

Louisiana Department of Wildlife and Fisheries

Marine Fisheries Division



2002

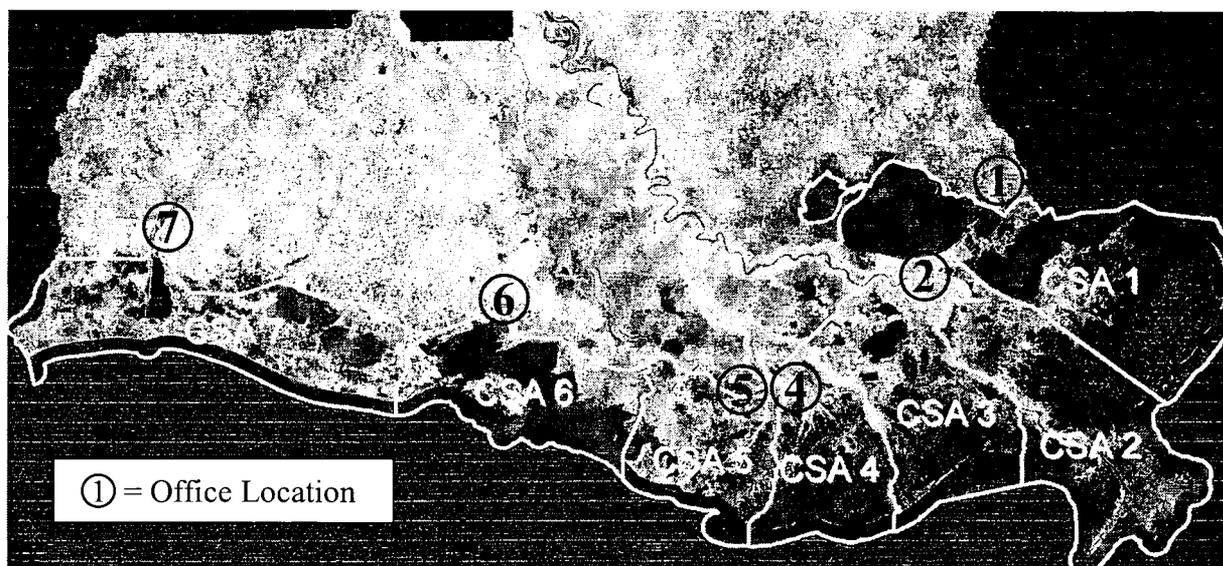
OYSTER STOCK ASSESSMENT REPORT ON THE PUBLIC SEED GROUNDS, SEED RESERVATIONS, AND TONGING AREAS

Oyster Data Report Series

No. 8

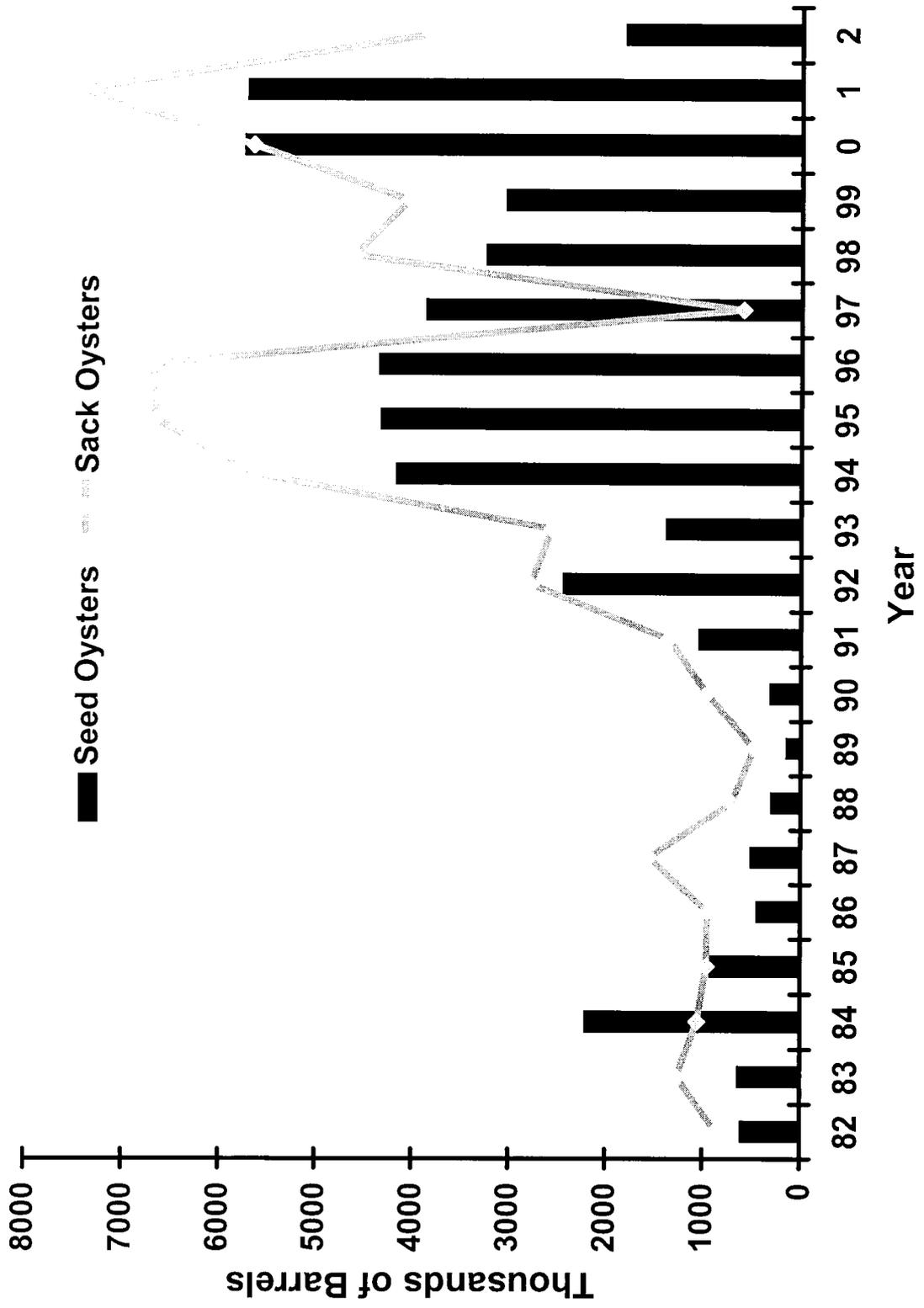
July, 2002

LDWF Marine Fisheries’ Coastal Study Areas (CSAs)



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ANNUAL OYSTER STOCK SIZE



**OYSTER AVAILABILITY AND SYNOPSIS OF RELATED ACTIVITIES
IN COASTAL STUDY AREA I: PUBLIC SEED GROUNDS IN THE LAKE BORGNE,
MISSISSIPPI SOUND AND BILOXI MARSH VICINITY**

JOHN F. BURDON, CARL F. BRITT AND THOMAS J. ROWLEY

On July 11, 12, 13 and 17, square meter field sampling associated with the 2002 oyster stock assessment of the Public Seed Grounds in Coastal Study Area I was conducted and completed. Sampling locations were as follows: Hospital Wall, Little Grassy Island, Half Moon Island, Petit Pass, Three Mile Pass, Grand Pass, Cabbage Reef, Turkey Bayou, Martin Island, Holmes Island and the 2000 Shell Plant (South of Half Moon Island). A square meter sample with one additional replicate was taken at each of the sites. An average of the two samples at each site was utilized to determine the market and seed oyster stock based on a predetermined amount of acreage.

The 2002 stock assessment conducted in Coastal Study Area I indicated that quantities of sack oysters will exceed 1.6 million barrels, while seed oyster stocks totaled over 925,000 barrels. Based on the square meter samples, the elevated abundance of the population of market oysters seen in the 2001 stock assessment have been harvested, and the population has stabilized to reflect available stocks which closely resembled the 1998 and 1999 seasons.

In 2001, Coastal study Area I experienced the highest estimate of sack and seed oysters throughout the area in twenty years. Several factors contributed to this elevated population: 1) rejuvenation and expanded distribution of oysters in 1999 and 2000 throughout the area as a result of low rainfall and subsequent low river discharge, and 2) consistent southeast winds that extended the optimum salinity range for good oyster propagation and survival. During 1999 and 2000, salinities often reached and remained a consistent 10 ppt at the western edges of Lake Borgne for extended periods of time. A noted benefit of this phenomenon was the explosive rejuvenation of the oyster population in the southern portion of Lake Borgne. Market oysters of extremely good quality and weight were harvested from this area during the 2001-2002 season. This productive situation should continue for some time if excessive amounts of freshwater are not introduced into the area. In the future, a square meter sampling station location should be determined and utilized to provide information from this once depleted area that has recently rebounded.

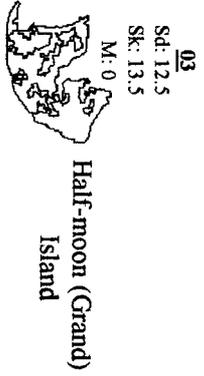
On June 17, 2002, samples consisting of both sack and seed size oysters from Three Mile Pass and Cabbage Reef were provided to Dr. John Supan (LSU Cooperative Extension Service) for "Dermo" analysis. Those results are provided in another section of this report.

Boarding reports indicate that some seed oysters are harvested through October, and that by November harvesters are fishing exclusively for market oysters. Again in late winter, prior to the closure of the Public Seed Grounds, seed oysters are procured for transfer and bedding on private leases. The majority of harvest of seed oyster took place from two locations: Cabbage Reef and Turkey Bayou.

Spat set, the rejuvenator of all seed and eventual market oysters, was minimum and random throughout the year in both square meter and dredge samples. Observations of spat catch were best at Cabbage Reef, followed by Petit Pass and Turkey Bayou.

The areas that provided the largest extraction of market oysters were Cabbage Reef, Turkey Bayou, Three Mile Pass and the rejuvenated area in the southern portion of Lake Borgne.

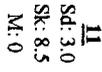
Mississippi Sound



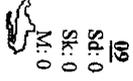
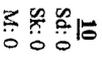
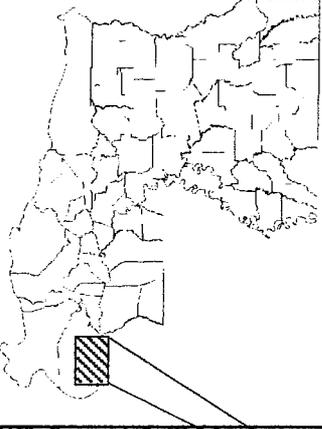
Lake Borgne



2000
Cutch Plant
Sd: 2.0
Sk: 5.0
M: 0



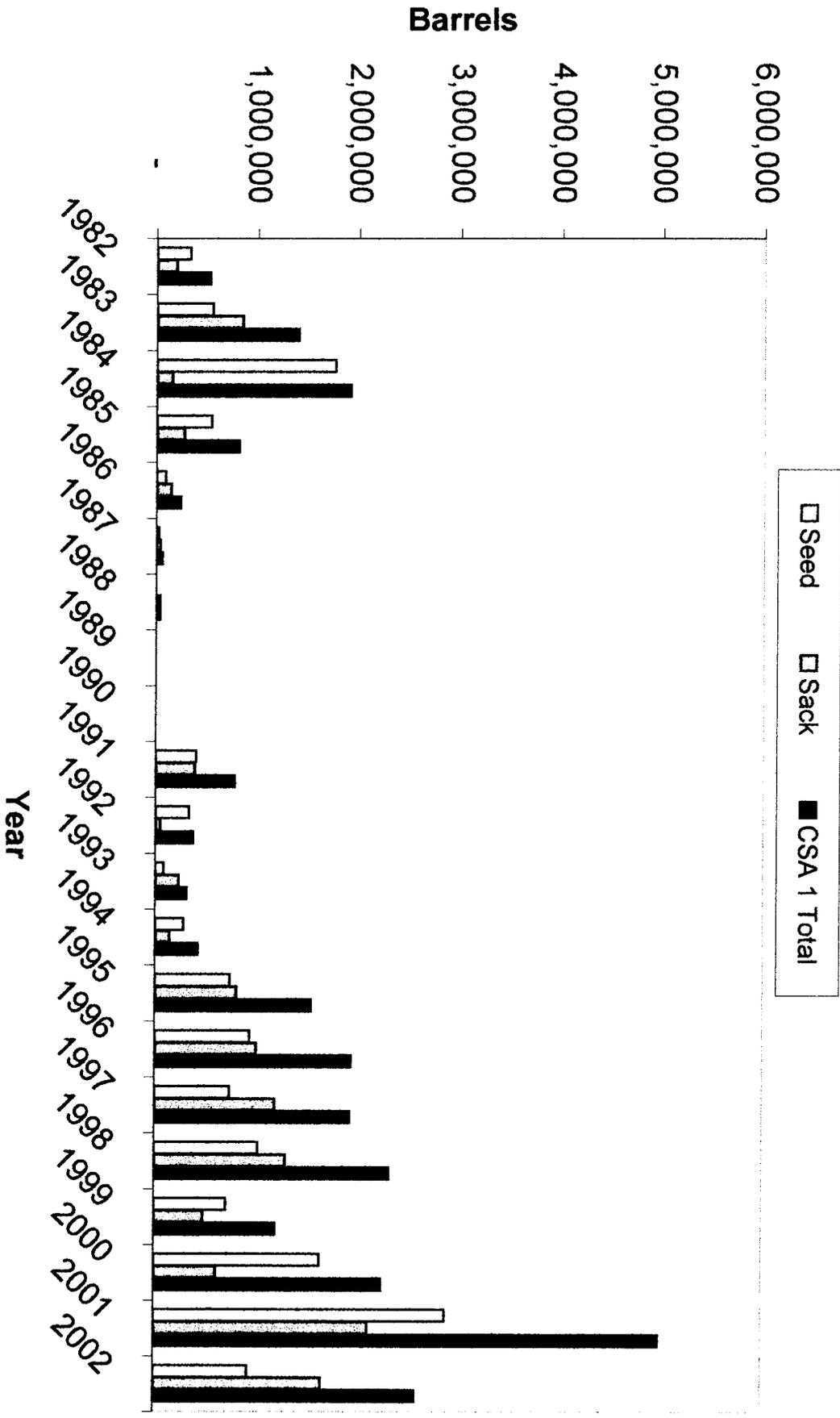
CSA I
2002 M²
Seed
Sack
Mussels



2002 Coastal Study Area I Oyster Availability

<i>Meter² Station</i>	<i>Reef Acreage</i>	<i># Meter²</i>	<i># Seed Oysters</i>	<i># Sack Oysters</i>	<i>Barrels of Seed</i>	<i>Barrels of Sack</i>
01	376.07	1,521,955.29	0	0	0	0
02			0	1		
03			12.5	13.5		
04			1.0	1.5		
02 - 04	6850.17	27,722,638.00	13.5	15.0	519,799	1,155,109
05	3058.65	12,378,356.55	3.5	0.5	60,172	17,192
06			0.5	1.5		
07			30.5	13.5		
08			N/A	N/A		
11			3.0	8.5		
06 - 11	1801.76	7,291,722.72	34.0	23.5	344,331	475,987
09			0	0		
10			0	0		
09 - 10	4155.7	16,818,117.9	0	0	0	0
Lake Pontchartrain	631.27	2,554,749.69	N/A	N/A		
2000 Culebra Plant	100	404,700	2.0	5.0	1124	5620
TOTALS					925,426	1,653,908

CSA 1 Annual Oyster Stock Size





State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES

1600 CANAL STREET
New Orleans, LA 70112
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M.J. "Mike" Foster
Governor

James H. Jenkins, Jr.
Secretary

July 18, 2002

MEMORANDUM

TO: Matrín Bourgeois, Shellfish Program Manager,
Marine Fisheries Division

FROM: Clarence Luquet, Biologist Supervisor,
Coastal Study Area II

SUBJECT: CSA II Meter Square Samples 2002

Personnel from Coastal Study Area II completed the 2002 meter square sampling project on July 11, 2002. A total of 29 stations were sampled from Bay Gardene and Northern Black Bay to Breton Sound. We found 600,991 barrels of seed oysters and 968,744 barrels of sack oysters for a total of 1,569,735 barrels overall.

The overall availability is down 63 percent from last year, and down 51% of last 10 years' average. Relative to last year, the stock of seed oysters is down again by 1,324,718 barrels (70%), while sack oyster availability is down by 1,352,754 barrels (60%). Seed oyster availability is well below the average for the 1990's: down 70 % of the 10 year average. Sack oysters are not far below the average of the 90's (down 21 %). Reminder: the Area had an all time high for sack oyster population last year. Note: preliminary figures indicate 415,954 barrels of market oysters were taken from public grounds east of the Mississippi River excluding Lake Borgne.

Assessment by station are presented in tabular form (Table 1).

Ample seed oysters were found at most Western Black Bay, Bay Crabe, and Bay Gardene reefs, but were more abundant in Bay Crabe, and Bay Gardene. Sack oysters appear to be most abundant in the western half of Coastal Study Area 2. The decrease in population is primarily due to last year's "*dermo*" infestation, high fishing effort in CSA 2 last season, and predation (*Stramonita (Thais)* were found at some of our seaward reefs). Salinities through June have been depressed throughout the area due to increased river stage, which may be killing the drills, and will help keep *dermo* levels down .

A map of average numbers of seed, and sack oysters per square meter is included in Figure 1.

The results of this June's *dermo* sampling show that infestation has greatly decreased from last year with the prevalence averaging less than 35% (last year >60%), and incidences at 6 of 7 stations < 0.5 (last year 0.7 to 2.8). The highest prevalence found this year was 73 % in N Black Bay with weighted incidence of 1.1.

Mussel counts were also made at each station. Mussels were encountered at most stations but were light overall, with the most fouling being at the two western-most sampling sites.

Mortalities in SEED oysters ranged from 0% to 100% at "The Wreck" (#28), but averaged less than 10 percent across the area.

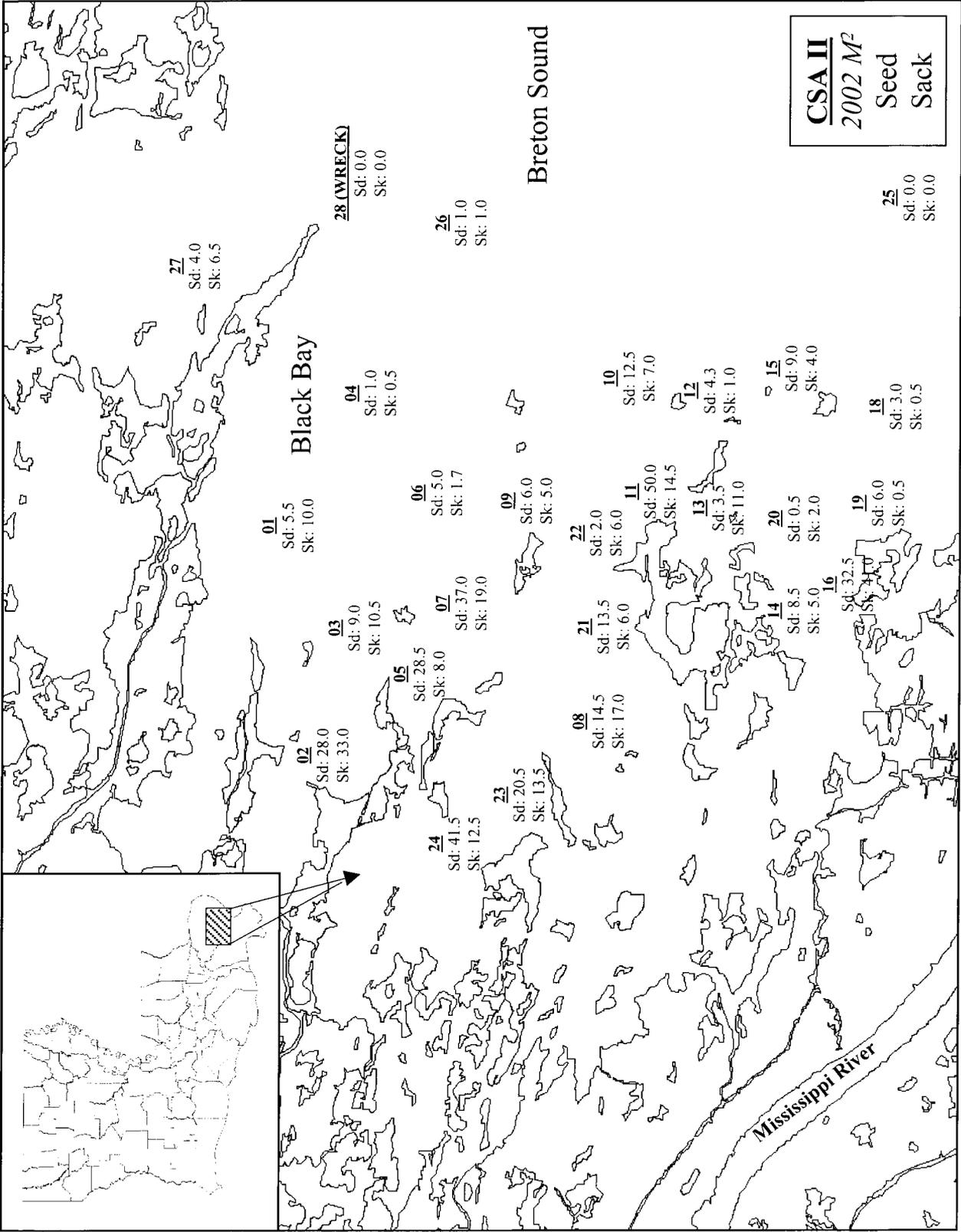
Mortalities in SACK oysters ranged from 0% to 17 % at Black Bay (#6), but averaged less than 2 percent across the area.

Young spat (less than one month old) were present at 24 of our 29 stations. The highest occurrences were in the south-central Black Bay, Bay Crabe, and western California Bay.

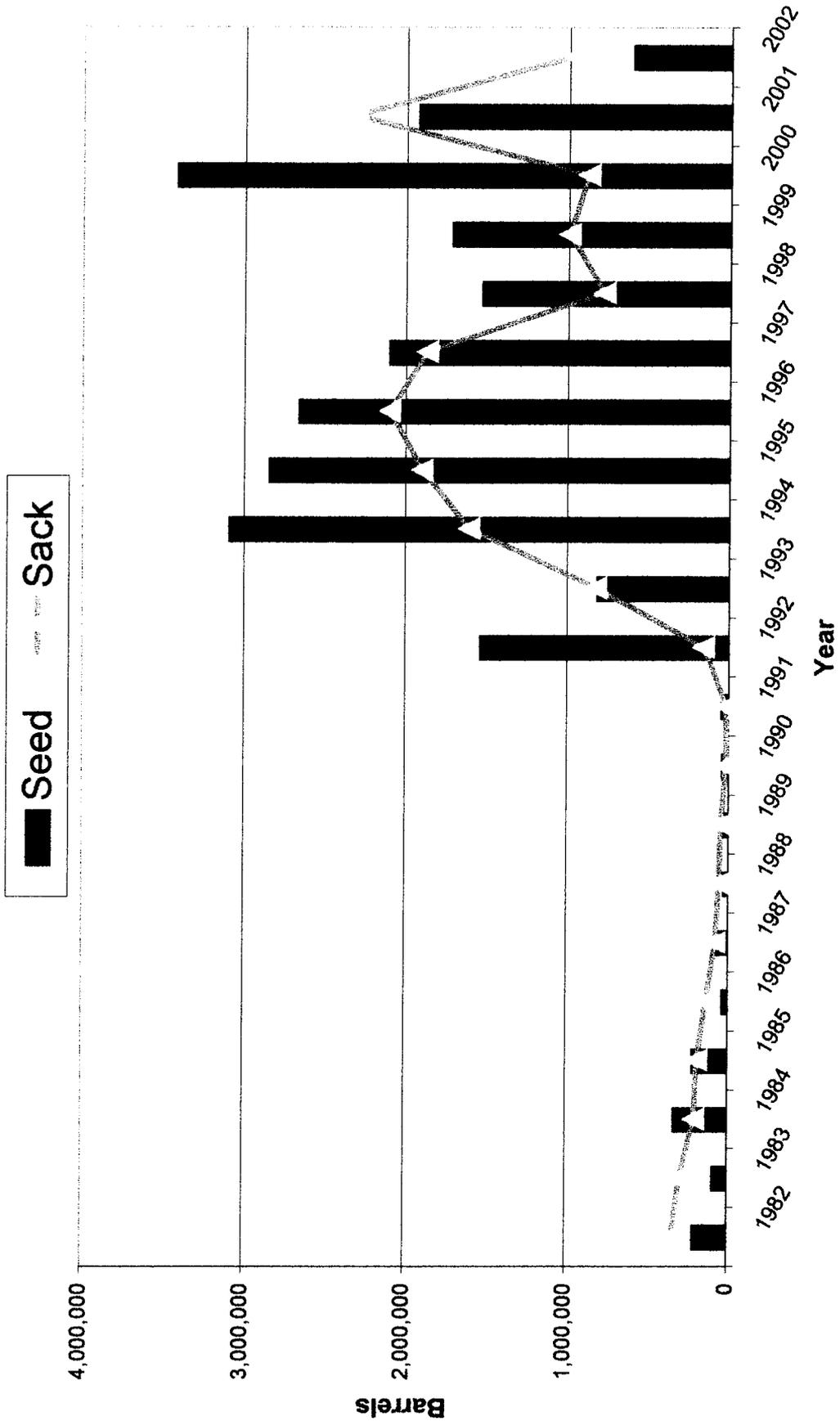
Average numbers of spat and mussels are reported on the stock assessment worksheet as an indicator of potential for the upcoming season. It should be noted that many stations with high numbers in these categories were populated by very young spat and/or mussels. These are normally subject to high mortalities at those juvenile stages, and therefore should not overly discourage or encourage oyster-fishing activities at those locations.

Table 1: Oyster stock assessment by station in Coastal Study Area II using meter square analysis.

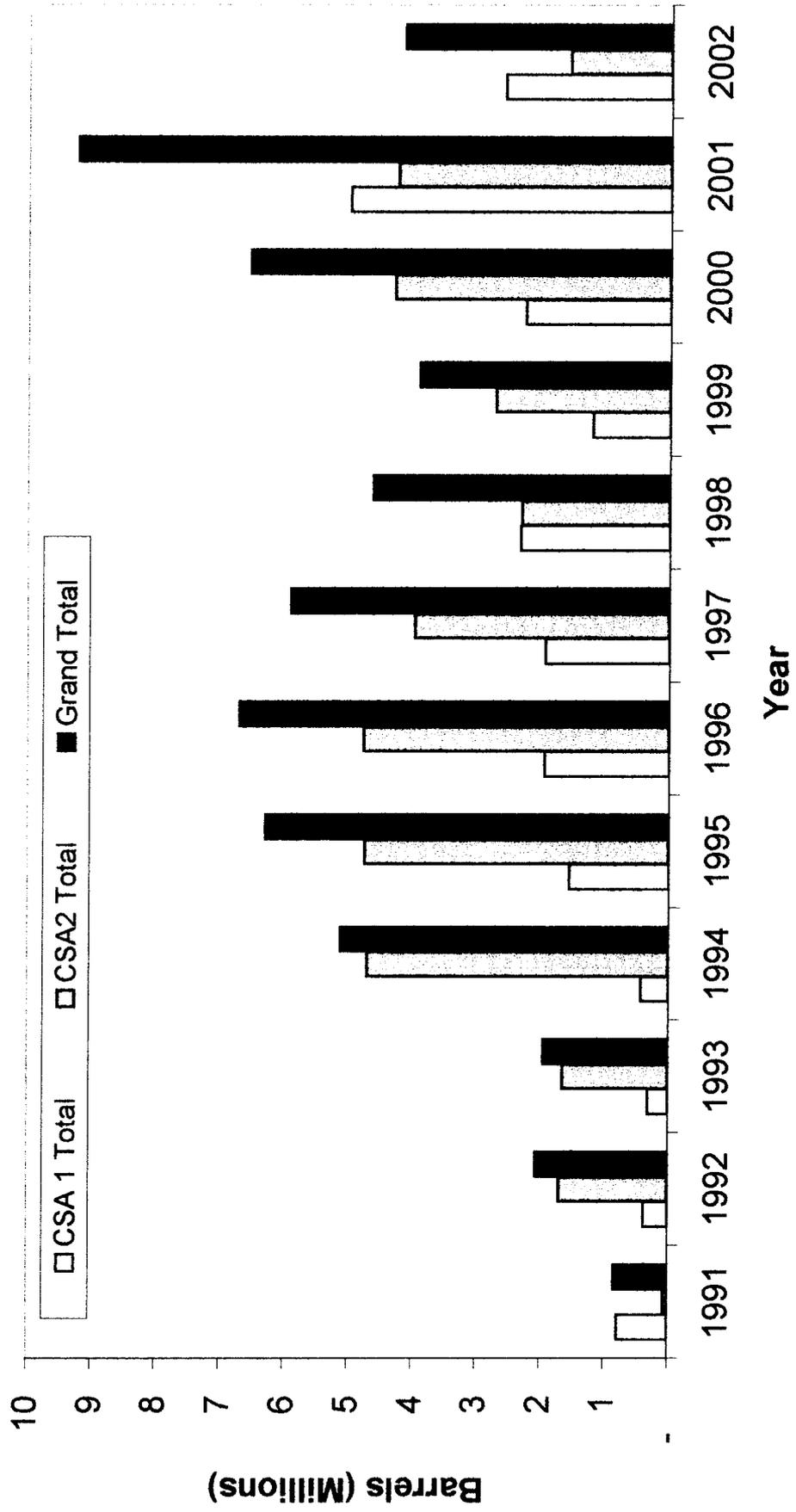
stations	grids	acres	sq. meters	seed	sack	BBLs SEED	BBLs SACK	mussels	spat
1	Snake	506	2,047,782	5.5	10	15,643	56,883	23.5	5.5
2	Jessie	59	283,773	28.0	33	11,036	26,013	85.0	90.0
3	N. Lonesome	896	3,626,112	9.0	10.5	45,326	105,762	21.5	present
5	Bayou Lost	118	477,546	28.5	8	18,903	10,612	7.5	9.5
6	Lonesome	716	2,897,652	5.0	1.67	20,123	13,442	0.3	2.0
7	Black Bay	301	1,218,147	37.0	19	62,599	64,291	4.5	25.0
8	W. Bay Crabe	501	2,027,547	14.5	17	40,833	95,745	42.0	42.5
9	Stone	461	1,865,667	6.0	5	15,547	25,912	2.5	37.5
10	S. Black Bay	145	586,815	12.5	7	10,188	11,410	4.5	0.0
11	Elephant	339	1,371,933	50.0	14.5	95,273	55,258	10.0	22.0
12	Curfew	425	1,719,975	4.3	1	10,344	4,778	6.7	11.5
13	N. California	109	441,123	3.5	11	2,144	13,479	0.0	5.0
14	California	7	28,329	8.5	5	334	393	9.5	59.5
16	Sunrise	174	704,178	32.5	41	31,786	80,198	36.0	61.5
17 SKIP						private leases discontinued			
19	Mangrove	659	2,666,973	6.0	0.5	31,600	5,267	2.0	3.0
20	W. Pelican	937	3,792,039	0.5	2	823	6,588	47.5	22.0
21	Bay Crabe	293	1,185,771	13.5	6	50,006	44,450	7.5	5.5
22	E. Bay Crabe	659	2,666,973	2.0	6	1,371	8,229	42.0	35.5
23	E. Gardene	122	493,734	20.5	13.5	3,226	4,249	45.0	10.5
24	Bay Gardene	28	113,316	41.5	12.5	16,095	9,696	66.5	24.5
4,26	N. Black Bay	69	279,243	1.0	0.75	1,771	2,656	0.0	0.0
15	Telegraph	315	1,274,805	9.0	4	6,425	5,711	12.0	2.5
18	E. Pelican	127	513,969	3.0	0.5	13,186	4,395	0.0	0.0
26 SKIP	see 4,26					combined data			
25	Battledore	1,528	3,164,754	0.0	0	0	0	0.0	0.0
27	L Fortuna	1419	5,742,693	4.0	6.5	96,409	313,328	0.5	1.0
28	Wreck	4288	17,353,536	0.0	0	0	0	0.0	0.0
Sub Total		2276	9,210,972						
ALL TOTAL						600,991	968,744		
						1,569,735			



Coastal Study Area 2 Oyster Availability 2002



Oyster Availability on the Public Grounds East of the Mississippi River (seed and sack oysters combined)





State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES
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P. O. Box 37
Grand Isle, LA 70358
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M.J. "Mike" Foster
Governor

James H. Jenkins, Jr.
Secretary

Date: July 17, 2002

To: Martin Bourgeois, Oyster Program Manager

From: John Dameier, Biologist Manager

Re: Hackberry Bay Public Oyster Seed Reservation Meter Square Samples

Meter square oyster samples were collected July 16, 2002. Samples were taken at three stations (upper, middle, and lower) with one replicate at each site (Figure 1). Oysters were measured in 5 -mm size classes, averaged for each class, and divided into groups of spat, seed, and sack oysters (Figure 2). Spat oysters, which measured less than 25 mm, averaged 1.0 per m². This number was lower than the previous six years (Figure 3). Seed oysters, which measured 25 mm to less than 75 mm, averaged 12.17 per m². This number was below the average of previous years, but was the same as 2001. Sack oysters, which measured 75 mm and greater, averaged 1.5 per m². This number was the lowest in the past six years. Oysters per m² were extrapolated for 5.938 hectares (14.7 acres) of reef. The results were 1,003.4 barrels of seed oysters and 494.8 sacks or 247.4 barrels of marketable oysters (Table 1).

During the 2001/2002 season (September 5, 2001 to April 15, 2002) from Hackberry Bay Oyster Seed Reservation, 1,621 sacks of marketable oysters and 2,455 barrels of seed oysters were harvested.

On June 18, 2002, oysters were collected with Dr. John Supan (LSU Cooperative Extension Service) from the mid Hackberry station with a dredge. Sack and seed oysters were divided for "Dermo" analysis. The results for seed oysters were 15% prevalence and a weighted incidence of 0.2 (on the Mackin Scale of 0-5). The results for market oysters were 80% prevalence and a weighted incidence of 0.7.

Salinities have stabilized since the 2-year drought and have remained between 10 ppt and 15 ppt from March through June (Figure 4). Temperatures have remained consistent with the long-term average (Figure 5). These conditions seem to be conducive to oyster reproduction and survival. Low mortalities were observed during meter square sampling and in recent dredge sampling. The conditions are favorable for this species as well as oyster predators, competitors, and pathogens. Hooked mussels per square meter averaged 21.7, an increase over recent years.

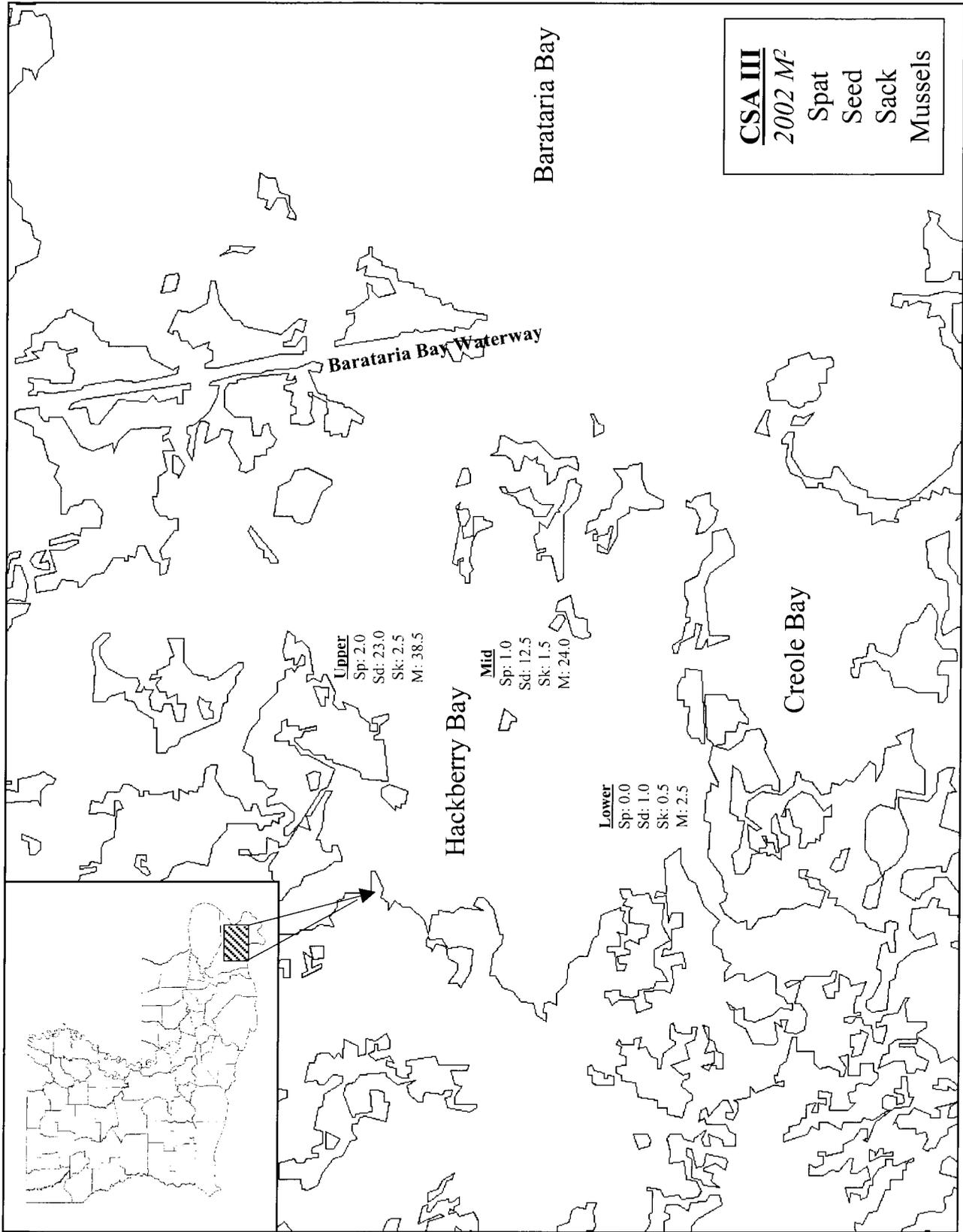


Figure 2.

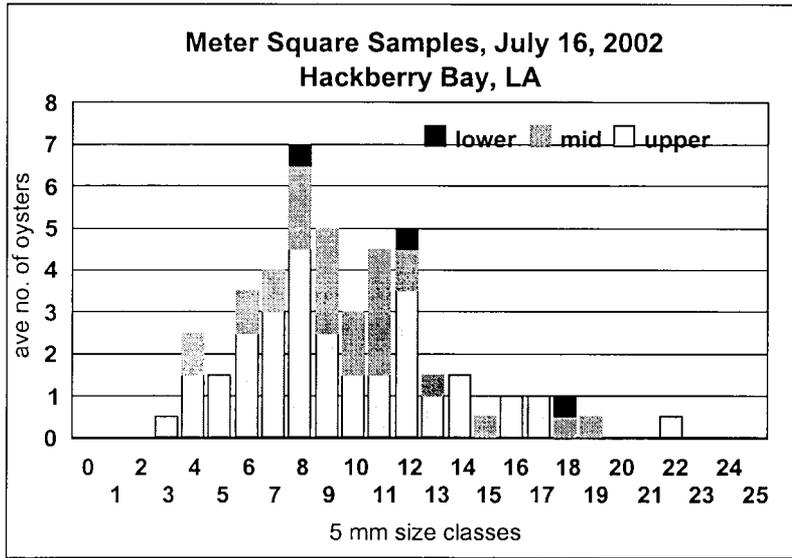


Figure 3.

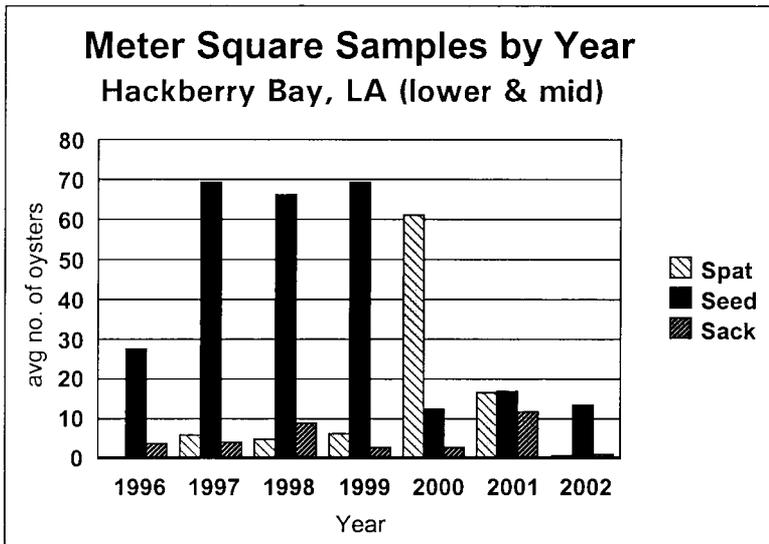


Table 1.

**2002 HACKBERRY BAY OYSTER AVAILABILITY
(Reefs Only)**

METER² STATION	REEF ACREAGE	# METER²	# SEED OYSTERS	# SACK OYSTERS	BARRELS SEED OYSTERS	BARRELS SACK OYSTERS
1, 2, 3	14.7	59,380.0	12.17	1.50	1,003.4	247.4

Figure 4.

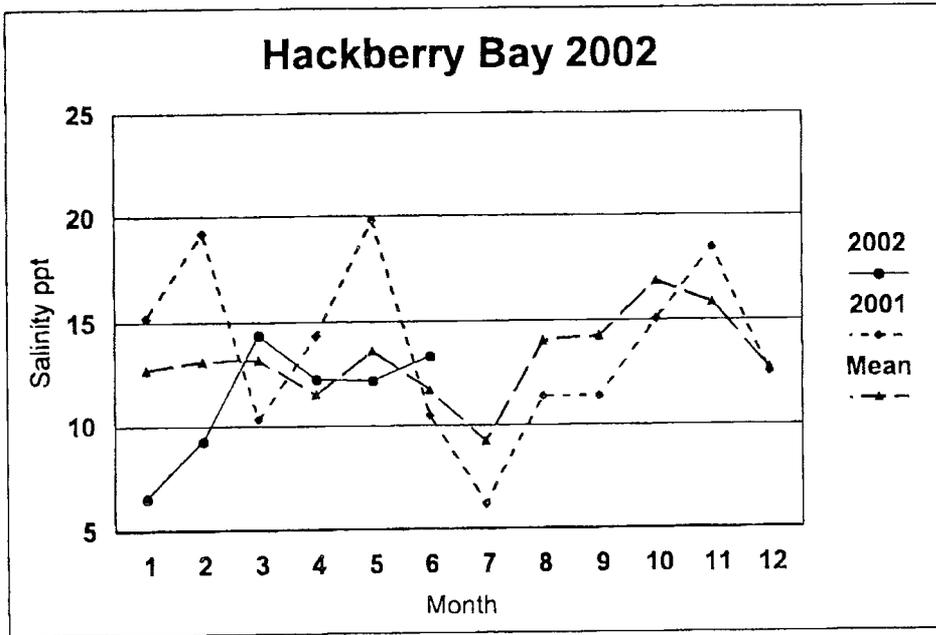
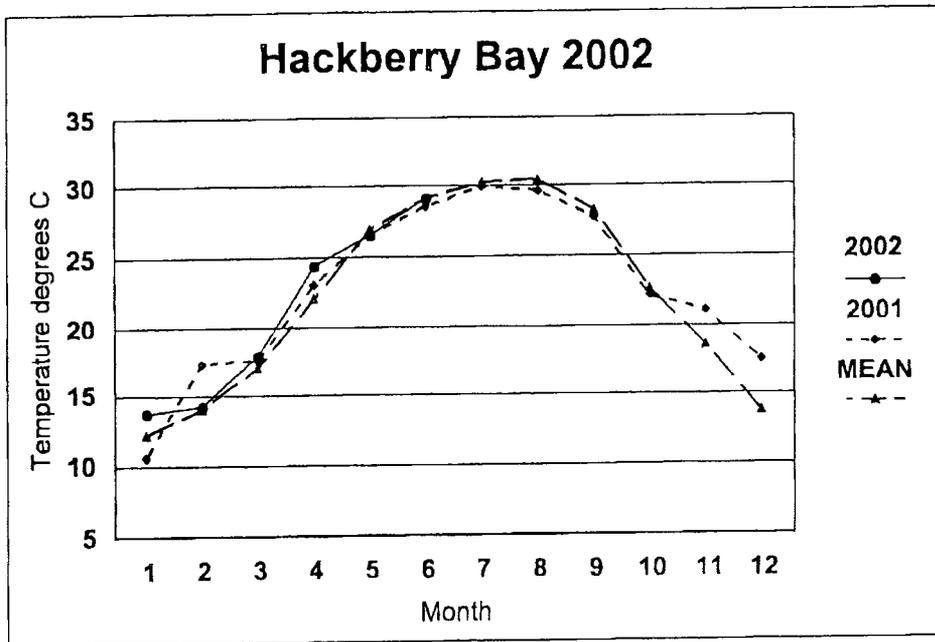


Figure 5.



State of Louisiana



James H. Jenkins, Jr.
Secretary

Department of Wildlife & Fisheries
Post Office Box 189
Bourg, Louisiana 70343
985 594-4139

M.J. Mike" Foster, Jr.
Governor

July 15, 2002

MEMORANDUM

To: Martin Bourgeois and Patrick Banks, Oyster Program Managers

From: Steve Hein and Manuel Ruiz, CSA-5

Subject: CSA-5 Meter Square Oyster Samples/2002 Stock Assessment

The 2002 stock assessment of the Sister Lake and Bay Junop Seed Grounds was completed on June 19, 2002 by CSA-5 personnel on all meter square sample locations along with replicates at each station. A total of 14 stations in all were sampled, 9 in Sister Lake (including the '94 and '95 shell plants) and 5 in Bay Junop.

The Sister Lake Seed Reservation was opened to harvest on October 1, 2001 through April 15, 2002. Based upon the meter square data, barrels of seed and sack oysters available for harvest declined in Sister Lake. Oysters available for harvest in Sister Lake, including shell plants, totaled 115,034.3 barrels of seed oysters and 186,233.4 barrels of sack oysters ranking them 11th and 8th, respectively, for the period since 1980 (tables and figures). The '94 and '95 shell plants (combined acreage) indicated a population of 66,730.5 barrels of seed oysters and 100,195.9 barrels of sack oysters. The 2002 data represented a decline from last year. The current ratio of seed to sack oysters available decreased from the previous five-year average of 1.2-1.0 seed to sack (1996 - 2001, excluding the 2000 stock ratio of 3.2-1.0) to 0.6-1.0.

Bay Junop seed oyster availability for harvest decreased for the third successive year with an estimated 15,524.4 barrels of seed oysters. Sack oysters estimated available for harvest decreased a second year in a row at 21,583.3 barrels. Both seed and sack oyster

availability ranked 12th since 1980. Bay Junop was last opened during the 2000-2001 season. The seed to sack ratio of 0.7-1.0 compares well with previous years except for the 1999 stock assessment ratio of 2.2-1.0.

Average water temperatures in Sister Lake and Bay Junop were slightly above average for May (28.4°C and 28.4°C) and normal for June (28.7°C and 28.5°C)(tables). Salinity in Sister Lake was normal for the month of May (14.0), and was increased slightly above average (11.1 ppt) in June. Bay Junop salinity was slightly below average in May (16.6 ppt) but returned to the long term average in June (15.9 ppt).

Samples and replicates were combined for a total number of hooked mussels at each station (tables). Biofouling rates of hooked mussels in Sister Lake decreased 45% from last year's assessment. Three stations comprised 92% of the hooked mussels found in the lake, the highest being Grand Pass (Stn. 200) at 322. The remaining 6 stations ranged from 36 hooked mussels to 0. Hooked mussels weren't recorded in Bay Junop but were noted that very little fouling was noticed at any of the stations.

The dermo samples (approximately 30-40 live oysters) were collected by a 2' oyster dredge on July 9, 2002 and delivered to Dr. Thomas Soniat at Nicholls State University for *Perkinsus marinus* analysis. Results are pending.

Figure 1 Sister Lake Meter Square Samples (average # of seed and sack oysters at each station)

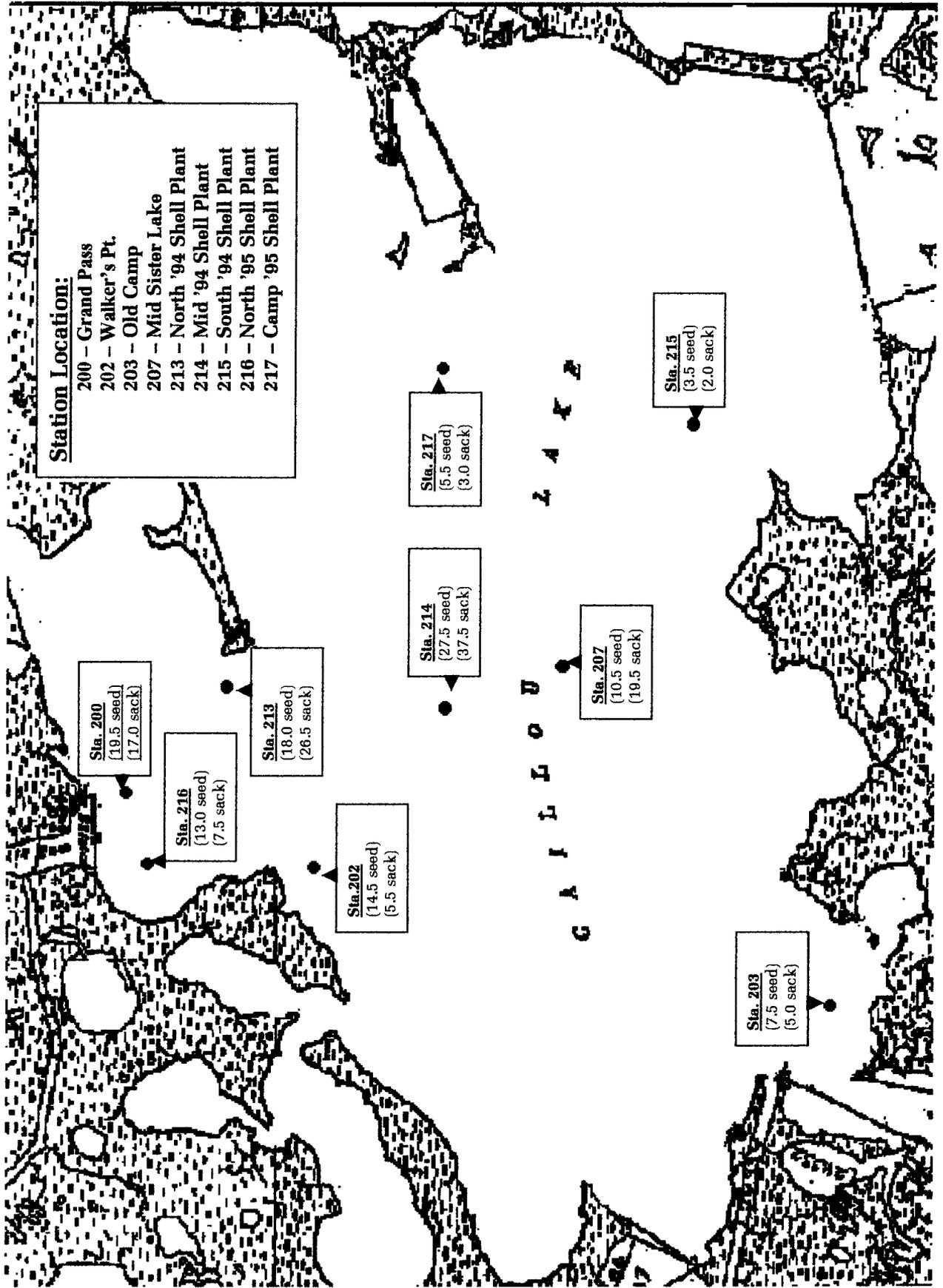


Figure 2 Bay Junop Meter Square Samples (average # of seed and sack oyster at each station)

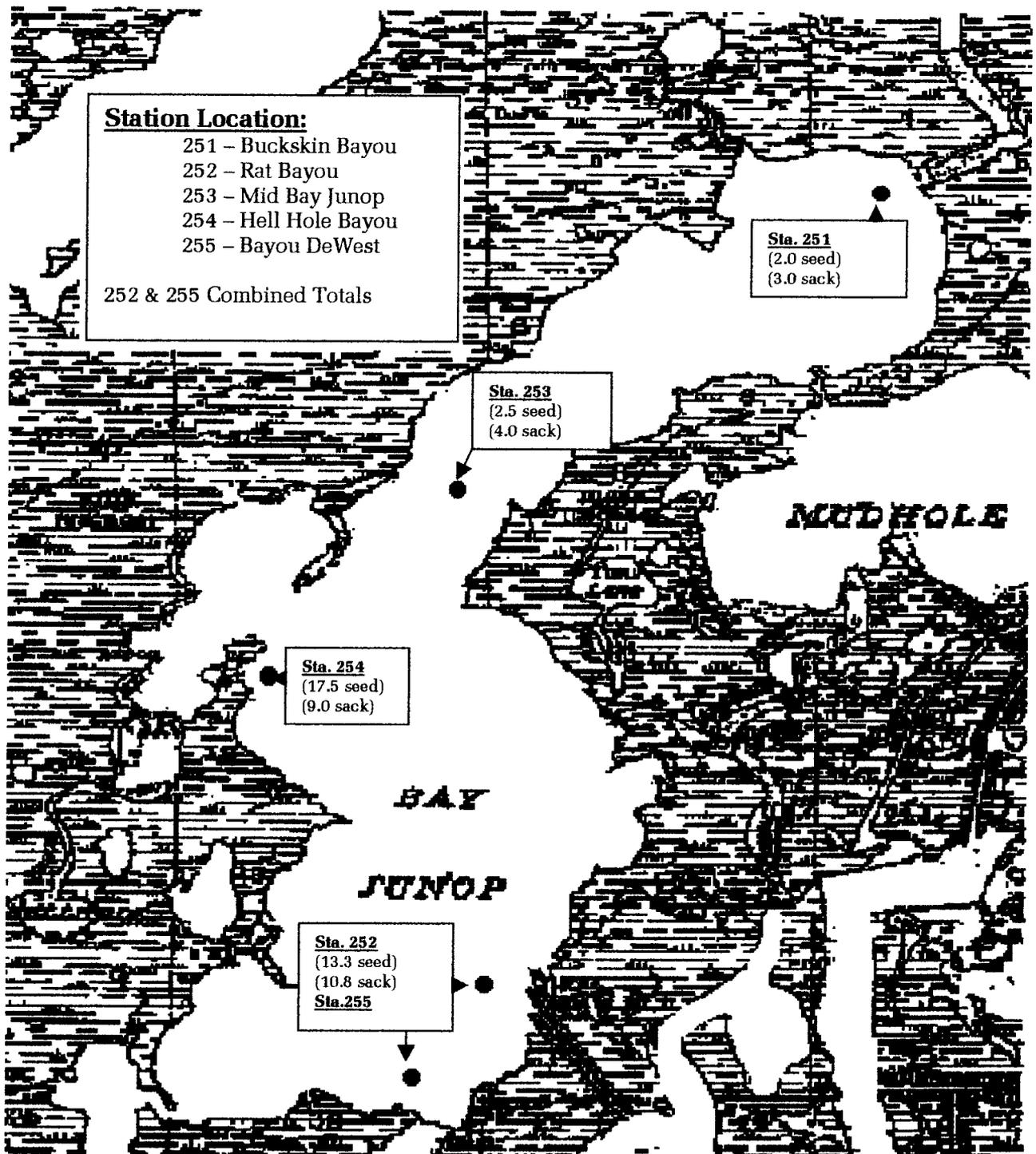


Table 1 Sister Lake M² Sample Coordinates

Stn. #	Stn. Name	North Lat.	West Long.	Habitat	Depth
200	Grand Pass	29°15'28.5"	90°55'45.5"	6	10'
202	Walkers Pt.	29°14'50.9"	90°56'16.9"	6	6'
203	Old Camp	29°12'58.2"	90°56'40.2"	6	4'
207	Mid Sister Lake	29°14'00.1"	90°55'14.7"	6	6'
213**	N '94 Shell Plant	29°15'02.9"	90°55'30.9"	6	6'
214**	Mid '94 Shell Plant	29°14'16.5"	90°55'33.8"	6	6'
215**	S '94 Shell Plant	29°13'14.1"	90°53'53.6"	6	5'
216***	N '95 Shell Plant	29°15'25.1"	90°56'10.1"	6	5'
217***	Camp '95 Shell Plant	29°14'21.8"	90°54'18.3"	6	5'

*Revised July 2001

**Not permanent stations; will sample 5 years then stop; 1995-1999. Continued samples '00-'02.

***Not permanent stations; will sample 5 years then stop; 1996-2000. Continued samples '01-'02.

Table 2 Bay Junop M² Sample Coordinates

Stn. #	Stn. Name	North Lat.	West Long.	Habitat	Depth
251	@ Buckskin Bayou	29°15'56.1"	91°01'45.1"	5	6'
252	@Rat Bayou	29°13'06.6"	91°02'52.6"	5	3'
253	Mid Bay Junop	29°14'43.7"	91°03'08.6"	5	5'
254	Mid @ Hellhole Bay	29°14'09.6"	91°03'47.6"	5	4'
255	@ Bayou deWest	29°12'38.4"	91°03'18.2"	5	4'

*Revised July 2001

Table 3 2002 Sister Lake Oyster Availability

METER ² STATION	REEF ACREAGE	#METER ²	#SEED OYSTERS	#SACK OYSTERS	BARRELS SEED OYSTERS	BARRELS SACK OYSTERS
200	221.58	896,734.26	19.5	17.0	24,286.6	42,345.8
202	81.93	331,570.71	14.5	5.5	6,677.5	13,354.9
203	151.31	612,352.00	7.5	5.0	6,378.7	8,504.9
207	185.72	751,608.84	10.5	19.5	10,961.0	21,921.9
213*	96	388,512	18	26.5	9,712.8	19,425.6
214*	129	522,063	27.5	37.5	19,939.9	54,381.6
215*	81	327,807	3.5	2.0	1,593.5	1,821.2
216**	115	465,405	13	7.5	8,403.1	9,695.9
217**	438	1,772,586	5.5	3.0	27,081.2	14,771.6
TOTAL	1,499.54	6,068,639	119.5	123.5	115,034.3	186,223.4

* 1994 Shell Plants

** 1995 Shell Plants

Figure 3 2002 Sister Lake Oyster Stock Size

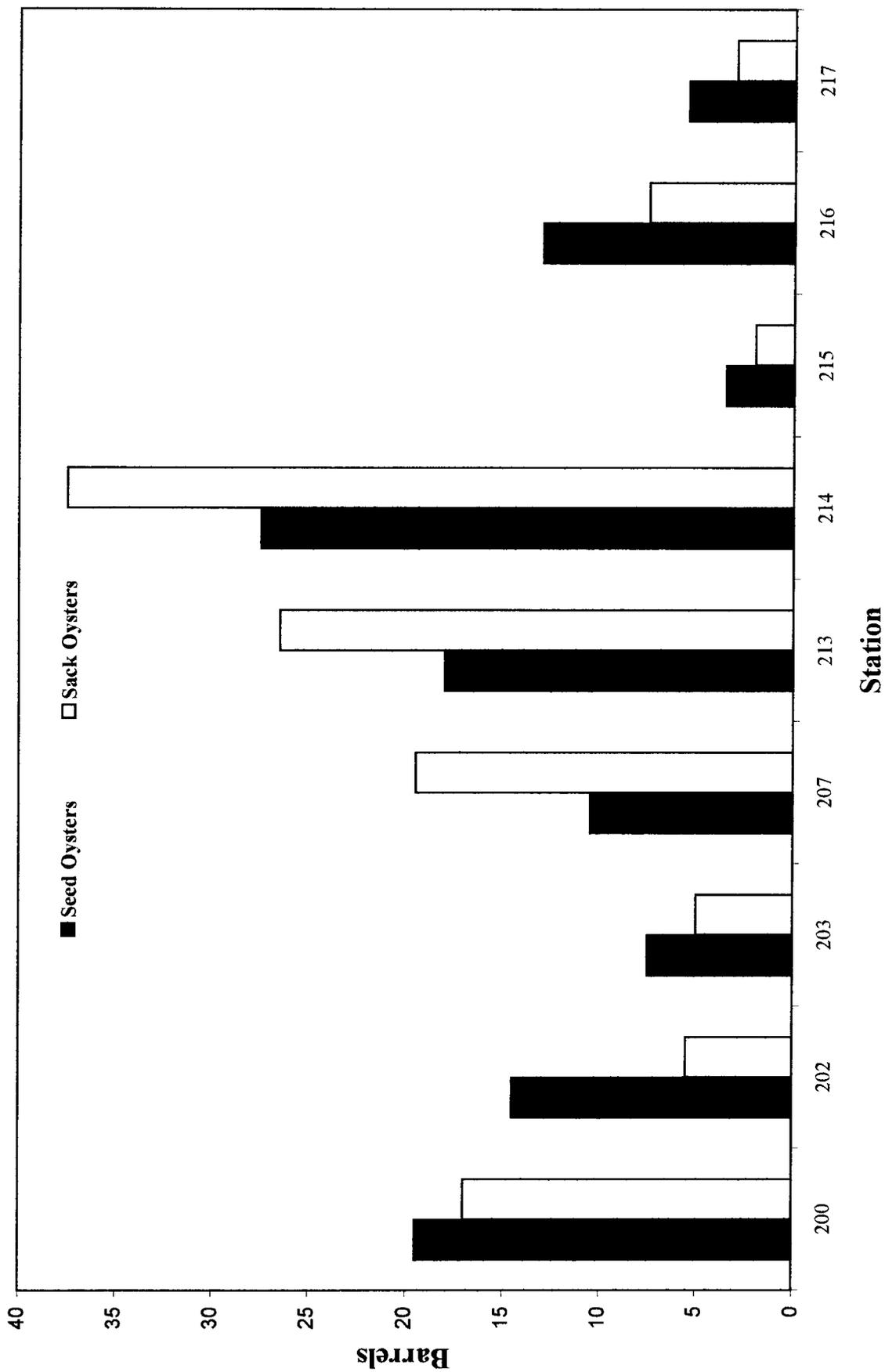


Table 4 Sister Lake Historical Meter² Available Oyster Production Estimates

YEAR	BARRELS SEED	BARRELS SACK	TOTAL BBLs AVAILABLE PRODUCTION	RATIO SEED TO SACK AVAILABILITY
1980*	142,620.1	35,170.3	177,790.4	4.1-1.0
1981	111,146.1	110,990.2	222,136.3	1.0-1.0
1982	76,950.0	94,050.0	171,000.0	0.8-1.0
1983	8,768.5	27,654.5	36,423.0	0.3-1.0
1984	69,136.0	50,587.0	119,723.0	1.4-1.0
1985	13,775.0	16,206.0	29,981.0	0.8-1.0
1986	32,633.0	21,516.0	54,150.0	1.5-1.0
1987	18,522.0	2,008.0	20,530.0	9.2-1.0
1988	47,695.0	69,570.0	117,265.0	0.7-1.0
1989	26,179.0	64,549.5	90,728.5	0.4-1.0
1990	72,862.9	24,282.0	97,144.9	3.0-1.0
1991	87,044.2	28,733.7	115,777.9	3.0-1.0
1992	172,132.0	209,854.0	381,986.0	0.8-1.0
1993	77,190.0	35,824.0	113,014.0	2.2-1.0
1994	358,455.0	50,429.0	408,884.0	7.1-1.0
1995	236,687.0	397,777.0	634,464.0	0.6-1.0
1996	384,500.0	256,164.0	640,664.0	1.5-1.0
1997	540,270.2	557,072.2	1,097,342.4	1.0-1.0
1998	298,975.0	327,125.0	626,100.0	0.9-1.0
1999	452,991.0	301,321.0	452,991.0	1.5-1.0
2000	243,589.9	76,515.5	320,105.4	3.2-1.0
2001	304,763.0	343,655.5	648,418.5	0.9-1.0
2002	115,034.0	186,233.4	301,257.4	0.6-1.0

*BASED ON 1999 ACREAGE

Figure 4 Sister Lake Historical Stock Size

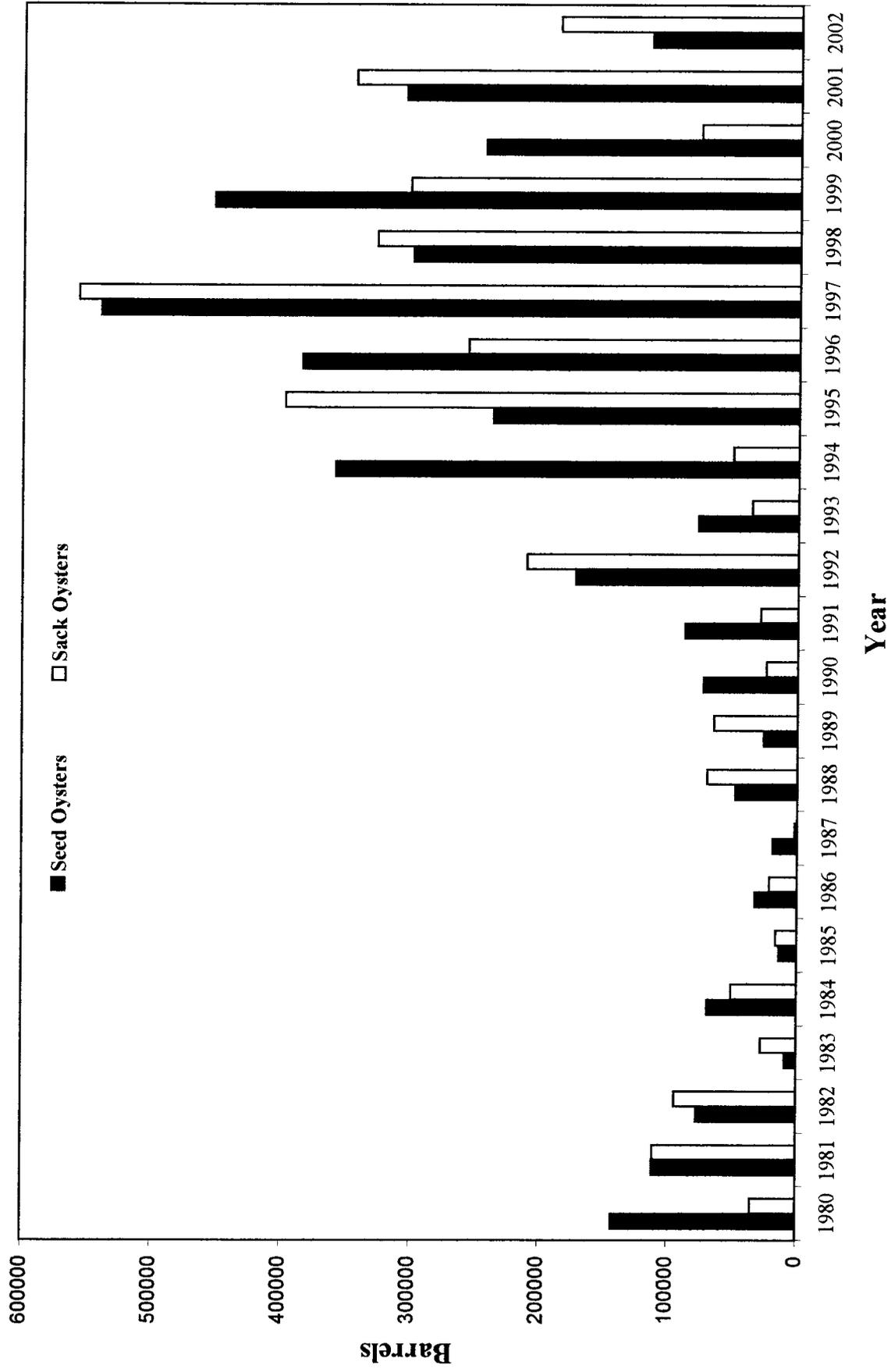


Table 5 Sister Lake Ranking of Seed and Sack Available Oyster Production

YEAR	BARRELS SEED*	YEAR	BARRELS SACK*
1997	540,270.2	1997	557,072.2
1999	452,991.0	1995	397,777.0
1996	384,500.0	2001	343,655.5
1994	358,455.0	1998	327,125.0
2001	304,763.0	1999	301,321.0
1998	298,975.0	1996	256,164.0
2000	243,589.9	1992	209,854.0
1995	236,687.0	2002	186,233.4
1992	172,132.0	1981	110,990.2
1980	142,620.1	1982	94,050.0
2002	115,034.0	2000	76,515.5
1981	111,146.1	1988	69,570.0
1991	87,044.2	1989	64,549.5
1993	77,190.0	1984	50,587.0
1982	76,950.0	1994	50,429.0
1990	72,862.9	1993	35,824.0
1984	69,136.0	1980	35,170.3
1988	47,695.0	1991	28,733.7
1986	32,633.0	1983	27,654.5
1989	26,179.0	1990	24,282.0
1987	18,522.0	1986	21,516.0
1985	13,775.0	1985	16,206.0
1983	8,768.5	1987	2,008.0

* BASED ON 1999 ACREAGE

Table 6 2002 Bay Junop Oyster Availability

METER ² STATION	REEF ACREAGE	#METER ²	#SEED OYSTERS	#SACK OYSTERS	BARRELS SEED OYSTERS	BARRELS SACK OYSTERS
251	17.2	69,608.40	2	3	193.4	580.1
252*	67.36	272,605.92	13.3	10.8	5,035.6	8,178.2
253	73.26	296,483.22	2.5	4	1,029.5	3,294.3
254	94.20	381,227.40	17.5	9	9,265.9	9,530.7
255*						
TOTAL	252.02	1,019,924.9	35.3	26.8	15,524.4	21,583.3

* Stations 252 and 255 are combined.

Figure 5 2002 Bay Junop Oyster Stock Size

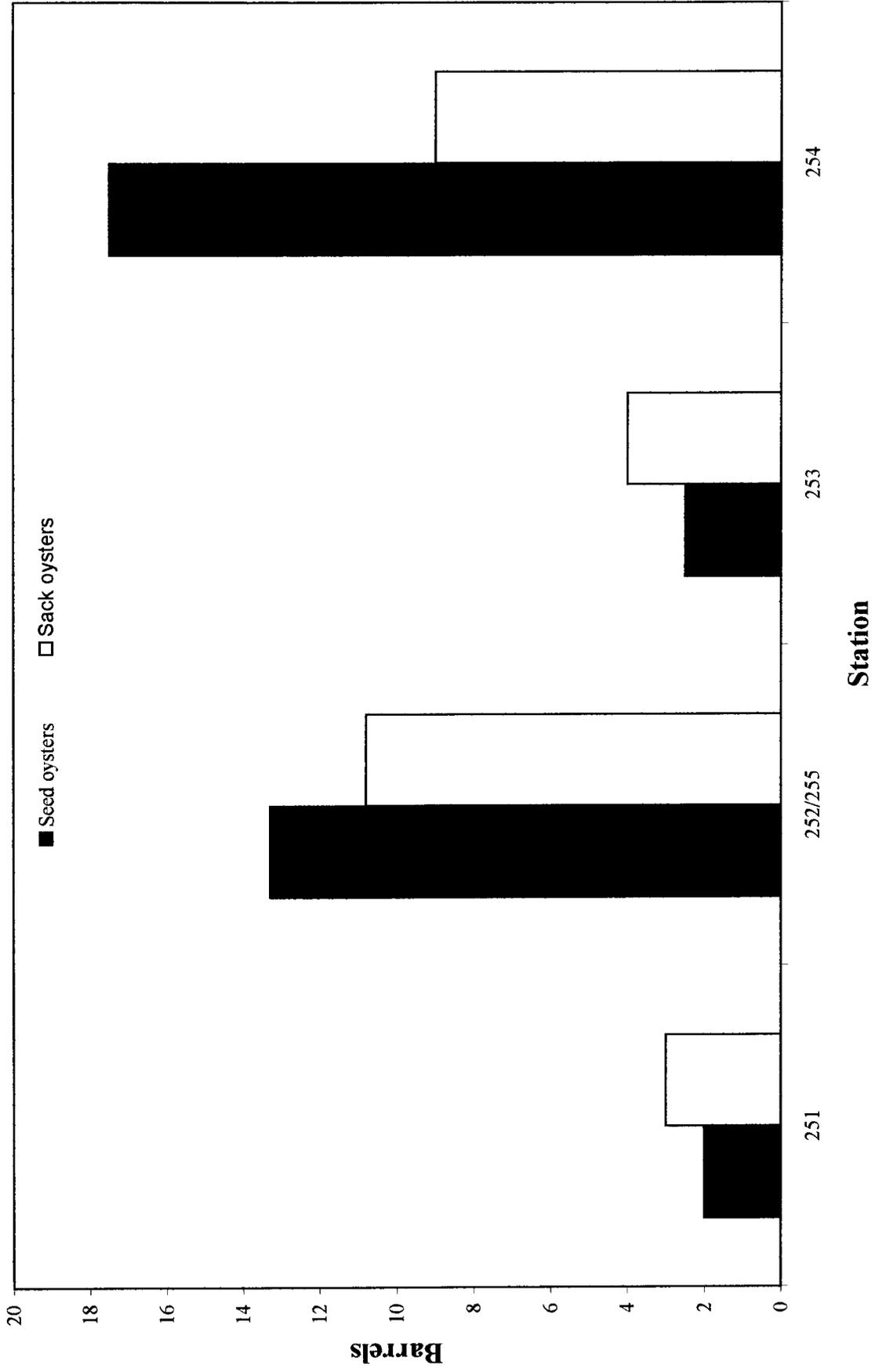


Table 7 Bay Junop Historical Meter² Available Oyster Production Estimates

YEAR	BARRELS SEED	BARRELS SACK	TOTAL BBLs AVAILABLE PRODUCTION	RATIO SEED TO SACK AVAILABILITY
1980*	4,297.4	5,632.3	9,929.7	0.8-1.0
1981	22,329.0	15,213.0	37,542.0	1.5-1.0
1982	7,082.2	21,809.0	28,891.2	0.3-1.0
1983	6,464.0	11,129.0	17,593.0	0.6-1.0
1984**	----	----	----	----
1985	10,004.0	3,344.5	13,348.5	3.0-1.0
1986	4,632.0	4,317.0	8,949.0	1.1-1.0
1987	5,878.0	11,188.0	17,066.0	0.5-1.0
1988	3,282.0	1,169.0	4,451.0	2.8-1.0
1989	8,073.7	8,935.0	17,009.0	0.9-1.0
1990	6,787.0	5,249.5	12,036.5	1.3-1.0
1991	8,843.0	11,166.0	20,009.0	0.8-1.0
1992	47,448.0	31,128.0	78,572.0	1.5-1.0
1993	51,492.0	32,466.0	83,958.0	1.6-1.0
1994	78,896.0	114,303.0	193,199.0	0.7-1.0
1995	38,950.0	67,837.0	106,787.0	0.6-1.0
1996	62,841.0	117,669.0	180,510.0	0.5-1.0
1997	17,262.0	29,243.0	46,505.0	0.6-1.0
1998	52,340.1	90,786.6	143,126.7	0.6-1.0
1999	63,010.4	28,763.5	91,773.5	2.2-1.0
2000	34,107.1	61,193.8	95,300.9	0.6-1.0
2001	29,453.4	32,004.9	61,458.3	0.9-1.0
2002	15,524.4	21,583.3	37,107.7	0.7-1.0

*BASED ON 1999 ACREAGE

**NO SAMPLES TAKEN

Figure 6 Bay Junop Historical Stock Size

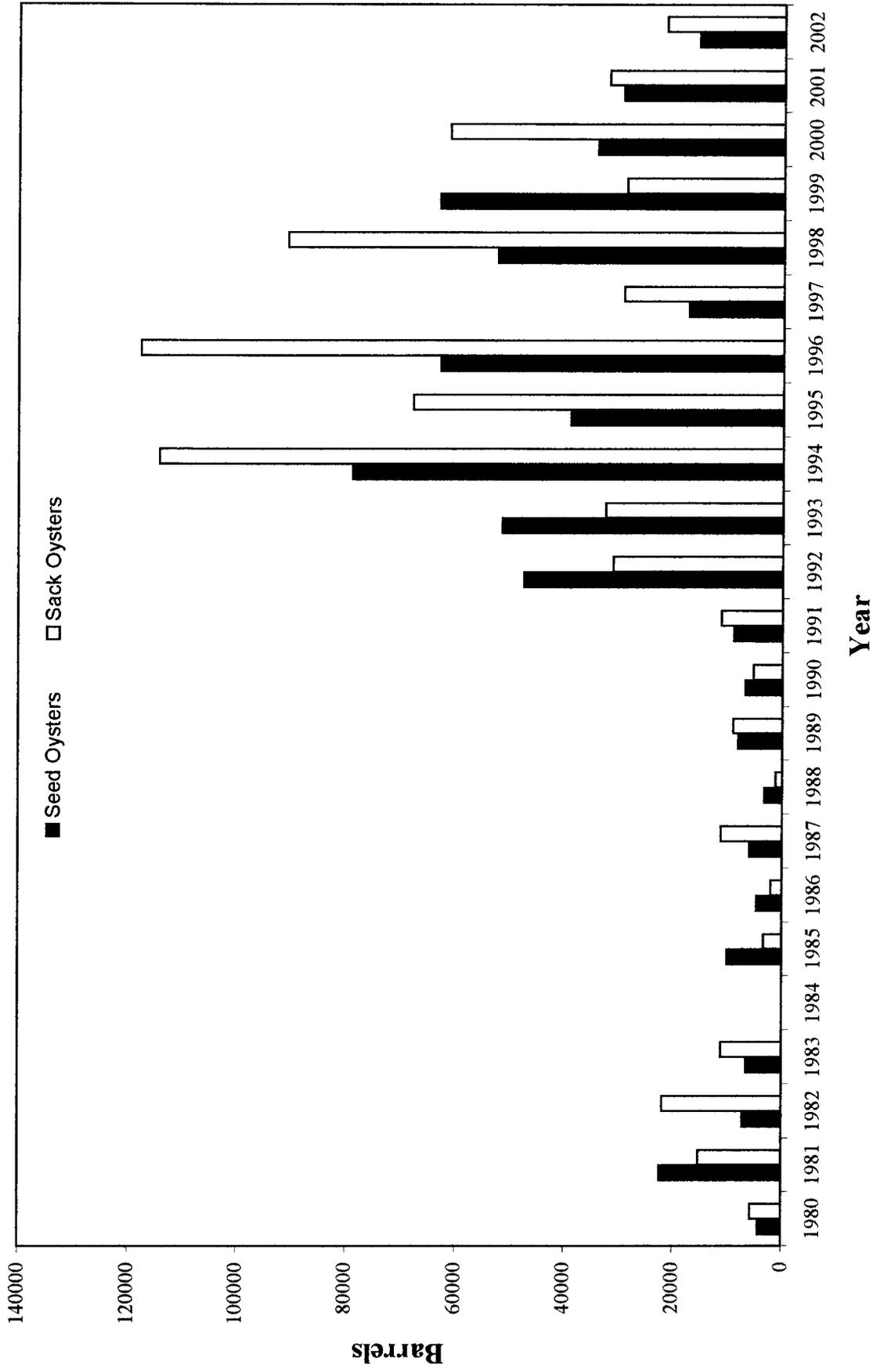


Table 8 Bay Junop Ranking of Seed and Sack Available Oyster Production

YEAR	BARRELS SEED*	YEAR	BARRELS SACK*
1994	78,896.0	1996	117,669.0
1999	63,010.4	1994	114,303.0
1996	62,841.0	1998	90,786.6
1998	52,340.1	1995	67,837.0
1993	51,492.0	2000	61,193.8
1992	47,448.0	1993	32,466.0
1995	38,950.0	2001	32,004.9
2000	34,107.1	1992	31,128.0
2001	29,453.4	1997	29,243.0
1981	22,329.0	1999	28,763.5
1997	17,262.0	1982	21,809.0
2002	15,524.4	2002	21,583.3
1985	10,004.0	1981	15,213.0
1991	8,843.0	1987	11,188.0
1989	8,073.7	1991	11,166.0
1982	7,082.2	1983	11,129.0
1990	6,787.0	1989	8,935.0
1983	6,464.0	1980	5,632.3
1987	5,878.0	1990	5,249.5
1986	4,632.0	1986	4,317.0
1980	4,297.4	1985	3,344.5
1988	3,282.0	1988	1,169.0
1984**	----	1984**	----

* BASED ON 1999 ACREAGE

** NO SAMPLES TAKEN

Table 9 Sister Lake Meter² Temp and Salinity

STATION	STATION NAME	TEMP (°C)**	SAL (ppt)**
200	GRAND PASS	27.8	6.9
202	WALKER'S PT.	27.9	5.8
203	OLD CAMP	28.7	11.0
207	MID SISTER LAKE	28.4	10.1
213*	NORTH '94*	27.8	8.7
214*	MID '94*	28.1	9.0
215*	SOUTH '94*	29.0	16.1
216*	NORHT '95*	28.0	6.6
217*	CAMP '95*	28.5	11.4

*SHELL PLANTS

Table 10 Bay Junop Meter² Temp and Salinity

STATION	STATION NAME	TEMP (°C)**	SAL (ppt)**
251	@BUCKSKIN BAYOU	27.6	5.6
252	@RAT BAYOU	27.5	10.5
253	MID BAY JUNOP	27.5	4.5
254	MID @ HELL HOLE	27.1	4.4
255	@ BAYOU deWEST	28.3	11.5

** TAKEN ON 06/17/02

Table 11 Mean Water Temp (°C) in Sister Lake and Bay Junop

YEAR	SISTER LAKE		BAY JUNOP	
	MAY	JUNE	MAY	JUNE
1995	27.3	29	29.3	29.3
1996	27.2	29.5	28.4	30.3
1997	27.1	30	26.4	28.6
1998	27.8	30.1	28	28.9
1999	25	28.8	25	28.8
2000	27.3	28.8	28.3	29.7
*2001	24.9	29.3	26.0	30.1
*2002	28.4	28.7	28.4	28.5

*OYSTER DREDGE SAMPLES

Table 12 Mean Salinity (ppt) in Sister Lake and Bay Junop

YEAR	SISTER LAKE		BAY JUNOP	
	MAY	JUNE	MAY	JUNE
1995	14.5	8.8	23.3	12.6
1996	15.8	7.4	24.3	12.2
1997	4.1	3.4	10.6	10.7
1998	6.6	4.8	14.4	8.6
1999	17.7	12.4	19.4	13
2000	22	20.5	25.5	27.7
*2001	17.6	8.2	18.4	9.8
*2002	14.2	11.1	16.6	15.9

*OYSTER DREDGE SAMPLES

Table 13 Sister Lake and Hooked Mussel Distribution

Stn. #	Stn. Name	1998	1999	2000	2001	2002
200	Grand Pass	2	28	2	764	322
202	Walker's Pt.	48	59	2	3	9
203	Old Camp	0	85	0	0	0
207	Mid Sister Lake	112	85	11	0	36
213	N '94 Shell Plant	123	23	27	129	247
214	Mid '94 Shell Plant	64	51	19	350	145
215	S '94 Shell Plant	31	567	6	0	4
216	N '95 Shell Plant	35	45	22	124	5
217	Camp '95 Shell Plant	534	201	9	36	0

*** Hooked Mussels in sample – both combined at each station to show total mussels.

Table 14 Bay Junop Hooked Mussel Distribution

Stn. #	Stn. Name	1998	1999	2000	2001	2002*
251	BJ @ Buckskin Bayou	0	136	308	0	0
252	BJ @ Rat Bayou	19	24	0	49	0
253	Mid Bay Junop	88	20	9	0	0
254	Mid BJ @ Hellhole Bay	750	452	14	78	0
255	BJ @ Bayou DeWest	78	25	17	0	0

*No Data Collected – Noted that some stations may have had five or less.

*** Hooked Mussels in sample – both combined at each station to show total mussels.

MEMORANDUM

TO: Martin Bourgeois
FROM: John Venissat
DATE: July 16, 2002
SUBJECT: CSA 6 Square Meter Oyster Samples / 2002

Square meter field sampling of designated sites on the inshore/offshore areas of the Vermilion, East and West Cote Blanche and Atchafalaya Bays Public Oyster Seed Ground was completed on July 9, 2002. A total of 5 stations were sampled with one additional replicate made at each station.

Results of the 2002 samples were as follows:

STATION NO.	STATION NAME	AVG. NO. SEED OYSTERS	AVG. NO. SACK OYSTERS
001	South Pt. / M. I.	5.0	0.5
002	Big Charles / SWP	0.0	0.0
003	Indian Pt. / SWP	0.0	0.0
005	Bayou Blanc	10.0	0.0
?	South Pt. #2 / Offshore	7.5	0.5

Although an overall Vermilion Bay area stock assessment is not possible at this time (figures relative to oyster reef sizes are not available), it can be seen from this years survey results that oyster numbers for 2002 have decreased from those found last year. There was an overall decrease of 88.2% in the number of seed oysters and a decrease of 95.0% in the numbers of sack oysters found in 2002 compared to 2001. The current ratio of seed to sack oysters is 22.5:1 compared to last years 9.5:1 figure.

It should be noted that a small percentage 4.3% of oysters taken in samples were sack oysters available for harvest. In addition, all areas sampled remain in the "Restricted Area" by order of DHH.

Oyster mortality throughout the inshore/offshore areas of the system has been noted from dredge samples taken since May, 2002. Atchafalaya River discharge remained at a level that has significantly affected hydrologic conditions in the Vermilion/Atchafalaya Complex. Salinity remained under 2 ppt (in some areas it has been <1 ppt) from April, 2002 until just recently, and the added stress of high water temperature has taken its toll. Recent mortality noted from square meter samples follows;

STATION NO.	STATION NAME	RECENT MORTALITY (%)
001	South Point / M. I.	31.3
002	Big Charles / SWP	100
003	Indian Point / SWP	100
005	Bayou Blanc	44.4
?	South Point #2 / Offshore	38.5

Hooked mussel fouling increased at 3 of the sample sites. The highest fouling rates were in the western part of the system where oysters are generally found in clusters, and on the shallow reef at Bayou Blanc.

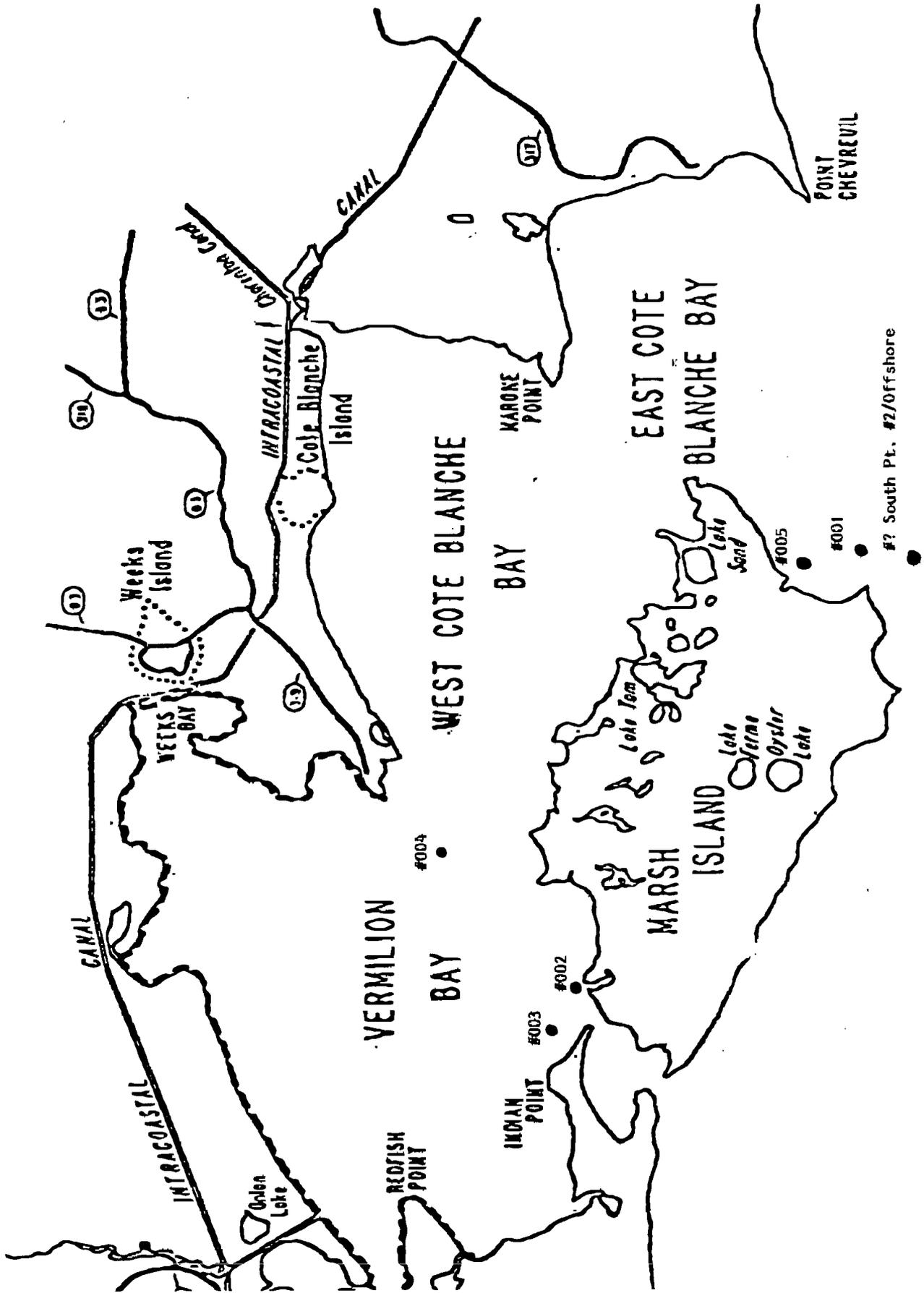
Samples were delivered to Dr. Soniat for “dermo” analysis from 001 and (?) South Point #2 / Offshore sites and results forwarded as they become available.

Tables, maps, and figures depicting the 2002 CSA 6 assessment are presented as follows;

JRV/dgg

STATION NO.	LATITUDE	LONGITUDE
001	N29°28.980'	W91°45.463'
002	N29°36.853'	W92°00.525'
003	N29°37.112'	W92°00.525'
004	N29°41.179'	W91°54.111'
005	N29°30.800'	W91°45.500'
?	N29°27.203'	W91°45.587'

2002 SQUARE METER / CSA 6

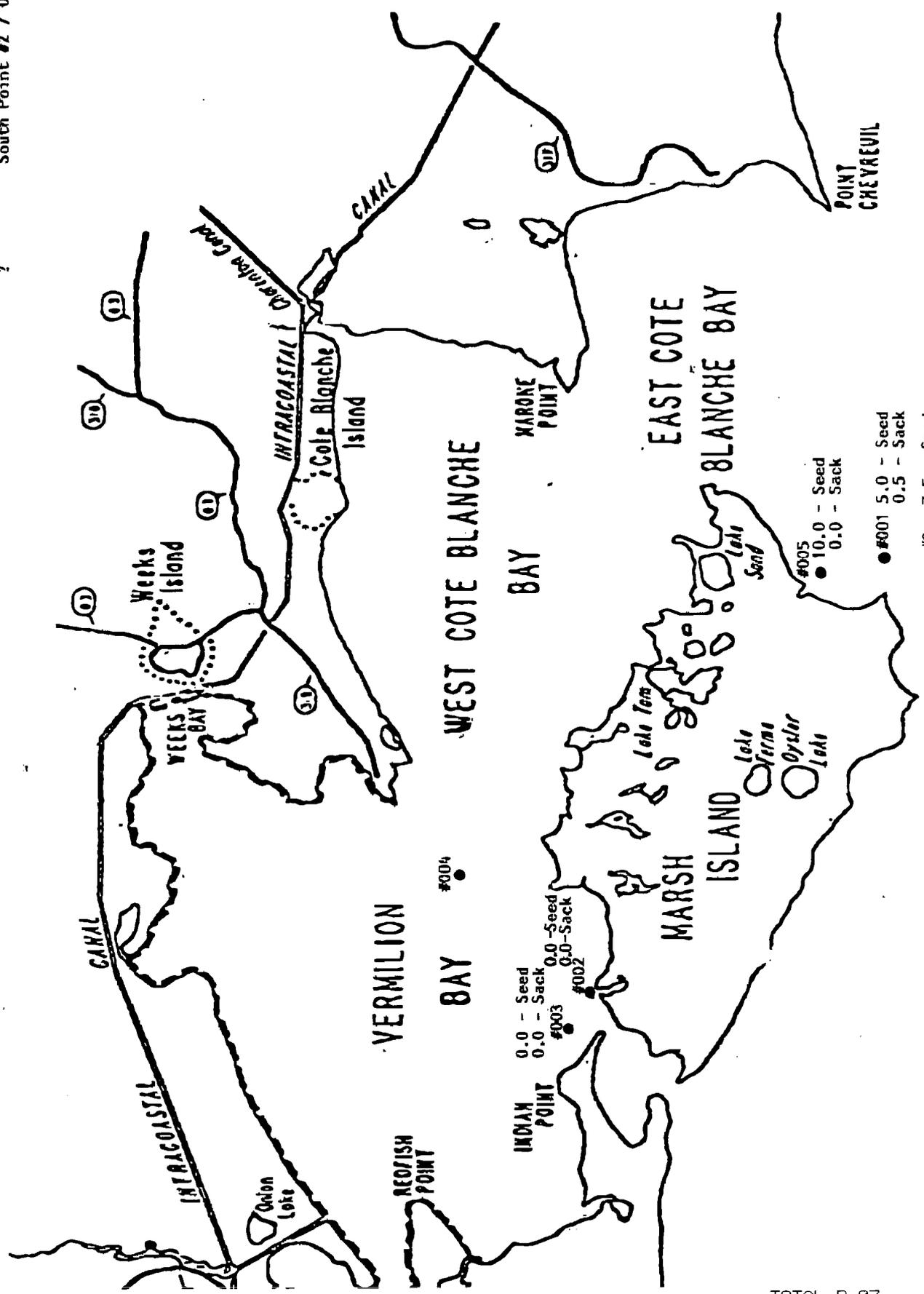


#? South Pt. #2/Offshore

STATION NO.

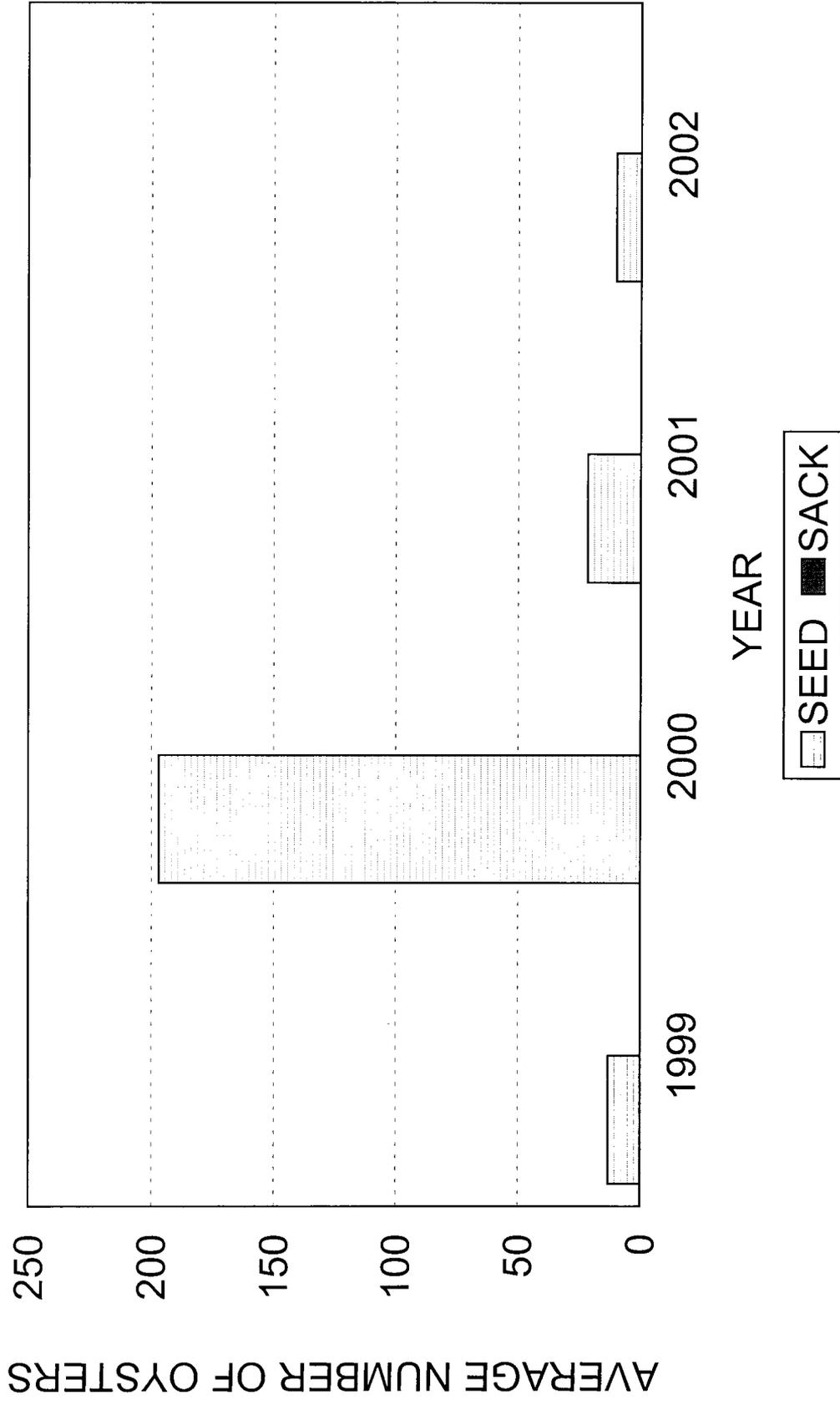
2002 SQUARE METER / CUM

- 001 South Point / M.I.
- 002 Big Charles / SWP
- 003 Indian Point / SWP
- 004 Dry Reef
- 005 Bayou Blanc
- ? South Point #2 / Offshore



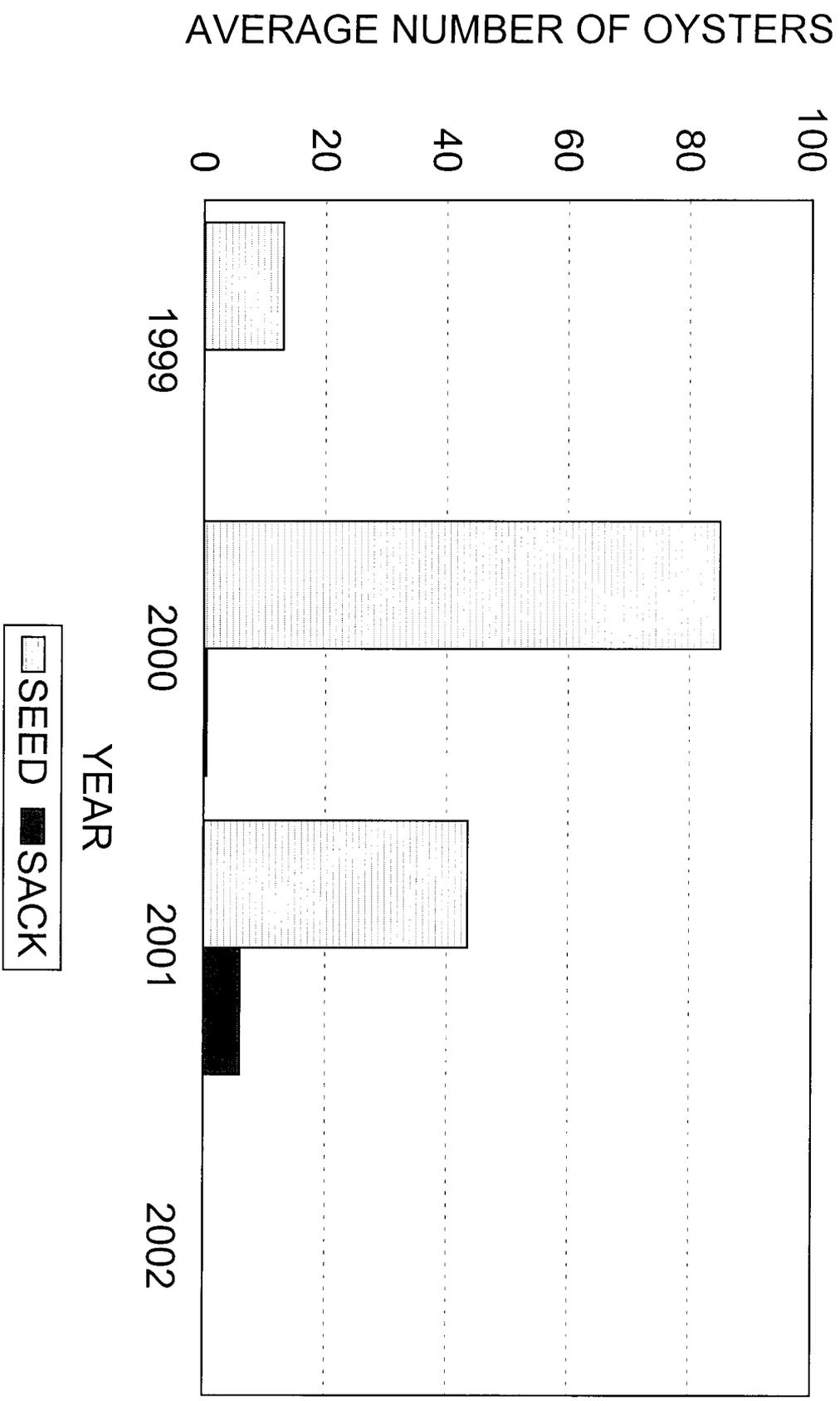
SQUARE METER SAMPLES / BAYOU BLANC

CSA 6



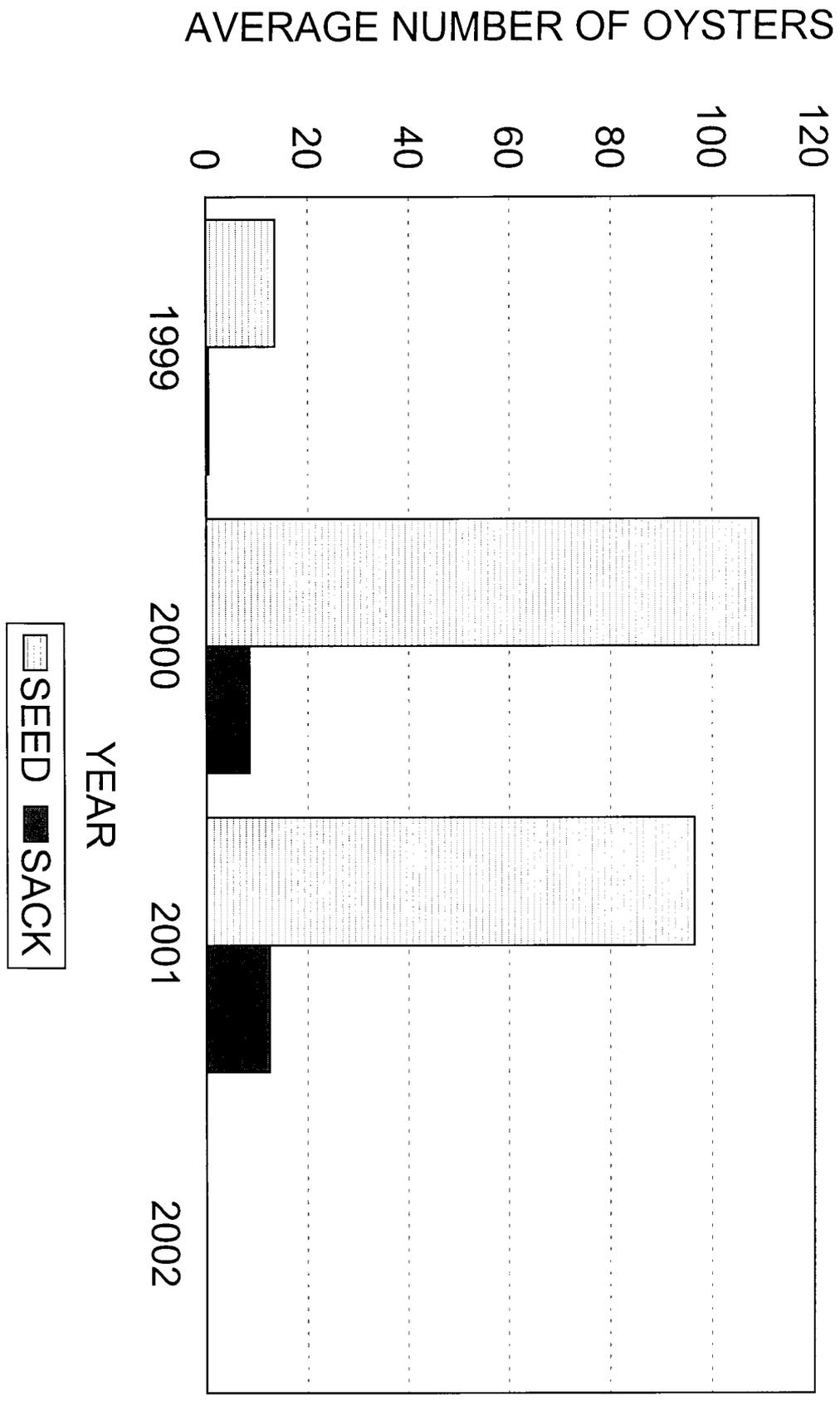
SQUARE METER SAMPLES / BIG CHARLES

CSA 6



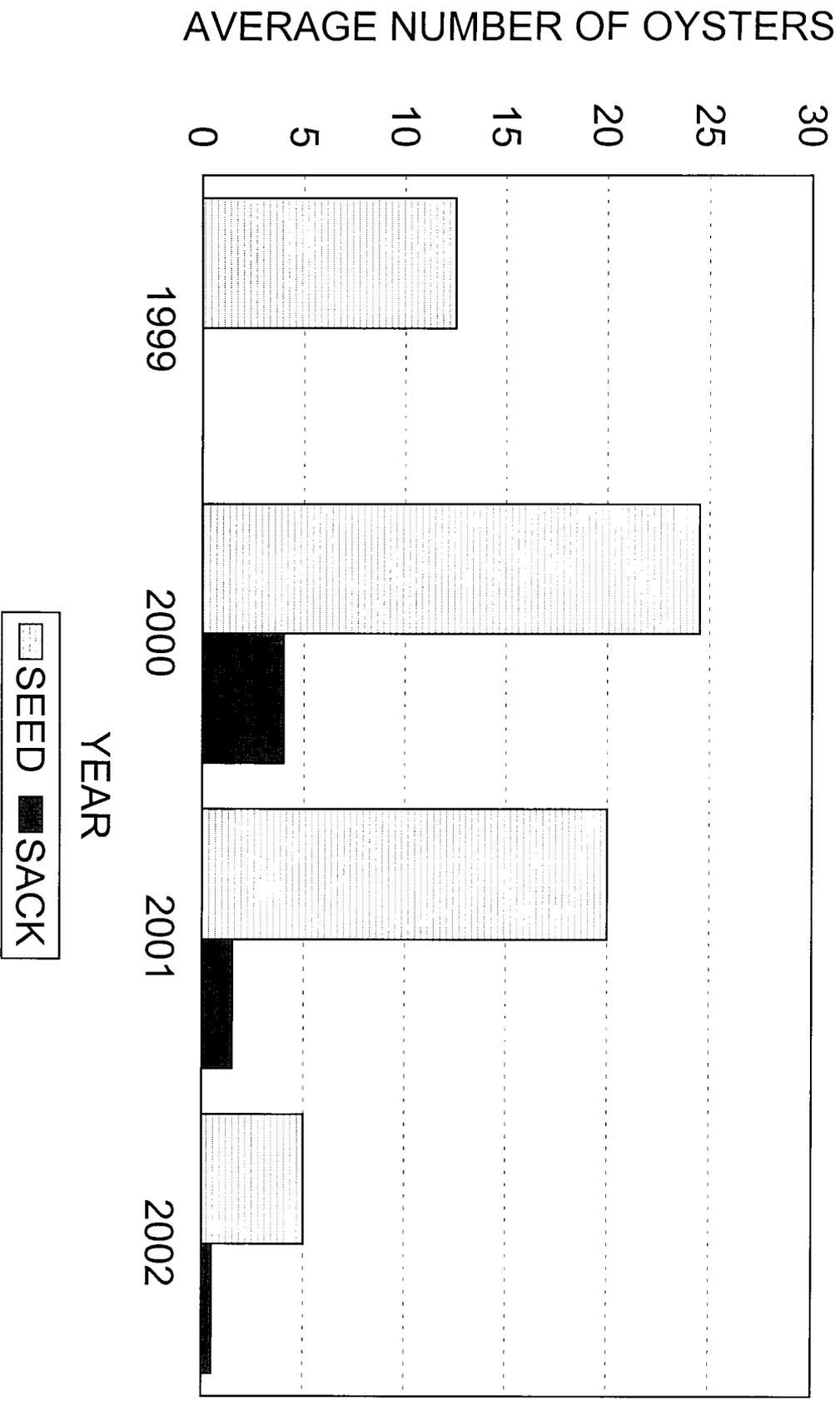
SQUARE METER SAMPLES / INDIAN POINT

OSA 6



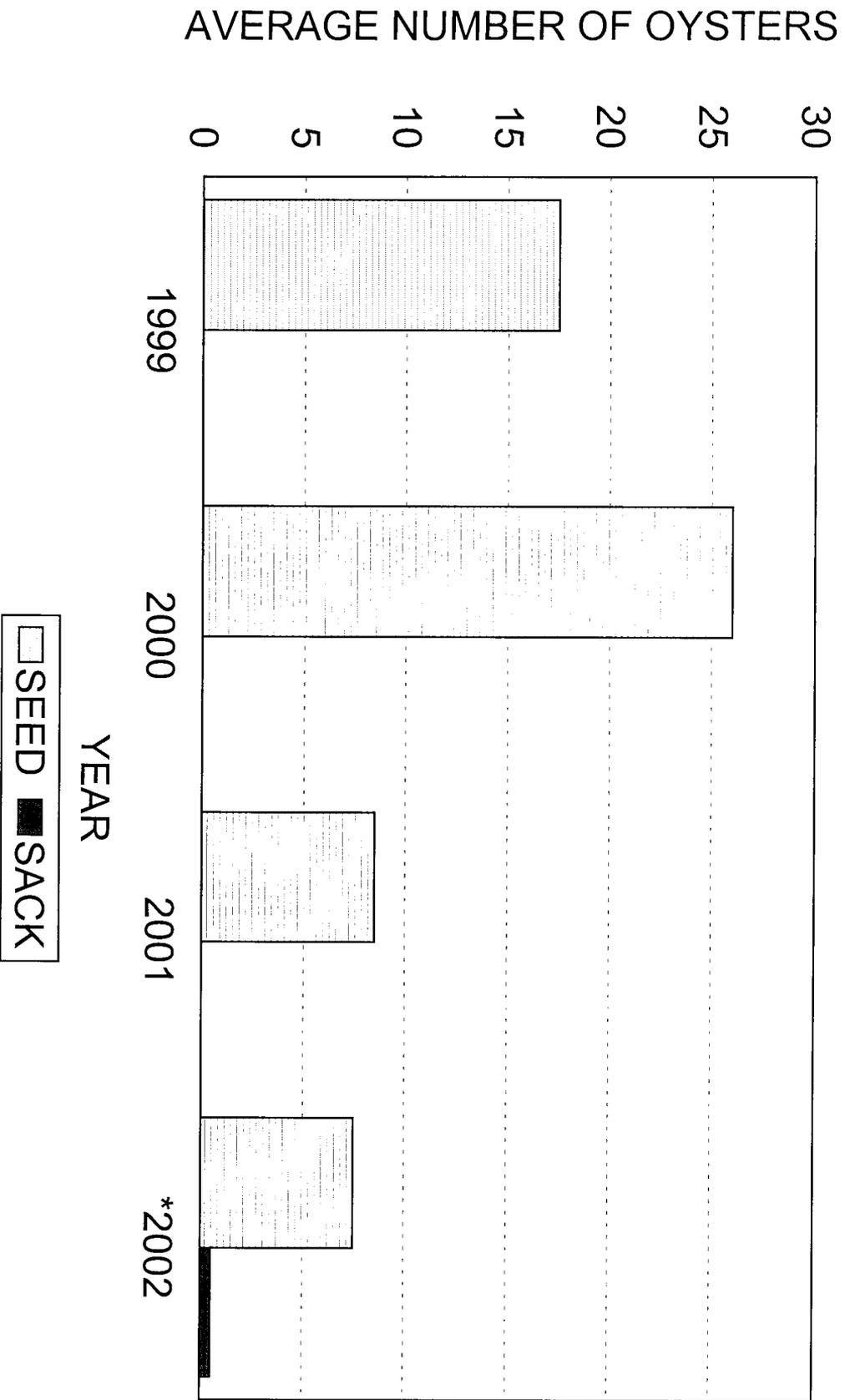
SQUARE METER SAMPLES / SOUTH POINT

CSA 6



SQUARE METER SAMPLES / DRY REEF

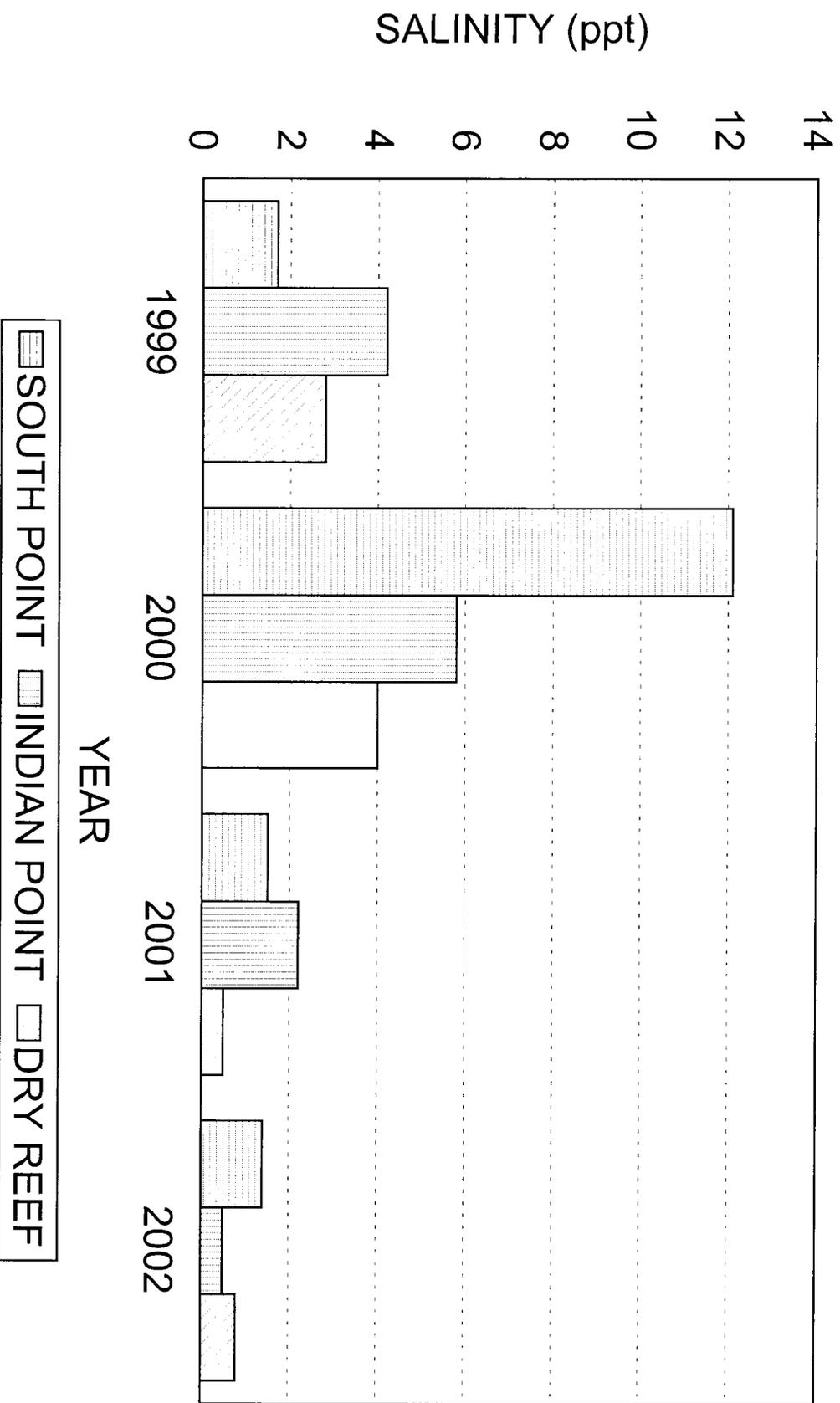
CSA 6



*Offshore South Pt. #2 replaced Dry Reef

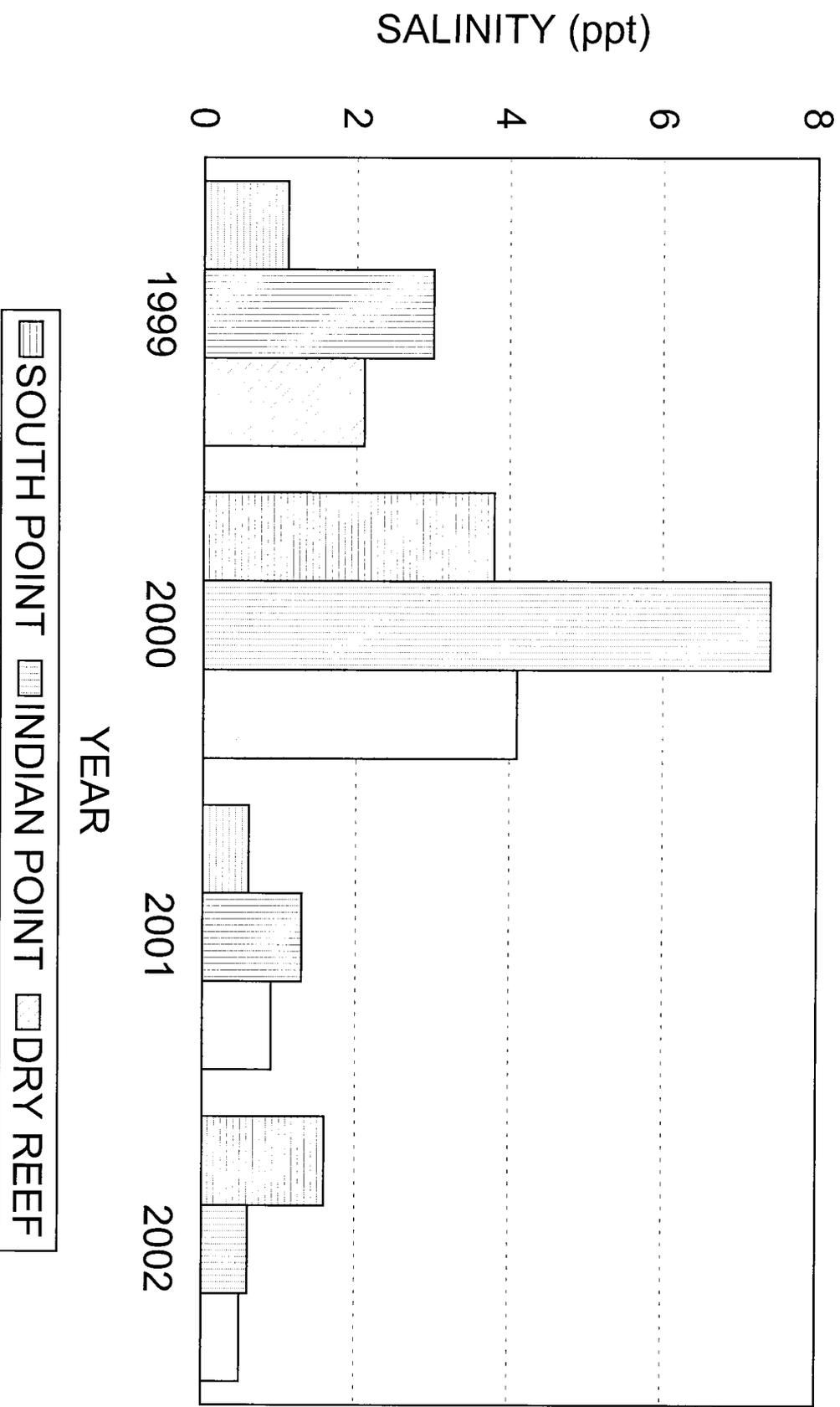
AVERAGE MAY SALINITY

CSA 6



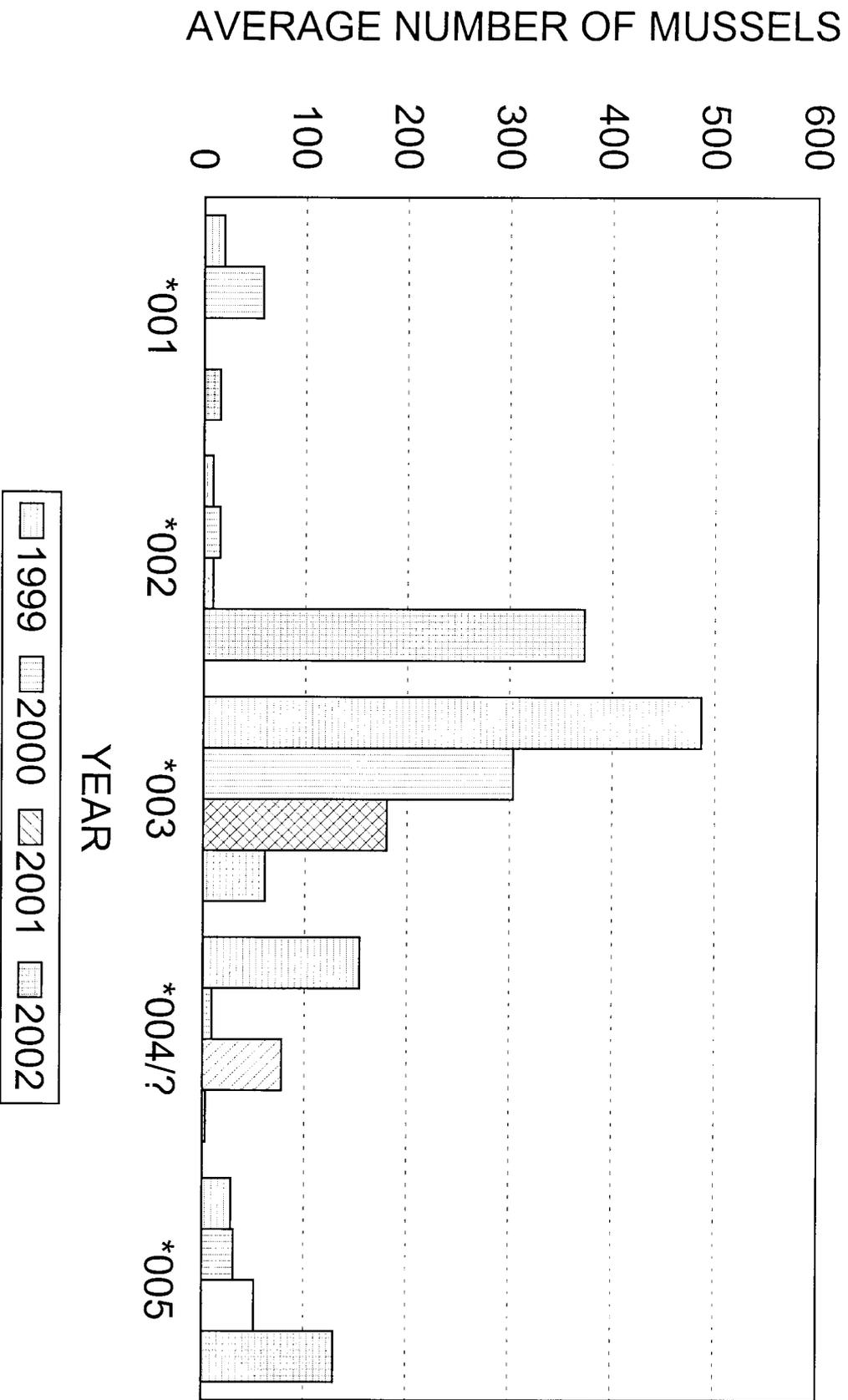
AVERAGE JUNE SALINITY

CSA 6



CSA 6 HOOKED MUSSEL

FREQUENCY DISTRIBUTION



001-South Pt., 002-Big Charles, 003-Indian Pt., 004-Dry Reef / ?South Pt.#2/Offshore, 005-Bayou Blanc

State of Louisiana



James H. Jenkins, Jr.
Secretary

Department of Wildlife & Fisheries
1213 N. Lakeshore
Lake Charles, LA 70601-5273
(318) 491-2573

M.J. "Mike" Foster, Jr.
Governor

MEMORANDUM

TO: Marty Bourgeois, Programs Manager, Mar. Fish. Div.

FROM: Michael Harbison, Biologist Supervisor, CSA VII

DATE: July 11, 2002

SUBJECT: 2002 Oyster Calcasieu Lake Stock Assessment

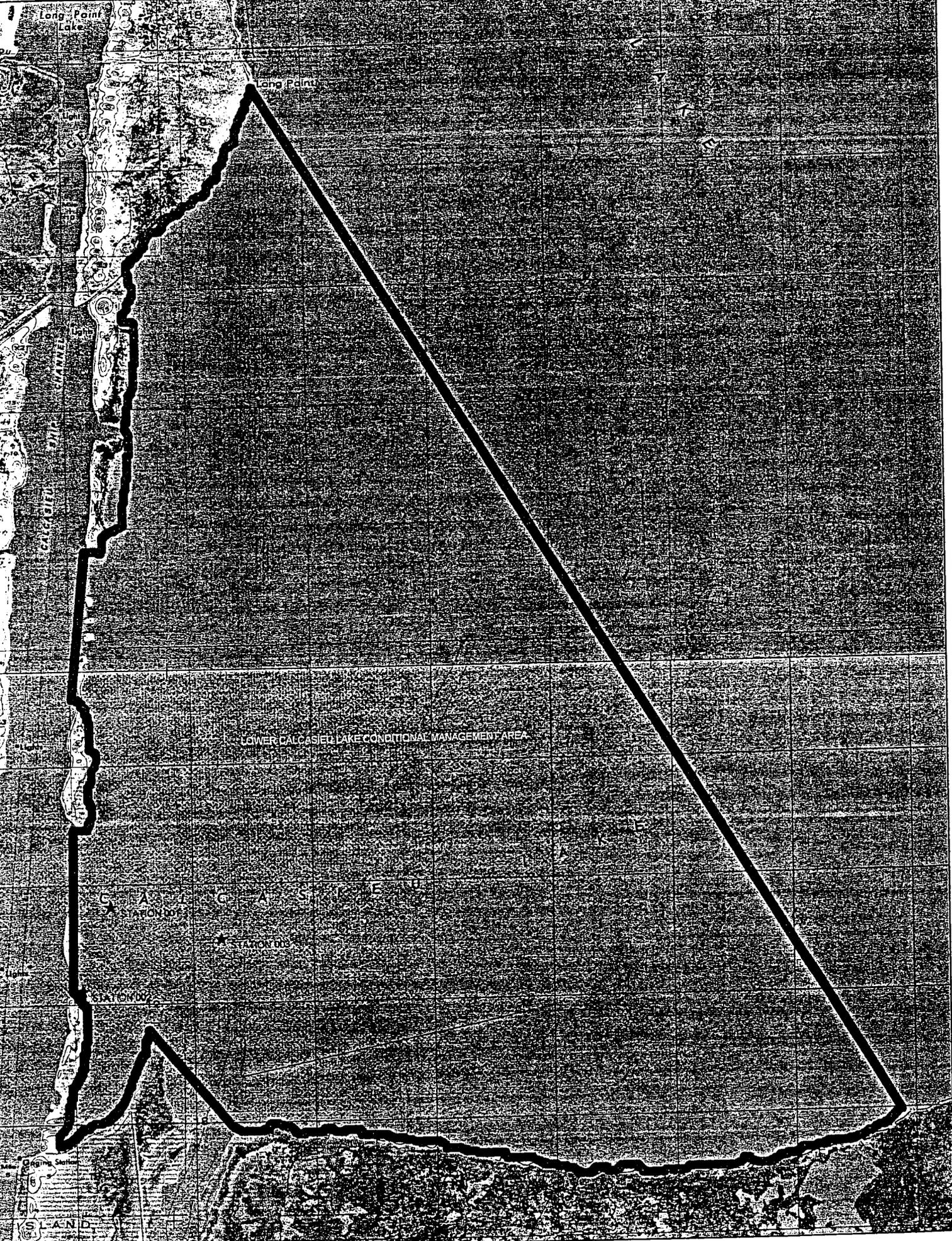
Calcasieu Lake is divided into two Conditionally Managed Areas (by DDH): Lower Calcasieu Lake Conditional Management Area (LCCMA), also known as the "Eastside" and Westcove Conditional Management Area (WCCMA). All samples are taken from these two areas - three stations in each area.

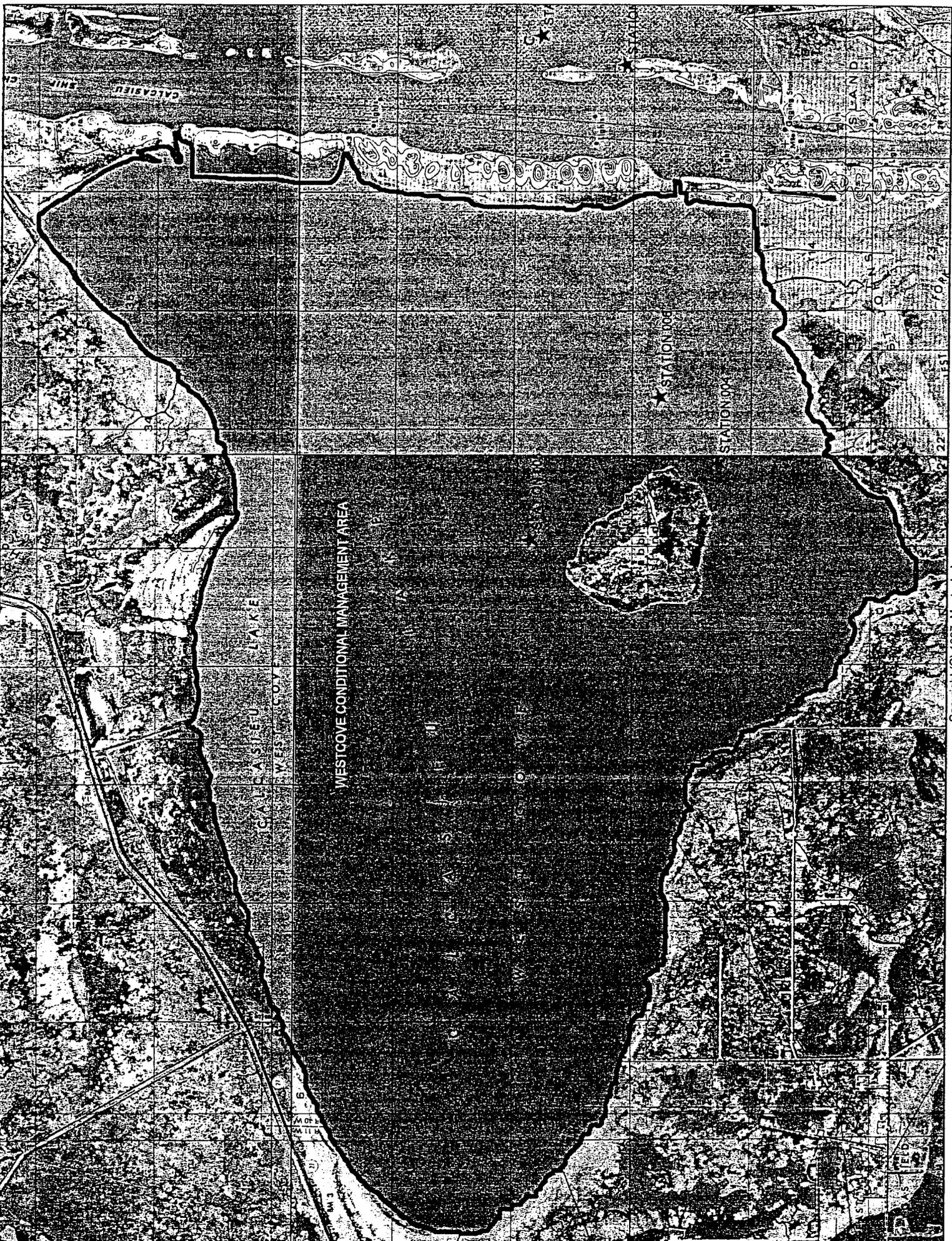
Square meter samples were taken on June 19th. The samples showed an decrease in both marketable (>3") and seed oysters (1-3") since last years survey. The marketable oyster availability is - 781,676 sacks; the total of marketable and seed oysters is - 1,100,257 sacks. Both are a little under the 1991-2002 average.

The Eastside marketable oysters decreased by 71,522 sacks and Westcove decreased 310,553 sacks (total of 382,075 sacks) from the 2001 oyster square meter samples.

The oysters harvested from Calcasieu Lake during the 2001-2002 season was 21,297 sacks. This was only 1.8 % of the marketable oysters indicated by the square meter samples from 2001.

See attached tables and graph for additional information.





CALCASIEU LAKE OYSTER STOCK ASSESMENT JUNE 2002

OYSTER NUMBERS

WESTSIDE					EASTSIDE				
SIZE	STATION			AVE.	SIZE	STATION			AVE.
	4	5	6			1	2	3	
> 3"	29	33	34	16.0	> 3"	59	31	54	24.0
1-3"	23	43	16	13.7	1-3"	69	47	8	20.7

OYSTER PRODUCTION AREA

WESTSIDE	EASTSIDE
2,942,076.67 SQ. METERS	3,901,185.57 SQ. METERS

PRODUCTION OF > 3" OYSTERS

WESTSIDE		EASTSIDE	
OYSTERS:	47,073,226.72	OYSTERS:	93,628,453.68
SACKS:	261,517.9	SACKS:	520,158.1
TOTAL SACKS OF > 3" OYSTERS:		781,676.0	

PRODUCTION OF 1-3" OYSTERS

WESTSIDE		EASTSIDE	
OYSTERS:	40,306,450.38	OYSTERS:	80,754,541.30
SACKS:	106,069.6	SACKS:	212,511.9
TOTAL SACKS OF 1-3" OYSTERS:		318,581.5	

TOTAL PRODUCTION

TOTAL OVERALL POTENTIAL OF OYSTERS (SACKS):	1,100,257.5
--	--------------------

OYSTER PRODUCTION IN CALCASIEU LAKE JULY 2001

OYSTER NUMBERS

WESTSIDE					EASTSIDE				
SIZE	STATION			AVE.	SIZE	STATION			AVE.
	4	5	6			1	2	3	
> 3"	30	36	144	35.0	> 3"	62	32	70	27.3
1-3"	23	52	114	31.5	1-3"	317	153	77	91.2

OYSTER PRODUCTION AREA

WESTSIDE	EASTSIDE
2,942,076.67 SQ. METERS	3,901,185.57 SQ. METERS

PRODUCTION OF > 3" OYSTERS

WESTSIDE		EASTSIDE	
OYSTERS:	102,972,683.450	OYSTERS:	106,502,366.061
SACKS:	572,070.5	SACKS:	591,679.8
TOTAL SACKS OF > 3" OYSTERS:		1,163,750.3	

PRODUCTION OF 1-3" OYSTERS

WESTSIDE		EASTSIDE	
OYSTERS:	92,675,415.105	OYSTERS:	355,788,123.984
SACKS:	257,431.7	SACKS:	988,300.3
TOTAL SACKS OF 1-3" OYSTERS:		1,245,732.0	

TOTAL PRODUCTION

TOTAL OVERALL POTENTIAL OF OYSTERS	2,409,482.3
------------------------------------	-------------

(SACKS):

OYSTER STOCK ASSESSMENT CALCASIEU LAKE

SEASONS	STOCK ASSESSMENT		ESTIMATED SACKS HARVESTED
	MARKETABLE	TOTAL	
1991-1992	1,048,882	1,731,367	31,383
1992-1993	749,915	1,612,736	27,328
1993-1994	748,281	1,238,783	12,818
1994-1995	756,525	1,246,480	6,134
1995-1996	956,926	1,298,379	29,082
1996-1997	618,767	1,083,866	43,441
1997-1998	950,979	1,706,510	80,735
1998-1999	702,371	1,160,115	39,202
1999-2000	614,145	1,032,117	50,592
2000-2001	846,176	1,197,311	35,881
2001-2002	1,163,750	2,409,782	21,297
AVERAGE	832,429	1,428,859	34,296

State of Louisiana



James H. Jenkins, Jr.
Secretary

Department of Wildlife & Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(225)765-2800

M.J. "Mike" Foster, Jr.
Governor

July 18, 2002

MEMORANDUM

To: Martin Bourgeois, Mollusc Program Manager

From: Patrick D. Banks, Biologist Supervisor

Re: **Dermo Overview and Results For 2002 Oyster Stock Assessment Report**

Since 1997, the Louisiana Oyster Task Force (OTF) has funded yearly analysis of *Perkinsus marinus* (Dermo) infestation on the Louisiana public oyster grounds, reservations, and tonging areas by Dr. John Supan (LSU) and Dr. Tom Soniat (Nicholls State). These results have been available to the OTF and other members of the Louisiana oyster industry to aid in decision-making efforts during harvest of seed and sack oysters from the public oyster areas. Utilization of these results can help predict and possibly prevent dermo-related mortalities on private leases that were planted with seed from public oyster areas.

Dermo was first identified in the late 1940s as the cause of significant oyster mortalities in the warm waters of Louisiana and other Gulf of Mexico states, although it also occurs along the east coast up to Long Island Sound. It is a microscopic parasite that infects the hemocytes (oyster cells that aid in digestion, nutrient transport, wound healing, internal defense, etc.) of oysters and was originally classified as a fungus under the scientific name *Dermocystidium marinum*. Although the scientific name has changed to *Perkinsus marinus*, the parasite is commonly referred to as Dermo.

Dermo infestation levels in oyster populations are described in two ways: 1) percentage of the population infested with the parasite, and 2) the average level of infestation in each oyster, termed the *weighted incidence*. A weighted incidence of 2.0 or greater on the Mackin Scale indicates an intense epidemic of the parasite in the oyster population. Although some locations experienced an increase in weighted incidence over last year, weighted incidence scores were generally low throughout the coast (Tables 1-3). Average weighted incidence of seed oysters east of the Mississippi River showed a decrease from 1.08 in 2001 to just 0.41 in 2002 (Figure 1). Dermo levels in seed oysters also dropped in Hackberry Bay as percent infestation dropped from

70% in 2001 to 15% in 2002 (Table 2). Although the oyster resource in central and western Louisiana showed a slight increase in Dermo weighted incidence, levels were below 1.0 ranging from 0.85 to 0.03 (Figure 2).

Dermo is a warm-water, high salinity parasite that becomes most abundant in waters above 25°C. Although water temperatures became conducive to Dermo proliferation in early spring 2002 (largely due to a warm winter), levels have remained low through the summer. This is likely due to the influx of fresh water into Louisiana estuaries from frequent rains experienced over the first half of 2002, which has kept salinities low throughout much of the public oyster areas. Dermo is almost completely suppressed at salinities < 8 ppt. If salinities remain low, available oyster resources on the public grounds should provide fishermen with a healthy supply of both seed oysters for transplating and sack oysters for market.

Table 1: Historical Dermo results from public oyster areas east of the Mississippi River.

Station Name	1997			1998			1999		
	Seed P	WI	Sack P	Seed P	WI	Sack P	Seed P	WI	Sack P
Bay Gardene	100	1.3	97	33	0.5	34	83	0.8	80
Lonesome Island	96	2	100	4	0.04	87	57	0.5	63
Mozambique Point	100	1.9	52	8	0.1	97	40	0.5	43
East Black Bay				22	0.3	85	27	0.2	63
North Black Bay									
South Black Bay	87	1.25	93	59	1.2	96	83	1	67
Bay Grabe	100	1.7	100	27	0.4	69	64	0.8	87
Telegraph Point	97	1.4	90	40	0.6	96	21	0.1	83
Cabbage Reef	96	2	100	76	1.5	95	63	0.3	57
Three Mile	59	0.63	23	22	0.2	97	67	0.6	65
AVERAGE	91.88	1.52	81.88	32.33	0.54	84.00	56.11	0.53	67.56

Station Name	2000			2001			2002		
	Seed P	WI	Sack P	Seed P	WI	Sack P	Seed P	WI	Sack P
Bay Gardene	70	0.7	87	87	1.5	87	30	0.5	60
Lonesome Island	70	0.45	73	10	0.1	20	20	0.1	20
Mozambique Point	67	0.45	87	53	1	83	19	0.1	40
East Black Bay				53	0.9	83			
North Black Bay	47	0.2					73	1.1	20
South Black Bay	80	0.7	97	47	0.7	93	35	0.4	55
Bay Grabe	93	0.7	77	93	2.8	77	20	0.1	40
Telegraph Point	70	0.4	80	67	1.5	87	36	0.4	55
Cabbage Reef	63	0.4	83	58	0.9	100	85	0.8	80
Three Mile	57	0.3	80	30	0.3	72	30	0.3	
AVERAGE	68.56	0.48	83.00	55.33	1.08	78.00	38.67	0.42	46.25

** Note: P = percent infestation and WI = weighted incidence

Table 2: Historical Dermo results from Hackberry Bay Oyster Seed Reservation

<i>Year</i>	Seed		Sack	
	P	WI	P	WI
1997			16	0.12
1998	11	0.1	30	0.3
1999	68	0.8	93	1
2000	100	1.2	97	1.1
2001	70	1.3	67	0.8
2002	15	0.2	80	0.7

** Note: P = percent infestation and WI = weighted incidence

Table 3. Average historical Dermo levels for sack oysters in central and western Louisiana.

<i>Location</i>	1997		1998		1999	
	P	WI	P	WI	P	WI
Sister Lake	10	0.03	15	0.1	95	1.05
Bay Junop	30	0.21	20	0.11	45	0.77
Vermilion Bay					0	0
Calcasieu Lake	100	1.5	100	1.57	90	0.8

<i>Location</i>	2000		2001		2002	
	P	WI	P	WI	P	WI
Sister Lake	95	1.23	40	0.22	60	0.45
Bay Junop	80	0.8	50	0.25	85	0.57
Vermilion Bay	20	0.07			10	0.03
Calcasieu Lake	100	0.6	60	0.33	90	0.85

** Note: P = percent infestation and WI = weighted incidence

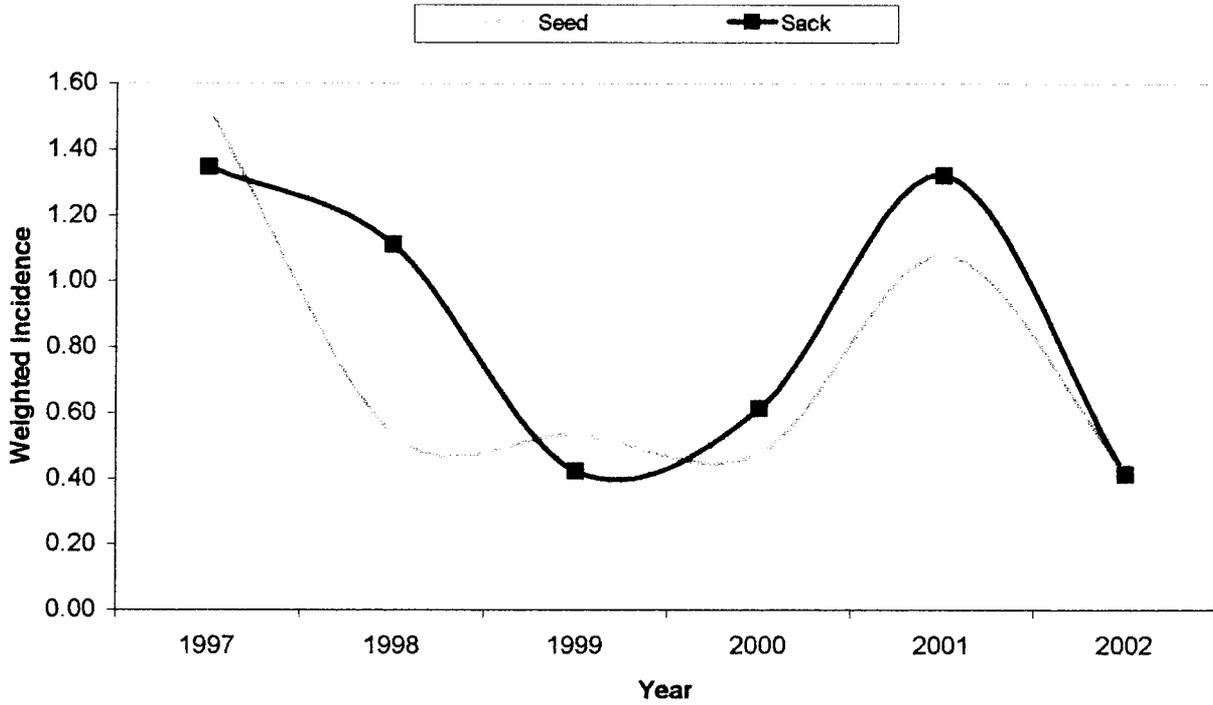


Figure 1. Historical average Dermo levels in the public oyster resource east of the Mississippi River.

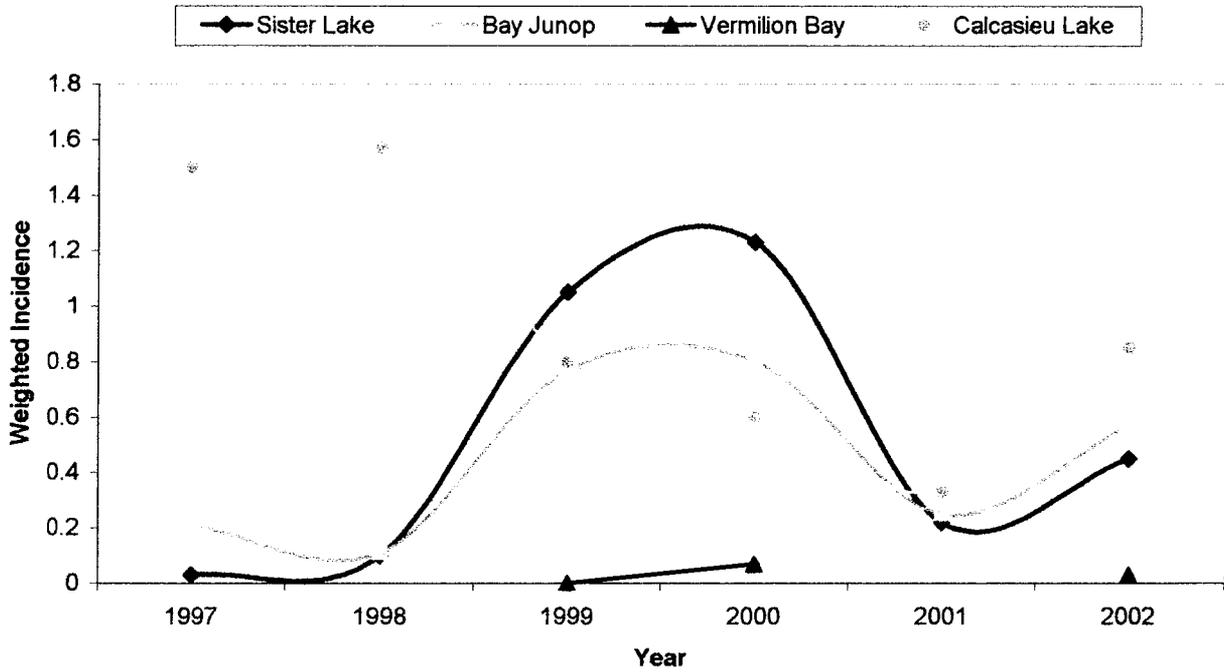


Figure 2. Historical average Dermo levels in the oyster resource of central and western Louisiana.