles remain in the nest about 10 or 12 weeks, becoming fully fledged by March.

The Louisiana Wildlife and Fisheries Commission fully assisted in initial surveys of bald eagle populations in Louisiana. Active nests are also monitored by Ray Aycock, U.S. Fish and Wildlife Service, who operates out of Baton Rouge. At the time this article was being prepared, Aycock had visited six of the eight active nests and reported nine young birds sighted, with eggs still being incubated in one nest. This was a slight increase over last year.

Tall trees are ideally suited for eyries, which are usually constructed 50 to 100 feet above the ground. The position of branches determines the shape of the nest, which can be cylindrical, bowl-shaped, or an inverted cone. Many eyries are on the top of dead trees but this is not done purposefully. After many years of use, fish oils seeping out of the nests into the bark stop the upward flow of sap killing the trees. In some sections of the country, rocky cliffs or even the bare ground have been used for nest sites.

The active Louisiana nests are located in cypress trees standing in areas that are mostly swamp and marsh, either adjacent or near watered areas which are primary sources of food. The eyries are easily visible from both helicopters and light fixed-wing aircraft.

Full reports on Louisiana's active eagle nests are prepared four times a year by Wayne Dubuc, a marine surveyor who lives in Morgan City. Five years ago while on a trip to Florida, Dubuc became vitally interested in bald eagles after seeing some nesting in that state. He became so enthusiastic about the sight of the national bird that he bought a camera and returned to Florida the following year to photograph eagles and their nests.

Not too long afterward, while on a routine business trip in a helicopter he spotted what he was certain to be bald eagle nests in a swampy area along the frequently traveled helicopter route. The pilot shared his enthusiasm and they agreed to return that weekend for photographs and a close look at the active eyrie.

This was several years before the present bicentennial year that sparked national interest in the bald eagle. His photographs and reports impressed Frank Lee, a vice president of Petroleum Helicopters, Inc., whose fleet of helicopters serve many facets of the offshore oil industry. Lee authorized a free flight every second Sunday so that Dubuc could monitor the nesting activities of Louisiana's very special eagles. The helicopter company certainly deserves a nod of thanks because the company's generosity and interest were made evident long before the relatively recent concern for the national bird.

Soon after he began monitoring the activities of the bald eagle, Dubuc met Ray Aycock. He has been furnishing detailed reports four times a year to the U.S. Fish and Wildlife Service. In talking with Dubuc, he revealed that on some occasions the parent birds make angry attacking movements toward a circling helicopter. In those instances, the helicopter moves on, to return at a later date. The bald eagle is no match for a big helicopter but the eagles have to be convinced. It is this stately fierceness that makes the bald eagle a fitting symbol of the United States. Perhaps John Adams and Thomas Jefferson were right in outvoting Benjamin Franklin.

Bob Dennie

The bald eagle, paradoxical symbol of the United States, is an impressively strong bird, can spot prey on the ground three miles away, can dive at speeds up to 60 miles an hour, and rarely ever misses its target. Eagles nest in pairs and select tall trees for their eyries. Note the eagle chick just below the mother's left wing.

RE-ESTABLISHMENT OF THE LOUISIANA BROWN PELICAN

by

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Presented at the

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Monroe, Louisiana

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The demise of the Louisiana brown pelican (Pelecanus occidentalis) has been well publicized. In 1968, seven years after the brown pelican ceased to nest in Louisiana, the Louisiana Wild Life and Fisheries Commission and the Florida Game and Fresh Water Fish Commission jointly undertook a program to re-establish the species by stocking previously occupied range with young birds from Florida colonies.

Several governmental agencies and private organizations showed enthusiastic interest and participated in the original organizational phases of this program. These agencies included Southeastern State Game Departments, the Bureau of Sport Fisheries and Wildlife, the National Audubon Society, and private organizations.

We are extremely pleased to report that encouraging results have been achieved with this re-introduction program. Reproduction has progressively increased over the past four years.

In July, 1968, fifty flightless brown pelicans, 9 to 12 weeks of age, were captured at Hall Island, Florida and transported to

Rockefeller Refuge, Louisiana. These birds were held under captive conditions at Rockefeller until September and then released at two locations. Twenty-five birds were released at Grand Terre, Louisiana and 21 at Rockefeller Refuge. The Rockefeller release eventually died out during late winter while the Grand Terre release did amazingly well.

The encouraging results achieved with the Grand Terre release prompted us to make all future releases in the Barataria Bay complex (Grand Terre Island).

After the first experience in 1968, it was evident that the pelicans could care for themselves as soon as they could fly. Thereafter, all 415 pelicans were released on a brackish lake on Grand Terre and permitted to go free immediately upon being released from the truck. Direct releases were made each year from 1969 through 1973.

All young pelicans were banded with a U. S. Fish and Wildlife Service leg band and also a white wing streamer was attached for identification purposes.

The pelicans generally remained on the release pond adjacent to the Grand Terre Marine Research Laboratory until they could fly. A few could fly within a week after release (10-12 weeks of age) but most could not fly well until about three weeks after being released. Trawl remnant fish, predominately Atlantic croaker (Micropogon undulatus), was purchased locally and fed until it was

determined that the young birds could feed for themselves. After they could fly, they fished in Barataria Bay, close to the release site and also took trash fish dumped by commercial fishing boats returning to port.

Periodic inventories indicated that survival was quite good. Approximately 200 pelicans could usually be counted at the Queen Bess Island nesting area during 1973.

Reproduction was first reported in 1971, when eight young survived to be eventually banded. The parent birds were three years of age at this first nesting effort. The number of young produced each year progressively increased thereafter; 14 in 1972, 26 in 1973, and 82 thus far for the late 1973-early 1974 nesting effort.

Eight nesting attempts have been made during this investigation; one attempt in 1971, four in 1972, two in 1973, and thus far one attempt in 1973-74. While four different land areas were used, they were all located within 1½ miles of the original release site.

A small shell reef was the first nesting site chosen (1971). This reef was washed away after the first successful nesting effort.

The initial three attempts during 1972 resulted in failure. High tides inundated all of the nests. Finally a successful nesting effort was managed on a small shell island with a natural wave

barrier around the perimeter.

The first attempt in 1973 was destroyed by high tides. Then the birds moved a short distance to a fairly high beach on a large size island. This was the first attempt on a suitable site and also one that contained bush growth.

It is interesting to note that double nesting was initiated in the same calendar year in 1973. A nesting effort was begun in mid-November of 1973 (82 young produced thus far) and continued until the present time in the same area as was used for the April-May effort of 1973 (26 young produced).

Nest dimensions for 91 nests measured during 1973 indicated an average nest was 30.0" long x 25.3" wide x 8.8" high. The average egg cavity dimensions were 11.9" x 10.8" x 3.5" deep. Twenty-seven percent of the nests had no depression for the eggs. Thirty percent of the nests were contructed in "trees" (Avicennia and Lycium), with the average height off the ground being 13".

Nests were generally constructed of black mangrove (Avicennia nitida), roseau cane (Phragmites communis), sea purslane (Sesuvium sp.), sea-matrimony (Lycium carolinianium), and oyster grass (Spartina alterniflora). Man-made materials, such as window screen, rope, pieces of plastic, and fishing line was seen quite commonly.

The onset of laying varied considerably from year to year and the termination of nesting seemed to be determined by how long it took to bring off a successful nesting attempt.

Dates on which nests were first discovered for different nesting attempts over the four years were:

1971 - 23 March - Successful.

1972 - 1 January - Unsuccessful, inundated by high tides.

- 20 January - Unsuccessful, inundated by high tides.

- 10 February - Unsuccessful, inundated by high tides.

- 20 February - Successful.

1973 - 19 February - Unsuccessful, inundated by high tides in late March.

- 5 April - Successful.

1973-74 - 15 November - Successful; important to note that two distinct, widely separated (time interval) nesting efforts occurred in same calendar year.

Clutch size was determined to be about 2.7 for productive nests during both the 1972 and spring 1973 nesting efforts.

Hatching success for 1972 and early 1973 averaged 48.7 percent and 35.1 percent respectively. The survival rate (mortality) for 1972 was 25.9 percent and for 1973 an amazing 67 percent. Mortality was extremely high the first week after hatching. Down tufts did not emerge until six to seven days after hatching, leaving the young hatchlings particularly vulnerable to the elements (sun, wind, cold, etc.).

The rearing procedure was typical of an altricial species, the young being fed and cared for in the nest. At one to two

days of age, the young were fed regurgitated anchovies (Anchoa mitchilli). As the young birds grew, larger species of fish were consumed. These species included anchovy, menhaden (Brevoortia patronus), striped mullet (Mugil cephalus), and Atlantic threadfin (Polydactylus octonemus).

Development of the young birds progressed slowly. Flight was attained from nine to twelve weeks of age and by the twelfth week the nesting area was abandoned.

Eggs collected from the 1971 and 1972 nesting efforts indicated some egg shell thinning was present. Measurements taken from seven eggs collected in 1971 indicated a 7.4 percent thinning and from 39 eggs collected in 1972 indicated a 12.3 percent thinning (Blus, Joanen, Belish, Prouty, 1973).

Although the restocked pelicans have been nesting successfully, it is still too early to declare the reintroduction to be completely successful. On the other hand, their survival and increasing breeding success indicate that the new population is probably not experiencing the same environmental factors, whatever they might have been, that extirpated the original Louisiana brown pelican population.

The successful reproduction, eggshell thickness measurements comparable to Florida's recent nesting efforts, and low DDT body residues in the restocked birds during the period between 1971 and 1974 suggests that exceptionally high levels of chlorinated

hydrocarbon pesticides are not present in the pelican's Louisiana environment at this time.

The future of the Louisiana Brown Pelican looks much brighter at present than it did just six or eight years ago. If the reproductive trend continues to progressively increase coupled with future releases of Florida hatched pelicans, our official state bird may once again be a common sight along sections of our coast.

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Brown Pelican: Population Status, Reproductive Success, and Organochlorine Residues in Louisiana, 1971-1976

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In a previous report (BLUS et al. 1975), we briefly described the recent troubled history of the brown pelican (Pelecanus occidentalis) in Louisiana and discussed the relationship of organochlorine pollutants and certain metals to the welfare of the newly established breeding colony in Barataria Bay. The purpose of this report is to further interpret the impact of organochlorine residues on population status and reproductive success of Louisiana brown pelicans.

MATERIALS AND METHODS

The materials and methods closely followed those in our previous report (BLUS et al. 1975). Approximately 800 pelican nestlings were transplanted from Florida to Louisiana from 1968 through 1976. From 1971 through 1976, 171 eggs were collected including freshly laid eggs and both viable and addled eggs in all stages of incubation. The eggs were frozen soon after collection and were sent to the Patuxent Wildlife Research Center several months later for processing, measurement of eggshell thickness, and analysis for organochlorine pollutants.

The contents of 110 eggs were analyzed individually for residues of organochlorine pesticides, their metabolites, and polychlorinated biphenyls (PCB's). For eggs collected in 1971, the contents of the entire egg were homogenized, and a 20-g portion of the homogenate was mixed with anhydrous sodium sulfate in a blender and extracted for 7 hours with hexane in a Soxhlet apparatus. The extract was cleaned up by acetonitrile partitioning and eluted on partially deactivated Florisil. For pesticides, residues in the cleaned extract were separated and removed in four fractions from a silica gel thin-layer plate (MULHERN et al. 1970). Each thin-layer fraction was analyzed by electron-capture gas chromatography (GC) on a column of 3% OV-1 or 3.8% UCW-98 on Chromosorb WHP. DDT and its metabolites in fractions III or IV were confirmed on a column of 3% XE-60 or 3% QF-1 on Gas Chrom Q. Polychlorinated biphenyls were identified and measured semi-quantitatively by thin-layer chromatography (MULHERN et al. 1971). The average recoveries of organochlorine pesticides and their metabolites ranged from 75 to 112 percent.

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For eggs collected from 1972 to 1976, the methodology was modified as described by CROMARTIE et al. (1975). The extract of the 10-g portion was cleaned up on a Florisil column. Pesticides and PCB's were separated into three fractions on a Silicar column and analyzed by GC on a 4% SE-30/6% QF-1 column. Using this methodology, we were able to detect additional pesticides (toxaphene, cis-chlordane and/or trans-nonachlor, and cis-nonachlor). Before 1973, we did not have a cis-nonachlor standard for quantitation, and a procedure to estimate toxaphene levels was first developed in 1973. For the eggs collected in 1974 through 1976, the lipids were removed either by a Florisil column or by automated gel permeation chromatography. In 1974, we were able to separate and quantitate cis-chlordane and trans-nonachlor by changing to a 1.5% OV-17/1.95% QF-1 column. A combined gas chromatograph-mass spectrometer (GC-MS) was used to confirm residues in about 10 percent of the samples. The average recoveries from spiked chicken eggs ranged from 81 to 110 percent.

RESULTS

Population status — From 1968 through 1976, 765 young pelicans were transplanted from Florida to Louisiana. The transplanted pelicans in Barataria Bay started breeding in 1971, and the breeding population increased each year (Table 1) until a disastrous die-off in May and June 1975 reduced the population 40% from 400 to 250 birds. Several months earlier, a die-off of approximately 100 white pelicans (*Pelecanus erythrorhynchos*) occurred near the same area.

TABLE 1

Reproductive success of brown pelicans in Louisiana

Year	No. of nests	Number of young fledged	
		Total	Per nest
1971	13	8	0.62
1972	28	14	0.50
1973	50	26	0.52
1974	83	104	1.25
1975	62	13	0.16
1976	38	56	1.47

On the basis of a recruitment standard of 1.2 to 1.5 young per breeding female necessary to maintain a stable population (HENNY 1972), the standard was attained in 1974 and 1976 (Table 1). The poor reproductive success in several years was partially attributable to pelicans nesting on a low shell bank where tide-waters washed away most nests. Flooding was a minor problem in

1976 because the pelicans nested on a higher island where approximately 20% of the nests were in black mangroves (Avicenna nitida).

There has been some problem with breeding phenology of the pelicans that were transplanted from Florida to Louisiana. The breeding season of pelicans on the Atlantic Coast of Florida is irregular and may occur year-round. The breeding season of pelicans on the Gulf Coast of Florida begins in March or April and continues into late summer (MASON 1945) — the same breeding season as that of the original population of pelicans in Louisiana (OBERHOLSER 1938). Florida pelicans transplanted to Louisiana and their offspring have followed the breeding schedule of Atlantic Coast pelicans and reproductive activities occur throughout the winter. Consequently, they are sometimes exposed to harsh weather such as on 20 December 1976 when 48 active nests failed after temperatures in the 20's (^{o}F) were recorded. Future plans call for utilization of Florida Gulf Coast pelicans in the transplanting program.

Eggshell thickness — Eggshell thickness means of pelican eggs from 1971 through 1976 averaged 6.7 to 13.5% less than the mean thickness for eggs collected before 1947 (Table 2). Multiple range tests (KRAMER 1956) and tests for sample size (SOKAL and ROHLF 1969) indicated a significant difference between the pre-1947 mean and each of the other means except 1971 ($P < 0.05$, power = 0.9, and coefficient of variation = 6%).

TABLE 2

Eggshell thickness of brown pelican eggs from Louisiana

Year	No. of eggs	Thickness (mm) Mean + Standard Error	Range
Pre-1947*	24	0.554 ± 0.007 a**	
1971	7	0.517 ± 0.007 ab	0.49-0.53
1972	39	0.486 ± 0.006 b	0.41-0.57
1973	21	0.488 ± 0.009 b	0.40-0.54
1974	25	0.479 ± 0.005 b	0.44-0.54
1975	30	0.480 ± 0.006 b	0.40-0.56
1976	25	0.494 ± 0.009 b	0.42-0.63

*Pre-1947 eggshell thickness data from ANDERSON and HICKEY (1970); range not listed.
**Means sharing a common letter are not statistically different ($P > 0.05$) from one another as calculated by multiple range tests (KRAMER 1956) and tests for adequate sample size (SOKAL and ROHLF 1969).

Residues — All of the eggs analyzed contained residues of

p,p'-DDE and polychlorinated biphenyls (Table 3). Most eggs contained residues of p,p'-DDD, dieldrin, and endrin. Residues of p,p'-DDT, heptachlor epoxide, hexachlorobenzene, toxaphene, and chlordanes were also identified; however, mirex residues were not identified in any of the samples.

We previously reported an absence of endrin in brown pelican eggs collected in Louisiana from 1971 through 1973 (BLUS et al. 1975). Since then, we reanalyzed those eggs and found endrin in all of them. Endrin was also present in most of the eggs collected from 1974 to 1976 (Table 3).

Sufficient residue data were available to statistically analyze trends for DDE, DDD, dieldrin, PCB's, and endrin. Although there were significant differences ($P < 0.05$) between DDE means for several years, there was no pronounced trend (Table 3). PCB residues remained essentially the same through the 6 years. There were some significant differences ($P < 0.05$) between years for DDD residues, but like DDE, no trend was evident. There was a significant increase ($P < 0.05$) in dieldrin residues during the study; endrin residues increased significantly ($P < 0.05$) through 1975 then dropped sharply in 1976.

DISCUSSION

There has been much speculation as to the cause of the extirpation of the large breeding population of brown pelicans in Louisiana (JAMES 1963, JOANEN and DUPUIE 1969, BLUS et al. 1975, and KING et al. 1977). Estimates of the Louisiana population during 1918 to 1933 ranged from 12,000 to 85,000 pelicans (KING et al. 1977). Birds from the original Louisiana population were last seen nesting in 1961 (VAN TETS 1965).

Data from Christmas bird counts indicated that the Louisiana brown pelican population crashed in the late 1950's and was extirpated by 1963 (JAMES 1963). Obviously, the agent or agents responsible for the disappearance of a population containing thousands of pelicans within a few years was extremely lethal to these normally long-lived sea birds (HENNY 1972). Furthermore, the brown pelican was extremely sensitive to the causative mechanism since it was the only species known to be extirpated in the Louisiana estuaries at that particular time.

There was no direct evident regarding the agent or agents responsible for the disappearance of the original population; however, prolonged freezing temperatures, hurricanes, disease, and endrin were mentioned as possible causes (BLUS et al. 1975, KING et al. 1977). Die-offs involving several species of fish and other vertebrates occurred every year from 1960 through at least 1963 (U.S. CONGRESS 1964). Endrin was implicated in the 1963-1964 die-off of fish when diagnostic lethal levels of endrin were found in the blood of dead or dying fish (MOUNT and PUTNICKI 1966); there were no residue analyses of pelican

tissues or eggs at that time.

Residues of endrin and several other organochlorines were found in tissues of brown and white pelicans involved in the die-offs in Louisiana in 1975 (WINN 1975). Endrin was the major factor in the die-offs because residues in brains of several of the pelicans were similar to those found in brains of experimental birds dying on endrin dosage (LUDKE 1976, W. H. STICKEL 1977). The die-off in 1975 coincided with the peak in endrin residues in pelican eggs; this tends to substantiate the contention by WINN (1975) that endrin residues were unusually high in Barataria Bay in the spring of 1975. The die-off in 1975 indicated that the brown pelican is sensitive to endrin--the white pelican was the only other organism involved in the die-off. This is in contrast to the die-offs in 1958 to 1963 when fish, snakes, turtles, and several species of birds were involved (U.S. CONGRESS 1964).

On the basis of our studies with brown pelicans in South Carolina (BLUS et al. 1974), residues of DDE were high enough in Louisiana brown pelican eggs to induce eggshell thinning but were not high enough to interfere with reproductive success. The significant ($P < 0.05$) increase in dieldrin concerned us initially, but pelicans in Louisiana had an excellent reproductive season in 1976 when their eggs contained an average of 0.94 μg/g of dieldrin. Dieldrin may have exerted an adverse effect on reproduction in several females that laid eggs containing 2 or 3 μg/g. The effect of endrin on reproductive success is unknown, but the egg with the highest residues (1.47 μg/g) contained an embryo that died while pipping.

Although the combined effect of several agents may have caused the demise of the original brown pelican population, the apparent sensitivity of the brown pelican to endrin in the 1975 die-off and high levels of endrin in biota in Louisiana estuaries at the time of extirpation strongly suggest that endrin was the major factor in the extirpation, acting primarily through direct toxicity to the pelican and perhaps secondarily through food shortage as a result of short-term reductions in prey fish populations.

The brown pelican population in Louisiana has received several severe setbacks and is not yet self-sustaining. The future of this population remains uncertain and, among other factors, is dependent upon decreased exposure to endrin. Declining agricultural usage of endrin in Louisiana and neighboring states (EPA 1975) and a decline in endrin residues in pelican eggs from 1975 to 1976 are optimistic signs.

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TABLE 3

Residues of organochlorine pollutants in eggs of the brown pelican from Louisiana

	µg/g (fresh wet weight)								
Year	p,p'-DDE	p,p'-DDD	p,p'-DDT	Dieldrin	Heptachlor epoxide	Chlordanes**	Toxaphene	PCB's	Endrin
1971 (3)*									
G.M.***	0.97 ab****	0.28 abcd	0.10	0.33 a	--	--	--	3.91 a	0.10 a
Range	0.58-1.30	0.18-0.40	ND-0.14	0.24-0.54	ND	NI	NI	3.0-5.0	0.08-0.12
1972 (12)									
G.M.	1.36 a	0.26 cd	0.15	0.45 a	--	0.39	--	3.51 a	0.18 ab
C.L.	1.0-1.68	0.20-0.34	0.10-0.22	0.33-0.61	--	0.28-0.55	--	2.92-4.21	0.12-0.27
Range	0.82-2.58	0.17-0.52	ND-0.32	0.30-0.79	ND-0.24	0.12-0.82	NI	2.30-6.40	0.11-0.29
1973 (21)									
G.M.	1.31 a	0.19 d	0.16	0.64 b	0.15	0.49	0.32	2.89 a	0.16 a
C.L.	1.08-1.85	0.16-0.24	0.12-0.20	0.56-0.73	0.13-0.17	0.42-0.57	0.27-0.39	2.44-3.44	0.12-0.21
Range	0.58-2.09	ND-0.60	ND-0.31	ND-0.31	ND-0.35	0.33-1.10	0.12-0.58	1.10-5.30	0.03-0.46
1974 (25)									
G.M.	0.68 b	0.41 b	--	0.84 c	0.10	0.27	--	2.65 a	0.30 b
C.L.	0.55-0.85	0.32-0.53	--	0.75-0.95	0.08-0.12	0.20-0.36	--	2.08-3.37	0.25-0.37
Range	0.22-1.79	ND-0.86	ND-0.20	0.49-1.61	ND-0.28	ND-0.61	ND	0.69-6.96	ND-0.73
1975 (30)									
G.M.	0.78 b	0.76 a	--	1.08 d	0.16	0.41	0.16	3.03 a	0.50 c
C.L.	0.63-0.96	0.69-0.84	--	0.97-1.20	0.14-0.18	0.32-0.50	0.11-0.22	2.63-3.50	0.44-0.57
Range	0.18-2.36	0.48-1.59	ND-0.41	0.64-2.25	0.09-0.38	ND-1.31	ND-0.73	1.49-8.02	0.29-1.06
1976 (25)									
G.M.	0.92 a	0.36 bc	--	0.94 cd	0.17	0.32	0.11	3.63 a	0.29 b
C.L.	0.80-1.07	0.31-0.41	--	0.79-1.11	0.14-0.21	0.26-0.39	0.09-0.14	3.12-4.21	0.23-0.36
Range	0.48-2.66	0.21-1.00	ND-0.10	0.44-3.03	ND-0.51	0.17-1.05	ND-0.27	2.06-8.90	ND-1.47

* Sample size in parentheses.

** Chlordanes include cis-chlordane, cis-nonachlor, trans-chlordane, and oxychlordane.

*** Abbreviations: G.M. = geometric mean, C. L. = 95% confidence limits, ND = no residue detected, and NI = residues not identified by chemical methodology used.

**** See footnotes in Table 2 for explanation of letters.

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The Brown Pelican and Certain Environmental Pollutants in Louisiana

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The recent history of the eastern brown pelican (Pelecanus occidentalis carolinensis) in Louisiana has involved the extirpation of a once flourishing population; a small breeding population has now been reestablished from birds taken from the stable Florida population. The elimination of the pelican as a breeding bird in Louisiana came about with little publicity, and the process was complete by the early 1960's.

The pelican population in Louisiana was a large one, but it is difficult to determine the thoroughness and accuracy of the early counts. BAILEY (1920) reported 50,000 brown pelicans on the Mud Lumps, which are small islands at the mouth of the Mississippi River. PEARSON (1919) reported 65,000 brown pelicans on the Gulf Coast from Texas to Florida. OBERHOLSER (1938) listed about 5,000 breeding pairs for the entire State and estimated only 4,550 pelicans on the Mud Lumps. The last record of nesting brown pelicans in Louisiana was in 1961 when VAN TETS (1965) found 200 breeding pairs and 100 nestlings on North Island. We do not know the reasons for the population decline, although JOANEN and DUPUIE (1969) theorized that hurricanes, diseases, and pesticides were the major causes. Pelicans have been exposed to hurricanes and diseases throughout their existence, but the addition of adverse effects induced by pesticides or other pollutants may have been enough to push them into extinction in Louisiana. Now that transplanted pelicans from Florida have established a small breeding population, it it important to determine the levels of environmental pollutants in these pelicans and to determine the effects of these pollutants.

METHODS

Field work involved collecting eggs from the colony, counting nests and young, and transplanting the young. The transplanting program involved 465 nestlings imported from Florida from 1968 through 1973. Fifty of these birds were released at Rockefeller Refuge, and the remainder were released at Grand Terre. The Rockefeller release failed, but a small breeding colony has been established at Grand Terre where birds began nesting in 1971. The period of this study includes 1971 through 1973.

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In the 3 years of study, 67 eggs were collected. Freshly laid eggs and both viable and addled eggs in all stages of incubation were collected. The eggs were frozen soon after collection, and they were sent to the Patuxent Wildlife Research Center several months later. The egg contents were then removed from the shell and refrozen. The shells were thoroughly washed and allowed to dry. The eggshell thickness was measured to the nearest 0.01 mm at three points along the waist of the egg with a Starrett 1010M micrometer.

The contents of 36 eggs were analyzed individually for residues of organochlorine pesticides, their metabolites, and polychlorinated biphenyls (PCB's) at the Patuxent Center. The methodology used in analyzing the eggs collected in 1971 (MULHERN et al., 1970) was modified and improved when later samples were analyzed (BLUS et al., 1974a). Electron capture gas chromatography and several types of columns were used each year. Thin layer chromatography was used to analyze PCB residues in eggs collected in 1971 and a portion of the eggs collected in 1972 (MULHERN et al., 1971). The major change in the analytical techniques involved use of the silicic acid column in 1972 and 1973; this permitted the separation of the organochlorine residues into three fractions. DDE was quantitated by peak height to avoid errors from PCB interference; the other organochlorines were measured by digital integration of area and PCB's were estimated by comparing total area of PCB peaks with that of Aroclor 1260. Mass spectrometry was utilized in confirming residues in some of the eggs. Recoveries from eagle tissue spiked with the organochlorine pesticides and Aroclor 1254 ranged from 90% to 109%. Residues in the pelican eggs were not corrected for recovery values.

Five of the eggs analyzed for organochlorines were also analyzed for six metals by the Environmental Trace Substances Center, Columbia, Missouri. Atomic absorption was used to detect residues of mercury, zinc, copper, cadmium, and lead; neutron activation analysis was used to detect nickel. The lower limit of sensitivity in detecting residues (μg/g) was 0.01 for pesticides or their metabolites, 0.5 for the PCB's, 0.005 for cadmium, 0.01 for nickel, 0.025 for lead and mercury, and 0.05 for zinc and copper. The residues are expressed on a fresh wet weight basis. Certain external egg measurements (length x breadth^2) were significantly correlated ($P<0.01$) with weight of the contents of fresh eggs. The resulting regression equation was used to convert egg content weight to fresh wet weight (STICKEL et al., 1973). Freshly laid pelican eggs contained 85 percent moisture (determined by lyophilization) and 4.4 percent lipids.

RESULTS AND DISCUSSION

The Transplanting Program -- In 1971, transplanted brown pelicans produced eight young; this was the first indication that the program had a real potential for replenishing the brown pelican population in Louisiana. The number of nests and number of young fledged increased through 1973 (Table 1). The number of fledglings produced per nesting effort was less than the 1.2 to 1.5 young estimated as necessary to maintain a stable population (HENNY, 1972). The pelicans initially selected a low shell bank for nesting, and some nests were flooded periodically by high tides. This problem was largely alleviated when the birds selected another island and constructed their nests in low black mangroves (*Avicenna nitida*).

TABLE 1

Reproductive success of brown pelicans transplanted in Louisiana.

Year	Number of Nests	Number of Young Fledged	
		Total	Per Nest
1971	13	8	0.62
1972	28	14	0.50
1973	50	26	0.52

The current increase in the breeding population (Table 1), is related to transplanted pelicans attaining breeding status rather than to recruitment of the young reared in Louisiana into the breeding population. Because of current subnormal reproductive success, the long-term outcome of the transplanting program is still somewhat in doubt. The continued growth and future of the brown pelican population in Louisiana is dependent upon the identification and alleviation of the agent or agents that induced the extirpation of this species. Population growth may be affected adversely by numerous factors including pollution, loss of nesting habitat, or other adverse alteration of the ecosystem that either played a role in the demise of the pelican or have emerged since its extirpation.

Eggshell thickness -- On the basis of eggshell thickness measurements obtained from 24 brown pelican eggs located in museums, the mean pre-1947 eggshell thickness of Louisiana eggs was 0.554 mm (ANDERSON and HICKEY, 1970). The shell thickness of contemporary eggs averaged 0.517 mm in 1971, 0.486 mm in 1972, and 0.488 mm in 1973 (Table 2). The pre-1947 eggshell thickness

was significantly greater ($P<0.05$) than that measured in either of the 3 later years, but the 1971 thickness was significantly greater ($P<0.05$) than either the 1972 thickness or the 1973 thickness (Table 2). Although it is not definitely established that the 7 percent eggshell thinning in 1971 and 12 percent thinning in 1972 and 1973 are affecting reproduction, thinning of 18 percent or less has been associated with lowered reproductive success in other birds used in experimental studies (HEATH et al., 1969; LONGCORE et al., 1971). Eggshells of brown pelicans are thinning in all sections of this species' range in North America (BLUS 1970; BLUS et al., 1971; KEITH et al., 1970).

TABLE 2

Eggshell thickness of brown pelican eggs from Louisiana.

Year	Number of Eggs	Thickness (mm) Mean ± standard error	Range
Pre-1947 1/	24	0.554 ± 0.007 a 2/	
1971	7	0.517 ± 0.007 b	0.49-0.53
1972	39	0.486 ± 0.006 c	0.41-0.57
1973	21	0.488 ± 0.009 c	0.40-0.54

1/ Pre-1947 eggshell thickness data from Anderson and Hickey (1970) range not listed.

2/ A significant difference ($P<0.05$) among thickness means is indicated for those means not sharing a common letter. Means were separated using the new multiple range test with an extension for unequal replication (KRAMER, 1956).

Residues -- Each of the 36 eggs analyzed contained measurable residues of p,p'-DDE, p,p'-DDD, dieldrin, and PCB's (Table 3). Most of the eggs contained measurable quantities of p,p'-DDT and heptachlor epoxide; none of the eggs contained mirex. Small residues of *cis*-nonachlor were found in all eggs analyzed in 1972 and 1973, and all but one of these eggs contained *cis*-chlordane and/or *trans*-nonachlor. Neither

TABLE 3

Residues of organochlorine pollutants in eggs of the brown pelican from Louisiana.

	μg/g (fresh wet weight)[1/]								
Year	p,p'-DDE	p,p'-DDD	p,p'-DDT	Dieldrin	Heptachlor epoxide	Cis-chlordane[2/]	Cis-nonachlor	PCB's	Toxaphene
1971	1.30	0.18	0.14	0.24	Tr	NI	NI	5.0	NI
	1.20	0.32	0.13	0.54	Tr	NI	NI	4.0	NI
	0.58	0.40	Tr	0.27	Tr	NI	NI	3.0	NI
G.M.[3/]	0.97	0.28	0.10	0.33	--	--	--	3.91	--
1972	2.58	0.52	0.28	0.65	ND	0.30	0.22	3.8	NQ
	1.37	0.29	0.15	0.47	0.12	0.29	0.47	3.5	NQ
	0.99	0.17	0.16	0.31	ND	0.13	0.16	2.7	NQ
	1.12	0.18	0.16	0.36	ND	0.20	0.18	3.2	NI
	1.30	0.27	0.26	0.63	0.11	0.21	0.28	3.7	NI
	1.61	0.27	0.26	0.46	ND	0.27	0.26	4.6	NI
	1.27	0.09	0.13	0.41	ND	0.16	0.14	3.3	NI
	2.25	0.35	0.32	0.79	0.24	0.46	0.36	6.4	NI
	0.83	0.17	ND	0.30	ND	ND	0.12	2.5	NI
	1.65	0.45	ND	0.50	0.19	0.25	0.28	4.7	NI
	1.27	0.22	0.12	0.35	0.10	0.12	0.17	3.1	NI
	0.98	0.21	0.15	0.36	ND	0.10	0.17	2.3	NQ
G.M.	1.36	0.26	0.15	0.45	--	0.18	0.22	3.51	--
C.L.	1.10-1.68	0.20-6.32	0.10-0.22	0.33-0.61	--	0.13-0.27	0.17-0.28	2.92-4.21	--
Range	0.82-2.58	0.17-0.52	ND-0.32	0.30-0.79	--	ND-0.46	0.12-0.47	2.3-6.4	--

1/ Tr=trace; ND = no residue detected; NI = residues were not identified by the chemical methodology; NQ = not quantified. 2/ and/or trans-nonachlor. 3/ G.M. = geometric mean; C.L. = 95% confidence limits.

	μg/g (fresh wet weight)[1/]								
Year	p,p'-DDE	p,p'-DDD	p,p'-DDT	Dieldrin	Heptachlor epoxide	Cis-chlordane[2/]	Cis-nonachlor	PCB's	Toxaphene
1973	1.34	0.24	0.27	0.71	0.16	0.37	0.22	2.7	0.44
	1.29	0.17	0.13	0.59	0.11	0.28	0.17	2.6	0.28
	0.78	0.14	0.14	0.53	0.12	0.16	0.20	1.8	0.27
	0.91	0.12	0.11	0.47	0.11	0.21	0.14	1.9	0.23
	0.99	0.15	0.11	0.57	0.13	0.25	0.17	3.7	0.25
	0.89	0.24	ND	0.42	0.15	0.18	0.20	1.8	0.12
	1.80	0.27	0.22	0.70	0.14	0.34	0.25	3.1	0.45
	2.09	0.13	0.12	0.54	0.12	0.21	0.16	4.7	0.52
	1.06	0.34	0.25	0.96	0.25	0.46	0.30	2.2	0.22
	1.54	0.19	0.21	0.74	0.14	0.28	0.21	3.6	0.38
	1.79	0.60	0.22	0.72	0.19	0.38	0.23	5.3	0.38
	1.18	0.13	0.13	0.50	0.11	0.23	0.17	2.5	0.25
	1.14	0.15	0.14	0.64	0.16	0.26	0.18	2.8	0.28
	1.61	0.16	0.20	0.67	0.18	0.30	0.23	3.1	0.41
	1.98	0.24	0.29	0.86	0.17	0.31	0.29	4.1	0.53
	0.58	Tr	Tr	0.30	ND	0.13	0.10	1.1	0.17
	1.44 4/	0.25	0.26	0.98	0.18	0.34	0.22	3.1	0.43
	1.17 4/	0.18	Tr	0.61	0.13	0.27	0.16	2.8	0.28
	1.84	0.16	0.31	0.83	0.20	0.36	0.27	4.3	0.43
	1.90	0.22	0.17	0.12	0.24	0.33	0.28	4.3	0.41
	1.74 4/	0.31	0.27	0.55	0.21	0.82	0.28	3.2	0.58
G.M.	1.31	0.19	0.16	0.64	0.15	0.28	0.20	2.89	0.32
C.L.	1.08-1.85	0.16-0.24	0.12-0.20	0.56-0.73	0.13-0.17	0.24-0.34	0.18-0.23	2.44-3.44	0.27-0.39
Range	0.58-2.09	Tr-0.60	ND-0.31	0.30-1.12	ND-0.25	0.13-0.82	0.10-0.30	1.1-5.3	0.12-0.58

4/ Trace of hexachlorobenzene

cis-chlordane nor cis-nonachlor would have been identified by the residue analysis techniques used for the 1971 eggs. Toxaphene was identified in all of the eggs collected in 1973. The residue methodology employed in analyzing the eggs collected in 1971 did not permit the identification of toxaphene. Toxaphene was present in 1972 eggs, but not quantified. A trace of hexachlorobenzene was found in a few of the eggs collected in 1973.

The heavy metals listed in Table 4 do not seem to be of sufficient magnitude to pose a threat to the pelicans in Louisiana, but our knowledge of the potential hazard of such low levels is incomplete. The mercury levels are much lower than those found in eggs from Florida, South Carolina or California (BLUS et al., 1974a). Otherwise, the residues of the other metals are similar to those found in the other areas.

TABLE 4

Residues of six heavy metals in eggs of the brown pelican from Louisiana, 1972.

	µg/g (fresh wet weight)					
	Cd.	Cu.	Zn.	Ni.	Hg.	Pb.
	Tr	1.20	6.0	0.044	0.08	Tr
	Tr	1.06	5.6	Tr	0.06	Tr
	0.008	1.49	6.8	0.035	0.07	Tr
	Tr	1.04	6.2	0.044	0.10	0.040
	0.006	1.03	5.1	0.022	0.08	Tr
G.M.	0.004	1.15	5.9	0.024	0.08	0.016

The PCB's in the pelican eggs resembled Aroclor 1260 or those Aroclors lying near 1260. The PCB's occurred at higher levels than the other residues followed by DDE and dieldrin. The DDE:PCB ratio was 0.4:1.0. One of the most encouraging findings was the absence of endrin. This highly toxic insecticide caused massive fish kills in the lower Mississippi River in the early 1960's (MOUNT and PUTNICKI, 1966) -- about the time that the pelicans disappeared in Louisiana. According to LONG et al. (1961), the use of endrin in Louisiana became widespread by 1958.

ROWE et al. (1971) found that residues of endrin and dieldrin had greatly declined in oysters and in water from the Mississippi River in Louisiana from 1964-1966 to 1968-1969. Whether endrin was related to the extirpation of the brown pelican in Louisiana is unknown because tissues or eggs of these birds were never analyzed for residues. Endrin was not detected in tissues or eggs of brown pelicans collected from Florida, California, and South Carolina from 1969 through 1972 (BLUS et al., 1971).

Relationships between residues in the egg and biological effects -- The relationship of DDE to shell thinning of the Louisiana brown pelican eggs followed that described in an earlier study in which DDE accounted for all or most of the shell thinning of brown pelican eggs from South Carolina, Florida and California (BLUS et al., 1971). The relationship of DDE to eggshell thinning was significant ($P<0.05$; $r = 0.374$; $\hat{Y} = 91.16 - 16.561 \log_{10} X$ where Y is the percent of the pre-1947 eggshell thickness and X is the logarithm of the DDE residue).

The percentage thinning of eggshells of Louisiana pelicans was less than the DDE-induced thinning associated with reduced reproductive success of captive birds of other species (HEATH et al., 1969; LONGCORE et al., 1971). Furthermore, eggshell thinning and residues of the eggs of Louisiana pelicans were similar to that found in eggs of pelicans from Florida (BLUS, 1970; BLUS et al., 1971; BLUS et al., 1974a). The breeding population of brown pelicans in Florida has been stable since 1968 when the population census of the nesting colonies was originated (WILLIAMS and MARTIN, 1968; LOVETT E. WILLIAMS, JR., 1974 Personal Communication); the reproductive success of one large Florida colony is said to be normal (SCHREIBER and RISEBROUGH, 1972).

The residues of DDE in the Louisiana eggs are generally below those associated with subnormal reproductive success of the brown pelican in South Carolina (BLUS et al., 1974b). However, the level of dieldrin tends to be slightly higher in the Louisiana eggs, and 18 of the 36 eggs contain a level of dieldrin considered potentially detrimental to reproductive success (BLUS et al., 1974b). Thus, there is the possibility that dieldrin may have some influence on reproductive success in Louisiana brown pelicans, but the effects of dieldrin were not satisfactorily separated from those of DDE in the South Carolina study (BLUS et al., 1974b). The low rate of reproductive success may be influenced by the unusual conditions existing in establishment of a small breeding colony in an

area without an existing breeding population. There is some suggestive evidence (LOVETT E. WILLIAMS, JR., 1974, Personal Communication), that the pelicans in Louisiana began to breed at an earlier age than normal; none of the pelicans breeding in 1971 or 1972 were in complete adult breeding plumage.

A series of studies should be made to clarify the past, present, and future status of the brown pelican population in Louisiana. We have made a start, but many other avenues of research need to be explored -- such as effects of metals, other pollutants, and disease organisms; extent of habitat loss including nesting islands; and the possibility of food shortages or losses.

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Age of first nesting in the Brown Pelican.—Disagreement exists in the literature as to the age at which Brown Pelicans (*Pelecanus occidentalis*) first breed. Bent (U.S. Natl. Mus., Bull. 12), 1922) and Palmer (Handbook of North American Birds, Vol. 1, 1962) say that breeding first occurs when the birds are about two years old, while others have suggested that this occurs at older ages. As no convincing evidence has been presented for any opinion, the question has remained unanswered (Henny, Bureau of Sport Fisheries and Wildlife, Wildlife Res. Report No. 1, 1972). We can now report from our studies on the Brown Pelican that marked individuals have first nested successfully when they were three years old.

In July 1968 a group of flightless, nestling pelicans was captured in a Florida colony and trucked to Grand Terre, Louisiana. There they were individually color-marked with patagial streamers similar to those described by Knowlton et al. (J. Wildlife Mgmt. 28:169-170, 1964), leg-banded, and released as part of a program to restore this recently extirpated species as a breeder in the "Pelican State." When released, the birds were 9 to 12 weeks old, and the older individuals were beginning to fly. Inventories of the color-marked, free-flying juveniles near the release area showed nearly 100 percent survival during the following months.

In late March 1971, 13 nests containing eggs were found on a low reef at the mouth of the Barataria Bay ship channel. Wing rivets, with remnants of the patagial streamers, and leg bands identified all the nesting birds as those released in the summer of 1968. At that time the nesting birds were almost three years old.

Additional Florida young were shipped to Louisiana in 1969, 1970, and 1971. These also apparently nested for the first time when they were approximately three years old. By 1973 so many banded pelicans with worn-out patagial streamers were present, along with the offspring from the 1971 and 1972 nesting seasons, that precise data on the ages of nesting birds were unattainable.

The nesting 3-year-olds were in an advanced subadult plumage. This is similar to the adult nuptial plumage, but it lacks the bright yellow crown and throat markings, has considerable white markings on the belly, shows a few dark marks on the crown, and has some light-colored markings on the neck (chestnut in full nuptial plumage). A light wash of yellow was first noticeable on the crown and median throat (through field glasses) at the start of the 1972 nesting season, when the older birds were nearly four years old. These markings did not become bright yellow (as they are in Florida nesting colonies) until 1974, when the older individuals were almost six years old.

One of us has visited all of the Brown Pelican colonies in Florida, some of them on several occasions, without finding substantial numbers of birds nesting in subadult plumage. The only exception was in a new colony of about 20 nests at Port St. Joe in 1972. Most of the breeding pelicans there were in subadult plumage similar to that worn by the 3-year-olds in Louisiana in 1968.

We do not consider ours to be the definitive statement on the age of first breeding in Brown Pelicans, nor do we believe that age of first breeding is necessarily a fixed parameter in the species. In some species, the age at first breeding is known to be lower when food is especially abundant and/or when older individuals have been removed from the population (Lack, Ecological Adaptations for Breeding in Birds, Methuen & Co., Ltd., London, 1968). Obviously, in 1968, the birds in our Louisiana colony contained no pelicans older than three years. Also, natural food supplies in the vicinity were such

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RH: Restocking Brown Pelicans in Louisiana . McNease et al.

Reintroduction and Colony Expansion of the Brown Pelican in Louisiana

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Abstract: The eastern brown pelican (*Pelecanus occidentalis carolinensis*) virtually disappeared from Louisiana by 1963. The Louisiana Department of Wildlife and Fisheries (LDWF) and Florida Game and Fresh Water Fish Commission (FGFWFC) reintroduced from Florida to southeastern Louisiana 1,276 fledgling pelicans at 3 release sites between 1968 and 1980. Florida transplants established 2 restored nesting populations, 1 at North Island in the Chandeleur Island chain and 1 at Queen Bess Island in Barataria Bay. The LDWF transplanted 149 fledglings from the Queen Bess colony to Last Island, Isles Dernieres between 1984 and 1986 which resulted in a third nesting colony. Natural colony expansion

occurred in 1990 when more than 100 nests were produced on the Mississippi River mud lumps and on Grand Gosier Island at the south end of the Chandeleur Island chain. The Queen Bess colony fledged 6,051 pelicans between 1971 and 1990. North Island production was 7,609 fledglings between 1979 and 1990. Last Island production was 780 between 1987 and 1990.

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The eastern brown pelican ceased nesting in Louisiana in 1961 and the species in essence disappeared by 1963. In 1968 the LDWF and FGFWFC began a pilot program to reintroduce birds to Louisiana from a relatively stable Florida population. Florida nestlings were transplanted annually through 1980 and reestablished colonies were monitored for reproductive success, survivability, and environmental pollutants (Nesbitt et al. 1978, McNease et al. 1984). Several southeastern state game departments, the U. S. Department of the Interior Fish and Wildlife Service, and the National Audubon Society participated in the organizational phases of the program.

The goal of the Louisiana eastern brown pelican program was to reestablish the bird to its historic nesting range. The program consisted of four phases: reintroduction of Florida pelicans to Louisiana, establishment of breeding colonies with birds of Florida

origin, transplantation of Louisiana produced fledglings to vacant range to establish nesting colonies, and natural colony expansion.

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METHODS

Historically, nesting colonies were described on the Chandeleur Island Chain, Isle aux Pitre, Mississippi River mud lumps and extending westward to Last Island, Isles Dernieres, all located in southeastern Louisiana (Lowery 1955, 1974, McNease et al. 1984). Island terrain is flat, low, and subject to tidal flooding. The climate is subtropical with infrequent freezing temperatures. The vegetation is characterized by saltmarsh grasses and incidental low shrubs. Land area is characterized by sand dunes, reef shell shelves, and marshy soils.

Reintroductions

From 1968 to 1976 nestling brown pelicans were captured from

nesting colonies on Florida's Atlantic coast and released at Grand Terre, Louisiana (Nesbitt et al. 1978). From 1977 to 1980, nestlings were captured from Florida's gulf coast and transported to North Island and Isle aux Pitre. Three primary reintroduction sites were restocked from 6 capture areas between 1968 and 1980 (McNease et al. 1984). All young pelicans (8-11 weeks old) were hand captured, crated, trucked to Louisiana, and then transported by boat to the release site. Time of confinement for the birds varied from 30 to 36 hours, depending upon capture time, highway distance between Florida capture and Louisiana boat dock sites, and length of boat ride to final destination. Direct release on barrier islands with 2 daily feedings was found to be the most effective method for establishing the birds in Louisiana (Joanen and McNease 1974, Nesbitt et al. 1978).

Reintroduced young pelicans were banded with a U. S. Fish and Wildlife Service leg band and a white patagial wing streamer. Louisiana-raised fledglings were banded from 1971 to 1980. Bands or streamers were not applied after 1980 because of colony disruptment and the stress caused by handling and confinement.

The LDWF transplanted 149 fledglings from the Queen Bess colony to Last Island, Isle Dernieres between 1984 and 1986.

Monitoring

Between 1968 and 1980, we periodically visited nesting colonies. Records were maintained on nesting activity, timing of nesting, location, number of nesting pairs, number of nests, number

of eggs per nest, hatchability, survival of young, and age of sexual maturity (McNease et al. 1984). Monitoring programs near the release and nesting sites consisted of retrieval of dead birds (adult and young), addled eggs, egg shells, and regurgitant materials found around the nest sites. These materials were analyzed for insecticide residues and egg shell thinning (Blus et al. 1975, 1979). Aerial surveys and photography were conducted in addition to ground surveys. Aerial photographs provided a permanent record of nesting and fledging. Periodic aerial surveys were conducted throughout the year to check on survival and dispersal from release sites.

After 1980, we monitored reproductive success of each colony by helicopter survey and aerial photography. Because of an extended nesting sequence (November-July), 3 to 4 surveys per year were required to obtain sufficient data to determine fledgling success. We used helicopters because of the isolated nature of the colonies, the 280 kilometers survey distance, the non-invasive nature of aerial monitoring, and slow flight requirements for photography. Surveys were conducted during peak nesting and prefledging periods. Winter nesting and the resultant multiple renesting sequence made it impossible to count every nest that produced a fledgling. Therefore, the numbers of nests presented and fledglings produced for each colony are conservative estimates.

RESULTS AND DISCUSSION

Reintroductions

Survivability of Florida transplanted nestlings was excellent (McNease et al. 1984). The numbers of Last Island nesting females in 1987, 1988, 1989, and 1990 (12, 50, 125, and 275, respectively), and the progressive increases each year indicate that survival of Louisiana transplants and their offspring was very good.

Nest Construction

We estimate that 90% of nests constructed were on the ground. The scarcity of shrubs or trees on the nesting islands precludes overstory nesting. Several unusually severe freezes since 1980 have decimated coastal black mangrove (*Avicennia nitida*) which historically was the nesting shrub of choice for pelicans. Nests are usually constructed of sticks and twigs, roseau cane (*Phragmites communis*), sea purslane (*Sesuvium* sp.), sea matrimony (*Lycium carolinianium*) and oyster grass (*Spartina alterniflora*). Manmade materials, such as window screen, rope, pieces of plastic, and fishing line were used quite commonly.

Reproductive Success

Queen Bess Colony.--Six thousand fifty-one pelicans were fledged from 4,782 nests by this colony from 1971-1990. An average of 1.27 young were fledged per nest during that 20-year period (Table 1).

Winter, spring, and summer nesting at this colony resulted in

2 or 3 major renesting attempts each year because of weather-related nesting failure (McNease et al. 1984).

North Island Colony.--For the 1979-1990 period, 7,609 pelicans were fledged from 4,580 nests. An average of 1.66 young were fledged per nest during that 12 year period (Table 1).

Late spring and summer nesting by this colony resulted in a 4-5 month reproductive cycle compared to the 8-9 month cycle of Queen Bess. Renesting attempts were infrequent on North Island.

Last Island Colony.--A total of 780 pelicans were fledged by this colony for the 1987-1990 period. The number of young fledged per nest averaged 1.69 for 462 nests during that 4 year period (Table 1).

This colony nested only in the spring-summer and renesting is minimal. This colony, which originated from a wintertime nesting colony, characteristically nested during warmer seasons characterized by less violent weather events.

Natural Colony Expansion.--Natural colony expansion occurred in 1990 when more than 100 nests were established on the Mississippi River mud lumps and on Grand Gosier Island. However, human interference resulted in complete loss of nests and eggs on the Mississippi River mud lumps. No nesting was accomplished on the mud lumps in 1991. Production on Grand Gosier was not determined in 1990, however 80 late nests were constructed.

Habitat Outlook

Louisiana's bay islands and barrier islands have undergone

tremendous detrimental change in recent years. Bagert (1989) categorized coastal wetland change (loss) rates as low, moderate, severe or very severe. Pelican nesting habitat was classified in the severe to very severe loss category. In addition to subtle island land loss changes (lack of sediment enrichment, subsidence and rising sea level) most outer islands have very obviously suffered from wave action/storm surge erosion since 1968 (La. Dept. Nat. Resources, Public Info. Release, 1989). As a result, pelican nesting habitat has been greatly reduced compared to that reported by Lowery (1955, 1974).

Efforts to restore Queen Bess Island were recently undertaken. The LDWF and Louisiana Department of Natural Resources in cooperation with the United States Corps of Engineers placed dredge material from a nearby ship channel on and adjacent to Queen Bess. Approximately 12,800 cubic m of shell material were spread over the Queen Bess Island nesting area and adjacent marsh to raise elevation where nesting occurred. The additional spoil is intended to retard erosion and secure the island as nesting habitat.

Population Recruitment

Recruitment (number fledglings/breeding female) for the 3 oldest colonies averaged 1.27 for Queen Bess (1971-1990), 1.66 for North Island (1979-1990), and 1.69 for Last Island (1987-1990) (Table 1). The higher numbers recorded for North Island and Last Island reflect more secure nesting habitat and a spring/summer nesting sequence. The low recruitment for Queen Bess reflects a

degrading nesting habitat and a winter nesting sequence. Henny (1972) indicated that a recruitment standard of 1.2 to 1.5 young per breeding female is necessary to maintain a stable population. Compared to Henny's recruitment standard, the 1.27 average for Queen Bess indicates the population is just holding its own. Production figures for 1983 through 1990 averaged 580 fledglings/year (range 300-800) and 1.34 fledglings per nest. The colony population appears to be relatively stable, which supports Henny's (1972) conclusions.

The 1.66 and 1.69 fledglings/nest average for North Island and Last Island indicate an expanding population. This is confirmed by our observations and is consistent with Henny's (1972) findings. The Last Island colony has shown a very healthy increase each year since 1988 and the North Island colony, with the exception of 1990, showed a steady annual increase during 1981-1989 (Table 1). North Island and Last Island offer more acreage, greater elevation, more cover, and better nesting materials than Queen Bess.

Catastrophic Weather Related Events

Our observations indicate that storms accompanied by severe tidal flooding are the most frequent and most devastating negative factor affecting productivity, especially to ground nesters sitting at low elevation. We have observed as many as 400 nestlings and large numbers of eggs lost to a single flood.

Our observations indicate that a female which has produced nestlings will not nest again that season. Likewise, renesting

may not occur when eggs are lost late in the nesting cycles.

Severe freezes have been particularly catastrophic, although they occur infrequently. Severe freezes in 1983 and 1989 resulted in high initial mortality by quick death hypothermia, mortality due to prolonged exposure (frost bite), and death while plunge-diving into ice. We recovered 169 brown pelicans in juvenile and adult plumage which died during the 1989 freeze. Severe freezes also caused surface ice to form which limited feeding opportunity of the birds. Fish mortality related to freezes probably negatively impacts the pelican's food supply on a short-term basis. Black mangrove, which historically was used for nesting, was killed-off and is just now beginning to be reestablished after a 9-year absence.

Island habitat degradation is a chronic factor which has adversely impacted nesting since the first egg was laid in 1971. This factor possesses particular significance to the long-term survival of Louisiana's official state bird and is caused, in part, by lack of sediment deposition necessary for island maintenance. Storm surges tend to wreak immediate havoc on island habitat.

Environmental Pollutants

A well publicized die-off occurred in 1975 attributed to endrin poisoning (Blus et al. 1979, Nesbitt et al. 1978). Blus et al. (1974) believed that DDE residues were high enough in Louisiana brown pelicans to induce egg shell thinning but not high enough to interfere with reproductive success.

We are unaware of any pollutant-related pelican mortality that occurred during the past 15 years. Excellent reproductive success achieved at North Island and Last Island indicates that pollutants are not high enough to significantly interfere with reproductive success.

We feel that the general health of the Queen Bess colony since the environmental contamination incident in 1975 must be good because pelicans there undergo the rigors of winter while nesting; plus their reproductive season lasts for up to 9 months.

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Table 1. Reproductive success of Louisiana brown pelican colonies, 1971-1990.

Year	Number nests			Number fledged			Number fledglings per nest		
	Q.B.	N.I.	L.I.	Q.B.	N.I.	L.I.	Q.B.	N.I.	L.I.
1971	11			8			0.72		
1972	23			14			0.60		
1973	42			26			0.61		
1974	90			104			1.15		
1975	82			13			0.16		
1976	49			56			1.14		
1977	83			1			0.01		
1978	140			128			0.91		
1979	179	17		150	9		0.84	0.53	
1980	158	16		184	10		1.17	0.63	
1981	214	40		300	50		1.40	1.25	
1982	237	94		427	163		1.80	1.73	

Table 1. Continued

Year	Number nests			Number fledged			Number fledglings per nest		
	Q.B.	N.I.	L.I.	Q.B.	N.I.	L.I.	Q.B.	N.I.	L.I.
1983	467	135		680	220		1.46	1.63	
1984	455	254		660	457		1.45	1.80	
1985	427	364		600	600		1.41	1.65	
1986	400	450		500	800		1.25	1.78	
1987	225	700	12	300	1,000	0	1.33	1.43	0
1988	500	800	50	600	1,400	80	1.20	1.75	1.60
1989	600	1,050	125	800	1,900	200	1.33	1.81	1.60
1990	400	660	275	500	1,000	500	1.25	1.52	1.82
Total/ave.	4,782	4,580	462	6,051	7,609	780	1.27	1.66	1.69

Q.B. = Queen Bess; N.I. = North Island; L.I. = Last Island

On Palm Key in Everglades National Park, a pair of brown pelicans nest in the tight tree above the golden thicket of saffron plum. Alone among all the brown pelican populations in North America, the Florida birds have suffered no severe setbacks from pesticide pollution, and this is one of ten healthy breeding colonies in Florida Bay. On the stick platform, whitewashed by excretion, naked two-week-old nestlings (right) wait to "beg" the parent to regurgitate food onto the nest. Nearby (following pages), adult pelicans bicker over an unseen territorial line between two neighboring nests.

Hang on, pelican!

article by GEORGE LAYCOCK

photography by CAULION SINGLETARY

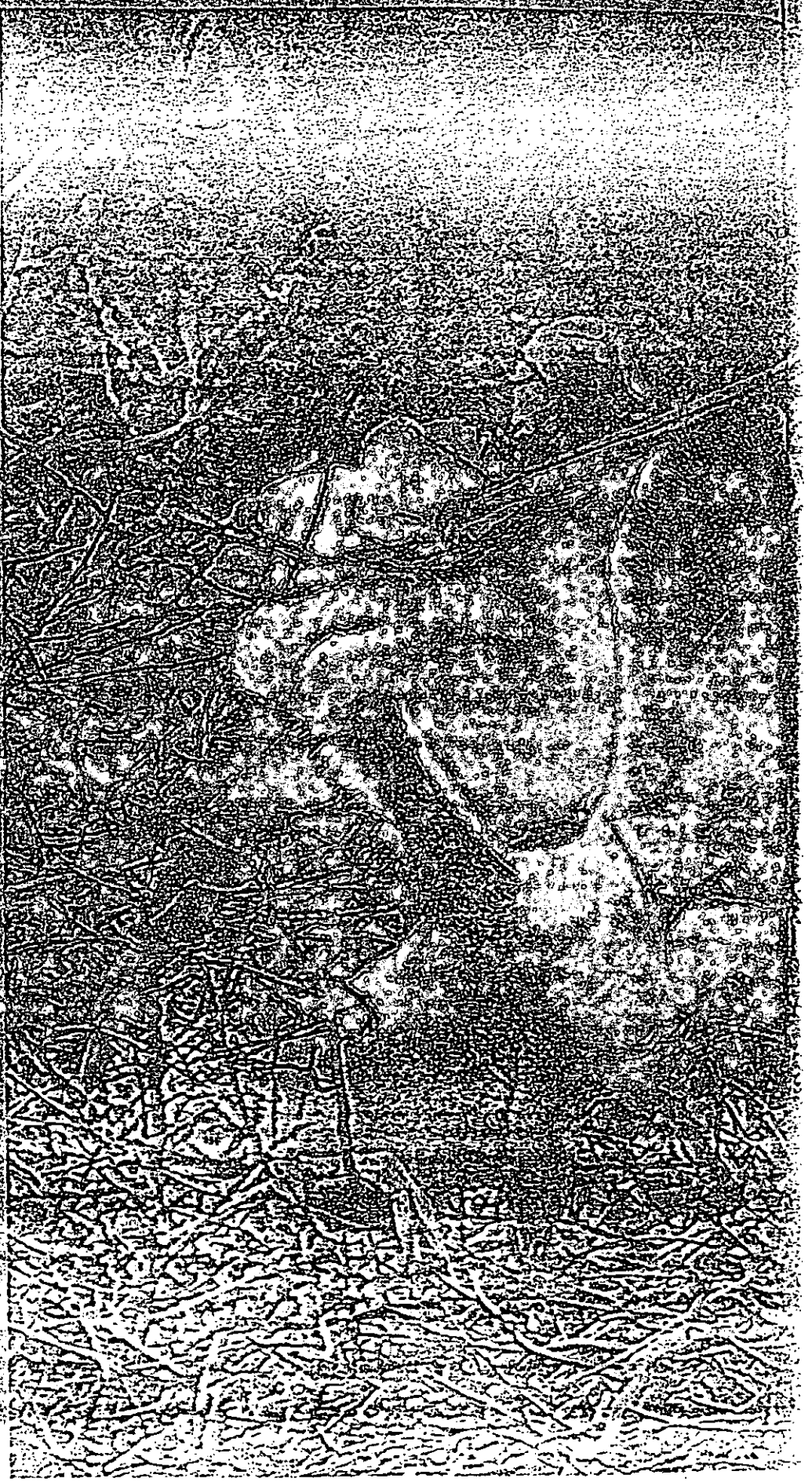
FIELD INVESTIGATORS who know the brown pelican best see rays of hope for this ungainly favorite of sandy beaches and mangrove thickets, for coastal surveys indicate the pelican is reclaiming some of its lost territory.

Five years ago the future of the brown pelican seemed bleak indeed. (See "Where Have All the Pelicans Gone?", *Audubon*, September 1969.) In colony after colony, adults were not attempting to nest—and those that did nest often laid eggs that failed to hatch. Both mainland subspecies of the brown pelican were put on the federal endangered species list in 1970. (The eastern race ranges from the Carolinas to Florida, around the Gulf Coast, and into South America; the western race is found from southern California to Chile.)

The outlook was gloomiest along the coast of Louisiana, which scientists believe once had the largest brown pelican population in the United States. Like alligators and muskrats, pelicans were taken for granted as part of the Louisiana scene, resting atop pilings down by the fishing docks or crossing the bay on powerful strokes of their broad wings. For more than seventy years the pelican has been the offical state bird of Louisiana, its likeness carried proudly on the state seal and imprinted boldly on automobile license plates.

Old records indicate there once were [illegible] breeding pelicans along the Louisiana coast. In 1933, omi-

Pelican chicks emerge from the egg blind and naked and must be shaded from the sun until down-covered. Now, they can stand tall enough to take food directly from their parents. Contrary to appearances, their dinner is not in that flexible pouch but farther down the gullet. The nestling rubs its bill along the base of the adult's bill to stimulate the regurgitation of food that has been partially digested during the return from fishing grounds. Feeding time is rough and noisy. The adult must spread its wings to maintain balance, and two nestlings may have their heads in the pouch simultaneously.

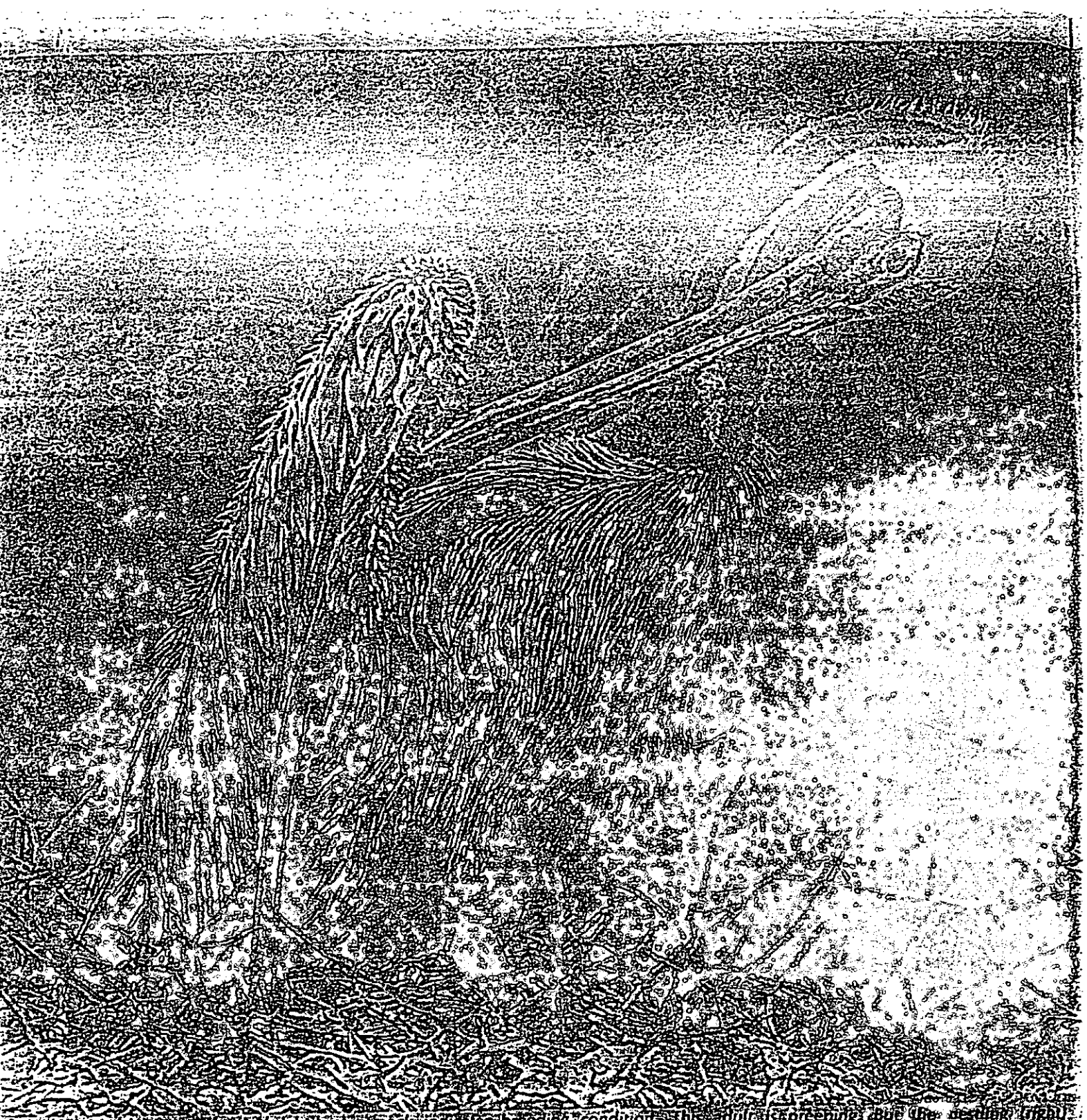


thologist H. C. Oberholzer recorded 2,300 pelican nests on North Island in the Chandeleur Island group. But when G. F. Van Tets visited North Island in 1967, he could find only 200 nesting pairs, with a total of about 100 nestlings. By this time, the 4,550 pelicans on 3 known to nest on Mud Lumps at the mouth of Pass a Loutre in the Mississippi River delta had completely disappeared, as had another colony on Belle Pass Island that previously contained 1,000 nests.

The following year, biologist Loven E. Williams and the Florida Game and Fresh Water Fish Commission visited North Island and found only 5 pelicans—and none were making any effort to nest. Indeed, not a single pelican nest was found in Louisiana after the 1961 season.

The story in Texas was scarcely better. Pelican populations were vanishing and by 1967 only four nests could be found. A year later, there were only two nests. Not a single pelican colony survived in Alabama and Mississippi. (None has ever been recorded in Georgia.) South Carolina's pelican population also was suffering severe reversals.

Then from Pacific Coast pelican colonies came reports of a disastrous population crash. At the only nesting colony north of Baja California—on Anacapa Island in Channel Islands National Monument west of Los Angeles—investigators in 1970 counted 552 pelican nests. But they found only one chick. The next year they counted just seven chicks, and the Anacapa colony seemed on the way to rapid extinction.



The brown pelican's bright-brown neck indicates breeding condition. This adult is preening. But the nesting urge

ONLY IN FLORIDA did a brown pelican population appear to be stable. But conservationists there were uneasy. As one observer said, "We could lose our pelicans before we realized they were in trouble."

The Florida Game and Fresh Water Fish Commission had, in 1965, assigned Lovett Williams to organize an annual pelican census and to investigate possible causes of pelican troubles. The next spring Williams and co-worker Larry Martin made an aerial survey that took them by single-engine aircraft all the way from the Suwannee River to Key West. They counted 6,920 pelican nests. The census has been repeated every year, often with the help of outside observers, the 1974 survey showing 6,290 pelican nests. The Florida figures have fluctuated during the nine years, but never alarmingly, and Williams considers the population secure. Indeed, Florida is the only major part of the brown pelican's breeding range in the United States where there has been no devastating nesting failure.

Meantime, at the National Audubon Society's 1967 convention in Atlantic

ed in a frenzy of feeding activity triggered by a parent's arrival, biting and lunging for a pouch not yet available

City, New Jersey, Alexander Sprunt IV, the society's research director, met with Dr. John S. Gottschalk, then director of the U.S. Bureau of Sport Fisheries and Wildlife, and reviewed the mounting evidence that pointed to a bleak future for the species.

Out of that meeting grew a conference to explore pelican problems and seek solutions. Representatives from several state and federal agencies, the National Audubon Society, and the Welder Wildlife Foundation in Texas met in Louisiana the following January and set up projects to gather information on annual production and movement of pelicans and to study disease and parasitism.

The pelican experts also decided to attempt to reestablish the brown pelican in Louisiana. Florida officials agreed to supply 50 young birds for transplant to Grand Terre Island. The first birds were tagged and released that summer, and biologists began making detailed observations of their movements and activities. New shipments of young pelicans have been added to the Grand Terre flock each year.

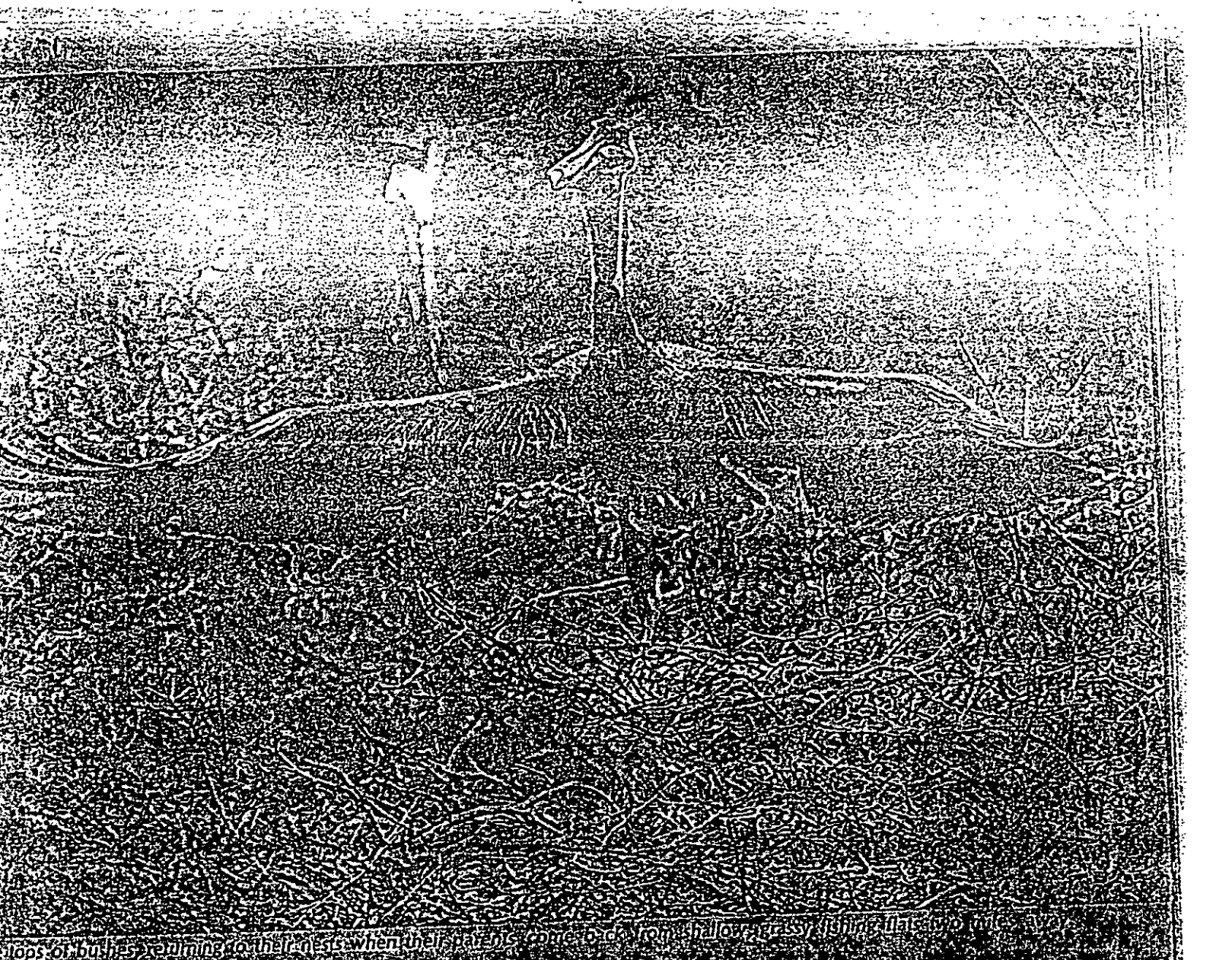
A young pelican's feathers develop rapidly on the back as protection from the sun. Older nestlings wander together in

MEANWHILE, EVIDENCE LINKING the brown pelican's widespread troubles to insecticides, and specifically to DDT, was mounting. It was known that DDT and its metabolite, DDE, could drastically upset avian calcium metabolism, causing the production of eggs with shells so thin they break beneath the parent bird's weight. Research in South Carolina convinced Lawrence J. Blus, biologist at the U.S. Fish and Wildlife Service's Patuxent Wildlife Research Center, that pelicans are more susceptible to these environmental pollutants than other fish-eating birds. Pelicans are, in effect, an early warning system. Blus determined that the critical number for pelicans is 2.5 parts per million of DDE in the eggs. Pelicans producing eggs with less than that amount tend to raise normal clutches of young. No young are produced from nests in which the eggs contain more.

Blus' continuing studies also show that the DDE content of Florida pelican eggs has reached 2.5 ppm and since the virtual ban on DDT use presumably has been declining.

It was this outlawing of DDT by the federal government at the end of 1972 that marked the turning point for the brown pelican. The marine ecosystem began to recover from its accumulated load of the long-lasting chlorinated hydrocarbon. But documenting the recovery has been complicated by the discovery of the presence of another harmful chemical substance, polychlorinated biphenyls, PCBs, because they are similar in structure to DDT and other chlorinated hydrocarbons, have been difficult to trace through the environment, and it is also difficult to separate their possible effects on the reproductive processes of birds from those of DDT and DDE.

Nonetheless, during the years when the pelican population on the Louisiana coast was decimated there were massive fish kills in the Mississippi River, dieoffs attributed to heavy pesticide use and runoff. And the coastal waters off southern California near the Anacapa colony were notoriously polluted with DDT, particularly from effluent discharged by Montrose Chemical Corporation's manufacturing plant at Los Angeles. After it was established that the plant allowed huge quantities of DDT to escape into the sewage system and thence into the ocean, a lawsuit and local government pressure finally halted the dumping, although Montrose still makes DDT there for export. (See "The Silent Shore" by Faith McNulty, *Audubon*, November 1971.)



flops of bushes returning to their nests when their parents come back from shallow, grassy fishing flats two miles away.

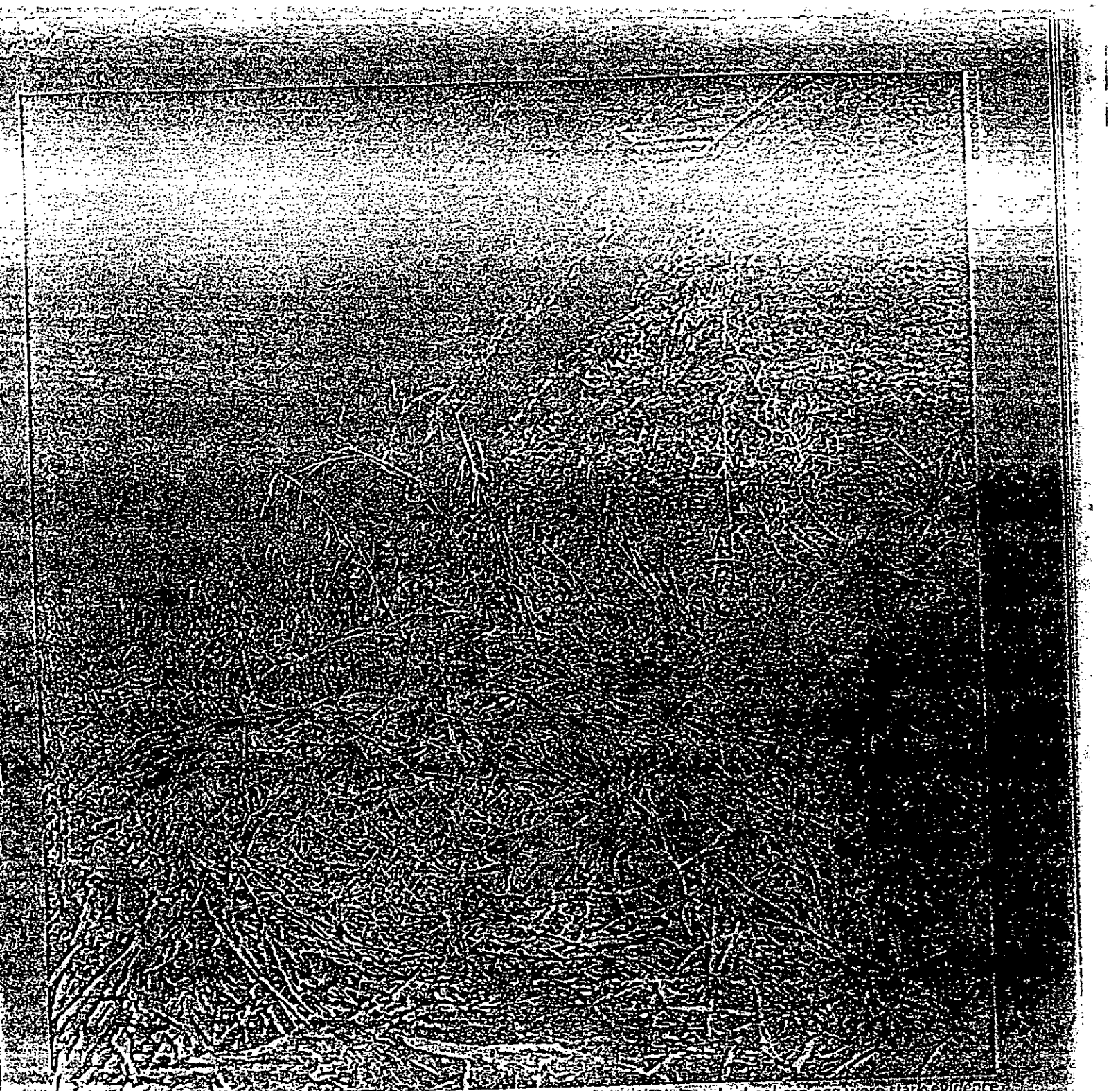
TODAY IN LOUISIANA and California, the brown pelican seems to be bouncing back. Elsewhere, reports are still mixed.

The success of the Louisiana transplant has prompted wildlife biologist Ted Joanen of the Louisiana Wildlife and Fisheries Commission to say cautiously that the outlook in the Pelican State is promising. This summer Louisiana had about 450 adult brown pelicans and 103 nestlings hatched, the most young counted since the transplant began. Joanen believes that in another year or two the Grand Terre flock will be secure and biologists can start to restock other pelican habitat.

In North Carolina, at the northern limit of the brown pelican's breeding range, there is a small colony that was discovered in 1929. Biologists believe the colony never was large, and when Larry Blus counted the birds this year there were 36 nests with 50 young in South Carolina, Blus has been keeping careful count of 1,650 breeding pairs of pelicans. All are in protected areas, 900 on coastal islands within Cape Romain National Wildlife Refuge and 750 on DeVeaux Bank, the National Audubon Society's new Alexander Sprunt Jr. sanctuary. Pelicans produce two and sometimes three eggs per nest. To maintain itself, a pelican population must produce between 1.2 and 1.5 young per year for each breeding pair. This year, however, the level dropped to one. Inexplicably, 300 nestlings almost old enough to fly died. Blus suspects a food shortage but is not pessimistic. Severe storms and tides always have inflicted such occasional losses on pelicans, especially when they nest on the ground as do those birds in the South Carolina colonies.

The news is badly mixed for the remnant pelican population in Texas. Audubon research biologist David Blankinship, stationed on the Gulf Coast, reports that eleven young hatched in 1973 and all but two survived. But this year only seven of 30 pairs of pelicans produced eggs. Out of a total of 19 eggs laid, 14 hatched but only two chicks survived long enough to fly. One of these was blind in one eye from an injury and not expected to survive, leaving only one new pelican for the entire Texas coast. Three of the 1974 nests were in Matagorda Bay, and the other four on Carroll Island within the National Audubon Society sanctuary on the Second Chain of Islands.

If pelicans in Texas do no better in the next year or two, a transplant may be tried, Blankinship adds.



A few years ago, on Anacapa Island off the California coast, an empty nest and a crushed pelican egg were stark evidence of a sick marine environment. Now the use of DDT is banned, and the long-lived adult pelicans are again raising young.

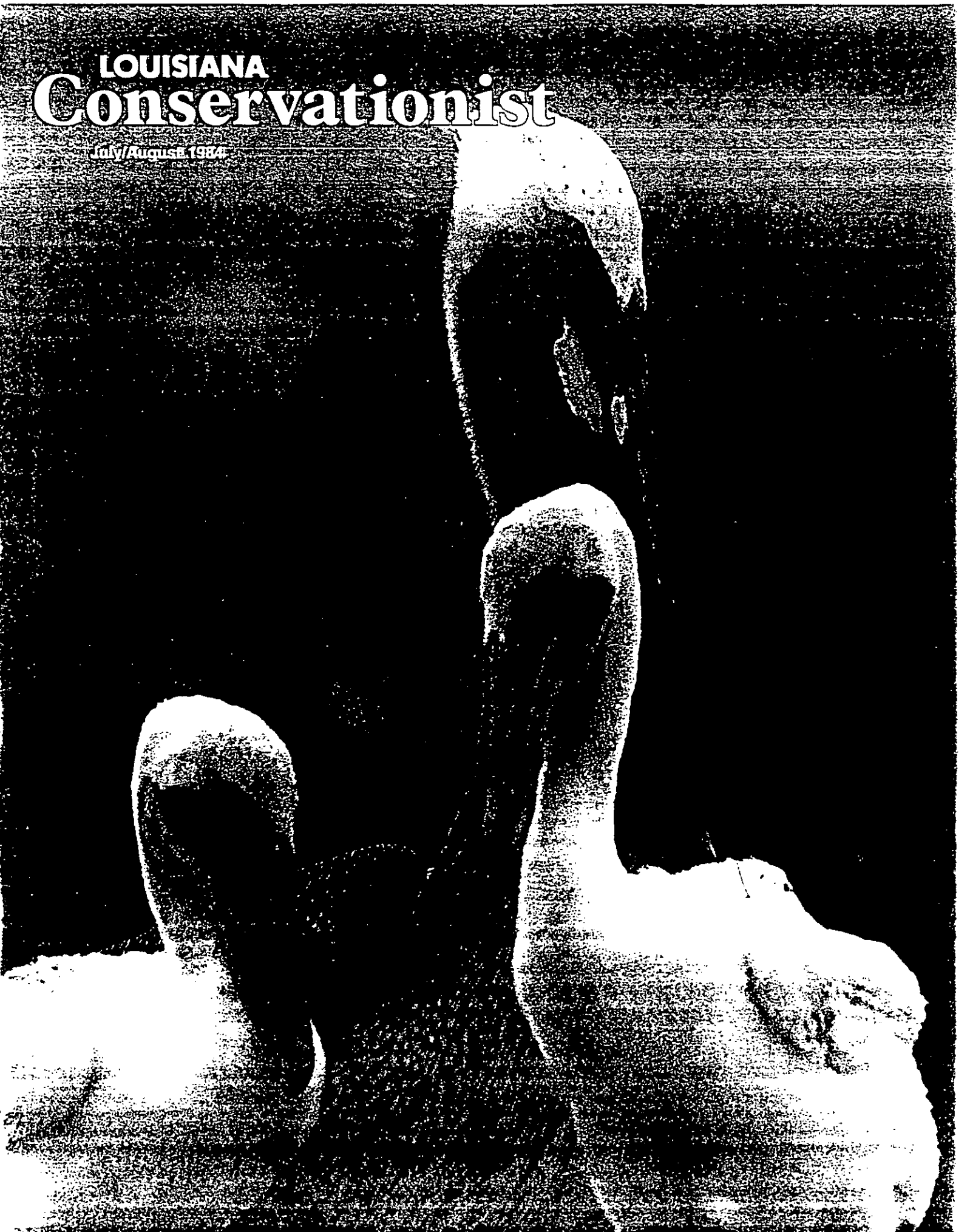
THE BEST NEWS comes from southern California. The National Park Service prohibits trespass in nesting areas on and around Anacapa Island; even biologists limit themselves to a single visit to make their annual census. In 1973 there were 34 young pelicans on Anacapa. This year there was a population explosion of 305 chicks, 229 on West Anacapa and another 76 on nearby Santa Cruz.

From farther south, off the western coast of Baja California, come further encouraging reports. The major pelican colony on Los Coronados Islands rose from no young in 1969 and five in 1970 to as many as a thousand nestlings this year. Such evidence is encouraging to Robert D. Mallette, wildlife biologist with the California Department of Fish and Game, and to other concerned professionals.

"The future of the brown pelican in the United States," says Larry Blus, "does indeed appear brighter than it did several years ago." But the pelican's guardians are unanimous in their warnings, agreeing with Blus when he says, "We have to see to it that DDT does not come back." ◻

LOUISIANA Conservationist

July/August 1984



A WUNNERFULL BIRD

La. Conser.
July/Aug 1984

IS THE PELICAN

By Maurice N. Cockerham
Photography by Guy LaBranche

Louisiana's brown pelican population once numbered fifty thousand . . . and then disaster struck. Now the state's official bird is making a comeback and biologists with the Department of Wildlife and Fisheries are determined that it will be a permanent success.

LOUISIANA'S MAJESTIC state bird, the brown pelican (Pelecanus occidentalis carolinensis), is once again becoming a familiar sight along the Gulf coast. During the second week of June, a team of Wildlife and Fisheries biologists from Rockefeller Refuge opened the latest chapter in an ongoing and very successful 16 year old program to restore the brown pelican to its full natural range on the Louisiana Coast.

Fifty young pelicans were transferred from the active nesting colony on Queen Bess Island in Barataria Bay (after an interesting round-up in which the birds were chased through the muck and mire of that swampy island and captured by hand) to Raccoon Point on Isles Dernieres south of Houma. The project is intended to establish the third active nesting colony in the restocking program, and the most westward colony to date.

Once numbering more than fifty thousand birds, the brown pelican was a common sight to anyone visiting Louisiana's sprawling coastal region. Then the birds began to disappear. The declining population of brown pelicans in Louisiana was first reported officially in the 1950s and, by that time, the pelicans were in serious trouble and facing virtual extinction in Louisiana. In 1961, a few young pelicans were hatched on North Island in the Chandeleurs. (Southeast Louisiana, and particularly the Chandeleur Island chain, had always been the stronghold of Louisiana's brown pelicans.) That was to be the last report of successful nesting in Louisiana for a full decade. Within a year, the colony at North Island contained only six pelicans, and there was no nesting activity. By 1963 the state's official bird had virtually disappeared from the Louisiana coast.

Intensive research would later reveal that pesticides and herbicides, particularly chlorinated hydrocarbons such as DDT, were killing the pelicans. The toxins were accumulating in the Mississippi River as that great waterway coursed through the heart of the nation. They passed through the food chain until they were finally consumed by the pelicans. The end result was two-fold.

In the first place, the toxins were retained in the pelicans' fatty tissues, rather than being passed through the birds' systems. In times of stress, such as severe weather or low food supplies, a high level of toxins entered the pelicans' systems and death resulted.

The chlorinated hydrocarbons also exerted a deadly effect on the reproduction of the brown pelicans. Research revealed that the chemicals inhibited the birds' ability to produce normal egg shells. In many cases, the shells were so thin that they actually collapsed. As a result, there were no new pelicans to replace those killed by poisoning or by such natural causes as hurricanes.

In 1968, representatives of the Louisiana Department of Wildlife and Fisheries, the U.S. Fish and Wildlife Service, and the National Audubon Society met with the officials of the Florida Game and Freshwater Fish Commission and instituted a cooperative program with the objective of reestablishing the brown pelican in Louisiana by stocking previously occupied sites with young birds from the stable and active Florida colonies.

In the ensuing sixteen years, 1,276 young brown pelicans have been captured from the Florida colonies and transferred to Louisiana. Releases were made in the Chandeleur Islands, at Queen Bess Island in Barataria Bay near Grand Isle, and at the Rockefeller Refuge in southwestern Louisiana. Although the effort at Rockefeller eventually failed, active breeding colonies were established at the other two sites. By the end of the 1983 nesting season, some 2,500 young pelicans had been hatched and fledged at the two sites.

With the two colonies in southeast Louisiana successfully reproducing and expanding, the biologists turned their attention to former nesting areas in the south central coastal area. It was decided that a new colony would be attempted using native Louisiana birds.

Only a mother could love a baby pelican.

On June 4, a three-man team of biologists, composed of Research Leader Ted Joanen, Larry McNease and Dave Richard, all from the Fur and Refuge Division's Rockefeller Wildlife Refuge, arrived at the Marine Lab on Grand Terre Island near Grand Isle. Seafood Division personnel stationed there, including Vince Guillory, Rick Kasprzak and Joe Shepard, furnished logistical support for the operation.

Late that evening, a survey was made of the nesting colony on Queen Bess Island, large wire cages were strategically placed on the east and west shores of the island and final plans were made for the Great Pelican Chase.

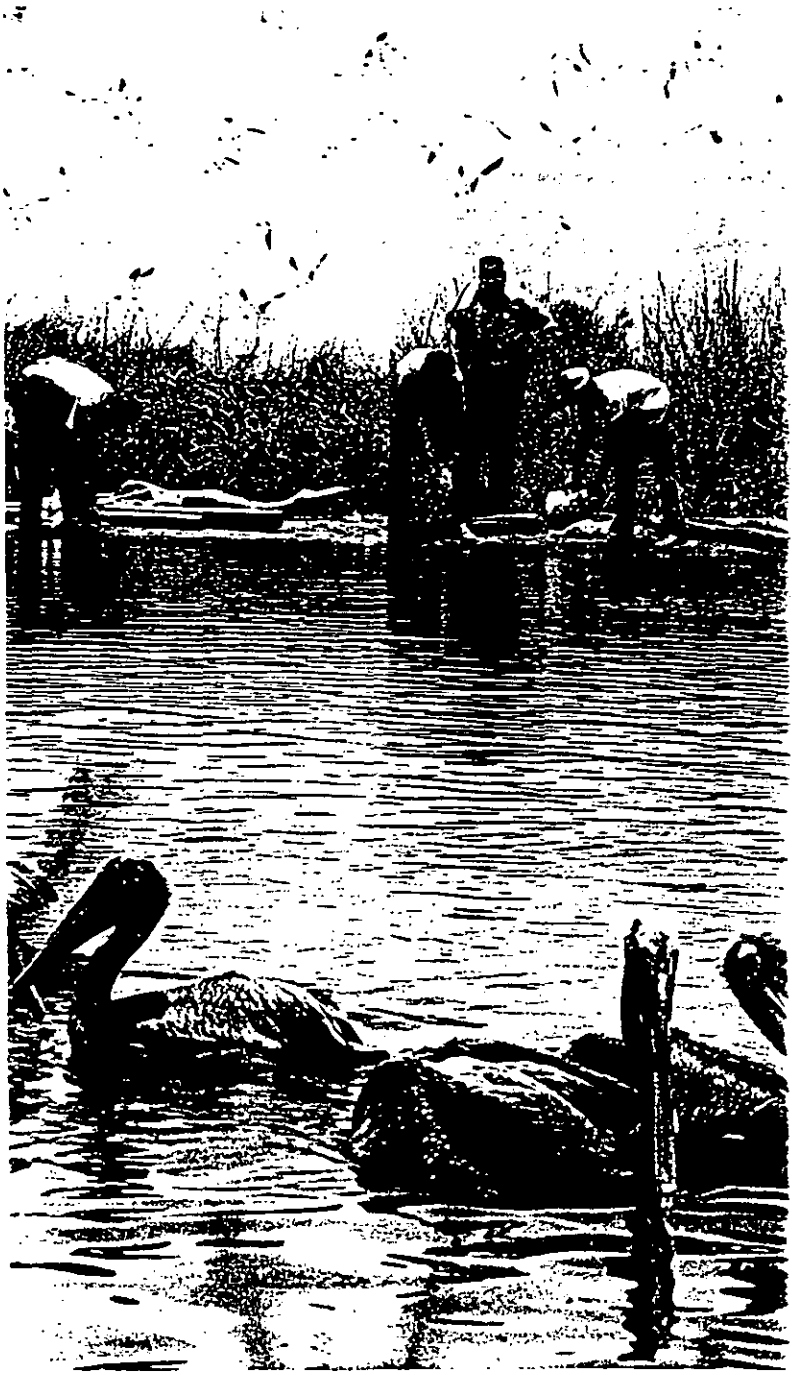
Daylight of the 5th found the small team floundering through the mud and droppings of the nesting area, capturing young pelicans that had not quite mastered the ability to fly. The captured birds were placed in burlap bags and then transferred to the waiting cages.

After a few hours of mud wrestling, the count stood at 50 birds, and the bedraggled crew had enjoyed just about all they could stand of that kind of fun. The cages were then transferred to the Enforcement Division's brand new patrol boat "Delta Tide." Agents Willie Dufrene and John Lopez looked on bravely as the neat cleanliness of their new vessel disappeared under a mass of angry birds and their wet, muddy captors. In a matter of minutes the Delta Tide was skimming the choppy waters of the open Gulf on the 100-mile journey to Raccoon Point on Isles Dernieres in Caillou Bay.

Prior to their release, the pelicans were fitted with leg bands to aid in monitoring the progress of the new colony. Then it was back into the burlap bags for the reluctant pelicans. They were transferred to a small boat manned by Fur and Refuge Division's Mark Castile and Dwight Brasseaux for the final run into the marsh on Raccoon Point.

The release itself was made at a carefully selected pond and followed immediately with a robust feeding. The pelicans were then left in the care of Quinn Kinler, a summer employee at Rockefeller Refuge. Kinler was temporarily assigned to the department's nearby Sister Lake Camp with the job of feeding the young pelicans a supply of fish twice each day until they had learned to fly and catch their own food.

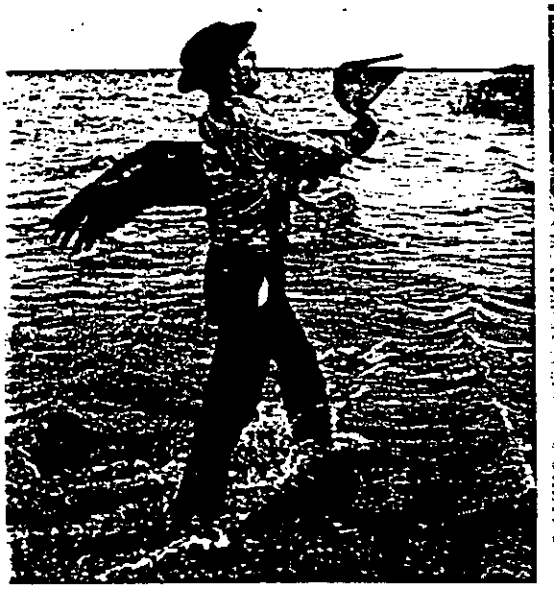
Hopefully, the new colony will establish itself permanently under the watchful eye of the department. In two or three years, the newly transplanted pelicans should begin breeding and nesting, adding still another success to the story of Louisiana's brown pelican.



Thousands of seagulls fly overhead as biologists observe pelicans at release spot on Raccoon Point.

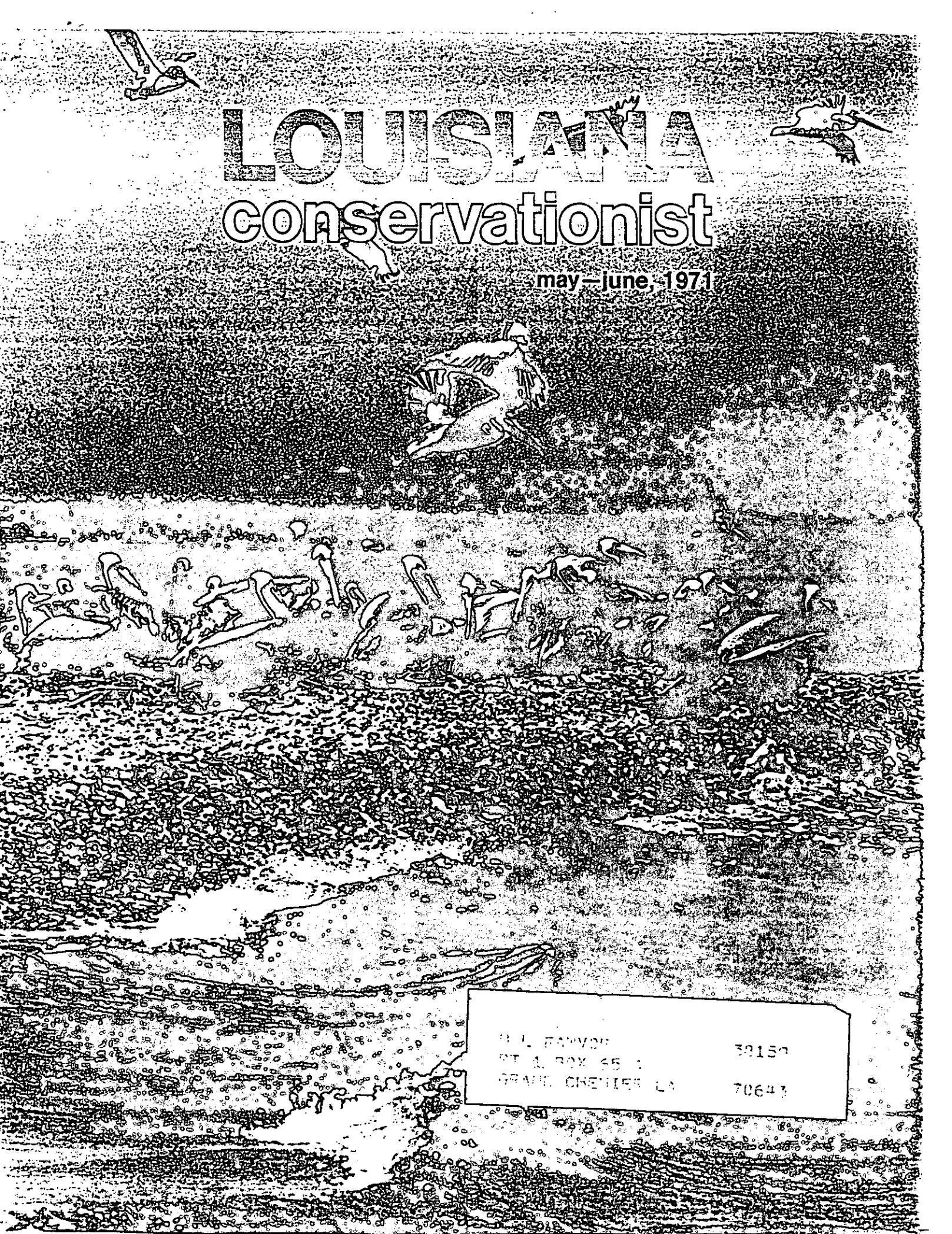
By the end of the 1983 nesting season, some 2,500 young pelicans had been hatched and fledged at Louisiana's two active colonies.

The chase is on . . . , as unwilling immature pelicans are rounded up and placed into burlap sacks for transport.



LOUISIANA conservationist

may—june, 1971



H. L. BANYOR 39150
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THE RETURN OF THE BROWN PELICAN

TED JOANEN AND DAVIDSON A. NEAL

A SMALL NESTING COLONY of Brown pelicans has been reported this spring along the Louisiana coast for the first time since 1961! All birds in this flock were also reported to be carrying small white cloth bands attached to their wings. Thirteen nests containing 20 eggs were located on a small shell island in Barataria Bay near the Commission-owned research laboratory at Grand Terre. These birds were a result of the restocking program carried on by the Refuge Division of the Louisiana Wild Life and Fisheries Commission each year since 1968.

In early spring of 1968, representatives of various state game departments, Bureau of Sport Fisheries and Wildlife, the National Audubon Society, and a number of private organizations met at the Commission-owned Rockefeller Wildlife Refuge to determine the past and present population trends of Brown pelicans and to investigate the possibility of re-establishing a resident colony once again in Louisiana.

Populations of Brown pelicans declined drastically in North America during the 1960's. Louisiana recorded its last nesting attempt back in 1961. Also, Texas reported only two nesting attempts in 1968 where hundreds nested before. As an outgrowth of the meeting held at Rockefeller Wildlife Refuge, plans were made to ship 50 fledgling pelicans from Florida for release in Louisiana.

That year, personnel of the Refuge Division of the Louisiana Wild Life and Fisheries Commission, with the aid of the Florida Game and Freshwater Fish Commission, obtained 50 young fledgling pelicans from Coco, Florida. The birds were trucked to the Rocke-

PHOTO BY ALLEN ENSMINGER

2.

3.

PHOTOS BY LLOYD POISSENOT

Opposite Page—1. Aerial view of narrow shell shoal where pelicans nested. At normal high tide there was only one foot elevation for the nesting birds.

2. With excellent chances of survival following the precarious hatching on the shell shoal, two young pelicans contemplate their new home.

3. A mother pelican carefully watches over fledglings in nest.

feller Refuge at Grand Chenier and released in two covered flying pens.

Diets and methods of handling were worked out and the birds were later released at the Grand Terre Marine Research Laboratory and also at the Rockefeller Refuge. Both areas had once supported large flocks of pelicans and the beaches, surrounding marshes and bay areas of Grand Terre Island provided ideal nesting habitat. Each bird was banded with a U.S. Fish and Wildlife Service leg band and also a white patagial wing streamer for identification in the field.

Plans for the captive flock were two-fold. First, the Louisiana Wild Life and Fisheries Commission wanted to investigate the possibilities of establishing a captive population of pelicans that would be available for experimental purposes; second, direct releases of young birds were planned.

The first release was made in September, 1968, with 25 banded birds set free on Grand Terre. In October, 1968, a release of 21 birds was made at Rockefeller.

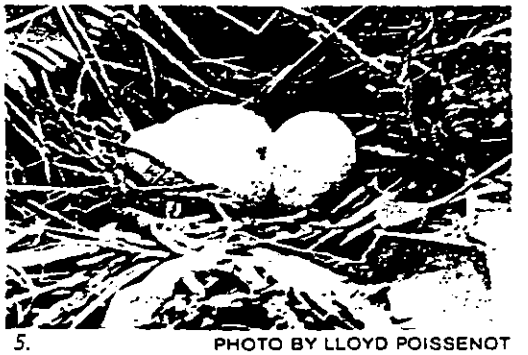
The birds quickly dispersed over Grand Terre Island, returning each day to feed on the food made available by the personnel at the Laboratory. In July of 1969, 25 additional fledgling pelicans were released at Grand Terre, and after several weeks all were flying and had joined with the other birds.

The 1968 release at Rockefeller Refuge did not fare out so well; however, the pelicans falling victim to a mysterious die-off. Sick and dying pelicans were noticed on the feeding sites in late March and were immediately taken to the Veterinary Science Department at LSU for post-mortem examination; all dead birds were also analyzed at LSU's Feed and Fertilizer Laboratory for possible chlorinated hydrocarbon insecticide residue.

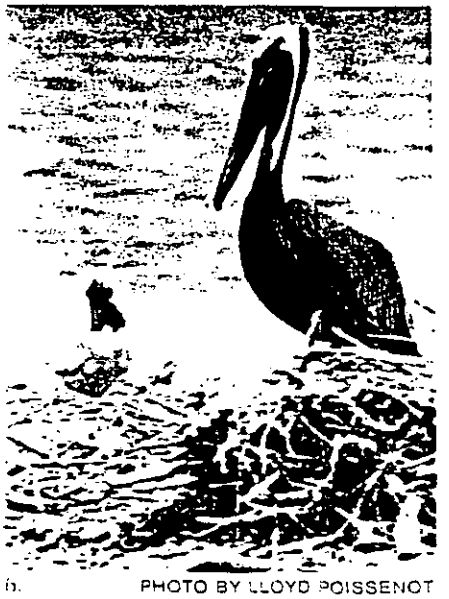
The results of the analysis from the Veterinary Science Department indicated little which seemed to be of major significance, although the birds were emaciated and showed the presence of ascarid endoparasites (round worms found in the intestinal tract). Occurrence of this parasite was believed to be relatively normal.

The insecticide residue analysis; however, proved to be another story. Relatively high concentrations of chlorinated hydrocarbons were found in tissues of the brain and liver of all birds analyzed from the Rockefeller release. According to the findings the tissue samples contained quantities of DDT, DDD,

4. PHOTO BY McFADDEN DUFFY



5. PHOTO BY LLOYD POISSENOT



6. PHOTO BY LLOYD POISSENOT

DDE, dieldrin and endrin.

The samples taken at Grand Terre, where the pelican colony continued to thrive, were relatively clean of insecticide content. The die-off at Rockefeller Refuge was spread over a period of approximately a month, indicating that disease, which would have resulted in a spontaneous die-off, was not the culprit.

A possible explanation of this situation was that the Brown pelican picked up insecticide residues over an extended period of time and stored them in fatty tissues of their bodies (which some birds—apparently pelicans among them—have the ability to do). When the birds are put under stress, stored fat is metabolized into energy and during the process pesticide residues are circulated to other organs of the body. During this period of stress, if there is enough organochlorine residue in fatty tissue it will cause mortality. The intake of stored fat, on the other hand, would have been different for each bird, resulting in a staggered death toll.

One hundred additional birds were obtained in 1970; however, all were released at the Grand Terre Lab. This brought the total to 150 birds released at Grand Terre over a three-year period. A very close check was kept on these birds by the personnel at the laboratory and periodic aerial inventories were made throughout the year. Also, information on mortality and plumage sequence were made.

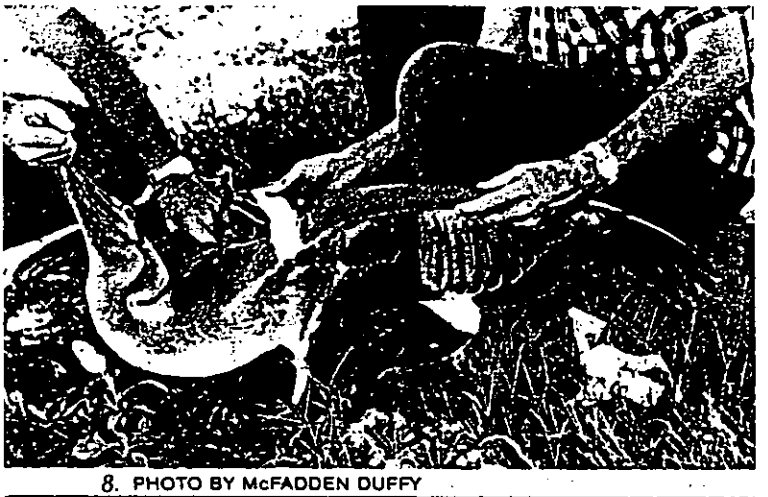
Nesting was first reported in March of this year by the personnel of the Marine Laboratory. Pelicans are known to nest either in the small, low mangrove bushes or on the ground. These birds chose a ground nesting site and constructed their nests on a small shell reef extending into Barataria Bay. Here the nests were built with loosely constructed mangrove sticks and also oyster grass. Anywhere from one to three eggs were present in each nest.

Incubation was started as soon as the first egg was laid. This would explain the variance in size of the young in the nest. The eggs appeared dull, dirty-white, heavily nest stained and appeared to have a rough surface. At the time of this writing, there are 11 young present with several eggs remaining to be hatched. When the young first hatched, they were far from attractive, looking more like shape-

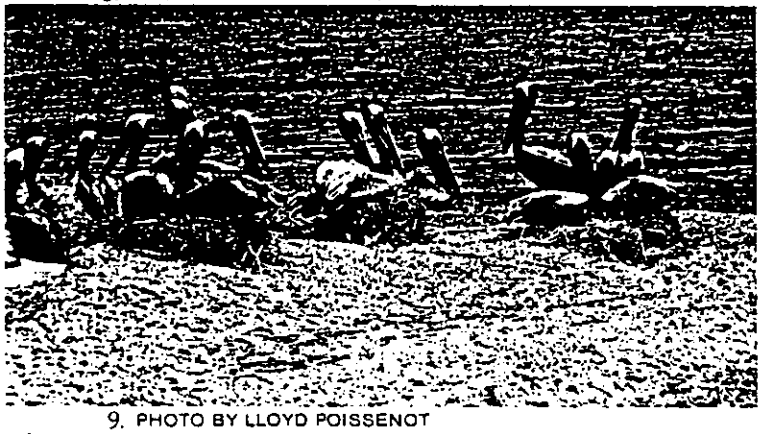
Opposite Page—4. Close up of newly hatched pelicans. Egg shells were carefully gathered and rushed to laboratories for analysis to determine possible presence of pesticides. 5. Average pelican nest contained two eggs. 6. A nesting pelican.

7. Commission personnel are shown banding pelicans imported in 1968 from Florida. Wing streamers were also attached to help proper identification of the age of birds. 8. The small colony of nesting pelicans are shown on the shell reef they selected to build their nests and lay their eggs. 9. A close up of nesting pelicans.

7. PHOTO BY TED JOANEN



8. PHOTO BY McFADDEN DUFFY



9. PHOTO BY LLOYD POISSENOT

less masses of red meat. They appear quite helpless in the early weeks of life; however, within a few weeks begin to take shape and become quite active. Their reddish color seems to disappear within a few weeks, taking the appearance of dark black to purple. In approximately three to four weeks down begins to appear, usually on the wings and the back, head and neck.

The young birds have been found to grow very rapidly and are three times the size within about a three-week period. At this stage they begin walking very clumsily throughout the nesting colony causing great confusion and frustration among the parent birds. It was interesting to note that nest construction continued throughout the incubation and rearing of the young. At the onset of the laying period, nests were composed of loosely gathered sticks and marsh grasses. As the young began to hatch, nest measurements indicated they had doubled in size and height. Both the male and female seemed to tend nest and assist with the incubating chores. From all indications, the food consists entirely of fish. Both parents also assist in caring for the young.

What security the environment along the Louisiana coast will offer these birds in the future remains to be seen. However, a very close monitoring system has been set up in order to follow certain aspects of the biology, parasites, diseases, and also pesticide residue in the Brown pelican. Eggs that produced young this year have been retrieved and measured for egg shell thickness. It already has been proven that thickness of the shell decreases with increasing amounts of DDE residue (a metabolite of DDT).

The inquiry into the fate of Louisiana's Brown pelican population is still in its infancy, and only general assumptions can be drawn; however, the preliminary results help to shed new light on some of the causative agents of the demise of the Brown pelican along the Louisiana coast. From the result of these studies and other studies conducted by researchers throughout the country, it is hoped that enough knowledge will be gained to insure this situation never develops again and it may also serve as an indication of what could happen to Louisiana's other wildlife forms.

RECOVERY PLAN FOR THE

eastern brown pelican

THIS IS AN AGENCY REVIEW DRAFT OF THE EASTERN BROWN PELICAN RECOVERY PLAN. IT IS NOT AN OFFICIAL GOVERNMENT DOCUMENT. IT HAS NOT BEEN APPROVED BY THE U. S. FISH AND WILDLIFE SERVICE OR ANY OTHER AGENCY. IT DOES NOT NECESSARILY REPRESENT OFFICIAL POSITIONS OF THE U. S. FISH AND WILDLIFE SERVICE OR ANY OTHER AGENCIES AND IT DOES NOT NECESSARILY REPRESENT THE VIEWS OF ALL RECOVERY TEAM MEMBERS. WITH POSSIBLE MODIFICATIONS BY THE REGIONAL DIRECTOR OF REGION 4 OF THE U. S. FISH AND WILDLIFE SERVICE, IT HAS BEEN PREPARED BY THE RECOVERY TEAM, WHICH HAS BEEN INSTRUCTED BY THE U. S. FISH AND WILDLIFE SERVICE TO DELINEATE REASONABLE ACTIONS WHICH THEY BELIEVE ARE REQUIRED TO PLACE THE ASSIGNED SPECIES IN THE BEST POSSIBLE POSITION. THIS PROPOSAL IS SUBJECT TO MODIFICATION FOLLOWING REVIEW AND RECEIPT OF COMMENTS BY COOPERATING AGENCIES AND OTHER INFORMED AND INTERESTED PARTIES.

RECOVERY PLAN

EASTERN BROWN PELICAN
(*Pelecanus occidentalis carolinensis*)

Prepared by the Eastern Brown Pelican Recovery Team

February 1978

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Resume: This Recovery Plan is intended to acquaint the managing agencies with the history of the Eastern Brown Pelican's problem (Part I); to recommend the directions that recovery efforts should take (Part II); to assign important tasks to that end and to estimate their costs (Part III); and to make management recommendations for current populations (Part IV). Part V is the literature cited and Part VI contains appendices.

The Eastern Brown Pelican was extirpated from Louisiana and nearly so from Texas during the late 1950's and very early 1960's. A small population remains in Texas, but the only Brown Pelicans now in Louisiana are those restocked from Florida since 1968 and their offspring. The new Louisiana population suffered a reduction of about 40% from endrin (an insecticide) pollution in 1975. The South Carolina and North Carolina populations are relatively small and approximately stable. The Florida population of 20,000 to 30,000 is stable at or near historic levels.

The Recovery Plan calls for re-establishment of Louisiana and Texas populations on all historically used nesting sites. Known environmental limiting factors should be monitored. Pelican populations themselves should be monitored to detect impacts of new factors that are not being routinely monitored. When population trends are seriously downward in monitored colonies, investigations should be conducted to learn why. Further study should be undertaken to quantify any newly discovered limiting factors involved and to affect remedies.

Current knowledge suggests that the agent that extirpated the Brown Pelican from Louisiana would have been equally effective regardless of how many pelicans were there in the late 1950's and very early 1960's.

Likewise, the well known reproductive failure in California affected the whole population there in the 1960's and obviously would have similarly affected the entire population there regardless of its size. Virtually nothing is known about the relationship between population size and species survival. To set goals of that kind would give the false impression that the Brown Pelican will be safe from extirpation when specified numbers are reached. Thus, it is not advisable to attempt to set goals for attaining specific numbers of pelicans in any portion if its range.

The only population goals to be set at this time are very general. These goals are: stabilizing or increasing populations in Florida, South Carolina, and North Carolina, and re-establishment of stable or increasing colonies in Louisiana and Texas. The situation in eastern Mexico and the northern part of the West Indies is unclear, but will be investigated.

Estimated costs for the implementation of this plan are $53,000 for 1978, $121,000 for 1979, and $131,500 for 1980. These estimates have to be adjusted annually.

PART I

INTRODUCTION

The Recovery Team

Recovery Teams are appointed by the U.S. Fish and Wildlife Service to draft "Recovery Plans" for endangered species, subspecies, or populations and to advise the Service when requested. A recovery plan is a guide to show how to bring back the species or population from near extinction. Theoretically, successful implementation of a recovery plan will result in the species being removed from the endangered list.

The Eastern Brown Pelican Recovery Plan delineates and schedules a management plan to re-establish the eastern subspecies as a viable part of its ecosystem. Recovery teams for other populations of the Brown Pelican may eventually be appointed, but this plan deals only with the "Eastern" subspecies (*P. o. carolinensis*).

Six members of the Eastern Brown Pelican Recovery Team were appointed on 23 September 1975; the seventh member was appointed on 4 June 1976. Lawrence Blus, U. S. Fish and Wildlife Service, Patuxent Wildlife Research Center, Pacific Northwest Field Station, has been involved with pelican research while in Laurel, Maryland, specializing in pesticide problems in the eastern United States since 1968; Larry McNease has been primarily involved with the Louisiana pelican restoration project which began in 1968; Burkett Neely was Refuge Manager of Cape Romain National Wildlife Refuge during the early period of Brown Pelican research there from 1971 through 1974; Stephen Nesbitt and Lovett Williams are working in Florida

on a Brown Pelican conservation program that began in 1966. Ralph Schreiber recently completed an eight-year study of pelican nesting behavior in Florida. Kirke King, U.S. Fish and Wildlife Service, who joined the Team in 1976, has worked on the species in Texas since 1970.

The Recovery Plan

This plan is designed around the "step-down" system (Phenicie and Lyons 1973) involving a process of problem identification and solution propositions. This approach helps guard against being seriously distracted by the many potential avenues for research and management that may be desirable for various reasons but that would not necessarily bear on the immediate problem of preventing the extinction of the Eastern Brown Pelican. Guidance and format were provided by "Endangered and Threatened Species Recovery Plan & Team Guidelines for Fish and Wildlife Service Personnel, Recovery Team Members and Cooperators" (U. S. Dept. of Interior, Fish and Wildlife Service, Office of Endangered Species, May 20, 1974).

The block diagram (Figure 5) is the skeleton of the recovery plan, but it is terse and easily misinterpreted because little room exists in such a diagram for explanatory wording. The annotated outline (pp. II-3 through II-8) contains additional information about wording in each block.

The plan will be updated to meet new goals or management objectives periodically as new information becomes available.

The members of the Recovery Team share equal responsibility for all portions of the report. The Team Leader compiled and edited the Recovery Plan. Our work was made easier by the sense of cooperation that existed throughout the planning process.

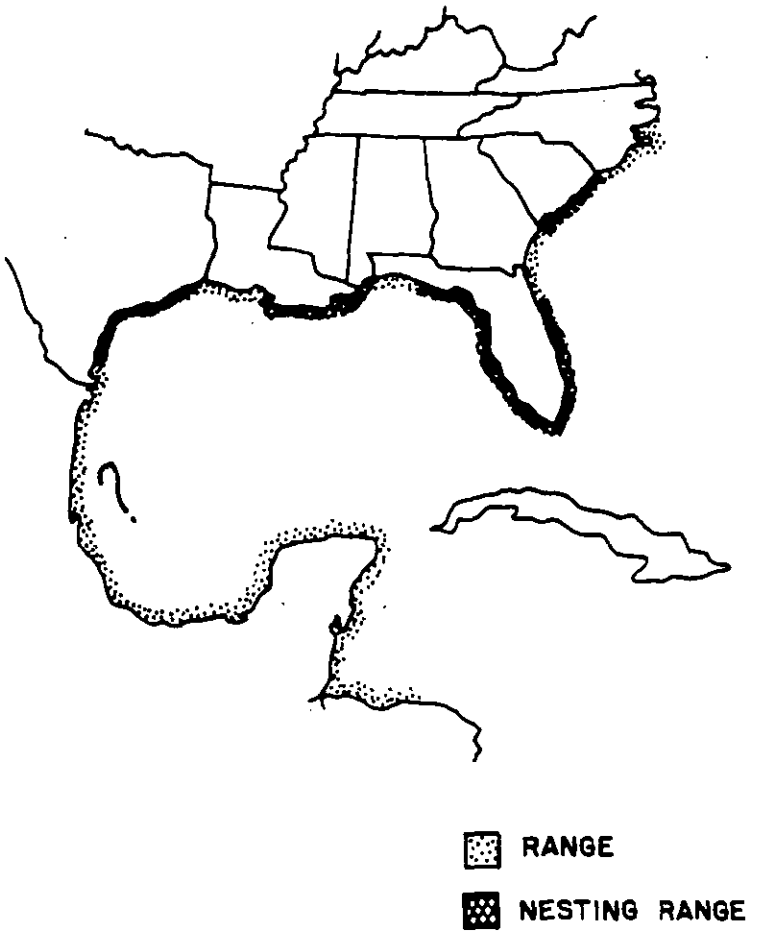


Figure 1. Historic range of the Eastern Brown Pelican. Status in eastern Mexico and West Indies uncertain at this time.

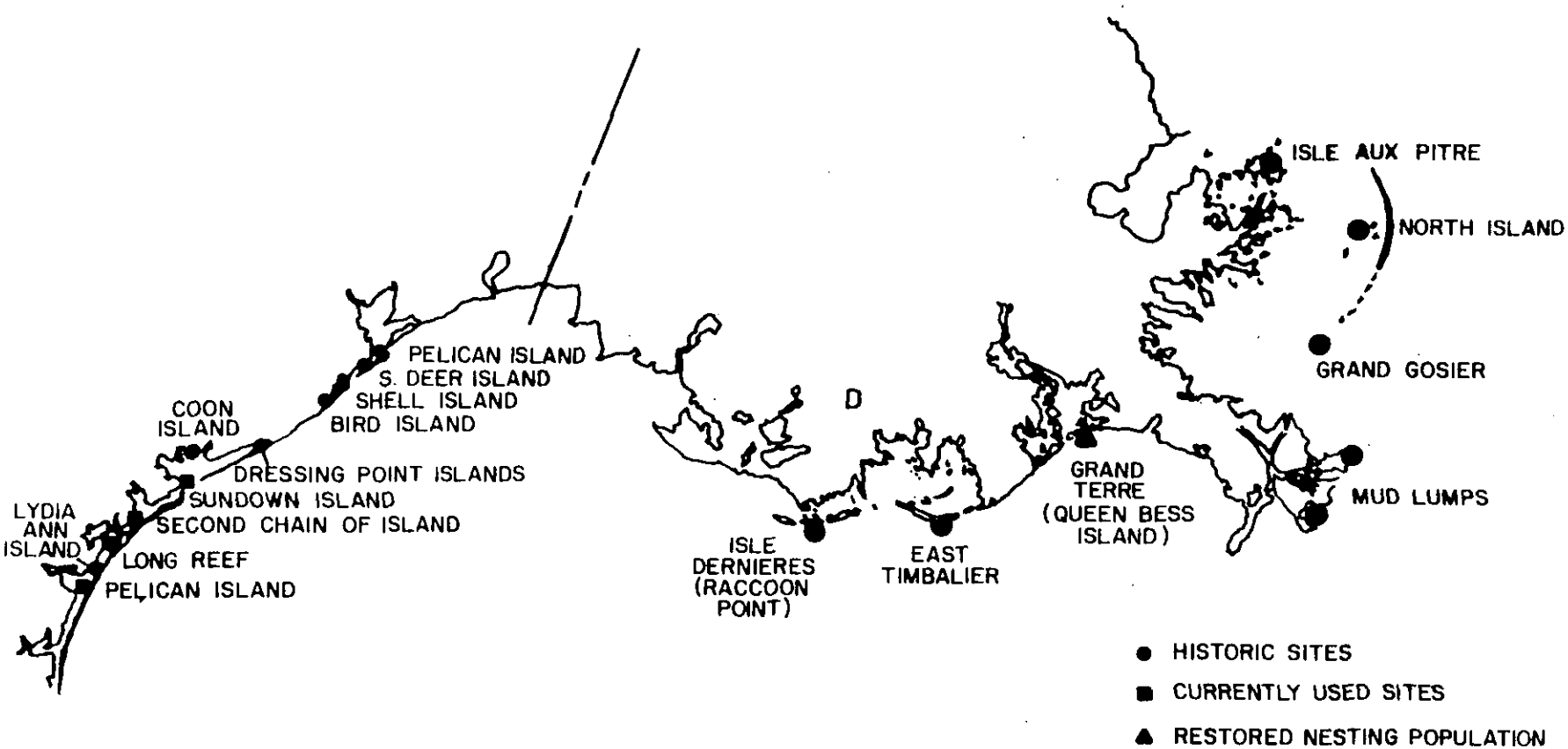


Figure 2. Eastern Brown Pelican nesting sites in Louisiana and Texas

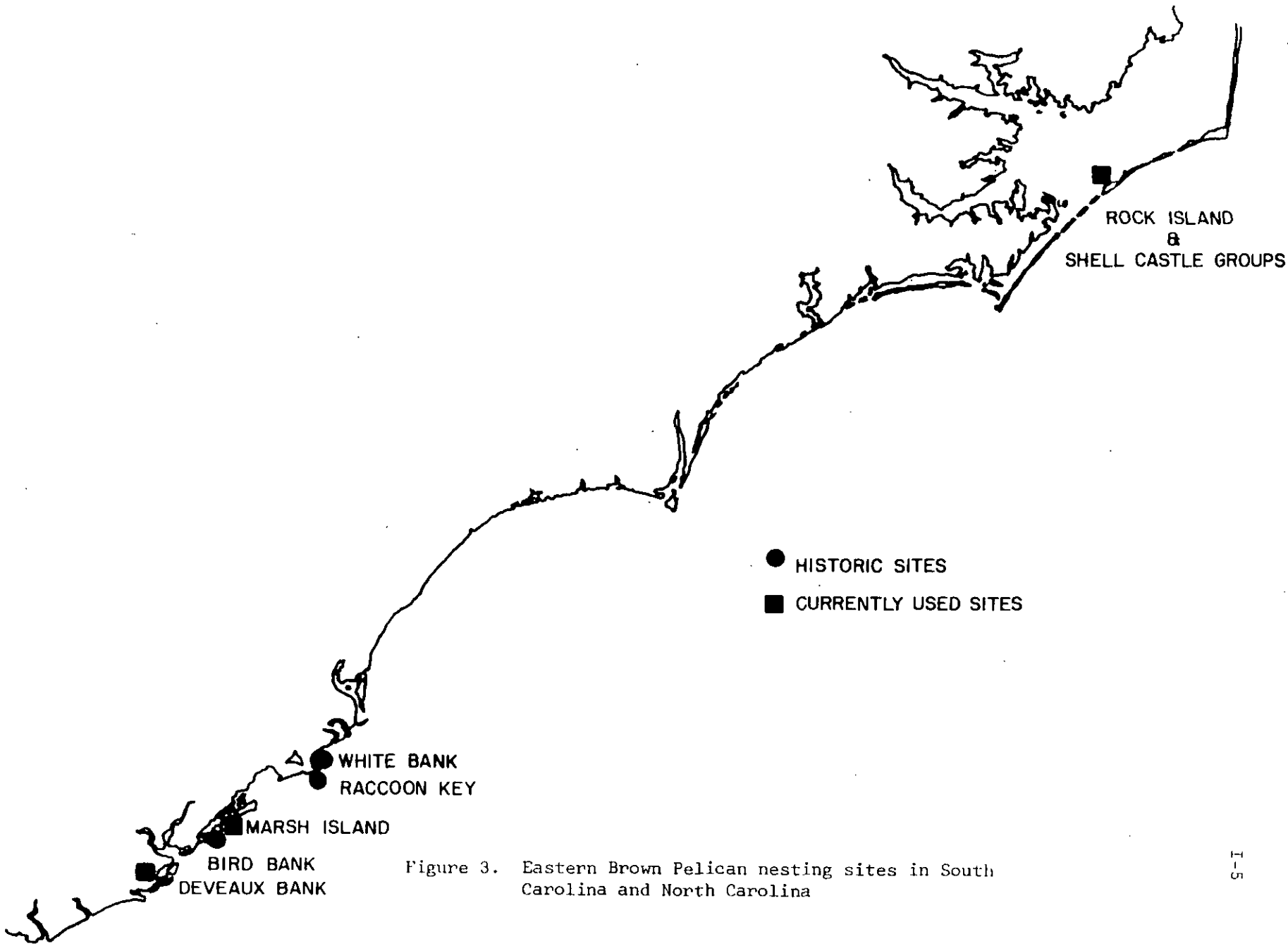


Figure 3. Eastern Brown Pelican nesting sites in South Carolina and North Carolina

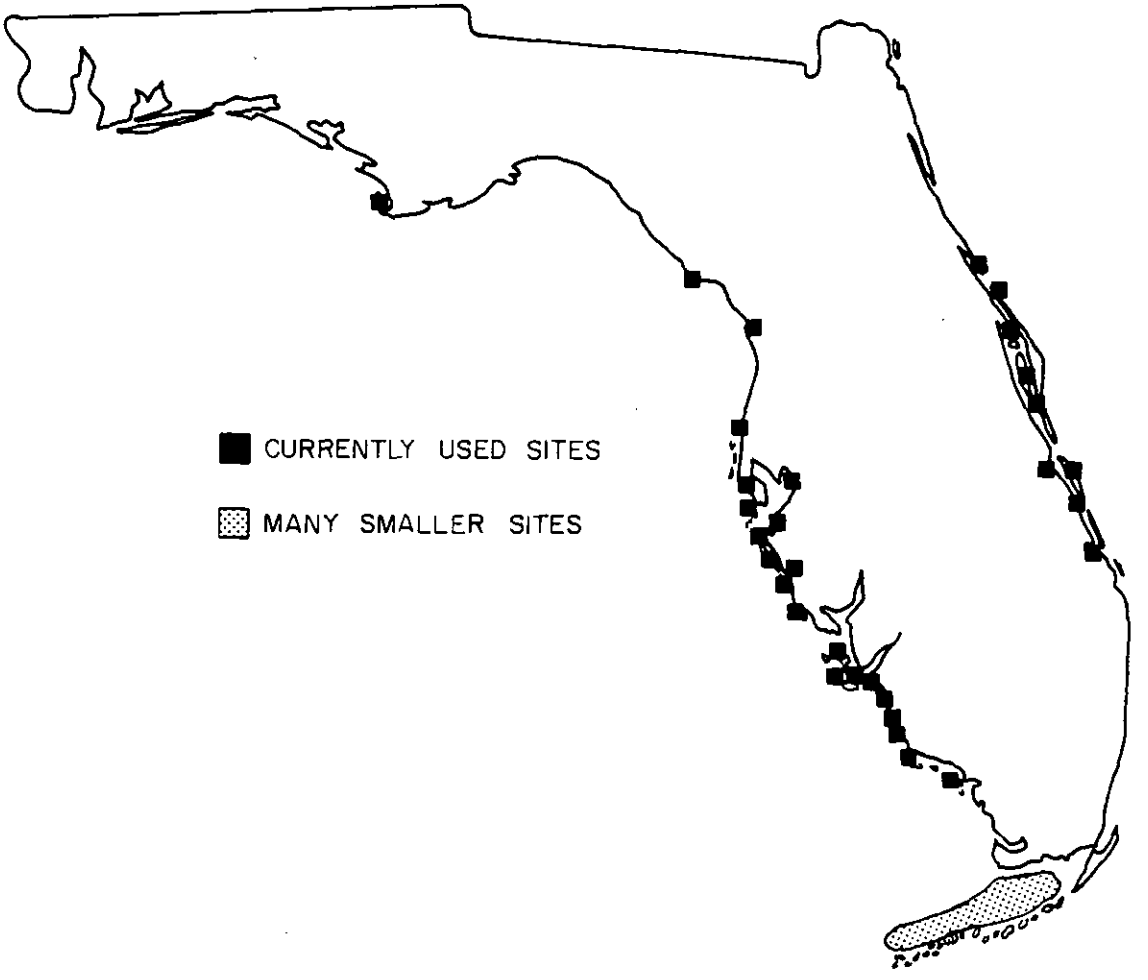


Figure 4. Eastern Brown Pelican nesting sites in Florida

The Brown Pelican in General

The Eastern Brown Pelican once nested on the coasts of eastern Mexico, Texas, Louisiana, Florida, South Carolina and North Carolina. They have not been known to nest in Alabama or Georgia or north of North Carolina. Significant U. S. breeding populations are now limited to Florida and South Carolina. This race of the Brown Pelican migrates to Florida, to the Caribbean coasts of Columbia and Venezuela, and throughout the Greater Antilles to Trinidad (Figure 1), but many pelicans in the eastern United States spend the winter in the southern parts of their nesting range. Records of the Eastern Brown Pelican along the Pacific Coast of Central America from Guatemala to El Salvador are not fully verified. Only a few inland records exist in the United States. Other subspecies of the Brown Pelican occur elsewhere in the eastern hemisphere, primarily in the subtropics and tropics.

The Brown Pelican is one of two species of pelican in North America--the other is the White Pelican (*Pelecanus erythrorhynchos*). The Brown Pelican weighs up to 8 pounds (4,000 g) and may have a wing spread over 7 feet (2 m). They feed almost entirely on fishes captured by plunge diving in coastal waters. Brown Pelicans are rarely found away from salt water and do not venture more than 20 miles (32 km) out to sea except to take advantage of especially good fishing conditions.

Brown Pelicans are colonial nesters and use only small coastal islands where they construct nests in whatever vegetation is available. Occasionally, they nest on the ground. Nesting occurs mainly in early spring and summer, but fall and winter nestings have occurred. Three eggs are the normal clutch. Hatching is asynchronous.

Some pelicans are tame and will seek food handouts from people at fishing piers. Their tameness, choice of coastal habitat, large size, and unique anatomical features, make them well known and prominent in popular literature.

Habitat requirements, limiting factors, population status, and conservation efforts that are crucial to the recovery effort are discussed in Part II.

Endangerment

Ornithologists have often mentioned instability of Brown Pelican populations. As early as 1931, the species was reported to be disappearing from Louisiana (Dabney 1931, Anonymous 1931a, Anonymous 1931b). Serious population declines have occurred in South America (Murphy 1936, p. 818). Weather, predation, starvation, and vandalism have been blamed for serious impacts on the species.

New problems now exist along with the old. In the early 1960's the Brown Pelican disappeared as a nesting species on the Louisiana coast (Williams and Martin 1968) and seriously declined along the Texas coast where it once had been abundant (King et al. 1977). Of the several species of coastal breeding birds along the Louisiana and Texas coasts, only the Brown Pelican was known to suffer so severely. Its nesting habitat in Louisiana was virtually undisturbed. A large proportion of the population had survived recent hurricanes. Mass vandalism or food shortages of a scope necessary to exterminate the species was unlikely. In short, there is at this time no adequate explanation for the disappearance of the

breeding population from Louisiana, but the demise of the entire adult population between 1957 and 1961 suggests an extremely lethal agent.

There is no evidence to support the belief that DDT alone was responsible for the demise of the Brown Pelican in Louisiana. To the contrary, DDT poisoning in pelicans impairs reproduction through eggshell thinning, but is not lethal to the birds even at the higher levels that have been recorded in the environment.

During the early 1960's in South Carolina there was a suggestion of declining annual reproduction that some workers believe was due to chemical (mainly pesticide) pollution. The only stable population during the 1960's was in Florida (Williams and Martin 1970).

Meanwhile, in California, the several hundred adult Brown Pelicans (*Pelecanus occidentalis californicus*) that attempted to nest each spring failed consistently to produce young (Schreiber and Risebrough 1972)--a result of eggshell thinning caused by DDE (Keith et al. 1970). Eventual extirpation of the species from California seemed to be only a matter of time. DDE levels in pelican body tissues exceed 1,000 parts per million. This trend has now been reversed by rapidly declining DDE levels in the California environment and in the birds themselves (Anderson et al. 1975).

Limiting Factors

To provide perspective of the factors potentially limiting populations of the Eastern Brown Pelican, we have listed and classified them (Table 1). Any single limiting factor, if of sufficient magnitude, is capable of causing extinction if it acts over a long enough period of time. Conversely, it may be inconsequential when it operates at a low level of impact or very briefly. The major need in reaching the prime objective of this Recovery

Table 1. A classification of factors limiting Brown Pelican populations.

NEGATIVE FACTORS. These are usually detrimental whenever and wherever they exist. Thus, their mere existence indicates a potential problem. Their seriousness is in proportion to their magnitude and duration.

I. Pollution

A. Pesticides and other chronic chemical contamination of the pelican's envornment

1. Sub-lethal poisoning--shell thinning and subtle pathological effects

2. Lethal poisoning--death of the bird

B. Lower water quality

1. Increased turbidity (from dredging, etc)--reduced visibility of the prey

C. Oil spills & other chemical spill incidents

1. Effects of oil on grown birds
2. Effects of oil on eggs

II. Human Interference

A. Disturbance

1. Vandalism (in nesting colonies, shooting, etc.)
2. Nest desertion or reduced nesting success, unintentionally caused
3. Facilitation of unusual predation (dogs, crows, etc.)
4. Disturbance at feeding, loafing and roosting sites

B. Fishing lines and hooks, plastic six-pack holders, etc.

III. Low Absolute Numbers (if a "threshold" effect exists)

IV. Natural Pollution, Natural Degradation of Habitat and Climatic Factors (through direct storm related mortality, erosion, plant succession, etc.)

V. Others

A. Disease and parasitism

B. Others not yet identified

Table 1. Continued

WELFARE FACTORS. These factors are only limiting when a particular resource is in short supply, thus the degree of limitation, if any, depends on the quantity of the resource.

VI. Habitat

A. Reducations in amount through losses of suitable:

1. Feeding areas
2. Loafing areas
3. Nesting areas

VII. Food

A. Insufficient supply for rearing young

B. Synergism of starvation, pesticides, parasitism, and disease

C. Insufficient maintenance diet

D. Periodic unavailability of food

1. Hurricanes, storms, tides, etc.

Plan is to accurately assess the impact of each factor singly and collectively so that they can be dealt with appropriately. This calls for identification of, and a proper emphasis on, each of the real problems.

We have followed the Fish and Wildlife Service's suggestion in developing the recovery plan through the "step-down" planning process (Phenicie and Lyons 1973). The Annotated Recovery Outline (p. II-3) and Block Diagram (Fig. 5) feature proposed remedies for controlling those limiting factors which the Recovery Team has identified as significant at this time. Our approach has been to analyze the problems and their solutions to the point that discreet tasks can be described and assigned. Some of the tasks (Fig. 5) could be further sub-divided but that would extend the length of the block diagram past the point of diminishing returns.

Past and Current Conservation Efforts

By the early 1960's the Brown Pelican had ceased to nest on the Louisiana coast and was faring almost as badly on the Texas coast. A few aerial surveys revealed that the pelican was virtually absent as a breeding species on the eastern shore of Mexico north of Veracruz by 1968. Only in Florida and possibly in South Carolina were populations at or near historic levels. This has been reviewed in geater detail by Williams and Martin (1968).

In January 1968 at the request of the National Audubon Society and the Louisiana Wildlife and Fisheries Commission about 30 biologists, wildlife managers, and wildlife administrators of the southeastern United States and federal and private agencies met at Rockefeller Wildlife Refuge

in Louisiana to develop a course of action to save the Eastern Brown Pelican from extinction.

Commitments made at the Rockefeller meeting resulted in a number of informational, research, and management activities that are still in progress. A "Brown Pelican Newsletter" was initiated to facilitate communication among biologists working on the pelican problem. A "Banding Committee" was formed to plan and coordinate banding and color-marking studies of pelicans in the southeastern United States. Each state conservation agency involved agreed to annually census the Brown Pelicans within its boundaries. A "Brown Pelican Committee" was formed jointly by the Southeastern Section of The Wildlife Society and the Southeastern Association of Game and Fish Commissioners.

The impetus provided by the Rockefeller meeting was partly responsible for the widespread public awareness of the plight of the Brown Pelican during the 1960's that ultimately resulted in its being listed as "endangered." The momentum of this early interest in pelican conservation has carried through to the present time.

Considerable research that has clarified the Brown Pelican's status and problems has been done on the Eastern Brown Pelican since 1967, particularly in relation to pesticides (Blus et al. 1974a, Blus et al. 1974b, Blus et al. 1975 and a number of others). Ralph Schreiber's studies in the Tampa Bay area have produced several valuable publications on life history, general biology, and behavior. Papers pertinent to Brown Pelican conservation are listed in the Literature Cited (Part V).

In addition to research, substantial progress has been made toward informing the public of the pelican's plight. Public interest and

appreciation are high judging from the treatment that the Brown Pelican receives in the news media. Posters and other informative materials telling the public that the species is "endangered" and protected by law and explaining how fishermen should remove hooked pelicans from their fishing lines have been disseminated by the Florida Game and Fresh Water Fish Commission since 1970. This public information campaign has been taken up by private conservation organizations, bird rehabilitation "hospitals," and research foundations. A few large Florida nesting colonies have been posted against public trespassing since 1971.

Regular population monitoring in Florida has indicated approximate stability since at least 1968 (Williams and Martin 1970, Schreiber and Schreiber 1973, Nesbitt et al. 1977) thus providing some optimism that the future is not hopeless. A stable Florida population has provided breeding stock for the Louisiana restoration project (Williams and Joanen 1974), and a restocking project using crippled pelicans from Florida is being attempted in Texas at this time.

Thus, the Team recognizes that this recovery plan does not represent the beginning of the recovery effort for the endangered Eastern Brown Pelican. Rather, this plan takes the matter up "in the middle" with the intention of providing a better organized format for further progress toward the recovery goal that was recognized 10 years ago.

The incomplete coverage of the Eastern Brown Pelican situation in Mexico is a serious deficiency in the recovery plan at this time. Very little information about the status of the species in eastern Mexico is available but it appears that it is not faring well there, perhaps being

limited there by some of the same factors that exist in Texas. In an effort to obtain more information, a meeting of the Recovery Team was scheduled in conjunction with the 1977 meeting of the Southeastern Section of The Wildlife Society in San Antonio, Texas to which the Republic of Mexico was invited through U. S. Government channels to send a representative. Efforts will be continued to establish contact with Mexican officials to obtain information about Brown Pelicans in Mexico. The Brown Pelican situation in the northern part of the West Indies will also be addressed by the Team as time permits in the future.

PART II

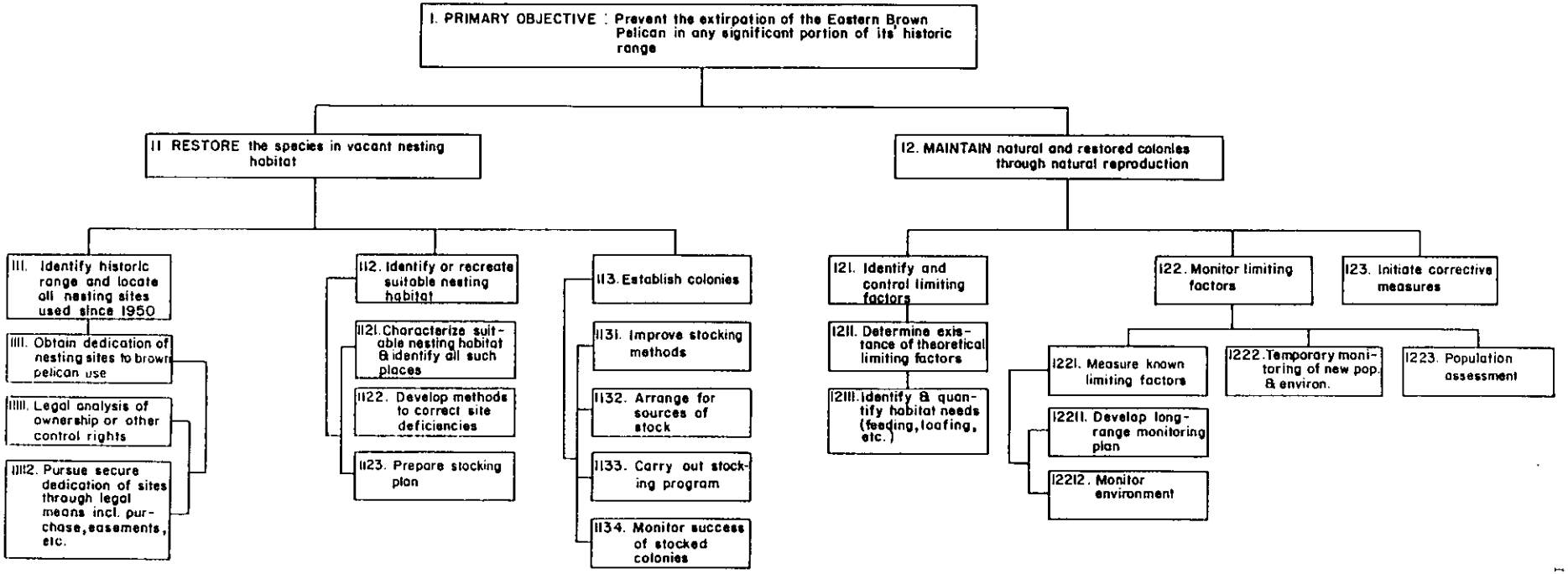
THE PLAN

This section describes the steps recommended by the Recovery Team to achieve recovery of the Eastern Brown Pelican.

The "step-down" planning process is not easy to describe or use. The reader is referred to "Tactical Planning in Fish and Wildlife Management and Research" (Phenicie and Lyons 1973) for a detailed explanation of this system. The block diagram (Fig. 5) contains the same information as the Annotated Recovery Outline. Table 1 contains some additional theoretical limiting factors, some of which, to our knowledge, do not at this time adversely affect the Brown Pelican.

Much of the same information is repeated in Table 2 (Implementation Schedule) of Part III where funding needs are estimated and job assignments are recommended.

Figure 5 Flow Chart



Annotated Recovery Outline

1. PRIMARY OBJECTIVE: Prevent the extirpation of the Eastern Brown Pelican in any significant portion of its historic range.

11. RESTORE the species in vacant nesting habitat. One characteristic of the species to resist extinction is its wide distribution. This wide distribution must be maintained.

111. Identify historic range and plot locations of all nesting sites used since 1950. Historic range is based on records of nesting along the Atlantic and Gulf Coasts. This task has been accomplished by the Recovery Team (Figures 1-4).

1111. Obtain dedication of nesting sites to Brown Pelican use. Although some nesting sites are in wildlife refuges and on other public property, there remain possible conflicts of uses that could be made of those properties. This is to be resolved in two steps.

11111. Legal analysis of ownership and other control rights. The ownership of some Brown Pelican nesting sites is not clear. An analysis of legal ownership and possible alternative management easements will precede any recommendations by the Recovery Team for land acquisition for Brown Pelican management.

11112. Pursue secure dedication of sites through legal means including purchase, easements, et cetera.

112. Identify extant or recreate suitable nesting habitat. This involves three steps:

1121. Characterize suitable nesting habitat and identify all such places. Habitat now used for nesting will be characterized to establish initial specifications of important features.

1122. Correct site deficiencies. Marginal or unsuitable habitat situations can be improved for nesting by modifying certain features, after appropriate study.

1123. Write stocking plan. Restocking of nesting sites should be planned for attainment of the primary objective. This would call for initial stocking only of the better sites which, by their locations and number, would result in re-establishment of the species in areas of former abundance. A stocking plan should be written.

113. Establish colonies. General distribution of the species is directly related to, and probably dependent upon, locations of nesting colonies; thus it is the nesting distribution, within the former range, that is of initial concern. After nesting habitat has been mapped, it would be appropriate to establish (or re-establish) nesting colonies in accord with the stocking plan. This will require the following steps.

1131. Develop stocking methods. Stocking practices should approximately follow those used in the Louisiana

restoration project. Alternative techniques should be tested and evaluated. Natural colonization, although a conceivable means of restoration, is too slow and uncertain to accomplish the necessary restoration within a reasonable length of time.

1132. Find and arrange sources of stock. Stock for new colonies should come only from secure populations with state and federal agency concurrence and with public support. Genetic relationships should be considered in choosing stock sources.

1133. Carry out stocking program. This covers capturing of stock, logistical and other activities associated with moving the stock, and care of transplanted birds until they can survive unattended.

1134. Monitor success of newly stocked colonies. Transplanted stock should be monitored for survival, reproductive success, and the impacts of identifiable limiting factors. This could probably be done best in connection with jobs (mentioned below) for routine environmental and population monitoring.

12. MAINTAIN natural and restocked colonies through natural reproduction. Populations should be monitored to detect whether nesting colonies are self-sustaining. It would not be realistic to specify population size goals since a basis for such specifications does not exist at this time. On the other hand, population trends will indicate whether populations are self-sustaining or not, regardless

of their absolute size.

121. Identify limiting factors. This will involve continuous vigilance for presently known limiting factors, or manifestation of possible limiting factors (Table 1, task 1211), and an indepth study of habitat quantity and quality requirements (Task 12111). As limiting factors are identified, they will be monitored in task 1221.

1211. Determine existence of theoretical limiting factors (Table 1). Any suspected manifestation of a factor that falls within this classification should be investigated to identify it and monitor it if appropriate. This task might overlap with other monitoring tasks at times. The determination of a serious limiting factor would lead to a corrective measure (Task 123).

12111. Identify and quantify needs for feeding, roosting, and loafing habitat. Research is needed to identify and quantify the overall habitat needs of the species so that realistic critcial habitat can be listed and bonafide habitat needs can be effectively provided.

122. Monitor limiting factors. Monitoring should be designed to routinely measure quantifiable known factors (DDE, etc.) and to search for suspected new factors when population failures cannot be accounted for by known limiting factors.

This can be approached in two ways: by monitoring for those factors that are suspected of being limiting (Fig. 5, block 1221) and by measuring population success itself (Fig. 5, block 1223). It will also be necessary to monitor the new Louisiana population and its environment temporarily until a monitoring plan is prepared.

1221. Measure known limiting factors. This form of monitoring would assess the potential impact of limiting factors (DDT, etc.) that can be quantified by environmental measurements.

12211. Develop long range monitoring plan. Monitoring to date has been primarily investigation of die-offs; obtaining baseline data from healthy specimens; analyses for pesticides and other chemical pollutants; and disease research. A long-range monitoring plan should be developed, by pesticide experts, with assistance from specialists in health sciences. The monitoring plan should provide for proper emphasis on measuring all detectable limiting factors including pesticides and other chemicals, disease, colony site erosion, human encroachment, et cetera. The objective should be to produce the kind and amount of data that would be necessary to detect problems as soon as they appear and before they become serious.

12212. Monitor environment. This provides for the implementation of a long-range monitoring plan and differs from task 1222 (below).

1222. Temporary monitoring. At least minimal monitoring of populations and the environments is necessary until the long range monitoring plan (task 12211) is prepared and implemented (task 12212). Special emphasis should be on the new population in Louisiana with the particular objective there of determining the role of endrin in any future die-off. Temporary monitoring is discussed in greater detail in Part IV.

1223. Population assessment. This monitoring would concern itself with detecting population failure and trends within the pelican population itself. Local population failure may be the first evidence of the presence of a new limiting factor in the environment. Data obtained under this task will, in a general way, indicate progress in the recovery effort.

123. Initiate corrective measures. When known limiting factors are detected in significant magnitude, measures should be taken to alleviate them. This might take the form of a recommendation that a certain pesticide be removed from use in the pelican's environment or that some special protective measure be enacted. However, until limiting factors are actually identified and measured, further task description is not possible.

PART III

IMPLEMENTATION OF THE PLAN

This section consists of the implementation schedule (Table 2) showing tasks, lead agencies, sources of funding, target dats for accomplishment, assigned priority, and estimated costs, for the period 1978-1980. It will require revision annually.

Tasks relate to the block diagram (Fig. 5) and the annotated recovery outline (pages II-3 through II-8).

We envision that much of the recovery effort will be funded with cooperative state and federal funds under the Endangered Species Act of 1973 (1/3 state; 2/3 federal). For the time being, this may be a problem with the States of Louisiana and Texas because they do not have cooperative agreements with the U. S. Fish and Wildlife Service to enter into the cost sharing provision of the 1973 Act. The present version of the implementation schedule has been prepared without taking such special circumstances into account in the belief that consistent assignment of tasks should be our goal and that deviations will become necessary only in special cases based on agreements with each agency involved. If one state cannot participate to the extent recommended in the implementation schedule, other arrangements will be made, but we can only recomment what we believe is the most appropriate assignment at this time.

Numbers in the Implementation Schedule correspond to Figure 5 and to the Annotated Recovery Outline (page II-3). Several numbers in the outline and block diagram do not appear in the implementation schedule because they are not "tasks."

Table 2. Implementation Schedule, Fiscal years 1978-1980.

		Task Block No. & Title	Lead Agency or Work Responsibility	Source of Funding	Target Dates Begin	Target Dates Finish	Priority and/or Chronology (1-4)	Estimated Cost ($1,000) FY78	FY79	FY80
111	HABITAT SECURITY	Identify historic range and record locations of nesting sites	Florida	Florida	FY78	FY78	1	½	--	--
11111		Ownership analysis	FWS	FWS	FY78	FY79	2	--	6	--
11112		Dedicate nesting sites	FWS & cooperators	FWS	FY78	Continue	3	--	6	--
1121	HABITAT MANAGEMENT	Characterize nesting habitat	Research Contract[1]	Each state[2]	FY78	FY79	4	--	12	6
1122		Correct site deficiencies	Florida	State[2]	FY79	Continue	4	--	--	6
1123		Stocking plan	FWS	FWS	FY78	FY79	3	½	½	½
1131	STOCKING	Stocking methods	Louisiana & Texas	Each state[2]	FY78	Continue	3	5	5	5
1132		Arrange sources of stock	Florida	Florida	Underway	Not Applicable	2	--	--	--
1133		Carry out stocking program	Fl., La., Tx.[3]	Each state[2]	Underway	FY80	2	10	10	20
1134		Monitor success of colonies	Each state[4]	Each state	Underway	Continue	1	4	4	6
1211	LIMITING FACTORS	Determine limiting factors	All cooperators	Each state	FY78	Continue	2	--	--	--
12111		Identify and quantify habitat needs (feeding, loafing, etc.)	Research Contract[1]	FWS	FY78	Continue	2	--	25	50
12211	MONITORING	Develop monitoring plan	Patuxent WRC	Patuxent (FWS)	FY78	FY79	1	5	15	--
12212		Monitor environment	Research Contract[1]	Each state[2]	Underway	Continue	2	10	20	20
1222		Temporary monitoring	States & Patuxent (FWS)	States & Patuxent (FWS)	FY77	FY79	1	6	--	--
1223		Population assessment	N.C., S.C., Fl., La., Tx.	Each state[2]	FY77	Continue	3	8	8	8
123		Initiate corrective measures[5]	Each state	Each state	FY78	Continue	3	6	10	10

[1]Contracts for research should be made to qualified agencies, organizations, or individuals.
[2]Funding would be appropriate under State and Federal cost sharing projects through the Endangered Species Act of 1973.
[3]Louisiana and Texas appear to be the only states requiring restocking at this time. This will be dealt with in detail in the stocking plan.
[4]Each restocked state should furnish data to the Recovery Team for routine evaluation of its restored colonies.
[5]Assignments, timing, and costs cannot all be anticipated until the required type of corrective measure is known.

PART IV

DISCUSSION AND GENERAL RECOMMENDATIONS

A number of items concerning the routine management of the Eastern Brown Pelican have come to the attention of the Recovery Team. Some of these do not seem to be essential to the primary objective of this recovery plan, but responsible management is not limited solely to recovery from the endangered status. The recovery effort will influence all management decisions to some degree by affecting priorities of the managing agencies. It would thus seem useful to discuss briefly some of these.

Banding Programs and Research

Ecological research should be encouraged with emphasis on well-planned studies that have pertinence to the conservation of the Brown Pelican and do not involve adverse impacts on the species. Purely zoological research should also be allowed when it does not interfere with the recovery effort or with other research with definite conservation objectives. Hobby type research and colony visitation by inexperienced or otherwise unqualified persons should be discouraged.

The following recommendations for banding are based on the judgement of the Recovery Team members and will be amended as new information becomes available:

1) Bandings should be done late in the nesting season to minimize disturbance to young, to nests containing eggs, and to adults guarding eggs.

2) Nestlings younger than six weeks should not be banded routinely.

3) Banding parties of 3 to 6 persons are recommended in order to expedite that activity and minimize prolonged disturbance.

4) Banding should be done by professional conservation personnel assisted, when necessary, by experienced laymen.

5) The frequency and duration of colony visits for banding and other research purposes should be held to an absolute minimum. Two, 2-hour banding visits per colony should be sufficient, if properly timed, to result in several hundred birds being banded in large colonies.

6) Banding Brown Pelicans distant from nesting colonies should be permitted provided the birds can be captured, handled, and released expeditiously and without injury.

Banding and research proposals that have merit should be permitted on National Wildlife Refuges as well as in other colony sites.

Scientific Specimens

There is a need in museums for Brown Pelican specimens, especially for known-age birds, alcohol preserved specimens, and tissue and/or internal organ samples. At this time, specimens should not be taken from the wild for these purposes but an effort should be made to make maximum utilization of any specimens that become available through accident or otherwise.

Scientific work related to survival of the species is especially important at this time. Some of this work requires taking specimens. A definite need exists for collecting normal wild specimens in connection with the species' recovery, particularly for monitoring and restocking.

Research proposals that call for such taking should be judged on their merits in the permit application, case by case.

It is difficult to insure that the availability of specimens will be known to persons who would use them. We recommend that an effort be made by the managing agencies to extend communications between the agencies, bird rehabilitation centers, and scientists who might use such specimens when they become available.

Captive Rearing

Brown Pelicans have nested in captivity as both "normal" birds and as permanent cripples unable to fly (Meischner 1959 & 1962; Klos 1966; Dooley, R. E. and O. Heyland 1969). In the several known successful breeding incidents, the pelicans involved were young when taken into captivity. They were also isolated from other birds.

Rearing in captivity has three possible applications in Brown Pelican conservation. First, the species could be maintained in captivity as stock against extinction in case of some holocaustic incident in its natural environment. Secondly, captive rearing would facilitate basic research on pesticides, diseases, nutrition, and other aspects of Brown Pelican biology that may be important to its recovery. And thirdly, public support of the Brown Pelican conservation program is important--the general public should have a clear concept of what a Brown Pelican is, by being able to see them in zoos.

Captive rearing programs for research and public education purposes should be encouraged by the States and Fish and Wildlife Service when crippled pelicans are available that cannot survive as wild birds. Rearing methods should be documented and simplified to the greatest possible degree.

Restoration in Louisiana

The Brown Pelican population in Louisiana was a large one, although considerable differences in numerical estimates exist. Arthur (1831) and Bailey (1918) reported 50,000 Brown Pelicans on the Mississippi River mud lumps. Arthur (1931) further estimated the total Louisiana population to be 75,000 to 85,000 adults. Oberholser (1938), however, recorded only 10,000 breeders for the entire Louisiana coast. While it is impossible to estimate historic numbers of Brown Pelicans in Louisiana from the small amount of highly contradictory evidence available, the Recovery Team feels that estimates of about 10,000 breeding pairs is probably more accurate than the others.

The last nesting record for Brown Pelicans in Louisiana involved 200 pairs in 1961 (Van Tets 1965) until Brown Pelicans from Florida were introduced to Louisiana during the period of 1968-1977. Bewteen 1971 and 1976, at least 220 young were fledged in the restored population. At the end of 1976 numbers stood at approximately 400 Brown Pelicans. Of the original 765 stocked and 220 fledged approximately 260 were killed by a pesticide incident in 1975. The remainder are unaccounted for, having probably died of various causes and/or dispersed from the vicinity.

The translocation of 100 fledglings in the summer of 1977 was to North Island in the Chandeleur Chain of Islands where the last natural nesting occurred in 1961. This new population is being monitored closely by the Louisiana Wildlife and Fisheries Commission. At last report, the birds were not dispersing unduly.

Information and Public Education

The effectiveness of the Brown Pelican recovery effort is dependent on agency and public support, in spirit and funding. To obtain the necessary support, accurate information about the seriousness of the pelican's plight should be made widely available so that all potential contributors will have an opportunity to support the pelican conservation program.

Participation in the recovery effort (or lack of it) by conservation agencies and organizations should be made known, when appropriate. Credit should be given to those who contribute substantially to the attainment of the recovery goals.

The public should be given opportunities to actively participate when pamphlets are distributed, signs are posted at fishing piers, et cetera.

News items on the recovery effort should be technically accurate, professional, and in a reasonably serious tone in order to convey the proper air. Technical personnel should review news items and scripts and assist public relations personnel in preparing them.

Law Enforcement

The Brown Pelican is susceptible at times to disturbance and to habitat alteration. Attention should be given to regular patrols and enforcement of conservation regulations. Important habitat, including nesting, feeding, and resting areas require protection from encroachment. Curtailment of human disturbance is especially important in nesting colonies.

The dedication of certain key nesting areas as Brown Pelican sanctuaries through purchase of long-term easements in combination with effective enforcement would add stability to the pelican management program.

Table 4. Ownership of Pelican Nesting Sites Used Between 1950 and 1976.

State	County/ Parrish	Local Name	Latitude-Longitude	Documented Year of Activity Since 1950	Ownership
N.Carolina	Carteret	Rock Island (3 sites)	35°06' - 76°04'	1950-1976	Public Ownership (State or Federal)
S.Carolina	Charleston	Deveaux Banks	32°33' - 80°10'	1950-1976	State Ownership
S.Carolina	Charleston	Marsh Islands	32°59' - 79°32'	1951, 55-59, 62, 64, 65, 67-76	National Wildlife Refuge
S.Carolina	Charleston	Bird Bank	32°57' - 79°34'	1951, 57, 61, 63, 65, 66, 71, 74	National Wildlife Refuge
S.Carolina	Charleston	Raccoon Key	33°00' - 79°29'	1952	National Wildlife Refuge
S.Carolina	Charleston	White Banks	33°01' - 79°31'	1956, 58-60, 63, 65	National Wildlife Refuge
Florida	Volusia	Port Orange	29°09' - 80°58'	1968-1976	State Owned Spoil Island
Florida	Brevard	New Smyrna	29°02' - 80°55'	1976	State Owned Spoil Island
Florida	Brevard	Crane Island	28°49' - 80°46'	1950-1976	National Wildlife Refuge
Florida	Brevard	Hall Island	28°23' - 80°37'	1968-1976	State Owned Sovereignty Land
Florida	Brevard	George & Brady Islands	28°17' - 80°40'	1974-1976	Brevard County

Table 4. Continued

State	County/ Parrish	Local Name	Latitude-Longitude	Documented Year of Activity Since 1950	Ownership
Florida	Indian River	Pelican Island	27°48' - 80°26'	1950-1976	National Wildlife Refuge
Florida	Indian River	Vero Beach	27°38' - 80°22'	1968-1976	State Owned Spoil Islands
Florida	St. Lucie	Ft. Pierce	27°28' - 80°20'	1968-1976	State Owned Spoil Islands
Florida	Martin	Sewell Pt.	27°11' - 80°11'	1974-1976	Private Ownership
Florida	Monroe	Don Quizote Key	24°40' - 81°19'	1968-1976	Private Ownership
Florida	Monroe	Molasses Key	24°41' - 81°11'	1968-1976	Private Ownership
Florida	Monroe	Remainder of Florida Bay & Keys (Little Duck Key, South Nest Key, Big Tern Key, Cowpens, West Key, South Bouyx Key, Palm Key, Frank Key, both Buchannan Keys, Barnes Key, Arsnicker Key, Channel Key, Fanny Key, East Bahia Key, Coon Key, Rattlesnake Key, Bill Finds Key, Cottel Key, Marquesas Key and Dry Tortugas.)		1968-1976	National Wildlife Refuge and National Park

Table 4. Continued.

Florida	Collier	Everglades City	25°51' - 82°25'	1968-1976	National Park
Florida	Collier	Marco Pass	25°58' - 82°41'	1971-1976	Unknown
Florida	Lee	Estero Bay	26°22' - 82°50'	1968-1976	State Owned Sovereignty Land
Florida	Lee	N. Estero Bay	26°25' - 82°53'	1971-1976	State Owned Sovereignty Land
Florida	Lee	Miguel Key	26°30' - 82°01'	1969, 1973	State Owned Sovereignty Land
Florida	Lee	Masters Landing	26°34' - 82°04'	1968-1973	State Owned Aquatic Preserve
Florida	Lee	Hemp Key	26°36' - 82°09'	1968-1976	State Owned Sovereignty Land
Florida	Lee	Bird Key	26°40' - 82°14'	1968-1976	State Owned Sovereignty Land
Florida	Charlotte	Gasparilla Pass	27°49' - 82°16'	1975-1976	West Coast Inland Navigation District
Florida	Sarasota	Venice	27°03' - 82°26'	1968-1974	State Owned Sovereignty Land
Florida	Sarasota	Osprey	27°12' - 82°32'	1972-1974	State Owned Sovereignty Land
Florida	Sarasota	Roberts Bay	27°18' - 82°32'	1970-1976	State Owned Sovereignty Land
Florida	Manatee	Buttonwood Harbor	27°23' - 82°38'	1968-1976	State Owned Sovereignty Land
Florida	Manatee	Cortez	27°28' - 82°41'	1968-1976	State Owned Sovereignty Land
Florida	Manatee	Bird Key	27°33' - 82°36'	1968-1976	State Owned Sovereignty Land

Table 4. Continued.

State	County/ Parrish	Local Name	Latitude-Longitude	Documented Year of Activity Since 1950	Ownership
Florida	Hillsborough	Bird Island	27°51' - 82°24'	1968-1970	Private Ownership
Florida	Pinellas	Tarpon Key	27°40' - 82°41'	1968-1976	National Wildlife Refuge
Florida	Pinellas	Johns Pass	27°47' - 82°46'	1971-1976	a) Private Ownership b) City of Maderal Beach
Florida	Pinellas	Ancolet Sound	28°06' - 82°49'	1968-1972	State Owned Sovereignty Land
Florida	Citrus	Bird Key	28°49' - 82°45'	1968-74, 76	State Owned Sovereignty Land
Florida	Levy	Seahorse Key	29°07' - 83°03'	1968-1976	National Wildlfie Refuge
Florida	Gulf	Port St. Joe	29°50' - 85°20'	1971, 1972, 1976	State Owned Sovereignty Land
Louisiana	Plaquemines	Queen Bess Island	28°18' - 80°95	1971-1976	State Owned
Louisiana	San Bernard	North Island	29°52' - 88°55'	1961-1962	State Owned
Texas	Matagorda	Sundown Island	28°27' - 96°21'	1974	State Owned
Texas	Aransas	Second Chain of Islands	28°11' - 96°49'	1965, 68, 70, 1972-74, 1976	State Owned, Leased to National Audubon
Texas	Aransas	Long Reef	28°04' - 96°57'	1969	State Owned, Leased to National Audubon
Texas	Nueces	Pelican Island	27°49' - 97°10'	1967, 1970-72, 1975-76	Corpus Christi Navigation District (Bird Sanctuary)

Monitoring

The decline of the Brown Pelican in Louisiana, Texas, and California in the 1950's went unnoticed by conservation agencies until the populations had reached seriously low levels. This emphasizes the need for monitoring. Temporary monitoring should proceed throughout the range of the Eastern Brown Pelican until a long-range monitoring plan is developed. The following discussion is designed to offer interim guidance in this area.

Florida. Temporary monitoring in Florida should include continuation of the annual aerial survey and prompt investigations of reported die-offs. At least two visits should be made to three widely separated nesting colonies during the nesting season to observe nesting success, or, more specifically to detect nesting failure, thin shelled eggs, or other serious reproductive problems.

More intensive field monitoring should commense in the event that a serious problem is detected.

Louisiana. Nesting success in the two new colonies should be monitored closely. Die-offs should be rapidly and carefully investigated as to the cause. Provisions should be made to routinely collect and store specimens of fishes and marine birds in the vicinity of nesting colonies for later analysis in the event of a bird or fish kill, with the objective of specifically determining the possible role of endrin.

Texas. All colonies should be monitored carefully for reproductive success. All dead pelican specimens available should be autopsied for cause

PART V

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PART VI

APPENDICES

APPENDIX A. Summary of reviewer comments on the Preliminary Draft

The Preliminary Draft of the Recovery Plan was issued on 1 November 1976 and mailed to 65 agencies, organizations, and individuals including state and federal agencies likely to be interested in Brown Pelican management, for critical review. Formal written responses were received from 12 reviewers, less formal review comments in the margins of the manuscript were received from 5 reviewers, informal hand-written notes were received from two reviewers, and brief verbal comments were made by several others. The 12 written review comments and the team's responses are on file at the U. S. Fish and Wildlife Service Regional Office, 17 Executive Park Drive, NE, Atlanta, Georgia 30329.

The reviews contained mostly editorial suggestions on grammar and style. Most criticism concerning omissions and other shortcomings of the manuscript were adopted and are reflected in this edition of the plan.

One criticism that was repeated by several reviewers had to do with certain management recommendations that were made in the narrative portion of the plan but which did not appear in the block diagram or the implementation schedule. This has been corrected by a clear statement that Part IV of the revised plan contains general management recommendations that are offerred in addition to the steps believed essential for recovery of the species and will thus not be scheduled for implementation as part of the Recovery Plan.

Several reviewers questioned what they viewed as undue emphasis on nesting season limiting factors and nesting colony management at the

BROWN PELICAN RESTOCKING EFFORTS IN LOUISIANA

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Brown Pelican restocking efforts in Louisiana.—The last natural nesting of the Brown Pelican (*Pelecanus occidentalis*) in Louisiana occurred in 1961 (Williams and Martin, Quart. J. Florida Acad. Sci. 31:130–140, 1969). Soon thereafter, it became evi-

TABLE 1

FLORIDA PELICANS SENT TO LOUISIANA AND THEIR SUBSEQUENT REPRODUCTIVE SUCCESS

Year	Collection Site (Fla)	No. of Nestlings Taken	Number Surviving		No. of Young Fledged in Louisiana
			Transport	2 Weeks After Release	
1968	Hall Island	50	49	46	no nesting
1969	Hall Island	55	53	50	no nesting
1970	Hall Island	100	100	94	no nesting
1971	Hall Island	65	65	63	8
1972	Hall Island	100	100	86	14
1973	Port Orange	100	100	97	26
1974	Port Orange	102	100	100	104
1975	Port Orange	103	101	97	13
1976	Crane Island and	58	99	72	56
	Port Orange	43			
Total		778	767	705	221

dent that if the species were to survive in Louisiana, a broad-based, cooperative reestablishment effort was needed. In 1966, a meeting of interested persons and agencies was organized by the Louisiana Wildlife and Fisheries Commission and the National Audubon Society. This meeting led to the formulation of a restocking program to be undertaken by the Louisiana Wildlife and Fisheries Commission and the Florida Game and Fresh Water Fish Commission. Birds were to be taken from stable colonies in Florida and introduced at historic colony sites in Louisiana. Secondary objectives of this study were: (1) to monitor for any lingering evidence of the factors responsible for the original demise of the species in Louisiana during the late 1950's to early 1960's, and (2) to compare the pesticide residue levels of Florida pelicans with those transplanted to Louisiana, thus providing some insight into the relative health of both environments.

Beginning in 1968, nestling Brown Pelicans, 8 to 11 weeks old, were captured from nesting colonies on Florida's Atlantic Coast (Brevard and Volusia counties) and trucked to Louisiana for release. The number of pelicans sent each year, the collection site, and number which survived are given in Table 1. Pelicans were released at 2 sites in 1968 and 1969, Rockefeller Refuge and Grand Terre Island (Fig. 1). The birds released at the Rockefeller Refuge site apparently died and all subsequent releases were made at Grand Terre. Direct release with 2 daily feedings was found to be the most effective method for establishing the birds in Louisiana.

Reproduction in transplanted birds first occurred in 1971 when the initial transplants became 3 years old (Williams and Joanen, Wilson Bull. 86:279-280). A total of 221 Louisiana-produced young were fledged between 1971 and 1976 (Table 1).

A well publicized die-off of both White (*Pelecanus erythrorhynchos*) and Brown Pelicans began late in the winter of 1975 and continued into summer. An estimated 35 to 40% of the standing population of 400 to 450 Brown Pelicans was lost. Earlier newspaper reports listed the loss as much higher, some accounts as high as 80%. Tissue

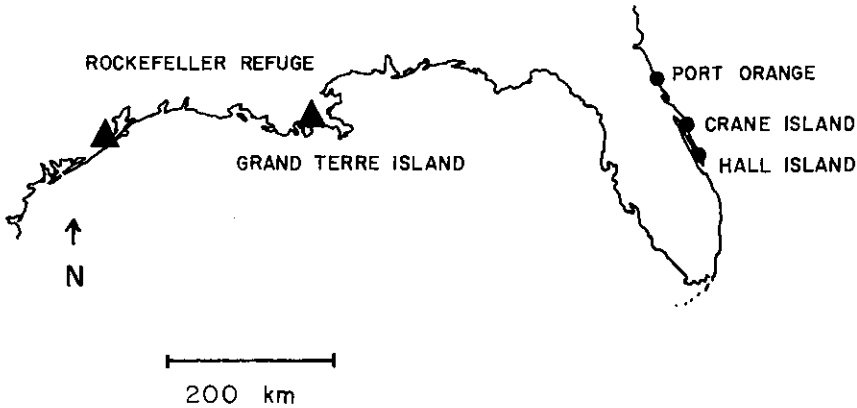

FIG. 1. Brown Pelican capture sites and release location for Louisiana restocking.

analysis indicated the presence of endrin (Florida Game & Fresh Water Fish Commission, unpublished data) which was probably the causative agent. The source of the endrin has not been identified.

The 1975 die-off points up the value of and need for a continuing monitoring effort. Had there been no pelicans present, the endrin contamination might have gone unnoticed until its effects would have been much more apparent. In the case of endrin, as with DDT (Anderson et al., Can. Field-Nat. 83:91–112, 1969), pelicans appear to be a highly sensitive organism responding quickly to environmental contamination.—STEPHEN A. NESBITT AND LOVETT E. WILLIAMS, JR., *Wildlife Research Laboratory, Florida Game and Fresh Water Fish Commission, 4005 S Main Street, Gainesville, FL 32601, and* LARRY MCNEASE AND TED JOANEN, *Louisiana Wildlife and Fisheries Commission, Grand Chenier, LA 70643.* *Accepted 18 July 1977.*

The Brown Pelican Restocking Program in Louisiana

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Abstract: The eastern brown pelican (*Pelecanus occidentalis carolinensis*) ceased nesting in Louisiana in 1961 and the species completely disappeared by 1963. From 1968 to 1980, the Louisiana Department of Wildlife and Fisheries and Florida Game and Fresh Water Fish Commission reintroduced 1,276 pelicans at 3 release sites in southeastern Louisiana. Two restored nesting populations were established, 1 at North Island in the Chandeleur Island chain and 1 at Queen Bess/Camp Island in Barataria Bay. The Queen Bess/Camp Island colony fledged 2,751 birds between 1971 and 1984. North Island production was 909 fledglings between 1979 and 1984. The restored North Island colony first nested successfully when the birds were 2 years old. Reintroduced birds at the Queen Bess/Camp Island site first nested successfully when 3 years of age.

Proc. Annu. Conf. Southeast. Assoc. Fish and Wildl. Agencies 38:165-173

The recent history of the eastern brown pelican in Louisiana involved the extirpation of a large population of birds, the reintroduction of pelicans from a relatively stable Florida population, and most recently encouraging reproductive success at 2 restored colony sites.

Historically, the brown pelican population in Louisiana was undoubtedly a large one, but the extreme variability of earlier counts makes the accuracy

of such counts suspect. In 1919, the Louisiana brown pelican population was estimated as more than 50,000 birds (Pearson 1919, as cited in King et al. 1977:419). Oberholser (1938) estimated approximately 5,000 breeding pairs for the entire state, while Lowery (1955) reported as many as 5,000 adults plus their young on East Timbalier Island alone. Although there are discrepancies among the earlier estimates, brown pelicans are known to have occupied the entire Louisiana coastal beach zone at one time. The largest nesting colonies were reported to occur in southeastern Louisiana on the Chandeleur Island chain, Isle aux Pitre, mud lumps at the mouth of the Mississippi River, and extending to the barrier island chain of the Timbaliers (Lowery 1955).

Newman (1958) first reported a declining brown pelican population in Louisiana. The last nesting record of brown pelicans was in May 1961 when Van Tets (1965) found adults with young on North Island in the Chandeleur chain. In 1962, Williams and Martin (1968) found only 6 non-breeding brown pelicans remaining at North Island. James (1963) reported brown pelicans had been common along the Louisiana coast until 1958 but had completely disappeared by 1963 (King et al. 1977).

In 1968, 7 years after the brown pelican ceased to nest in the state, the Louisiana Department of Wildlife and Fisheries and the Florida Game and Fresh Water Fish Commission jointly undertook a program to reestablish the species by stocking previously occupied range with young birds from Florida colonies. Secondary objectives were to monitor survivability, reproductive success, and environmental pollutants. Several governmental agencies and private organizations participated in the original organizational phases of the program. These agencies included southeastern state game departments, the U.S. Department of the Interior Fish and Wildlife Service, and the National Audubon Society.

The authors wish to acknowledge A. Ensminger and J. Tarver of the Louisiana Department of Wildlife and Fisheries Fur and Refuge Division for their support and supervision of Louisiana's brown pelican program. For their assistance in field work, the authors extend appreciation to T. Prickett, R. Latapie, R. J. Dugas, S. Hein, N. Kinler, and other cooperators of the Louisiana Department of Wildlife and Fisheries. Personnel of the Florida Game and Fresh Water Fish Commission provided valuable field assistance in Florida capture and loading operations.

Methods

From 1968 to 1976 nestling brown pelicans were captured from nesting colonies on Florida's Atlantic coast and released at Grand Terre, Louisiana (Nesbitt et al. 1978). From 1977 to 1980, nestlings were captured from Florida's gulf coast and transported to North Island and Isle aux Pitre. Three primary reintroduction sites were restocked from 6 capture areas between 1968 and 1980 (Fig. 1).

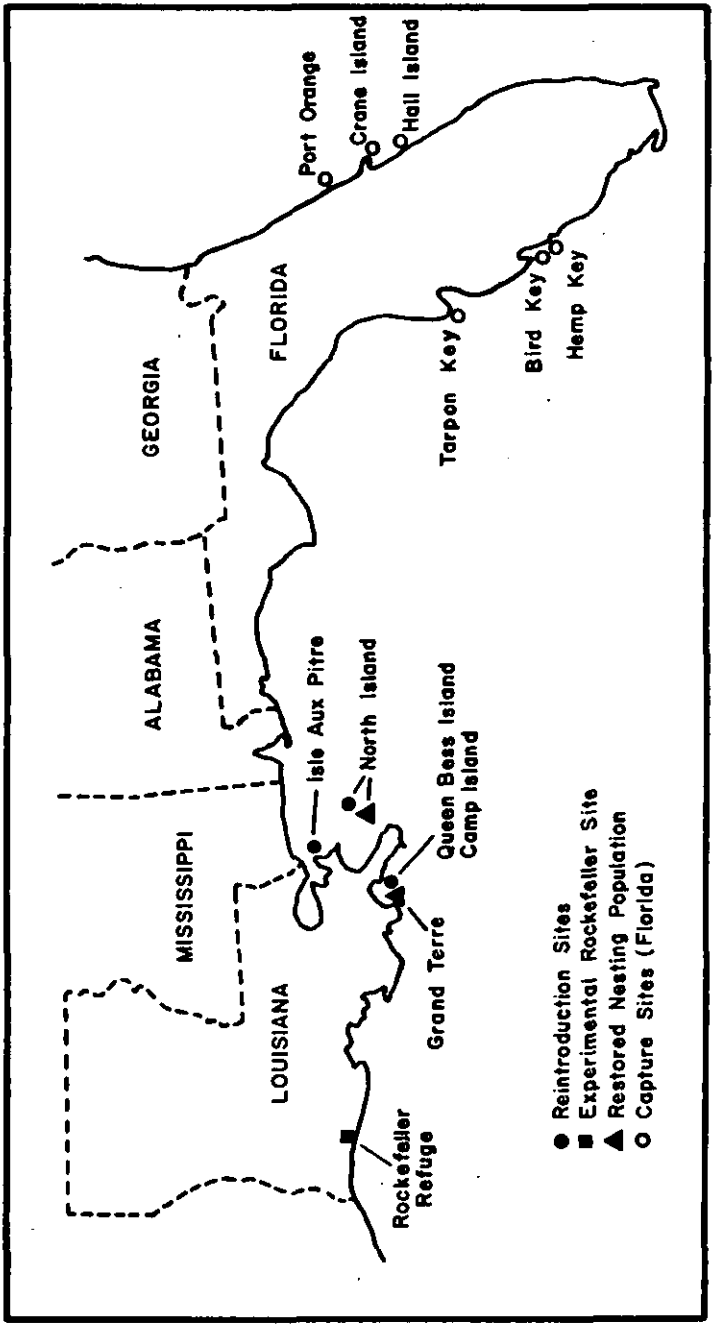

Figure 1. Brown pelican capture and restoration sites (redrawn from Nesbitt et al. 1978).

All young pelicans (8–11 weeks old), were hand captured, crated, and trucked to Louisiana. The birds were then transported by boat to the release site. Time of confinement for the birds varied from 30 to 36 hours, depending upon capture time, highway distance between Florida capture and Louisiana boat dock sites, and length of boat ride to final destination. Direct release with 2 daily feedings was found to be the most effective method for establishing the birds in Louisiana (Joanen and McNease 1974, Nesbitt et al. 1978).

Reintroduced young pelicans were banded with a U.S. Fish and Wildlife Service leg band and also a white patagial wing streamer at time of release. Louisiana-raised fledglings were banded from 1971 to 1980. Banding was discontinued after 1980 because of the stress caused by banding operations. Monitoring programs near the release and nesting sites consisted of retrieval of dead birds (adult and young), addled eggs, egg shells, and regurgitant materials found around the nest sites. These materials were analyzed for insecticide residues and egg shell thinning (Blus et al. 1975, 1979). Records were also maintained on nesting activity, timing of nesting, location, number of nesting pairs, number of nests, number of eggs per nest, hatchability, survival of young, and age at sexual maturity. Aerial photographs provided a permanent record of nesting and fledging. Periodic aerial surveys were conducted throughout the year in order to check on survival and dispersal from release sites.

Results and Discussion

Survival of Reintroduced Pelicans

The survival rate for 1,318 transplanted nestling Florida pelicans was 96.8% during transport and 89.5% at the end of 2 weeks following release (Table 1). This period was judged to be the most critical in terms of survivability.

A dieoff of both white (*P. erythrorhynchos*) and brown pelicans began in the late winter of 1975 and continued into spring. Approximately 35% of the standing population of 400 to 450 brown pelicans were lost (Nesbitt et al. 1978).

Reproductive Success of Restored Colonies

A total of 2,751 pelicans were fledged by the Queen Bess/Camp Island colony for the 1971–84 period. The number of young fledged per nest averaged 1.2 for 2,305 nests which contained eggs during that 14-year period (Table 2). The active nesting period generally began in November and extended into July. The number of major renesting attempts per year ranged from 2 to 5, a reflection of the detrimental effects that severe winter and early spring environmental conditions had on reproductive success. High tides, high winds, cold temperatures, torrential rainfall, and wind driven waves caused many nesting failures.

Table 1. Transplant success of Florida brown pelicans sent to Louisiana, 1968–1980.

Year	*N* taken	Capture site (Fla.)	*N* surviving		Release site (La.)
			Transport	2 weeks after release	
1968	50	Hall Island	49	46	Grand Terre
1969	55	Hall Island	53	50	Grand Terre
1970	100	Hall Island	100	94	Grand Terre
1971	65	Hall Island	65	63	Grand Terre
1972	100	Hall Island	100	86	Grand Terre
1973	102	Port Orange	100	97	Grand Terre
1974	102	Port Orange	100	100	Grand Terre
1975	103	Port Orange	101	97	Grand Terre
1976	58	Crane Island	99	72	Grand Terre
	43	Port Orange			
1977	102	Tarpon Key	95	90	North Island
1978	118	Tarpon Key	101	95	I. Aux Pitre
1979	122	Tarpon Key	122	120	I. Aux Pitre
1980	198	Bird Key Hemp Key	191	169	I. Aux Pitre
Total	1,318		1,276	1,179	

The reestablished North Island colony fledged 909 brown pelicans out of 556 nests (with eggs) from 1979 to 1984. The number of young fledged per nest averaged 1.6 during the 6-year period (Table 3). The North Island birds generally began nesting in April and their young were fledged by July. Nesting by the North Island colony was generally adversely affected by late spring weather fronts. However, this colony always completed its reproductive efforts with fewer renesting attempts than did the Queen Bess/Camp Island colony.

Winter and early spring nesting by the Queen Bess/Camp Island colony resulted in an extended reproductive cycle because of weather-related nesting failure, as reflected by the number of major renesting attempts presented in Tables 2 and 3. The lower number of young fledged per nest for Queen Bess/Camp Island (1.2) when compared to North Island (1.6) is a direct reflection of an 8–9 month reproductive cycle as compared to a 4–5 month cycle. North Island nests were generally better constructed than those at Queen Bess/Camp Island, perhaps because of availability of nesting materials and/or competition for available materials.

Queen Bess/Camp Island Colony

During the non-nesting period, July–October, birds were observed to move out approximately 32 km around the release site. The pelicans fed in Barataria Bay close to the release site in the Gulf of Mexico and also took trash fish dumped by commercial fishing boats returning to port. However, during the nesting period, the birds, both adults and immatures, were usually found gathered at the nesting colony.

Table 2. Reproductive success of brown pelicans in Louisiana, 1971–1984.

Year	Nest initiation	Last young fledged	Renesting attempts	Ground nests (%)	*N* nests	*N* fledged Total	*N* fledged Per nest
1971	Mar 1971	Jun 1971	–	100	11	8	0.72
1972	Jan 1972	Jun 1972	2 QB–1 Cl[a]	80–100	0–23	0–14	0–0.60
1973	Feb 1973	Jul 1973	1 QB–2 CI	50–100	42–25	26–0	0.61–0
1974	Nov 1973	Jun 1974	2 QB	50	90	104	1.15
1975	Nov 1974	Jul 1975	2 QB–2 CI	70–100	82–36	13–0	0.16–0
1976	Oct 1975	Aug 1976	2 QB–3 CI	80–100	49–14	56–0	1.14–0
1977	Nov 1976	Apr 1977	3 QB	10	83	1	0.01
1978	Nov 1977	Jul 1978	1 QB–3 CI	80–100	62–78	74–54	1.19–0.69
1979	Nov 1978	Jul 1979	2 QB–3 CI	80–100	104–75	130–20	1.25–0.27
1980	Nov 1979	Jul 1980	3 QB	50	158	184	1.17
1981	Dec 1980	Jul 1981	2 QB	90	214	300	1.40
1982	Nov 1981	Jun 1982	3 QB	90	237	427	1.80
1983	Dec 1982	Jul 1983	2 QB	90	467	680	1.46
1984	Dec 1983	Jul 1984	3 QB	90	455	660	1.45
Total					2,305	2,751	1.19

[a] QB = Queen Bess Island; CI = Camp Island.

The first nesting attempt at the Grand Terre release took place in March 1971 on a manmade shell island approximately 3 km from the original release site, at the mouth of the Barataria Bay ship channel. Wing rivets with remnants of patagial streamers and leg bands identified all the nesting birds as those released in the summer 1968. At that time, the nesting birds were almost 3 years old (Williams and Joanen 1974). Thirteen nests were found, 11 of which contained 22 eggs. From this effort, 8 young were fledged. Survival from the original 1968 stocking indicated almost a 100% survival to age 3.

The 1972 nest construction and egg laying effort began on a low shell island in late January; however, this attempt was lost due to high tides and wave action. After 3 fruitless nesting attempts, a fourth successfully produced 14 fledglings. The 1973 nesting effort began in mid-February; however, this attempt proved unsuccessful. In April of that year, the birds began nest construction and successfully fledged 26 young (Joanen and McNease 1974). The

Table 3. Reproductive success of Brown Pelicans on North Island, Louisiana, 1979–1984.

Year	nesting began Date	young fledged Date last	renesting attempts *N* major	nests *N*	*N* fledged Total	*N* fledged Per nest
1979	Apr 1979	Jul 1979	1	17	9	0.53
1980	Apr 1980	Jul 1980	2	16	10	0.63
1981	Mar 1981	Jun 1981	1	40	50	1.25
1982	Apr 1982	Jul 1982	1	94	163	1.73
1983	Apr 1983	Jul 1983	1	135	220	1.63
1984	Mar 1984	Aug 1984	2	254	457	1.80
Total				556	909	1.63

birds began nesting again in November of the same year. This nesting attempt was successful and carried over into 1974, producing 104 young.

The onset of laying varied considerably from year to year and the termination of nesting was extended until a successful nesting effort was accomplished. The 1975 nesting attempt began in November and produced only 13 fledgling young. That year, a notable dieoff of white and brown pelicans occurred in winter and early spring. The colony was reduced to approximately 250 brown pelicans, a loss of approximately 35%. Carcasses of both white and brown pelicans were collected and sent to a laboratory for analysis. Tissue analysis indicated the presence of endrin, which was the probable causative agent (Nesbitt et al. 1978).

About 40 pairs initiated nesting in the winter of 1975 at the colony site. Fifty-six young were fledged from 49 nests in 1976.

The 1977 effort began in early November 1976 and after 3 major nesting attempts only 1 young was fledged.

From 1978 to 1984, the majority of nesting was accomplished on Queen Bess Island. The number of young produced and also the number of young fledged per nest generally increased each successive year (Table 2). This is a rather large island approximately 80 ha in size with a high beach rim. The island is vegetated with sea matrimony (*Lycium carolinianium*) and black mangrove (*Avicennia nitida*). Camp Island, badly destroyed by the high winds and wave action in 1976, was completely eroded away by tides and wave action early in 1980.

Henny (1972) indicated that a recruitment standard of 1.2 to 1.5 young per breeding female is necessary to maintain a stable population. The Queen Bess colony met or exceeded this standard each year from 1978 to 1984 (Table 2). Although nesting was usually initiated in November, rarely did these early attempts produce young. Due to the severe weather and high tides produced from advancing cold fronts, low shell nesting islands were inundated and nests were lost.

Nests were constructed of sticks and twigs of black mangrove, roseau cane (*Phragmites communis*), sea purslane (*Sesuvium* sp.), sea matrimony, and oyster grass (*Spartina alterniflora*). Manmade materials, such as window screen, rope, pieces of plastic, and fishing line were used quite commonly. Nest dimensions measured during 1973 indicated an average nest was 76 cm long x 64 cm wide x 22 cm high. The average egg cavity dimensions were 30 cm x 27 cm x 9 cm deep. Thirty percent of the nests were constructed in *Avicennia* and *Lycium*, with an average height above the ground of 33 cm.

North Island Nesting

The first nesting attempt on North Island was begun in April 1979 and 9 young were fledged (Table 3). Young produced per nesting attempt increased each year until 1982 with a high of 1.7. The total number of young fledged in 1983 was 220 out of 135 nests for a 1.6 ratio. The North Island

colony met Henny's (1972) 1.2 to 1.5 fledglings per nesting female recruitment standard in 1981 and exceeded it in 1982, 1983, and 1984 (Table 3). This colony has nested each year very close to the original release site. All North Island nests were built on the ground. During the nonnesting period, however, pelicans were usually spread out some 80 km over the entire Chandeleur Island chain. A total of 909 young have been fledged in the colony since it was established in 1977.

The restored North Island brown pelicans first nested successfully when they were 2 years old. Individuals marked with wing buttons and leg bands from the 1977 transplant were 21 months old when they first began nest construction. Banding records indicate a few birds from the original Florida transplants were recovered in Florida, some 250 km from the original release site. These data indicate a small number of birds probably abandoned the release site and wandered east toward their former Florida colony.

Environmental Pollutants, Queen Bess/Camp Island Colony

Egg shell thickness of 147 pelican eggs collected from 1971 through 1976 averaged 6.7% to 13.5% less than the mean thickness of eggs collected before 1947 (Blus et al. 1979). Blus et al. (1979) also found that all egg contents analyzed contained residues of *p,p'*-DDD, dieldrin, PCB's, and endrin. Residues of *p,p'*t-DDT, heptachlor epoxide, hexachlorobenzene, toxaphene, and chlordanes also were identified; however, mirex residues were not identified in any of the samples. Residues of endrin and several other organochlorines were found in tissues of brown and white pelicans involved in the dieoff in Louisiana in 1975. Endrin was the major factor in the dieoffs because residues in brains of several of the pelicans were similar to those found in brains of experimental birds dying on endrin dosage (Blus et al. 1979).

The dieoff in 1975 coincided with the peak in endrin residues in pelican eggs (Blus et al. 1979). Blus et al. (1974) also concluded from their studies of pelicans in South Carolina that residues of DDE were high enough in Louisiana brown pelicans to induce eggshell thinning but not high enough to interfere with reproductive success.

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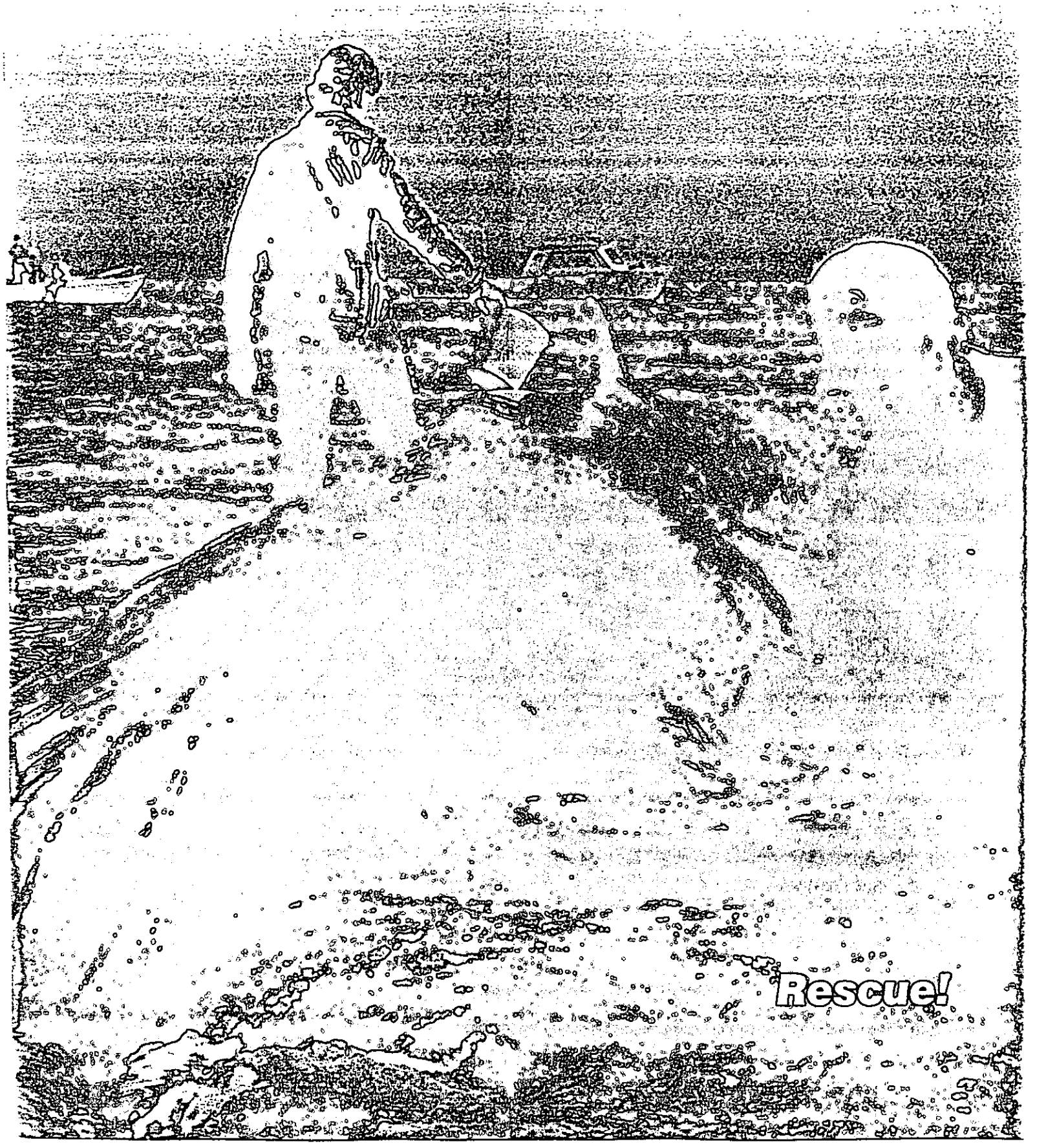
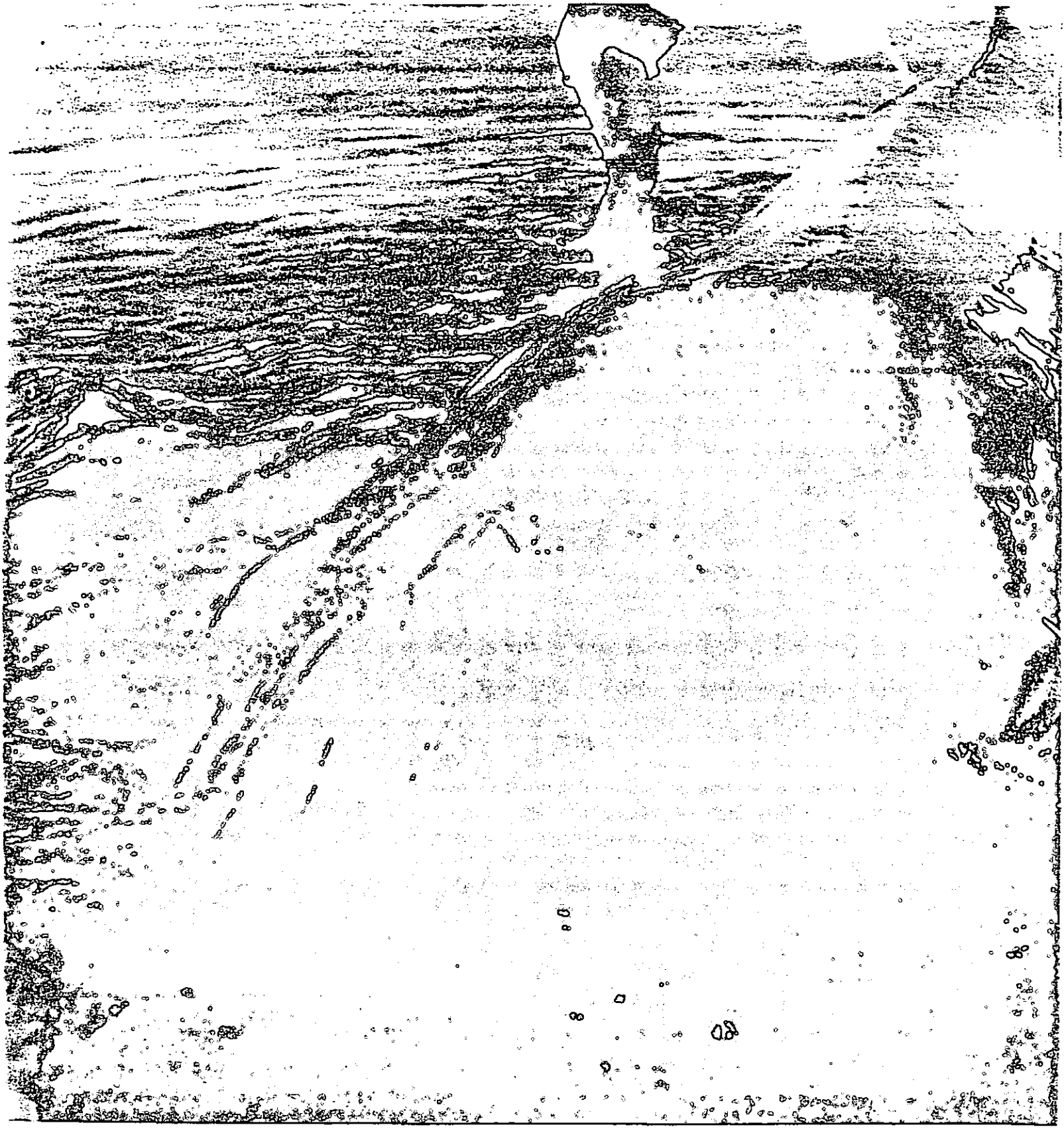
LOUISIANA Conservationist

January/February 1987





Caught Between the Devil and the Deep Blue Sea

By Sara Ann Harris and Dave Richard

Photograph by Pete Picou

"Entrapment is one thing, but if a whale is beached because he is sick, even if he is freed, swims away and looks healthy—he is damned." *Jim Mead*

Shrimpers off of the Louisiana southwest coast spied a large swell in the water and a sickle shaped dorsal fin. Dolphins whipping through the waves off of a boat's stern was an every day occurrence for shrimp boat captains. But clearly this heaving from beneath the surface was not caused by the usual playful boatmates. Two jet sprays into the October air—a giveaway of the creature's identity.

A couple of days later, Tuesday October 28, at 6:00 a.m., fisherman Danny Callisle, while running his gill nets, sighted that whale stuck in the sand one mile east of Calcasieu Pass in Cameron Parish. Originally he took the sight for an overturned sailboat with the keel pointing skyward. A doubletake and then Callisle realized that he was actually looking at a live whale—a 33 foot, 15 ton, dark blue-grey, adult male Bryde's whale, as marine biologists later established.

Over the next 24 hours biologists, writers, law enforcement officers, television and radio reporters, video photographers and local citizens became privy to an introduction to this unexpected and startling visitor about which even the experts stated forthrightly, "We know that Bryde's whales exist and that's about it." Bryde's whales are one of ten species commonly called the Great Whales due to their terrific size. A baleen rather than a toothed whale (the two major categories of the cetacean order which includes whales, dolphins and porpoises), the Bryde's whale feeds by filtering small schooling fish and crustaceans through rows of course baleen plates on each side of its mouth. Bryde's range in the Pacific, Atlantic and Indian oceans and adjoining seas. They "tend to occur in warmer water," explained Smithsonian Curator of Marine Mammals Jim Mead. Other sources indicate that unlike most species in this family called rorquals (Norwegian for tube shaped with throat grooves), Bryde's whales do not migrate to the poles to feed and reproduce in the spring. Physically, they can be distinguished from similar species by two ridges running from the tip of the snout to beside two blowholes and another more pronounced ridge running down the snout's center directly to the blowholes.

This animal floundering on the sandbar near a stretch once called Broussard's Beach was clearly identifiable as a Bryde's whale. What was unclear was what anyone could *do* for the huge lost creature. Even a healthy cetacean truly suffers when subjected to the fate of being stranded in the shallows or beached. Their skin is acutely sensitive to the sun. Exposure in a very short time causes blistering and cracking and the consequent susceptibility to serious skin infections. Some sources still hold that land bound the massive cetaceans, in fact the order including the largest mammals to ever exist, can be stressed and suffocated by the pressure of their own weight.

Exposure also introduces the threat of severe heat exhaustion. Body temperature among cetaceans is kept from exceeding the normal range by water conduction. Body heat is released primarily through the flukes (tail "fins") and flippers by cooling waters. Even in cold weather these appendages are very warm to the touch and it's not uncommon in dolphin beachings to pack these in ice.

The factor that deals the death blow, Mead added, and one which we don't have any control over is an advanced case of shock. It causes internal contamination that can be lethal. Even an animal that appears healthy more than likely is suffering the effects of shock—some degree of blood poisoning by intestinal bacteria. When dealing with a whale as large as this, the logistics of proper treatment (dousing it with gallons of sun screen, moving it to a facility to monitor for at least 24 hours, and/or injecting the marine mammal with liters upon liters of antibiotics) exceed realistic expectations.

There is no marine mammal section in the Louisiana Department of Wildlife and Fisheries nor any cetologists (cetacean biologists) on staff. Piecing together this sparse but helpful incoming information on

The factor that deals the death blow and one that we don't have any control over is an advanced case of shock. It causes internal contamination that can be lethal.

whales, it became obvious to department biologists as the drama unfolded that nothing substantial could be done in the way of supportive treatment. Time became the critical issue. Time was *the* issue. If the hyperstressed creature was to survive, a rescue team had to return him to the sea as quickly as humanly possible. Contacting Department Secretary J. Burton Angelle Sr., they got the word: "Do whatever it takes to save that whale."

7:45 a.m. Tuesday October 28, 1986. Danny Callisle reports the strange sighting to the Cameron Parish Sheriff's Department.

8:00 a.m. The sheriff contacts the Louisiana Department of Wildlife and Fisheries at Rockefeller Refuge 30 miles away.

8:55 a.m. LDWF wildlife specialist and the sheriff approach the whale by boat across placid waters.

10:00 a.m. LDWF biologists motor out to the scene to investigate.

11:15 a.m. LDWF telephones cetologists at Sea-Arama Marineworld and Texas Agricultural and Mechanical College both in Galveston. They recommend that the operation be put on standby until they have the chance to give the whale a medical checkup. Many marine mammals are sick or injured when they become stranded. Returning them to the sea without any treatment only assures that they will show up on the beach again with Mr. Death sitting even closer. The cetologists stress the importance of protecting the whale. The tide will be receding leaving

Photograph by Pete Picou

Fire hoses are used to jet sand out beneath the whale for buoyancy.

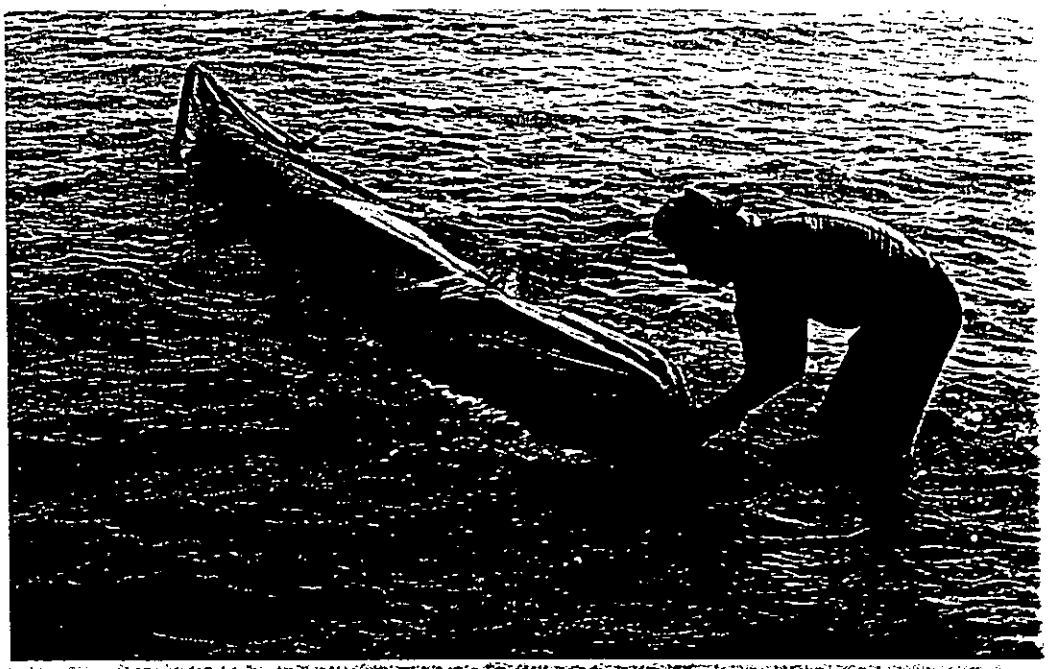
the animal even more vulnerable to life threatening conditions.

Noon Wildlife specialists along with the sheriff post guard on Kim, as an assisting shrimper named him. A tarp is placed over the flukes to keep them cool and moist and to guard against overheating. Volunteers contribute to the continuous vigil by dumping buckets of water over the stray whale to protect his delicate skin. Calls are placed to locate enough suntan lotion as already there is blistering on the whale's flippers. Finally, utmost care is taken not to obstruct the blowholes through which, of course, the mammal breathes. He shows no sign of protest. The voluminous, helpless and most likely puzzled creature can do little more than maintain in such bizarre circumstances.

2:30 p.m. The two members of the Marine Mammal Stranding and Salvage Network arrive from Galveston. Sherman Jones of Texas A & M and John Kerivan from Sea-Arama check Kim over. They establish that she is a he and find no signs of injury, major infection or illness. He is an apparently healthy animal. Like many beachings the cause remains a mystery. Kerivan postulates that perhaps while feeding along the coastline with no concept of an end to the ocean, he ran aground when distancing himself from the heavy shrimping activity.

All thoughts turn toward a rescue. Immediately, Kim must be returned to his aquatic environment. LDWF devises a strategy that is going to take all of the heavy duty pumps, industrial size hoses, muscle power and boats that can be coordinated to move him out of very shallow water.

3:45 p.m. A backup crew from LDWF arrives. Biologists and shop crew along with marine mammal experts and university biologists launch a rescue effort with the generous assistance of Cameron Construction Company. It "simply" involves turning the plus 15 ton mammal, no longer supported or protected by the nurturing sea, 180° around to face homeward and then as gently as possible pull and push it back into deep water.



Photograph by James Nunez

Craig Guillory checks on the whale.

Photograph by James Nunez

Department and sheriff's crew physically turn Kim 180 degrees.

Pumps from the Grand Chenier Fire Department and Cameron Construction Company are stationed on several boat decks. Affixed hoses are run out to Kim. Jetting out the sand beneath the exposed whale forms a pit providing a degree of buoyancy. All hands at the victim's sides, the rescue team physically turns him. Kim sprays up jets of water that dampen the diligent crew and then involuntarily rolls from side to side knocking some of the men for a dunk in the brine.

5:15 p.m. Darkness and fatigue introduce themselves to complicate the effort. Fortunately for the chilled crew members who had been on and/or in the water all day without anything to eat, the Baptist church in Cameron sends over sandwich makings and drinks.

The equipment for this operation is improvisational and quick wits accounts for much of the knowhow. A nylon sling is fashioned and slipped around Kim fitting behind the flippers and extending out in front of the snout. The rope is secured to the Skipjack (a mere 27 foot runabout) which then attempts to ease the whale off of the sand. But the movement is awkward. The whale repeatedly lumbers sideways and sloughs off the sling.

7:35 p.m. The team finally inches Kim into deeper water. The men jump back to avoid thousands of pounds of undulating life as the mostly unseen Kim begins to sense his regained freedom. Still roped to the whale, the Skipjack looks like a cork bobbing on the ocean. It is a long few moments before the reawakening whale loosens himself from the bridle and the towboat.

Darkness obscures the efforts of seven small boats to locate one another and coordinate their movement for the unfamiliar maneuver of herding the whale to safe waters. To surround a 33-foot (probably very upset) whale whose behavior is totally unpredictable with only his occasional surfacing for air to indicate his whereabouts presents not just a challenging task but a threat to human life.

9:08 p.m. Having stuck it out until reaching nearly a mile offshore, the crew calls it a night.

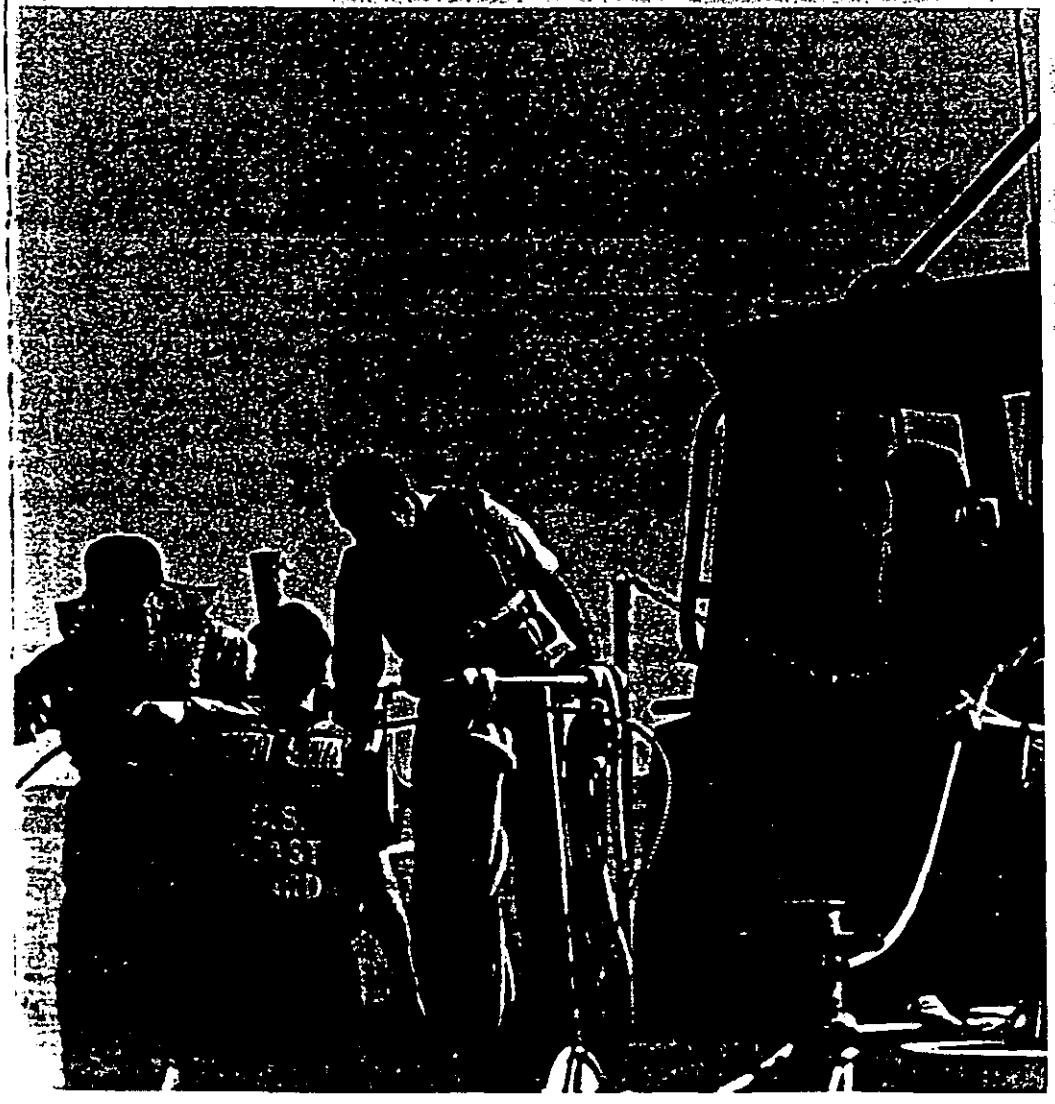
Reporters, photographers and technicians for newspapers and television stations in Texas and Louisiana had been at the site that day asking questions, taping footage and shooting stills. A CBS van sped up to the boat launch, photographers dashed down to a department boat and fired questions about the latest development. "Stuck in the Sand" was broadcast on the ten o'clock news announcing the day's feat—prying a whale, a creature that most Louisianans probably didn't realize even *lived* in the Gulf, to freedom.

Dawn Wednesday October 29, 1986. LDWF biologists receive a radio transmission from an oil company helicopter pilot. As the biologists expected, darkness had prohibited them from successfully escorting Kim far enough off of the coast. Engine sounds and rigs probably confused the cetacean which navigates by sonar. Kim is back on the beach.

7 a.m. Biologist Guthrie Perry flies the coast under a slight fog to investigate the report. He alerts biologist Dave Richard at Rockefeller that indeed the same Bryde's whale is beached and in almost the exact same location.

Anticipating an encore much like

Rescue team prepares to tow the whale into deeper water.



Photograph by Pete Picou

the Tuesday event—time consuming, physically taxing, and wet—Richard regroups to organize another attempt. He has the advantage of daylight and hindsight to better orchestrate the maneuver. He finds the U.S. Coast Guard at Sabine Pass in Texas immediately responsive and ready to show with a forty-one foot vessel for the tow job. All parties synchronize their watches for a rendezvous exactly one hour before high tide. Richard is counting on the volume of water to draw everything in its armspread seaward.

1:11 p.m. High Tide A willing crew with assistance from Mother Nature manages to turn the animal without the use of the pumps and strap on an improved sling, a model that features easy release once Kim reaches deeper water.

The operation ticks away like a fine timepiece. Entering deeper water the 33-foot whale comes to life again pumping its massive tail up and down and surfacing with bursts of sea water. Each equipped with a radio, the seven boats keep one another abreast of Kim's location and use the motors' sounds to herd him homeward. The Coast Guard and sheriff's boats signal tankers and other vessels ahead to cut their engines so as to clear a silent path.

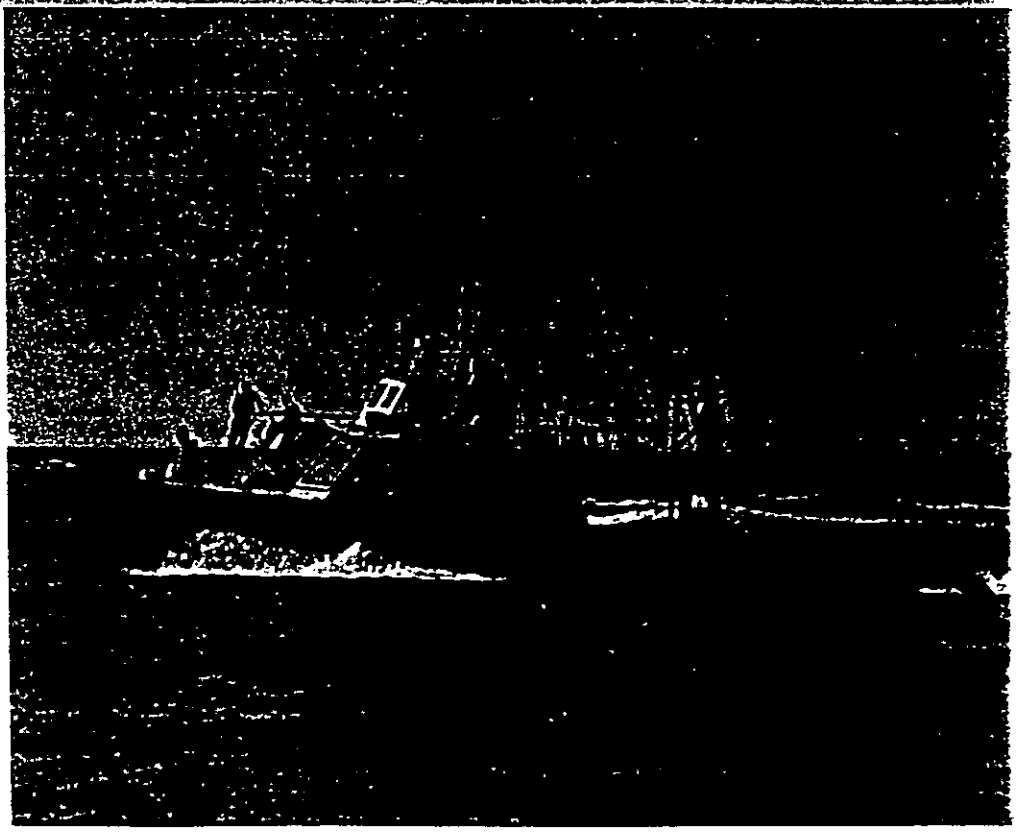
2:35 p.m. Now at seven miles out, the rescuers ease back on the throttles. In his own element the once inert even pitiable misfit transforms into a powerhouse coasting through the water flipping his wide flukes in the air.

The causes of his coming ashore are only conjecture as are the chances of his staying alive. The odds are stacked against a cetacean surviving a beaching unless it is healthy and simply lost, as the cetologists Tuesday surmised Kim might be. Mead elaborated later, "Entrapment is one thing, but if a whale is beached because it is sick, even if he is freed, swims away and looks healthy—he is damned."

For a tense moment this Bryde's whale was caught between the devil and the deep blue sea. All hopes are that the deep blue sea this time won out.

Photograph by James Nunez

A tarpaulin keeps the flukes moist and cool.



Photograph by Pete Piom

Rescue boats herd the whale southward.

Louisiana Alligator Farmers & Ranchers Association

1105 WEST PORT STREET, ABBEVILLE, LA 70510

March 31, 1993

Louisiana Wildlife and Fisheries Commission
P. O. Box 98000
Baton Rouge, LA 70898-9000

Dear Commission Members:

The Louisiana alligator farmers industry has made a significant contribution to the economy of the state over the last several years. Landowners have capitalized on egg collection and the farms have employed several hundred people who might otherwise be on the unemployment rolls.

Our industry is in an economic crisis at this time, mainly due to constraints abroad in Europe and the Far East. Until some of these problems can run their course, the market for alligator skins will continue to be depressed.

The Louisiana Alligator Farmers and Ranchers Association would like to solicit the cooperation of the Wildlife and Fisheries Commission to assist our industry during this critical time. We would like to discuss the situation with you and offer some interim solutions at your April 6 meeting. If you would, please allot a few minutes for our representative, Charles Fuller, to address the commission during the public comment period.

We look forward to your cooperation and continued support of the Louisiana alligator farming industry.

Sincerely,

Wayne Sagrera
President

RESOLUTION

BY: THE LOUISIANA ALLIGATOR FARMERS AND RANCHERS ASSOCIATION

WHEREAS, in 1991 the Legislature of Louisiana recognized that the Louisiana alligator industry, both the farm and wild, is a vital aspect of Louisiana's economic base; and recognized the many beneficial influences that Louisiana's alligator program has had on crocodilian conservation worldwide; and recognized world trends questioning the consumptive utilization of wildlife species which could have a severe impact on the alligator industry; and recognized that raw and finished alligator skins and products are largely consumed outside the United States; and recognized the need to educate the public concerning alligator hunting and farming as a sound wildlife management practice; and recognized the urgent need to support the alligator farming industry with comprehensive research and development programs; and recognized the need to staff and fund the Louisiana Department of Wildlife and Fisheries with adequate personnel in order to service the industry's needs. The Legislature, therefore, established the Louisiana Alligator Resource Fund with the intent of **helping to defray the cost of specific sub-programs** within the Louisiana Department of Wildlife and Fisheries' alligator conservation program; and

WHEREAS, the Louisiana alligator industry generates considerable income for the Department of Wildlife and Fisheries from license fees, tag and label fees, severance tax, Rockefeller supplement program and income from sales of skins and/or hatchlings from state-owned lands; and

WHEREAS, even though the Louisiana Alligator Resource Fund captures only tag and label fees as its sole funding source **for assisting in the funding of the alligator program's costs**, it has become the **sole** source for funding the program cost. The alligator farming industry contributes approximately 75% and the wild industry contributes approximately 25% of these fees. All other alligator-related revenue streams such as farm license fees, alligator dealer license fees, parts dealers license fees, severance tax, Rockefeller supplement program and income from the sale of skins and/or hatchlings from state-owned lands are being used by the Department for various expenditures not necessarily related to the alligator industry; and

WHEREAS, in the 1991-1992 fiscal year, the Louisiana Alligator Resource Fund accrued a surplus of approximately $169,000 above the total alligator program costs and, in the 1992-1993 fiscal year, it is estimated that the surplus balance remaining in the fund will be approximately $150,000; and

WHEREAS, surplus funds have been generated and not used in the alligator program from the Alligator Resource Fund, and other alligator-related revenues are available to help defray the costs of the alligator program;

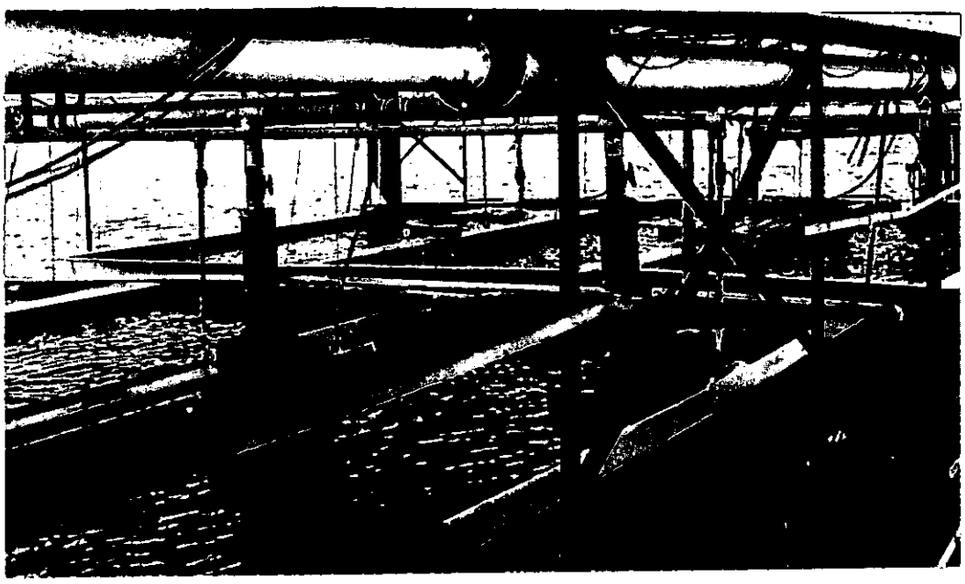
THEREFORE, BE IT RESOLVED that the Louisiana Alligator Farmers and Ranchers Association requests and petitions the Louisiana Department of Wildlife and Fisheries to partially fund the alligator program costs from sources other than the Louisiana Alligator Resource Fund and to practice budget restraints to keep the alligator program costs from escalating;

BE IT FURTHER RESOLVED that the Louisiana Alligator Farmers and Ranchers Association petitions and prays that the Louisiana Wildlife and Fisheries Commission reduce the current alligator skin tag fee on both farm-raised and wild alligators from $4.00 to $2.00, as provided for by law, to become effective September 1, 1993.

LAFOURCHE MARICULTURE, INC.
GOLDEN MEADOW, LOUISIANA

FARM RAISED FINFISH

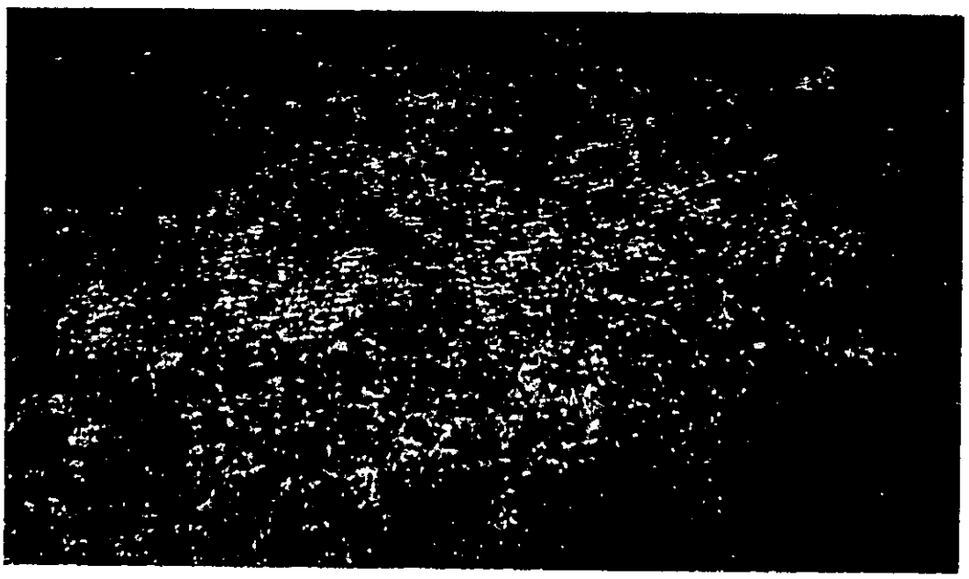
WLF SPECIAL MARICULTURE PERMIT #01
LRS 56:579.1



Fingerling raceways
(barge mounted)

Green roof:
Fingerling raceways
White roof:
Marine laboratory

Growout cages stocked with redfish and bass from raceway grown fingerlings



Fish feeding

LMI
October 15, 1991

Report on Mariculture
to
Louisiana Wildlife and Fisheries Commission
4/6/93

Experimental mariculture in Louisiana was first established in 1987 by LRS 56:579.1 and LRS 56:13. LRS 56:13 was repealed by the Legislature the year following it's passage (1988).

LRS 56:579.1 provided for the establishment of 10 experimental mariculture operations of no more than 8,000 acres each to be permitted by the Department within one year of the passage of the act. The act required that each permitted site possess a Coastal Use Permit, prohibited the use of public waters for experimental mariculture, provided for reporting requirements, provided for the release of an appropriate number of fish into the natural population from time to time, provided that the Department of Wildlife and Fisheries would administer the program, provided that the experimental permits could be renewed, and provided that WLF would monitor the stocking and harvest of fish from the mariculture areas.

Within the one year allotted time frame, the Department issued 10 permits. Only 3 are still in operation. Those three are; 1. Lafourche Mariculture, 2. Bourg Mariculture, and 3. Bayou Blue Mariculture (formerly Gulf South Fisheries, Inc.) all located in Lafourche or Terrebonne Parishes. Copies of the 3 permits and maps of the areas of the three operations are attached to this report. Also attached is the Mariculture Enterprises, Inc. permit.

In 1988, the legislature amended LRS 56:579.1 to required a $1,000 annual permit fee be paid by the permittees in order to maintain their permits.

A reporting procedure was developed which required the mariculture operators to notify the Department prior to harvest of the fish and again prior to shipping the fish to market. The notice is given via the Department WATS line. Records of the self reporting are maintained by Enforcement Division, Communication Section.

The purposes of the reporting were to allow Department personnel to be aware of the activity, to be present and witness the harvest and shipment of the fish. Department personnel did, from time to time witness these events, but no budget was ever established for the operation of this program and only one individual was assigned to administer it. An informal agreement between the Coordinator of Ecological Studies (who was at the time of the inception of the program attached to the Office of Coastal and Marine Resources) and the Marine Fishery Division field biological staff domiciled in Lafourche and Terrebonne Parishes allowed some 'on-site' monitoring of stocking and harvest. After the closure of the Marine Lab on Grand Terre Island, there were no longer any personnel available to continue the monitoring and the Ecological Studies Section was transferred back into the Office of Wildlife where it had been prior to the Treen administration.

The mariculture operators who are still in business continue to provide monthly and annual reports on their activities (per the conditions of their permits) and continue to report harvest and shipping via the WATS line.

The three mariculture operations which are still functioning have all received permit renewals for an additional 5 years. All of the experiments were slow to get off of the ground and, although promising, none had proven themselves to be

viable within the initial 5 year period. Based upon discussions between the mariculturists, department staff and then Secretary McInnis, permit extensions were granted. One of the mariculture farms that received an extension, Mariculture Enterprises, Inc., has apparently ceased operations, but we have received no formal notice from them to that effect.

No fish have been released to the wild from any of these operations except via accident. Although the law requires the releases, the Department, the academic and the environmental communities had and have reservations about releasing hatchery raised stock into the natural populations. Our primary concerns are disease potential and genetic ramifications. Since there has been some release to the wild by all operations, albeit by accident, we believe we have achieved compliance with the statute.

Monitoring has been a problem from the outset. As stated earlier, this program had to be absorbed into the regular operating budget of all Departmental divisions and sections involved. Marine Fish Division, Enforcement Division and the Ecological Studies Section all have had a function associated with the experimental mariculture program. The $1,000/year permit fee does not even cover administrative costs, and certainly does not address any monitoring program. The lack of personnel to physically monitor the operations has forced us into relying upon a self-monitoring system of written monthly and annual reports from the permittees (per the statute), telephone reporting, occasional surveillance by Enforcement Division, and a trip ticket/chain of custody document that accompanies the fish when they are sold and shipped.

In summary, the mariculture program has the potential of being a viable industry

in this State, but it also has the potential for abuse. If the Legislature is serious about having a mariculture program, and if the program is to be effective, it must be properly funded and staffed with personnel who are trained in fishery science, are familiar with aquaculture/mariculture, and who will be working in concert with our law enforcement officers.

Louisiana for wholesale or retail sale. Those standards shall govern the quality and weight of all seafood packaged in this state.

B. The secretary is authorized to inspect any facility which packages seafood. In the event of a violation of any rule, regulation, or state law, the secretary with the advice of the Louisiana Seafood Promotion and Marketing Board is authorized to:

(1) Order the packager to halt the distribution or sale of seafood which is packaged in violation of the packaging standards.

(2) Seek injunctive relief to stop the packaging practices which cause any violation of packaging standards.

(3) Order the seafood packager to comply with the rules and regulations.

(4) Impose civil fines of not more than one thousand dollars for each violation. Each day a seafood packager is not in compliance with any rule, regulation, or order of the secretary is considered a separate violation.

C. Any person aggrieved by any order or civil fine imposed by the secretary shall be entitled to an adjudicatory hearing in accordance with the Administrative Procedure Act.

Acts 1986, No. 1016, §1.

§578.11. Labeling of catfish packaging; penalties

A. Any catfish product sold in the state, whether wholesale or retail, shall be labeled as farm-raised or naturally-produced. Such labels shall be easily identifiable and affixed to every package sold.

B. Violation of the labeling requirements shall subject the distributor or packager to the penalties provided in R.S. 56:578.10(B).

Acts 1991, No. 514, §1, eff. Jan. 1, 1992.

SUBPART G-2. MARICULTURE INDUSTRY

§579.1. Experimental development of mariculture in the coastal zone; policy and purpose; permits; rules and regulations; fees

A. Recognizing the value to the economy of the state of Louisiana of developing a mariculture industry in the coastal zone, and recognizing that a mariculture industry has the potential of employing thousands of Louisiana citizens, thereby decreasing unemployment and the burden that unemployment places on the state fisc, and recognizing that mariculture is compatible with the state's policy for managing and enhancing the renewable resources of the coastal zone, and recognizing that mariculture is compatible with the social and cultural heritage of the coastal area, and that mariculture will provide economic incentive for landowners to undertake management programs that will prevent erosion and deterioration of the invaluable coastal wetlands, it is the policy and purpose of the legislature to provide every method of encouragement and assistance to the wetland owner of the state of Louisiana, to protect the culture and heritage that is unique to Louisiana, to prevent unemployment of Louisiana citizens, to assure adequate food for Louisiana citizens, and to provide for economic stability for those areas of Louisiana so dependent upon the seafood industry. Recognizing that mariculture represents a technique for stocking our coastal waters in a manner that may significantly increase the total volume and improve the quality of the annual fish harvest in the area of both commercial and sports fisheries and that this may be the only viable approach for replenishing the stressed and diminishing natural fisheries stock in coastal Louisiana waters; and that without mariculture Louisiana citizens may realize the continuing decline in the quantity and quality of the fisheries resources and related economic consequences of this decline. To that end, the legislature of Louisiana shall foster and encourage the experimental implementation of maricultural practices within duly authorized and permitted marsh management systems within the coastal zone of the state of Louisiana.

B. Notwithstanding any other provision of law to the contrary, including but not limited to R.S. 56:8(33) and 329, the secretary of the Department of Wildlife and Fisheries is authorized to issue up to a maximum of ten permits for maricultural projects within the coastal zone for the development of a mariculture industry inclusive of all phases of the industry. The department shall have the authority to and may exempt permittees from statutory limitations as to the kind, number, or size of fish which may be harvested or taken, or as to the method of harvesting or taking fish, or seasons or other

limitations, restrictions, prohibitions, or regulations governing the management and harvesting or taking of fish, including hatchery breeding, spawning, transportation, implantation, propagation, growout, and harvesting of domesticated fish and other aquatic species such as the overstressed red drum, Sciaenops ocellatus, when produced in hatcheries in privately owned water bodies. The secretary shall not issue any permit for the mariculture of any harmful species of fishery.

C.(1) Permits shall be issued only for areas within marsh management systems that have valid coastal use permits issued by the Department of Natural Resources.

(2) Permits shall be issued for five years subject to renewal at the discretion of the secretary only if completion of an experimental project necessitates such renewal.

(3) Applications for permit shall be accepted for one year after the effective date of this Subpart.

(4) No permit shall be issued to encompass more than eight thousand acres of marsh area.

(5) The permit fee for each mariculture permit shall be one thousand dollars.

D. Applications for permits shall include a plan specifying the total acreage involved, with a copy of marsh management system permit attached; methods for containment of the fisheries; and procedures for planting, protecting, and harvesting of the fishery.

E. The secretary shall use the following guidelines for permitting the experimental mariculture projects:

(1) All fisheries utilized in the project shall be purchased from a legal source, and all necessary documentation pertaining to those transactions shall be maintained.

(2) All facilities shall be available for inspection by the department during normal business hours.

(3) Detailed records shall be maintained and furnished to the department upon request. The records shall include the following items:

(a) The number of fish or other species bought and sold.

(b) The rate and type of food utilized.

(c) The observed or recorded growth.

(d) The mortality observed.

(e) The average depth of water, current, salinity, and temperature.

However, information which would disclose knowledge gained through experimentation that enhances the yield of production may be withheld.

F. The Department of Wildlife and Fisheries shall monitor the stocking, growth, and harvest of any fish, and shall determine a reasonable percentage of the fish to be released or allowed to escape to the wild. Accurate records shall be maintained on separation of wild fish from domestic stock. The department shall, during the experimental period of the permits, develop an inspection program to monitor the harvesting and sale of fish pursuant to this Subpart in order to differentiate between wild and domesticated fish for scientific and enforcement purposes and to certify that the fish were raised and taken pursuant to the Subpart.

G. All data obtained from the monitoring of projects and all documents related thereto shall be public and the Department of Wildlife and Fisheries shall make an annual report to the committees on natural resources of the House and Senate on the progress and effectiveness of the program.

H. Nothing contained herein shall be interpreted to require activities by Department of Wildlife and Fisheries scientists which will impede the efficient operation of the enterprise.

I. The secretary shall charge an annual fee of one thousand dollars for each permit issued under the provisions of this Section.

J. If work to implement the provisions of this Section has not begun within two years from the date of issuance of a permit authorized herein, that permit shall automatically terminate two years from the date of issuance.

K. The coastal management division personnel of the Department of Natural Resources shall have access to inspect all operations and processes of each mariculture system authorized by this Section.

Acts 1987, No. 305, §1, eff. July 5, 1987; Acts 1988, No. 995, §1; Acts 1988, No. 993, §1.

NOTE: See Acts 1988, No. 993, §3, and 995, §3.

NOTE: See Acts 1990, No. 299, §§1 and 2. Extension of time to operate under certain permits.

§579.2. Harvest of mariculture fish; authority to harvest during closure of fishing

The closure of fishing pursuant to any authority of this Title of any species of fish shall not prohibit the harvesting and sale of such fish that are raised pursuant to any mariculture permit or license authorized by this Title.

Acts 1988, No. 848, §1.

SUBPART G-3. LOUISIANA MARINE RECREATIONAL FISHING DEVELOPMENT BOARD

§580.1. Purposes

A. The marine recreational fishing industry in Louisiana contributes significantly to the economy of the state and could have an even greater impact in terms of tourism if improvements were made in recreational fishing facilities and capabilities. However, there has never been a cohesive, comprehensive strategy or effort to promote, market, and develop marine recreational fisheries.

B. The legislature created the Louisiana Seafood Promotion and Marketing Board to promote the consumption of commercial fishery products and to assist the seafood industry in market development. That board has been effective in achieving its goals and the legislature seeks to aid the recreational fishing industry in a similar manner.

C. The purpose of this Subpart is to provide the means to expand public awareness of marine recreational fishing opportunities in Louisiana, to establish new and improve existing marketing channels and concepts, to identify and remove impediments to the development of marine recreational fishing in Louisiana, and to assist the industry in improving the quality of its services and products.

Acts 1990, No. 562, §2.

NOTE: See Acts 1990, No. 562, §3.

§580.2. Louisiana Marine Recreational Fishing Development Board; creation and organization

A.(1) There is hereby created in the office of the secretary of the Department of Wildlife and Fisheries the Louisiana Marine Recreational Fishing Development Board. The agency shall have its domicile in Baton Rouge and shall be governed by a board of trustees composed of fifteen members, fourteen members to be appointed by the governor from persons engaged in the marine recreational fishing industry to serve terms concurrent with the governor, and the fifteenth member to be the lieutenant governor or his designated representative, who shall serve as an ex-officio member. The names of each of the fourteen members appointed by the governor shall be submitted to the Senate for confirmation.

(2) The appointed members shall be chosen as follows:

(a) One member shall be appointed from a list of three names submitted by the Louisiana Association of Charterboat Captains.

(b) One member shall be appointed from a list of three names submitted by the Louisiana Travel Promotion Association.

(c) One member shall be appointed from a list of three names submitted by the Louisiana Restaurant Association.

(d) One member shall be appointed from a list of three names submitted by the Louisiana Hotel-Motel Association.

(e) One member shall be appointed from a list of three names submitted by the Louisiana Wildlife and Fisheries Commission.

(f) One member shall be appointed from a list of three names submitted by the Louisiana Gulf Coast Conservation Association.

(g) One member shall be appointed from a list of three names submitted by the Louisiana Marine Trades Association.

(h) One member shall be engaged in the retail business of selling fishing tackle.

(i) One member shall be a marina or launch operator.

(j) One member shall be a marketing specialist.

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

May 29, 1991

Lafourche Realty Co., Inc.
1201 Old Kent Bank Bldg
136 East Michigan Ave.
Kalamazoo, Michigan 49007-3936

Lafourche Mariculture, Inc
c/o P.A. Bienvenu
1400 American Bank Bldg.
200 Corondellett St.
New Orleans, La. 70130

John Plaisance & Sons, Inc.
2502 South Bayou Drive
Golden Meadow, La. 70357

Dear Sirs:

Pursuant to RS 56:579.1, you are hereby re-issued Experimental Mariculture Permit #LA-01 allowing you and your company's representatives to purchase, possess, transport, implant, propagate, growout and harvest for commercial purposes, red drum (Sciaenops ocellatus) and hybrid striped bass Morone saxatilis X Morone chrysops on private property for a period not to exceed five (5) years.

Modifications to this permit must be approved by the Department of Wildlife and Fisheries prior to implementation. The following provisions must be adhered to by you and your company's representatives for the duration of the permit.:

1. A. All fry or fingerlings stocked must either be obtained 1) from a legally licensed or permitted source (necessary documentation pertaining to those transactions are to be maintained) or 2) produced under this permit.

   B. Only fish stocked pursuant to the provisions of this permit may be harvested under this permit.

2. All fish must be placed and held in the permitted mariculture areas described as follows:

   In Lafourche Realty Company's privately owned water bodies in Lafourche Parish T20S-R22E, Sections 12,13,14,22,23,24,25, 26,27,34,35,36 and T20S-R23E, Sections 18,19,30,31 and T21S-R22E, Section 2,3
   The fish must remain within the mariculture area until a harvestable

The fish must remain within the mariculture area until a harvestable size is attained.

3. All facilities must be available for inspection by Department of Wildlife and Fisheries personnel at any time.

4. Periodic disease and parasite assessments of the mariculture stock must be conducted.

5. Detailed records must be maintained and furnished to the Department on a monthly(m) or annual(a) basis. These records must include, but are not limited to:

   a. The number and species of fish stocked and sold.(m)
   b. The rate and type of food utilized (m)
   c. The observed or recorded growth (a)
   d. The mortality observed (a)
   e. Incidence of disease and corrective action taken (m)
   f. The depth of water, current, salinity and temperature records.(m)

Information which is considered to be proprietary must be so indicated in the report and will be withheld from the public record.

6. The Department of Wildlife and Fisheries shall monitor the stocking, growth, and harvest of fish within the mariculture areas. All non-proprietary data obtained by the Department during the monitoring shall be in the public domain.

7. A final report must be furnished to the Department at the end of the permit period including summaries of the data gathered and an assessment of the economic feasibility of mariculture of each of the permitted species;

8. If operations are canceled prior to the expiration date of this permit, this permit becomes invalid; if suspended, the Department must be notified in writing as soon as possible;

9. At least two (2) hours prior to harvest of any species within the permitted mariculture area, and again prior to shipping the harvested species, the permittee will notify personnel of the Department of Wildlife and Fisheries via the Department's WATS line at 1-800-442-2511. The following information shall be provided: (1) Species and number of fish to be shipped, (2) Pounds of fish, (3) Source & Destination,(4) Carrier License #,(5) Description of carrier vehicle,(6) Company/owner of carrier vehicle.

10. A Chain of Custody document must accompany any shipment from the mariculture site to the wholesale destination. That document will contain the Permit number, a description of the cargo, the original, dated signature of the seller, the original, dated signature of the buyer, the original, dated signatures or any subsequent buyers, and the original signature of the Wildlife and Fisheries witness, if available. In lieu of the witness, the time, date, and person

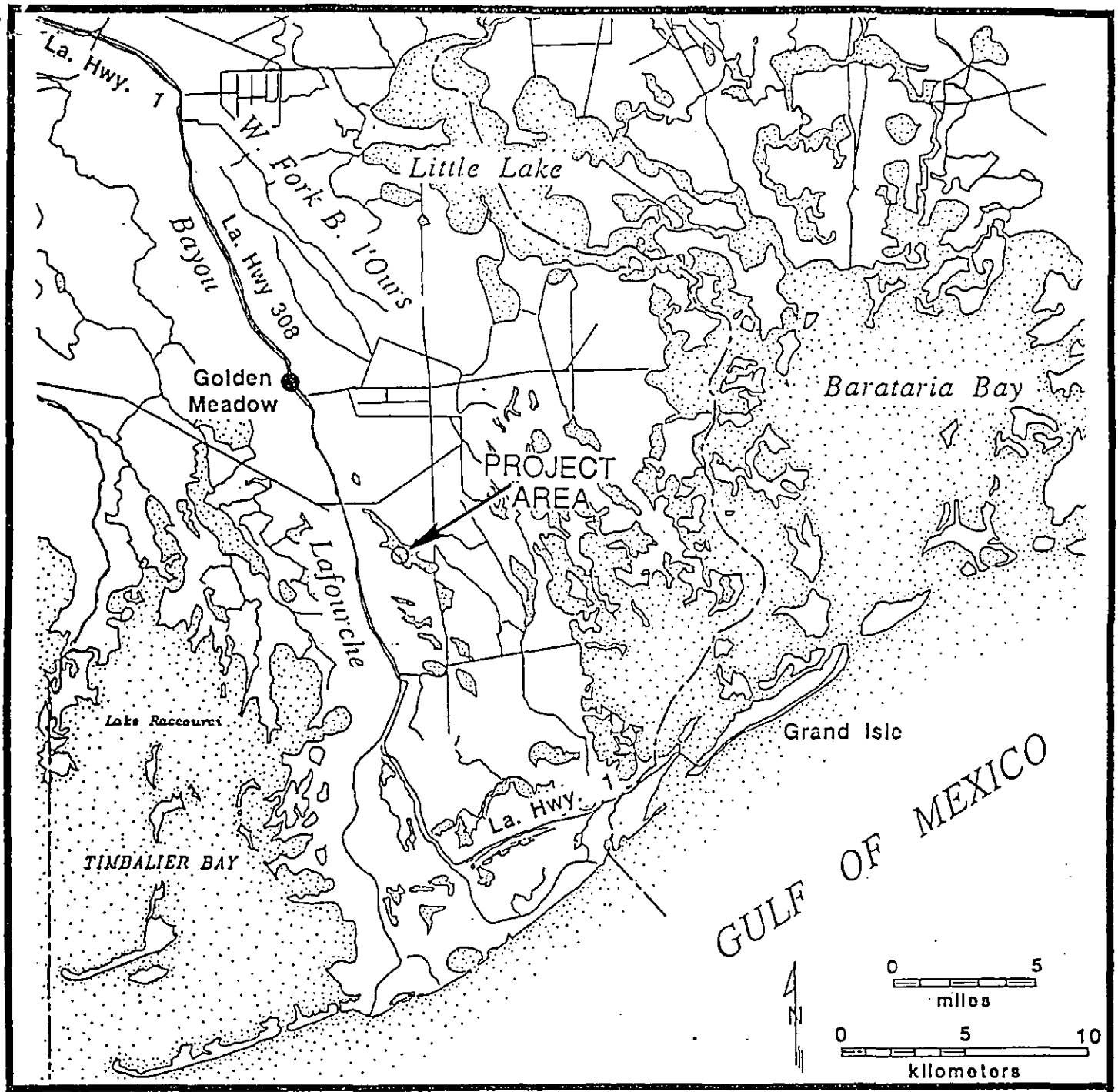
contacted via the 800 number will be entered upon the document.

11. Failure to adhere to the provisions of this permit shall be grounds for permit revocation.

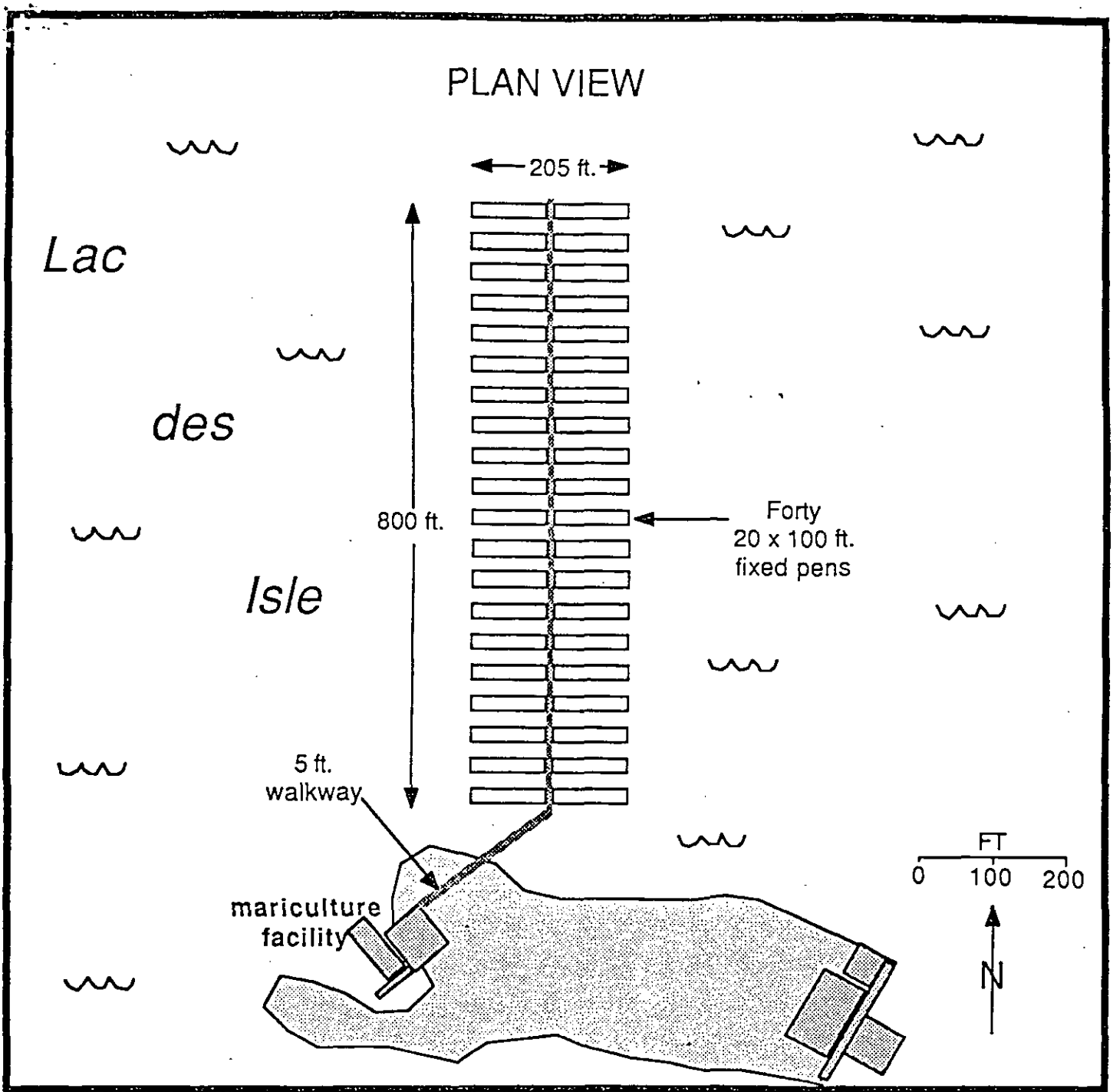
12. This permit expires on July 31, 1997.

A. Kell McInnis,III
Acting Secretary

Date



Construction of Fixed Pens for Fish Culture; T20S, R22E Section 35, Lafourche Parish.	LOCATION OF PROPOSED FISH PENS	
APPLICANT: LAFOURCHE MARICULTURE, INC.		
Date: February 28, 1990	**Sheet 1 of 3**	Coastal Environments, Inc. 1260 Main Street Baton Rouge, Louisiana 70802 (504) 383-7451



Construction of Fixed Pens for Fish Culture; T20S, R22E Section 35, Lafourche Parish.	PLAN VIEW OF PROPOSED FISH PENS	
APPLICANT: LAFOURCHE MARICULTURE, INC.		
Date: February 28, 1990	Sheet 2 of 3	Coastal Environments, Inc. 1260 Main Street Baton Rouge, Louisiana 70802 (504) 383-7451

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

May 29, 1991

Mr. Gary A. Lee
President
Mariculture Enterprises, Inc.
c/o Faris, Ellis, Cutrone, & Gilmore
Whitney Building
New Orleans, La. 70130-2657

Dear Sir:

Pursuant to RS 56:579.1, you are hereby re-issued Special Mariculture Permit #LA-02 allowing you and your company's representatives to purchase, possess, transport, implant, propagate, growout and harvest for commercial purposes, red drum (Sciaenops ocellatus) and hybrid striped bass (Morone saxatilis X Morone chrysops) on private property for a period not to exceed five (5) years.

Modifications to this permit must be approved by the Department of Wildlife and Fisheries prior to implementation. The following provisions must be adhered to by you and your company's representatives for the duration of the permit.:

1. A. All fry or fingerlings stocked must either be obtained 1) from a legally licensed or permitted source (necessary documentation pertaining to those transactions are to be maintained) or 2) produced under this permit.

   B. Only fish stocked pursuant to the provisions of this permit may be harvested under this permit.

2. All fish must be placed and held in the permitted mariculture areas described as follows:

   Lafourche Parish T19S-R23E:
   - Sec 9 - Man-made canal
   - Sec 10 - Man-made canal
   - Sec 11 - Man-made canals
   - Sec 12 - Man-made canal
   - Sec 13 - SW1/4 & S1/2 of SE1/4
   - Sec 14 - SW1/4 of SE1/4 + man-made canals
   - Sec 15 - S1/2 of S1/2 + man-made canals N1/2
   - Sec 21 - SE1/4 & E1/2 of NE1/4

   Sec 22,23,24,27,34,35 - All

Sec 26 - N1/2
Sec 28 - E1/2
Sec 33 - E1/2

Lafourche Parish T20S-R23E
Sec 2,3,4 - All
Sec 9 - Round Lake & man-made canal
Sec 10 - Man-made canals
Sec 11 - Lake Enfermer + man-made canal

The fish must remain within the mariculture area until a harvestable size is attained.

3. All facilities must be available for inspection by Department of Wildlife and Fisheries personnel at any time.

4. Periodic disease and parasite assessments of the mariculture stock must be conducted.

5. Detailed records must be maintained and furnished to the Department on a monthly(m) or annual(a) basis. These records must include, but are not limited to:

   a. The number and species of fish stocked and sold.(m)
   b. The rate and type of food utilized (m)
   c. The observed or recorded growth (a)
   d. The mortality observed (a)
   e. Incidence of disease and corrective action taken (m)
   f. The depth of water, current, salinity and temperature records.(m)

   Information which is considered to be proprietary must be so indicated in the report and will be withheld from the public record.

6. The Department of Wildlife and Fisheries shall monitor the stocking, growth, and harvest of fish within the mariculture areas. All data obtained by the Department during the monitoring shall be in the public domain.

7. A final report must be furnished to the Department at the end of the permit period including an analysis of the economic feasibility of of mariculture of each permitted species;

8. If operations are canceled prior to the expiration date of this permit, this permit becomes invalid; if suspended, the Department must be notified in writing as soon as possible;

9. Nothing in this permit may be construed as conveying property rights to the permittee nor to exempt the permittee from compliance with provisions of Coastal Use Permit # P841605 or C.O.E. No. LMNOD-SP (Lafourche Parish Wetlands) 577.

10. At least two (2) hours prior to harvest of any species within the permitted mariculture area, and again prior to shipping the

harvested species, the permittee will notify personnel of the Department of Wildlife and Fisheries via the Department's WATS line at 1-800-442-2511. The following information shall be provided: (1) Species & number of fish to be shipped, (2) Pounds of fish, (3) Source & Destination,(4) Carrier License #,(5) Description of carrier vehicle,(6) Company/owner of carrier vehicle.

11. A Chain of Custody document must accompany any shipment from the mariculture site to the wholesale destination. That document will contain the Permit number, a description of the cargo, the original, dated signature of the seller, the original, dated signature of the buyer, the original, dated signatures or any subsequent buyers, and the original signature of the Wildlife and Fisheries witness, if available. In lieu of the witness, the time, date, and person contacted via the 800 number will be entered upon the document.

12. Failure to adhere to the provisions of this permit shall be grounds for permit revocation.

13. This permit expires on August 31, 1997.

_____ _____

A. Kell McInnis, III Date
Acting Secretary

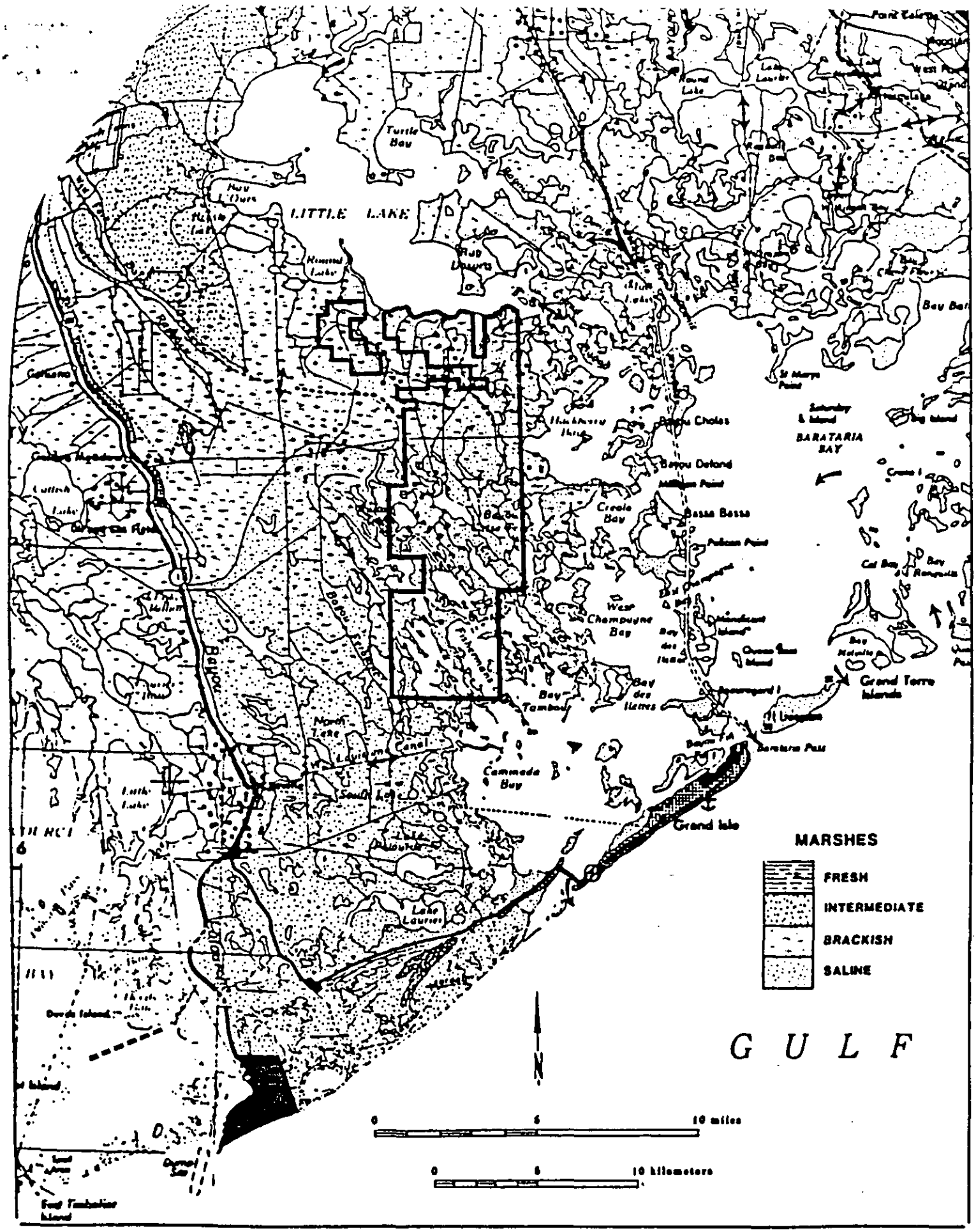


Figure 1. Location of the Harrison family property.

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

May 29, 1991

Danny J. Duet
Route 1 Box 58
Galliano, Louisiana 70354

Dear Sir:

Pursuant to RS 56:579.1, you are hereby re-issued Special Mariculture Permit #LA-09 for a period not to exceed five (5) years, allowing you and your company's representatives to purchase, possess, transport, implant, propagate, growout and harvest for commercial purposes on private property, the following species:

1. Red drum (Sciaenops ocellatus)
2. Black drum (Pogonias cromis)
3. Hybrid striped bass (Morone saxatilis X Morone chrysops)

Modifications to this permit must be approved, in writing by the Department of Wildlife and Fisheries prior to implementation. The following provisions must be adhered to by you and your company's representatives for the duration of the permit.:

1. A. All fry or fingerlings stocked must either be obtained 1) from a legally licensed or permitted source (necessary documentation pertaining to those transactions are to be maintained) or 2) produced under this permit.

   B. Only fish stocked pursuant to the provisions of this permit may be harvested under this permit.

2. All fry or fingerlings must be placed and held within cages in selected water bodies within the 5,181 acre permitted mariculture area in Lafourche Parish as described in the attached application document. The attached document becomes and remains part of this permit.

The fish must remain within the cages in the mariculture area until a harvestable size is attained. A determination of whether a reasonable per centage of fish are to be released to the wild will be made by this Department at that time.

3. All facilities must be available for inspection by Department of Wildlife and Fisheries personnel at any time.

4. Periodic disease and parasite assessments of the mariculture stock must be conducted.

5. Detailed records must be maintained and furnished to the Department on a monthly(m) or annual(a) basis. These records must include, but are not limited to:

   a. The number and species of fish stocked and sold.(m)
   b. The rate and type of food utilized (m)
   c. The observed or recorded growth (a)
   d. The mortality observed (a)
   e. Incidence of disease and corrective action taken (m)
   f. The depth of water, current, salinity and temperature records.(m)

   Information which is considered to be proprietary must be so indicated in the report and will be withheld from the public record.

6. The Department of Wildlife and Fisheries will periodically monitor the stocking, growth, and harvest of fish within the mariculture areas and all records pertaining thereto. All data obtained by the Department during the monitoring that is not proprietary in nature shall be in the public domain.

7. At least two (2) hours prior to harvest of any species within the permitted mariculture area, and again prior to shipping the harvested species, the permittee will notify personnel of the Department of Wildlife and Fisheries via the Department's WATS line at 1-800-442-2511. The following information shall be provided: (1) Species and number of fish to be shipped, (2) Pounds of fish, (3) Source & Destination,(4) Carrier License #,(5) Description of carrier vehicle,(6) Company/owner of carrier vehicle.

8. A Chain of Custody document must accompany any shipment from the mariculture site to the wholesale destination. That document will contain the Permit number, a description of the cargo, the original, dated signature of the seller, the original, dated signature of the buyer, the original, dated signatures or any subsequent buyers, and the original signature of the Wildlife and Fisheries witness, if available. In lieu of the witness, the time, date, and person contacted via the 800 number will be entered upon the document.

9. A final report must be furnished to the Department at the end of the permit period including economic feasibility of mariculture of each permitted species.

10. If operations are canceled prior to the expiration date of this permit, this permit becomes invalid; if suspended, the Department must be notified in writing as soon as possible.

11. This permit becomes effective upon the date of the signature of the Secretary and expires on May 11, 1998.

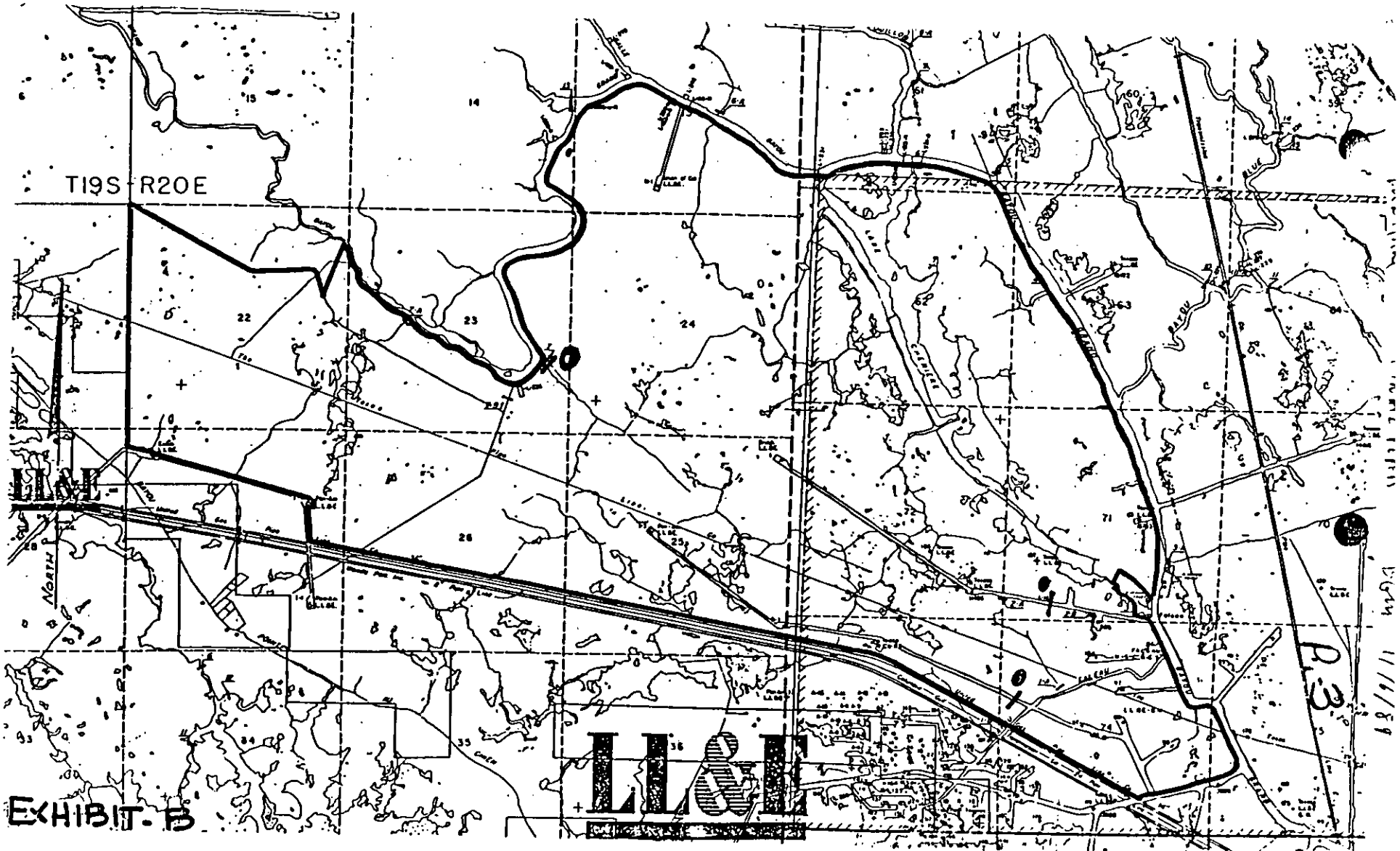
12. Nothing in this permit may be construed to convey any property rights to the permit holder nor to exempt the permittee from any rules or regulations imposed by the Louisiana Department of Health & Hospitals. You are specifically exempted from the provisions of RS 56:8(33) and 329, however special exemptions from other statutes, rules, regulations or orders of the Louisiana Department of Wildlife & Fisheries or of the Louisiana Wildlife & Fisheries Commission must be requested in writing from the Secretary of the Department. Any exemptions, granted in writing by the Secretary of the Department become a part of this permit.

13. Failure to comply with the provisions of this permit can, after due notification and hearing, result in revocation of this permit.

_____ _____

A. Kell McInnis, III
Acting Secretary

Date


T19S R20E
LL&E
LL&E
R.3
EXHIBIT-B

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

September 24, 1992

Bourg Mariculture, Inc.
P.O. Box 200
Dulac, LA 70353

Dear Sirs:

Pursuant to RS 56:579.1, you are hereby re-issued Special Mariculture Permit #LA-05 allowing you and your company's representatives to purchase, possess, transport, implant, propagate, growout and harvest for commercial purposes, the following species on private property for a period not to exceed five (5) years.

1. Red drum (Sciaenops ocellatus)
2. Hybrid Striped Bass (Morone saxatilis X Morone chrysops)
3. American Oyster (Crassostrea virginica)

Modifications to this permit must be approved by the Department of Wildlife and Fisheries prior to implementation. The following provisions must be adhered to by you and your company's representatives for the duration of the permit.:

1. All red drum fingerlings must be purchased from a legally licensed or permitted source, and all necessary documentation pertaining to those transactions are to be maintained.

2. All red drum must be placed and held in the permitted mariculture areas described as follows:

   Privately owned estuarine waters in Terrebonne, Parish, Louisiana described as follows:
   T19S,R16E Sec. 35 & 36 - T20S,R16E Sec.1,2,3,10,11,12 (3747 Ac). See Attached Maps.

   The fish must remain within the mariculture area until a harvestable size is attained.

3. All facilities must be available for inspection by Department of Wildlife and Fisheries personnel at any time.

4. Detailed records must be maintained and furnished to the Department on a monthly(m) or annual(a) basis. These records must include, but are not limited to:

   a. The number of fish bought and sold.(m)
   b. The rate and type of food utilized (m)
   c. The observed or recorded growth (a)
   d. The mortality observed (a)
   e. The depth of water, current, salinity and temperature records.(m)

   Information which is considered to be proprietary may be withheld.

5. The Department of Wildlife and Fisheries shall monitor the stocking, growth, and harvest of fish within the mariculture areas. All data obtained by the Department during the monitoring shall be in the public domain.

6. A final report must be furnished to the Department, including economic feasibility of red drum mariculture;

7. If operations are canceled prior to the expiration date of this permit, this permit becomes invalid; if suspended, the Department must be notified in writing as soon as possible;

8. At least two (2) hours prior to harvest of any species within the permitted mariculture area, and again prior to shipping the harvested species, the permittee will notify personnel of the Department of Wildlife and Fisheries via the Department's WATS line at 1-800-442-2511. The following information shall be provided: (1) Number of fish to be shipped, (2) Pounds of fish, (3) Source & Destination,(4) Carrier License #,(5) Description of carrier vehicle,(6) Company/owner of carrier vehicle.

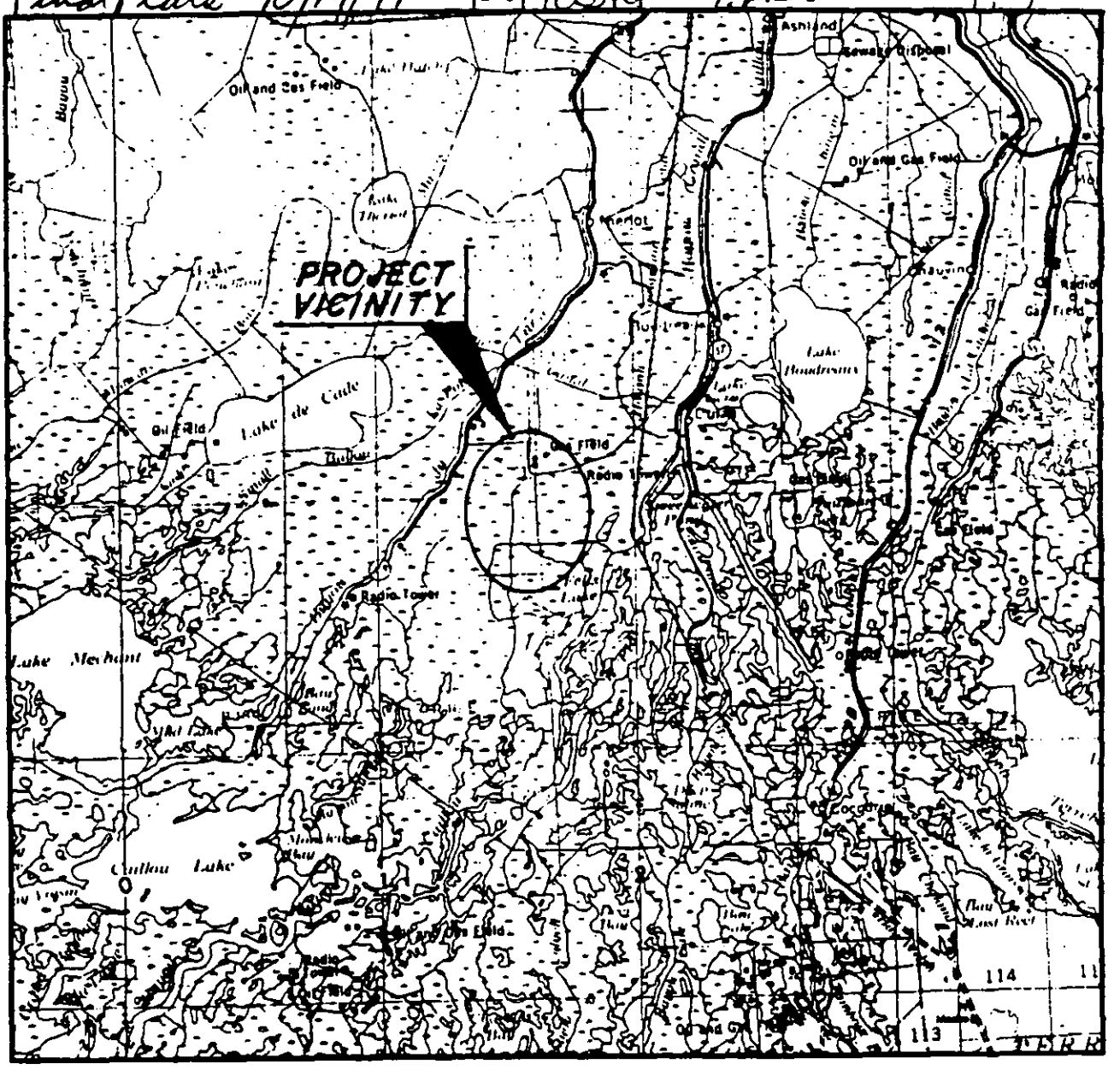
9. A Chain of Custody document must accompany any shipment from the mariculture site to the wholesale destination. That document will contain the Permit number, a description of the cargo, the original, dated signature of the seller, the original, dated signature of the buyer, the original, dated signatures or any subsequent buyers, and the original signature of the Wildlife and Fisheries witness, if available. In lieu of the witness, the time, date, and person contacted via the 800 number will be entered upon the document.

10. This permit expires on 30 September, 1997

_____ _____

Joe L. Herring, Secretary Date

Final Plate 10/14/91 PO 10519 P.3



VICINITY MAP

STATUTE MILES

5 4 3 2 1 0 5 10 15 20

PROPOSED STRUCTURES & FISH CAGES FOR
MARICULTURE OPERATIONS LOCATED IN
SEC. 7, T20S-R17E; SEC. 1 & 12, T20S-R16E
SEC. 77, T19S-R17E & SEC. 36, T19S-R16E
NEAR BAYOU RAMBIO
TERREBONNE PARISH, LOUISIANA

T. BAKER SMITH & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
HOUMA, LOUISIANA

REV. 5/8/9
DATE: 5/2/91

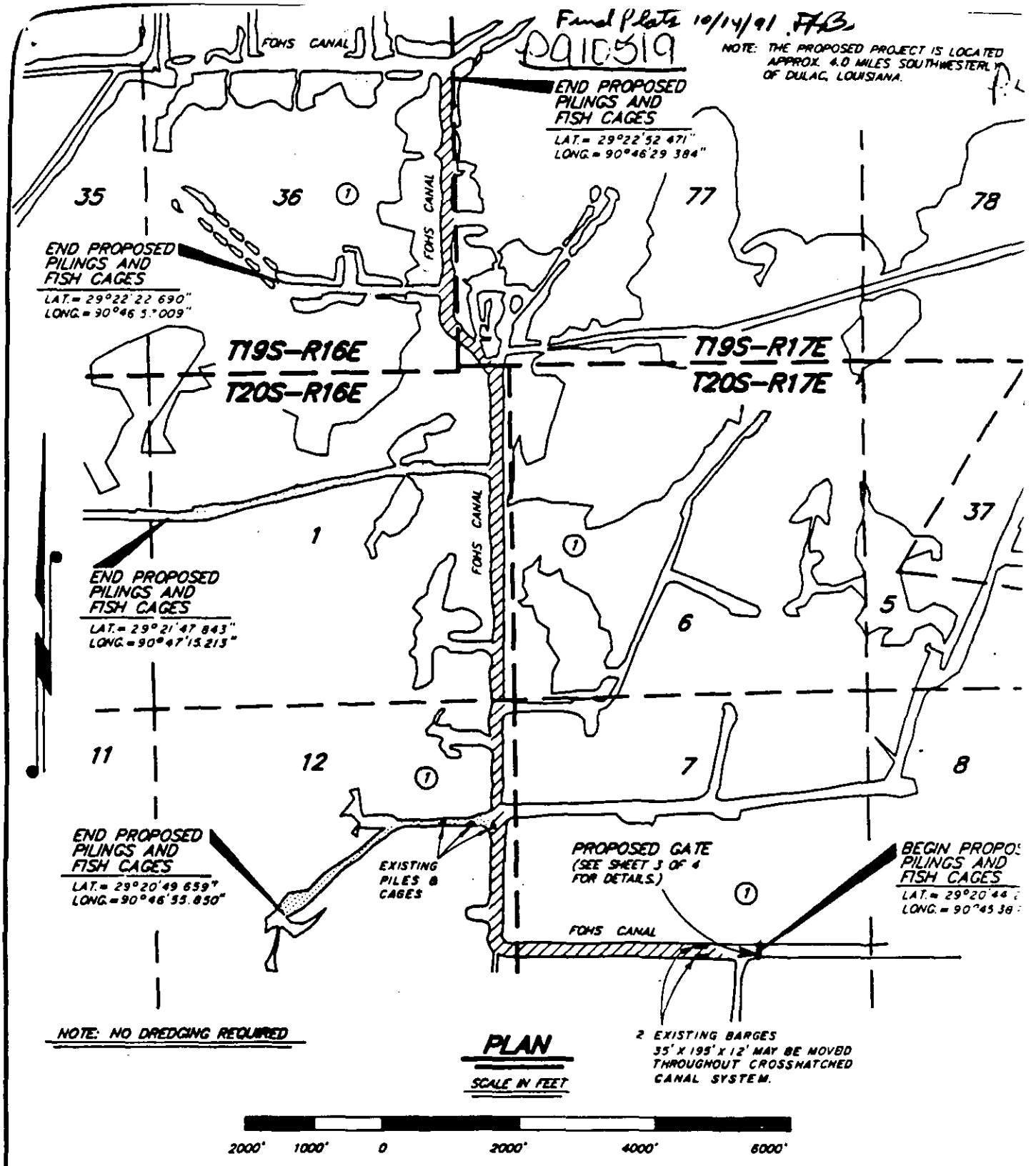
APPLICATION BY: BOURG MARICULTURE INC.

SHEET 1 OF 4

Final Plats 10/14/91 FHB

P91-0519

NOTE: THE PROPOSED PROJECT IS LOCATED APPROX. 4.0 MILES SOUTHWESTERLY OF DULAC, LOUISIANA.



NOTE: NO DREDGING REQUIRED

PLAN

SCALE IN FEET

LEGEND

SEE SHEET 3 OF 4 FOR TYPICAL DETAIL "A"

SEE SHEET 3 OF 4 FOR TYPICAL DETAIL "B"

ADJACENT PROPERTY OWNERS:

(1) HARRY BOURG CORP.

APPLICATION BY: BOURG MARICULTURE INC.

PROPOSED STRUCTURES & FISH CAGES FOR MARICULTURE OPERATIONS LOCATED IN SEC. 7, T20S-R17E; SEC. 1 & 12, T20S-R16E SEC. 77, T19S-R17E & SEC. 36, T19S-R16E NEAR BAYOU RAMBIO TERREBONNE PARISH, LOUISIANA

T. BAKER SMITH & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
HOUMA, LOUISIANA

REV. 5/17/91
REV. 5/8/91
DATE: 5/2/91

SHEET 2 OF 4

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

March 31, 1993

M E M O R A N D U M

TO: Bert Jones, Chairman, Wildlife & Fisheries Commission
Members, Wildlife & Fisheries Commission

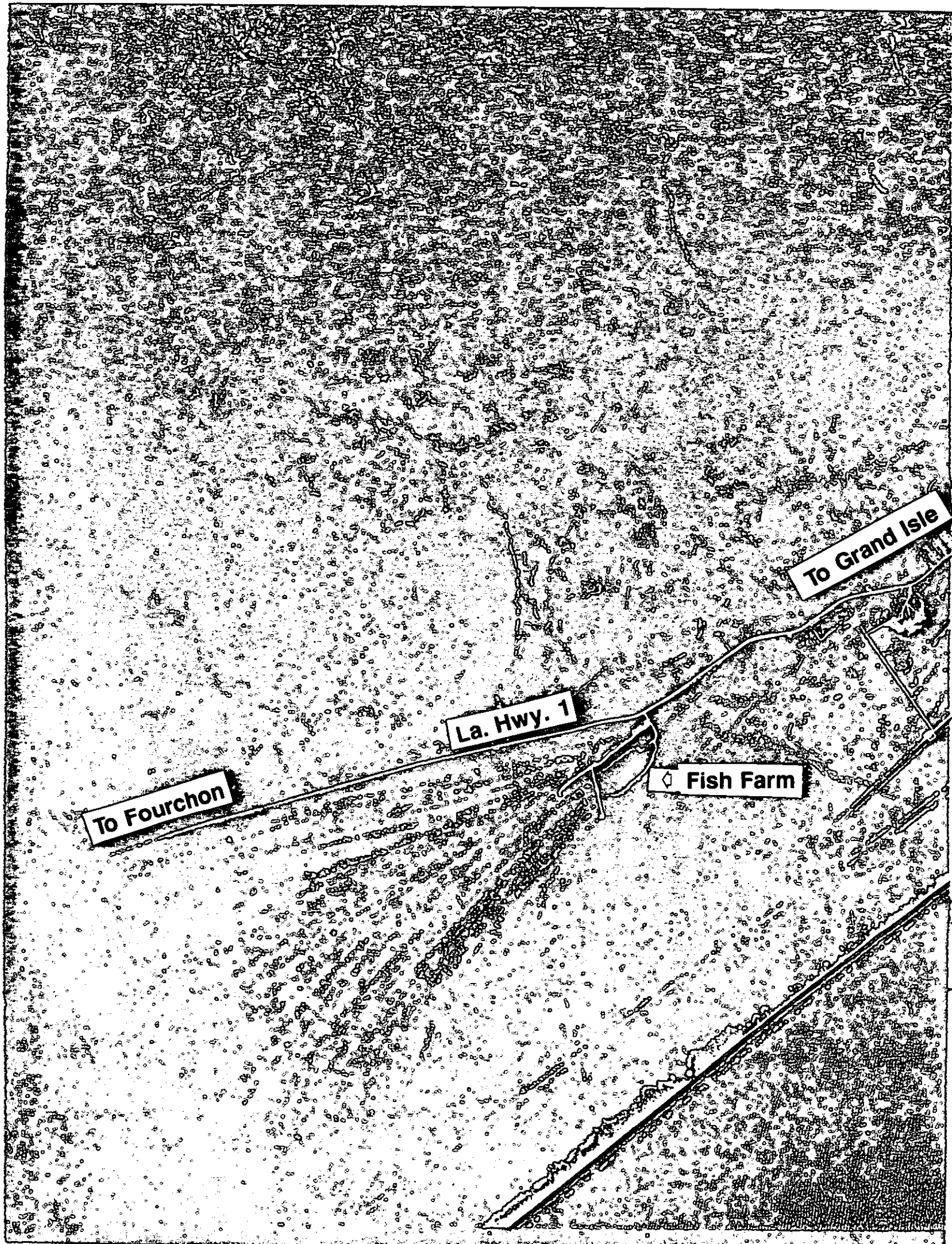
FROM: Bennie Fontenot, Administrator, Inland Fisheries

SUBJECT: Additional information covering Perilliat-Michoud Fish Farm

Attached for your information is a photocopy of the location of the above referenced fish farm in Lafourche Parish. The fish farm is permitted under the domestic fish farming program, not the mariculture program. Another pit which is permitted to the same operation is located further west. That pit is not represented on any of the aerial photographs or maps that we have. The permit allows the permittee to raise hybrid striped bass and redfish.

Attached is also a copy of the current domestic fish farming licensing procedures and regulations.

If you have any further questions, please give me a call.


To Grand Isle
La. Hwy. 1
Fish Farm
To Fourchon

B. Violation of this Section constitutes a class two violation.

Acts 1986, No. 748, §1; Acts 1992, No. 528, §1, eff. June 29, 1992.

§410.1. Paratrawling prohibited in canals; penalty

No person shall paratrawl in any canal which is part of the waters of the state. Violation of this Section constitutes a class three violation.

Acts 1988, No. 574, §1.

§410.2. Use of trammel nets, gill nets, and strike nets in Calcasieu Lake prohibited

A. No person shall set or use any trammel net, gill net, or strike net for the taking of fish in Calcasieu Lake during the hours after the official sunset on Friday and before the official sunset on Sunday of each week during the period from May first through September thirtieth of each year.

B. Violation of this Section constitutes a class two violation.

Acts 1990, No. 509, §1; Acts 1992, No. 528, §1, eff. June 29, 1992.

SUBPART C. DOMESTIC FISH FARMING

§411. Definitions

In recognition of the fact that domestic fish farming is becoming an important part of the agricultural economy of this state, the legislature hereby determines and declares that whenever any law or regulation promulgated pursuant thereto shall use any of the following terms, such terms shall be deemed and construed to include, within the common or statutory definition thereof, the following:

(1) "Agriculture" or "agricultural pursuit" or any similar term includes the Cultivation, growing, harvesting and/or marketing of domesticated fish.

(2) "Cultivated crop" includes domesticated fish which are grown, managed or harvested on an annual, semi-annual, biennial or short interval basis.

(3) "Livestock" includes domesticated fish which are grown, managed, harvested and/or marketed as a cultivated crop.

(4) "Domesticated fish" as used in this Sub-part means any fish that are spawned and grown, managed, harvested and marketed on an annual, semi-annual, biennial or short term basis, in privately owned waters, as defined herein.

(5) "Privately owned waters" means artificial earthen reservoirs and shall be constructed with levees so as to prevent at all times the ingress and egress of fish life from public waters, and such reservoirs shall not include lands of natural streams or natural lake beds.

(6) The definition of "domesticated fish" under this Subpart does not include bass, crappie, striped bass, bream, tetra or other exotic fish unless approval is first obtained from the Louisiana Wildlife and Fisheries Commission. However, the definition of "domesticated fish" shall specifically include hybrid striped bass which are produced and regulated pursuant to provisions of this Subpart.

Added by Acts 1964, No. 248, §1; Amended by Acts 1974, No. 223, §3; Acts 1988, No. 778, §1.

§412. Issuance and renewal of certificate; transportation of finfish; use of public waters

A. It shall be unlawful for any person to engage in the propagation, production, transportation, and possession of fish, including hybrid striped bass, or minnows raised or produced in private artificial earthen reservoirs in this state except as provided hereinbelow:

(1) Every person desiring to engage in the production or propagation of fish or minnows for sale shall first make application in writing to the Louisiana Wildlife and Fisheries Commission for a certificate to do so. The application shall be made on an application blank furnished by the commission. It shall contain a description of the land to be included in the artificial reservoir, by lot and block number, or by other legal description, shall give, in detail, the nature of the business in which the applicant desires to engage, and shall be signed by the applicant.

(2)(a) Upon filing of the proper application, an annual certificate shall be issued to the applicant, the initial certificate to cover a period of time ending with the calendar year following the date of the certificate. The application for the certificate shall be accompanied by an initial fee of fifteen dollars.

(b) Annually thereafter, on the first of December, the Department of Wildlife and Fisheries shall notify each grower of fish or minnows by mail on a suitable form, that unless renewed, their fish or minnow grower's certificate shall expire on December 31st. If the grower desires to renew his certificate he shall fill out the blank form furnished by the Department of Wildlife and Fisheries and return it to the department accompanied by a fifteen dollar renewal fee, and the certificate shall be automatically renewed thereby for one year upon complying with the other provisions of this Subpart.

(3) In the sale or transportation of fish or minnows over the highways of this state, a bill of lading shall accompany each shipment showing the species of fish or minnows contained in the shipment, number of pounds, the origin of the payload, destination of the shipment, the name of the consignee and consignor, the grower's certificate number and name. Numbers heretofore required to be placed on the side of the trucks or motor vehicles shall not hereafter be required.

Obnoxious or undesirable species of fish or minnows shall not be grown or sold to the public for human consumption or be used as bait.

(4) Persons engaged in the business of domestic fish farming under this Subpart are excepted from the provisions of R.S. 56:306, and shall be entitled by virtue of their certificate to sell domesticated hybrid striped bass, catfish, carp, drum, and buffalo fish in any size, quantity, or limit without restriction in state or out of state, provided that the domestic fish farmer shall notify the Department of Wildlife and Fisheries not less than twenty-four hours prior to the transportation of each shipment of commercial fish over the highways of this state.

(5) No fin fish farmer or other person may use public bodies of water to propagate, raise, feed or grow any species of fin fish. The use of cages, pens and fenced-off portions of such water bodies for propagating, raising or growing any species of fin fish is prohibited.

B. Violation of any of the provisions of this Section constitutes a class three violation.

Added by Acts 1964, No. 245, §1; Amended by Acts 1966, No. 242, §1; Acts 1970, No. 77, §1; Acts 1974, No. 223, §3; Acts 1984, No. 230, §1, eff. June 29, 1984; Acts 1986, No. 1008, §1; Acts 1987, No. 92, §2; Acts 1987, No. 534, §2; Acts 1987, No. 851, §2; Acts 1988, No. 778, §1; Acts 1990, No. 251, §1; Acts 1992, No. 528, §1, eff. June 29, 1992.

§413. Harvest and sale

Harvest and sale of fish, minnows, or gold fish produced in private artificial earthen reservoirs may be carried out at the time desired by the grower, and with seines or tackle selected by the owner; provided, however, that such tackle, unless it otherwise meets the legal requirements of the commission, shall not be used in any of the public waters of the state, without special permission of the Louisiana Wildlife and Fisheries Commission or its agents. Commercial fish farm producers shall be entitled to transport, without restriction, on the public roads and highways of this state any and all equipment, except any electric fish shocking devices, necessary for the harvest of domesticated fish produced in privately owned waters.

Added by Acts 1964, No. 245, §1. Amended by Acts 1966, No. 242, §1; Acts 1974, No. 223, §3.

§414. Penalties

Except as otherwise provided herein, violation of any provision of this Subpart constitutes a class two violation.

Added by Acts 1964, No. 245, §1. Amended by Acts 1966, No. 242, §1; Acts 1974, No. 223, §3; Acts 1981, No. 837, §3; Acts 1992, No. 528, §1, eff. June 29, 1992.

§415. Crawfish harvesters and catfish farmers

A. The provisions of this Subpart shall not apply to the harvesting of crawfish, or to the production and harvesting of catfish in private ponds, or to the transporting of crawfish from the place where they are harvested or catfish from a private pond to the first point of sale, or to the sale to the first purchaser of crawfish from the person who harvested them, or of catfish which are produced and harvested in private ponds.

B. The Wildlife and Fisheries Commission and the Department of Wildlife and Fisheries shall not have jurisdiction over any activities or transactions exempted by this Section.

Acts 1987, No. 92, §1; Acts 1987, No. 534, §1; Acts 1987, No. 851, §1.

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

March 31, 1993

M E M O R A N D U M

TO: Bert Jones, Chairman, Wildlife & Fisheries Commission
Members, Wildlife & Fisheries Commission

FROM: Blue Watson, Programs Manager, Ecological Studies

SUBJECT: Requested information on Mariculture

Per your request and that of Mr. Jenkins, I am providing you with a written account of the information that you requested on mariculture operations in the coastal areas of the state.

I have attempted to answer all of the questions posed, but the matter of locating redfish and netting violations in the vicinity of the permitted mariculture operations will have to be answered at the meeting. The agents from the mariculture areas will be available to discuss this issue with you. Major Clarke indicated to me that he did not have the data available to be able to pinpoint the violations on the maps, but the agents could. In order to get the rest of the information to you prior to the meeting, we could not wait for the agents to come to Baton Rouge. They will be here on Tuesday.

The question about stocking and harvest rates was looked at based upon reports submitted to us from the permittees. We only considered redfish in the investigation. It appears that the harvest rates are considerably lower (at least an order of magnitude) than the stocking rates. For example, in November and December of 1990, Lafourche Mariculture stocked 118,000 redfish fingerlings. In May of 1991 they sold 3486 fish. That pattern is typical of the operations across the coast.

The fish have been purchased from the Redfish Hatchery, Inc. in Mississippi and Redfish Unlimited in Texas.

cc: Joe Herring

RULE

Department of Wildlife and Fisheries
Office of Fisheries

The Secretary of the Department of Wildlife and Fisheries does hereby amend the rule governing the importation, transportation, possession, disposal and sale of live triploid grass carp for aquatic plant control in private and public waters.

Title 76

Wildlife and Fisheries

Part VII. Fish and Other Aquatic Life

Chapter 9. Freshwater Sports and Commercial Fishing

Section 901. Triploid Grass Carp; Rules and Regulations

Subsection A. TRIPLOID GRASS CARP POSSESSION AND TRANSPORTATION FOR AQUATIC PLANT CONTROL; PERMIT REQUIRED

No person, firm or corporation shall at any time possess, sell or cause to be transported into this state or corporation, triploid grass carp (*Ctenopharyngodon idella*), except in accordance with a permit issued under and in compliance with the following regulations.

The Department of Wildlife and Fisheries hereby adopts the following regulations governing the importation, transportation, possession, disposal and sale of live triploid grass carp for aquatic plant control in private and public waters, including ponds on public golf courses, municipal water treatment plants, parks and zoos. Nothing contained herein shall be construed to restrict or

prevent the Department from conducting bona-fide research studies and fish and aquatic plant management programs as authorized by law or regulation.

Definitions:

Department - is the Louisiana Department of Wildlife and Fisheries or an authorized employee of the Department.

Secretary - is the Secretary of the Louisiana Department of Wildlife and Fisheries.

Triploid grass carp - refers to *Ctenopharyngodon idella* fingerlings and larger individuals that are certified as triploid carp (3N chromosomes) by the U.S. Fish and Wildlife Service or a qualified agent or contractor approved by the Department.

Triploid grass carp possession and transportation permit - is the official document that identifies the terms of, and allows for the importation, transportation and possession of live triploid grass carp in Louisiana as approved by the Secretary or his designee.

Permittee - organization that possesses a valid Louisiana triploid grass carp permit. A permittee can only be a natural person. A permittee may represent himself, a business, corporation or organization. The permittee is responsible for compliance with all stipulations in the permit.

TRIPLOID GRASS CARP HABITAT MANAGEMENT REQUEST PROCEDURES

1. Individuals wishing to import, transport or possess live triploid grass carp in Louisiana must first request a permit

from the Department through an application form furnished by the Department.

2. The completed applications must be returned to the Department, after which, Department personnel will review the application and make an on-site inspection of the water body.
3. Upon completing the on-site inspection, the Department personnel will make a final determination as to whether the applicant is in full compliance with all rules for the triploid grass carp management permit.
4. The secretary, or his designee, will notify the applicant in writing as to whether or not the permit has been granted and if not, the reasons therefore. In the event of disapproval, applicants may re-apply after meeting department requirements.

RULES ON TRANSPORT OF TRIPLOID GRASS CARP FOR HABITAT MANAGEMENT

1. For each occurrence whereby the permittee wishes to import, transport or possess live triploid grass carp, the permittee must obtain prior written approval from the Department using the following procedures.
   a. Requests shall be made to the Permits Supervisor, Inland Fish Division, Louisiana Department of Wildlife and Fisheries, P. O. Box 98000, Baton Rouge, Louisiana 70898-9000.
   b. Requests shall include:
      (1) Louisiana triploid grass carp permit number or a copy of the permit

(2) Route of transport

(3) Date of transport

(4) Time(s) of transport

(5) Destination

(6) Owner of transport vehicle

(7) Total number of fish

(8) Identification of seller and buyer

2. A bill of lading must accompany those individuals in possession of living triploid grass carp during transportation and shall include:

a. Copy of the permittee's written approval as described in 1 above

b. Date and approximate time of shipment

c. Route of shipment

d. Source of triploid grass carp (hatchery)

e. Name, address and phone number of seller

f. Name, address and phone number of buyer

g. Copy of triploid certification

h. Total number of fish

i. Destination

j. Display the words "TRIPLOID GRASS CARP" prominently on at least two sides of the vehicle or hauling tank with letters that are no less than 4 inches high.

RULES APPLICABLE TO TRIPLOID GRASS CARP STOCKING

1. Only approved waters may be stocked.

2. Site must not have any direct connections with any other stream or lake. Any site containment measures must be approved by Inland Fish Division biologists.
3. Site must have a vegetation problem documented by the Department that interferes with either access, esthetics, recreation, health, drainage, agriculture, municipal or industrial utilization or management of the water body.

GENERAL RULES FOR TRIPLOID GRASS CARP HABITAT MANAGEMENT

1. Prior to introductions, fish to be introduced must be certified as triploid grass carp by the U.S. Fish and Wildlife Service or a qualified agent or contractor approved by the Department. Such certification must be furnished to and approved by the Department prior to introduction of any fish into any waters of this state.
2. No fingerlings under 6 inches in total length or eggs or fry shall be imported, transported or possessed in Louisiana.
3. Permits are not transferable from person to person or from site location to site location.
4. No person may permit the release of live triploid grass carp into waters of Louisiana without the written approval of the Secretary or his designee.
5. Applicant shall provide an adequate number of triploid grass carp to the Department, at no cost to the Department, upon request, to verify triploidy. Cost of any test deemed necessary by the Department shall be borne by the permittee.

6. The applicant must agree to allow Department officials or a Department approved contractor to conduct unannounced random inspections of the transport vehicle, property, water body site and fish. Additionally, Department officials may request other officials to accompany them during these inspections. Additionally, those individuals performing these inspections may remove or take fish samples for analysis and/or inspection.

7. The Department shall approve final stocking rates for each applicant.

8. The Department reserves the right to disapprove any permit application if, in the determination of the Department, escape of triploid grass carp into the wild is a risk. If an escape incident occurs through either a meteorological event or structural failure, permit reapplications will receive a more critical review by the Department.

9. Except in cases of mortality or unavoidable loss, restocking will be permitted only at intervals of 2.5 years following the initial stocking.

10. The cost of an initial triploid grass carp permit shall be $50.00 plus an additional fee for on-site inspection. The initial permit will be issued to cover a period of time ending with the calendar year following the date of the permit. Permits shall be renewed annually thereafter at a cost of $25.00. No site inspection or site inspection fee shall be required for permit renewals.

11. A permittee will be charged an administrative fee of $25.00 for each importation occurrence beginning with the second occurrence.

12. Qualified universities conducting research approved by the Department shall be exempt from fee charges.

13. If a permittee terminates the use of triploid grass carp in the permitted waterbody, the permittee shall notify the Department immediately and dispose of the triploid grass carp according to methods approved by the Department.

14. In addition to all other legal remedies, failure to comply with any of the provisions herein shall be just cause to immediately suspend and/or revoke the permittee's permit. All triploid grass carp shall be destroyed at permittee's expense under the Department's supervision within 30 days of permit revocation. Violation of any of the provisions of the permit constitutes a class four violation in accordance with R.S. 56:319(E).

15. Any permittee charged with violation of the above rules has a right to make a written response to the alleged violation(s) to the Secretary requesting a hearing to review the alleged violation(s).

Subsection B. SALE OF LIVE TRIPLOID GRASS CARP FOR AQUATIC PLANT CONTROL; PERMIT REQUIRED.

Definitions:

Triploid grass carp sales permit - the official document that

allows for the importation, transportation, possession and sale of live triploid grass carp in Louisiana as approved by the Secretary or his designee.

Triploid grass carp seller - a properly licensed fish farmer who possesses a triploid grass carp sales permit.

RULES

1. Individuals wishing to sell live triploid grass carp must first obtain a Triploid Grass Carp Sales Permit.
2. A triploid grass carp seller must be a properly licensed fish farmer.
3. A triploid grass carp seller is bound by the triploid grass carp possession and transportation regulations as stipulated in sub-section A above; except that:
    a. The holder of a Triploid Grass Carp Sales Permit may sell live triploid grass carp.
    b. The Triploid Grass Carp Sales Permit serves in lieu of the Triploid Grass Carp Possession and Transportation Permit.
4. The holders of a Triploid Grass Carp Sales Permit may only sell triploid grass carp to holders of a valid Triploid Grass Carp Possession and Transportation Permit or a Triploid Grass Carp Sales Permit.
5. The initial Triploid Grass Carp Sales Permit will be issued to cover a period of time ending with the calendar year following the date of the permit. Permits shall be renewed annually

thereafter. The cost of a Triploid Grass Carp Sales Permit is $250.00.

6. An additional fee for the initial inspection of facilities will be assessed and charged.

7. In addition to all other legal remedies, failure to comply with any of the provisions herein shall be just cause to immediately suspend and/or revoke the permittee's permit. All triploid grass carp shall be destroyed at permittee's expense under the Department's supervision within 30 days of permit revocation. Violation of any of the provisions of the permit constitutes a class four violation in accordance with R.S. 56:319(E).

AUTHORITY NOTE: Promulgated in accordance with R.S. 56:318, 56:319 and 56:319.1.

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Office of Fisheries, LR 17:806 (August 1991); Amended LR

Joe L. Herring
Secretary

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

BOARD MEETING

MARCH 7, 1991

JIMMY JENKINS
CHAIRMAN

BATON ROUGE, LOUISIANA

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Wildlife and Fisheries Commission L.R. 14:548 (August 1988), Amended L.R. 17: (March 1991).

James H. Jenkins
Chairman

Continuing, Dr. Jerry Clark presented the **Proposed Rules and Regulations on Introduction of Triploid Grass Carp in Commercial Catfish Culture Ponds** and **Proposed Rules and Regulations on Importation, Culture, Possession and Disposal of Tilapia in Louisiana** at Thursday's meeting. Dr. Clark advised that at the last two Commission meetings tilapia and grass carp have been discussed and a resolution was introduced to "domesticate" grass carp and tilapia in order that they may be reared in aquacultural settings in the state. The Commission did domesticate these two species at the February Commission meeting contingent upon acceptance of the department's proposed rules. Dr. Clark pointed out that in the Commissioner's packet there are the rules and regulations governing this. All is a needed is a vote in support of the rules if that is the Commission's choice advice Dr. Clark and asked if there were any questions about the proposed rules.

Mr. Schneider asked if catfish farmers were the only ones that could procure the fish and would the rule preclude any private pond owner, country club, housing development, farmer, etc. who had a private pond that had a grass problem and wanted to use these carp. Dr. Clark answered that was correct and there has been discussion over the last three or four years. Out of this discussion a task force was put together of fishermen (recreational, catfish and others who were interested in the grass carp for uses that Mr. Schneider is talking about and they came out with a recommended set of uses and the department has abided by that set of agreements. That agreement is basically as it is seen in this set of rules pointed out Dr. Clark.

Chairman Jenkins asked Dr. Clark if he needed a motion to adopt the permanent regulations. Dr. Clark explained that was not it at all, the department by law has to promulgate these rules. If the Commission agrees with the rules the department will begin with the process of the Administrative Procedure Act (notice of intent, etc.). The department is not involved with the Commission at all with the APA other than the domestication of the species. The Commission had told the department that they did not agree with the domestication unless they saw the rules so the department is providing them with the opportunity to see the rules advised Dr. Clark. A simple motion in favor of the rules is all that is needed then the department will proceed with adoption of the formal rules.

Mr. Pol moved that the Commission accept the recommendation of the rules by Dr. Clark. The motion was seconded by Mr. McCall.

Chairman Jenkins called for discussion by the Commission. Mr. Jones asked about the department personnel that will recommend to the administrator if the applicant's request should be approved or disapproved and how this would be handled. Dr. Clark explained that the department has a proposed form which will be mailed to the department by the applicant. A biologist will be sent to the site and if they don't meet the rules a permit will not be issued. Every application will have a on-site inspection. Mr. Jones asked about the "all catfish cultural ponds that will contain triploid grass carp must have levees at least one foot above the one hundred year flood elevation" and does this take into account the Mississippi River levee. Dr. Clark advised that this is a standard clarification, within a watershed the one hundred year flood plain, whatever the source of flood waters, is identified and this standard classification will be used. Mr. Jones stated disregarding the fact of the Mississippi River levee. Dr. Clark stated that he believes that the classification of the possibility of a one hundred year flood takes into account all factors including wherever you are, whatever the source of the flood water is, etc. Chairman Jenkins asked for public comments. There be none Chairman Jenkins called for a vote on the motion. The motion passed unanimously

(The full text of the proposed rule is made a part of the record)

RULES AND REGULATIONS ON INTRODUCTION OF TRIPLOID GRASS CARP IN COMMERCIAL CATFISH CULTURE PONDS

The Louisiana Department of Wildlife and Fisheries hereby adopts the following regulations governing the importation, transportation, possession, disposal, and sale of live triploid grass carp in Louisiana. The following terms shall have the following meaning in this document:

Catfish Culture -	all activities associated with raising catfish from eggs to adult size.
Commercial catfish farmer -	any commercial catfish operator whose ponds are stocked with a minimum of 1500 catfish per acre and who markets 85 percent of his catfish.
Triploid grass carp culture -	all activities associated with raising triploid grass carp from fingerlings (not less than 6 inches in length) to adult size.

Culture system -	shall be a system used for catfish culture and designed such that all triploid grass carp are prevented from escaping.
Department -	the Louisiana Department of Wildlife and Fisheries or an authorized employee of the department.
Secretary -	the Secretary of the Louisiana Department of Wildlife and Fisheries.
Triploid grass carp culture permit -	the official document that identifies the terms of, and allows for the importation, transportation, possession, disposal, and sale of live triploid grass carp in Louisiana as approved by the Secretary.
Triploid grass carp -	refers to Ctenopharyngodon idella fingerlings, and larger individuals that are certified as triploid (3N chromosomes) by the U.S. Fish and Wildlife Service or an agency or contractor approved by the department.
Permittee -	the individual, business, corporation or organization that possess a valid Louisiana triploid grass carp culture permit.
Disposal -	the business of processing, selling, eradicating or purposely removing triploid grass carp from a culture system.

TRIPLOID GRASS CARP CULTURE PERMIT REQUEST PROCEDURES

Catfish farmers wishing to import, transport, culture, possess, dispose, or sell live triploid grass carp in Louisiana must first request a permit from the Secretary of the Louisiana Department of Wildlife and Fisheries.

The following procedures will be necessary:

1. Applications for permits can be obtained by contacting the Administrator, Inland Fish Division, Louisiana Department of Wildlife and Fisheries, Box 98000, Baton Rouge, LA 70898-9000.

2. The completed applications should be returned to the same address whereby Inland Fish Division personnel will review the

application. Department personnel or a department approved contractor, at the applicant's expense, will then make an on-site inspection of the property and culture system.

3. After the on-site inspection has been completed, department personnel will make a final determination as to whether the applicant is in full compliance with all rules for triploid grass carp culture permit. Department personnel will then recommend to the Administrator if the applicant's request should be approved or disapproved.

4. The Secretary will notify the applicant, in writing, as to whether or not the permit has been granted and if not, why. In the event of disapproval, applicants may reapply after correcting specified deficiencies noted in the Secretary's letter of denial.

RULES ON TRANSPORT OF TRIPLOID GRASS CARP FOR CULTURE

1. For each occurrence when the permittee wished to import, transport, possess, or sell live triploid grass carp, the permittee must obtain, in writing, approval from the department. Procedures and necessary information for obtaining approval are:

   a. Requests shall be made to the Administrator, Inland Fish Division, Louisiana Department of Wildlife and Fisheries, Box 98000, Baton Rouge, LA 70898-9000.

   b. Requests shall include:

      (1) Louisiana triploid grass carp permit number, or a copy of the permit.

      (2) Route of transport.

      (3) Date of transport.

      (4) Time(s) of transport.

      (5) Destination.

      (6) Owner of transport vehicle.

      (7) Total number of fish.

      (8) Identification of seller and buyer.

2. A bill of lading must accompany those individuals in possession of live triploid grass carp during transportation and shall include:

a. Copy of the permittee's written approval as described in one above.

b. Date and approximate time of shipment.

c. Route of shipment.

d. Source of triploid grass carp (hatchery, culture pond, etc.).

e. Name, address and phone number of seller.

f. Name, address and phone number of buyer.

g. Copy of triploid certification.

h. Total number of fish.

i. Destination.

j. Display the words **"TRIPLOID GRASS CARP"** prominently on at least two sides of the vehicle or hauling tank with letters that are no less than six inches high.

RULES OF TRIPLOID GRASS CARP CULTURE SITE

1. A legal description of the catfish culture property that shows ownership must be submitted along with the permit request.

2. The applicant must agree to allow department officials or a department approved contractor, at the applicant's expense, to conduct unannounced random inspections of the transport vehicle, property, culture system, and fish. Department officials may request other officials to accompany them during these inspections. Additionally, those individuals performing these inspections may remove and take fish samples for analysis and/or inspection.

3. All catfish culture ponds that will contain triploid grass carp must have levees at least one foot above the 100-year flood elevation.

4. Triploid grass carp will be permitted only in commercial catfish culture ponds.

GENERAL RULES FOR TRIPLOID GRASS CARP CULTURE

1. The cost of a Triploid Grass Carp Culture Permit shall be $50, plus the actual cost of the on-site inspection. Qualified

universities conducting research approved by the department shall be exempt from the fee charge.

2. In order for a permit to be valid, a Fish Farming License from the department is required.

3. Permits are valid for 12 months.

4. Permits are not transferable from person to person or property to property.

5. Live triploid grass carp may be sold only to a commercial catfish farmer permitted to possess triploid grass carp.

6. No person may release live triploid grass carp into the waters of Louisiana (whether public or private) without the written approval of the Secretary.

7. Permittee must agree to collect and provide an adequate number of triploid grass carp to the department or a department approved contractor upon request to verify triploidy, at the permittee's expense.

8. No eggs, fry or fingerlings under six inches in total length shall be transported, shipped, possessed, stocked or sold in Louisiana.

9. Water discharge from all culture systems stocked with triploid grass carp must have appropriate barriers designed to prevent escapement of triploid grass carp and constructed with rigid, sturdy screens of a size no larger than 1/2 inch square mesh.

10. The department may employ whatever means it deems necessary to prevent the release of escapement of triploid grass carp or their eggs into the environment. The permittee shall agree to reimburse the department for all cost including, but not limited to, man hours and materials utilized during these corrective actions.

11. The department shall be overseer of all escape incidents and may implement or require to be implemented whatever measures deemed necessary to contain, kill or recapture fish. The permittee shall agree to reimburse Wildlife and Fisheries for all department costs including, but not limited to, man hours and materials utilized during these corrective actions.

12. If a permittee terminates the use of triploid grass carp in catfish culture ponds, the permittee shall notify the Secretary immediately and dispose of the triploid grass carp according to methods approved by the department.

13. In addition to all other legal remedies, failure to comply with any of the provisions herein shall be just cause to immediately suspend and/or revoke, the permittee's permit. All triploid grass carp shall be destroyed at permittee's expense under the department's supervision within 30 days of permit revocation.

14. Any permittee allegedly in violation of the above rules has a right to make a written response of the alleged violation(s) to the Secretary requesting a hearing to review the alleged violation(s) within five days.

(The full text of the proposed rule is made a part of the record)

RULES AND REGULATIONS ON IMPORTATION, CULTURE, POSSESSION AND DISPOSAL OF TILAPIA IN LOUISIANA

The Louisiana Department of Wildlife and Fisheries hereby adopts the following regulations governing the importation, exportation, transport, culture, possession, disposal, transfer and sale of tilapia and, or their hybrids in Louisiana. The following terms shall have the following meaning in this document:

Culture -	all activities associated with the propagation and nurturing of tilapia.
Culture system -	shall be a closed system and designed such that all water containing, or that at any time might contain, tilapia (adult fish, juvenile fish, or fish eggs) is filtered, recirculated and prevented from any discharge.
Disposal -	the business of processing, selling, or purposely removing tilapia from the culture system.
Department -	the Louisiana Department of Wildlife and Fisheries or an authorized employee of the department.
Secretary -	the Secretary of the Louisiana Department of Wildlife and Fisheries.
Tilapia permit -	official document that identifies the terms of, and allows for the importation, exportation, transport, culture, possession, disposal, transfer and sale of tilapia in Louisiana as approved by the Secretary.

Tilapia - eggs, fish, or body parts belonging to the genera Tilapia, Sarotherdon, or Oreochromis and their hybrids.

Permittee - the individual or organization that possess a valid Louisiana tilapia permit.

TILAPIA PERMIT REQUEST PROCEDURES

Individuals or organizations wishing to import, export, transport, culture, possess, dispose, transfer or sell live tilapia in Louisiana must first request a permit from the Secretary of the Louisiana Department of Wildlife and Fisheries.

The following procedures will be necessary:

1. Applications for permits can be obtained by contacting the Administrator, Inland Fish Division, Louisiana Department of Wildlife and Fisheries, Box 98000, Baton Rouge, LA 70898-9000.

2. The completed applications should be returned to the same address whereby Inland Fish Division personnel will review the application. Department personnel or a department approved contractor, at the applicant's expense, will then make an on-site inspection of the property and culture system.

3. After the on-site inspection has been completed, department personnel will make a final determination as to whether the applicant is in full compliance with all rules for a tilapia permit. Department personnel will then recommend to the Administrator if the applicant's request should be approved or disapproved.

4. The Secretary will notify the applicant, in writing, as to whether or not the permit has been granted and if not, why. In the event of disapproval, applicants may re-apply after correcting specified deficiencies noted in the Secretary's letter of denial.

Individuals or organizations wishing to import or buy processed (dead) tilapia for the sole purpose of retail sales must first obtain written permission from the Secretary. Requests should be addressed as in one above. Please include your name, phone number, intentions, and wholesale-retail dealers license number.

RULES ON TRANSPORT OF LIVE TILAPIA

1. For each occurrence when the permittee wishes to import, export, transport, possess, transfer, or sell tilapia, the

permittee must obtain, in writing, approval from the department. In addition, if live tilapia are transported into or within the State of Louisiana, anyone taking possession of these live tilapia must also have a tilapia permit. Live tilapia showing signs of diseases shall not be transported into or within the State of Louisiana. Procedures and necessary information for obtaining approval are:

a. Requests shall be made to: Administrator, Inland Fish Division, Louisiana Department of Wildlife and Fisheries, Box 98000, Baton Rouge, LA 70898-9000.

b. Request shall include:

(1) Louisiana tilapia permit number, or a copy of the permit.

(2) Route of transport.

(3) Date of transport.

(4) Time(s) of transport.

(5) Destination.

(6) Owner of transport vehicle.

(7) Electrophoretic certification which must identify stocks) to species.

(8) Total number of each species.

(9) Identification of seller and buyer.

2. A bill of lading must accompany those individuals in possession of live tilapia during import, export, transport, transfer or sale and shall include:

a. Copy of the permittee's written approval as described in one above.

b. Date and approximate time of shipment.

c. Route of shipment.

d. Source of tilapia (culture facility).

e. Name, address and phone number of seller.

f. Name, address and phone number of buyer.

g. Identification and certification as to species.

h. Total number of each species.

i. Destination.

j. Letter from source stating that tilapia are not showing signs of diseases.

k. Display the work **"TILAPIA"** prominently on at least two sides of the vehicle or hauling tank with letters that are no less than six inches high.

RULES FOR SECURITY OF TILAPIA CULTURE FACILITY

1. Applicant must demonstrate to the satisfaction of department officials that adequate security measures are in place at the culture facility that will guard against vandalism and theft of tilapia.

2. Any changes or modification of a permitted security system must first have the approval of department officials.

3. The department will have just cause to revoke a tilapia permit for lapses in security if: 1) the permittee is found to be in non-compliance with numbers one and two above; 2) the permittee is determined to be derelict in maintaining the security measures that were approved for the permit; 3) failure to take appropriate measures when vandalism, theft, or accidental release of fish occurs.

4. It shall be the responsibility of the permittee to immediately notify the Secretary of any tilapia that leave the facility for any reason, including but not limited to accidental releases, theft, etc.

5. It shall be the responsibility of the permittee to have at least one individual who is familiar with the culture system readily available for emergencies, inspections, etc.

RULES OF TILAPIA CULTURE SITE

1. A legal description of the tilapia culture facility site that shows ownership must be submitted along with the permit request.

2. The applicant must agree to allow department officials or a department approved contractor, at the applicant's expense, to conduct unannounced random inspections of the transport vehicle, property, culture system, and fish. Additionally, department officials may request other officials to accompany

them during these inspections. Additionally, those individuals performing these inspections may remove or take fish samples for analysis and/or inspection.

3. All aspects of the tilapia culture facility must be at least one foot above the 100-year flood elevation. Additionally, the department may require a surface hydrological assessment of the proposed site at permittee's expense.

RULES FOR THE TILAPIA CULTURE SYSTEM

1. Applicant must provide a detailed narrative description, including scale drawings, of the tilapia culture system.

2. The tilapia culture system shall be a closed system designed such that tilapia eggs, larvae, juveniles or adults cannot escape.

3. All water utilized in the culture of tilapia shall be accounted for and shall not leave the permittee's property.

4. All aspects of tilapia culture system and processing shall be completely enclosed so that predation from birds, mammals, amphibians, and reptiles is precluded.

RULES FOR THE PROCESSING OF TILAPIA

1. All processing of tilapia shall only occur at a department approved permitted processing facility, and in such a manner that will prevent escapement of eggs, larvae, juveniles and/or adults.

2. Records shall be kept of all processed tilapia and include the following information:

   a. Species.

   b. Processed pounds.

   c. Date processed.

   d. Name of processor.

   e. Buyer of processed fish.

   A copy of this information shall be sent to the department's Baton Rouge office at the end of each year, or at anytime upon the request of department officials.

GENERAL RULES FOR TILAPIA

1. The cost of a Tilapia Permit shall be $50, plus the actual cost of the on-site inspection. Qualified universities conducting research approved by the department shall be exempt from the fee charge.

2. In order for the permit to be valid, a Fish Farming License from the department is required.

3. Permits are valid for 12 months.

4. Permits are not transferable from person to person, or property to property.

5. Live tilapia, fish or eggs, may be sold only to a holder of a valid tilapia permit.

6. No person may release live tilapia, fish or eggs, into the waters of Louisiana (whether public or private) without the written approval of the Secretary.

7. Permittee must agree to collect and provide an adequate number of tilapia to the department or a department approved contractor upon request for identification and analysis, at the permittee's expense.

8. Only those persons or organizations with valid tilapia permits may propagate, culture or possess the following species and/or hybrids produced from their crosses.

   Tilapia aurea — *Tilapia nilotica*

   Tilapia mossambica — *Tilapia hornorum*

9. The permittee shall be required to submit an annual report to the Secretary on a form provided by the department.

10. The department may employ whatever means it deems necessary to prevent the release or escapement of tilapia or their eggs into the environment. The permittee shall agree to reimburse the department for all costs including, but not limited to, man hours and materials utilized during corrective actions.

11. The department shall be overseer of all escape incidents and may implement or require to be implemented whatever measures deemed necessary to contain, kill or recapture fish. The permittee shall agree to reimburse Wildlife and Fisheries for all department costs including, but not limited to, man hours and materials utilized during these corrective actions. In order to assure the Secretary that the permittee will fulfill

their financial obligation, the permittee shall post a $25,000 bond.

12. If a permittee terminates tilapia production, the permittee shall notify the Secretary immediately and dispose of the tilapia according to methods approved by the department.

13. In addition to all other legal remedies, failure to comply with any of the provisions herein shall be just cause to immediately suspend and/or revoke the permittee's permit. All tilapia shall be destroyed at permittee's expense under the department's supervision within 30 days of permit revocation.

14. Any permittee allegedly in violation of the above rules has a right to make a written response of the alleged violation(s) to the Secretary requesting a hearing to review the alleged violation(s) within five days.

Mr. Don Puckett reported to the Commission on the **Shell Dredging Bid Package** at Thursday's meeting. Mr. Puckett advised the Commissioners that they have before them a package consisting of a proposed resolution for the Commission, a timetable which sets out the shell dredging procedures, an addendum to the notice of publication, amendments to the lease and the bid package; and the bid package which contains special instructions, notice of publication, bid form, bid bond and a proposed lease. At yesterday's meeting of the Minerals Committee the bid package along with the amendments to the bid package and the addendum to the notice of publication were all adopted by the Minerals Committee. The only change to this package which has arisen since the meeting of the committee would be a one day change, which Mr. Puckett advised he was going to personally recommend, on the date for accepting bids and would be changing it from June 30th to July 1. June 30th was a Sunday and Mr. Puckett recommends to the full Commission that this date be changed to July 1 which is a Monday. Mr. Puckett briefly went through the amendments that were approved yesterday by the Minerals Committee. These were: To require the winning bidder to report the posted barge price, any changes in the posted barge price and any sales that occur from the barge. The bid that would be submitted would be basically two part and would not only consist of a fractional bid but would also state a minimum selling price from the barge. The department's minimum selling price is $7.50 and can only go up from that. The minimum bid altogether would be one eighth of $7.50. Another requirement that would give the Commission the authority to waive all or part of the bid bond of a bona fide or good faith bidder who has attempted to secure certain permits from other agencies, Corps, DNR, DEQ, and has been unable to do so. As a fundamental requirement of this would be that the bidder had attempted to secure all those permits that he knew or should have known he should have received. In other words a bidder would not have the luxury of simply ignoring one of the permits and then claiming the benefit of this provision.

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

BOARD MEETING

FEBRUARY 7, 1991

JIMMY JENKINS
CHAIRMAN

BATON ROUGE, LOUISIANA

the Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic.

The recreational and commercial bag limit for possession of cobia (Rachycentron canadum) whether caught within or without the territorial waters of Louisiana shall be 2 fish per person, per day.

AUTHORITY NOTE: Promulgated in accordance with R.S.56:325.1 and R.S.56:326.3.
HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Wildlife and Fisheries Commission. L.R.13:502 (September, 1987) amended L.R.17: (February, 1991).

James H. Jenkins
Chairman

Mr. Bennie Fontenot presented the **Resolution for Domestication of Tilapia and Triploid Grass Carp for Agricultural Purposes** at Thursday's meeting. Mr. Fontenot advised that they are bringing back before the Commission the resolution which domesticates two exotic fish, The triploid grass carp and the tilapia. The reason for this resolution is that this will permit the department to allow under a strict regulated permit system the aquaculture of these fish under systems that the department will deem safe. The triploid grass carp is a functionally sterile fish. Before the department can issue such a permit the Commission has to domesticate or approve this exotic fish. In Title 56 there is a section that says "the secretary of the department cannot issue any permits for the culture of exotic fish until this exotic fish is domesticated by the Commission". Mr. Fontenot commented that this is the second time this is being brought before the Commission and there was a change made in the resolution. It reads "Said approval is given contingent upon Commission approval of Departmental rules pertaining to the issuance of permits". In other words the Commission will take action today to domesticate the fish, however, it will not be domesticated until the Commission goes over the rules and approves them. Chairman Jenkins called for questions from the Commission. There being none Chairman Jenkins called for a motion on the resolution. A motion was made by Mr. Jones for adoption of the resolution and seconded by Mr. Vujnovich. The motion passed unanimously. Chairman Jenkins asked if there was any public comment.

Mr. John Juneaus addressed the Commission. Mr. Juneaus stated that he was interested in culturing the tilapia in a closed system and wanted to bring up the fact that this fish is starting to enter into the market place from California and he believes it is a wise decision that the state starts to look at growing this fish in a greenhouse type arrangement where it is controlled. What is happening in Louisiana, as a state, is that it is beginning to lose market share. It is legal to grow the fish in Texas, Arkansas and

Mississippi. It is important that the state starts to look at technology and this fish, not to compete with the wild fish but to keep the business in Louisiana. What will happen is that these fish will come in from out-of-state and quite a bit of money will be lost. As technology moves the state needs to keep up. There are a lot of rumor about the fish and a lot of people are afraid of the fish stated Mr. Juneaus. This fish has been in Florida waters for the past twenty to twenty five years and in talking to the wildlife and fisheries people in Florida they talk about the fish and how fast it populates and all the problems you have with it but when you ask what problems do they see, they see none. Bass fishing is just as great as ever in Florida and Mr. Juneaus is not saying that we need to get this fish into the wild waters but is trying to say that he thinks that maybe the wildlife and fisheries might want to look a little closer at this fish and see what it is all about. This is the fish for the future. If the state does not look at growing this fish the other people that are growing it will come into the state and take the market share.

Mr. Raymond Bieo, commercial catfish farmer, Board of Directors of the Louisiana Catfish Association, addressed the Commission. Mr. Bieo stated that they wanted to express their appreciation to the department for seeking to find ways to legalize grass carp in their ponds. Mississippi has grass carp in their ponds and this gives them an economic advantage over the Louisiana catfish farmers because the grass carp cleans the bottom of the ponds. Mr. Bieo asked that as the rules are being promulgated that they have the opportunity to comment on them so that the rules can be productive and not counter productive. Chairman Jenkins stated that they would welcome their comments and asked if anyone else wanted to speak. There being no one Chairman Jenkins went on to the next item on the agenda.

(The full text of the resolution is made a part of the resolution)

LOUISIANA WILDLIFE AND FISHERIES COMMISSION
RESOLUTION

Pursuant to R.S. 56:411 et seq., this Commission does hereby officially give its approval for the species tilapia and triploid grass carp as exotic fish which may be gown, managed and harvested as a "domesticated fish" under the Domestic Fish Farming Program. Said approval is given contingent upon Commission approval of Departmental rules pertaining to the issuance of permits for these species and all permittees meeting all rules, regulations, guidelines, and permit stipulations as shall be imposed by the Department based upon the biological and technical recommendations of its staff; and further contingent upon the issuance by the Department of any and all necessary permits pursuant to Section 318, 319, 319.1 or other statutes.

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

BOARD MEETING

JANUARY 10, 1991

JIMMY JENKINS
CHAIRMAN

BATON ROUGE, LOUISIANA

some individuals who had applied but were not included on the Civil Service's first list. It should take about a week or 10 days to get the list back. The Specialist position that was lined out to be in East Baton Rouge Parish has been changed to Webster Parish in north Louisiana because it was felt there was a greater need with many of the alligator farmers now being located in north Louisiana. This person will service the north Louisiana alligator farmers. The list for the alligator farm biologist position is still called for and the department still has not received it. Mr. Prickett advised that he checked on this list day before yesterday and was told it should be arriving any day.

Mr. McCall stated that a couple of months ago one of the planes was in a crash and asked Acting Secretary McInnis for information on whether or not it has been repaired, the cost, etc. Acting Secretary McInnis informed the Commissioners that this was the amphibious plane and there was some damage done to the floats. There are thousands of rivets that have got to be reworked. The plane is being worked on and it was determined to be an accidental type situation. It is covered entirely by insurance but it will take some time to repair the floats. The problem causing the accident was with a gear and the wheels that come out of the floats. Ms. Baker who supervises the Aviation Section had reports from the Chief Pilot and other persons that were on site at the time as to the nature of the accident. The FFA looked at it and this was the determination that the FFA came back with, advised Acting Secretary McInnis. Mr. McCall asked if the pilot was still flying other planes at this time? Acting Secretary McInnis stated that the pilot flies different aircraft and has been flying waterfowl surveys since that time.

Chairman Jenkins called for other questions. There being none Chairman Jenkins called for a motion to adjourn for lunch and reconvene at 1:30 p.m. A motion was made by Mr. McCall for adjournment and seconded by Mr. Jones. The motion passed unanimously

Chairman Jenkins called the meeting back to order at 1:30 p.m. on Thursday, January 10, 1991.

At Thursday's meeting Dr. Jerry Clark presented a Resolution for Domestication of Tilapia and Triploid Grass Carp for Agricultural Purposes for approval. Dr. Clark gave a brief background on the proposed resolution. By state law in order for the department to grant a permit for certain species to be reared in aquaculture the Commission has to declare them as a domesticated species. The department has a recommendation in the form of a resolution for the Commission to declare triploid grass carp which is a sterile grass carp and tilapia as domesticated species. This would allow these species to be reared in aquacultural. This resolution will not open the doors for the production of either of these species in Louisiana for aquaculture. Subsequent to this the agency will

promulgate rules, and the permits to rear these species will only be granted after those rules are adopted. These rules are going to be very restrictive advised Dr. Clark. Over the last three or four years a Grass Carp Task Force had several meetings which included recreational fishermen, commercial aquacultural people, catfish farmers and a number of other people. This group met for a series of meetings and came to a conclusion about under what conditions triploid grass carp should be allowed into this state. It is the department's intention to follow the letter and the spirit of that agreement and not allow triploid grass carp to be anywhere else in the state other than what was part of the agreement, commented Dr. Clark. It is also the department's intention to write rules for tilapia in which they would have to be reared only in closed aquacultural systems which means in tanks in buildings. The department is going to treat tilapia or the escape of tilapia as a hazardous waste.

Mr. Jones asked if tilapia got out in the wild in the Atchafalaya Basin what would happen? Dr. Clark answered it would reproduce and it is possible that it could interfere with other species that are already in the basin. Mr. Jones asked why did the department want to deal with this and why would they want to consider the risk? Dr. Clark stated because we think we can control it. In the last year a case was made against a catfish farmer who had diploid grass carp (fertile grass carp) in his ponds. Grass carp are showing up in the National Marine Fisheries Service commercial report in Louisiana's major river systems. These fish are in the state and if the department can provide a legal opportunity to use a triploid grass carp this might stop the spread of the grass carp. The tilapia, to Dr. Clark's knowledge, has not been established in the state whereas grass carp has.

Chairman Jenkins called for any other questions. Dr. Clark reiterated that this will not allow these species into the state. It would only be under the rules that will be promulgated as an agency. It would be appropriate for the Commission to be a part of this process since they are part of the process by domesticating the fish stated, Dr. Clark. If the Commission does not like the rules they can exercise their authority to de-domesticate the fish anytime they want. Mr. Jones questioned why we were doing this. Dr. Clark answered that we are doing this because a number of people in a number of industries throughout the state, the aquacultural industry, catfish industry, and others have said that this state could benefit from the activities that could be permitted under this system. Individuals could make money rearing tilapia in the state; individuals could make more money rearing catfish in the state if they could use these species for grass control in their ponds. For every action there is a benefit and a cost pointed out Dr. Clark. Mr. McCall asked if the risk was worth it. Dr. Clark answered we think it is or we would not have recommended it. Mr. Schneider asked how big of a problem are the diploid grass carp right now and were people bringing them in

illegally and using them? Dr. Clark answered yes but all he has is rumors. He has had people tell him that every catfish farmer in the state has got them. Dr. Clark does not think this is true but thinks there are probably significant numbers that do. Dr. Clark explained how dangerous diploid were. Lake Conroe in Texas was stocked with diploid by the university people from Texas A&M. Within a number of years, not very many, every piece of vegetation in the lake was gone. The lake has not yet recovered, advised Dr. Clark and the diploid grass carp have shown up in the bays and estuaries of Texas downstream from Lake Conroe. The diploid grass carp are a potential serious problem and are fertile fish. Dr. Clark stated that we are talking about a program that we would be undertaking where anybody getting a permit would have to have certified triploid fish (sterile fish) and the department would do their own investigations on every one of the permits to make sure that the fish are triploid. Chairman Jenkins stated that the problems is not the sterile fish that we would permit, right, it is the other species of fish that is concerning Mr. Jones? Mr. Jones stated that it was the same species of fish, is it not? Dr. Clark answered yes, triploid just means that they have taken a fertile fish and put it through a process and made it infertile by fooling with its genetics. This fish does not reproduce. Mr. Jones stated that they keep making them. Dr. Clark commented that not in Louisiana they would not keep making them, these fish would have to be imported from out-of-state. With respect to the grass carp, all the interested organizations were part of the task force and they met for a long period of time. All the department would be doing is implementing an agreement that was reached by sport fishermen, catfish farmers, etc. and are not proposing any addition to that agreement explained Dr. Clark. Mr. Foret stated that the carp can destroy everything in this state.

Acting Secretary McInnis added that three years ago one of the initial challenges the department had, in which he was involved, was the introduction of this grass carp into the catfish ponds. A great deal of time was spent learning about this, studying it, and working with the agricultural interests on the matter. After heated discussion in the House Agricultural Committee where the grass carp was being discussed they agreed to put it off and the task force was put together. The task force came back with recommendations that everyone on the task force bought into but when it got back to the committee they decided that the cost of the permit would be so costly to test the fish that the farmers decided that they did not want to do this. Since that time there have been several meetings with different representation from throughout the state who are still interested in pursuing the matter and Acting Secretary McInnis trust that if it does come back again before the legislature that it will again return to the House Agricultural Committee where it will receive its discussion. The department participates in these hearings but are not as well received in the House Agricultural Committee as in the House Natural Resources Committee. The Agricultural Committee's focus is in a different

direction and if this fish is to be introduced Acting Secretary McInnis would certainly like to see this department take the lead in drafting the regulations under which it would be conditioned.

Mr. Jones stated that he does not know enough about this to form an opinion right now and would like to have a little more information to be able to base his opinion on something other than just this quick introduction which seems to be a monumental issue to the sport fishermen, the Atchafalaya Basin people, and to the catfish farmers.

Dr. Clark pointed out that two things needed to be done. The resolution needs to be passed and a set of rules need to be promulgated. The difficulty is by statute, the Commission does the domestication and the department does the rules. If the department does not have the Commission's authority to domesticate than it did not make sense for the department to write a set of rules for an illegal fish.

Chairman Jenkins asked Dr. Clark if they were to domesticate the fish can they undomesticate it? Dr. Clark answered in a minute but cannot tell them though that if they domesticated it and put a set of rules in, get a million of these fish in the waters with 12 people investing millions of dollars that 5 years from now it will be easy to undo. Chairman Jenkins stated that he was talking about short term and if they did this today then the next thing that would come along would be further discussion, rules, etc. and if they are not adopted the fish could be undomesticated. Dr. Clark answered right and it is not the department's intention to permit any of the fish until rules are in place and it would be at the Commission's discretion to do oversight on the rules. If the Commission does not like the rules and do not believe that they are protection enough then they can undomesticate the fish. All of this can take place and would take place before anyone of those fish was permitted into the state advised Dr. Clark.

Mr. Schneider asked if 30 days would hurt either way. Dr. Clark answered no. Mr. Schneider asked if the Commissioners could get a copy of the task force report and all the information so that they could study it. Dr. Clark stated yes. Chairman Jenkins suggested that this be put on the agenda for next month for presentation and whatever information that could be sent to the Commissioners in the meantime could be reviewed. Dr. Clark agreed. Chairman Jenkins stated that this will be done.

The Date for the March Commission Meeting was set at Thursday's meeting. Mr. Jones made a motion that the March Commission meeting be set for March 7, 1991, Baton Rouge, Louisiana, 10:00 AM. The motion was seconded by Mr. McCall and passed unanimously.

Acting Secretary McInnis announced that the tentative dates for the May Commission Meeting which is held in conjunction with the

LOUISIANA WILDLIFE AND FISHERIES COMMISSION

RESOLUTION

Pursuant to R.S. 56:411 et seq., this Commission does hereby officially give its approval for the species tilapia and triploid grass carp as exotic fish which may be grown, managed and harvested as a "domesticated fish" under the Domestic Fish Farming Program. Said approval is given contingent upon Commission approval of Departmental rules pertaining to the issuance of permits for these species and all permittees meeting all rules, regulations, guidelines, and permit stipulations as shall be imposed by the Department based upon the biological and technical recommendations of its staff; and further contingent upon the issuance by the Department of any and all necessary permits pursuant to Section 318, 319, 319.1 or other statutes.

Chairman

Secretary

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

March 25, 1993

Mr. Bert Jones, Chairman
Louisiana Wildlife and Fisheries Commission
P. O. Box 298
Simsboro, LA 71275

Dear Mr. Jones:

Please find enclosed for your review and information the latest rule (not yet ratified) developed and proposed by the Department concerning the importation, transportation, possession and sale of live triploid grass carp, as authorized by LRS, Title 56, Sections 318, 319 and 319.1. The Notice of Intent has already been advertised in the State Register and has cleared Oversite as relative to the Administrative Procedures Act. The remaining action necessary for the Rule to be ratified is Commission approval and publication in the State Register. The Rule would then become effective the 20th of the month in which it is published.

Before the Department submits the Rule for ratification, however, I am asking the Commission to review the proposed rule prior to the April 6 Commission meeting at which time comments and the approval of the proposed rule will be requested from the Commission. Bennie Fontenot is available in his office if you need more information or have any questions you would like answered or addressed before the meeting. His phone number is (504)765-2330.

I also have enclosed for your review and information the minutes of the January, February and March, 1991 Commission meeting where discussion and/or action pursued relative to Triploid Grass Carp. Also included is a Commission resolution dealing with the domestication of Triploid Grass Carp for aquaculture purposes.

Your attention and consideration of this important program is certainly appreciated. Thank you!

Sincerely,

Joe L. Herring
Secretary

JLH:BJF:acc
cc: Commission members
Bennie J. Fontenot, Jr.

Louisiana Aquaculture Association

March 31, 1993

Commissioner Bert Jones
Louisiana Wildlife and Fisheries Commission
P.O. Box 298
Simmsboro, LA 71275

Dear Mr. Jones:

Please allow me this opportunity, on behalf of the Louisiana Aquaculture Association, to express our appreciation for the past efforts of the Commission in fostering the growth and development of the aquaculture industry within the state. In 1990, the Louisiana legislature recognized the Louisiana Aquaculture Association as representing production aquaculture within this state through concurrent resolutions. These resolutions made reference to the potential economic impact of the aquaculture industry within the state, and the topic we wish to address herein involves one aspect of that economic impact.

Due in no small part to the support of the Louisiana Wildlife and Fisheries Commission and the Louisiana Department of Wildlife and Fisheries, catfish producers within this state have the opportunity to employ triploid grass carp as a means of controlling aquatic vegetation within their production ponds. We understand that this option may soon be available to owners of other types of ponds within the state. These fish, however, must be purchased from sources outside the state. As demand for triploid grass carp rises, large sums of money will flow out of the state to aquaculture producers in Arkansas, Alabama, and elsewhere. Although mechanisms for in-state production of these fish are not envisioned for the foreseeable future, some portion of the funds in question might be caused to remain within Louisiana if the opportunity to bring fish in at small sizes and re-sell them after a growth period were available to Louisiana aquaculturists.

We respectfully request your consideration of such a mechanism if it could be developed without undue burdens on the Department or unnecessary risks to our natural aquatic habitats. Please do not hesitate to contact us if we can cooperate in any way in your efforts.

Sincerely,

Ramon Billeaud/cgl

Ramon Billeaud
President, Louisiana Aquaculture Association

P.O. Box 16008 Baton Rouge, LA 70893

RULE

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF FISHERIES

The Department of Wildlife and Fisheries (DWF) hearby adopts the following rule establishing freshwater mussel harvest regulations.

TITLE 76

WILDLIFE AND FISHERIES

PART VII. FISH AND OTHER AQUATIC LIFE

Chapter 1. Freshwater Sports and Commercial Fishing

Section 161. Freshwater Mussel Harvest

Part I. Commercial Harvest

PERMITS

A. In addition to a commercial fishing license, all mussel harvesters must obtain a mussel harvester's permit issued by DWF prior to initiation of commercial harvesting.

B. The Secretary of DWF shall have the authority to limit the number of mussel harvester permits, cease issuance of new permits, or close the season entirely if it is deemed necessary to protect the mussel resource.

C. In addition to a wholesale/retail dealer's license, all mussel buyers must obtain a mussel buyer's permit issued by DWF.

FEES

A. An annual permit fee of $100.00 for resident mussel fishermen and $400.00 for non-resident mussel fishermen will accompany the permit application. This fee will be applicable for one calendar year. If the permit application is disapproved, the fee will be refunded to the applicant.

B. An annual permit fee of $150 for resident mussel buyers and $600 for

non-resident mussel buyers will accompany the permit application. This fee will be applicable for one calendar year. If the permit application is disapproved, the fee will be refunded to the applicant.

GEAR

A. Mussels shall be harvested by hand only, with or without underwater breathing apparatus.

SPECIES FOR COMMERCIAL HARVEST

A. Only the following taxa may be legally harvested:

washboard	*Megaolonaias nervosa*
pimpleback	*Quadrula spp.*
three ridge	*Amblema plicata*
ebonyshell	*Fusconaia ebena*
bluefer	*Potamilus (Proptera) purpuratus*
Asian clam	*Corbicula fluminea*

B. Only specimens larger than the following minimum sizes shall be harvested:

washboard	4 inches
three ridge and bluefer	3 inches
pimpleback and ebony shell	2 3/4 inches
Asian clam	no size limit

Minimum size will be measured by passing the specimen through a ring with the inside diameter equivalent to the minimum size given for each taxa. Only those individuals that will not pass through the ring (from any angle) may be retained. Any individuals that pass through the rings must be immediately returned to the original mussel bed unharmed.

TIMING OF HARVEST

A. Mussels may be harvested year-round between official sunrise and

official sunset; except that, commercial harvest of mussels will be closed on Saturdays and Sundays of each week.

AREAS OPEN TO HARVEST

A. Unless otherwise stated, all publicly owned water bottoms in Louisiana outside of officially recognized saltwater areas (R.S. 56:322A and 322B) are open to harvest.

B. Because of the presence of threatened or endangered species of mussels, commercial mussel harvest is prohibited in the following areas:

1. Amite River from the junction with Bayou Manchac to the Mississippi state line.

2. All of Rapides and Grant Parishes except the main channel of the Red River.

C. Additional areas may be closed by the Secretary of DWF if deemed necessary to protect local mussel populations.

REPORTING

A. Commercial mussel harvesters and mussel buyers must file reports to the DWF of harvesting or buying activities conducted under their mussel permit on forms furnished by the Department. Time and frequency of filing reports shall be specified on the permit and shall be subject to change by the Department upon written notification to the commercial harvester or buyer. Written notification of changes and reporting requirements sent by the Department to commercial harvesters or buyers at the address on permittees most recent application or permit shall become part of the harvester's permit and must be maintained by the permittee along with the permit.

B. Commercial harvesters must contact DWF and provide information on harvesting location at least 24 hours prior to the first day of

harvesting activities on that location. The harvester must also notify DWF within 24 hours when harvesting at that location has been completed. Information on harvesting locations will be given to DWF but will be kept confidential.

SPECIAL RESTRICTIONS

A. Meats shall not be used or sold for human consumption.

B. Mussels shall be transferred whole (unopened with meat) from the collection site directly to an in-state buyer for processing.

C. Buyer must render meats unsuitable for human consumption then dispose of meats, as per DEQ regulations for disposal of solid waste.

D. If the mussel harvester prefers to personally process the mussels rather than sell whole mussels to a buyer, approval must be first obtained from DWF. Meat disposal requirements will be the same for buyers under special restrictions as in Section C.

PENALTIES

A. Failure to abide by the above rules shall result in revocation of permit and forfeiture of future permits for a 3 year period after which issuance or denial of a permit will be at the discretion of the Secretary of the DWF.

Part II. Recreational Harvest

GENERAL HARVEST RESTRICTIONS

A. Freshwater mussels may be taken year-round between official sunrise and official sunset for recreational purposes with a basic recreational fishing license. The daily possession limit is 50 whole mussels, or 100 separate valves, of one species or in aggregate.

B. Mussels shall be harvested by hand only; no diving with underwater breathing apparatus will be permitted.

C. No size limits will apply to recreational harvest.

D. All species of freshwater mussels may be harvested for recreational purposes except that no live or dead specimens of inflated heelsplitter (Potamilus [Proptera] inflatus) or Louisiana pearlshell (Margaritifera hembeli) may be harvested or intentionally disturbed.

AREAS OPEN TO HARVEST

A. Unless otherwise stated, all public water bottoms in Louisiana outside of officially recognized saltwater areas (R.S. 56:322A and 322B) are open to harvest.

B. Because of the presence of threatened or endangered species of mussels, recreational mussel harvest is prohibited in the following areas:

1. Amite River from the junction with Bayou Manchac to the Mississippi state line.

2. All of Rapides and Grant Parishes except the main channel of the Red River.

C. Additional areas may be closed by the Secretary of DWF if deemed necessary to protect local mussel populations.

SPECIAL RESTRICTIONS

A. Meats shall not be used for human consumption.

AUTHORITY NOTE: Promulgated in accordance with R.S. 56:450.

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, LR

State of Louisiana

Joe L. Herring
Secretary

Fredrick J. Prejean, Sr.
Undersecretary

Department of Wildlife and Fisheries
Office of Management and Finance
P.O. Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2860

Edwin W. Edwards
Governor

April 6, 1993

M E M O R A N D U M

RE: Update on Budget Cuts

The budget process continues to be an arduous one, ever changing and therefore tentative. We have been advised that our department should not anticipate receiving any state funding whatsoever, i.e. State General Funds nor Lottery proceeds. With this in mind, our appropriation level is expected to be approximately $38.7 million. This amount represents a 12% decline in comparison to our current year appropriation level. The impact of the cuts will be felt primarily in the categories of acquisitions and major repairs. However, such other categories including merit increases, out of state travel, uniform cleaning allowance, etc. will also be impacted.

Attached please find information pertaining to the status of our 1993-94 budget. The attachment summarizes the following:

1. Continuation level - This is our current year operating level.

2. Cuts - These are the actual cuts (by Office or Division) which reduced our 1993-94 budget request.

3. Backpacks/New & Expanded - These are additions to our budget.

4. Other adjustments - These adjustments are for U.P.S., Civil Service and State Register charges to our current department.

5. Total Recommended Budget - This represents the total amount of our budget (1993-94) as it stands now (3/26/93).

6. Under Continuation Level - Represents the total reduction to our budget.

7. % Continuation Cut - Represents the per cent our continuation level request has been reduced.

As noted on the attachment, our 1993-94 budget is $4,992,029 or 11.71% less than our continuation level. See attached schedule for impact of cuts on each Division.

Please contact me if you have any questions regarding this matter.

FJP,Sr./dta

	CONT LEVEL	CUTS	BACP'S/NE'S (net +-)	OTHER ADJUST	TOTAL RECOMM	UNDER CONT LEVEL	% CONT
OMF	4,956,860	(459,657)	(22,000)	8,676	4,483,879	459,657	9.27%
Sec - Admin.	2,109,662	(60,896)			2,048,766	60,896	2.89%
Enforcement	10,882,299	(1,637,431)			9,244,868	1,637,431	15.05%
Education	1,470,795	(49,005)	158,299		1,580,089	49,005	3.33%
Wildlife- Admin.	652,979	(6,759)	5,172	(5,851)	645,541	6,759	1.04%
Wildlife	6,129,821	(598,017)	267,990	(200,000)	5,599,794	598,017	9.76%
Fur/Refuge	5,219,192	(525,841)	358,970		5,052,321	525,841	10.08%
Fisheries- Admin	132,439	(1,781)		(3,625)	127,033	1,781	1.34%
Inland	4,480,226	(689,328)			3,790,898	689,328	15.39%
Marine	5,870,328	(963,314)	545,633		5,452,647	963,314	16.41%
Marketing	711,916				711,916		
TOTAL	42,616,517	(4,992,029)	1,314,064	(200,800)	38,737,752	4,992,029	11.71%

State of Louisiana

#15

Joe L. Herring
Secretary

Fredrick J. Prejean, Sr.
Undersecretary

Department of Wildlife and Fisheries
Office of Management and Finance
P.O. Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2860

Edwin W. Edwards
Governor

March 26, 1993

M E M O R A N D U M

To: Joe L. Herring
Secretary

From: Fredrick J. Prejean, Sr.
Undersecretary

Re: Budget Status Report

Attached please find information pertaining to the status of our 1993-94 budget. The attachment summarizes the following:

1. Continuation level - This is our current year operating level.

2. Cuts - These are the actual cuts (by Office or Division) which reduced our 1993-94 budget request.

3. Backpacks/New & Expanded - These are additions to our budget.

4. Other adjustments - These adjustments are for U.P.S., Civil Service and State Register charges to our department.

5. Total Recommended Budget - This represents the total amount of our budget (1993-94) as it stands now (3/26/93).

6. Under Continuation Level - Represents the total reduction to our budget.

7. % Continuation Cut - Represents the per cent our continuation level request has been reduced.

As noted on the attachment, our 1993-94 budget is $4,992,029 or 11.71% less than our continuation level. See attached schedule for impact of cuts on each Division.

Please contact me if you have any questions regarding this matter.

FJP,Sr./mag

MAR-29-1993 15:19 FROM 63 TO 99270204 P.02

Dried

LSU $60K for students cut LOWER students?

	CONT LEVEL	CUTS	BACP'S/NF'S (net +-)	OTHER ADJUST	TOTAL RECOMM	UNDER CONT LEVEL	% CONT
ONF	4,956,860	(459,657)	(22,000)	8,676	4,483,879	459,657	9.27%
Sec - Admin.	2,109,662	(60,896)			2,048,766	60,896	2.89%
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Marketing	711,916				711,916		
TOTAL	42,616,517	(4,992,029)	1,314,064	(200,800)	38,737,752	4,992,029	11.71%

MARINE

How are you going to do this?

How will you get the funds?

I move that we table the prior motion indefinitely

RESOLUTION

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES
LOUISIANA WILDLIFE AND FISHERIES COMMISSION

February 25, 1993

WHEREAS, this Commission, pursuant to R.S. 56:6 (27) adopted the Red Drum Report prepared by Department staff dated February 18, 1993, and

WHEREAS, that Report, while discussing gamefish status did not contain within it a recommendation as to the retention or removal of gamefish status for red drum, and

WHEREAS, this Commission hereby includes such a recommendation to the Legislature to accompany and supplement the technical report prepared by the Department, and

WHEREAS, five years ago the Legislature declared red drum a gamefish subject to a three year "sunset" provision, and

WHEREAS, by Acts 1991, No. 157, the Louisiana Legislature permanently established red drum as a gamefish, and

WHEREAS, biological staff of the Department of Wildlife and Fisheries have recommended no increase in current fishing mortality rate on red drum at this time, and

WHEREAS, therefore the only way that an allowable commercial take of red drum could occur without an increase in current mortality rates would be to reduce the recreational catch limits, and

WHEREAS, it is the opinion of the Commission that such a reallocation of the red drum resources would not be in the best interest of the State from either a social or economic standpoint.

THEREFORE BE IT RESOLVED, that this Commission hereby respectfully recommends to the Legislature that the present gamefish status of red drum be retained.

BE IT FURTHER RESOLVED, that the Commission hereby directs the Secretary to have the appropriate staff members make additional studies including "catch and release" and "marine recreational surveys", which will enhance the Department's ability to evaluate this fishery.

Bert H. Jones

Bert H. Jones, Chairman
Louisiana Wildlife & Fisheries Commission

Joe L. Herring

Joe L. Herring, Secretary
Louisiana Department of Wildlife & Fisheries

WHEREAS, the Louisiana Wildlife and Fisheries Commissions 1993 "Red Drum Report" submitted to the legislature shows that red drum populations has and will continue to rapidly improve; and

WHEREAS, the minimum of 20% S.S.B.R./30% escapement was set as the safe standard for the red drum fishery; and

WHEREAS, the 1993 Red Drum Report shows under Scenario One approximately 32% S.S.B.R./42% escapement and under Scenario Two approximately 38%S.S.B.R./48% escapement has been achieved; and

WHEREAS, under Scenario One will increase to approximately 44% S.S.B.R./54% escapement and under Scenario Two approximately 52% S.S.B.R./62% escapement by 1994; and

WHEREAS, 81% of Louisiana voters surveyed in a 1991 statewide poll indicated a preference for a red fish management policy based on a commercial harvest that would enable them to buy Louisiana red fish in restaurants and grocery stores.

THEREFORE BE IT RESOLVED, that we the Louisiana Wildlife and Fisheries Commission hereby request that the Louisiana Department of Wildlife and Fisheries:

a. develop a plan on or before January 1, 1994 to implement a commercial harvest of red drum;
b. that the plan provide for no reduction in the current recreational bag limit and for the equitable allocation of the available harvest between the commercial and recreational fisheries based upon the historical distribution of the catch; and
c. that this plan incorporate recommendations for strict controls and regulation which may include, but not be limited to the establishment of a permit system, a limited entry system and/or tagging system.

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

March 31, 1993

MEMORANDUM

TO: Chairman and Members of the Commission

FROM: Susan Hawkins, Commission Secretary Susan

SUBJECT: Additional Information for April 6th Meeting

Enclosed you will find a copy of Commissioner Mialjevich's Red Drum Resolution he passed out at the end of the March meeting which will be discussed at the April Meeting. Also enclosed is a copy of the resolution that was sent to the Legislature with the Red Drum Report for you to compare the two.

Thank you.

sch

Enclosures

COMMENTS ON RED DRUM RESOLUTION TO BE PRESENTED AT THE

APRIL 6, 1993 COMMISSION MEETING

Leslie Fitch (New Orleans): In favor of the Red Drum Resolution.

Gary Fitch (Metairie): In favor of the Red Drum Resolution.

Pete Gerica (New Orleans): The members of the Lake Pontchartrain Fisherman's Association are in favor of the Red Drum Resolution.

Barry Schaferkotter (Metairie): In favor of the Red Drum Resolution.

Jerry Campbell (Abbeville): In favor of the Red Drum Resolution.

Donald Aucoin (Forked Island): In favor of the Red Drum Resolution.

Henry Truelove (Charenton): In favor of the Red Drum Resolution.

Gloria Truelove (Charenton): In favor of the Red Drum Resolution.

Charles Guillory (Morgan City): In favor of the Red Drum Resolution to re-open red drum to commercial fishing.

Amanda Edgar (New Iberia): In favor of the Red Drum Resolution.

JoAnn Aucoin (Berwick): In favor of the Red Drum Resolution for commercial fishermen.

Hazel Olander (Cypremort Point): In favor of the Red Drum Resolution to re-open red drum to commercial fishing.

Leo Simon (Cypremort Point): In favor of Red Drum Resolution for commercial fishermen.

Berl Anderson (Cypremort Point): In favor of Red Drum Resolution for commercial fishermen.

Rose Broussard (Lake Charles): In favor of Red Drum Resolution.

Anita Leet (Cypremort Point): In favor of Red Drum Resolution to re-open red drum to commercial fishing.

Clyde Leet (Cypremort Point): In favor of Red Drum Resolution to re-open red drum to commercial fishing.

Enola Leet (Jeanerette): In favor of Red Drum Resolution to open red drum to commercial fishermen.

Valcoura Leet (Jeanerette): In favor of Red Drum Resolution to open red drum to commercial fishermen.

Sandra Rollins (Jeanerette): In favor of Red Drum Resolution to open red drum to commercial fishermen.

John R. Rollins (Jeanerette): In favor of Red Drum Resolution to open red drum to commercial fishermen.

Dorothy Babin (Jeanerette): In favor of Red Drum Resolution to open red drum to commercial fishermen.

Harrison Babin (Jeanerette): In favor of Red Drum Resolution to open red drum to commercial fishermen.

Diane Guillory (Sorrel): In favor of re-opening red drum for commercial fishermen.

Alan Porche (Baton Rouge): Seafood company owner who buys red drum from Mississippi when in season and his supply sells quickly. Would like to see commercial fishing of red drum open again for the commercial fishermen with a quota limit.

Billie LaCoste (Metairie): In favor of Red Drum Resolution.

Curtis Borgerson (Cypremort Point): In favor of Red Drum Resolution.

Tina Simon (New Iberia): In favor of opening red drum to commercial fishing.

Murphy Blanchard (St. Martinville): In favor of opening red drum to commercial fishing.

Durphy Blanchard (St. Martinville): In favor of opening red drum to commercial fishing.

Louella Blanchard (St. Martinville): In favor of opening red drum to commercial fishing.

Viola Simon (New Iberia): Open red drum fishing for commercial fishermen.

Helen Simon (New Iberia): Open red drum fishing for commercial fishermen.

Paul Simon (New Iberia): Open red drum fishing for commercial fishermen.

Harry Simon (New Iberia): Bring back red drum to commercial industry.

Robert Bertrand (Abbeville): Open red drum fishing for commercial fishermen.

Charles Blanchard (St. Martinville): Open red drum fishing for commercial fishermen.

Lance Blanchard (St. Martinville): Open red drum fishing for commercial fishermen.

Francis Suire, II (New Iberia): Re-open red drum fishing for commercial fishermen.

Harlon Pearce (New Orleans): In favor of Red Drum Resolution.

Curnis Simon (Franklin): In favor of having red drum fishing open for commercial fishermen.

Roland Olander (Franklin): Open red drum fishing for commercial fishermen.

Milda Olander (Franklin): Open red drum fishing for commercial fishermen.

Marjorie Guillot (New Iberia): Open red drum fishing for commercial fishermen.

Leo Olander (Cypremort Point): Open red drum fishing for commercial fishermen.

Gerald Wilbur (Franklin): Open red drum fishing for commercial fishermen.

Mrs. Paul Guillot (Jeanerette): Open red drum fishing for commercial fishing.

Joe Lalonde (Lafayette): In favor of opening red drum fishing for commercial fishermen.

Christine Johnson (Lafayette): In favor of re-opening season for red drum fishing.

Billy Carlton (Lafayette): In favor of opening red drum fishing for commercial fishermen with a season or limit on it.

Dee Hale (Breaux Bridge): In favor of opening red drum fishing for commercial fishermen.

Ruby Hunter (Franklin): In favor of re-opening red drum fishing for commercial fishermen.

Brenda Lalonde (Lafayette): Re-open red drum fishing for commercial fishermen.

Jude Viator (Carencro): Re-open red drum fishing for commercial fishermen.

Jeff Meaux (Kaplan): Re-open red drum fishing for commercial fishermen.

John Lingoni (New Orleans): In favor of Red Drum Resolution and to re-open red drum fishing for commercial fishermen.

Troy Olander (Cypremort Point): In favor of opening red drum fishing for commercial.

Walter Parantino (Metairie): In favor of opening red drum fishing for commercial fishermen.

WESTOVER FARMS, INC.

April 2, 1993

La. Dept. of Wildlife & Fisheries
Baton Rouge, La.

Attn: Mr. Bennie Fontenot

Subject: La. Farm Raised Red Drum

Dear Bennie,

Our experience with farm raised red drum in Louisiana has been mixed.

The 1989 crop was destroyed by the Dec. '89 freeze.

We restocked in 1990, and our results have been as follows:

Stocking rates of larvae--------200,000/acre
Survival------to Phase 1 fingerlings--25%

Stocking rates of Phase I fingerlings--10,000/acre
Survival------to Phase II----------50%

Stocking rate of Phase II fingerlings--3,000/acre
Survival to market size (2 lbs.)------90%

The largest problem remains the fish's inability to withstand cold temperatures.

Our North Carolina broodstock experiment with L.S.U. is not yet complete.

Market prices are cyclical. The Mississippi quota of wildfish keeps the price in the $1.60 to $1.75 range.

Should you need more information please do not hesitate to call me.

Very truly yours,

Walter J. Landry
President

P. O. BOX 771 JEANERETTE, LOUISIANA 70544 U.S.A.
BUSINESS OFFICE (318) 276-6054 • (318) 276-4716 • CABLE W. U. "SUGAR"

Perrilliat-Michoud Aqua Farms, Inc.
2502 S. Bayou Dr — Golden Meadow, LA 70357
Tel/Fax: (504) 475-6128

FISH PURCHASES

HYBRID STRIPED BASS/REDFISH FINGERLINGS-FRY

6/24/91	Keo Fish Farm- Keo, Arkansas			
	100,000 Hybrid Striped Bass Fingerlings	@ $ .20	$20,000.00	
	Freight/Transport		980.00	
				$20,980.00
6/28/91	Keo Fish Farm - Keo, Arkansas			
	200,000 Hybrid Striped Bass Fingerlings	@ $ .20	$40,000.00	
	Freight/Transport		980.00	
				$40,980.00
11/18/91	Redfish Unlimited - Houston, Texas			
	40,000 Redfish Fingerlings	@ $ .15	$ 6,000.00	
	Freight/Transport		500.00	
				$ 6,500.00
4/2/92	Redfish Unlimited - Houston, Texas			
	460,000 Redfish Fry	@ $7.50 per 1,000	$ 3,450.00	
	Freight/Transport		302.00	
				$ 3,752.00
		TOTAL		$72,212.00

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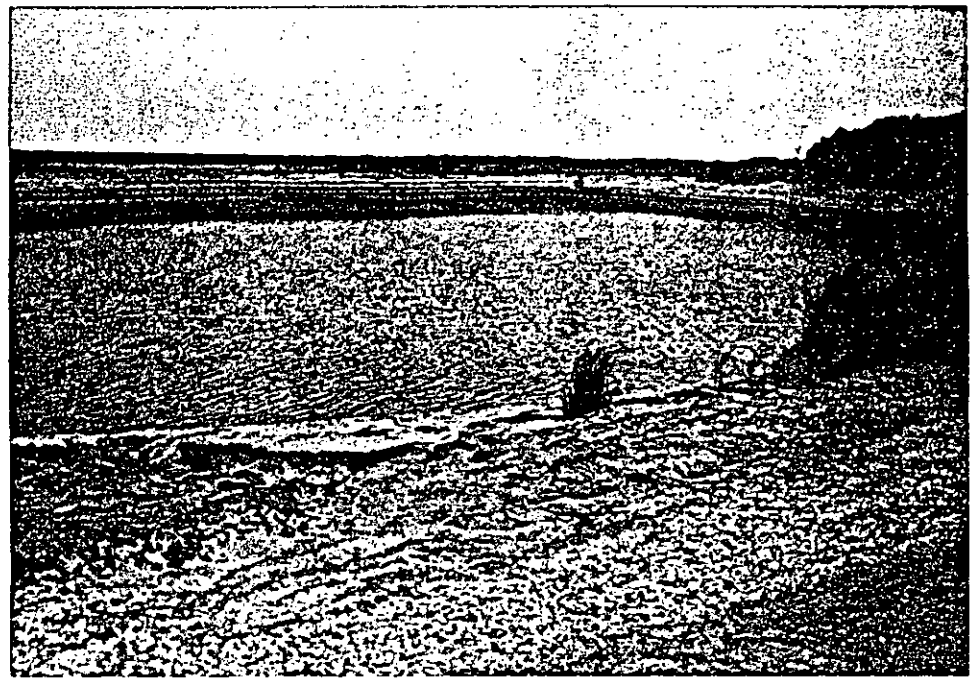
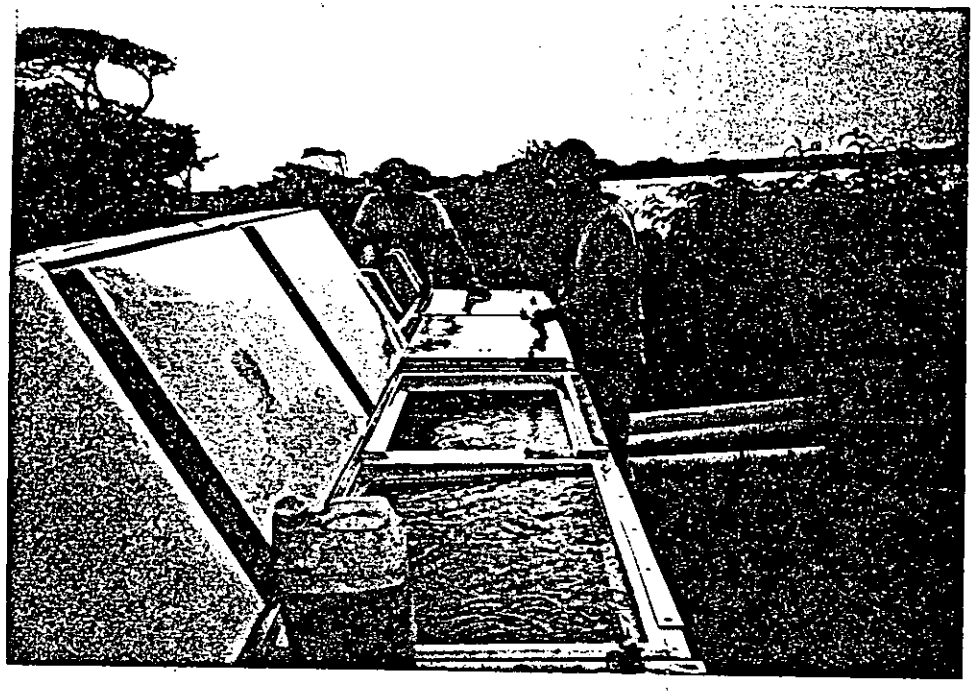
Tel/Fax: (504) 475-6128

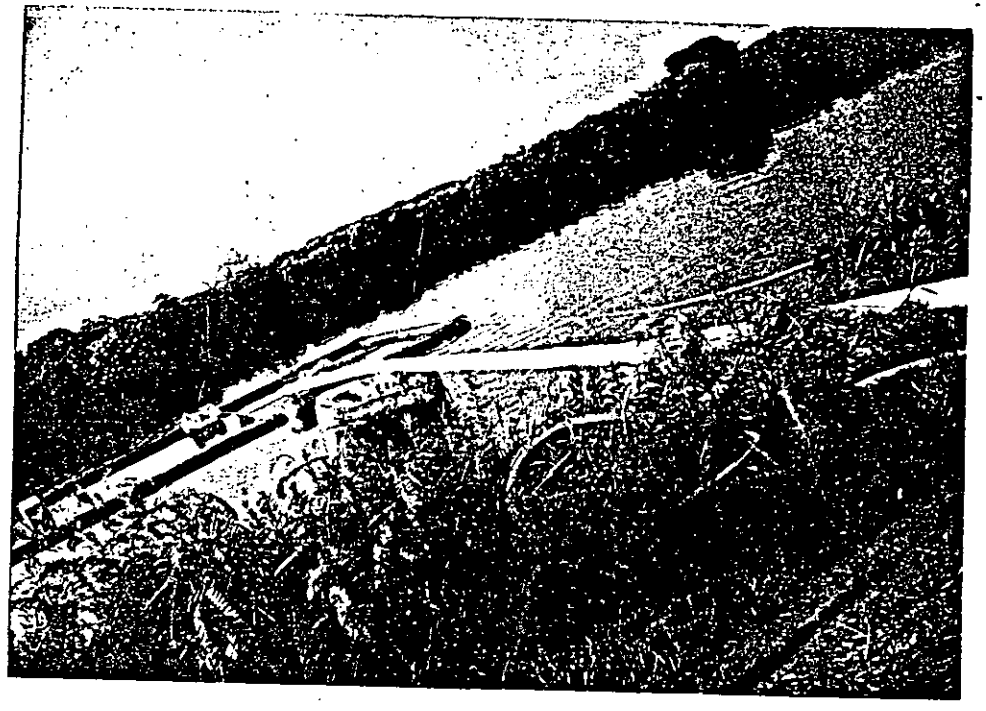
FISH FOOD PURCHASES

6/18/91	Inv. #0041711 Nelson And Sons, Inc. 12,000 lbs Silver Cup Fish Food	$ 3,895.00
8/9/91	Inv. #0042601 Nelson And Sons, Inc. 14,000 lbs Silver Cup Fish Food	$ 3,480.00
9/12/91	Inv. #0043072 Nelson And Sons, Inc. 24,750 lbs Silver Cup Fish Food	$ 7,110.00
10/15/91	Inv. #0043603 Nelson And Sons, Inc. 14,000 lbs Silver Cup Fish Food	$ 3,479.00
11/08/91	Inv. #0044001 Nelson And Sons, Inc. 20,000 lbs Silver Cup Fish Food	$ 4,970.00
12/16/91	Inv. #0044456 Nelson And Sons, Inc. 22,500 lbs Silver Cup Fish Food	$ 5,703.75
1/28/92	Inv. #0045124 Nelson And Sons, Inc. 16,000 lbs Silver Cup Fish Food	$ 4,056.00
2/28/92	Inv. #0045596 Nelson And Sons, Inc. 25,000 lbs Silver Cup Fish Food	$ 6,337.50
4/13/92	Inv. #0046324 Nelson And Sons, Inc. 24,000 lbs Silver Cup Fish Food	$ 6,149.00
5/15/92	Inv. #0046911 Nelson And Sons, Inc. 20,000 lbs Silver Cup Fish Food	$ 5,000.00
	TOTAL	$50,180.25

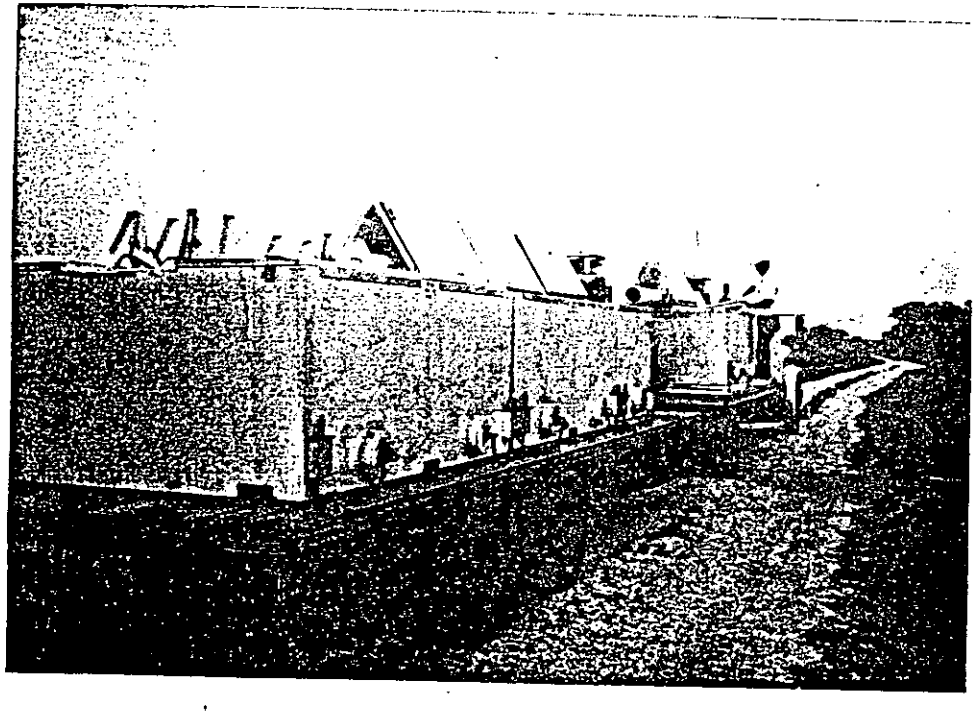
POND PREPERATION

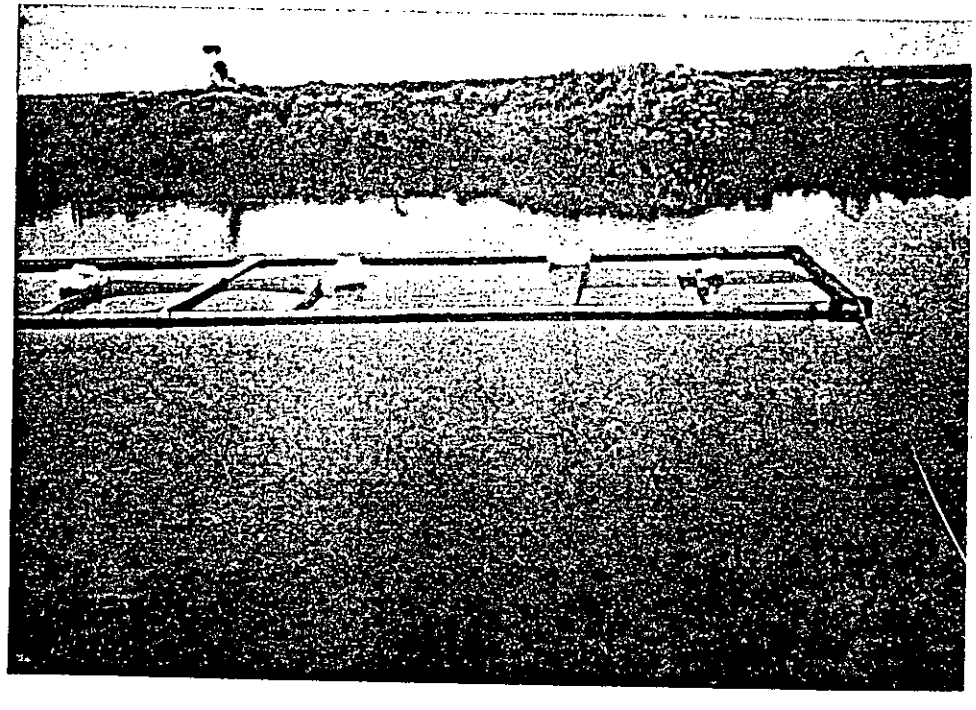


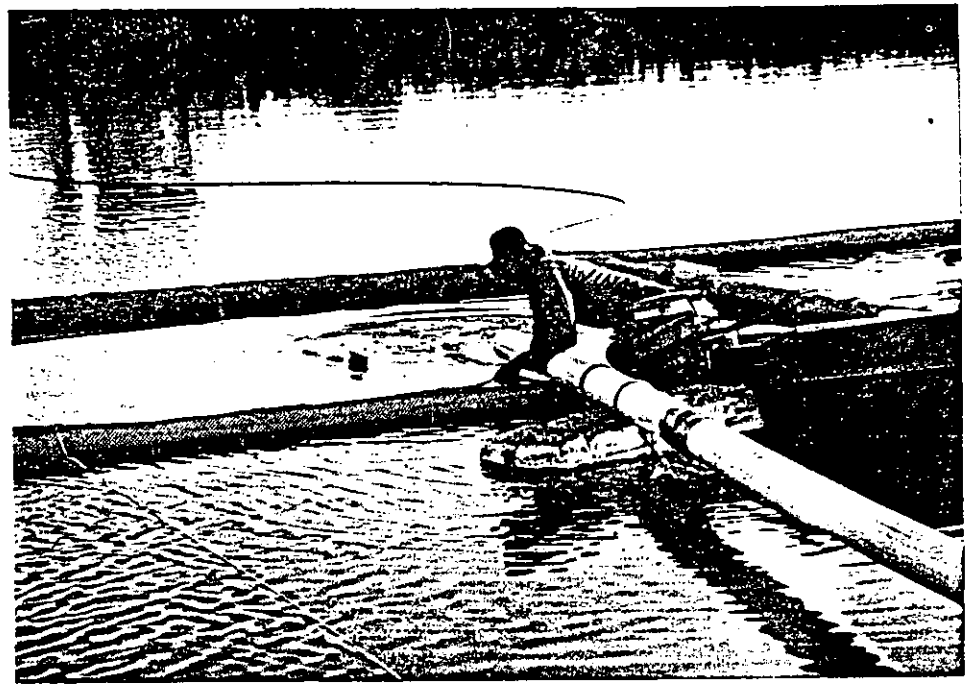




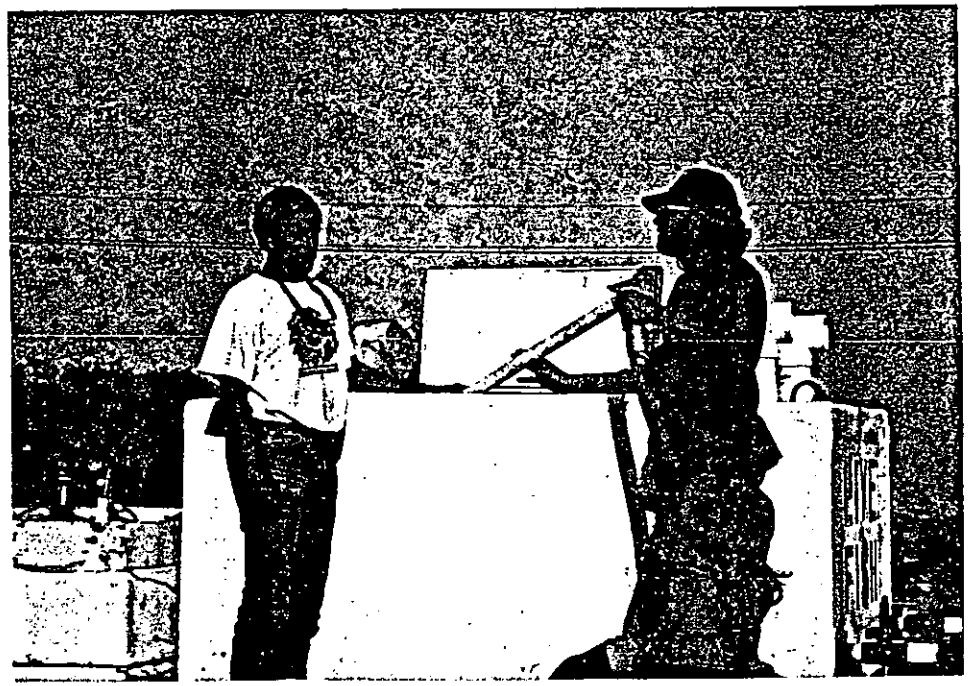
FINGERLING RELEASE-STRIPED BASS

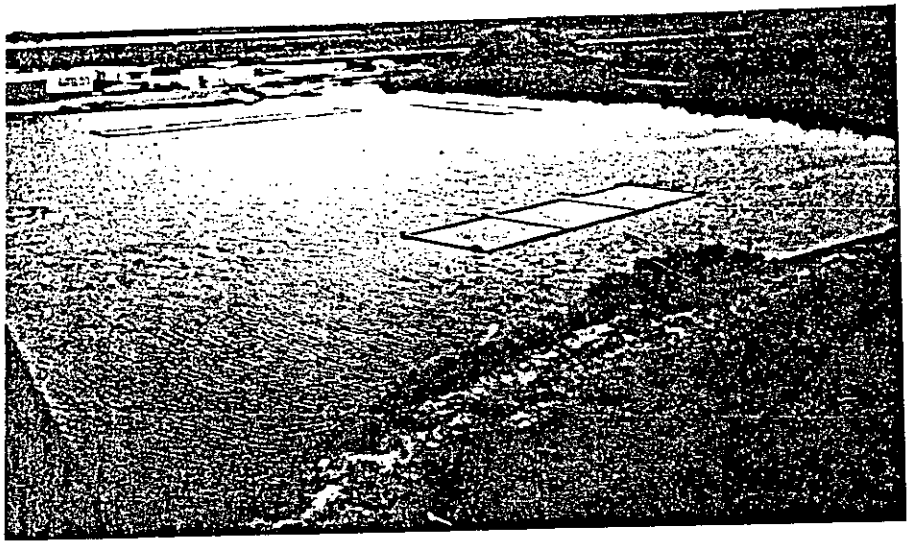


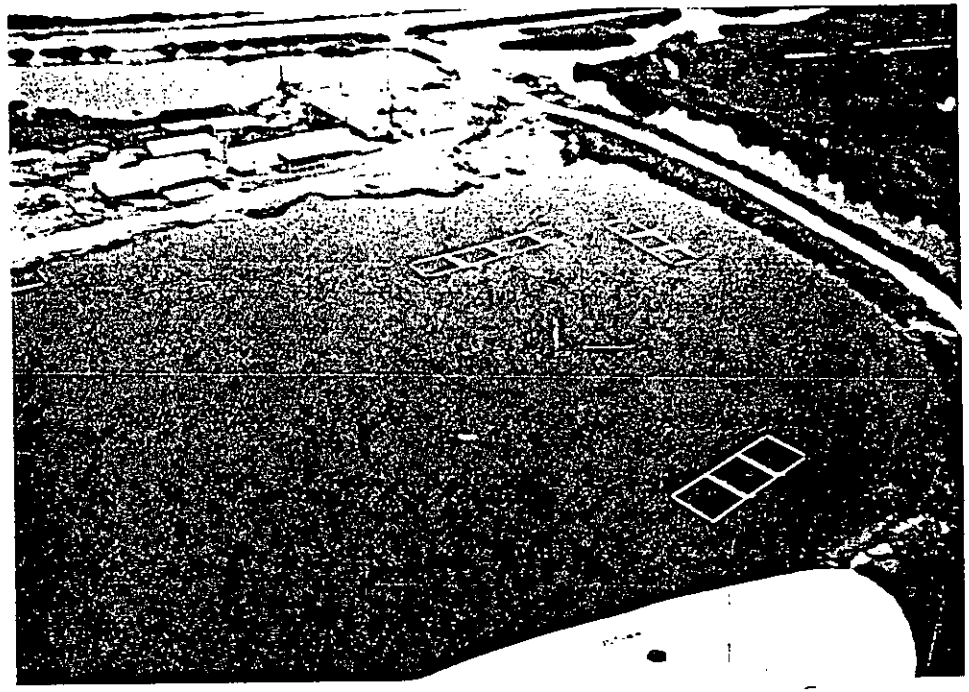




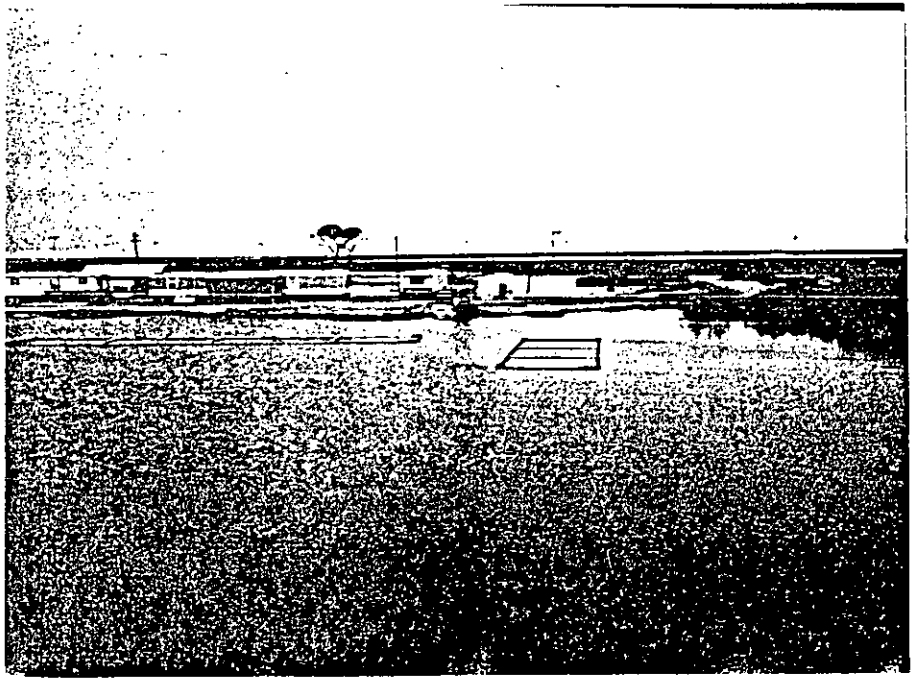
FINGERLING RELEASE-RED FISH

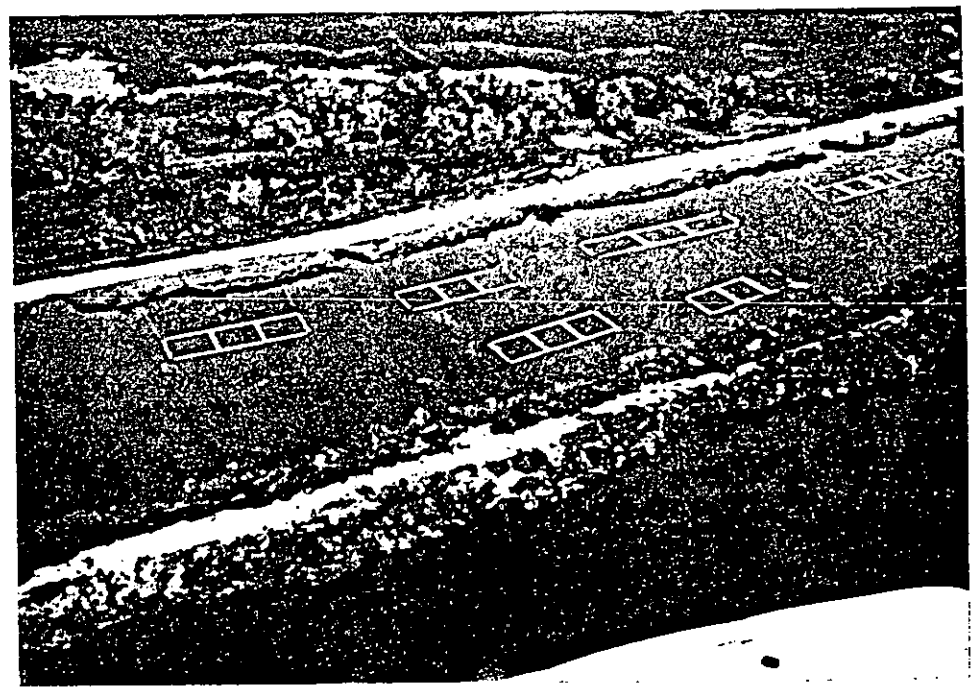


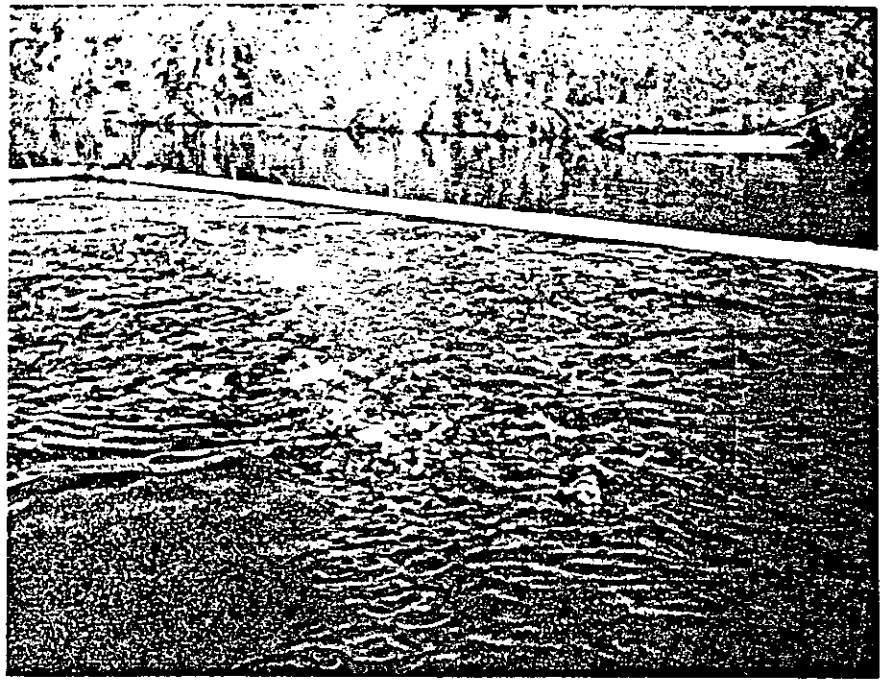


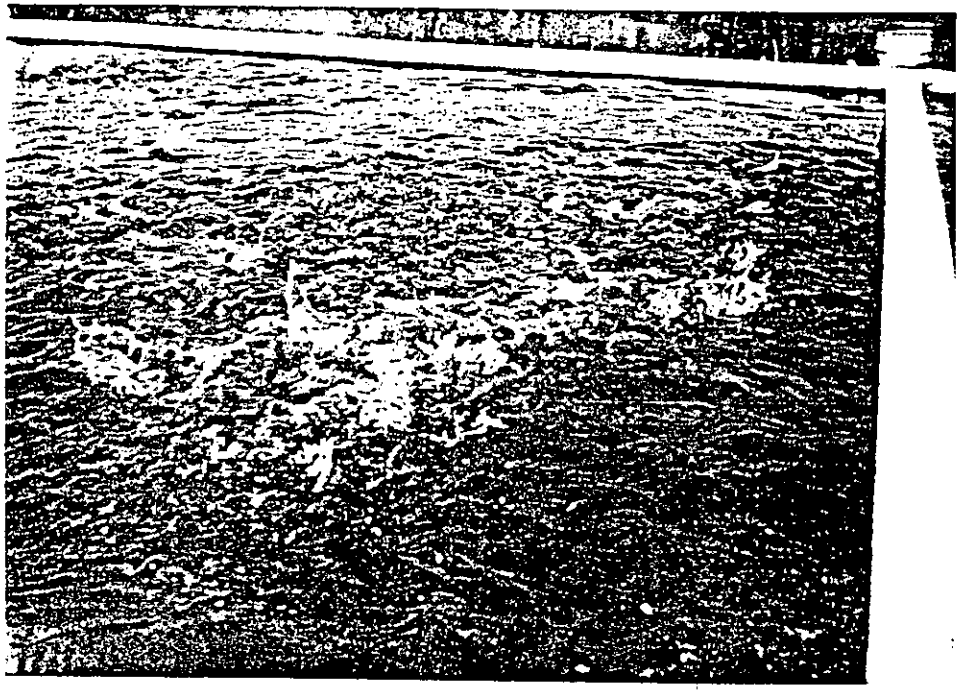


AERIAL VIEW OF CAGES

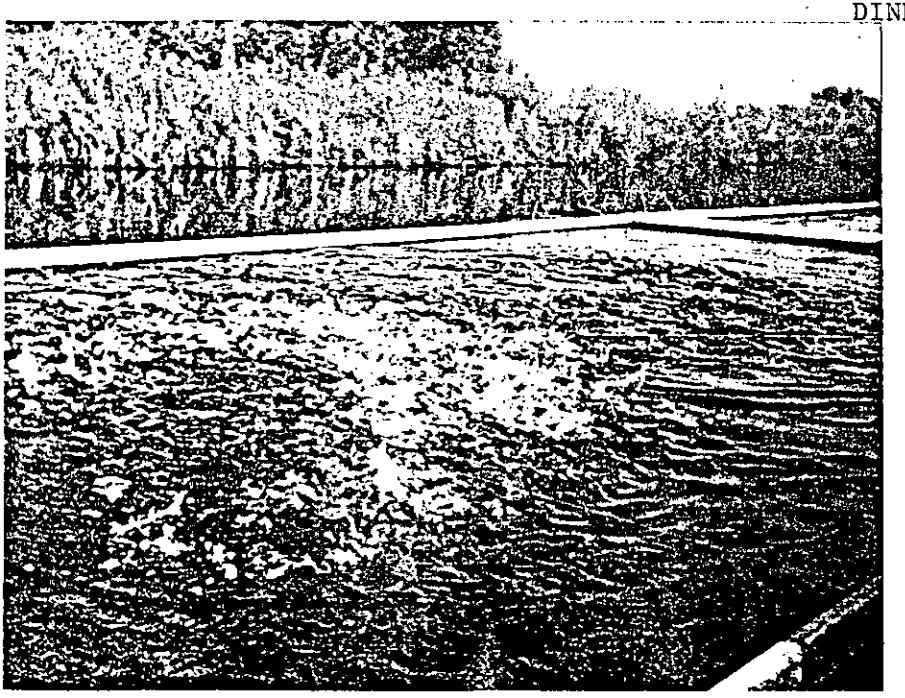


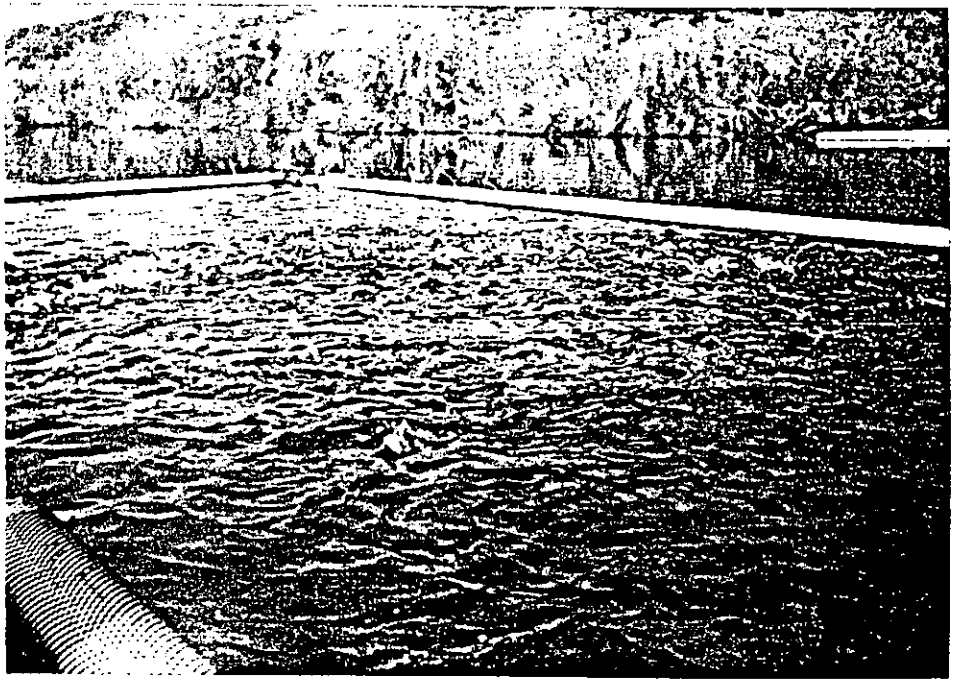




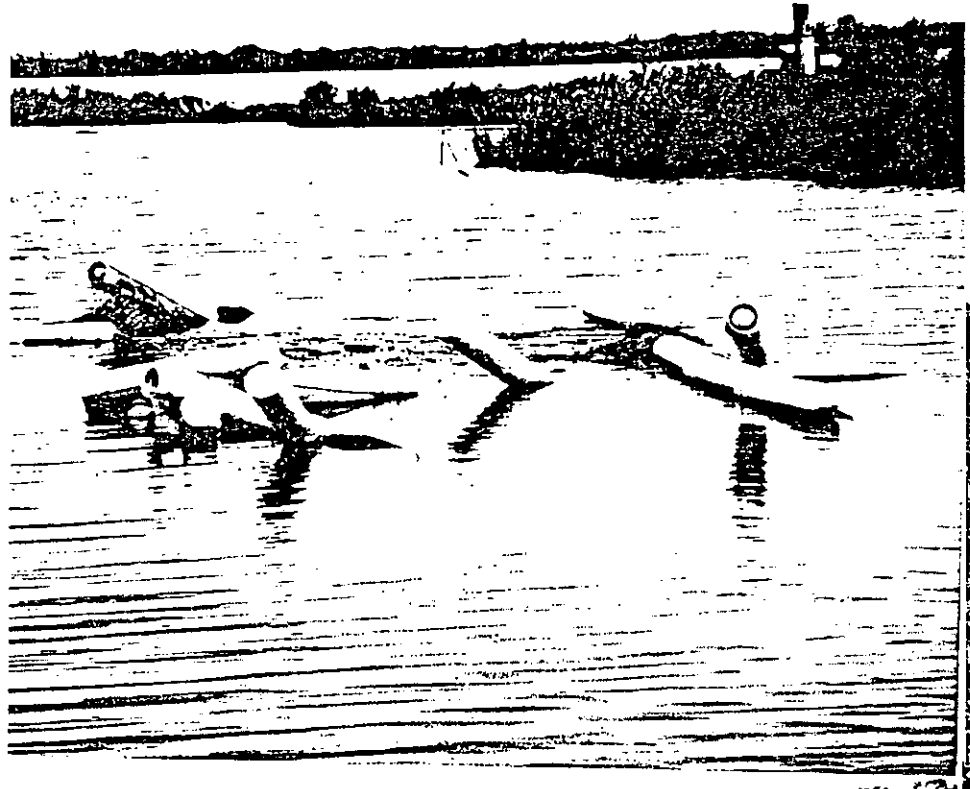


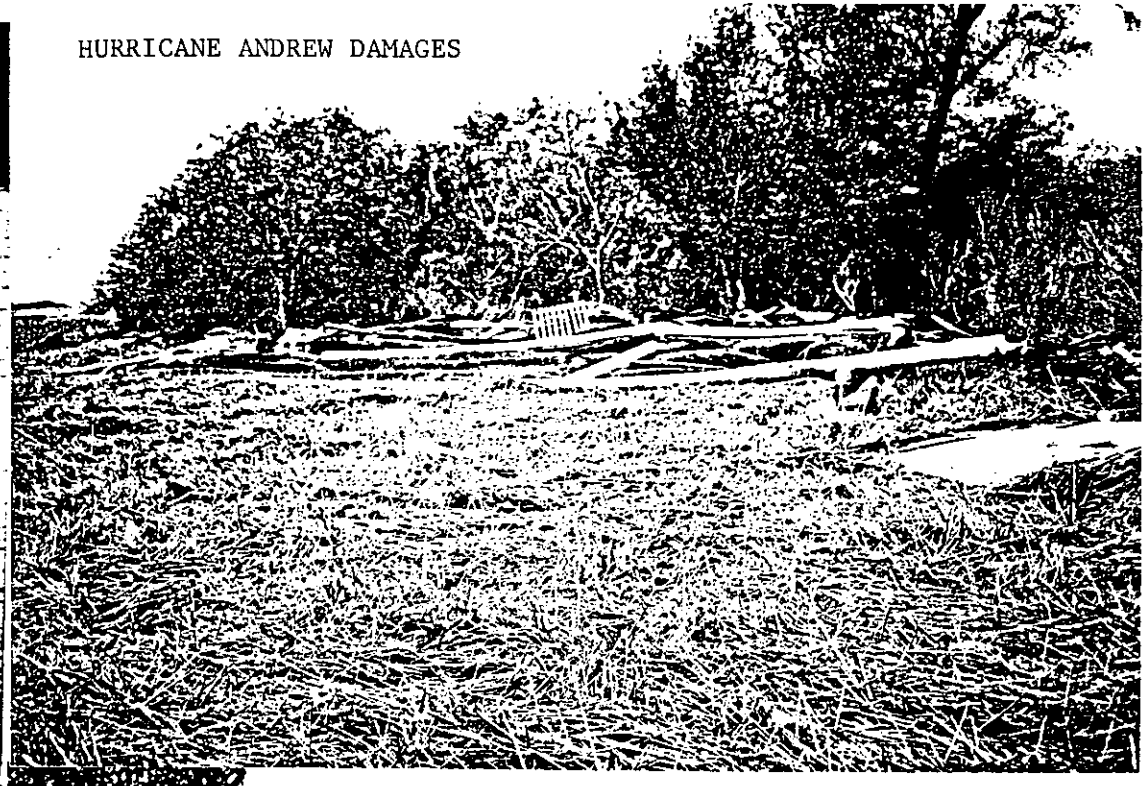
DINNER TIME

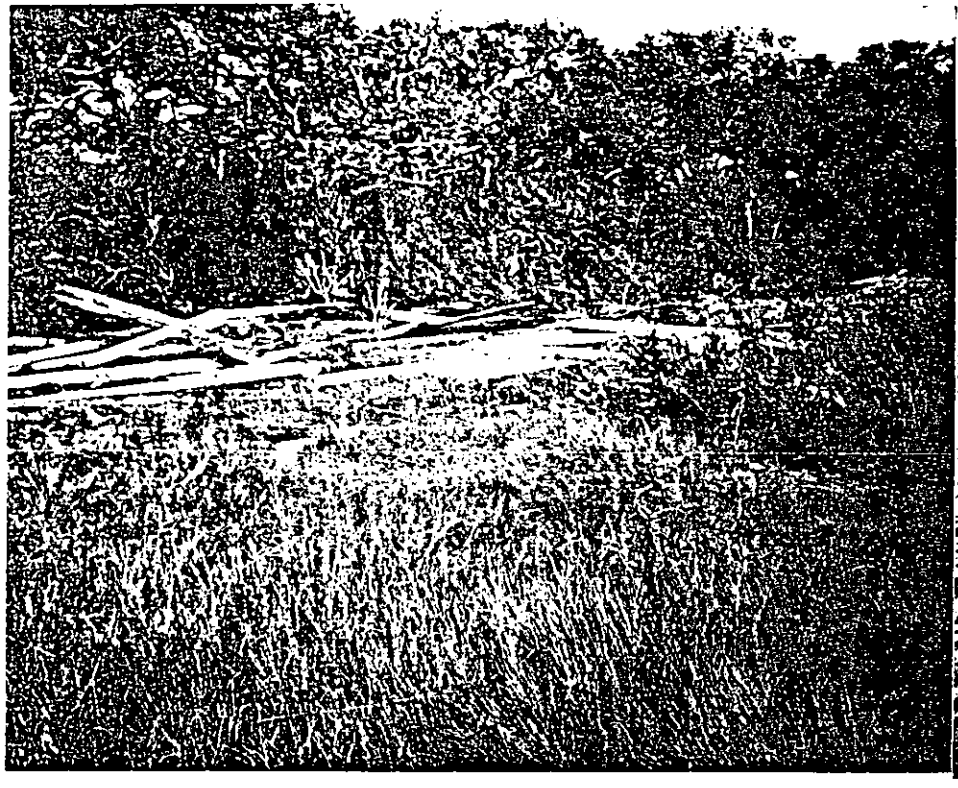


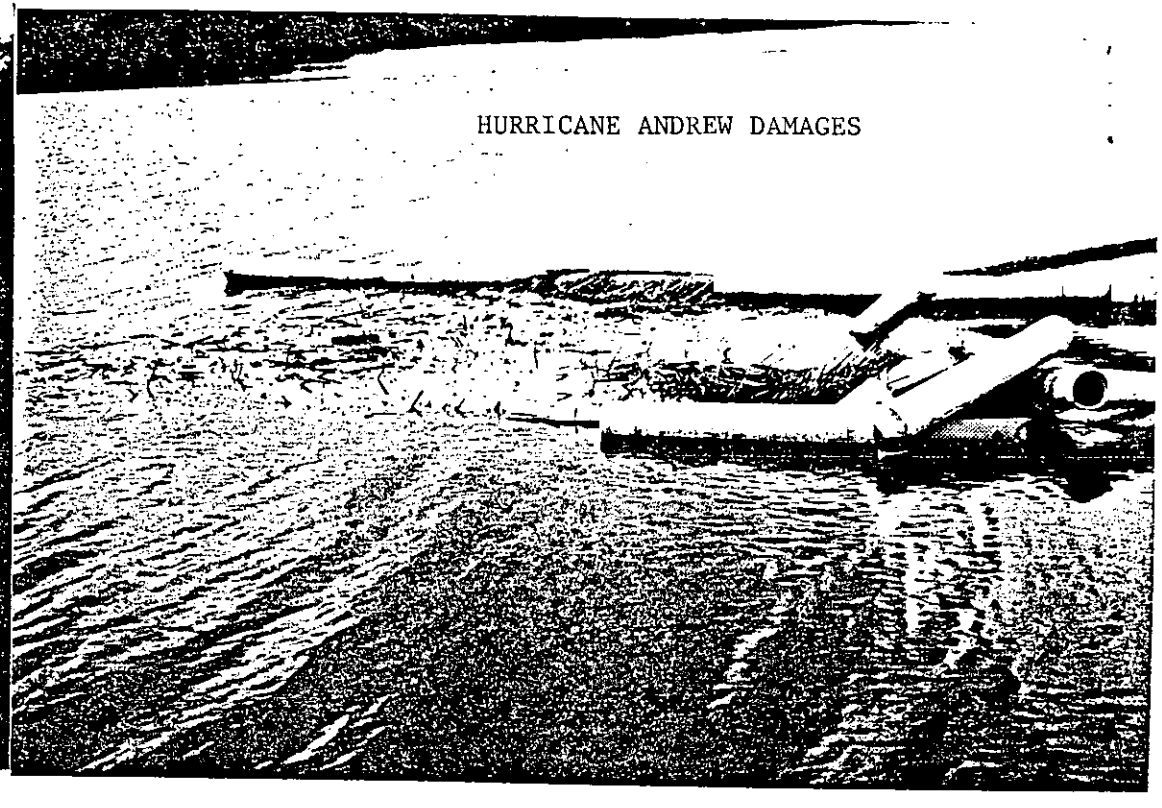


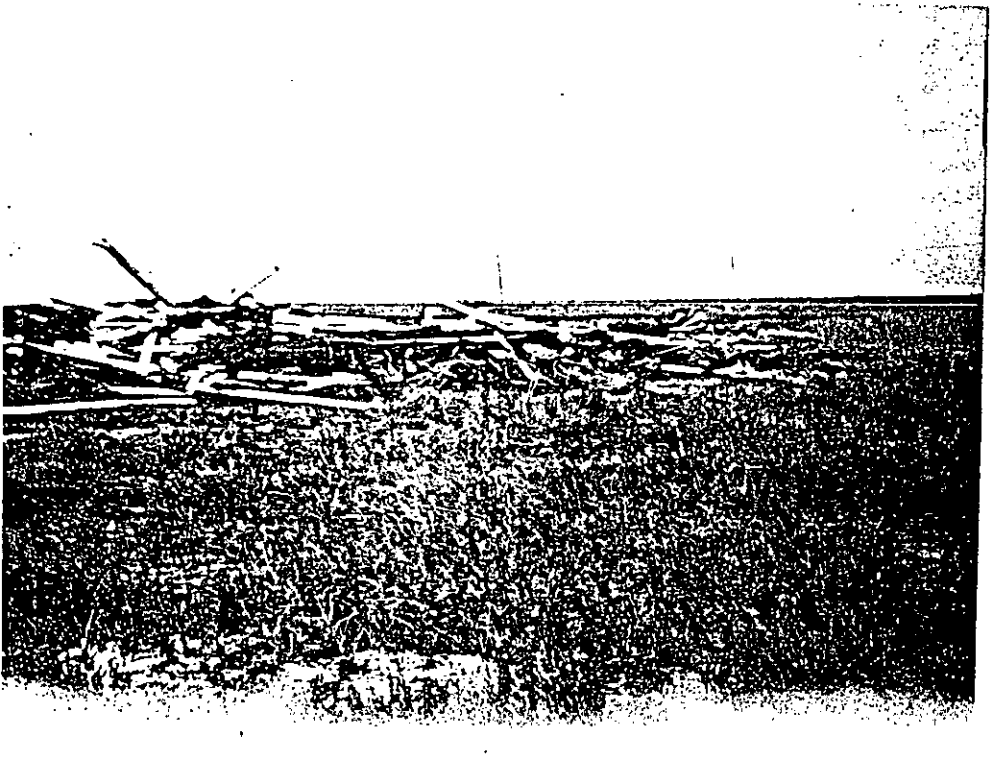
HURRICANE ANDREW DAMAGES

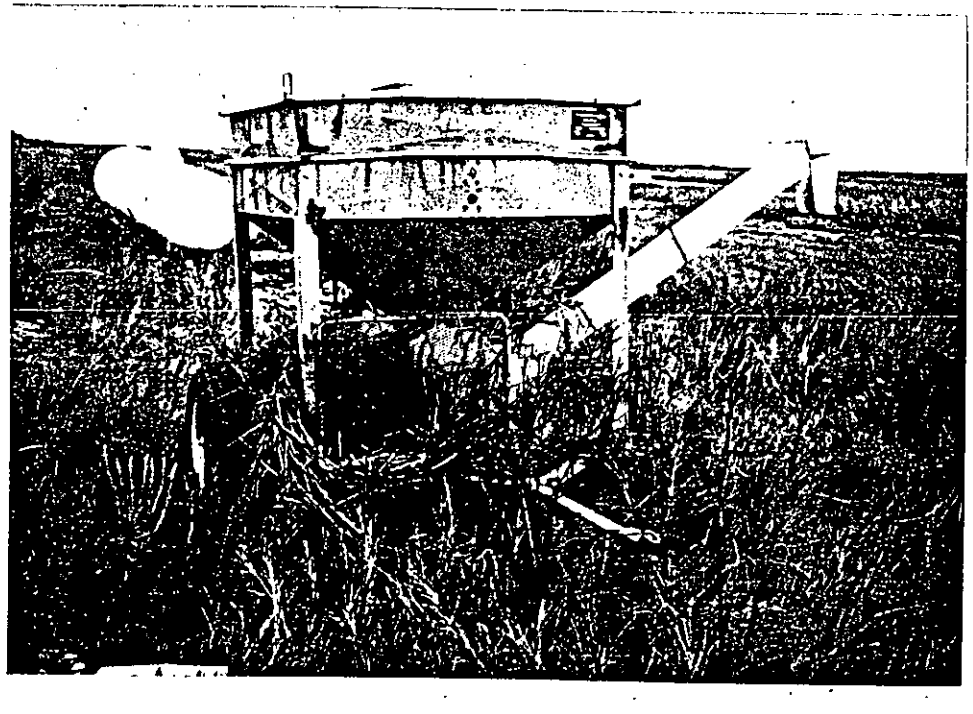







HURRICANE ANDREW DAMAGES





STRIPED BASS READINGS/BEGINNING JUNE 1992 [SBRJU92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
7/27-8/2/92		POND	3.0/7.0	16	100/DAY				238,221
8/3-8/9/92		POND	3.0/6.0	15	100/DAY	14 3/4"-16 1/2" 3 SAMPLES - CAST NET			238,221
8/10-8/16/92		POND	4.0/6.0	15	100/DAY				238,221
8/17-8/23-92		POND	4.0/6.0	15	100/DAY				238,221
8/24/92		POND HURRICANE ANDREW COMING	4.0/8.0	15	100	15"-17 3/4" 3 SAMPLES -NET/ROD REEL			238,221

HURRICANE ANDREW COMING. BEGAN PREPARATIONS ON 8/23/92- BRINGING EQUIPMENT ETC. TO GOLDEN MEADOW, TYING DOWN, MOVING.

8/25/92 EVACUATION FINISHED BY MID MORNING. OUTER FINGERS OF HURRICANE ANDREW EFFECTS BY MID DAY WITH HIGH WINDS AND HIGH TIDES. HURRICANE CAME ASHORE WEST OF US DURING THE NIGHT. WE EXPERIENCED WINDS UP TO 100+ MILES PER HOUR, FLOODWATERS OF 4 1/2 FEET AND MORE.

8/26/92 HURRICANE FLOODWATERS OF 4 1/2 FEET ON FISH FARM. HIGHWAY LA 1 BLOCKED OFF TO ALL TRAFFIC SOUTH OF FLOODGATES UNTIL 8/28/92 WHEN WATER RECEEDED ENOUGH FOR ROADS TO BE CLEARED OF DEBRIS. EQUIPMENT WE WERE UNABLE TO MOVE TO HIGHER GROUND GONE.

NO FARM RAISED FISH OBSERVED SINCE HURRICANE. ALL APPEAR TO HAVE ESCAPED PONDS DURING FLOODWATERS.

STRIPED BASS READINGS/JUNE 1992 [SBRJU92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
6/1/92 thru 6/3/92 During this three day period all fish were released into Pond as they were showing symptoms of being stressed and not feeding well. Their chances of surviving would be better in the pond where they could move around freely.									
	Pond	86/88	3.0/4.0	16	450	9"-14 3/4"			300,657
6/4/92	POND	86/88	3.5/3.5	16			447	FISH KILL	300,210
6/5/92	POND	86/88	3.0/6.0	16			3,444	FISH KILL	296,766
6/6/92	POND	86/88	3.5/7.0	15			6,640	FISH KILL	290,126
6/7/92	POND	88/88	4.0/8.0	16			11,600	FISH KILL	278,526
6/8/92	POND	86/88	4.0/7.0	16			15,000	FISH KILL	263,526
6/9/92	POND	86/88	4.0/7.5	16			17,400	FISH KILL	246,126
6/10/92	POND	86/88	5.0/8.0	15			7,500	FISH KILL	238,626
6/11/92	POND	86/88	4.0/8.5	15			400	FISH KILL	238,226
FISH KILL CAUSED BY PASTURELLA BACTERIA IN THE AMOUNT OF 62,431 BY ACTUAL COUNT. DEAD FISH WERE REMOVED FROM POND AND BURRIED. TOTAL FISH IN POND 238,226 FROM ORIGINAL TOTAL OF 317,800, A TOTAL OF 79,574 HAVE BEEN LOST DUE TO NATURAL ATTRITION AND THE PASTURELLA BACTERIA TO DATE.									
6/12/92	POND	88/90	5.0/7.0	15					238,226
6/13/92	POND	88/90	3.5/7.5	15					238,226
6/14/92	POND	88/90	4.0/8.0	16					238,226
FROM 6/12/92 THRU 6/22/92 SURVIVING FISH OBSERVED IN PONDS - NOT EATING PROCESSED FOOD - FISH CONTINUE TO BE STRESSED FROM BACTERIA.									
6/15-6/21/92	POND		3.5/8.0	16	100/DAILY				238,226
6/22-6/28/92	POND		4.0/8.0	16	50-100/DAILY		5		238,221
MORTALITY DUE TO NATURAL ATTRITION. REMAINING FISH APPEAR TO BE HEALTHY AND ARE FOR THE MOST PART IN THE MID WATER COLUMN. THESE FISH ARE FEEDING MORE ON NATURAL FOOD AND LESS ON PROCESSED FOOD.									
6/28-7/5/92	POND		4.0/8.0	16	50/100 DAILY				238,221
7/6-7/12/92	POND		3.5/7.5	15	100 DAILY	15 1/2"			238,221
						3 SAMPLES ROD & REEL			
7/13-7/19/92	POND		3.5/7.5	15	100 DAILY				238,221
7/20-7/26/92	POND		3.0/6.0	16	100 DAILY				238,221

STRIPED BASS READINGS/MAY 1992 [SBRMAY92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
5/29/92	1	80/84	2.0/5.0	16	50			CLDY	300,657
	2	"	"	"	50			[LOOSE FISH	104,750]
	3	"	1.5/5.0	"	50				
	4	"	"	"	50				
	6	"	2.0/5.0	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
LOOSE FISH IN POND			AM/2.0	"	150#				
5/30/92	1		2.0/4.0	16	50			CLEAR	300,657
	2		"	"	50			[LOOSE FISH	104,750]
	3		"	"	50				
	4		"	"	50				
	6		"	"	50				
	7		"	"	50				
	8		"	"	50				
	9		"	"	50				
LOOSE FISH IN POND					150#				
5/31/92	1	86	2.0/3.5	16	50			PTLY CLDY	300,657
	2	"	"	"	50			[LOOSE FISH	104,750]
	3	"	"	"	50				
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
LOOSE FISH IN POND					150#				

Perrilliat-Michoud Aqua Farms, Inc.
2502 S. Bayou Dr. — Golden Meadow, LA 70357
Tel/Fax: (504) 475-6128

LOSS ESTIMATE BASED ON CURRENT MARKET VALUE

HYBRID STRIPED BASS

NUMBER OF FISH	AVG. WEIGHT	TOTAL POUNDS
238,221	2 3/4 #	655,107.75

PRICE PER POUND	TOTAL LOSS
$2.25	$1,473,992.44

STRIPED BASS READINGS/BEGINNING JUNE 1992 [SBRJU92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
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8/3-8/9/92		POND	3.0/6.0	15	100/DAY	14 3/4"-16 1/2" 3 SAMPLES - CAST NET			238,221
8/10-8/16/92		POND	4.0/6.0	15	100/DAY				238,221
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6/13/92	POND	88/90	3.5/7.5	15					238,226
6/14/92	POND	88/90	4.0/8.0	16					238,226
FROM 6/12/92 THRU 6/22/92 SURVIVING FISH OBSERVED IN PONDS - NOT EATING PROCESSED FOOD - FISH CONTINUE TO BE STRESSED FROM BACTERIA.									
6/15-6/21/92		POND	3.5/8.0	16	100/DAILY				238,226
6/22-6/28/92		POND	4.0/8.0	16	50-100/DAILY		5		238,221
MORTALITY DUE TO NATURAL ATTRITION. REMAINING FISH APPEAR TO BE HEALTHY AND ARE FOR THE MOST PART IN THE MID WATER COLUMN. THESE FISH ARE FEEDING MORE ON NATURAL FOOD AND LESS ON PROCESSED FOOD.									
6/28-7/5/92		POND	4.0/8.0	16	50/100 DAILY				238,221
7/6-7/12/92		POND	3.5/7.5	15	100 DAILY	15 1/2"			238,221
						3 SAMPLES ROD & REEL			
7/13-7/19/92		POND	3.5/7.5	15	100 DAILY				238,221
7/20-7/26/92		POND	3.0/6.0	16	100 DAILY				238,221

STRIPED BASS READINGS/MAY 1992 [SBRMAY92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
5/29/92	1	80/84	2.0/5.0	16	50			CLDY	300,657
	2	"	"	"	50			[LOOSE FISH	104,750]
	3	"	1.5/5.0	"	50				
	4	"	"	"	50				
	6	"	2.0/5.0	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
LOOSE FISH IN POND			AM/2.0	"	150#				
5/30/92	1		2.0/4.0	16	50			CLEAR	300,657
	2		"	"	50			[LOOSE FISH	104,750]
	3		"	"	50				
	4		"	"	50				
	6		"	"	50				
	7		"	"	50				
	8		"	"	50				
	9		"	"	50				
LOOSE FISH IN POND					150#				
5/31/92	1	86	2.0/3.5	16	50			PTLY CLDY	300,657
	2	"	"	"	50			[LOOSE FISH	104,750]
	3	"	"	"	50				
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
LOOSE FISH IN POND					150#				

STRIPED BASS READINGS/MAY 1992 [SBRMAY92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
5/23/92	8	78/82	2.5/5.0	18	75			PTLY CLDY	300,657
	9	"	"	"	75			[LOOSE FISH	104,750]
LOOSE FISH/POND		"	PM/5.5	"	250#				
5/24/92	1	78/82	3.0/5.0	18	25			PTLY CLDY	300,657
	2	"	"	"	150			[LOOSE FISH	104,750]
	3	"	"	"	100				
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
LOOSE FISH/POND		"	AM/4.0	"	250#				
5/25/92	1	80/82	2.0/4.5	18	25			RAIN/CLDY	300,657
	2	"	"	"	150			[LOOSE FISH	104,750]
	3	"	"	"	150				
	4	"	"	"	100				
	6	"	"	"	150				
	7	"	"	"	150				
	8	"	"	"	75				
	9	"	"	"	100				
LOOSE FISH/POND		"	AM/3.0	"	250#				
5/26/92	1	80/84	1.5/5.5	18	50			PTLY CLDY	300,657
	2	"	"	"	100			[LOOSE FISH	104,750]
	3	"	"	"	100				
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	50				
	9	"	"	"	50				
LOOSE FISH/POND		"	AM/2.0	"	250				
5/27/92	1	80/84	2.0/5.5	18	50			PTLY CLDY	300,657
	2	"	"	"	150			[LOOSE FISH	104,750]
	3	"	"	"	100				
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
LOOSE FISH/POND		"	AM/2.0	"	250#				
5/28/92	1	78/80	3.0/3.0	18	25			RAIN/CLDY	300,657
	2	"	"	"	50			[LOOSE FISH	104,750]
	3	"	2.0/3.0	"	50				
	4	"	"	"	50				
	6	"	3.0/3.0	"	50				
	7	"	2.0/3.0	"	50				
	8	"	3.0/3.0	"	50				
	9	"	3.0/3.0	"	50				
LOOSE FISH/POND		"	AM/4.0	"	250				

STRIPED BASS READINGS/MAY 1992 [SBRMAY92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
5/19/92	1	78/82	2.0/4.0	17	25			PTLY CLDY	300,657
	2	"	"	"	75			[LOOSE FISH	86,750]
	3	"	"	"	50				
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
LOOSE FISH/POND		"	AM/3.0	"	150				
5/20/92	1	78/82	2.0/4.5	17	25			PTLY CLDY	300,657
	2	"	"	"	75			[LOOSE FISH	86,750]
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	50				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
LOOSE FISH/POND		"	AM/3.0		150				
5/21/92	1	78/82	1.5/3.5	17	LOW DO'S			PTLY CLDY	300,657
	2	"	2.0/4.0	"	DID NOT FEED			[LOOSE FISH	86,750]
	3	"	2.0/4.0	"					
	4	"	2.0/4.0	"					
	6	"	1.5/3.5	"					
	7	"	2.0/4.0	"					
	8	"	1.5/3.5	"					
	9	"	2.0/4.0	"					
	10	"	1.0		FISH STRESSED DUE TO LOW DO'S APPX 18,000 FISH IN CAGE #10 CUT CAGE TO RELEASE FISH INTO POND AT 8:00 AM - NONE DEAD - THESE 18,000 FISH WILL BE ADDED TO THE "LOOSE FISH" INVENTORY				
LOOSE FISH/POND		"	AM/3.5		150# FEED				
5/22/92	1	78/82	2.0/4.5	18	25	11.12		PTLY CLDY	300,657
	2	"	"	"	125	10.48		[LOOSE FISH	86,750]
	3	"	"	"	100	12.31		CAGE #10	+18,000
	4	"	"	"	75	11.85			
	6	"	"	"	75	10.20		[TOTAL LOOSE	104,750]
	7	"	"	"	100	11.72			
	8	"	"	"	75	10.00			
	9	"	"	"	75	11.00			
LOOSE FISH/POND		"	AM/3.0	"	250#	10.68			
5/23/92	1	78/82	2.5/5.0	18	25			PTLY CLDY	300,657
	2	"	"	"	125			[LOOSE FISH	104,750]
	3	"	"	"	100				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	100				

STRIPED BASS READINGS/MAY 1992 [SBRMAY92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
5/14/92	1	78/82	2.0/5.0	15	50			PTLY CLDY	300,657
	2	"	"	"	75			[LOOSE FISH	86,570]
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
LOOSE FISH/POND		"	AM 3.0	"	150				
5/15/92	1	78/82	2.5/5.0	15	25			PTLY CLDY	300,657
	2	"	"	"	75			[LOOSE FISH	86,570]
	3	"	"	"	50				
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
LOOSE FISH/POND		"	AM 3.0	"	150				
5/16/92	1	78/82	2.5/5.0	15	25			PTLY CLDY	300,657
	2	"	"	"	75			[LOOSE FISH	86,750]
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
LOOSE FISH/POND		"			100				
5/17/92	1 THRU 10	78/84	2.5/5.0	16	LOW DO'S DID NOT FEED			PTLY CLDY	300,657
								[LOOSE FISH	86,750]
LOOSE FISH/POND					50				
5/18/92	1	78/82	2.0/4.0	16	25			PTLY CLDY	300,657
	2	"	"	"	75			[LOOSE FISH	86,750]
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
LOOSE FISH/POND		"	AM/3.0		150				

STRIPED BASS READINGS/MAY 1992 [SBRMAY92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
5/9/92	1	76/80	2.5/6.0	15	25			CLEAR	300,657
	2	"	"	"	25			[LOOSE FISH	86,570
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
5/10/92	1	76/82	3.0/5.5	15	50			PTLY CLDY	300,657
	2	"	"	"	150			[LOOSE FISH	86,570]
	3	"	"	"	150				
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
	10	"	"	"	100				
5/11/92	1	78/84	2.0/5.0	15	25			CLEAR	300,657
	2	"	"	"	75			[LOOSE FISH	86,570]
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
LOOSE FISH/POND		"	PM 6.0	15	150				
5/12/92	1	78/84	2.0/5.5	15	25			PTLY CLDY	300,657
	2	"	"	"	75			[LOOSE FISH	86,570]
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
LOOSE FISH/POND		"	AM 6.0	"	150				
5/13/92	1	76/80	4.0/4.5	15	25			PTLY CLDY	300,657
	2	"	"	"	75			[LOOSE FISH	86,570]
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
LOOSE FISH/POND		"	PM 6.2	"	150				

STRIPED BASS READINGS/MAY 1992 [SBRMAY92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
5/6/92	1	80/80	2.5/4.0	15	25			CLEAR	
	2	"	"	"	75				NEW TOTALS
	3	"	"	"	50				LISTED BELOW
	4	"	"	"	50				
	5	NO FISH							
	6	80/80	2.5/4.0	15	50		DEAD- 20		
	7	"	"	"	50				
	8	"	"	"	50		DEAD- 20		
	9	"	"	"	50				
	10	"	"	"	50				
	11	NO FISH				DEAD- 1,200			

CONDITIONS IN THE CAGES CRITICAL THIS PAST WEEK - SPRING WEATHER CONDITIONS UNSTABLE CAUSING LOW DO'S AND NO TIDAL XCHANGE OF WATER. RELEASED CAGE #11 INTO POND WHERE THE APPX. 10,000 FISH WOULD HAVE A BETTER CHANCE OF SURVIVING. WE LOST 1,200 FISH IN CAGE #11 WHICH HAD ALREADY DIED. WE ALSO LOST A SMALL NUMBER IN CAGE #6 AND 8. LISTED BELOW ARE THE NEW TOTALS ON FISH OVERALL AND FISH WHICH ARE LOOSE IN THE POND.

TOTAL FISH	301,897
DEAD FISH CAGE #6,8,11	1,240
CURRENT TOTAL FISH	300,657
LOOSE FISH	77,770
RELEASED FROM CAGE #11	+ 8,800
CURRENT LOOSE FISH	86,570

OF OUR APPX. TOTAL FISH OF 300,657, ABOUT 1/3 (86,570) ARE LOOSE IN POND

5/7/92	1	76/80	2.0/4.5	15	25			CLEAR	300,657
	2	"	"	"	75			[LOOSE FISH	86,570]
	3	"	"	"	50				
	4	"	"	"	50				
	5	NONE							
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	NONE							
5/8/92	1	76/80	2.5/6.0	15	25	10.92		CLEAR	300,657
	2	"	"	"	75	10.71		[LOOSE FISH	86,570]
	3	"	"	"	75	12.12			
	4	"	"	"	75	12.00			
	6	"	"	"	75	10.35			
	7	"	"	"	75	11.80			
	8	"	"	"	50	10.15			
	9	"	"	"	50	10.71			
	10	"	"	"	50	10.47			

STRIPED BASS READINGS/MAY 92 [SBRMAY92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
5/1/92	1	80/84	2.5/5.0	15	25			CLEAR	301,897
	2	"	"	"	75			[LOOSE FISH	77,770]
	3	"	"	"	50				
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
5/2/92	1	80/84	3.0/6.0	15	50			CLEAR	301,897
	2	"	"	"	100			[LOOSE FISH	77,770]
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	50				
	11	"	"	"	50				
5/3/92	1	82/86	3.0/6.0	13	50			CLEAR	301,897
	2	"	"	"	100			[LOOSE FISH	77,770]
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	50				
	11	"	"	"	50				
5/4/92	1	80/82	2.5/3.0	13	LOW DO'S			CLOUDY	301,897
	THRU				DID NOT			[LOOSE FISH	77,770]
	11	"	"	"	FEED FISH				
5/5/92	1	80/84	2.0/3.0	13	25			CLEAR	301,897
	2	"	"	"	25			[LOOSE FISH	77,770]
	3	"	"	"	25				
	4	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	FISH IN DANGER/NOT ENOUGH OXYGEN/CUT CAGE #11 OPEN TO RELEASE FISH INTO POND - ESTIMATED NUMBER: 10,000				

STRIPED BASS READINGS/APRIL 1992 [SBRAPR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
4/28/92	1	74/78	2.5/5.0	17	25			CLEAR	301,897
	2	"	"	"	100			[LOOSE FISH 77,770]	
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
4/29/92	1	74/78	2.0/4.0	17	25			CLOUDY	301,897
	2	"	"	"	50			[LOOSE FISH 77,770]	
	3	"	"	"	25				
	4	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
4/30/92	1	76/80	2.0/4.0	17	25			CLEAR	301,897
	2	"	"	"	50			[LOOSE FISH 77,770]	
	3	"	"	"	25				
	4	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				

STRIPED BASS READINGS/APRIL 1992 [SBRAPR92.DOC]

DATE	CAGE #	AM/PM TEMPS	AM/PM DO' S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
4/22/92	8	80/82	2.5/4.0	15	25			CLEAR	301,897
	9	"	"	"	25			[LOOSE FISH 77,770]	
	10	"	"	"	25				
	11	"	"	"	25				
4/23/92	1	80/82	2.0/3.0	15	LOW DO'S			CLDY/RAIN	301,897
	THRU				DID NOT FEED			[LOOSE FISH 77,770]	
	11	"	"	"					
4/24/92	1	80/82	2.0/3.5	14	20			CLOUDY	301,897
	2	"	"	"	30			[LOOSE FISH 77,770]	
	3	"	"	"	25				
	4	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
4/25/92	1	78/82	2.5/4.0	14	25			CLEAR	301,897
	2	"	"	"	75			[LOOSE FISH 77,770]	
	3	"	"	"	50				
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
4/26/92	1	76/80	2.5/4.0	14	30			CLEAR	301,897
	2	"	"	"	100			[LOOSE FISH 77,770]	
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	50				
	11	"	"	"	50				
4/27/92	1	74/78	2.5/5.0	16	25			CLEAR	301,897
	2	"	"	"	100			[LOOSE FISH 77,770]	
	3	"	"	"	75				
	4	"	"	"	75				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				

STRIPED BASS READINGS/APRIL, 1992 [SBRAPR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO' S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
4/17/92	1	78/80	2.5/3.5	16	25			PTLY CLDY	301,897
	2	"	"	"	50			[LOOSE FISH 77,770]	
	3	"	"	"	25				
	4	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
4/18/92	1	78/80	3.0/5.0	16	50			CLOUDY	301,897
	2	"	"	"	75			[LOOSE FISH 77,770]	
	3	"	"	"	75				
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
4/19/92	1 THRU 11	78/78	2.5/6.0	16	LOW DO'S DID NOT FEED			RAIN [LOOSE FISH 77,770]	301,897
4/20/92	1	78/80	3.0/5.0	16	50			RAIN	301,897
	2	"	"	"	75			[LOOSE FISH 77,770]	
	3	"	"	"	75				
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
4/21/92	1	80/82	2.5/5.5	16	50			CLEAR	301,897
	2	"	"	"	75			[LOOSE FISH 77,770]	
	3	"	"	"	75				
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
4/22/92	1	80/82	2.5/4.0	15	25			CLEAR	301,897
	2	"	"	"	25			[LOOSE FISH 77,770]	
	3	"	"	"	25				
	4	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				

STRIPED BASS READINGS/APRIL 1992 [SBRAPR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
4/11/92	7	76/80	3.0/6.0	16	50			PTLY CLDY	301,957
	8	"	"	"	50			[LOOSE FISH	77,770]
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
4/12/92	2	78/82	4.0/6.5	16	150			CLEAR	301,957
	3	"	"	"	100			[LOOSE FISH	77,770]
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
	10	"	"	"	100				
	11	"	"	"	75				
CAGE #1 REINSTATED WITH FISH THINNED OUT OF CAGE #2									
4/13/92	1	78/82	3.0/6.0	17	100			CLEAR	301,957
	2	"	"	"	150			[LOOSE FISH	77,770]
	3	"	"	"	100				
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
	10	"	"	"	100				
	11	"	"	"	75				
4/14/92	1	78/82	3.0/4.0	17	25			CLEAR	301,957
	2	"	"	"	25			[LOOSE FISH	77,770]
	3	"	"	"	25				
	4	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
4/15/92	1	78/82	2.0/3.0	17	LOW			CLEAR	301,957
	2	"	"	"	DO'S			[LOOSE FISH	77,770]
	3	"	"	"	DID				
	4	"	"	"	NOT				
	6	"	"	"	FEED		60 DEAD DUE TO LOW DO'S		
	7	"	"	"	FISH				
	8	"	"	"					
	9	"	"	"					
	10	"	"	"					
	11	"	"	"					
4/16/92	1	78/80	2.0/3.0	16	LOW DO'S			PTLY CLDY	301,897
	THRU				DID NOT FEED			[LOOSE FISH	77,770]
	11	"	"	"					

STRIPED BASS READINGS/APRIL 1992 [SBRAPR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
4/6/92	2	68/70	4.0/4.5	17	50			RAIN	301,957
	3	"	"	"	50			[LOOSE FISH	77,770]
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
4/7/92	2	72/76	4.0/5.5	17	150			CLEAR	301,957
	3	"	"	"	150			[LOOSE FISH	77,770]
	4	"	"	"	125				
	6	"	"	"	100				
	7	"	"	"	150				
	8	"	"	"	100				
	9	"	"	"	100				
	10	"	"	"	100				
	11	"	"	"	75				
4/8/92	2	74/76	3.0/4.5	17	125			CLOUDY	301,957
	3	"	"	"	100			[LOOSE FISH	77,770]
	4	"	"	"	100				
	6	"	"	"	75				
	7	"	"	"	100				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
4/9/92	2	72/76	3.5/5.5	16	100			PTLY CLDY	301,957
	3	"	"	"	100			[LOOSE FISH	77,770]
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
	10	"	"	"	75				
	11	"	"	"	75				
4/10/92	2	74/78	3.5/5.5	16	150			PTLY CLDY	301,957
	3	"	"	"	100			[LOOSE FISH	77,770]
	4	"	"	"	100				
	6	"	"	"	75				
	7	"	"	"	100				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
4/11/92	2	76/80	3.0/6.0	16	100			PTLY CLDY	301,957
	3	"	"	"	75			[LOOSE FISH	77,770]
	4	"	"	"	75				
	6	"	"	"	50				

STRIPED BASS READINGS/APRIL 1992 [SBRAPR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
4/1/92	2	70/74	3.0/5.0	17	100			CLEAR	301,957
	3	"	"	"	75			[LOOSE FISH	77,770]
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
4/2/92	2	72/70	3.0/5.0	17	100			CLOUDY	301,957
	3	"	"	"	75			[LOOSE FISH	77,770]
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
4/3/92	2	68/70	3.0/5.0	17	100	10.22		CLOUDY	301,957
	3	"	"	"	75	11.66		[LOOSE FISH	77,770]
	4	"	"	"	75	11.63			
	6	"	"	"	75	9.71			
	7	"	"	"	75	11.27			
	8	"	"	"	75	9.22			
	9	"	"	"	75	9.96			
	10	"	"	"	75	9.76			
	11	"	"	"	50	9.72			
4/4/92	2	68/70	3.0/5.0	17	100			PTLY CLDY	301,957
	3	"	"	"	50			[LOOSE FISH	77,770]
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
4/5/92	2	70/70	3.0/4.5	17	75			PTLY CLDY	301,957
	3	"	"	"	75			[LOOSE FISH	77,770]
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				

STRIPED BASS READINGS/MARCH 1992 [SBRMAR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
3/30/92	2	70/70	3.5/5.0	16	50			PTLY CLDY	301,957
	3	"	"	"	50			[LOOSE FISH	77,770]
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/31/92	2	68/70	3.0/4.0	17	25			CLOUDY	301,957
	3	"	"	"	25			[LOOSE FISH	77,770]
	4	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				

STRIPED BASS READINGS/MARCH 1992 [SBRMAR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
3/25/92	2	66/68	4.0/6.0	17	100			PTLY CLDY	301,957
	3	"	"	"	100			[LOOSE FISH	77,770]
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/26/92	2	68/70	4.0/6.0	17	150			CLEAR	301,957
	3	"	"	"	100			[LOOSE FISH	77,770]
	4	"	"	"	150				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
	10	"	"	"	100				
	11	"	"	"	50				
3/27/92	2	70/72	4.0/6.0	17	150			CLEAR	301,957
	3	"	"	"	125			[LOOSE FISH	77,770]
	4	"	"	"	150				
	6	"	"	"	125				
	7	"	"	"	150				
	8	"	"	"	125				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
3/28/92	2	70/70	4.0/6.0	17	150			CLOUDY	301,957
	3	"	"	"	100			[LOOSE FISH	77,770]
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
	10	"	"	"	100				
	11	"	"	"	50				
3/29/92	2	70/70	3.5/5.5	17	50			RAIN/CLOUDY	301,957
	3	"	"	"	50			[LOOSE FISH	77,770]
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				

STRIPED BASS READINGS/MARCH 1992 [SBRMAR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
3/20/92	2	66/68	4.0/6.0	16	150	9.96		CLEAR	301,957
	3	"	"	"	100	11.50		[LOOSE FISH 77,790]	
	4	"	"	"	100	11.15			
	6	"	"	"	75	9.81			
	7	"	"	"	100	11.11			
	8	"	"	"	75	9.42			
	9	"	"	"	75	9.65			
	10	"	"	"	75	9.72			
	11	"	"	"	50	9.71			
3/21/92	2	66/66	4.0/6.0	16	100			CLOUDY	301,957
	3	"	"	"	100			[LOOSE FISH 77,790]	
	4	"	"	"	100				
	6	"	"	"	75				
	7	"	"	"	100				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
3/22/92	2	64/66	3.5/5.0	16	50			RAIN	301,957
	3	"	"	"	50			[LOOSE FISH 77,790]	
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/23/92	2	66/66	4.0/6.0	16	100			CLOUDY	301,957
	3	"	"	"	100			[LOOSE FISH 77,790]	
	4	"	"	"	100		FISH RETRIEVED FROM POND		20
	6	"	"	"	100			[TOTAL LOOSE FISH 77,770]	
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/24/92	2	66/68	4.0/6.0	16	100			CLEAR	301,957
	3	"	"	"	100			[LOOSE FISH 77,770]	
	4	"	"	"	100				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				

STRIPED BASS READINGS/MARCH 1992 [SBRMAR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
3/15/92	2	62/66	3.5/6.0	17	75			CLEAR	301,957
	3	"	"	"	75			[LOOSE FISH	77,815]
	4	"	"	"	75				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/16/92	2	66/68	3.5/5.5	17	75			CLEAR	301,957
	3	"	"	"	50			[LOOSE FISH	77,815]
	4	"	"	"	50	FISH RETRIEVED FROM POND			25
	6	"	"	"	50				
	7	"	"	"	75	NEW TOTAL LOOSE FISH			[77,790]
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/17/92	2	66/68	4.0/6.0	17	75			PTLY CLDY	301,957
	3	"	"	"	75			[LOOSE FISH	77,790]
	4	"	"	"	75				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
3/18/91	2	66/66	4.0/6.0	17	100			CLOUDY	301,957
	3	"	"	"	100			[LOOSE FISH	77,790]
	4	"	"	"	100				
	6	"	"	"	75				
	7	"	"	"	100				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
3/19/92	2	66/68	4.0/6.0	16	150			PTLY CLDY	301,957
	3	"	"	"	100			[LOOSE FISH	77,790]
	4	"	"	"	100				
	6	"	"	"	75				
	7	"	"	"	100				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				

STRIPED BASS READINGS/MARCH 1992 [SBRMAR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO' S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
3/10/92	2	64/64	2.0/3.0	16	0			CLOUDY	309,957
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	0		8,000		
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				

A COMBINATION OF LOW DO'S, HEAVY LINGERING FOG, NO SUN, NO TIDAL EXCHANGE CONTRIBUTED TO THE LOSS OF 8,000 FISH AND RELEASING 10,000 MORE INTO THE POND IN ORDER TO SAVE THEM, FROM CAGE #5. CAGE #5 REMOVED AND NO LONGER IN USE.

3/11/92	2	62/62	2.0/3.0	16	50			CLOUDY	309,957
	3	"	"	"	25			DEAD CAGE 5 -	8,000
	4	"	"	"	25				---
	6	"	"	"	25			TOTAL # FISH	301,957
	7	"	"	"	25			LOOSE FISH	67,815
	8	"	"	"	25			RELEASED CAGE 5	+10,000
	9	"	"	"	25				---
	10	"	"	"	25			[TOTAL LOOSE FISH	77,815]
	11	"	"	"	25				

3/12/92	2	62/62	2.0/2.5	16	LOW			CLOUDY	301,957
	3	"	"	"	DO'S			[LOOSE FISH	[77,815]
	4	"	"	"	DID				
	6	"	"	"	NOT				
	7	"	"	"	FEED				
	8	"	"	"					
	9	"	"	"					
	10	"	"	"					
	11	"	"	"					

3/13/92	2	60/64	2.0/3.5	16	25			PTLY CLDY	301,957
	3	"	"	"	25			[LOOSE FISH	77,815]
	4	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25	PADDLE-WHEEL AERATOR INSTALLED			
	9	"	"	"	25	AND WORKING 6:00 PM 3/13/92			
	10	"	"	"	25				
	11	"	"	"	25				

3/14/92	2	60/64	3.5/5.5	17	50			CLEAR	301,957
	3	"	"	"	50			[LOOSE FISH	77,815]
	4	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				

STRIPED BASS READINGS/MARCH 1992 [SBRMAR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
3/5/92	7	64/64	4.0/5.0	18	25			CLOUDY	309,957
	8	"	"	"	50			[LOOSE FISH	15,815]
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	25				

3/5/92 CAGE #1 SINKS DURING SEVERE THUNDERSTORM/HEAVY WINDS - UNABLE TO KEEP FISH FROM ESCAPING CAGE. FISH ARE NOW LOOSE IN THE POND AND WILL BE LISTED AS "LOOSE FISH".....THERE WERE APPROXIMATELY 52,000 FISH IN CAGE #1.

3/6/92	1	ESCAPED CAGE - LOOSE IN POND						RAIN	309,957
	2	64/62	3.0/4.5	18	50			[LOOSE FISH	15,815
	3	"	"	"	25			CAGE #1	+52,000
	4	"	"	"	25				
	5	"	"	"	50			TOTAL LOOSE FISH	67,815]
	6	"	"	"	50				
	7	"	"	"	25				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/7/92	2	64/66	2.0/4.0	16	LOW			CLOUDY	309,957
	3	"	"	"	DO'S			[LOOSE FISH	67,815]
	4	"	"	"	DID				
	5	"	"	"	NOT				
	6	"	"	"	FEED				
	7	"	"	"	FISH				
	8	"	"	"					
	9	"	"	"					
	10	"	"	"					
	11	"	"	"					
3/8/92	2	66/68	2.0/3.5	16	LOW			PTLY CLDY	309,957
	3	"	"	"	DO'S			[LOOSE FISH	67,815]
	4	"	"	"	DID				
	5	"	"	"	NOT				
	6	"	"	"	FEED				
	7	"	"	"					
	8	"	"	"					
	9	"	"	"					
	10	"	"	"					
	11	"	"	"					
3/9/92	2	66/66	2.0/3.0	16	LOW			CLOUDY	309,957
	3	"	"	"	DO'S			[LOOSE FISH	67,815]
	4	"	"	"	DID				
	5	"	1.0/2.5	"	NOT				
	6	"	2.0/3.0	"	FEED				
	7	"	2.0/3.0	"					
	8	"	2.0/3.0	"					
	9	"	2.0/3.0	"					
	10	"	2.0/3.0	"					
	11	"	2.0/3.0	"					

STRIPED BASS READINGS/MARCH 1992 [SBRMAR92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
3/1/92	1	64/66	5.0/7.0	18	50			CLEAR	309.957
	2	"	"	"	75			[LOOSE FISH 15,815]	
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/2/92	1	64/66	5.0/6.0	18	75			CLEAR	309,957
	2	"	"	"	100			[LOOSE FISH 15,815]	
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
3/3/92	1	64/66	5.0/6.0	18	50			CLEAR	309,957
	2	"	"	"	75			[LOOSE FISH 15,815]	
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/4/92	1	64/66	4.5/5.0	18	50			PTLY CLDY	309,957
	2	"	"	"	75			[LOOSE FISH 15,815]	
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
3/5/92	1	64/64	4.0/5.0	18	50			CLOUDY	309,957
	2	"	"	"	50			[LOOSE FISH 15,815]	
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	50				
	6	"	"	"	50				

STRIPED BASS READINGS/FEBRUARY 1992 [SBRFE92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
2/27/92	1	64/66	4.5/6.5	17	75			PTLY CLDY	309,957
	2	"	"	"	100			[LOOSE FISH	15,815]
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				
2/28/92	1	62/64	5.0/7.0	17	75	9.25		CLEAR	309,957
	2	"	"	"	100	9.75		[LOOSE FISH	15,815]
	3	"	"	"	75	11.11			
	4	"	"	"	75	11.06			
	5	"	"	"	50	10.16			
	6	"	"	"	75	9.48			
	7	"	"	"	75	11.00			
	8	"	"	"	75	9.48			
	9	"	"	"	75	9.82			
	10	"	"	"	75	9.00			
	11	"	"	"	50	9.43			
FISH AVERAGE 1.53 LBS IN CAGE #4						10 FISH = 6 1/2 LBS.			
2/29/93	1	62/64	5.0/7.0	18	50			CLEAR	309,957
	2	"	"	"	75			[LOOSE FISH	15,815]
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				

STRIPED BASS READINGS/FEBRUARY 1992 [SBRFE92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
2/23/92	1	64/66	5.0/8.0	16	75			CLOUDY	309,957
	2	"	"	"	100			[LOOSE FISH 15,815]	
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	50				

WATER IS COPPER COLOR IN PONDS 1 & 2, DO'S ARE HIGH; #1 IS 10.0, #2 IS 8.0
CHECKED WITH GLENN THOMAS, BIOLOGIST, AND HE SAYS IT IS AN ALGAE BLOOM

2/24/92	1	64/64	5.0/8.0	16	50			RAIN	309,957
	2	"	"	"	50			[LOOSE FISH 15,815]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/25/92	1	64/64	5.0/7.0	16	75			CLOUDY	309,957
	2	"	"	"	75			[LOOSE FISH 15,815]	
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/26/92	1	64/64	5.0/7.0	16	75			CLOUDY	309,957
	2	"	"	"	75			[LOOSE FISH 15,815]	
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				

STRIPED BASS READINGS/FEBRUARY 92 [SBRFE92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
2/18/92	7	62/64	4.0/6.0	17	50			CLOUDY	309,957
	8	"	"	"	50			[LOOSE FISH	15,815]
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/19/92	1	64/66	4.0/6.0	17	50			CLEAR	309,957
	2	"	"	"	75			[LOOSE FISH	15,815]
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/20/92	1	66/68	4.0/7.0	17	75			CLEAR	309,957
	2	"	"	"	75			[LOOSE FISH	15,815]
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	75				
	11	"	"	"	50				
2/21/92	1	64/66	5.0/8.0	17	75			CLOUDY	309,957
	2	"	"	"	75			[LOOSE FISH	15,815]
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	75				
	11	"	"	"	50				
2/22/92	1	64/64	4.0/7.0	17	75			RAIN	309,957
	2	"	"	"	75			[LOOSE FISH	15,815]
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				

STRIPED BASS READINGS/FEBRUARY 92 [SBRFE92.DOC] PERRILLIAT-MICHOUD

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
2/14/92	1	60/64	4.0/6.0	18	50	8.91		PTLY CLDY	309,957
	2	"	"	"	50	9.02		[LOOSE FISH	15,900]
	3	"	"	"	50	10.52			
	4	"	"	"	50	10.48			
	5	"	"	"	50	8.85			
	6	"	"	"	50	8.92			
	7	"	"	"	50	10.48			
	8	"	"	"	50	8.75			
	9	"	"	"	50	9.27			
	10	"	"	"	50	9.00			
	11	"	"	"	50	8.70			
2/15/92	1	60/62	4.0/6.0	18	50			PTLY CLDY	309,957
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	25				
2/16/92	1	62/66	3.5/6.0	18	50			PTLY CLDY	309,957
	2	"	"	"	75			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/17/92	1	62/64	4.0/8.0	18	50			RAIN	309,957
	2	"	"	"	75			[LOOSE FISH	15,900]
	3	"	"	"	75		FISH RETRIEVED		- 85
	4	"	"	"	75				
	5	"	"	"	50			[LOOSE FISH	15,815]
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/18/92	1	62/64	4.0/6.0	17	50			CLOUDY	309,957
	2	"	"	"	50			[LOOSE FISH	15,815]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				

STRIPED BASS READINGS/FEBRUARY 92 [SBRFE92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DOs	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
2/10/92	1	58/60	3.5/5.5	17	50			CLEAR	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	25				
2/11/92	1	58/62	3.5/5.5	17	50			CLEAR	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	75				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/12/92	1	58/62	3.0/4.5	17	50			CLEAR	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50		[RAN PUMP TO AERATE]		
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	50				
	11	"	"	"	25				
2/13/92	1	60/64	4.0/6.0	17	50			CLEAR	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	25				

STRIPED BASS READINGS/FEBRUARY 92 [SBRFE92.DOC]

DATE	CAGE #	AM/PM TEMPS	AM/PM DOs	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
2/5/92	7	60/58	3.5/5.5	15	50			RAIN	309,957
	8	"	"	"	50			[LOOSE FISH 15,900]	
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/6/92	1	58/60	3.5/5.0	16	50			PTLY CLDY	309,957
	2	"	"	"	75			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	25				
2/7/92	1	56/60	3.0/5.0	16	25			CLEAR	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
2/8/92	1	58/62	4.0/5.0	16	50			CLEAR	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	25				
2/9/92	1	58/62	4.0/5.0	17	50			CLEAR	309.957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	25				

STRIPED BASS READINGS/FEBRUARY 92 [SBRFE92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
2/1/92	1	60/64	5.0/6.0	15	50			CLEAR	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/2/92	1	60/62	5.0/6.0	16	50			CLOUDY	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
2/3/92	1	60/62	4.0/6.0	16	25			CLOUDY	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
2/4/92	1	60/60	4.0/6.0	16	50			RAIN	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	25				
	10	"	"	"	50				
	11	"	"	"	25				
2/5/92	1	60/58	3.5/5.5	15	50			RAIN	309,957
	2	"	"	"	75			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				

STRIPED BASS READINGS/JANUARY 92 [SBRJA92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
1/28/92	1	56/56	3.0/5.0	16	25			RAIN	309,957
	2	"	"	"	25			[LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/29/92	1	56/56	4.0/5.0	15	25			RAIN	309,957
	2	"	"	"	50			[LOOSE FISH	15,900
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/30/92	1	58/58	5.0/6.0	16	25			CLOUDY	309.957
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/31/92	1	58/62	5.0/6.0	16	25	8.61		CLOUDY	309,957
	2	"	"	"	50	9.42		[LOOSE FISH	15,900]
	3	"	"	"	50	10.61			
	4	"	"	"	50	10.62			
	5	"	"	"	25	9.10			
	6	"	"	"	25	8.98			
	7	"	"	"	50	10.33			
	8	"	"	"	25	8.88			
	9	"	"	"	25	9.65			
	10	"	"	"	25	9.01			
	11	"	"	"	25	8.61			

STRIPED BASS READINGS/JANUARY 92 [SBRJAN92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
1/23/92	7	54/57	4.0/7.0	17	25			CLOUDY	309,957
	8	"	"	"	25			[LOOSE FISH	15,900]
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/24/92	1	54/58	5.0/7.0	17	50			CLR/COLD	309,957
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	50				
	11	"	"	"	25				
1/25/92	1	52/56	4.0/6.5	17	50			CLR/COLD	309,957
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/26/92	1	56/58	5.0/7.0	17	25			CLOUDY	309,957
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/27/92	1	54/56	3.0/5.0	17	25			RAIN	309,957
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				

STRIPED BASS READINGS/JANUARY 92 [SBRJA92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
1/19/92	1	54/54	5.0/6.0	15	25			CLDY/CLD	309.957
	2	"	"	"	25			[LOOSE FISH 15,900]	
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/20/92	1	52/56	4.0/6.0	16	25			CLR/COLD	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/21/92	1	51/56	4.0/6.0	16	25			CLEAR	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/22/92	1	52/56	4.0/6.0	16	25			RAIN	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/23/92	1	54/57	4.0/7.0	17	25			CLOUDY	309,957
	2	"	"	"	25			[LOOSE FISH 15,900]	
	3	"	"	"	25				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	25				

STRIPED BASS READINGS/JANUARY 92 [SBRJA92.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
1/14/92	7	58/60	5.0/7.0	17	100			CLEAR	309,957
	8	"	"	"	75			[LOOSE FISH 15,900]	
	9	"	"	"	75				
	10	"	"	"	75				
	11	"	"	"	75				
1/15/92	1	60/60	4.5/6.0	17	50			CLEAR	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
1/16/92	1	58/58	4.5/4.5	17	50			CLDY/COLD	309,957
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
1/17/92	1	56/58	4.0/3.0	17	50	8.38		RAIN/CLD	309,957
	2	"	"	"	50	8.81		[LOOSE FISH 15,900]	
	3	"	"	"	50	10.72			
	4	"	"	"	50	10.46			
	5	"	"	"	25	8.98			
	6	"	"	"	50	8.91			
	7	"	"	"	25	10.40			
	8	"	"	"	25	8.43			
	9	"	"	"	25	9.52			
	10	"	"	"	25	8.80			
	11	"	"	"	25	8.71			
1/18/92	1	54/54	4.0/5.5	15	25			RAIN/CLD	309,957
	2	"	"	"	25			[LOOSE FISH 15,900]	
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				

STRIPED BASS READINGS/JANUARY 92 [SBRJA92.DOC]

DATE	CAGE#	AM/PM TEMP	AM/PM DO'S	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
1/10/92	1	60/60	3.0/5.0	17	50	8.22		CLOUDY	309.957
	2	"	"	"	100	8.72		[LOOSE FISH	15,900
	3	"	"	"	50	10.56			
	4	"	"	"	50	10.22			
	5	"	"	"	50	8.90			
	6	"	"	"	50	8.82			
	7	"	"	"	50	10.30			
	8	"	"	"	50	8.35			
	9	"	"	"	50	9.60			
	10	"	"	"	50	8.72			
	11	"	"	"	50	8.57			
1/11/92	1	58/60	4.0/5.0	17	50			CLR / CLDY	309,957
	2	"	"	"	75			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
1/12/92	1	60/60	4.0/5.0	17	25			CLDY/RAIN	309,957
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/13/92	1	60/60	3.0/6.0	17	25			RAIN	309,957
	2	"	"	"	25			[LOOSE FISH	15,900]
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/14/92	1	58/60	5.0/7.0	17	75			CLEAR	309,957
	2	"	"	"	100			[LOOSE FISH	15,900]
	3	"	"	"	75				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	75				

STRIPED BASS READINGS/JAN. 92 (SBRJA92.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
1/5/92	7	60	3.5/6.0	19	25			CLOUDY	309,965
	8	"	"	"	25			[LOOSE FISH	15,900]
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/6/92	1	60/63	3.0/5.0	18	50				309,965
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/7/92	1	60/62	2.5/3.0	18	LOW			CLOUDY	309,965
	2	"	"	"	DO'S			[LOOSE FISH	15,900]
	3	"	"	"	DID				
	4	"	"	"	NOT				
	5	"	"	"	FEED				
	6	"	"	"	FISH				
	7	"	"	"	TODAY				
	8	"	"	"			8 FISH DIED-		
	9	"	"	"			CAUGHT IN BIRD MESH		
	10	"	"	"					
	11	"	"	"					
1/8/92	1	62/62	3.0/4.0	18	25			CLDY/RAIN	309,957
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/9/92	1	62/62	3.0/4.5	18	25			CLDY/RAIN	309,957
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				

STRIPED BASS DAILY READINGS/JAN. 92 (SBRJA92.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
1/1/92	1	60/60	3.0/4.0	19	25			PTLY CLDY	310,037
	2	"	"	"	25			[LOOSE FISH 15,900]	
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/2/92	1	60/60	2.5/4.5	19	25			PTLY CLDY	310,037
	2	"	"	"	50			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	25				
	11	"	"	"	25				
1/3/92	1	61	4.0/6.0	20	25	8.10		CLEAR	310,037
	2	"	"	"	50	8.40		[LOOSE FISH 15,900]	
	3	"	"	"	50	9.55			
	4	"	"	"	50	9.95			
	5	"	"	"	25	8.60			
	6	"	"	"	50	8.70			
	7	"	"	"	50	9.90	30 FISH DIED IN WEBBING		
	8	"	"	"	50	8.60	42 FISH DIED IN WEBBING		
	9	"	"	"	50	8.45	CAUSED BY PELLICAN SIT-		
	10	"	"	"	25	8.30	TING ON WEBBING MAKING		
	11	"	"	"	25	8.30	IT SINK BELOW SURFACE		
1/4/92	1	60	4.0/5.0	19	25			CLEAR	309,965
	2	"	"	"	25			[LOOSE FISH 15,900]	
	3	"	"	"	25				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
1/5/92	1	60	3.5/6.0	19	25			CLOUDY	309,965
	2	"	"	"	50			[LOOSE FISH 15,900	
	3	"	"	"	25				
	4	"	"	"	25				
	5	"	"	"	25				
	6	"	"	"	25				

STRIPED BASS DAILY READINGS/DECEMBER [READPDEC.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
12/29/91	1	58/60	3.5/5.5	18	50			CLOUDY	310,037
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	100				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
12/30/91	1	60	2.0/2.5	18	LOW			CLOUDY	310,037
	2	"	"	"	DO'S			[LOOSE FISH	15,900]
	3	"	"	"	DID				
	4	"	"	"	NOT				
	5	"	"	"	FEED				
	6	"	"	"					
	7	"	"	"					
	8	"	"	"					
	9	"	"	"					
	10	"	"	"					
	11	"	"	"					
12/31/91	1	60	2.0/2.5	20	25			CLOUDY	310,037
	2	"	"	"	25			[LOOSE FISH	15,900]
	3	"	"	"	25				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	25				
	7	"	"	"	25				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				

STRIPED BASS DAILY READINGS DECEMBER [READPDEC.DOC]

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
12/24/91	7	64/64	6.0/8.0	20	100				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
12/25/91	1	62/64	5.0/7.0	20	75			WINDY	310,037
	2	"	"	"	75			[LOOSE FISH 15,900]	
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	50				
	8	"	"	"	25				
	9	"	"	"	25				
	10	"	"	"	25				
	11	"	"	"	25				
12/26/91	1	60/62	4.5/7.0	20	50			CLOUDY	310,037
	2	"	"	"	125			[LOOSE FISH 15,900]	
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
12/27/91	1	60/60	4.0/5.0	20	25	8.45		HEAVY RAIN	310,037
	2	"	"	"	25	9.00		[LOOSE FISH 15,900]	
	3	"	"	"	25	10.50			
	4	"	"	"	25	10.30			
	5	"	"	"	25	8.95			
	6	"	"	"	25	8.80			
	7	"	"	"	25	10.25			
	8	"	"	"	25	8.45			
	9	"	"	"	25	8.90			
	10	"	"	"	25	8.60			
	11	"	"	"	25	8.55			
12/28/91	1	58/60	4.0/6.0	18	50			CLOUDY	310,037
	2	"	"	"	100			[LOOSE FISH 15,900]	
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				

STRIPED BASS DAILY READINGS/DECEMBER 91 (READPDEC.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
12/20/91	1	64/68	4.5/7.0	18	50	8.30		CLEAR	310,037
	2	"	"	"	50	8.60		[LOOSE FISH	15,900]
	3	"	"	"	50	10.50			
	4	"	"	"	50	10.05			
	5	"	"	"	50	9.10			
	6	"	"	"	50	8.70			
	7	"	"	"	50	10.05			
	8	"	"	"	50	8.15			
	9	"	"	"	50	8.60			
	10	"	"	"	50	8.50			
	11	"	"	"	50	8.35			
12/21/91	1	66/70	5.0/7.0	18	50			CLEAR	310,037
	2	"	"	"	100			[LOOSE FISH	15,900]
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
12/22/91	1	66/72	5.0/7.0	18	50			CLDY	310,037
	2	"	"	"	100			[LOOSE FISH	15,900]
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
12/23/91	1	66/66	6.0/8.0	20	50			RAIN	310,037
	2	"	"	"	50			[LOOSE FISH	15,900]
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
12/24/91	1	64/64	6.0/8.0	20	50			WINDY	310,037
	2	"	"	"	100			[LOOSE FISH	15,900]
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	50				

STRIPED BASS DAILY READINGS/DECEMBER (READPDEC.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DOs	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
12/16/91	1	64/68	5.0/5.0	16	50			CLOUDY	310,037
	2	"	"	"	50			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
12/17/91	1	62/66	5.0/5.5	16	50			CLEAR	310,037
	2	"	"	"	75			[LOOSE FISH	15,900]
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
12/18/91	1	64/66	5.0/6.0	18	75			CLDY	310,037
	2	"	"	"	100			[LOOSE FISH	15,900]
	3	"	"	"	75				
	4	"	"	"	50				
	5	"	"	"	75				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				
12/19/91	1	64/66	5.0/6.5	18	50			CLEAR	310,037
	2	"	"	"	100			[LOOSE FISH	15,900]
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	100				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
	11	"	"	"	50				

STRIPED BASS DAILY READINGS/DECEMBER (READPDEC.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
12/11/91	1	66/68	3.0/4.5	18	50			CLEAR	310.037
	2	"	"	"	50			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
12/12/71	1	68/72	4.0/4.5	18	50			CLOUDY	310,037
	2	"	"	"	50			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
12/13/91	1	70/74	5.0/6.0	18	50	7.80		CLEAR	310,037
	2	"	"	"	50	8.20		LOOSE FISH	15,900
	3	"	"	"	50	10.25			
	4	"	"	"	50	10.20			
	5	"	"	"	50	8.75			
	6	"	"	"	50	8.40			
	7	"	"	"	50	10.00			
	8	"	"	"	50	8.20			
	9	"	"	"	50	8.60			
	10	"	"	"	50	8.05			
12/14/91	1	72/68	4.0/6.0	18	50			RAIN/CLDY	310,037
	2	"	"	"	50			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
12/15/91	1	68/66	3.0/6.0	16	LOW			CLEAR	310,037
	2	"	"	"	DO'S			LOOSE FISH	15,900
	3	"	"	"	DID				
	4	"	"	"	NOT				
	5	"	"	"	FEED				
	6	"	"	"	THE				
	7	"	"	"	FISH				
	8	"	"	"	TODAY				
	9	"	"	"					
	10	"	"	"					

STR[PED BASS READINGS (READPDEC.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
12/6/91	1	64/68	4.0/6.0	20	50	8.00		CLEAR	310,037
	2	"	"	"	50	7.90		LOOSE FISH	15,900
	3	"	"	"	50	9.95			
	4	"	"	"	50	9.80			
	5	"	"	"	50	8.70			
	6	"	"	"	50	8.40			
	7	"	"	"	50	9.70			
	8	"	"	"	50	8.05			
	9	"	"	"	50	8.40			
12/7/91	1	64/68	4.0/5.0	20	75			CLEAR	310,037
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
12/8/91	1	66/70	4.0/5.0	20	75			CLEAR	310,037
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
12/9/91	1	70/68	3.0/5.0	20	50			CLDY/RAIN	310,037
	2	"	"	"	50			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	50				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
	9	"	"	"	50				
	10	"	"	"	50				
12/10/91	1	66/66	2.5/4.5	18	LOW			CLOUDY	310,037
	2	"	"	"	DO'S			LOOSE FISH	15,900
	3	"	"	"	DID				
	4	"	"	"	NOT				
	5	"	"	"	FEED				
	6	"	"	"	THE				
	7	"	"	"	FISH				
	8	"	"	"	ON				
	9	"	"	"	THIS				
	10	"	"	"	DATE				

(READPMDEC.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DOs	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
12/1/91	1	70/72	6.0/8.0	20	75			CLEAR	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
12/2/91	1	74/76	5.0/6.0	20	75			10 FISH TO LSU FOR TESTING	
	2	"	"	"	75				310,037
	3	"	"	"	75			LOOSE FISH	15,900
	4	"	"	"	75			CLOUDY	
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
12/3/91	1	74/72	5.0/7.0	20	75			RAIN	310,037
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
12/4/91	1	68/70	3.0/4.0	20	LOW			CLOUDY	310,037
	2	"	"	"	DO'S			LOOSE FISH	15,900
	3	"	"	"	DID				
	4	"	"	"	NOT				
	5	"	"	"	FEED				
	6	"	"	"	THE				
	7	"	"	"	FISH				
	8	"	"	"	THIS				
	9	"	"	"	DAY				
12/5/91	1	62/66	4.0/6.0	20	100			CLR/COLD	310,037
	2	"	"	"	100			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	75				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				

(READPM6.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DOs	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
11/29/91	1	66/68	6.0/7.0	18	75	8.15		CLOUDY	310,047
	2	"	"	"	75	8.35		LOOSE FISH	15,900
	3	"	"	"	75	9.65			
	4	"	"	"	75	9.65			
	5	"	"	"	75	8.40			
	6	"	"	"	75	8.25			
	7	"	"	"	75	9.65			
	8	"	"	"	75	7.80			
	9	"	"	"	75	8.30			
11/30/91	1	68/70	5.0/7.0	18	75			CLEAR	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				

(READPM6.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DOs	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
11/24/91	1	66/66	3.5/6.0	18	75			CLEAR	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
11/25/91	1	62/66	3.0/6.0	17	75			CLEAR	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
11/26/91	1	62/68	4.0/7.0	17	75			CLEAR	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
11/27/91	1	64/68	4.0/7.0	17	75			CLEAR	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				
11/28/91	1	64/68	5.0/7.0	17	75			CLOUDY	310.047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				

(READPM6.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DOs	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
11/19/91	1	62/62	3.0/5.0	18	100			RAIN	310,047
	2	"	"	"	100			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
11/20/91	1	60/62	3.0/5.0	18	100			RAIN	310,047
	2	"	"	"	100			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	75				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
11/21/91	1	62/68	3.0/5.0	15	100			LT RAIN	310,047
	2	"	"	"	100			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	75				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
	9	"	"	"	100				
11/22/91	1	66/68	3.0/6.0	18	100	7.70		CLEAR	310,047
	2	"	"	"	75	7.70		LOOSE FISH	15,900
	3	"	"	"	75	9.50			
	4	"	"	"	75	9.50			
	5	"	"	"	50	8.20			
	6	"	"	"	75	7.60			
	7	"	"	"	75	9.50			
	8	"	"	"	75	7.40			
	9	"	"	"	75	8.10			
11/23/91	1	66/68	4.0/6.5	18	100			CLEAR	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	50				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
	9	"	"	"	75				

(READPM6.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DOs	AM/PM SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
11/13/91	1	60/64	3.5/6.5	20	100			CLEAR	310,047
	2	"	"	"	100			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	25				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
11/14/91	1	62/66	4.0/7.0	20	100			CLEAR	310,047
	2	"	"	"	100			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
11/15/91	1	64/68	4.0/6.0	20	100	7.65		CLEAR	310,047
	2	"	"	"	100	7.75		LOOSE FISH	15,900
	3	"	"	"	100	9.50			
	4	"	"	"	100	9.50			
	5	"	"	"	50	8.40			
	6	"	"	"	100	7.55			
	7	"	"	"	100	9.45			
	8	"	"	"	100	7.55			
11/16/91	1	64/68	3.5/6.0	20	100			CLEAR	310,047
	2	"	"	"	100			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
11/17/91	1	66/68	3.5/4.5	20	100			CLOUDY	310,047
	2	"	"	"	100			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
11/18/91	1	62/66	3.0/4.0	18	LOW			CLOUDY	310,047
	2	"	"	"	DOs			LOOSE FISH	15,900
	3	"	"	"	DID				
	4	"	"	"	NOT				
	5	"	"	"	FEED				
	6	"	"	"	THIS				
	7	"	"	"	DATE				
	8	"	"	"					
	9	"	"	"					

READINGS, PERRILLIAT-MICHOUD (READPM5.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
11/7/91	1	60/60	4.0/6.0	22	75			CLOUDY	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
11/8/91	1	58/56	4.0/6.0	22	75			CLDY/WDY	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	30				
	6	"	"	"	60				
	7	"	"	"	60				
	8	"	"	"	50				
11/9/91	1	53/56	5.0/6.5	22	75	7.50		CLD/CLR	310,047
	2	"	"	"	75	7.65		LOOSE FISH	15,900
	3	"	"	"	50	9.25			
	4	"	"	"	50	9.20			
	5	"	"	"	30	8.20			
	6	"	"	"	60	7.45			
	7	"	"	"	60	9.20			
	8	"	"	"	50	7.40			
11/10/91	1	54/58	5.0/6.5	22	100			CLEAR	310,047
	2	"	"	"	100			LOOSE FISH	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
11/11/91	1	56/60	4.0/7.0	22	50			CLEAR	310,047
	2	"	"	"	50			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
11/12/91	1	58/62	4.0/7.0	22	50			CLEAR	310,047
	2	"	"	"	50			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	25				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				

READINGS/PERRILLIAT-MICHOUD (READPM6.DOC)

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL.	LBS. FEED	FISH SIZE	MORT.	OTHER	# OF FISH
11/1/91	1	72/73	4.0/7.0	18	125			RAIN	310,047
	2	"	"	"	125			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100			COLD FRONT	
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	100				
	8	"	"	"	75				
11/2/91	1	68/67	4.0/6.0	20	125			CLD/CLR	310,047
	2	"	"	"	125			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	100				
	8	"	"	"	75				
10/3/91	1	64/65	3.0/6.0	22	125			CLOUDY	310,047
	2	"	"	"	125			LOOSE FISH	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	100				
	8	"	"	"	75				
11/4/91	1	62/64	3.0/5.0	23	60			COLD/CLR	310,047
	2	"	"	"	60			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	50				
	5	"	"	"	30				
	6	"	"	"	50				
	7	"	"	"	50				
	8	"	"	"	50				
11/5/91	1	60/64	3.0/5.0	22	75			WDY/CLR	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
11/6/91	1	62/64	3.0/5.0	22	75			CLEAR	310,047
	2	"	"	"	75			LOOSE FISH	15,900
	3	"	"	"	50				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL.	LBS. FEED	FISH SIZE	MORT.	OTHER	# OF FISH
10/30/91	1	78/78	4.0/6.0	15	75			CLOUDY	310,047
	2	"	"	"	75			LOOSE	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
10/31/91	1	78/80	4.0/5.0	15	125	7.35		RAIN	310,047
	2	"	"	"	125	7.50		LOOSE	15,900
	3	"	"	"	100	9.00			
	4	"	"	"	100	9.00			
	5	"	"	"	25	8.00			
	6	"	"	"	75	7.35			
	7	"	"	"	100	9.00			
	8	"	"	"	75	7.20			

DATE	CAGE#	AM/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
10/24/91	7	76/82	3.0/5.5	18	100			P-CLDY	310,048
	8	"	"	"	50			LOOSE	15,900
10/25/91	1	76/82	4.0/6.0	16	100			P-CLDY	310,048
	2	"	"	"	100			LOOSE	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	30				
	6	"	"	"	100				
	7	"	"	"	85				
	8	"	"	"	85				
10/26/91	1	77/82	4.0/6.0	16	125	7.0		CLOUDY	310,048
	2	"	"	"	125	7.35		LOOSE	15,900
	3	"	"	"	100	8.75			
	4	"	"	"	100	8.40	1		
	5	"	"	"	25	7.15			
	6	"	"	"	100	6.80			
	7	"	"	"	100				
	8	"	"	"	100				
10/27/91	1	77/82	4.0/6.0	15	125			CLOUDY	310,047
	2	"	"	"	125			LOOSE	15,900
	3	"	"	"	100				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	100				
	7	"	"	"	100				
	8	"	"	"	100				
10/28/91	1	78/80	3.0/5.0	15	75			CLEAR	310,047
	2	"	"	"	75			LOOSE	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				
10/29/91	1	78/78	3.5/5.0	15	75			CLEAR	310,047
	2	"	"	"	75			LOOSE	15,900
	3	"	"	"	75				
	4	"	"	"	75				
	5	"	"	"	25				
	6	"	"	"	75				
	7	"	"	"	75				
	8	"	"	"	75				

DATE	CAGE#	AN/PM TEMPS	AM/PM DO'S	AM/PM SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
10/17/91	1	82/86	2.0/4.0	METER	LOW			CLEAR	310,048
	2	"	"	ORDERED	DO'S			LOOSE	15,900
	3	"	"	--	DID				
	4	"	"		NOT				
	5	"	"		FEED				
	6	"	"						
10/18/91	1	84/88	3.0/4.0	METER	50	6.65		CLEAR	310,048
	2	"	"	ORDERED	50	6.90		LOOSE	15,900
	3	"	"		50	8.55			
	4	"	"		50	8.40			
	5	"	"		25	7.15			
	6	"	"		50	6.80			
10/19/91	1	84/88	2.5/5.0	METER	50			CLEAR	310,048
	2	"	"	ORDERED	50			LOOSE	15,900
	3	"	"		50				
	4	"	"		35				
	5	"	"		25				
	6	"	"		40				
10/20/91	1	84/88	2.5/4.0	METER	50			CLEAR	310,048
	2	"	"	ORDERED	50			LOOSE	15,900
	3	"	"		50				
	4	"	"		35				
	5	"	"		25				
	6	"	"		40				
10/21/91	1	78/82	2.0/5.0	16	175			CLEAR	310,048
	2	"	"	16	150			LOOSE	15,900
	3	"	"	16	225				
	4	"	"	16	100				
	5	"	"	16	50				
	6	"	"	16	50				
10/22/91	1	78/82	3.0/5.0	16	175			CLEAR	310,048
	2	"	"	"	150			LOOSE	15,900
	3	"	"	"	175				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	75				
10/23/91	1	78/80	4.0/6.0	16	175			CLEAR	310,048
	2	"	"	"	225			LOOSE	15,900
	3	"	"	"	100				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	100				
10/24/91	1	76/82	3.0/5.5	18	175			P-CLOUDY	310,048
	2	"	"	"	175			LOOSE	15,900
	3	"	"	"	200				
	4	"	"	"	100				
	5	"	"	"	50				
	6	"	"	"	100				

DATE	CAGE#	AM/PM TEMPS	AM/PM DO's	AM/PM SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
10/9/91	3	78/82	4.0/5.0		150			CLEAR	310,048
	4	"	"		100			LOOSE	15,900
	5	"	"		50		SALINITY METER ON ORDER		
	6	"	"		80				
10/10/91	1	80/83	4.0/5.0		85			CLEAR	310,048
	2	"	"		85			LOOSE	15,900
	3	"	"		100		SALINITY METER ON ORDER		
	4	"	"		50				
	5	"	"		30				
	6	"	"		50				
10/11/91	1	80/84	4.0/5.5	METER	85	6.75		CLEAR	310,048
	2	"	"	ORDERED	85	6.75		LOOSE	15,900
	3	"	"		100	8.15			
	4	"	"		50	8.10			
	5	"	"		25	6.75			
	6	"	"		50	6.80			
10/12/91	1	82/86	4.5/6.0	METER	85			CLEAR	310,048
	2	"	"	ORDERED	85			LOOSE	15,900
	3	"	"		100				
	4	"	"		50				
	5	"	"		25				
	6	"	"		50				
10/13/91	1	82/86	5.0/6.0	METER	85			CLEAR	310,048
	2	"	"	ORDERED	85			LOOSE	15,900
	3	"	"		100				
	4	"	"		50				
	5	"	"		25				
	6	"	"		50				
10/14/91	1	82/86	5.0/6.0	METER	85			CLEAR	310,048
	2	"	"	ORDERED	85			LOOSE	15,900
	3	"	"		100				
	4	"	"		50				
	5	"	"		25				
	6	"	"		50				
10/15/91	1	82/86	5.0/6.5	METER	85			CLEAR	310,048
	2	"	"	ORDERED	85			LOOSE	15,900
	3	"	"		100				
	4	"	"		50				
	5	"	"		25				
	6	"	"		50				
10/16/91	1	82/86	3.0/5.0	METER	100			CLEAR	310,048
	2	"	"	ORDERED	95			LOOSE	15,900
	3	"	"		100				
	4	"	"		25				
	5	"	"		25				
	6	"	"		50				

READPM5.DOC

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
10/5/91	2	AM	84	4.5		75	6.68			310,048
		PM	86	6.0	METER IN FOR REPAIR				LOOSE	15,900
	3	AM	84	4.5		100	7.75			
		PM	86	6.0						
	4	AM	84	4.5		50	7.68			
		PM	86	6.0						
	5	AM	84	4.5		20	6.15			
		PM	86	6.0						
	6	AM	84	4.5		30	6.45			
		PM	86	6.0						
10/6/91	1	AM	78	2.5		50				310,048
		PM	82	4.0	METER IN FOR REPAIR				LOOSE	15,900
	2	AM	78	2.5		50				
		PM	82	4.0						
	3	AM	78	2.5		50				
		PM	82	4.0						
	4	AM	78	2.5		25				
		PM	82	4.0						
	5	AM	78	2.5		25				
		PM	82	4.0						
	6	AM	78	2.5		25				
		PM	82	4.0						
10/7/91	1	AM	78	3.0		50			CLOUDY	310,048
		PM	82	4.0	METER IN FOR REPAIR				LOOSE	15,900
	2	AM	78	3.0		50				
		PM	82	4.0	NEW METER ON ORDER					
	3	AM	78	3.0		50				
		PM	82	4.0						
	4	AM	78	3.0		50				
		PM	82	4.0						
	5	AM	78	3.0		20				
		PM	82	4.0						
	6	AM	78	3.0		30				
		PM	82	4.0						
10/8/91	1	AM	78	4.0		125			CLEAR	310,048
		PM	82	4.5	NEW METER ON ORDER				LOOSE	15,900
	2	AM	78	4.0		125				
		PM	82	4.5						
	3	AM	78	4.0		150				
		PM	82	4.5						
	4	AM	78	4.0		90				
		PM	82	4.5						
	5	AM	78	4.0		40				
		PM	82	4.5						
	6	AM	78	4.0		70				
		PM	82	4.5						
10/9/91	1	AM	78	4.0		135			CLEAR	310,048
		PM	82	5.0	NEW METER ON ORDER				LOOSE	15,900
	2	AM	78	4.0		135				
		PM	82	5.0						

READPM5.DOC

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
10/1/91	1	AM	86	4.0		125				310,048
		PM	90	4.5	SALINITY METER IN FOR REPAIR					
	2	AM	86	4.0		125			LOOSE	15,900
		PM	90	4.5						
	3	AM	86	4.0		150				
		PM	90	4.5						
	4	AM	86	4.0		60				
		PM	90	4.5						
	5	AM	86	4.0		30				
		PM	90	4.5						
	6	AM	86	4.0		60				
		PM	90	4.5						
10/2/91	1	AM	86	3.0		125				310,048
		PM	90	6.0	METER IN FOR REPAIR				LOOSE	15,900
	2	AM	86	3.0		125				
		PM	90	6.0						
	3	AM	86	3.0		125				
		PM	90	6.0						
	4	AM	86	3.0		100				
		PM	90	6.0						
	5	AM	86	3.0		35				
		PM	90	6.0						
	6	AM	86	3.0		90				
		PM	90	6.0						
10/3/91	1	AM	86	4.0		125				310,048
		PM	90	6.0	METER IN FOR REPAIR				LOOSE	15,900
	2	AM	86	4.0		125				
		PM	90	6.0						
	3	AM	86	4.0		175				
		PM	90	6.0						
	4	AM	86	4.0		100				
		PM	90	6.0						
	5	AM	86	4.0		45				
		PM	90	6.0						
	6	AM	86	4.0		80				
		PM	90	6.0						
10/4/91	1	AM	84	4.5		125				310,048
		PM	88	6.5	METER IN FOR REPAIR				LOOSE	15,900
	2	AM	84	4.5		125				
		PM	88	6.5						
	3	AM	84	4.5		175				
		PM	88	6.5						
	4	AM	84	4.5		70				
		PM	88	6.5						
	5	AM	84	4.5		40				
		PM	88	6.5						
	6	AM	84	4.5		60				
		PM	88	6.5						
10/5/91	1	AM	84	4.5		75	6.35			310,048
		PM	86	6.0	METER IN FOR REPAIR				LOOSE	15,900

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
9/28/91	5	AM	85	3.5	18	55	6.00			310,048
		PM	88	4.0	18				LOOSE	15,900
	6	AM	85	3.5	18	65	6.25			
		PM	88	4.0	18					
9/29/91	1	AM	87	3.5	17	75				310,048
		PM	90	3.5	17				LOOSE	15,900
	2	AM	87	3.5	17	75				
		PM	90	3.5	17					
	3	AM	87	3.5	17	100				
		PM	90	3.5	17					
	4	AM	87	3.5	17	50				
		PM	90	3.5	17					
	5	AM	87	3.5	17	25				
		PM	90	3.5	17					
	6	AM	87	3.5	17	50				
		PM	90	3.5	17					
9/30/91	1	AM	86	3.0	17	75				310,048
		PM	89	4.0	17				LOOSE	15,900
	2	AM	86	3.0	17	75				
		PM	89	4.0	17					
	3	AM	86	3.0	17	100				
		PM	89	4.0	17					
	4	AM	86	3.0	17	50				
		PM	89	4.0	17					
	5	AM	86	3.0	17	25				
		PM	89	4.0	17					
	6	AM	86	3.0	17	50				
		PM	89	4.0	17					

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
9/24/91	4	AM	86	3.0	17	60				310,048
		PM	90	5.0	17				LOOSE	16,000
	5	AM	86	3.0	17	40				
		PM	90	5.0	17					
	6	AM	86	3.0	17	55				
		PM	90	5.0	17					
9/25/91	1	AM	84	3.0	17	50				310,048
		PM	90	3.5	17				LOOSE	16,000
	2	AM	84	3.0	17	50				
		PM	90	3.5	17					
	3	AM	84	3.0	17	75				
		PM	90	3.5	17					
	4	AM	84	3.0	17	30				
		PM	90	3.5	17					
	5	AM	84	3.0	17	20				
		PM	90	3.5	17					
	6	AM	84	3.0	17	30				
		PM	90	3.5	17					
9/26/91	1	AM	82	3.0	18	50				310,048
		PM	88	4.0	18				LOOSE	16,000
	2	AM	82	3.0	18	50				
		PM	88	4.0	18					
	3	AM	82	3.0	18	50				
		PM	88	4.0	18					
	4	AM	82	3.0	18	40				
		PM	88	4.0	18					
	5	AM	82	3.0	18	30				
		PM	88	4.0	18					
	6	AM	82	3.0	18	30				
		PM	88	4.0	18					
9/27/91	1	AM	87	3.0	18	75				310,048
		PM	90	4.0	18				LOOSE	16,000
	2	AM	87	3.0	18	75				
		PM	90	4.0	18					
	3	AM	87	3.0	18	75				
		PM	90	4.0	18					
	4	AM	87	3.0	18	65				
		PM	90	4.0	18			RETRIEVED 100 FISH FROM POND		
	5	AM	87	3.0	18	55				
		PM	90	4.0	18					
	6	AM	87	3.0	18	65				
		PM	90	4.0	18					
9/28/91	1	AM	85	3.5	18	75	6.10			310,048
		PM	88	4.0	18				LOOSE	15,900
	2	AM	85	3.5	18	75	6.50			
		PM	88	4.0	18					
	3	AM	85	3.5	18	75	7.65			
		PM	88	4.0	18					
	4	AM	85	3.5	18	65	7.50			
		PM	88	4.0	18					

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
9/20/91	2	AM	86	2.5	16	50	6.30			310,048
		PM	89	3.5	16				LOOSE	18,000
	3	AM	86	2.5	16	50	7.50			
		PM	89	3.5	16					
	4	AM	86	2.5	16	40	7.25			
		PM	89	3.5	16					
	5	AM	86	2.5	16	35	5.70			
		PM	89	3.5	16					
	6	AM	86	2.5	16	35	6.05			
		PM	89	3.5	16					
9/21/91	1	AM	85	1.5	15	50				310,048
		PM	89	5.0	15				LOOSE	18,000
	2	AM	85	1.5	15	50				
		PM	89	5.0	15					
	3	AM	85	1.5	15	75				
		PM	89	5.0	15					
	4	AM	85	1.5	15	25				
		PM	89	5.0	15					
	5	AM	85	1.5	15	25				
		PM	89	5.0	15					
	6	AM	85	1.5	15	25				
		PM	89	5.0	15					
9/22/91	1	AM	82	2.0	15	75				310,048
		PM	85	5.0	15				LOOSE	18,000
	2	AM	82	2.0	15	75				
		PM	85	5.0	15					
	3	AM	82	2.0	15	75				
		PM	85	5.0	15			WEEK OF 9/16-9/22		2,000
	4	AM	82	2.0	15	30		FISH RETRIEVED FROM POND		
		PM	85	5.0	15					
	5	AM	82	2.0	15	20				
		PM	85	5.0	15					
	6	AM	82	2.0	15	25				
		PM	85	5.0	15					
9/23/91	1	AM	86	3.0	15	110				310,048
		PM	90	6.0	15				LOOSE	16,000
	2	AM	86	3.0	15	110				
		PM	90	6.0	15					
	3	AM	86	3.0	15	150				
		PM	90	6.0	15					
	4	AM	86	3.0	15	60				
		PM	90	6.0	15					
	5	AM	86	3.0	15	50				
		PM	90	6.0	15					
	6	AM	86	3.0	15	60				
9/24/91	1	AM	86	3.0	17	100				310,048
		PM	90	5.0	17				LOOSE	16,000
	2	AM	86	3.0	17	100				
		PM	90	5.0	17					
	3	AM	86	3.0	17	150				
		PM	90	5.0	17					

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
9/16/91	1	AM	86	4.0	16	150				310,048
		PM	92	7.0	16				LOOSE	18,000
	2	AM	86	4.0	16	150				
		PM	92	7.0	16					
	3	AM	86	4.0	16	150				
		PM	92	7.0	16					
	4	AM	86	4.0	16	55				
		PM	92	7.0	16					
	5	AM	86	4.0	16	40				
		PM	92	7.0	16					
	6	AM	86	4.0	16	60				
		PM	92	7.0	16					
9/17/91	1	AM	86	4.0	14	100				310,048
		PM	92	7.0	14				LOOSE	18,000
	2	AM	86	4.0	14	100				
		PM	92	7.0	14					
	3	AM	86	4.0	14	100				
		PM	92	7.0	14					
	4	AM	86	4.0	14	75				
		PM	92	7.0	14					
	5	AM	86	4.0	14	40				
		PM	92	7.0	14					
	6	AM	86	4.0	14	50				
		PM	92	7.0	14					
9/18/91	1	AM	86	3.5	15	100				310,048
		PM	92	6.5	15				LOOSE	18,000
	2	AM	86	3.5	15	100				
		PM	92	6.5	15					
	3	AM	86	3.5	15	150				
		PM	92	6.5	15					
	4	AM	86	3.5	15	60				
		PM	92	6.5	15					
	5	AM	86	3.5	15	40				
		PM	92	6.5	15					
	6	AM	86	3.5	15	60				
		PM	92	6.5	15					
9/19/91	1	AM	86	3.0	15	70				310,048
		PM	90	4.0	15				LOOSE	18,000
	2	AM	86	3.0	15	70				
		PM	90	4.0	15					
	3	AM	86	3.0	15	95				
		PM	90	4.0	15					
	4	AM	86	3.0	15	30				
		PM	90	4.0	15					
	5	AM	86	3.0	15	40				
		PM	90	4.0	15					
	6	AM	86	3.0	15	50				
		PM	90	4.0	15					
9/20/91	1	AM	86	2.5	16	50	5.95			310,048
		PM	89	3.5	16				LOOSE	18,000

CONTINUED NEXT PAGE

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
9/12/91	1	AM	85	4.0	14	100				310,048
		PM	91	7.0						
	2	AM	85	4.0	14	105				
		PM	91	7.0						
	3	AM	85	4.0	14	150				
		PM	91	7.0						
	4	AM	85	4.0	14	50				
		PM	91	7.0						
	5	AM	85	4.0	14	45				
		PM	91	7.0						
	6	AM	85	4.0	14	50				
		PM	91	7.0						
9/13	1	AM	84	4.0	15	125	5.45			310,048
		PM	91	8.0						
	2	AM	84	4.0	15	125	5.50			
		PM	91	8.0						
	3	AM	84	4.0	15	130	7.10			
		PM	91	8.0						
	4	AM	84	4.0	15	55	7.15			
		PM	91	8.0						
	5	AM	84	4.0	15	20	5.45			
		PM	91	8.0						
	6	AM	84	4.0	15	55	5.38			
		PM	91	8.0						
9/14	1	AM	86	3.0	16	135				310,048
		PM	91	8.0						
	2	AM	86	3.0	16	135				
		PM	91	8.0						
	3	AM	86	3.0	16	150				
		PM	91	8.0						
	4	AM	86	3.0	16	55				
		PM	91	8.0						
	5	AM	86	3.0	16	30				
		PM	91	8.0						
	6	AM	86	3.0	16	55				
		PM	91	8.0						
9/15	1	AM	87	4.0	14	135				310,048
		PM	92	8.0					LOOSE	18,000
	2	AM	87	4.0	14	135	ON 9/14/91 A HOLE WAS DISCOVERED			
		PM	92	8.0			THE SIZE OF A FIST IN CAGE #5			
	3	AM	87	4.0	14	150	APPROXIMATELY 6,000 FISH ESCAPED			
		PM	92	8.0			TO THE GENERAL POND AREA. WE			
	4	AM	87	4.0	14	55	WILL BE ABLE TO HARVEST SOME OF			
		PM	92	8.0			THESE FISH WHEN THE TIME COMES.			
	5	AM	87	4.0	14	30	ONE CAGE SANK EARLIER WITH SOME			
		PM	92	8.0			12,000 FISH ESCAPING INTO THE			
		AM	87	4.0	14	55	POND. THESE FISH WILL BE CARRIED			
		PM	92	8.0			AS "LOOSE" AS SHOWN ABOVE.			

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
9/7/91	1	AM	86	3.5	14	110			CLOUDY	310,048
		PM	88	5.0						
	2	AM	86	3.5	14	110				
		PM	88	5.0						
	3	AM	86	3.5	14	140				
		PM	88	5.0						
	4	AM	86	3.5	14	40				
		PM	88	5.0						
	6	AM	86	3.5	14	50				
		PM	88	5.0						
9/8	1	AM	87	3.5	15	110				310.048
		PM	92	7.0						
	2	AM	87	3.5	15	110				
		PM	92	7.0						
	3	AM	87	3.5	15	130				
		PM	92	7.0						
	4	AM	87	3.5	15	50				
		PM	92	7.0						
	6	AM	87	3.5	15	50				
9/9	1	AM	85	3.5	14	110				310,048
		PM	90	6.5						
	2	AM	85	3.5	14	110				
		PM	90	6.5						
	3	AM	85	3.5	14	140				
		PM	90	6.5						
	4	AM	85	3.5	14	40				
		PM	90	6.5						
	6	AM	85	3.5	14	40				
		PM	90	6.5						
9/10	1	AM	84	3.5	14	100				310,048
		PM	90	6.5						
	2	AM	84	3.5	14	100				
		PM	90	6.5						
	3	AM	84	3.5	14	110				
		PM	90	6.5						
	4	AM	84	3.5	14	40				
		PM	90	6.5						
	6	AM	84	3.5	14	40				
		PM	90	6.5						
9/11	1	AM	84	4.0	14	100				310,048
		PM	88	7.0						
	2	AM	84	4.0	14	100				
		PM	88	7.0						
	3	AM	84	4.0	14	125				
		PM	88	7.0						
	4	AM	84	4.0	14	55				
		PM	88	7.0						
	5	AM	84	4.0	14	45				
		PM	88	7.0						
	6	AM	84	4.0	14	50				
		PM	88	7.0						

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS FEED	FISH SIZE	MORT	OTHER	#OF FISH
9/2	1	AM	85	3.0	15	120			CLOUDY	310,048
		PM	90	6.0						
	2	AM	85	3.0	15	100				
		PM	90	6.0						
	3	AM	85	3.0	15	170				
		PM	90	6.0						
	4	AM	85	3.0	15	55				
		PM	90	6.0						
	6	AM	85	3.0	15	60				
		PM	85	6.0						
9/3	1	AM	84	3.5	15	120			RAIN	310,048
		PM	86	4.0						
	2	AM	84	3.5	15	120				
		PM	86	4.0						
	3	AM	84	3.5	15	190				
		PM	86	4.0						
	4	AM	84	3.5	15	55				
		PM	86	4.0						
	6	AM	84	3.5	15	55				
		PM	86	4.0						
9/4	1	AM	84	3.5	15	115			RAIN	310,048
		PM	89	5.0						
	2	AM	84	3.5	15	115				
		PM	89	5.0						
	3	AM	84	3.5	15	125				
		PM	89	5.0						
	4	AM	84	3.5	15	50				
		PM	89	5.0						
	6	AM	84	3.5	15	55				
		PM	89	5.0						
9/5	1	AM	84	3.0	14	110			RAIN	310,048
		PM	88	5.0						
	2	AM	84	3.0	14	110				
		PM	88	5.0						
	3	AM	84	3.0	14	140				
		PM	88	5.0						
	4	AM	84	3.0	14	45				
		PM	88	5.0						
	6	AM	84	3.0	14	45				
		PM	88	5.0						
9/6	1	AM	85	3.5	14	110	5.35		CLOUDY	310,048
		PM	88	6.0						
	2	AM	85	3.5	14	110	5.25			
		PM	88	6.0						
	3	AM	85	3.5	14	140	6.75			
		PM	88	6.0						
	4	AM	85	3.5	14	40	6.80			
		PM	88	6.0						
	6	AM	85	3.5	14	50	4.90			
		PM	88	6.0						

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS FEED	FISH SIZE	MORT	OTHER	# OF FISH
8/27	ALL	7AM	87	4.0	15				RAIN	310,048
		4PM	88	5.0	15					
	1					50				
	2					50				
	3					100				
8/28	ALL	7AM	84	3.0	14				RAIN	310,048
		4PM	87	5.5	14					
	1					75				
	2					75				
	3					150				
8/29	ALL	7AM	85	3.0	14					310,048
		4PM	91	3.0	14					
	1					100				
	2					100				
	3					75				
8/30	ALL	7AM	86	3.0	14					310,048
		4PM	90	5.5	14					
	1					75				
	2					125				
	3					225				
8/31	1	7AM	86	4.0	14	110	4.65		RAIN	310,048
		4PM	90	6.0						
	2	7AM	86	3.0	14	110	4.95			
		4PM	90	6.0						
	3	7AM	86	3.0	14	150	6.40			
		4PM	90	6.0						
	6	7AM	86	4.0	14	55	4.65			
		4PM	90	6.0						
9/1	ALL	7AM	86	3.5	15					310,048
		4PM	90	5.5	15					
	1					100				
	2					100				
	3					150				
	6					50				

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
8/19	ALL	7AM	87	3.5	14					310,048
		4PM	92	5.5						
	1					100				
	2					100				
	3					185				
8/20	ALL	7AM	87	3.0	13					310,048
		4PM	92	6.0						
	1					100				
	2					100				
	3					200				
8/21	ALL	7AM	88	3.5	13					310,048
		4PM	93	8.0						
	1					100				
	2					100				
	3					200				
8/22	ALL	7AM	88	3.0	15					310,048
		4PM	92	6.0						
	1					65				
	2					65			WASHED	
	3					120				
8/23	ALL	7AM	87	2.0	14					310,048
		4PM	90	4.5						
	1					90	4.26"			
	2					90	4.53"			
	3					120	5.85"			
8/24	ALL	7AM	86	3.0	15					310,048
		4PM	90	5.5						
	1					100				
	2					100				
	3					150				
8/25	ALL	7AM	86	2.0	14					310,048
		4PM	92	7.5						
	1					100				
	2					100				
	3					150				
8/26	ALL	7AM	87	4.0	14					310,048
		4PM	92	7.0						
	1					100				
	2					100				
	3					150				

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
8/17	1	AM	86	3.5	13	105				310,048
		PM	92	7.0						
	2	AM	86	3.5	13	95				
		PM	92	7.0						
	3	AM	86	3.5	13	150				
		PM	92	7.0						
8/18	1	AM	87	3.5	14	100				310,048
		PM	92	7.0						
	2	AM	87	3.5	14	100				
		PM	92	7.0						
	3	AM	87	4.0	14	175				
		PM	87	7.0						

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
8/10	1	AM	90	3.0	12	75				310,051
		PM	90	5.0						
	2	AM	90	3.0	12	75				
		PM	90	5.0						
	3	AM	90	3.5	12	150				
		PM	92	5.0						
8/11	1	AM	90	3.0	14	50				310,051
		PM	85	3.5						
	2	AM	90	3.0	14	50				
		PM	85	3.5						
	3	AM	90	3.0	14	100				
		PM	85	3.5						
8/12	1	AM	85	2.0	15	75		1		310,050
		PM	90	6.5						
	2	AM	85	2.0	15	75		2		310,048
		PM	90	6.5						
	3	AM	85	2.0	15	140				
		PM	90	7.0						
8/13	1	AM	86	3.0	15	75				310.048
		PM	90	6.0						
	2	AM	86	3.0	15	75				
		PM	90	6.0						
	3	AM	86	3.5	15	170				
		PM	90	7.0						
8/14	1	AM	86	3.0	15	55	2 FISH TO THOMAS/SCREENING			
		PM	92	6.0			OUT OF EACH CAGE FOR DISEASE			
	2	AM	86	3.0	15	50	CONTROL/ 6 FISH TOTAL			310,042
		PM	92	6.0						
	3	AM	86	2.5	15	110				
		PM	92	6.0						
8/15	1	AM	87	3.5	14	75				310,048
		PM	92	7.0						
	2	AM	87	3.5	14	75				
		PM	92	7.0						
	3	AM	87	3.5	14	150				
		PM	92	7.0						
8/16	1	AM	86	3.5	13	80	33/4"			310,048
		PM	92	6.5						
	2	AM	86	4.0	13	80	4"			
		PM	92	7.0						
	3	AM	86	4.0	13	160	51/4"			
		PM	92	7.0						

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
8/3	1	AM		4.0	13	90				310,053
		PM	90	6.0						
	2	AM		4.0	13	80				
		PM	90	6.0						
	3	AM		4.0	13	150				
		PM	90	6.0						
8/4	1	AM		3.0	14	85	23/4"-33/8"			310,053
		PM	88	7.0						
	2	AM		3.0	14	85	21/2"-31/2"			
		PM	88	7.0						
	3	AM		3.0	14	130	37/8"-45/8"			310,053
		PM	88	7.0						
8/5	1	AM	90	3.0	13	100				310,053
		PM	91	7.0						
	2	AM	90	3.0	13	100				
		PM	91	7.0						
	3	AM	90	3.0	13	150				
		PM	91	7.0						
8/6	1	AM	90	2.5	13	85				310,053
		PM	91	7.5						
	2	AM	90	2.5	13	85				
		PM	91	7.5						
	3	AM	90	3.0	13	180				
		PM	91	7.5						
8/7	1	AM	90	4.0	14	85				310,053
		PM	91	6.0						
	2	AM	90	4.0	14	85		-2		310,051
		PM	91	6.0						
	3	AM	90	3.5	14	150				
		PM	92	6.0						
8/8	1	AM	90	2.5	14	100				
		PM	94	8.0						
	2	AM	90	2.5	14	100				
		PM	94	8.0						
	3	AM	90	3.0	14	150				
		PM	94	8.0						
8/9	1	AM	90	3.0	13	100	31/2"			310,051
		PM	94	7.0						
	2	AM	90	3.0	13	100	31/4"			
		PM	94	7.0						
	3	AM	90	3.0	13	150	5"			
		PM	90	7.0						

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
7/24	1	AM	86	2.0	12	85		30 TOTAL		316,203
		PM	90	3.5						
	2					85				
	3					100				
7/25	1	AM	86	5.0	12	30		3,150 TOTAL		313,053
		PM	90	6.0						
	2					30				
	3					40				
7/26	1	AM	87	3.0	12	75	CAGE 4 SANK IN GRADING			313,053
		PM	90	7.0			13,000 LOOSE IN POND			
	2					75	FENCED TO HOLD			
	3					75				
7/27 & 7/28 NO READINGS								3,000 TOTAL		310,053
7/29	1	AM		2.5	15	75				310,053
		PM	90	6.5						
	2	AM		3.0	15	75				
		PM	90	6.5						
	3	AM		4.0	15	100				
		PM	90	7.0						
7/30	1	AM		2.5	15	75				310,053
		PM	89	7.0						
	2	AM		2.5	15	75				
		PM	89	7.0						
	3	AM		3.5	15	100				
		PM	89	7.0						
7/31	1	AM		4.0	10	65				310,053
		PM	90	7.0						
	2	AM		4.0	10	65				
		PM	90	7.0						
	3	AM		5.0	10	100				
		PM	90	7.5						
8/1	1	AM		4.0	16	100				310,053
		PM	89	7.0						
	2	AM		4.0	16	100				
		PM	89	7.0						
	3	AM		3.5	16	140				
8/2	1	AM		5.0	14	100				310,053
		PM	90	7.0						
	2	AM		5.0	14	100				
		PM	90	7.0						
	3	AM		5.0	14	125				
		PM	90	7.0						

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
7/12	1&2	AM	86	3.0	12	200	21/8"-31/2"	10		317,731
		PM	90	7.0						
7/13	1&2	AM	85	3.0	12	210		48		317,683
		PM	90	7.0						
7/14	1&2	AM	85	3.5	12	215		1,300		316,383
		PM	90	6.0						
7/15	1&2	AM	88	3.5	11	50		50	GRADING	316,333
		PM	90	7.0						
7/16	1&2	AM	88	3.0	12	150		50	GRADING	316,283
		PM	90	7.0						
7/17	1&2	AM	84	3.0	10	200		10	GRADING	316,273
		PM	90	7.0						
7/18	1&2	AM	84	3.5	12	100			GRADING	316,273
		PM	90	8.0						
	3					50				
7/19	1&2	AM	87	4.0	14	150		10		316,263
		PM	90	8.0						
	3					50				
7/20	1&2	AM	89	4.0	13	150		5		316,258
		PM	90	8.0						
	3					100				
7/21	1&2	AM	89	3.0	13	150			ALL GRADED	316,258
		PM	90	8.0						
	3					100				
7/22	1	AM	89	3.5	13	100		20	TOTAL	316,238
		PM	90	5.0						
	2	AM	89	3.5	13	100				
		PM	90	7.5						
	3	AM	89	4.0	13	100				
		PM	90	6.0						
7/23	1	AM	87	3.5	12	100		5	TOTAL	316,233
		PM	90	8.0						
	2	AM	87	3.5	12	100				
		PM	90	7.0						
	3	AM	87	4.5	12	100				
		PM	90	7.0						

DATE	CAGE#	TIME	TEMP	DO	SAL	LBS. FEED	FISH SIZE	MORT	OTHER	# OF FISH
6/25/91	1	AM	85	6.5	00	25	1"	-0-		100,000
		PM	88	9.0						
6/26	1	AM	86	4.5	00	35	1"	-0-		100,000
		PM	88	6.3						
6/27	1	AM	86	3.5	00	40		200		99,800
		PM	88	6.3						
6/28	1	AM	87	4.4	00	50		-0-		99,800
		PM	88	6.5						
6/29	1&2	AM	88	3.9	00	100		-0-		317,800
		PM	89	8.2	00					
6/30	1&2	AM	88	4.5	00	150		-0-		317,800
		PM	89	7.2	00					
7/1	1&2	AM	88	4.5	12	150		-0-		317,800
		PM	90	6.5						
7/2	1&2	AM	88	4.0	11	200		-0-		317,800
		PM	90	7,0						
7/3	1&2	AM	89	4.5	14	275		3		317,797
		PM	90	7.0						
7/4	1&2	AM	89	3.0	13	300		11		317,786
		PM	90	7,0						
7/5	1&2	AM	89	2.0	12	225		-0-		317,786
		PM	90	7.0						
7/6	1&2	AM	86	3.5	13	150		10		317,776
		PM	90	5.0						
7/7	1&2	AM	86	3.5	11	150		20		317,756
		PM	90	6.0						
7/8	1&2	AM	86	3.8	12	170		15		317,741
		PM	90	7.0						
7/9	1&2	AM	86	4.0	13	180		-0-		317,741
		PM	90	6.5						
7/10	1&2	AM	86	4.0	12	200		5		317,736
		PM	90	8.0						
7/11	1&2	AM	86	4.5	12	250		5		317,731
		PM	90	7.5						

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

June 3, 1992

Mr. Alex J. Plaisance, Jr.
President/CEO
John Plaisance & sons, Inc.
Perrilliat-Michoud
Aqua Farms, Inc.

Dear Mr. Plaisance:

Governor Edwards forwarded to us a copy of your correspondence relative to mariculture in the coastal marshes. The Governor and the Department appreciate your thoughts and comments on this subject and thank you for your insight.

The Department is particularly sympathetic with your views about the differences between mariculture and entrapment. We have also communicated those views to the chairman of the House Natural Resources Committee. As you are well aware, we have attempted to work within the framework established by RS 56:579.1 addressing experimental mariculture in coastal Louisiana. We will continue to carry out any new mandates or changes in existing law that are given to us by the legislature. That not-withstanding, the Department is ill equipped to assume some of the changes envisioned by recent legislation.

We also share your views that mariculture can and should be allowed to develop into a viable industry in the state. We believe that with properly crafted and reasonable legislation and regulation, we can accomplish that goal together.

Thank you once again for your comments.

Sincerely,

Joe L. Herring
Secretary

JLH/MBW/mw
cc: Governor's Office

John J. Plaisance 1892-1967
Alex J. Plaisance, Sr. 1915-1975
J. Wayne Plaisance 1935-1988
Kip J. Plaisance, Sr. 1938-1988

JOHN PLAISANCE & SONS, INC.

2502 South Bayou Drive
GOLDEN MEADOW, LOUISIANA 70357
Tel./FAX.: (504) 475-6128

Alex J. Plaisance, Jr.
President
Marlene I. Plaisance
Secretary/Treasurer

May 18, 1992

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Hon. Edwin W. Edwards, Governor
STATE OF LOUISIANA
P.O. Box 94004
Baton Rouge, LA 70804

Hon. Samuel B. Nunez, President
LOUISIANA STATE SENATE
P.O. Box 94183
Baton Rouge, LA 70804

Hon. John Alario, Jr., Speaker
LOUISIANA STATE HOUSE OF REPRESENTATIVES
P.O. Box 94062
Baton Rouge, LA 70804

Hon. Sam H. Theriot, Chairman
NATURAL RESOURCES COMMITTEE
LOUISIANA STATE HOUSE OF REPRESENTATIVES
P.O. Box 94062
Baton Rouge, LA 70804

Hon. Oswald A. Decuir, Chairman
NATURAL RESOURCES COMMITTEE
LOUISIANA STATE SENATE
Baton Rouge, LA 70804

Dear Governor, Mr. President, Mr. Speaker & Misters Chairmen:

Jobs are being lost by the hundredfold, ultra liberal environmentalists are going unchallenged, ultra conservatives expound on the so called virtues of no regulations, governments are becoming more antagonistic and obstructionistic and the entrepreneur is being penalized for his efforts and successes. It is extremely difficult, if not impossible, to build on the "State Fisc" under such circumstances.

As of late, much adverse criticism has been heaped on Mariculture. Unfortunately, the bulk of the flack is based on ignorance, misconception and an outright attempt at the socialization of the wetlands.

Mariculture, simply defined is Aquaculture in the Coastal Zone. It is the cultivation of domesticated marine animals separate and apart from the wild stock. The manipulation, use, exploitation or otherwise management of wild stock is not Mariculture. Too often projects dealing with wild stock are placed under the guise of Mariculture so as to achieve some level of legitimacy. As much as some might try to link the two together, wild stock has nothing to do with Mariculture and Mariculture has nothing to do with wild stock.

In fish farming, as in any other farming, in order to cultivate (culture) one must first sow. Once sown, the fish then need cultivating, separate and apart from the wild stock, in order to achieve proper grow out ready for reaping. If one does not sow, then the reaping cannot be classified as Mariculture.

The set up costs for fish farming in the coastal zone is astronomical. Thus far, Perrilliat-Michoud Aqua Farms, Inc., of which I am President/CEO, has in its first year invested in excess of $700,000.00. This amount includes fish inventory, fish feed, equipment, operations and maintenance, insurance, payroll, marine biological consultation and etc. Prior to our first harvest (which we have not experienced as of yet), PMAF, Inc., will have invested an approximate total of $850,000.00. Our fish inventory consists of Hybrid Striped Bass and Red Fish, all purchased form legal hatcheries, delivered to the farm by truck and placed in cages in abandoned sand pits separate and apart from any wild stock.

This same type of operation also exist on other fish farms in the coastal zone. Any information contrary to the above emanates from uninformed, obstructionist people whose agenda is not served through the multiple use of the wetlands.

The truth is that Aquaculture/Maricluture has the potential to become a major industry for our State. The entrepreneurial efforts toward its success should be aided and encouraged based on facts rather than the heresay of the uninformed.

Please feel free to call on me should you have any questions. Arrangements can be made for you to visit and observe a farm in operation.

Sincerely,

Alex A. Plaisance, Jr.
President/CEO
John Plaisance & Sons, Inc.
Perrilliat-Michoud
Aqua Farms, Inc.

cc: Senate & House Natural Resources Committee Members

Phone (318) 232-7745

(318) 232-7749

C. Barry Greer
P. O. Box 52341
Lafayette, Louisiana 70505

March 31, 1992

Chairman LDWF Commission
P.O. Box 298
Simmsboro, La. 71275

Attn: Mr. Bert Jones

Dear Mr. Jones:

I am writing as a concerned fisherman regarding the attempt to place Red Fish back on the commercial status.

I thought this issue was finally put to rest, but it seems the commercial industry is again trying to halt the progress we have made in renewing our Red Fish resource.

The trouble with a commercial harvest has been and always will be the lack of agents required to police the allowable. With our vast coastline it is impossible to monitor all of the places that can be used for boat landings and please don't think we believe in Voluntary reporting. I used to fish out of Burns Point in St. Mary Parish and the manager of the Park used to complain about the gill netters that came in late at night. At that time there was a commercial limit, but there was no way you could keep an agent there all night to check the landings and if you did all they had to do is move over a few hundred yards to the Exxon dock facilities. The Park Manager estimated these fishermen brought in between 5,000-7000#'s of Red Fish one weekened.

We have fought hard to bring this resource back from near depletion and I can only hope you can preserve our small gains. If I can help feel free to call.

Yours very truly,

C. Barry Greer

H. EDWIN McGLASSON
W. GERALD GAUDET
RICHARD D. CHAPPUIS, JR.
WILLIAM M. BASS
ROBERT A. LECKY
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OF COUNSEL
JOHN W. HUTCHISON

March 29, 1993

Mr. Burt Jones
Post Office Box 298
Simsboro, LA 71275

Re: Redfish Status

Dear Burt:

It is my understanding that there is an effort on the part of the commercial fishing interest to return redfish to status that would permit "gill net commercial harvest."

As a lifelong resident of South Louisiana and a saltwater sportsman, I do not feel such action would be in the best interest of the state and hundreds of thousands of fishermen or to the local economies who reap the benefits from fishermen who come here to fish redfish, speckled trout, etc. I am certainly not alone in these feelings and urge the Commission to oppose any efforts to change redfish status to permit commercial harvesting.

Sincerely,

William M. Bass
WMB/pt

The

MIKE-BAKER BRICK COMPANY, INC.

PHONES: (318) 234-1439 — (318) 234-1430 — (318) 232-3434

P. O. BOX 51234
LAFAYETTE, LA. 70505

3-29-93

Dear Mr. Jones,

Terry Morton has asked me to write to you and thank you for your vote and support that you have for G.C.C.A. and the recreation fisherman in the past.

Please allow me to express my support not to cut the "Red Fish" items on the agenda at the legislative meeting.

Your continued interest and support is much appreciated.

Your Truly

Terry W. "Lee" Baker
President

REPRESENTATIVES OF OLD BRICK:

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ST. LOUIS OLD
PATIO BRICKS
ANTIQUE BRICKS
FACE BRICKS
MANHOLD BRICK
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U. S. BRICK
HOLLY SPRINGS BRICK
COLUMBUS BRICK
HENRY BRICK
TEXAS CLAY BRICK

Mr. Bert Jones, Chair
LDW+F Comm.

3/25/93

Dear Mr. Jones,

Please don't let your guard down when it comes to Speckled trout and Redfish, I know Lee John and constituents are a pain in the ass, but people like you and Jimmy Jenkins are our last line of defense. There are a few senators + representatives who we can depend on to protect our resources, but I think Edwin would like to see the commercials back in business as part of his committment and being controlled by the Mafia who also control the entire seafood industry.

It is truly ashame that the illiterate and uneducated masses of this state continue to be manulipated for the sake of a few payolla dollars

to the detriment of the majority of the tax paying citizens. When you deal in a cash business like the commercials do, how can you verify anything from a tax return or whether or not quotas are being adhered to or not, you can't.

We continue to be the laughing stock of the gulf coast; Florida, and Texas have outlawed all gill nets because their resources were totally depleted and on the verge of collapse. So they come to Louisiana who still lets outlaws operate legally. How stupid! Gill nets fish constantly whether the tides coming in or going out, whether the water is clear or dirty, whether it is raining or sunshining, hot or cold, or whatever. If you must have a commercial season for specs + reds make it a hook + line, or rod + reel commercial permit only.

If we would let our specs and reds grow to full potential, we would have people coming down from Montana, Colorado, Nebraska, Iowa, etc to fish trophy specs, the same as we have people leave here and go up there to hunt trophy mule deer. Our tourism industry would certainly benefit.

What we really need is a proposal to discontinue all inland trawling for shrimp inside the three mile limit, and all inland waterways and bays. This is not so redundant when you figure the damage done to the environment and the massive by-catch of resources that is destroyed. We probably destroy 10 lbs of by-catch for every two 2 lbs of shrimp caught, just think if we let all of this more grow-up what we might have. If we can get such a proposal brought up

obviously it will help the fisheries resources, but an additional benefit is the possibility that when this thought finally penetrates into Lee Johns' pea size brain, it may just trigger a massive coronary or stroke where by we wouldn't have to listen to his babbling ranting and raving anymore.

If Louisiana is to ever reach its full potential as a Sportsmans Paradise it needs to first, outlaw all gillnets, and second, close all inland waters to commercial or recreational shrimping.

Best of luck to you guys and my sincerest thanks for the job you're doing, you are appreciated.

Regards

Hank B Barber

P.S. If I can help get such a proposal introduced let me know.

P.O. Box 4-1209
Lafayette, La. 70504
318-231-6922 - office
318-235-6534 - home

From the Desk of

KENNETH R. TUMINELLO

Mar 27, 1993

To: Bert Jones, Chairman LDWF Commission

Re: Red Fish

Dear Bert,

Please count this citizen and recreational fisherman as being opposed to monthly reconsideration of the Commission's action in February not to allow commercial harvest of red fish. Please feel supported in the Commission's action not to allow commercial harvest of red fish. Thanks for your leadership in conserving Louisiana's natural resources and all effort's that encourage public recreation and tourism! Stay the course and best wishes / Good Luck!

Ken Tuminello
P.O. Box 66357
Baton Rouge LA
70896

____ See me.
____ Needed by: _____

Mr. Bert Jones
Chairman
L D W F Commission
P.O. Box 298
Simmsboro, LA 71275

Dear Mr. Jones:

Please do not allow the "RED FISH" item to be put back on the agenda for your April meeting. This issue has been settled and should stay that way. The Commission followed the laws in making their recommendation and that should be final.

Sincerely,

Harland B Rousseau

STAR

SERVICE, INC. OF BATON ROUGE

March 24, 1993

MR. BERT JONES
BOX 298
SIMMSBORO, LA 71275

Dear Bert:

This formal request is made not only for me but also for the state. I ask that every possible means be employed to preserve the Speckled Trout and Redfish resources we now have. Commercial fishing is the greatest threat to this resource and provides very little return to the state. Commercial fishing benefits few as opposed to the hundreds of millions of dollars recreational fishing generates for our economy.

Please do not allow continued debate on the issue. It has been dealt with for now and should not be allowed back on the agendas of future WLF meetings.

Sincerely,

Michael G. Miller
President

MGM/mc

527 N. Acadian Thruway, P.O. Box 65103, Baton Rouge, LA 70896, Phone: (504) 383-0306, FAX: (504) 387-6411

LINC SERVICE

ALEXANDER M. CRIGHTON, III
P. O. Box 3005
Houma, Louisiana 70361-3005
(504)872-9635
or
(504)851-4743

March 22, 1993

Mr. Bert Jones, Chairman
Louisiana Department of
Wildlife and Fisheries
P. O. Box 298
Simmsboro, Louisiana 71275

Re: **Redfish Status**

Dear Mr. Jones:

It is my understanding that the special interest group represented by Mr. Tee John Malcovich at the Commission meeting in February was out-voted 4 to 3 on the issue of the gamefish status of the redfish. In spite of this matter having been resolved in February, it has come to my attention that Mr. Malcovich intends to have this very same issue put on the agenda of the April 1 Commission meeting.

I am an avid recreational fisherman, and I feel certain that you have read your share of letters from other coastal anglers expressing outrage at having the recreational limit reduced to allow for a commercial redfish harvest. Since I believe you already know my position on this issue, I will simply say that this matter should not be put on the agenda of the April 1 Commission meeting because **the matter has been resolved.**

Thank you for your cooperation.

Sincerely yours,

ALEXANDER M. CRIGHTON, III

agc

March 23, 1993

Mr. Robert E. Bush
18621 Beaconwoods Drive
Baton Rouge, LA 70817

Mr. Bert Jones
PO Box 298
Simmesboro, LA 71275

Dear Bert,

I am writing this letter as a concerned sportsman in Louisiana. During the past few months I have watched as the Redfish issue continues to be brought before the Commission. It was only a short time ago that Redfish in Louisiana were almost wiped out. With the combination of over harvest by commercial fishermen and the freeze, the Redfish population in Louisiana had diminished to the point it became almost impossible to catch a fish. The commercial fishermen in this State have had the attitude for a long time if there was one fish in the water they would try to catch it. We were able to control this situation by making the Redfish a game fish. Had it not been for that legislation I am convinced we would be in the same situation as Florida and other States where Redfish is almost extinct.

We came up with a logical solution to this problem. The sportsmen of this State took an active role in agreeing to reduce their limit to five per day with a minimum length provision. These conservation efforts have allowed the Redfish to start to come back to our area. Just as we are starting to see some improvement in the population, the commercial fishermen are coming forward again crying they need this fish to survive. Restaurants and commercial entities of this State have fared well in the last couple of years without the Redfish on the table. I believe they can continue to fare well with the Redfish as a game fish.

It is depressing to me as a sportsman to see commercial interests raising their head in form of members on the Commission trying to do away with what is a very conservative posture. The problem has been solved. With a 4 to 3 vote by your Commission, you should allow this issue to rest and not continue to place this item on your Agenda of meetings.

It only takes a few hours to ride around the coast of this State and see the money recreational fishermen spend. If you look at the bait shops, the marinas, boat dealers, and construction of camps it becomes obvious the money spent by recreational fishermen has a true impact on the economy of this State. The recreational fishermen are willing to spend the money if they can catch fish. If the Commission and the Commissioner continue to hammer at these issues and make it where we cannot catch fish, people will stop spending this money on recreational fishing and spend it elsewhere.

I congratulate you and other members of the Board who have fought hard to continue this battle. Your efforts are very much appreciated by recreational fishermen throughout this State.

Sincerely,

Bob Bush

BB/mmc

P.S. See attached newspaper article and my letter to the Times Picayune.

cc: Mr. Henry Mouton
101 Myrtle Place
Lafayette, LA 70506

Wildlife agency trapped in past?

The state Department of Wildlife and Fisheries has entered a precarious transition phase as a result of our society's changing recreational pursuits. There is cause to wonder if the agency's leaders and, for that matter, the governor and members of the Legislature are in step with the times.

The preservation of wildlife habitat and supporting traditional recreational activities, primarily hunting and fishing, remain two of the agency's primary missions. But, based on the public's growing interest in other outdoor activities, such as bird-watching, hiking, wildflower appreciation, canoeing, etc., the time has come for the department to expand its mission and, with it, its expanding constituency.

Department Secretary Joe Herring, faced with persistent financial problems in part because of declining revenues from hunting and fishing licenses, should embrace the opportunity to build a broader constituency base and the potential increased financial support it will bring. In the effort, he should have the encouragement of the administration and legislators who care enough to recognize the new opportunities.

Bob Marshall, The Times-Picayune's outdoor editor, notes that all professional studies indicate that the primary area of growth for state wildlife agencies is in habitat conservation and the broad range of recreational activities, including hunting and fishing, it sustains.

Secretary Herring insists he recognizes the importance of habitat conservation and such programs as Natural Heritage, which accommodates recreational activities other than hunting and fishing. But his record seems to indicate otherwise.

Mr. Herring, a veteran wildlife official who was brought out of retirement by Gov. Edwards, promptly abolished the Habitat Conservation Division as a cost-cutting measure. The Natural Heritage Section, which enjoys strong support among such groups as the Audubon Society and the Sierra Club, was relocated to the Office of Wildlife, which has traditionally been concerned with game birds and animals. Subsequently, $36,000 of lottery money the Legislature had appropriated for the financially pinched heritage program was eliminated by a budget-cutting Division of Administration.

Later, all pelican and bald eagle programs were transferred from Natural Heritage to the Rockefeller Wildlife Refuge.

Audubon Society members and others view these and similar actions as not merely reflective of administrative short-sightedness and budget restrictions but as indicative of official hostility to non-hunting and non-fishing interests.

Not so, says Secretary Herring. And yet there is ample cause to wonder if state officials have a clue about the inherent capacity of an enlightened Wildlife and Fisheries not only to pay more of its own way but to enhance tourism and other recreation-based industries as well.

More and more Louisianians are saying it is time for this important agency to adjust to the public's changing recreational needs.

We are confident that many Louisianians who hunt and fish will support the change. After all, many who hunt and fish are ardent bird-watchers as well.

T-P 3/15/93

Tucan -
What better opportunity to write a letter to the editor about La's lack of Recreational Fishing Promotion? LWF doesn't want to do that because they know it would be at the expense of

Mr. Robert E. Bush
11764 Haymarket Drive
Baton Rouge, LA 70816

March 23, 1993

Editor of the Times Picayune
3800 Howard Avenue
New Orleans, LA 70140

Dear Sir,

I read with interest the article which appeared in your newspaper entitled "Wildlife Agency Trapped in Past". As a recreational sportsman I agree 100% with the statements you made. Louisiana is blessed with outstanding outdoor recreation of which our greatest asset is salt-water fishing. Recreational fishermen in this State spend literally millions and millions of dollars on this sport. However, the Game & Fish Commissioner and some members of the Game & Fish Commission continue to try to harm this industry. The commercial interest of this State would gill net the last fish swimming in the waters of this State if they were allowed to. Through the efforts of a hand full of concerned sportsmen we were able to inact a game fish law for Redfish. Now that law is threatened at the very time that the Redfish is just starting to come back to our State.

I applaud you for the article and I assure you that recreational sportsmen throughout the State agree with your statement that you wonder if Secretary Herring has a clue about the inherent capacity of an enlighten wildlife & fisheries, not only to pay more of its own way, but to enhance tourism and other recreational based industries as well.

I appreciate very much the stance that your paper took in writing this article and assure you that we as concerned sportsmen support stronger game laws for Redfish and Speckled Trout in Louisiana waters.

Sincerely,

Bob Bush

BB/mmc

J. HARRY HEBERT
P. O. DRAWER 30519
LAFAYETTE, LOUISIANA 70593
318/984-2010
318/984-8591

March 23, 1993

Bert Jones
Chairman of LDWF Commission
P. O. Box 298
Simmsboro, LA 71275

Dear Mr. Jones,

Louisiana has taken steps forward in protecting the Louisiana red fish. I urge you not to allow any steps backwards that would devastate, again, the red fish population.

The supposed legal fishing of speckled trout with gill nets still continues and those same gill nets do not know the difference between a red fish, a speckle trout, white trout, sheephead, or mullet; they catch them all. The law that mandates that these nets must be attended is ridiculous. In fishing Louisiana waters, we have come upon many, many nets with no one in sight. Upon returning hours later, still there is no one in sight.

I complement you and the other three members who took a firm stand in not allowing the action of Mr. Tee John Malivcih in his attempt to again allow a red fish harvest. The commercial fisherman have no respect for any type of limits, rules or laws.

The commercial fisherman would be much better served if they were to help promote the red fish fishing and speckle trout fishing. If they were to become guides for fisherman they would reap much greater profits, an easier life style, more rewarding and our total economy would be much better served and richly rewarded.

In this endeavor also, the La. Wildlife Federation and the State of Louisiana need to promote the fact that Louisiana has guides, has boats available to take out-of-state fisherman into the marshlands of Louisiana and experience some of the best fishing in the world.

I read a publication put out by Louisiana Wildlife and Federation about rod and reel fishing stating that it is an established fact that rod and reel fisherman cannot deplete any fishery.

Again, thank you for your strong stand and keep up the good work.

Yours truly,

Harry Hebert mh

Harry Hebert

HH/mh

March 22 1993

Jep E. Turner
1001 Fairoak Lane
Lake Charles, La. 70605

Rep Randy Roach
4830 Lake Street
Lake Charles, La. 70605

Dear Randy:

As you are aware, I have long been an advocate for the conservation of Red Fish and Speckled Trout, as well as the right of the Commercial Fisherman to his fair share through the quota system. Many so-called solutions have been initiated by the Legislature to document the commercial catch but has failed in each instant due to a shortage of State funds. A system has to be devised that will be cost effective, costing the State little or nothing, while at the same time, enabling the enforcement of the quota system. What I am going to suggest is radical but in my opinion, radical measures are called for since nothing else seems to work.

I will go back several years to the period prior to the Texas ban on Red Fish and Speckled Trout. At that time the main port of entry for the City of Houston for Red Fish and Trout was Seabrook, Texas. When Game Fish status was placed on Trout and Reds by the Texas Legislature, there was a brief interruption in the supply, but only briefly. The slack was taken up by the illegal shipment of undocumented fish from Louisiana, mainly from Calcasieu Lake. This is possible because the mere placing of a label with the name of the state of origin is all that is necessary to make them legitimate in out of state markets. This ready market for Trout and Reds continues unabated at the present time and is responsible for the rape of these resources from this small body of water, which will eventually collapse due to over-harvesting and under-documentation.

Since these undocumented fish are shipped within the state and across State borders, they should be declared by the Legislature as contraband and severe penalties imposed for violations. The State of Louisiana and the neighboring states could then treat these undocumented shipments as illegal shipments and importations of contraband, seizing the Fish and fining the Businesses involved. This has to stop and the only way is to make it very expensive for those Businesses in State and out of State who purchase these un-documented illegal fish.

The commercial fisherman cannot complain about such legislation because to do so would be an admission of guilt on his part.

As you have always treated my presentations and ideas with respect and consideration, it is with high hope that you will

treat this presentation with utmost urgency. At the present time, there are three lines of nets set from Long Point to the East shore of Calcasieu Lake making it impossible to navigate the length of the Lake. This is not heresay because I witnessed it Sunday, March 21st and in spite of my best efforts, ran through two of them, fowling my props. How long will this condition exist before corrective measures are taken?

Sincerely,

Jep E. Turner

Jep E. Turner

cc: La. Fisheries Commission
La. GCCA
Texas Parks and Wildlife
Texas GCCA

R. BRADY BROUSSARD
Mayor

• CITY OF •
ABBEVILLE
SINCE 1850

March 24, 1993

Mr. Bert Jones
Chairman
L D W F Commission
P.O. Box 298
Simmsboro, LA 71275

Dear Mr. Jones:

Please do not allow the RED FISH item to be put back on the agenda for your April meeting. This issue has been settled and should stay that way. The Commission followed the laws in making their recommendation and that should be it.

Respectfully yours,

Mark Piazza,
City Councilman
Abbeville, LA

MP:wfb

COUNCILMEN:
NORMAN BROUSSARD
Councilman at Large, Mayor Pro Temp
MARK PIAZZA
District A
HAROLD LEMAIRE
District B
CARBETT DUHON
District C
HERBERT MYLES
District D

City of Abbeville
101 N. State Street
Abbeville, LA 70510-5146
(318) 893-8550
Fax. (318) 898-4298

MIKE D. HARDY
Chief of Police
SUZANNE C. ZAUNBRECHER
Secretary-Treasurer

Mr. Bert Jones
Chairman
L D W F Commission
P.O. Box 298
Simmsboro, LA 71275

Dear Mr. Jones:

Please do not allow the "RED FISH" item to be put back on the agenda for your April meeting. This issue has been settled and should stay that way. The Commission followed the laws in making their recommendation and that should be final.

Sincerely,

Tony J. Broussard

Tony Broussard

Broussard's Pharmacy
Rene Broussard & Pete Aucoin
Pharmacists

600 WEST ST. PETER STREET
NEW IBERIA, LA. 70560-3695
(318) 364-2381

March 19, 1993

Mr. Bert Jones
P.O. Box 298
Simmsboro, La. 71275

Dear Bert:

I attended your LDWF Commission meeting in February and found it very informative.

In as much as the Red Fish issue was settled at the meeting, I would like to urge you not to put it on the agenda for other meetings this year.

Many thanks for your concerned efforts as head of this commission.

Sincerely,

Rene Broussard

RENE L. BROUSSARD

Barry Colligan
Rt. 2, Box 278
Port Sulphur, La. 70083

Representative Frank J. Patti
113 Ft. Jackson Street
Belle Chasse, La. 70037

Ref: The Wanton Waste of Gamefish Status Redfish Through the Continued Use of Unattended Nets (Set Nets)

Dear Representative Patti:

This letter is written in accordance with your request made at our meeting in your office in Belle Chasse on July 22, 1992.

My purpose is to ask you to take a leading role in correcting a dangerous and deteriorating situation that occurs every year from late Spring to early Fall seriously affecting the welfare and continued existence of the Redfish stock in the Inside Waters of Plaquemines, St. Bernard and Jefferson Parishes.

Though currently prohibited by State Law, the use of unattended nets is nevertheless common and takes place constantly due to a law that seems to be unenforceable as well as a deliberate disregard by certain fisherman who disregard the long-term consequences of their actions in favor of an immediate salable catch.

There are hundreds--if not thousands--of sport and recreational fishermen just like me who are tired of going to their favorite fishing grounds only to find them blocked off or surrounded by unattended nets filled with dead rotting Redfish.

As you know, a set net is secured to the shore line and water bottom and left in place day or night to trap those fish of whatever species which may encounter the mesh.

The Redfish is considered a TRASH FISH by some of these fishermen because it has no salable value and is treated in the same manner that a crab or catfish could be. That is, if while running or checking their nets they come across a crab, catfish or redfish that is not already dead from the length of time of being in the net or because of the water temperature during the summer months, it is mashed or beaten with a stick until dead so it won't get caught in the nets again when it is thrown back into the water.

There is a double threat in the use of these nets in Louisiana's Inside Waters. They aren't just catching and killing any Redfish; but, because of the mesh size of the webbing--5-1/2 and 6-inch stretch--these nets are catching and killing the 27-inch fish and larger ones. The same SLOT FISH that Louisiana, by Law, hopes to return to the Gulf of Mexico to become the future breeding stock of Redfish.

An impression is created that the group of fishermen using these types of nets act apparently in total disregard of Laws, Regulations, or Proper Conservation Practices. I do not include in this category those true commercial fishermen who are knowledgeable and law-abiding as well as interested in the practice of conservation to insure the future of their livelihood. It is not my purpose to condemn legal fishery practices but only those practices which are clearly contrary to law and sound conservation. Nor is it my intention to obtain any advantage for the Recreational Fishery at the expense of Proper Commercial Fishing.

It seems to me that a segment of the sport and recreational fishermen along with our lawmakers have become unconcerned with the welfare of the Redfish since becoming a Gamefish. Maybe they don't remember the long fought battle of the middle to late 1980's for Redfish to reach Gamefish status!

In my opinion, Redfish and Speckled Trout are to Louisiana what Bonefish and Snook are to Florida in regards to the recreational economic value. Is there any other state that has the quantity or quality of Redfish that Louisiana has; if so, why do so many out-of-state fishermen come here to catch Redfish?

I hope that you are aware of the huge economic value of the recreational fishery which is said to far exceed that of the commercial fishery. Both, however, are economic assets; and, both are doomed if something is not done in the immediate future to insure their continued existence.

It would be no problem for me to obtain many signatures on a Petition asking for your assistance and support; and, should you desire, I will undertake to do so and enlist the aid of other persons also interested in the problem. However, without your aid, assistance, and strong evidence of concern; we, as your constituents, have very little hope that we could accomplish anything.

I cannot believe that you are solely concerned with the interests of commercial fishermen; and, I hope that you have the vision and foresight to recognize that unless something is done about the continued use of unattended nets, none of us--Commercial or Recreational--may be able to enjoy either fishery in the future. There are two steps which might be taken in order to truly protect our vital Redfish resource.

- I suggest that you promote as a first measure the closing of all Commercial netting of fish in Louisiana's Inside Waters at the same time the Speckled Trout Season is closed during the Summer months.

- As a second measure, Strike Fishing only would be allowed in Louisiana's Inside Waters if there is no closure of Netting. When Strike Fishing, usually only one net is used and is actively worked; that way the undesired catch can be released before death or spoilage. A fisherman using Set Nets usually has a minimum of 20 nets at lengths of 100 to 1200 feet.

It is my firm opinion that only the two measures listed above would truly protect the Gamefish status Redfish in Louisiana's Inside Waters.

It is time for South Louisianians to quit taking our great fishing--our so-called BILLION DOLLAR SPORT FISHING INDUSTRY for granted--nothing lasts forever! Our good time will only last as long as our inside marshes, our estuary, our hatcheries will last, but that's another story.

I would appreciate the opportunity of having a further discussion with you after you have had a chance to give consideration to the above.

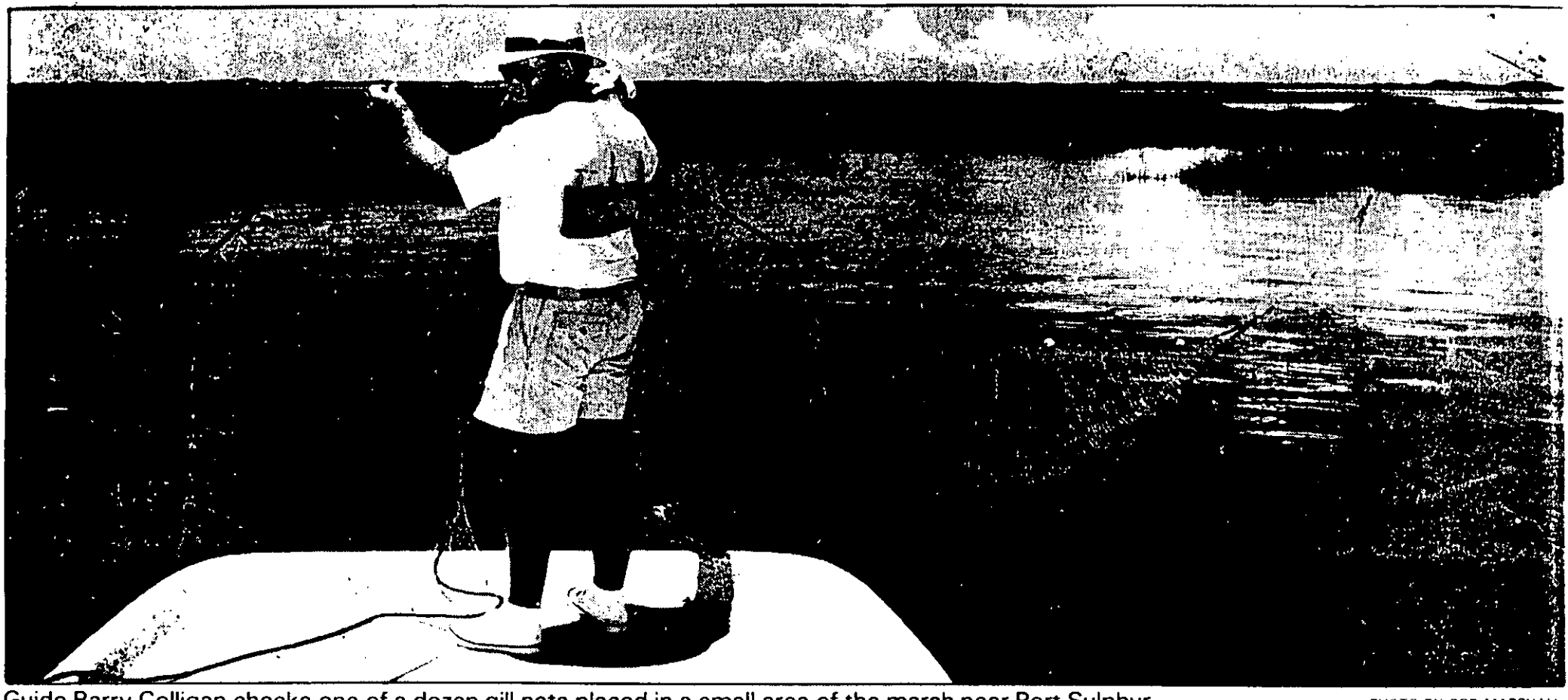
Very truly yours,

Barry Colligan

Barry Colligan

Enclosures

cc: Senator Sammy Nunez, Jr.
Representative John A. Alario, Jr.
Maumus F. Claverie, Jr., G.C.C.A.
Judge Michael Kirby
District Attorney Darryl W. Bubrig, Sr.
Louisiana Wildlife Federation
Jimmy Jenkins, Jr., W.L. & F. Commission
Bob Marshall, Outdoors Sportswriter, Times Picayune



Guide Barry Colligan checks one of a dozen gill nets placed in a small area of the marsh near Port Sulphur. PHOTO BY BOB MARSHALL

Unattended nets are wreaking havoc

Angler Barry Colligan was not happy. Two hours after pulling into a series of shallow lagoons near Port Sulphur he found his fishing area bordered by a dozen gill nets.

Commercial netters, who arrived shortly after Colligan, had busily placed their gear along the edges of marsh ponds, hoping to trap fish when the high tide began falling.

Colligan, although fenced off from some prime fishing areas, wasn't trapped by the webbing. But it wasn't much comfort; as soon as the nets were down, the commercial fishermen disappeared beyond the horizon.

State law prohibits unattended nets.

"It's been like this since April and it's only getting worse," said Colligan, a guide based in Port Sulphur. "They leave these nets out overnight almost all the time. By the next morning the things are filled with dead fish — plenty of them reds.

"Since this started in April we've seen the redfish in these ponds just get decimated. Before four men could catch their limits and be back at the dock by 10. And the reds were all over 18 inches.

"Now we have to work for them, and the fish are smaller."

Commercial fishing for reds has been banned for three years, and the trout season has been closed since May. However, multifilament gill nets of large webbing are legal for other species such as drum, gar and sheepshead.

"The commercials are fishing primarily fishing for drum; they throw the reds away," Colligan said. "The problem is by the time they check their nets in the morning, most of the reds are dead. You can see them floating in the marsh."

Colligan, a former game warden, said the Department of Wildlife and Fisheries enforcement agents are "doing the best job they can with the resources available, but it isn't enough to prevent the damage."

His solution: strike netting. In that type of fishing netters place their webbing out, then drive fish toward the net usually with their boats. The nets are then taken back in and checked almost immediately.

"I have no problem with these guys trying to make a living with their nets, only with the fact the law can't be enforced," he said. "In my opinion these over-night, unattended nets is the reason the redfish in this area are getting knocked back to the freeze days."

Bob Marshall

DECLARATION OF EMERGENCY

Department of Wildlife and Fisheries
Wildlife and Fisheries Commission

The Louisiana Department of Wildlife and Fisheries and the Mississippi Department of Wildlife, Fisheries and Parks initiated a management program on Eagle Lake in Madison Parish in 1992. The first step of the management plan, a controlled drawdown, was successful in producing a large number of fingerling black bass (Micropterus spp.). In order to ensure and accelerate the recovery of black bass in Eagle Lake, and, in accordance with the emergency provisions of R.S. 49:953(B) and R.S. 49:967(d), the Administrative Procedure Act, and under the authority of R.S. 56:326.3, the Wildlife and Fisheries Commission does hereby enact the following emergency rule:

> It shall be unlawful to take or possess, while on the water or while fishing in the water, black bass less than 14 inches total length on Eagle Lake, located east of the Mississippi River in Madison Parish, Louisiana.

Bert H. Jones
Chairman

RULE

Department of Wildlife and Fisheries
Wildlife and Fisheries Commission

The Louisiana Wildlife and Fisheries Commission does hereby amend the regulations concerning bag limits for king mackerel, spanish mackerel and cobia.

TITLE 76

WILDLIFE AND FISHERIES

Part VII. Fish and Other Aquatic Life

Chapter 3. Saltwater Sport and Commercial Fishery

Section 327. Daily Take and Possession Limits of King and Spanish Mackerel and Cobia

A. The recreational bag limit for possession of Spanish mackerel (Scomberomorus maculatus) whether caught within or without the territorial waters of Louisiana shall be 10 fish per person, per day.

B. The recreational bag limit for possession of king mackerel (Scomberomorus cavalla) whether caught within or without the territorial waters of Louisiana shall be 2 fish per person, per day.

C. A person subject to a bag limit for Spanish or king mackerel may not possess during a single day, regardless of the number of trips or the duration of a trip, any king or Spanish mackerel in excess of such bag limit, except that a person who is on a trip that spans more than 24 hours may possess no more than two daily limits, provided such a trip is aboard a charter vessel or headboat, and (1) the vessel has two licensed operators aboard as

required by the U.S. Coast Guard for trips over 12 hours, and (2) each passenger is issued and has in possession a receipt issued on behalf of the vessel that verifies the length of the trip.

D. The recreational and commercial bag limit for possession of cobia (Rachycentron canadum) whether caught within or without the territorial waters of Louisiana shall be 2 fish per person.

AUTHORITY NOTE: Promulgated in accordance with R.S.56:325.1 and R.S.56:326.3.

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Wildlife and Fisheries Commission, LR 15:868 (October 1989), amended LR 17:207 (February 1991), amended LR (April 1993).

Bert Jones
Chairman

INFORMATION PACKET

MARINE FINFISH PANEL

prepared for

Louisiana Wildlife and Fisheries Commission

March 25, 1993

MARINE FINFISH PANEL

A Marine Finfish Panel and Technical Working Group was formed in late 1988 by Secretary Van Sickle. The purpose, goal, membership and objectives of both groups are outlined in the attached written charge which was provided to the participants at the organizational meeting. The only modification to this written charge was an increase in the membership by the addition of 2 members. In response to a request from the GCCA and the Louisiana Wildlife Federation, each of these organizations were allowed to have a representative, and recognized commercial fishing organizations were allowed to select one additional representative. A list of the membership is attached.

The Finfish Panel met very regularly from its inception in late 1988 through March, 1990 (approximately 12 meetings). Objectives 1 and 2 were completed: both a "Policy and Standards" document and a species priority list were adopted and provided to Secretary Van Sickle. The Finfish Panel did not complete objective 6 for any species however, the management measures implemented by the Commission for black drum were reviewed by the panel at its March 7, 1990 meeting. The last meeting of the Finfish Panel was held on April 17, 1991 where the Department Spotted Seatrout Fishery Management Plan was reviewed by the panel.

NAME: Marine Finfish Panel
Marine Finfish Technical Working Group

PURPOSE: To provide a formal mechanism for the Department to receive input from the public and the scientific community regarding the management and wise use of Louisiana's marine finfish resources.

GOAL: To examine the status of Louisiana's fisheries and develop a comprehensive plan for managing Louisiana's marine finfish resources.

MEMBERSHIP:

Finfish Panel

1.) One member from the Department of Wildlife and Fisheries (Co-Chair)
2.) One member from the LSU Coastal Fisheries Institute (Co-Chair)
3.) One member representing the recreational fishing interest selected by the GCCA and the Louisiana Wildlife Federation
4.) One member representing the recreational fishing interest selected by the Department of Wildlife and Fisheries
5.) One member who is involved in the charterboat industry selected by the Department of Wildlife and Fisheries
6.) One member representing the commercial finfishing interest selected by the consensus of recognized commercial fishing organizations
7.) One member representing the commercial finfishing interest selected by the Department of Wildlife and Fisheries
8.) One member of the Senate Natural Resources Committee
9.) One member of the House Natural Resources Committee
10.) One member selected by the Louisiana Restaurant Association
11.) One member of the Wildlife and Fisheries Commission

In addition to the above membership, LSU Seagrant Legal Program will be requested to provide input and a staff member from Information and Education Division, Enforcement Division, and the Seafood Marketing Board will be required to attend all meetings.

Technical Working Group

The technical committee membership will be open to all state, federal and university scientists with expertise in marine fisheries.

OBJECTIVES:

1.) To develop and recommend a statement of policy and a set of standards to be used to guide the state in the management, preservation and use of Louisiana's marine finfish resources.[1]

2.) To list the recreationally and commercially important finfish species and develop a priority order for stock assessment.[2]

3.) To assemble the available information and data for the recreationally and commercially important finfish species and identify research currently in progress.[3]

4.) To conduct stock assessments of the recreationally and commercially important finfish species.[3]

5.) To formulate biologically based management objectives and recommendations regarding allowable harvest.[3]

6.) To identify appropriate methods and time frames for ensuring biologically allowable harvest levels and recommending acceptable resource allocations.[2]

[1] Objective to be addressed jointly by both the Finfish Panel and the Technical Working Group

[2] Objective to be addressed by the Finfish Panel

[3] Objective to be addressed by the Technical Working Group

MARINE FINFISH PANEL

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ENFORCEMENT CASE REPORT-MARCH 1993

REGION I

TOTAL CASES-23 **ENFORCEMENT-23**

OTHER - 0

3-Boating

3-Angling W/O A License

2-Fish W/O Resident Pole License

2-Not Abiding By Rules And Regulations Of Commission Closed Seasons Or Zones

5-Take Or Poss. Game Fish Illegally

1-Taking/Poss. Over Limit Or Undersized Freshwater Gamefish

2-Take Or Sell Commercial Fish Or Bait Species W/O Comm. Lic.

2-Take Commercial Fish W/O Commercial Gear License

2-Sell And/Or Buy Fish W/O Wholesale/Retail Dealer's Lic.

1-Take Commercial Fish W/Non-Approved Devices

CONFISCATIONS:

47 catfish, 9 bream, 52 crappie, 185 bass, 2 hoop net licenses, 8 slat traps, 1-16 foot boat.

GRAND TOTAL OF EACH CATEGORY FOR REGION 1:

3-Boating

20-Fishing

REGION 2

TOTAL CASES-77

ENFORCEMENT-77

OTHER - 0

28-Boating

13-Angling W/O A License

17-Fish W/O Resident Pole Lic.

4-Use Gear W/O Recreational Gear Lic.

1-Fail To Have Commercial Lic. In Poss.

1-Sell And/Or Buy Fish W/O Wholesale/Retail Dealer's Lic.

1-Hunting From Moving Vehicle And/Or Aircraft

2-Hunt Wild Quadrupeds And/Or Wild Birds Illegal Hours

4-Not Abiding By Rules And Regs. On WMA

1-Resisting An Officer

1-Littering

4-Other Than Wildlife And Fisheries

CONFISCATIONS:

none.

GRAND TOTAL OF EACH CATEGORY FOR REGION 2:

26-Boating

36-Fishing

5-Hunting

10-Other

REGION 3

TOTAL CASES-60 **ENFORCEMENT-57**

OTHER - 3

15-Boating

19-Angling W/O A License

3-Fish W/O Resident Pole License

4-Take Or Poss. Game Fish Illegally

1-Take Illegal Size Black Bass

4-Take Or Sell Commercial Fish Or Bait Species W/O Comm. Lic.

4-Take Commercial Fish W/O Comm. Gear License

1-Sell And/Or Buy Fish W/O Wholesale/Retail Dealer's License

2-Hunt Turkey Over Baited Area

1-Not Abiding By Rules And Regs. On WMA

2-Criminal Trespass On State Property

4-Operate ATV Vehicle On Public Road

CONFISCATIONS:

17 white perch, 1 buffalo fish, 3 carp, 17 lbs. of dressed stripers.

GRAND TOTAL OF EACH CATEGORY FOR REGION 3:

15-Boating

2-Hunting

43-Other

REGION 4

TOTAL CASES-27 **ENFORCEMENT-27**

OTHER - 0

9-Boating

3-Angling W/O A License

1-Fish W/O Resident Pole License

4-Use Gear W/O Recreation Gear License

1-Take Or Poss. Game Fish Illegally

2-Hunting W/O Resident License

2-Hunt W/O Resident Big Game License

4-Illegal Possession Of Drugs Or Marijuana

1-Other Than Wildlife And Fisheries

CONFISCATIONS:

11 crappie, 3 bass, 265 yards of 2 inch gill net, 11 hoop nets with leads.

GRAND TOTAL OF EACH CATEGORY FOR REGION 4:

9-Boating

9-Fishing

4-Hunting

5-Other

REGION 5

TOTAL CASES-112 **ENFORCEMENT-112**

OTHER - 0

33-Boating

57-Angling W/O A License

1-Use Gear W/O Recreational Gear Lic.

1-Take Illegal Size Black Bass

1-Fail To Have Commercial Lic. In Poss.

1-Take Or Sell Commercial Fish Or Bait Species W/O Comm. Lic.

1-Take Or Poss. Commercial Fish W/O Vessel Lic.

1-Transport W/O Required Lic.

1-Illegal Shipping Of Commercial Fish

1-Leave Nets Unattended

2-Use Crab Traps W/O Required Markings

1-Poss. Of Buckshot During Closed Deer Season

2-Taking Or Possession Of Other Non-Game Birds-No Season

1-Other Than Wildlife And Fisheries

1-Possess/Take Undersize Federal Controlled Fish

1-Possess/Take Over Limit Federal Controlled Fish

3-Littering

1-Poss. Of Firearm Of Convicted Felon-Certain Felonies

CONFISCATIONS:

3 gill nets, 1 bass, 1 hawk, 13 of shrimp sold $5,339.10.

GRAND TOTAL OF EACH CATEGORY FOR REGION 5:

33-Boating 3-Hunting

74-Fishing 2-Other

REGION 6

TOTAL CASES-114 **ENFORCEMENT-114**

OTHER - 0

40-Boating

57-Angling W/O A License

12-Fish W/O Resident Pole License

1-Take Or Poss. Game Fish Illegally

1-Take Illegal Size Black Bass

1-Possess Or Sell Undersized Crabs

1-Possess Rabbits Closed Season

1-Taking Robins-No Season

CONFISCATIONS:

1 robin, 1 crate of crabs, 17 yellow bass, 1 rabbit.

GRAND TOTAL OF EACH CATEGORY FOR REGION 6:

40-Boating

72-Fishing

2-Hunting

REGION 7

TOTAL CASES-82 **ENFORCEMENT-76**

OTHER - 6

16-Boating

34-Angling W/O A License

9-Fish W/O Resident Pole License

1-Angling W/O Saltwater License

1-Transport W/O Required License

1-Use Crab Traps W/O Required Markings

1-Possess Or Sell Undersized Crabs

1-Hunting W/O Resident License

1-Hunt From Public Road Or Road Right-Of-Way

2-Hunt W/O Resident Big Game License

6-Hunt Turkey Over Baited Area

1-Trap Or Sell F.B.A. W/O Non-Res. License

1-Trapping Closed Season

2-Not Abiding By Rules And Regs. On WMA

1-Criminal Trespass

4-Other Than Wildlife And Fisheries

CONFISCATIONS:

3 shotguns.

GRAND TOTAL OF EACH CATEGORY FOR REGION 7:

16-Boating

44-Fishing

9-Hunting

13-Other

REGION 8

TOTAL CASES-204 **ENFORCEMENT-204**

OTHER - 0

37-Boating

29-Angling W/O A License

15-Angling W/O A Saltwater License

3-Poss. O/L Red Drum

1-Fail To Have Fish Intact

1-Obtain License Or Engage In Activity During Revocation period

9-Take Or Sell Commercial Fish Or Bait Species W/O Commercial License

1-Sell And/Or Buy Fish W/O Wholesale/Retail Dealers License

1-Take Or Poss. Undersized Red Drum

1-Take Or Poss. Undersized Spotted Sea Trout

1-Take Or Poss. Undersized Black Drum

1-Fail To Have Commercial Lic. In Poss.

7-Take Commercial Fish W/O Commercial Gear Lic.

10-Take Or Poss. Commercial Fish W/O Vessel Lic.

8-Sell And/Or Buy Fish W/O Wholesale/Retail Dealer's Lic.

16-Leave Nets Unattended

1-Take/Poss. Undersized Cml. Finfish

6-Blocking Passage Of Fish

6-Use Crab Traps W/O Required Markings

2-Destroy Legal Crab Traps Or Removing Contents

2-Take Eel W/O Proper License

2-Use Eel Pots W/O Required Floats

REGION 8 CONT'D.

1-Allow Another To Use Commercial License

2-Permit Unlicensed Person To Operate Commercial Vessel

2-Permit Unlicensed Person To Use Commercial Gear

2-Take/Possess Oysters W/O Oyster Harvester License

4-Failure To Mark/Tag Nets

1-Take/Possess Undersized Black Drum

4-Possess Or Sell Undersized Crabs

1-Poss. Red Drum Illegally

2-Unlawfully Take Oysters Off A Private Lease

2-Take Undersize Oysters From Natural Reef

2-Harvest Oysters W/O Harvester License

1-Harvest Oysters From Unmarked Lease

2-Commercial Fishing In Closed Or Restricted Area Lake Ponchartrain

2-Possess Wild Birds Or Wild Quadrupeds W/O A Lic.

1-Hunting W/Unplugged Gun Or Silencer

4-Criminal Trespass On State Property

1-Operating Vehicle While Intoxicated

1-Littering

1-Other Than Wildlife And Fisheries

5-Lacy Act

1-License Fraud

1-Discharge Firearm From Public Road

1-Reckless Operation Of A Vehicle

1-Violation Of Sanitary Code-Chapter 9

REGION 8 CONT'D.

CONFISCATIONS:

1 rabbit, 1 nutria, 404 lbs. of fish sold for $484.80, 2,271 lbs. of shrimp sold for $10,673.70

383 lbs. of blue cat and eel sold for $110.00, 7 crab traps, 1 gun, 2 boats, 33 eel pots, 5,600 feet of gill net.

GRAND TOTAL OF EACH CATEGORY FOR REGION 8

37-Boating

55-Sport Fishing

80-Commercial Fishing

7-Oysters

3-General Hunting

22-Misc.

REGION 9

TOTAL CASES-174 **ENFORCEMENT-170**

OTHER - 4

52-Boating

34-Angling W/O A License

1-Fish W/O Resident Pole License

1-Use Gear W/O Recreational Gear License

2-Angling W/O Saltwater License

2-Take Or Poss. Game Fish Illegally

2-Taking/Poss. Over Limit Or Undersized Freshwater Gamefish

1-Take Illegal Size Black Bass

3-Take Or Poss. Undersized Red Drum

2-Take Or Poss. Undersized Spotted Sea Trout

1-Take Or Sell Commercial Fish Or Bait Species

9-Take Or Poss. Commercial Fish W/O Vessel License

2-Sell And/Or Buy Fish W/O Wholesale/Retail Dealer's License

1-Fail To Maintain Records

1-Transport W/O Required License

4-Use Crab Traps W/O Required Markings

2-Use Illegal Length/Mesh Nets-Freshwater

27-Possess Or Sell Undersized Crabs

2-Failure To Have Written Permission

8-Unlawfully Take Oysters From State Water Bottoms

1-Taking Oysters From Unapproved Area

1-Unlawfully Take Oysters Off A Private Lease

REGION 9 CONT'D.

1-Unlawfully Stake Off Unleased Water Bottoms

1-Failure To Display Proper Number On Vessel

3-Taking Or Possession Of Other Non-Game Birds-No Season

2-Obstruction Of Justice

4-Violation Of Sanitation Code-No Vessel Cover

4-Not Abiding By Rules And Regs. On WMA

CONFISCATIONS:

42 drum, 58 sacks of oysters released, 96 crates of crabs released,

24 black bass, 6 seatrout, 4 egrets, 4 crab traps, 2 air rifles, 2100 feet of monofilament gill net, 2 fish traps.

GRAND TOTAL OF EACH CATEGORY FOR REGION 9:

52-Boating

95-Fishing

14-Oyster

3-MGB

4-WMA

6-Misc.

OYSTER STRIKE FORCE

TOTAL CASES-70

2-No Commercial Fisherman's License

3-No Gear License

2-No Vessel License

1-No Oyster Harvester License

1-File False Application-License Fraud

2-No Wholesale/Retail Dealers License

1-Fail To Maintain Records

6-Take Oysters From State Water Bottoms

5-Take/Possess Undersize Red Drum

2-No Written Permission

1-Fail To Display Numbers For Plane

3-Sanitation Code Violation

1-Fail To Comply With P.F.D. Requirements

1-Theft Of Oysters From Private Lease

1-Stake Off State Water Bottoms Illegally

2-Take Possess Undersize Black Drum

2-Take Possess Overlimit Red Drum

3-No Saltwater Fishing License

1-Possession Of Oversize Gill Net

1-Buy License Under Revocation

14-Leave Nets Unattended

2-Fail To Tag Gill Net

OYSTER STRIKE FORCE CONT'D.

1-Block Passage Of Fish

1-Cull Oysters In Closed Area

1-Allow Another To Use Commercial License

1-Allow Unlicensed Fisherman To Use Gear

1-Allow Unlicensed Fisherman To Use Vessel

2-Remove Contents From Crab Traps

2-Fail To Have Fish Intact

CONFISCATIONS:

41 sacks of oysters, 38 drum, 50 sheephead, 2 speckled trout, 5 commercial licenses, 2 garfish, 1 vessel.

STATE STRIKE FORCE

TOTAL CASES-69

21-Boating

12-Angling W/O A License

4-Fish W/O Resident Pole License

1-Angling W/O Saltwater License

3-Take Or Poss. Game Fish Illegally

1-Taking/Poss. Over Limit Or Undersized Freshwater Gamefish

1-Fail To Have Intact

1-Not Abiding By Commission Rules And Regs.

1-Fail to Have Commercial Lic. In Paws.

1-Take Or Sell Commercial Fish Or Bait Species W/O Comm. License

2-Take Commercial Fish W/O Comm. Gear License

1-Take Or Poss. Commercial Fish W/O Vessel License

1-Sell And/Or Buy Fish W/O Wholesale/Retail Dealer's License

1-Transport W/O Required License

1-Taking Fish Illegally

1-Leave Nets Unattended

1-Blocking Passage Of Fish

1-Use Crab Traps W/O Required Markings

1-Allow Another To Use Commercial License

1-Fail To Have Commercial Fish Intact

1-Take/Possess Oysters W/O Oyster Harvester License

2-Failure To Mark/Tag Nets

1-Possess Or Sell Undersized Crabs

2-Take Undersize Oysters From Natural Reef

STATE STRIKE FORCE CONT'D.

1-Failure To Display Proper Number On Vessel

2-Hunt From Public Road Or Road Right-Of-Way

CONFISCATIONS:

91 lbs. of catfish, 4 white perch, 14 bream, 13 black bass, 82 drum, 1 king mackerel, 55 sacks of oysters returned to water, 2600 crabs returned to water, 1400 lbs. of shrimp sold for $5,339.10, 404 lbs. of wahoo sold for $482.00, 9452 lbs. of red snapper sold for $16,000.00, 119 trigger fish sold for $2600.00, 1 truck, 2 boats, 3 stolen boats, 9,000 feet of gill net.

S.W.E.P.

156 RUNNING HOURS

134 BOATS CHECKED

TOTAL CASES-27

2-No Vessel License

2-No Gear License

1-No Commercial License

2-No Boat Numbers Displayed On Vessel

1-Expired Registration Certificate

1-Failure To Mark Crab Traps

1-No Basic Fishing License

1-No Saltwater License

1-Use Another's Commercial License

1-Take Undersize Fish (Cml. Finfish)

1-Allow Another To Use Commercial License

1-Allow Unlicensed Person To Operate Commercial Gear License

1-Allow Unlicensed Person To Operate Commercial Vessel

2-Lake Pontchartrain Sanctuary Fishing Violation

2-Take Eel Illegal Method

2-Use Eel Pots W/O Required Markings

1-Improper Running Lights on Vessel

1-Take Undersize Oysters

1-No Oyster Harvester License

S.W.E.P. CONT'D.

1-Fail To Comply With P.F.D. Requirements

1-Angling W/O A License

CONFISCATIONS:

2,271 lbs. of shrimp sold for $10,673.70, 27 sacks of oysters returned to water, 12,000 feet of gill net.

TOTAL CASES ENFORCEMENT-		**860**
TOTAL CASES OTHER	**-**	**13**
TOTAL CASES OSFORCE	**-**	**70**
TOTAL CASES SSFORCE	**-**	**69**
TOTAL CASES S.W.E.P.	**-**	**27**
GRAND TOTAL	**-**	**1039**

ENFORCEMENT CASE REPORT

MARCH 1993

04/05/93

1993 REGULAR SESSION

HOUSE BILLS

HB	57	Gunn	(c)	Allows the hunting of raccoons and opossums with .22 caliber handguns. (N.R.)
HB	74	Patti	(c)	Authorizes purchase of recreational fishing and hunting licenses and certain stamps with credit card by phone. (N.R.)
HB	75	Theriot, S.	(c)	Enacts penalties for violations of firearm and hunter education and certification requirements. (N.R.)
HB	76	Theriot, S.	(c)	Makes technical changes in certain penalty provisions relative to methods of taking freshwater or saltwater fish. (N.R.)
HB	77	Theriot, S.	(c)	Removes the open water and open season restriction on recreational possession limits on shrimp taken by castnets. (N.R.)
HB	78	Theriot, S.	(c)	Changes the term "game quadrupeds" to "wild quadrupeds" in certain provisions. (N.R.)
HB	79	Theriot, S.	(c)	Enacts penalties for violations of provisions relative to taking of clams. (N.R.)
HB	80	Theriot, S.	(c)	Prohibits the intrastate transportation of fish for restocking, except in accordance with rules and regulations. (N.R.)
HB	81	Theriot, S.	(c)	Allows for closure or restriction of a fishing season by secretary of DWF by publication of intent in the official parish journal one time instead of three times. (N.R.)
HB	82	Theriot, S.	(c)	Provides that the taking or possessing of a spotted fawn constitutes a class 5-A violation. (N.R.)
HB	83	Theriot, S.	(c)	Repeals the provisions dealing with mesh sizes for nets used to harvest crawfish. (N.R.)
HB	84	Theriot, S.	(c)	Changes penalty for violation of "hunter orange" provisions. (N.R.)
HB	85	Theriot, S.	(c)	Enacts provisions relative to the fraudulent acquisition of hunting and fishing licenses. (N.R.)
HB	99	Downer	(c)	Deletes the minimum size limits on spotted sea trout. (N.R.)

HB	105	Thuenissen	(c)	Provides that anyone who has a certificate for an accredited law enforcement training school and who has passed an approved comprehensive examination shall be licensed without further training or examination. (Commerce)
HB	145	Farrar	(c)	Prohibits separate duck and coot hunting zone and season on Catahoula Lake. (N.R.)
HB	147	Theriot, S.	(c)	Allows the use of global positioning satellite (GPS) navigational instrument reading to determine if shrimping is in inside or outside waters. (N.R.)
HB	156	Dewitt	(c)	Constitutional amendment that provides for the removal of members of the Wildlife & Fisheries Commission for specific causes. (N.R.)
HB	157	Farrar	(c)	Repeals prohibition against the use of mud boats on Catahoula Lake. (N.R.)
HB	163	Gunn	(c)	Provides for uniform deer seasons in Kisatchie National Forest lands. (N.R.)
HB	171	Theunissen	(c)	Exempts White Lake and Grand Lake from restrictions on use of trot-lines. (N.R.)
HB	197	Deville	(c)	Requires all restaurants serving crawfish to notify customers if the crawfish is imported from a foreign country. (N.R.)
HB	200	Dewitt	(c)	Repeals Louisiana Noncoal Surface Mining Law. (Commerce)
HB	249	Bergeron	(c)	Deletes the minimum size limits on spotted sea trout. (N.R.)
HB	300	Odinet		Requires landing of oysters taken from natural reefs of the state.
HB	308	Roach	(c)	Provides for limitations on claims, fees and penalties under the Fishermen's Gear Compensation Fund.
HB	320	Theriot, M.	(c)	Provides for recreational saltwater fishing licenses.
HB	322	Theriot, S.	(c)	Requires nonresidents to have license in their immediate possession when recreational fishing and provides for penalties.
HB	371	Roach		Provides immunity from liability associated with certain coastal restoration programs.

HB	375	Theriot, S.	(c)	Provides penalties by the Dept. of Wildlife and Fisheries for unauthorized dredging of fill sand and fill material from water bottoms.
HB	403	Odinet		Provides for mounting of skimmer and butterfly nets.
HB	410	Theriot, S.		Requires deposit of a portion of civil restitution for wildlife violations to be remitted to the criminal court fund of the district court.
HB	411	Theriot, S.		Provides for criminal penalties for dredging and permit violations; provides that mandamus proceedings to compel the issuance of dredging permits shall be brought against DWF.
HB	412	Theriot, S.		Specifies that "saltwater angling" licenses is included in the universal hunting and fishing license.
HB	449	Theriot, S.		Provides for separate licenses for hunting wild birds and wild quadrupeds for residents and nonresidents.
HB	450	Theriot, S.		Allows for the use of trawls for the taking of commercial fish in saltwater.
HB	490	Hudson		Requires at least 25% of the total funding appropriated to DWF be allocated to enforcement.
HB	491	Hudson		Limits the number of biologist positions within the Department of Wildlife and Fisheries.
HB	492	Hudson		Limits the number of specialist positions within the Department of Wildlife and Fisheries.
HB	594	Salter		Prohibits damaging or removing state buoys placed in state waters.
HB	603	Riddle		Authorizes federal agents to enforce state wildlife & fisheries laws.
HB	604	Dewitt		Deletes civil penalties for class one violation and provides for criminal penalties regarding wildlife.
HB	619	Odinet		Authorizes the limited commercial taking of red drum as a by-catch.
HB	633	Copelin		Authorizes the seizing law enforcement agency to recovery expenses for preserving, maintaining, repairing, or enhancing the value of the property seized.
HB	641	Alexander, A.		Requires announced and unannounced inspection of fish processing facilities by the office of public health.

HB	644	Alexander, A.		Requires state health officer to cause seafood inspection to include testing of water source and environment in cases of contamination or spoilage.
HB	655	Hammett		Authorizes the Wildlife and Fisheries Commission to set, by rule, the fees for nonresident recreational hunting and fishing licenses.
HB	659	Roach		Prohibits commercial harvest of saltwater fish and shellfish in certain man-made coastal water impoundments without permit.
HB	681	Landrieu	(c)	Increases nonresident hunting and recreational fishing license fees by $10.50.
HB	708	John	(c)	Requires minors ages 10 through 15 years to complete firearm and hunter education course.
HCR	24	Long		Authorizes late introduction of a bill designating the secretary of the Dept. of Wildlife & Fisheries as the final authority to open dams on Black Lake, Clear Lake and Saline Lake in Natchitoches Parish.
HR	1	Odinet		Directs DWF to study feasibility of allowing oyster fishermen to purchase preprinted oyster tags.

1993 REGULAR LEGISLATIVE SESSION

SENATE BILLS

SB	57	Hinton	(c)	Requires liability insurance coverage on motor boats, sailboats, watercraft, or vessels fourteen feet or more in length.
SB	212	Hinton		Requires applicants for a coastal use permit or other Coastal Management Division authorization to own at least fifty-one percent of the subject property.

HLS 93-354 ORIGINAL

Regular Session, 1993

HOUSE BILL NO. 99

BY REPRESENTATIVE DOWNER

FISHING: Deletes the minimum size limits on spotted sea trout

AN ACT

To amend and reenact R.S. 56:325.1(A)(1), (B)(introductory paragraph), and (C)(2)(c) and to repeal R.S. 56:325.1(B)(3), relative to taking spotted sea trout; to delete minimum size limits; to delete penalties; to limit the authority of the commission; and to provide for related matters.

Be it enacted by the Legislature of Louisiana:

Section 1. R.S. 56:325.1(A)(1), (B)(introductory paragraph), and (C)(2)(c) are hereby amended and reenacted to read as follows:

§325.1. Size and possession limits, recreational saltwater finfish; penalties

A.(1) The Wildlife and Fisheries Commission may set by rule, in accordance with the Administrative Procedure Act, daily take, and possession, and size limits for saltwater finfish caught recreationally in Louisiana territorial waters, based on biological and technical data<u>; however, the commission shall not set size limits on spotted sea trout taken recreationally.</u> Aquaculturally raised fish, as defined in R.S. 56:356, shall be exempt from the provisions of this Section.

* * *

B. No saltwater sport fisherman shall take or possess at any one time in the Louisiana territorial waters extending to the outermost boundary limit of the Federal Exclusive Economic Zone any red drum ~~or spotted sea trout~~ under the prescribed

CODING: Words in ~~struck through~~ type are deletions from existing law; words <u>underlined</u> are additions.

Proposed law deletes present law and prohibits the commission from setting size limits on spotted sea trout.

(Amends R.S. 56:325.1(A)(1), (B)(intro. para.), and (C)(2)(c); Repeals R.S. 56:325.1(B)(3))

Regular Session, 1993

HOUSE BILL NO. 249

BY REPRESENTATIVES BERGERON, DOWNER, AND SAM THERIOT

FISHING: Deletes the minimum size limits on spotted sea trout

AN ACT

To amend and reenact R.S. 56:325.1(A)(1), (B)(introductory paragraph), and (C)(2)(c) and to repeal R.S. 56:325.1(B)(3), relative to taking spotted sea trout; to delete minimum size limits; to delete penalties; to limit the authority of the commission; and to provide for related matters.

Be it enacted by the Legislature of Louisiana:

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* * *

B. No saltwater sport fisherman shall take or possess at any one time in the Louisiana territorial waters extending to the outermost boundary limit of the Federal Exclusive Economic Zone any red drum or spotted sea trout under the prescribed

CODING: Words in ~~struck through~~ type are deletions from existing law; words <u>underlined</u> are additions.

Proposed law deletes present law and prohibits the commission from setting size limits on spotted sea trout.

(Amends R.S. 56:325.1(A)(1), (B)(intro. para.), and (C)(2)(c); Repeals R.S. 56:325.1(B)(3))

HLS 93-1135

Regular Session, 1993

HOUSE BILL NO. 156

BY REPRESENTATIVE DEWITT

ORIGINAL

RECEIVED

MAR 29 93

WILDLIFE/COMMISSON: (Constitutional Amendment) Provides for the removal of members of the Wildlife and Fisheries Commission for specific causes

A JOINT RESOLUTION

Proposing to add Article IX, Section 7(C) of the Constitution of Louisiana, relative to the Wildlife and Fisheries Commission; to provide for removal of members; to provide for the submission of the proposed amendment to the electors; and to provide for related matters.

Section 1. Be it resolved by the Legislature of Louisiana, two-thirds of the members elected to each house concurring, that there shall be submitted to the electors of the state of Louisiana, for their approval or rejection in the manner provided by law, a proposal to add Article IX, Section 7(C) of the Constitution of Louisiana, to read as follows:

§7. Wildlife and Fisheries Commission

Section 7.

* * *

(C) Removal. Any member of the commission may be removed by a two-thirds vote of the members of the Louisiana Legislature for neglect of duty, misfeasance, or nonfeasance after being served with written specifications of the charges against him and being afforded an opportunity for a public hearing thereon before a joint committee of the House and Senate Natural Resources Committees.

CODING: Words in ~~struck through~~ type are deletions from existing law; words underlined are additions.

1 Section 2. Be it resolved that this proposed amendment shall be
2 submitted to the electors of the state of Louisiana at the
3 congressional primary election to be held in 1994.
4 Section 3. Be it resolved that on the official ballot to be
5 used at said election there shall be printed a proposition, upon
6 which the electors of the state shall be permitted to vote FOR or
7 AGAINST, to amend the Constitution of Louisiana, which proposition
8 shall read as follows:
9 To provide for the removal of a member of the Wildlife and
10 Fisheries Commission by a two-thirds vote of the Louisiana
11 Legislature for neglect of duty, misfeasance, or
12 nonfeasance after being served with written specifications
13 of the charges against him and being afforded an
14 opportunity for a public hearing thereon before a joint
15 committee of the House and Senate Natural Resources
16 Committees. (Adds Article IX, Section 7(C))

DIGEST

The digest printed below was prepared by House Legislative Services. It constitutes no part of the instrument.

DeWitt HB No.

Proposed constitutional amendment provides for the removal of any member of the Wildlife and Fisheries Commission by a two-thirds vote of the members of the legislature for neglect of duty, misfeasance or nonfeasance after being served with written charges and being afforded an opportunity for a public hearing before a joint committee of the House and Senate Natural Resources Committees.

Provides for submission of the proposed amendment to the voters at the congressional primary election in 1994.

(Adds Const. Art. §7(C))

CODING: Words in struck through type are deletions from existing law; words underlined are additions.

of the Intracoastal Waterway, on the south 750 feet seaward from the inside and outside shrimp line described in R.S. 56:495, on the east by the eastern boundary line of the parish of Lafourche and on the west by the western boundary line of the parish of Terrebonne. It is specifically provided in this section that menhaden vessels licensed by the State of Louisiana shall be allowed to purse seine for menhaden seaward but not nearer than 750 feet seaward from the inside and outside shrimp line described in R.S. 56:495.

C. Any person found guilty of violating any provision hereof shall be subject to a fine of not less than two hundred dollars or more than five hundred dollars or imprisonment of not less than thirty days or more than six months. As an additional penalty, the violator's net or nets and catch shall be confiscated.

Acts 1974, No. 223, §2. ANY FISH !

§409.1. Penalty for the wasting of the state's fishery resources

A. No person shall waste any fish of this state. As used in this Section, "waste" means the harvesting of any fish for commercial purposes which results in the excessive killing of such fish.

B. Any person in violation of the provisions of this Section may be subject to a civil fine by the Department of Wildlife and Fisheries in an amount not to exceed the fair market value of the fish wasted. The fair market value of such fish shall be based upon the prevailing wholesale price of the fish, if such price is available, or shall approximate the price which could otherwise be obtained for the fish.

C. The Department of Wildlife and Fisheries shall promulgate rules and regulations to assign a fair market value to fish under its jurisdiction, determine what constitutes the excessive killing of fish, and to otherwise implement the provisions of this Section; and shall subject such rules and regulations to legislative oversight by the House and Senate Natural Resources Committees by no later than January 1, 1987.

D. Civil penalties may be assessed only by a ruling of the department based on an adjudicatory hearing held in accordance with the Administrative Procedure Act. No civil penalty shall be assessed under this Section for the wasting of fish the value of which is deemed by the department to be less than one thousand dollars.

E. Any proceeds from a fine imposed under this Section shall be placed in the Conservation Fund to be used for the purposes of the fund.

F. The provisions of this Section shall not apply to the taking or use of shrimp.

Acts 1986, No. 919, §1.

§410. Trawling at night prohibited on White Lake and Grand Lake

Trawling on White Lake in Cameron and Vermilion Parishes and Grand Lake in Cameron Parish from official sunset to official sunrise is hereby prohibited.

Acts 1986, No. 748, §1.

§410.1. Paratrawling prohibited in canals; penalty

No person shall paratrawl in any canal which is part of the waters of the state. Violation of this Section constitutes a class three violation.

Acts 1988, No. 574, §1.

§410.2. Use of trammel nets, gill nets, and strike nets in Calcasieu Lake prohibited

No person shall set or use any trammel net, gill net, or strike net for the taking of fish in Calcasieu Lake during the hours after the official sunset on Friday and before the official sunset on Sunday of each week during the period from May first through September thirtieth of each year.

Acts 1990, No. 509, §1.

.S. 13:5104] for suits brought against State. ·molle v. Louisiana Dept. of Wildlife & Fisher-, App. 4 Cir.1991, 580 So.2d 1083.

l Fisheries Resources

n Rouge, Louisiana, wherein the primary ildlife and Fisheries are located shall be ·es Resources".

. words and phrases have the meaning ·xt clearly indicates a different meaning:

·xt of (1) to (19)]

ɔmmercial fish and saltwater commercial

xt of (21) to (26)]

ıcted with vegetable, synthetic, or metal ·ire frame that forms a net basket and is ce shall be operated solely by hand and

with entrance funnels and either a bait ɔeeler crabs, which is used for the sole fished in a stationary, passive manner.

·t of (29) to (33)]

found in the waters of the state which ıbroad, including but not limited to sea ·t, oyster, paddlefish, pompano, sheeps-y trout, croaker, black drum, mackerel,

3.

t of (35) and (36)]

ɜ cold-blooded aquatic vertebrates that ills, and are covered with skin or scales.

·t of (38) to (51)]

ın two layers, not customarily used for . size and design as to be used primarily ney projections.

t of (53) to (76)]

ɔaring fish or fish products, or wild salting, packing or packaging, dehead-t not simple packing of fresh fish in a

·t of (78) to (80)]

(81) "Saltwater commercial fish" means any species of saltwater fish taken for commercial purposes. Saltwater commercial fish does not include sailfish (Istiopharus platypterus), blue marlin (Makaira nigricans), white marlin (Tetrapturus albidus), black marlin (Makaira indica), striped marlin (Tetrapturus audax), hatchet marlin (Tetrapturus spp.), and red drum (Sciaenops ocellatus). Aquaculturally raised fish, as defined by R.S. 56:356, shall be exempt from the provisions of this Section.

Amended by Acts 1987, No. 285, § 1; Acts 1988, No. 889, § 1, eff. July 21, 1988; Acts 1988, No. 889, § 4, eff. Sept. 1, 1991; Acts 1991, No. 157, § 1, eff. July 2, 1991.

(82) "Saltwater fish" means all species of finfishes which normally inhabit the saline waters of the marine and estuarine environment for most of their life cycle.

Amended by Acts 1987, No. 285, § 1.

[See main volume for text of (83) to (101)]

(102) "Unattended net" means any net in the water to which the licensee thereof cannot be immediately located for identification therewith without leaving the location of the net.

Amended by Acts 1988, No. 711, § 1.

[See main volume for text of (103) and (104)]

(105)(a) "Wild quadrupeds" means and includes any and all of the following:

(i) Game quadrupeds: wild deer, bears, squirrels, and wild rabbits.

(ii) Outlaw quadrupeds: coyotes and armadillos.

(iii) Protected quadrupeds: wolves, cougars, bobcats, and foxes; provided that foxes and bobcats may be run with dogs.

(iv) Nongame quadrupeds: mink, otter, muskrat, nutria, beaver, weasels, raccoons, skunks, opossum, alligator, and other wild quadrupeds valuable for their skins or furs.

(b) Wild quadrupeds does not include wild quadrupeds taken, possessed, or transported under the provisions set forth in the game breeder license. The terms "wild quadrupeds" and "wild game quadrupeds" shall not include buffalo, bison, or beefalo.

Amended by Acts 1988, No. 25, § 1.

[See main volume for text of (106) to (111)]

(112) "Eel pot" means any device not to exceed forty-eight inches in length and with an outside mesh size not smaller than one-half inch, constructed with throats or flues not larger than three inches in diameter at their narrowest point and not larger than five inches in diameter at their widest point, and which is used solely for the purpose of taking eel. No lead or wing shall be connected to or used in conjunction with any eel pot. Any fish other than eel taken in this gear must be immediately returned unharmed to the water.

Amended by Acts 1987, No. 219, § 1.

[See main volume for text of (113)]

(114) "Total length" means the longest measurable distance from the outermost portion of the snout lengthwise to the outermost portion of the caudal fin. Extended snouts such as those occurring on marlin, swordfish, and sawfish are not included; snout refers to the outermost portion of the mandible in those and other fish having extended snouts.

Added by Acts 1987, No. 383, § 1.

(115) "Paratrawling" is the fishing with a net by affixing a net to or holding a net from two or more vessels so as to pull the net between or behind the vessels.

Added by Acts 1988, No. 574, § 1.

(116) "Strike net" means any gill net, trammel net, or seine net not anchored or secured to the waterbottom or shore and which is used off a vessel and actively worked while being used.

Added by Acts 1988, No. 889, § 1, eff. July 21, 1988.

(117) "Migratory waterfowl" means all species of wild ducks, geese, and coots.

Added by Acts 1988, No. 632, § 1, eff. Sept. 1, 1989.

Department of Wildlife and Fisheries at such times and in such manner as the secretary shall provide by rules and regulations, pursuant to the Administrative Procedure Act.

Added by Acts 1990, No. 441, § 1.

Historical and Statutory Notes

Section 2 of Acts 1990, No. 441 (§ 1 of which, inter alia, enacted this section) provides:

"The Wildlife and Fisheries Commission and the secretary of the Department of Wildlife and Fisheries shall promulgate the rules and regulations and perform all other necessary acts to establish the Commercial Fisherman's Sales Card provided for in this Act no later than January 1, 1992."

SUBPART D. VESSEL LICENSE

Cross References

Discharge of trash, garbage and sewage, see R.S. 30:2074.

SUBPART E. GEAR LICENSE

§ 305. Commercial gear license; issuance to certain nonresidents prohibited

[See main volume for text of A]

B. Residents shall pay a commercial gear fee as follows:

[See main volume for text of B(1)]

(2) Crab traps: twenty-five dollars to use any legal number of crab traps, or one dollar for each crab trap used on a trotline, not to exceed twenty-five dollars for the use of any legal number of crab traps.

Amended by Acts 1987, No. 854, § 1.

(3) Oyster dredges: twenty-five dollars for each dredge.

Amended by Acts 1991, No. 859, § 1.

(4) Gill nets: twenty-five dollars to use any legal number of gill nets in the freshwater areas of the state and two hundred fifty dollars to use any legal number of gill nets in the saltwater areas of the state.

Amended by Acts 1991, No. 887, § 1, eff. Nov. 1, 1991.

[See main volume for text of B(5) to (11)]

(12) Any other type of legal gear not listed above: twenty-five dollars. This type of gear includes pipes, buckets, drums, tires, and cans that are placed into the water for the purpose of capturing and taking fish for commercial purposes.

Amended by Acts 1988, No. 825, § 1.

(13) Castnets with a radius in excess of six feet.

Added by Acts 1991, No. 871, § 1.

C. (1) The commercial gear fee for nonresidents is four times the gear fee for residents; however, the nonresident fee for oyster dredges and tongs in particular shall be eight times the fee for residents.

(2) No commercial gear license for gill nets and purse seines shall be issued to any nonresident whose domiciliary state prohibits the use of those nets in commercial fishing.

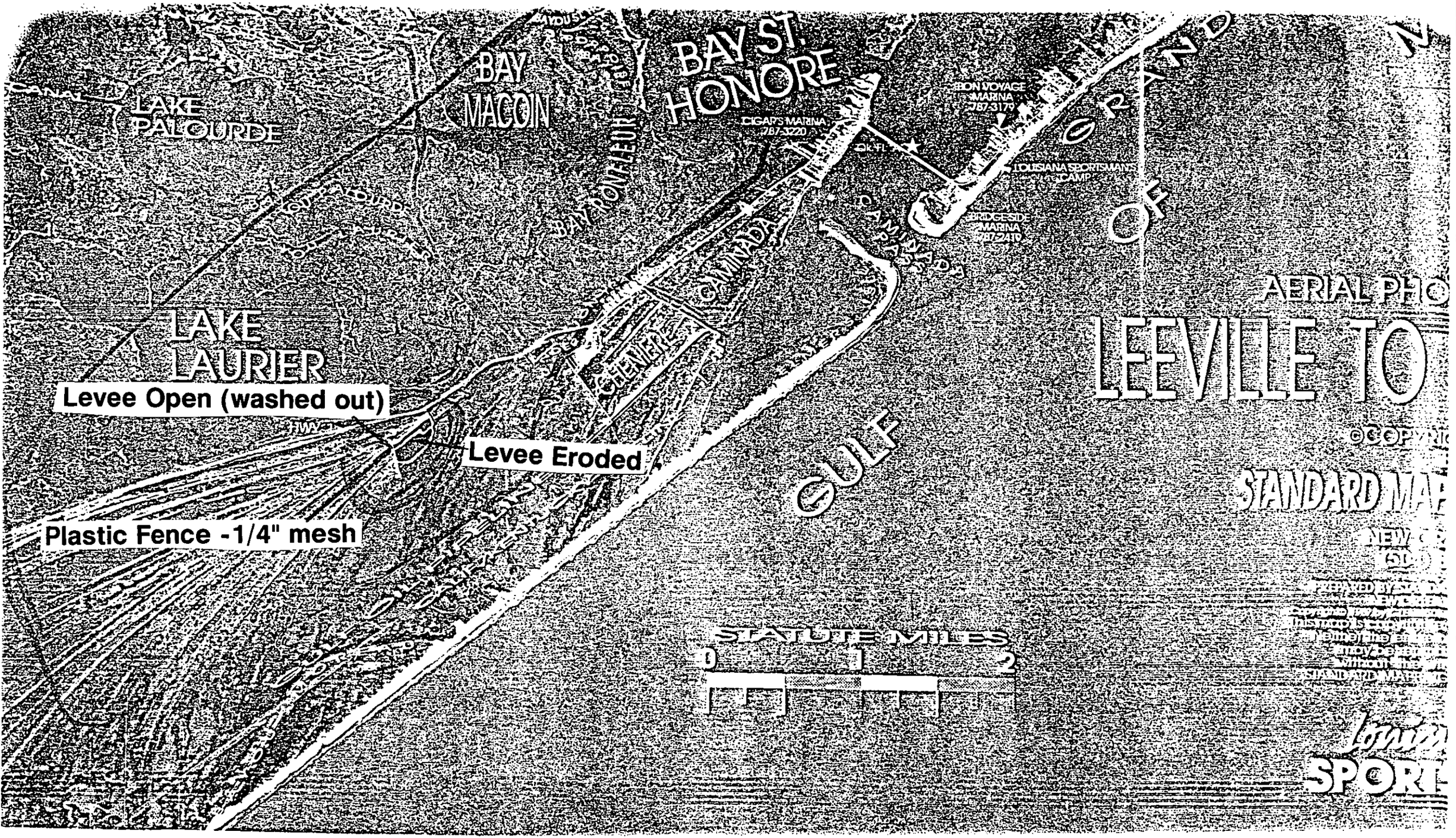
Amended by Acts 1988, No. 234, § 1; Acts 1990, No. 307, § 1.

[See main volume for text of D and E]

Historical and Statutory Notes

In subsec. C as amended in 1990, format changes were made on authority of R.S. 24:253.

WHAT IS THE LEGAL NUMBER ?


LAKE PALOURDE
BAY MACON
BAY ST. HONORE
CIGAR'S MARINA 787-3220
BON VOYAGE MARINA 787-3179
LOUISIANA SPORTSMAN'S CAMP
BRIDGESIDE MARINA 787-2419
BAYOU LEON
CAMINADA
CHENIERE
LAKE LAURIER
Levee Open (washed out)
Levee Eroded
Plastic Fence -1/4" mesh
GULF
STATUTE MILES
0 1 2
AERIAL PHO
LEEVILLE TO
©COPYRIG
STANDARD MAP
SPORT

ANNUAL PERMITS / ADMINISTRATIVE FEES

PERMIT TYPE / ADMINISTRATIVE /976X 976X LEGAL CITATION	NO. ISSUED	CURRENT FEE	REVENUE GENERATED	PROPOSED FEE	EST. REVENUE GENERATED	EST. ADMIN. COST	DIVISION	STD. FORM
TEMP. HOLDING/DISPLAY OF NONGAME QUADRUPEDS FOR EDUCATIONAL PURPOSES, DISPLAY, PROMOTIONAL, ETC.	<10	$ 0	$ 0	$ 5	$50	$25	FUR & REFUGE	NO
TAXIDERMY WORK; ALLOWING POSSESSION OF ROAD KILLED NONGAME QUADRUPED USED FOR VARIOUS PURPOSES	<10	$ 0	$ 0	$ 5	$50	$25	FUR & REFUGE	NO
COYOTE COLLECTION	35-40	$25	$1,000	$25	$1,000	$25	FUR & REFUGE	YES
EEL POT	3	$ 0	$ 0	$ 5	$15	$25	INLAND FISH.	NO
GAMEFISH	0	$ 0	$ 0	$25	$ 0	$25	INLAND FISH.	NO
TILAPIA	0	$50 + INSPEC.	$ 0	$50 + INSPEC. COST	$ 0	$50	INLAND FISH.	NO
TRIPLOID GRASS CARP	0	$50 + INSPEC.	$ 0	$50 + INSPEC. COST	$ 0	$50	INLAND FISH.	NO
SCUBA (TAKE CRAPPIE & BREAM)	40	$ 0	$ 0	$25	$1,000	$25	INLAND FISH.	NO (SPECIFIC AREAS ONLY)
FRESHWATER EXPERIMENTAL FISHERIES	54	$20	$1,080	$25	$1,350	$25	INLAND FISH.	NO
FRESHWATER SCIENTIFIC COLLECTING	93	$ 0	$ 0	$25	$2,325	$25	INLAND FISH.	YES
SCENIC RIVER PERMIT	15	$100	$1,500	$100 + $135 FIELD INSPEC.	$1,500 + $2,025	$100	ECOLOGICAL STUDIES	YES
MARICULTURE PERMIT	MAX OF 10 (4 EXISTING) UP TO 8,000 ACRES EACH)	$1,000	$2,000	$1,000 EACH YEAR	$4,000		ECOLOGICAL STUDIES	YES
FILL MATERIAL	14	$50	$700	$25	?	$50	ECOLOGICAL STUDIES	

ANNUAL PERMITS / ADMINISTRATIVE FEES

PERMIT TYPE / ADMINISTRATIVE / LEGAL CITATION	NO. ISSUED	CURRENT FEE	REVENUE GENERATED	PROPOSED FEE	EST. REVENUE GENERATED	EST. ADMIN. COST	DIVISION	STD. FORM
BAIT SHRIMP	24	$ 0 + $1,000 BOND	$ 0	$1,000 BOND REQUIRED + $50 INSPECTION FEE	$1,200	$50	MARINE FISH.	YES
POMPANO & BLACK DRUM	21	$ 0 + $1,000 BOND	$ 0	$25	$525	$25	MARINE FISH.	NO
BLACK DRUM (BULL DRUM)	240	$ 0	$ 0	$ 5	$1,200	$25	MARINE FISH.	NO
MENHADEN BAIT SEASON	3	$ 0	$ 0	$25	$75	$25	MARINE FISH.	NO
SHARK PERMIT	393	$ 0	$ 0	$ 5	$1,965	$25	MARINE FISH.	NO
SALTWATER SCIENTIFIC COLLECTING	92	$ 0	$ 0	$25	$2,300	$25	MARINE FISH.	NO
FRESHWATER SCIENTIFIC COLLECTING	93	$ 0	$ 0	$25	$2,325	$25	INLAND FISH.	YES
SALTWATER EXPERIMENTAL FISHERIES	1	$50 + $1,000 DEPOSIT	$50	$50 ($1,000 PERFORMANCE FEE DEPOSIT)	$ 0	$50	MARINE FISH.	YES
CANADA GOOSE HUNTING	690	$ 5	$ 3,450	$ 5	$3,450	$25	WILDLIFE	YES
GAME BREEDER LICENSE	431	$25	$10,775	$25 + $5 RENEWAL FEE + $50 PER INSPEC.	$10,775 + $ 2,155	$25	WILDLIFE	YES
WMA HANDICAPPED HUNT	48	$ 0	$ 0	$ 5	$240	$25	WILDLIFE	YES
FIELD TRIAL	24	$ 0	$ 0	$ 5	$120	$25	WILDLIFE	NO
FIREWOOD CUTTING ON WMA'S	8	$ 0	$ 0	$ 5	$40	$25	WILDLIFE	YES
SCIENTIFIC COLLECTING PERMIT	69	$ 0	$ 0	$25	$1,725	$25	WILDLIFE	YES

ANNUAL PERMITS / ADMINISTRATIVE FEES

PERMIT TYPE / ADMINISTRATIVE / LEGAL CITATION	NO. ISSUED	CURRENT FEE	REVENUE GENERATED	PROPOSED FEE	EST. REVENUE GENERATED	EST. ADMIN. COST	DIVISION	STD. FORM
RACCOON NIGHTTIME ON WMA's	50	$ 0	$ 0	$ 5	$250	$25	WILDLIFE	YES
WMA LOTTERY DEER HUNT	1,900*	$ 5	$9,500	$ 5	$25,000 +	$25	WILDLIFE	YES
CROSSBOW	930	$ 0	$ 0	$ 5	$4,650	$25	WILDLIFE	YES
HANDICAPPED ATV	180	$ 0	$ 0	$5 + $2 PER DECAL	$900 + $360	$25	WILDLIFE	YES
SHOOTING PRESERVE LICENSE	25	$200	$5,000	$200 LICENSE FEE + $50 INSPECTION FEE	$5,000	$200	WILDLIFE	YES
FALCONRY PERMIT (Game Breeder License Required)	0	$25	$ 0	$25 LICENSE + $5 RENEWAL FEE + $50 INSPEC. FEE	$ 0	$25	WILDLIFE	YES
SOFTFRUIT COLLECTION WMA's	0	$ 0	$ 0	$25	$ 0	$25	WILDLIFE	YES
WILDLIFE REHABILITATION	23	$ 0	$ 0	$ 0	$ 0	$25	WILDLIFE	YES
SPECIAL PURPOSE - POSSESSION	8	$ 0	$ 0	$ 0	$ 0	$25	WILDLIFE	YES
NUISANCE WILDLIFE CONTROL OPERATOR	7	$ 0	$ 0	$25 (TRAPPING LICENSE IS REQUIRED)	$175	$25	WILDLIFE	YES
NUISANCE WILDLIFE CONTROL	146	$ 0	$ 0	$ 5 + $50 INSPECTION FEE (IF REQUIRED)	$730	$25	WILDLIFE	YES
TOTAL	5,675		$35,005		$76,150			

*5,000 - 6,000 PERMITS ESTIMATED TO BE ISSUED FOR NEXT YEAR.

FN/lmf b:permits; permits.2 11-24-92

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

April 6, 1993

Mr. Bert Jones, Chairman
Post Office Box 298
Simsboro, LA 71275

Mr. James H. Jenkins, Jr.
Post Office Box 15279
Baton Rouge, LA 70815

Capt. Peter Vujnovich
Vice Chairman
6028 Chatham
New Orleans, LA 70122

Mr. John F. "Jeff" Schneider
Rt. 1, Box 201
Loranger, LA 70446

Mr. Perry Gisclair
Post Office Box 338
Golden Meadow, LA 70357

Mr. Joseph B. Cormier
804 E. Alexander Street
Lafayette, LA 70501

Mr. Tee John Mialjevich
2621 Wyoming Street
Marrero, LA 70072

Gentlemen:

The March of Dimes of America is having their annual WalkAmerica on April 24, 1993. The Department of Wildlife and Fisheries, as in previous years, has supported the March of Dimes. As you know, the March of Dimes is an organization that helps to fight birth defects.

This year, I am soliciting your help. I am asking that each Commission Member for a contribution. Any contribution that you make will be greatly appreciated. The deadline for submission of contributions is April 16, 1993.

Thank you for your courtesies in this matter.

Sincerely,

Patricia Porch

Patricia Porch
Team Captain

RULE

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF FISHERIES

The Department of Wildlife and Fisheries (DWF) hearby adopts the following rule establishing freshwater mussel harvest regulations.

TITLE 76

WILDLIFE AND FISHERIES

PART VII. FISH AND OTHER AQUATIC LIFE

Chapter 1. Freshwater Sports and Commercial Fishing

Section 161. Freshwater Mussel Harvest

Part I. Commercial Harvest

PERMITS

A. In addition to a commercial fishing license, all mussel harvesters must obtain a mussel harvester's permit issued by DWF prior to initiation of commercial harvesting.

B. The Secretary of DWF shall have the authority to limit the number of mussel harvester permits, cease issuance of new permits, or close the season entirely if it is deemed necessary to protect the mussel resource.

C. In addition to a wholesale/retail dealer's license, all mussel buyers must obtain a mussel buyer's permit issued by DWF.

FEES

A. An annual permit fee of $100.00 for resident mussel fishermen and $400.00 for non-resident mussel fishermen will accompany the permit application. This fee will be applicable for one calendar year. If the permit application is disapproved, the fee will be refunded to the applicant.

B. An annual permit fee of $150 for resident mussel buyers and $600 for

non-resident mussel buyers will accompany the permit application. This fee will be applicable for one calendar year. If the permit application is disapproved, the fee will be refunded to the applicant.

GEAR

A. Mussels shall be harvested by hand only, with or without underwater breathing apparatus.

SPECIES FOR COMMERCIAL HARVEST

A. Only the following taxa may be legally harvested:

washboard	*Megaolonaias nervosa*
pimpleback	*Quadrula spp.*
three ridge	*Amblema plicata*
ebonyshell	*Fusconaia ebena*
bluefer	*Potamilus (Proptera) purpuratus*
Asian clam	*Corbicula fluminea*

B. Only specimens larger than the following minimum sizes shall be harvested:

washboard	4 inches
three ridge and bluefer	3 inches
pimpleback and ebony shell	2 3/4 inches
Asian clam	no size limit

Minimum size will be measured by passing the specimen through a ring with the inside diameter equivalent to the minimum size given for each taxa. Only those individuals that will not pass through the ring (from any angle) may be retained. Any individuals that pass through the rings must be immediately returned to the original mussel bed unharmed.

TIMING OF HARVEST

A. Mussels may be harvested year-round between official sunrise and

official sunset; except that, commercial harvest of mussels will be closed on Saturdays and Sundays of each week.

AREAS OPEN TO HARVEST

A. Unless otherwise stated, all publicly owned water bottoms in Louisiana outside of officially recognized saltwater areas (R.S. 56:322A and 322B) are open to harvest.

B. Because of the presence of threatened or endangered species of mussels, commercial mussel harvest is prohibited in the following areas:

1. Amite River from the junction with Bayou Manchac to the Mississippi state line.

2. All of Rapides and Grant Parishes except the main channel of the Red River.

C. Additional areas may be closed by the Secretary of DWF if deemed necessary to protect local mussel populations.

REPORTING

A. Commercial mussel harvesters and mussel buyers must file reports to the DWF of harvesting or buying activities conducted under their mussel permit on forms furnished by the Department. Time and frequency of filing reports shall be specified on the permit and shall be subject to change by the Department upon written notification to the commercial harvester or buyer. Written notification of changes and reporting requirements sent by the Department to commercial harvesters or buyers at the address on permittees most recent application or permit shall become part of the harvester's permit and must be maintained by the permittee along with the permit.

B. Commercial harvesters must contact DWF and provide information on harvesting location at least 24 hours prior to the first day of

harvesting activities on that location. The harvester must also notify DWF within 24 hours when harvesting at that location has been completed. Information on harvesting locations will be given to DWF but will be kept confidential.

SPECIAL RESTRICTIONS

A. Meats shall not be used or sold for human consumption.

B. Mussels shall be transferred whole (unopened with meat) from the collection site directly to an in-state buyer for processing.

C. Buyer must render meats unsuitable for human consumption then dispose of meats, as per DEQ regulations for disposal of solid waste.

D. If the mussel harvester prefers to personally process the mussels rather than sell whole mussels to a buyer, approval must be first obtained from DWF. Meat disposal requirements will be the same for buyers under special restrictions as in Section C.

PENALTIES

A. Failure to abide by the above rules shall result in revocation of permit and forfeiture of future permits for a 3 year period after which issuance or denial of a permit will be at the discretion of the Secretary of the DWF.

Part II. Recreational Harvest

GENERAL HARVEST RESTRICTIONS

A. Freshwater mussels may be taken year-round between official sunrise and official sunset for recreational purposes with a basic recreational fishing license. The daily possession limit is 50 whole mussels, or 100 separate valves, of one species or in aggregate.

B. Mussels shall be harvested by hand only; no diving with underwater breathing apparatus will be permitted.