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Cottontails, Swamp Rabbits and Their Management



BY MITCH SAMAHA, LDWF Wildlife Educator
JEFFREY P. DUGUAY, Ph.D., LDWF Dove, Woodcock and Research & Survey Program Manager

As deer and waterfowl hunting seasons come to an end, there are still opportunities to enjoy some fast hunting action. Rabbit season is often overlooked by many hunters who concentrate on big game or waterfowl, and the same properties where they already hunt more than likely hold a large population of rabbits.

In Louisiana there are two species of rabbit, the eastern cottontail and the swamp rabbit (also referred to as the cane-cutter). The eastern cottontail is a typical rabbit with long ears, large hind legs and feet, short front legs and feet, and a short, fluffy tail that is white beneath. The upperparts vary from grayish brown to reddish brown except for the nape which is rusty, and the face and flanks which are gray. The tops of the front and hind feet are white or whitish, and a pale cream-colored eye-ring surrounds the eye. The cottontail's weight at maturity is 2.5 to 3 pounds. The eastern cottontail inhabits forested upland areas, overgrown fields, and prairies.

The swamp rabbit resembles the eastern cottontail but is larger (up to 6 pounds) and darker in coloration, usually lacking the reddish brown nape and white on the tips of the feet. The swamp rabbit is also very

well adapted to wet conditions and life in or near the swamp. It has no fear of water and actually has been witnessed completely submerged with just its nose above water in order to escape predators.

With most all species of cottontails, spring comes early as the first courting activity may be seen in January. They can be seen running, leaping and fighting as their mating increases through February, and by the first of March most of the does (females) have mated. Most of the courting activity is done during the evening and early mornings. About 28 days after mating the doe starts labor and has her litter in the nest. The nest is usually located in a hole in the ground or levee, but can also occur in a thicket in wet areas. It is constructed of grass and leaves and lined with fur pulled from the female's breast and abdomen. At birth, the young are furless, blind and weigh

less than 1 ounce. The doe nurses them frequently, and the buck (male) has no maternal care of the young.

Litters may range from three to nine, with four or five about average. Although capable of having six litters each season in ideal habitat, the usual litters per mating season is three or four. Young rabbits grow extremely fast. By the end of the first week they have their eyes open, and by the end of the second week they are beginning to leave the nest and feed on green plants. During the next few days they may return to the nest to nurse, spending the day very close to the nest for escape cover and protection. At this time they still weigh only about 4 ounces but are well developed and able to survive on their own. By 6 months of age the young have reached minimum adult weight, are able to reproduce, and are hard to distinguish from adults.

RABBIT HABITAT MANAGEMENT*

Ideal rabbit habitat includes an abundance of well-distributed patches of brushy cover mixed with grass and weedy fields. Cottontails thrive where cropland, idle fields, hay fields, and newly (2-8 years old) cutover forest land are present in one area. Most cottontails rarely range over more than 10 acres in search of food and cover during their entire lifetime.

It is possible to support a stable population of about one rabbit per acre by providing green food plants and plenty of cover, especially during the winter. These habitat components should be provided within the 10-acre home range of rabbits.

**Adapted from:*

- *Mississippi State University Extension Service. Publication 2467. Ecology and Management of Rabbits in Mississippi.*
- *Yarrow, G.K., and D.T. Yarrow. 1999. Managing Wildlife. Sweetwater Press, Birmingham, AL. 588pp.*

ESCAPE COVER

Adequate escape cover must be present if huntable rabbit populations are to become established. Cover strips, briar patches or brush piles should be at least 20 feet wide. Vegetative cover includes natural thickets such as blackberry, wild plums, dogwoods, sumac, fallow areas, or any naturally growing thicket which is thick enough to provide protection from coyotes, foxes, hawks, owls, dogs, and other predators. Artificial cover includes brush piles, fencerows or piles of rock with drain pipes for access.

Brush piles can be made by cutting brush, trees or limbs and piling them up in open areas. Cover can be created by falling several large trees on top of one another. Almost any woody debris can be piled to create brush piles, but more woody debris should be added to the pile after several years of decay. Keep about 10 to 15 percent of grass fields or upland forests in scattered shrubs, thickets or brush piles for rabbit cover. Be sure to protect desirable shrub thickets or brush piles from disking or burning. If you use prescribed burning, simply disk firebreaks around desirable shrub thickets or brush piles until such thickets become too open for cover. At this time simply mow or burn to start the optimal cover process over again.

TRANSITION ZONES

Transition zones are simply a third habitat type developed between two existing and different habitat types. Transition zones between forest and field are extremely important because rabbits are an “edge” species. The amount and quality of edge present usually determines the abundance of cottontails on a particular area. Transi-



Both coyotes and bobcats are natural predators of rabbits. Bobcats eat mainly rabbits and rodents but will also prey on deer, birds and other vertebrates. Coyotes eat a variety of foods, including berries and insects, snakes, birds, carrion, and small mammals including rabbits.



PARASITES AND DISEASE

Parasites and disease are a natural occurrence in many species of wildlife. The eastern cottontail and swamp rabbits may harbor fleas, ticks, botfly larvae and tapeworms. However, rarely is the rabbit negatively affected by these parasites. Bacterial tularemia is recognized as occurring in cottontails more often than in any other species of wildlife. Although tularemia is transmitted primarily by tick bites, humans can become infected by contact with diseased rabbits. Lethargic rabbits should not be handled and should be avoided. Tularemia does not pose a significant threat to humans when treated appropriately with antibiotics. As a precaution, always wear rubber gloves when handling any wildlife.



Nest of Cottontail Bunnies
Photo courtesy of dfwurbanwildlife.com



Eastern Cottontail Rabbit
Photo by Lewis Gorman (USFWS)

tion zones may be established in field corners, edges or borders. These zones may be located where woodlands meet crop fields, open pastures, or along fence lines and roadways. Transition zones should never be less than 15 feet wide.

To maintain transition zones in a mixture of legumes, grasses and weeds, they must be burned, plowed, mowed or disked on a periodic basis (every two to three years) in late winter. If this is done in the spring, it will destroy many rabbit nests. A general rule of thumb is that when more than 50 percent of the soil is covered in dead vegetation, transition zones need maintenance. Depending on soil productivity, this will occur sometime between two and six years after establishment.

DEVELOPING FOOD

Native grasses, legumes and other forbs can be allowed to become established in 1/2 acre or more of open land. These areas should be well distributed across the landscape and located near cover. Natural openings can be easily maintained in early stages of plant growth by periodic mowing, disking or prescribed burning. With proper management, native plants will provide enough rabbit food.

Food plantings can provide extra food resources for rabbits, especially during winter months. Food plantings should be near protective cover, such as tall grass, thickets or brush piles, and be a 1/4-acre in size. Winter food plantings include wheat, oats, clovers and smooth or hairy vetch. Summer foods are usually plentiful, but warm-season food plantings may help if native forbs are hard to come by. If warm-season forbs are scarce, try plantings of alyce clover, partridge pea or kobe for summer feeding.

HABITAT MANAGEMENT PRACTICES FOR SWAMP RABBITS

Swamp rabbits depend mostly on bottomland forests, wetland habitats and grassland habitats next to streams, drainages or wetlands. Conserving these habitats and maintaining food (grasses, forbs and vines) and cover (cane and other thickets) are essential for increasing swamp rabbit populations.

Thinning bottomland hardwood forests or timber stand improvement treatments can improve swamp rabbit habitat by increasing sunlight on the ground. Increasing sunlight on the ground promotes growth of grasses and forbs that provide food and cover. Creating 1/4-acre to 1-acre forest openings throughout forests also enhances cover. Debris can be piled from thinning or cutting to create escape cover. ■



Disked plot providing rabbit food, yellow-flowered plants are partridge pea.



Vine covered woody debris providing excellent escape cover.



Transition zone

The Basics of Moist-Soil Impoundment Management

BY JASON OLSZAK, LDWF Waterfowl Program Biologist

Well managed moist-soil units are an effective management technique for providing millions of migratory waterfowl high quality wintering habitat

More than any other natural feature, wetlands are synonymous with Louisiana. Second only to Florida in the lower 48 states, nearly a third of the state's land area is made up of wetlands. Occurring within our borders are roughly 40 percent of the coastal marshes of the lower states and 27 percent of the floodplain of the Lower Mississippi Alluvial Valley. For centuries, wetland dependent wildlife have thrived in the coastal and inland marshes, river floodplains, oxbows, bayous, and more recently, flooded agricultural lands. This is especially true for migratory birds. A variety of avian taxonomic groups use these wetlands as areas for rest and refueling during either a migration stopover or the final destination where they will spend their winter months. Waterfowl are one of the most visible and economically important of these avian groups. At the terminus of the Mississippi Flyway, Louisiana commonly winters well over 4 million ducks. Louisiana duck hunters generally account for 35 to 40 percent of the Mississippi Flyway's duck harvest. That's 15 percent of the total U.S. duck harvest and more than two-times the harvest of all of Canada. Consequently, considerable time and resources are dedicated to ensuring quality waterfowl habitat (i.e.,

waterfowl hunting locations) exist for these wintering guests.

One factor that contributes to the high waterfowl value of Louisiana wetlands is the abundant food in the form of wetland plant seeds and tubers. As the science of wetland management has expanded in the last half-century, wetland managers have accumulated a wealth of knowledge concerning the creation and enhancement of waterfowl habitat. Natural habitats, such as marsh, swamp and floodplain lakes are relatively self-sustaining and will do well with minimal management activity. The practice of actively managing wetland impoundments (also referred to as shallow water areas or moist-soil units) has proven to be an effective way to increase the quantity, quality and attractiveness of wetland habitat available to wintering waterfowl.

Moist-soil unit (MSU) management involves the presence of low levees, which permit the retention of seasonal surface water typically through the winter months. Passively managed MSUs make use of water control structures to capture and hold rainwater. In addition to the ability to capture water, managers practicing active management usually have pumps installed to deliver water on demand and employ

some type of vegetative manipulation. Oftentimes, active managers will opt for passive management during years when the suitable conditions can be achieved without the additional cost involved with active management.

Wetland adapted (moist-soil) plants are those whose seeds begin germinating when temperatures rise and soil moisture reaches the muddy to moist stage during the spring-summer growing season. When a wetland remains too wet, submerged aquatic plants are expected. Conversely, when soil dries too quickly, upland grasses and forbs will dominate the area. Once sprouted, these plants are relatively tolerant of flooding so long as the water doesn't overtop them. Their seeds are necessarily very resistant to extensive flooding and can remain dormant in the soil for many years until conditions are again favorable for germination. Thus, seeding a newly created MSU for native, natural species is seldom necessary, as there is an existing seed bank in the soil ready to respond when the right soil moisture conditions exist.

The initial conditions of a field used for moist-soil management are usually the most productive, as the water is drawn down and an open, non-vegetated mud-

flat dominates. This is quickly followed by a flush of herbaceous, annual, moist-soil plants. Annual plants are adapted to produce an abundance of seeds, as they only live for one growth cycle. Any new plants of the same species that grow the following years are the result of new seed growth. However, annuals are not very competitive with other plants, so as vegetative growth continues through the years, annuals decline. In subsequent years perennial plants become established and, over time, become the dominant species in a MSU, a process called succession. In regards to perennials, the same individuals live more than one growing season, and thus allocate more energy into structural growth (stems, roots, leaves) than reproductive growth (seeds). Perennial shrubs and trees will also begin to appear as succession continues, and will eventually outcompete much of the herbaceous plant component. Units

that are dominated by perennial plants are less productive for waterfowl than those with abundant annuals, since seeds make up the bulk of a typical dabbling duck's diet.

Usually, an MSU will only produce an adequate amount of annuals for three to five years before perennials dominate to the point that management action is needed. The dilemma of decreasing seed production with increasing age in an MSU can be dealt with by actively setting back successional processes. The most common approaches to setting back succession include disking, mowing, burning and/or herbicide application. Depending on the species and degree of problem vegetation, one or two of these techniques can be used on all or a portion of a particular MSU. If only a portion of a unit contains problematic perennial (or sometimes annual) vegetation, spot treatment of that area can be applied rather than treating the entire unit.

Nevertheless, whole unit treatment can be used when objectives call for reestablishing the bare ground, mudflat, early successional conditions that promote annual plant growth. Woody vegetation should be kept to a minimum, especially if it includes species that do not produce duck forage (i.e. black willow, swamp privet, Chinese tallow, water locust, persimmon). These species also exhibit rapid growth, and if management action is put off, they can make future management more time consuming and costly than if taken care of promptly. When addressed early, young trees and shrubs can be mowed, disked or sprayed from the ground. Whereas later, larger trees may have to be sprayed aerially, removed with a dozer, or cut with chainsaws, then either burned, removed or left to rot. A diligent wetland manager will not allow his units to reach this condition. Flooded woodlands can indeed be productive for waterfowl. In fact, acorns make up an important part of the diets of mallards and wood ducks. However, the quantity of acorns in a flooded forest with 30 percent red oak component only approaches 75kg/ha versus over 500kg/ha of moist-soil seeds in an MSU. The energy content of acorns is only slightly higher than that of annual moist soil seeds and does not make up for the lower yield. In addition, actively managed MSUs with abundant annuals can achieve over 1,000kg/ha moist-soil seeds. Considering most ducks cease feeding in areas with less than 50kg/ha, well-managed MSUs provide the greatest opportunity to maximize the carrying capacity of a given wetland, excluding unharvested grain crops that are flooded.



The ability to deliver water on demand allows the creation of moist-soil conditions favorable to growing herbaceous wetland vegetation



LEFT: When treatment of the entire unit is not warranted spot application can be done with backpack sprayers if the ground is too wet for a tractor or ATV. RIGHT: Young invasive woody vegetation can be controlled by mowing.

Regularly monitoring site conditions such as plant species occurrence, water levels and management activities will go a long way in reducing errors and inefficiencies in wetland management. Fundamental to effectively managing MSUs for waterfowl is the ability to identify wetland plant species. No less important, the ability to distinguish “nuisance” perennial vegetation from those that are either benign or produce seed that ducks actually consume is the key to maximizing carrying capacity. Studying plant identification books can be useful, but consultation with a knowledgeable wetland/waterfowl manager is the most effective way to get a crash course in wetland plant identification, and LDWF staff biologists are always available to conduct a site visit. They can also assist in making recommendations or establishing an informal plan for management actions that may be warranted to improve site conditions. At the least, good record keeping can help prevent repeating the same management mistakes, or assist in the replication of beneficial activities and results. Nevertheless, things don’t always go according to plan in nature and adaptability is another hallmark of MSU management. Countless problems can and will occur. Water delivery fails, tractors break down, vegetative manipulations take a back seat to other activities, and nuisance vegetation has a tendency to be more aggressive than predicted. For these and countless more unanticipated events, a well-informed plan B is often necessary. A common example involves two undesirable annuals, coffeeweed and cocklebur, which often colonize freshly disked MSUs. However, regular monitoring and appropriate action (herbicide application/mowing) before they produce seed will eliminate that year’s growth and reduce growth in subsequent years by reducing the amount of seed in the soil.

In addition to LDWF biologists, numerous resources are available online that can assist wetland managers in improving their sites for wintering waterfowl. From plant specific herbicide recommendations to waterfowl food preferences, the amount of information available will be of assistance and trial and error no longer needs to be a common management technique. One of the biggest improvements many managers can make is simply getting away from repeating the same management actions year after year. Water control structure boards do not need to be pulled, and the impoundment drained, at the conclusion of duck season each year. With an increased knowledge base and improved conditions in artificial impoundments, the value of these vital winter wetlands can be increased for the millions of migratory waterbirds that arrive in Louisiana each fall and winter. ■



Annual grasses and forbs provide an average of 500 kg of seed per hectare in a well managed moist-soil unit.



Delayed action in keeping woody vegetation under control will result in increased effort and expenditure to reclaim a moist-soil area.



Aerial application of herbicides can be done when entire unit treatment is required and the soil has not dried enough to support heavy equipment.

Louisiana Deer Regulations



BY SCOTT DURHAM, LDWF Deer Program Study Leader

Have you ever wondered how the deer season length and limits are set? Hunting seasons represent a balance between the biology of the game species, in this case white-tailed deer, and offering the most recreational hunting opportunity possible. Professional biologists consider many factors when recommending hunting season lengths and bag limits. Habitat quality and productivity, landscape features, breeding periods, hunter surveys, harvest data, and public comments are all important factors in determining hunting season length and bag limits.

In the late 1950s Louisiana had a deer population of approximately 67,000 white-tailed deer with an annual harvest of 4,500 to 5,000 deer. During that time Louisiana ranked among the top in deer population among the southern states (St. Amant 1959). The deer harvest increased to 32,500 deer during the 1967 season. Three decades later, in 1997, an estimated 267,600 deer were harvested in Louisiana. The increased harvests can be attributed to more liberal hunting regulations which were able to be implemented due to increased deer herds. In 1960, for example, there were 22 deer areas, the longest season was 56 days, and most were only two to four weeks in length. The season limit during this time was two deer, many areas were closed to hunting, and for the most part it was bucks-only hunting. As deer herds in-

creased and there was a greater demand by the public for more hunting opportunities, season lengths and limits were able to become more liberal without jeopardizing Louisiana's deer herd.

Several factors are considered in managing Louisiana's deer herd. We defined nine deer physiographic regions (Louisiana Deer Habitat Units) and three levels of productivity across the state. There are great differences in the productivity of a rich upland or bottomland hardwood site with abundant browse and mast resources versus a deep swamp, brackish marsh or monoculture pine stand on poor acidic soils. More productive areas are able to support a larger deer herd than less productive areas. All else being equal, a more productive site will therefore have more deer and thus a higher harvest potential than a less

productive site. It should be remembered, however, that the statewide limits and seasons are designed to offer maximum hunting opportunity on a statewide basis, they do not necessarily mean you should harvest a full season limit of deer on any particular property you hunt. Understanding your land's size, carrying capacity and productivity, adjacent property harvest pressure, and common sense should dictate how many and where a hunter should harvest their deer. The Deer Management Assistance Program (DMAP) is a technical assistance program designed to offer specific harvest and habitat recommendations for individual hunters and properties.

Most hunters desire a season set around peak breeding periods. The "rut" is a time that bucks are more vulnerable to harvest because they are more active

chasing does. During the rut, hunters have one of their best chances at harvesting a trophy, given sufficient age structure in the population. As a result, LDWF has been conducting research to determine peak breeding dates of deer across the state. This information is then incorporated into setting deer seasons statewide.

Deer harvest trends are also part of the equation when setting deer season dates and bag limits. The department conducts an annual hunter harvest survey in which 6 percent of licensed Louisiana hunters are randomly sent a survey. The survey includes questions on type of game hunted, number of game harvested by species, number of days spent hunting and so on. This information, coupled with the new mandatory reporting system, enables biologists to examine deer harvest numbers at the parish level. According to both the harvest survey and reporting data, deer harvest has been declining in most parishes since the 2008-2009 season, the first year of mandatory reporting. Reporting data include four categories:

1. Reporting system non-DMAP private lands.
2. Reporting system public lands.
3. Wildlife Management Areas managed hunts.
4. DMAP lands.

Theoretically, every deer harvested in Louisiana should be reported under one of these categories.

Though substantially lower, the reporting data tracked the hunter harvest survey data fairly well for years 08-09, 09-10 and 10-11. However, during the past two seasons (2011-2012, and 2012-2013), there were greater differences in the mail survey vs. reporting data. How much of this is due to the reporting rate remains unclear, but steps have been taken to make reporting easier and quicker, and we urge hunters to report all deer they harvest. Without accurate harvest data, LDWF season recommendations will not be optimal.

Louisiana deer hunters want to hunt, and LDWF strives to offer the most recreational opportunity possible. Four month long seasons that include early and late archery hunting during the full range of breeding activity are what most Louisiana deer hunter's desire. LDWF fully supports this as long as the harvest is sustainable and that every hunter has a fair chance at harvesting a deer. The best way of achieving this is through DMAP. Under this program there is measured control and flexibility to allow whatever level of harvest is needed for a specific tract of land, accompanied by direct communication between hunters and LDWF biologists and managers. For more information on the DMAP program contact Scott Durham (sdurham@wlf.la.gov).

Even outside of DMAP, it may be time to manage at a finer scale. Currently, the state is divided into 10 deer hunting areas. Having deer hunting areas allows for different management approaches across the state based on habitat quality and productivity, landscape features, and breeding periods, factors that have a direct impact on deer herds and hunter opportunity to harvest deer. LDWF biologist's concerns have been high enough in some areas of the state to call for some "pull back" in harvest pressure, at least temporarily, while we work towards more area specific seasons and limits. For the 2013-2014 seasons, for example, coastal areas and southeast Louisiana deer hunters will be return-

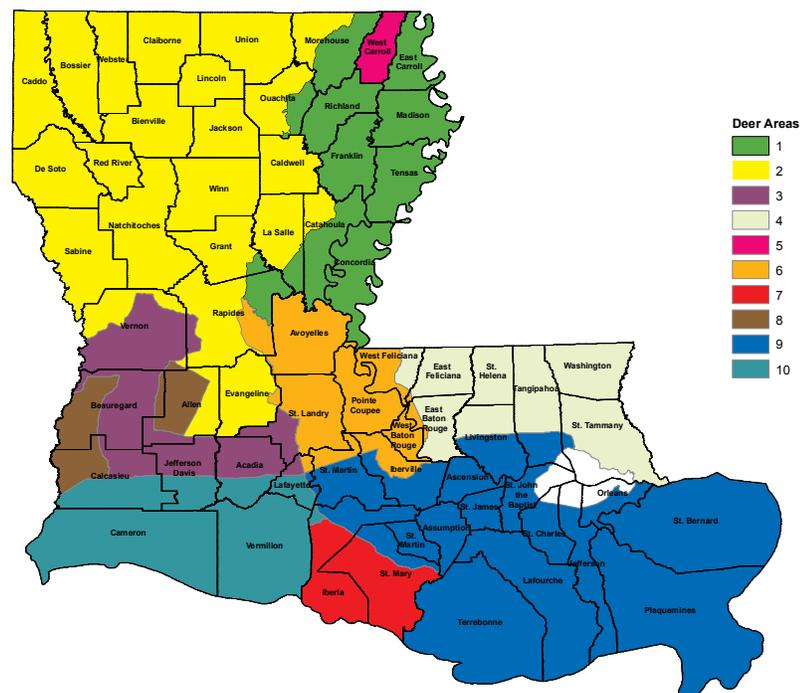
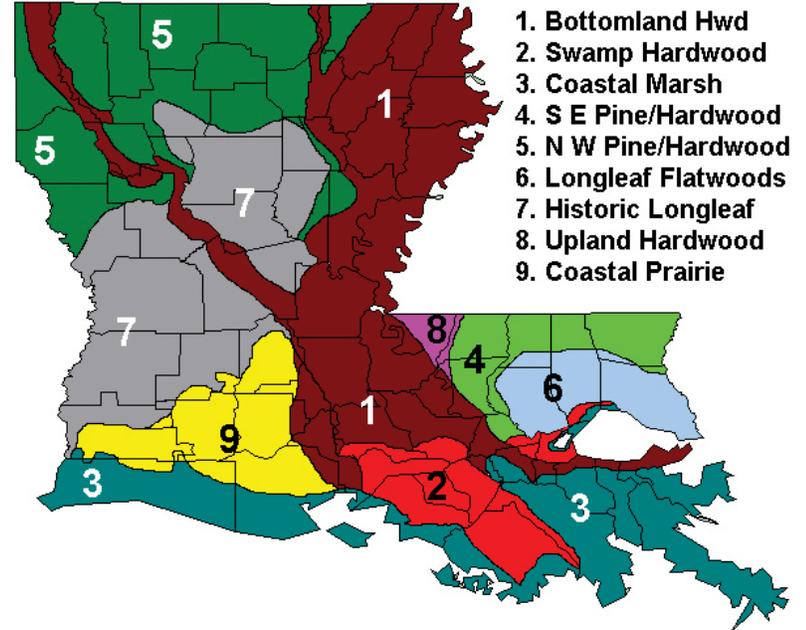
ing to more limited and specific days for female harvest (doe days) due to concerns of declining deer numbers. Additionally, three new areas (Areas 4, 9 and 10) were established to allow a finer-tuned scale of deer management.

What can you do to assist in deer management? Most importantly, keep hunting and report every deer you harvest. Having an accurate estimate of the annual deer harvest is a critical component of deer management. Also, contact Scott Durham about DMAP if you would like more fine-tuned deer management on your property. ■

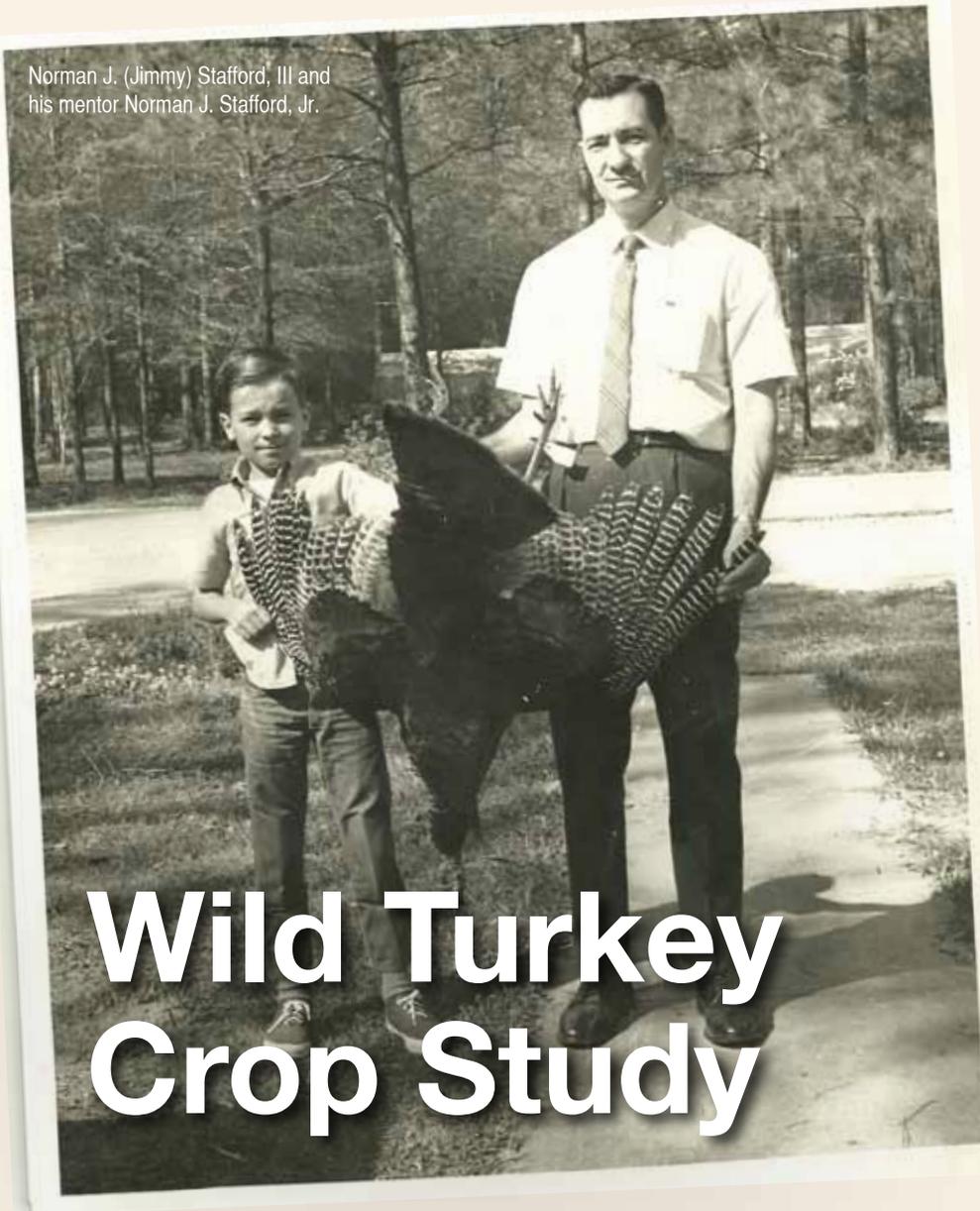
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LOUISIANA DEER HABITAT UNITS



Norman J. (Jimmy) Stafford, III and his mentor Norman J. Stafford, Jr.



Wild Turkey Crop Study

BY JIMMY STAFFORD, LDWF Small Game & Turkey Program Leader

From a very young age I was taught the value of conservation by my dad and grandpaw. Dad was an educator and Grandpaw a District Conservationist for the Soil Conservation Service. These men taught me how to hunt and the importance of quality habitat to wildlife. Like many young hunters, my early years were more about the harvest and less about conservation. But with time, experience and being blessed to hunt in the company of many good men, my perspectives matured. Aldo Leopold, considered the founder of wildlife management as a profession, stated in his book *A Sand County Almanac* that “Ethical behavior is doing the right thing when no one else is watching - even when doing the wrong thing is legal.” It is this ethic that should guide any mature hunter.

It is in the nature of any biologist worth his salt to learn more about the animals

with which he or she works. Currently, LDWF biologists are conducting a study to determine food habits of wild turkeys. This study consists of examining crop contents from male turkeys harvested during March and April. A crop is an expanded section of the esophagus that stores food. I remember sifting through crop contents as a kid with Dad, and him pointing out items that our trophy had eaten: acorns, various insects and lots of unidentified seeds and leaves. Little digestion occurs in the crop, which is more of a temporary storage for food. Therefore, biologists can still identify food items from this organ. Findings from this study may help biologists better understand spring seasonal food habits.

To date, more than 100 wild turkey crops have been submitted for study. Crops were examined from 24 parishes and three adjacent Mississippi counties.

Turkeys are thought by many to be opportunistic feeders that eat any number of unusual items with seemingly no rhyme or reason. Food items from snakes to small sticks have been found in crops by hunters and biologists. Although this study is in its infancy, it appears that although turkeys eat a variety of food items, they seem to be very deliberate in what they select at any given time. For example, within a given year turkeys from different locations within the state may select for a specific flower, seed or insect. This may indicate seasonal and availability dietary preferences. As more crops are examined, such observations may become more refined.

At full capacity, a turkey crop will expand to the size of a soft ball. The percent of crop capacity filled was estimated for each crop examined. The percent by volume of each different food item found within the crop space used was also estimated for each turkey.

Eighty-five different food items were found within the 102 crops examined. Very large items such as whole pecans and plant fungi as large as a golf ball were found. Foods found in crops were grouped into the following categories: native grasses (seeds & leaves), forbs (seeds, flowers, leaves, & stems), insects, acorns, planted crops (commercial & green food plot plantings such as oats, wheat, ryegrass, clover, etc.), placed grains (processed corn, oats, sorghum, etc. made available to turkeys-and sometimes used as bait), crawfish, other plants (berries, stems, fruits, & etc.), and other items (rocks, etc.).

Many associate insects as being a critical dietary component of poults (young turkeys). But in this study of predominantly adult and jake gobblers, 80 crops were found to contain insects. Insects were eaten more than any other food category. Beetles seemed to be highly preferred along with stink-bugs, grasshoppers and crickets. However, on average, insects only represented 10 percent of crop volume. Insects were followed by the food category “other plants” found in 66 crops. Other plants include berries, fruits, seeds, leaves and stems of plants other than grasses and forbs. American elm seeds are very small inconspicuous seeds. Although not occupying large areas within crops, elm seeds were found often. Native grasses were found in 60 crops and by volume represented 11 percent. Seeds, stems and blades of grasses also were consumed. Among grasses, panic grasses were most often consumed by turkeys. Planted

crops included grasses such as wheat, oats and chufa as well as forbs such as clover, and were found in 54 crops. By volume, planted foods averaged 39 percent, representing greater than three times any other food category. Of individual plant species identified in all food categories, clovers were found more often than any other plant species. Where available, turkeys would often fill their crop completely with clover leaves. Of all plants identified, clover is likely the most preferred food plant consumed by turkeys. Forbs such as vetch, dandelion and buttercup followed planted crops. Forbs were found in 45 crops and averaged 13 percent by volume. Acorns averaged 7 percent and “other items,” 2 percent, were found in 23 crops each. By March acorns are usually scarce, but seem to be highly sought after when available. The “other items” category includes rocks used to grind food in the gizzard or even stranger items such as 1/2-inch circular mud balls. Placed grains were found in only seven crops but still managed to average 7 percent by volume. This indicates that when found as a food source, grains are consumed in large amounts. It is suspected that these processed and dried grains such as corn, oats and sorghum were placed for the purpose of attracting turkeys. Last but not least, no Louisiana turkey study would be complete without the inclusion of crawfish found in one crop.

A special thanks is offered to hunters and biologists across the state that collected the crops used in this study. If you would like to participate in this crop study please freeze intact crops within plastic bags labeled with the parish of harvest, date, age and sex of the turkey then deliver to your nearest LDWF region office. For more information contact Jimmy Stafford (jstafford@wlf.la.gov).

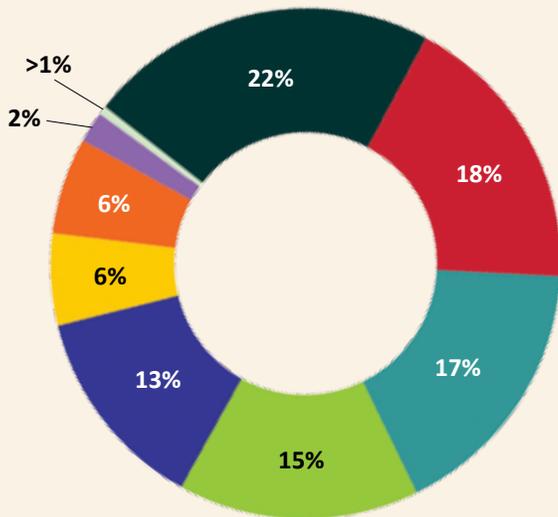


Pointing out the location of a turkey's crop.



ABOVE: A good variety of plant material eaten by a turkey, comprised mostly of vetch and also some wild strawberry, hawthorne, and poison ivy. BELOW: A Louisiana crawfish, acorns, and false dandelion were found in one turkey's crop.

PERCENT OF TURKEYS USING FOOD GROUP (March/April Foods*)



- Insects
- Other Plants
- Grasses (seeds, tubers & leaves)
- Planted Species
- Forbs (leaves, stems & flowers)
- Acorns
- Other Items
- “Placed” Grains
- Crawfish



Prairie in Louisiana

BY CHRIS REID, LDWF Natural Heritage Program Botanist
AMITY BASS, LDWF Natural Heritage Program Manager



“Prairie” is the French word for meadow. A prairie is a grassland habitat dominated by native grasses and other herbs with trees and shrubs mostly absent. In the humid eastern U.S., a combination of the correct soil type, abundant fuel and lightning strikes maintained prairies. Most of Louisiana outside of floodplains experienced fire at regular intervals and supported open savannas and woodlands with prairie-like grassy ground covers and sparse canopies.

Prairies are imperiled globally. Historically, both large-scale and small-scale prairies existed in Louisiana. In the southwestern part of the state, about 2.5 million acres of coastal prairie existed at one time. Of the original 2.5 million acres, perhaps 2,000 acres remain in scattered tracts. Some of this acreage is accounted for by railroad remnants, where narrow strips of prairie along railroads escaped conversion to agriculture. The prairie remnants with the highest conservation value in Louisiana are embedded in rangelands in the Lake Charles area. These rangeland prairies vary in size from about 200 to 400 acres. These prairies have the highest conservation value because of their landscape contexts. They are embedded in pasture/range and agricultural landscapes, rather than in urban settings or, in the case of many prairie remnants, situated between railroad grades and highways. Their better landscape contexts makes them more valuable to wildlife. The Louisiana Department of Wildlife and Fisheries is actively working to improve habitat quality on several of these rangeland prairies by implementing

chemical brush control and prescribed fire. There are currently no unplowed coastal prairie remnants that are publicly accessible. There are two sites where prairie sod and seed were established in an attempt to re-create coastal prairie. These sites are Eunice Prairie, owned and managed by Cajun Prairie Habitat Preservation Society, and Duralde Prairie on Lacassine National Wildlife Refuge near Eunice.

Coastal prairie soils are relatively extreme. Near the soil surface there is an abrupt soil textural change from silt loam to clay. This subsurface clay horizon is called a clay pan. The clay pan restricts downward development of tree roots. The clay pan also impedes upward movement of deeper soil water, accentuating droughts. Woody plants have higher water requirements than grasses and other herbaceous plants. The clay pan alone directly slows, but does not prevent, forest development. Grasses provide abundant fine fuel and frequent lightning strike fires further prevent forest development and perpetuate a grassland. The clay pan perches water, lending these soils to rice cultivation, to which over 99 percent of the prairie has been converted. Soils of the Grand Prairie of eastern Arkansas are similar, and the Grand Prairie has also been nearly completely converted to rice.

Calcareous or blackland prairies are small-scale habitats embedded in pine and pine-hardwood woodlands in interior Louisiana. As with coastal prairie, calcareous prairies are maintained by extreme soil properties combined with fire. Soils of most of our calcareous prairies formed in ancient

sea bed deposits. Even today clam and oyster shells are evident in the soils. Soils of calcareous prairies are high in calcium carbonate and are thus alkaline. Calcareous prairie soils usually contain clay and have high shrink-swell potential. The heavy soils accentuate drought stress. Woody plants are subjective to physical, chemical and drought stress. Again, grasses provide abundant fine fuel and fire compliments the extreme soils to perpetuate a prairie.

Coastal and calcareous prairies have similar vegetation. Both prairie types are dominated by tall perennial bunch grasses such as little bluestem (*Schizachyrium scoparium*), brownseed paspalum (*Paspalum plicatulum*), big bluestem (*Andropogon gerardii*), and Indian grass (*Sorghastrum nutans*). Bunch grasses, as the name indicates, form discrete clumps which slowly increase in diameter with age. The space between clumps provides growing space for other herbaceous plants. This interstitial space is also important for wildlife, including grassland birds, to move about through the prairie. Turf or sod-forming grasses, unlike bunch grasses, spread laterally via elongate stolons and/or rhizomes and form dense continuous stands. Examples of turf grasses include carpet grass (*Axonopus fissifolius*), bahia grass (*Paspalum notatum*), and Bermuda grass (*Cynodon dactylon*). In a prairie, most of the biomass is accounted for by grasses, but most of the species' richness is provided by the many broad-leaved herbs (forbs) that occur interstitially. The prairie flora is very rich, and showy floral displays are produced especially following fire, which stimulates

growth and flowering. Without fire or with inadequate fire (too infrequent, too little fuel), woody encroachment by shrubs and trees will occur, though tree species will usually be stunted and have slow growth rates. In coastal prairies, frequently encroaching species include the native shrubs eastern baccharis (*Baccharis halimifolia*), wax-myrtle (*Myrica cerifera*), yaupon (*Ilex vomitoria*), and the exotic Chinese tallow tree (*Triadica sebifera*). Without fire, calcareous prairies can convert to eastern redcedar (*Juniperus virginiana*) forests. Calcareous prairies are reduced from their historical extent, but there remain some high-quality prairies with public access. The Keiffer Prairie Complex on the Winn District of Kisatchie National Forest is an example of such a prairie complex. There are several other calcareous prairies on other districts of Kisatchie. There are also several high-quality calcareous prairies on Barksdale Air Force Base, Bodcau Wildlife Management Area, and on private lands in north Louisiana.

Louisiana has other small scale grasslands including saline prairies and sandstone glades. Saline prairies may best be described as “barrens” since the alkali soils are extreme enough to prevent forest development without fire. These prairies support the diminutive earthfruit (*Geocrapon minimum*), an endangered plant. A glade is an open area in an otherwise wooded landscape, which exists due to the presence of rock at or near the surface. Sandstone glades occur on the Catahoula Formation in central Louisiana. There are many sandstone glades on the Kisatchie District or Kisatchie National Forest. On glades with relatively deep soil, fire likely played an

important role in preventing woody encroachment.

PRAIRIE WILDLIFE

Historically, Louisiana coastal prairies contained species such as the red wolf, bison, elk and Attwater’s prairie chicken. Today, these species are extirpated from the coastal prairie region, except for the Attwater’s prairie chicken which is still currently found in Texas. The last prairie chicken record in Louisiana was in 1919 in Cameron Parish. Louisiana prairies support a diverse array of wildlife and provide critical habitat for many grassland dependent species.

Many species of conservation concern are known to occur in Louisiana’s native grasslands. Bobwhite quail are rapidly declining throughout the South, with Louisiana estimates showing declines as much as 85 percent since 1962. This once popular game bird is becoming increasingly rare on the landscape, most likely due to clean farming practices and the lack of fire. This decline is not limited to bobwhite quail. The entire suite of species that depend on grassland habitats are declining. Loggerhead shrikes, Henslow’s sparrows, sandhill cranes and dickcissels are just a few of the many bird species becoming more difficult to find. There are several species of reptiles and amphibians, including the western slender glass lizard and the southern crawfish frog that were once commonly found in southwest Louisiana, but no more. A large number of butterflies and skippers were once abundant in Louisiana’s native grasslands, but are also in considerable decline. Management of these grassland systems is essential if these species are to persist. ■

COASTAL PRAIRIES Species of Conservation Concern (30)		
Amphibians	Southern Crawfish Frog	
Birds	American Bittern	Nelson’s Sparrow
	American Woodcock	Northern Bobwhite
	Black Rail	Northern Pintail
	Buff-breasted Sandpiper	Sandhill Crane
	Crested Caracara	Sedge Wren
	Dickcissel	Short-eared Owl
	Grasshopper Sparrow	Sprague’s Pipit
	Le Conte’s Sparrow	Upland Sandpiper
	Loggerhead Shrike	White-tailed Kite
	Long-billed Curlew	Whooping Crane
	Marsh Wren	Yellow Rail
	Mottled Duck	
Mammals	Baird’s Pocket Gopher Prairie Vole	
Reptiles	Eastern Hog-nosed Snake	
	Ornate Box Turtle	
	Western Slender Glass Lizard	
Crustaceans	Old Prairie Digger	
CALCAREOUS PRAIRIES Species of Conservation Concern (13)		
Birds	American Woodcock	Henslow’s Sparrow
	Bachman’s Sparrow	Le Conte’s Sparrow
	Field Sparrow	Loggerhead Shrike
	Grasshopper Sparrow	Northern Bobwhite
Mammals	Eastern Harvest Mouse	
Reptiles	Western Slender Glass Lizard	
Insects	Dusted Skipper	Wild Indigo Duskywing
	Frosted Elf	
SALINE PRAIRIE Species of Conservation Concern (12)		
Birds	American Woodcock	Loggerhead Shrike
	Field Sparrow	Northern Bobwhite
	Grasshopper Sparrow	Sprague’s Pipit
	Le Conte’s Sparrow	
Mammals	Eastern Harvest Mouse	
Reptiles	Eastern Hog-nosed Snake	
	Southern Prairie Skink	
	Western Slender Glass Lizard	
Insects	Saline Prairie Scarab Beetle	
SANDSTONE GLADE BARREN Species of Conservation Concern (8)		
Amphibians	Southern Red-backed Salamander	
Birds	Chuck-Will’s-Widow	Greater Roadrunner
	Field Sparrow	Northern Bobwhite
Reptiles	Western Slender Glass Lizard Coal Skink	
Insects	Cobweb Skipper	



Eastern Hog-nosed Snake



Loggerhead Shrike



Geocrapon

Indian Grass



Ornate Box Turtle

The American Woodcock



BY JEFFREY P. DUGUAY, Ph.D., LDWF Dove, Woodcock and Research & Survey Program Manager

Muscles tensed, heart pounding with an adrenaline rush, head down and eyes fixed on a thicket of greenbrier and dewberry growing amid the crown of a fallen white oak. Nose filled with the sweet aroma of a woodcock, the only thing your bird dog is waiting on is the flushing of the bird and the crack of your shotgun. It's mid-December and the woodcock have returned to Louisiana!

LOUISIANA WOODCOCK HUNTING

Louisiana consistently has more woodcock hunters than any other southern state. Louisiana hunters spend more days afield hunting woodcock than hunters in any other southern state, and they harvested 10,500 woodcock during the 2012-2013 woodcock season. Based on annual Louisiana Department of Wildlife and Fisheries (LDWF) hunter surveys, the long-term average number of woodcock hunters in the state each year is 5,050.

What makes woodcock hunting so attractive in the state of Louisiana? Great opportunities. Louisiana represents important wintering grounds for woodcock with some of the highest numbers of wintering woodcock found within the state (Straw et al. 1994). Additionally, several wildlife management areas

(WMAs) in the state, as well as private lands, are managed to enhance woodcock habitat and woodcock hunting opportunities; this means birds and great places to hunt them.

Not only that, but studies on wintering ground habitat use on WMAs in the state provide the most up-to-date information on how to effectively manage for woodcock. As with any wildlife, numbers of woodcock are directly tied to habitat, with more individuals found in quality habitat than in poor habitats.

NATURAL HISTORY

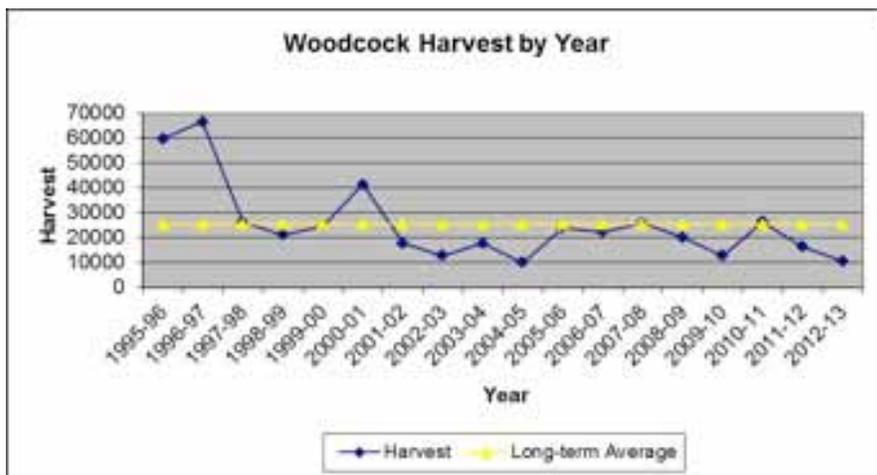
The American woodcock (*Scolopax minor*) is a shorebird that has forsaken the marshes for forested habitats. In the day time, woodcock prefer to spend their time in forest thickets with rich moist soil. This habitat provides protective cover as well as areas where

they can feed on their favorite food, earthworms. Beginning at sunset, woodcock fly to fields. These fields may be agricultural fields, pastures, clear cuts or fallow fields and are used for courtship displays and feeding. Nocturnal (nighttime) fields should be moist and contain patchy cover, as thick, uniform ground cover is undesirable for woodcock.

Females are larger than males, with females averaging 7.3 oz. and males 5.8 oz. Females also have longer bills (over 2.75 inches) than males (less than 2.5 inches).

FOOD

Worms are the staple diet of the woodcock throughout the year. The woodcock uses its long bill for extracting worms from the soil. The upper mandible (bill) is flexible and the woodcock can open the tip of the bill below



the soil surface to seize its prey. Woodcock have been known to eat their weight or more in earthworms within a 24 hour period. Evidence of woodcock feeding can be seen by looking for probe holes in the soil. During dry periods, woodcock will turn over leaves with their bill and feed on slugs, sow bugs, other insects and their larvae.

MIGRATION

Woodcock generally begin to depart from their northern breeding grounds in October. Woodcock occupy the wintering grounds in Louisiana from November to February with maximum numbers arriving in mid-December.

REPRODUCTION AND NESTING

There is limited nesting in the extreme southern part of the woodcock's range, which occurs from January to February. On the northern breeding grounds (where most reproduction occurs) woodcock nest from March to May. Woodcock typically lay four spotted eggs in a depression on the ground, often under bushes or at the base of small trees. The female incubates the eggs for 20-21 days. The young are precocial, meaning they are able to walk within a short time of hatching and are able to feed themselves, they still need the mother to brood them, especially during inclement weather. Broods tend to break up between six and eight weeks after hatching.

POPULATION MANAGEMENT

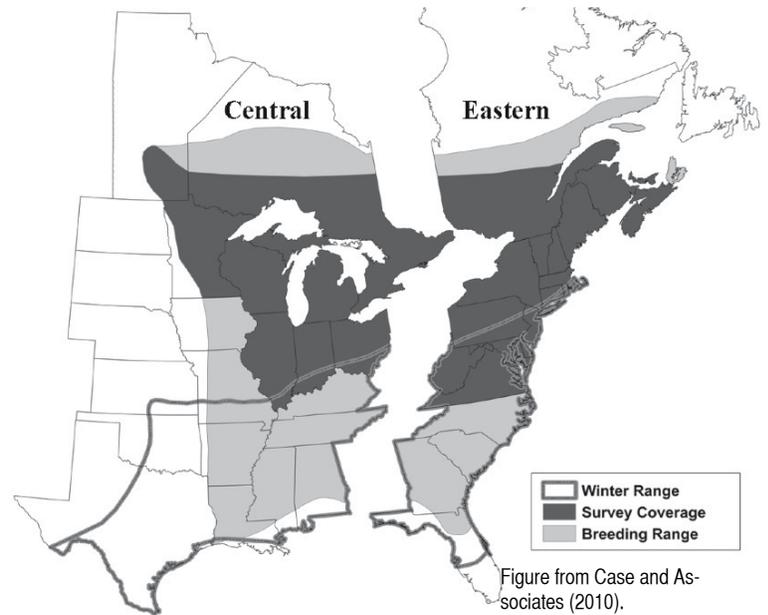
Woodcock are managed on the basis of two management regions or populations, eastern and central. These regions are biologically justified because analysis of band recovery data indicate there is little crossover between regions (Cooper and Rau 2013).

Each year, the U.S. Fish and Wildlife Service, in cooperation with numerous partners, coordinates three surveys to assess the population status of American woodcock:

1. Singing-ground Survey, which provides an estimate of population trends.
2. Wing-collection Survey, which provides an annual index of woodcock recruitment.
3. Harvest Information Program, which provides data on the number of hunters, harvest and days spent afield each year.

The Singing-ground Survey covers a major portion of the breeding range in Canada and the U.S., while the Wing-collec-

AMERICAN WOODCOCK MANAGEMENT REGIONS, BREEDING RANGE, SINGING-GROUND SURVEY COVERAGE AND WINTER RANGE



tion Survey and Harvest Information Program only sample U.S. hunters (Cooper and Rau 2013).

HABITAT MANAGEMENT

Diurnal (daytime) habitat for the woodcock consists of thickets with relatively sparse ground cover up to 6 inches above the ground for easy foraging, and dense cover greater than 6 inches above the ground to provide protective overhead cover. The soils must be moist and rich containing abundant earthworms for feeding. This type of habitat can be created by making patch clearcuts or small group selection cuts within the forest. However, remember the woodcock's need for moist soils, as this is where habitat management needs to be conducted if woodcock are to be attracted; hard dry soils will not provide suitable habitat for woodcock.

Woodcock use nocturnal habitat for both courtship displays and feeding. Old fields containing patches of cover, such as brush, make good nocturnal habitat for woodcock. Nocturnal habitat can be maintained by mowing, burning, herbicides and encouraging native shrubs. Burning can create some of the best habitat for woodcock because it removes layers of grass and dead vegetation, but will leave a few scattered stalks and patches of cover that provide concealment for feeding woodcock. Current research conducted on Sher-





FUN FACT

American woodcock have many local names, including bogsucker, Labrador twister, timber-doodle (probably the most well-known), big-eyes, blind snipe, brush snipe, swamp bat, mud bat, and so on. But in Louisiana the woodcock is known as bécasse (bay-Cass), this is from the French bécassine meaning a snipe.

burne WMA to determine what habitat management treatments create optimal nocturnal habitat for American woodcock were recently completed by Dr. Jeff Duguay (LDWF), Dr. Kim Marie Tolson (University of Louisiana at Monroe) and graduate student Cody Haynes (ULM). Two field seasons of data indicate that early successional habitat consisting of small trees can be set back by mowing at a height of 12-18 inches, or burning. However, based on this research, sites should not be mowed in consecutive years. Consecutive annual mowing results in too little debris and development of grass. A good strategy may be to mow a site one year, and the next year either burn the site or allow it to remain fallow.

WOODCOCK HUNTING ON PUBLIC LANDS

Interested in hunting woodcock in Louisiana? There is ample woodcock hunting opportunity on public land in Louisiana. WMAs, Kisatchie National Forest, national wildlife refuges, and U.S. Army Corps of Engineers lands offer woodcock hunting opportunity. Woodcock distribution varies from year to year depending on soil moisture and temperature. In most years, lands in the Mississippi and Atchafalaya River floodplains offer the

best woodcock hunting. Some of these properties include Sherburne WMA, Three Rivers WMA, Indian Bayou Area (USACE), and Dewey W. Wills WMA. However, hunters should not overlook the upland areas which can offer very good hunting as well. Some of these include the Kisatchie National Forest, Clear Creek WMA, Bodcau WMA and Sandy Hollow WMA. ■

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WILDLIFE MANAGEMENT CALENDAR OF EVENTS

	JANURAY	FEBRUARY	MARCH	APRIL	MAY
GENERAL		Dormant season prescribe burn.** Invasive plant control. Take soil samples for food plot preparation.	Growing season prescribe burn, invasive plant control, soil tests, prune and fertilize fruit/mast trees.	Apply herbicide to longleaf stands if necessary, growing season prescribe burn, invasive plant control, fertilize native vegetation.	Plant warm-season food plots*, perform maintenance of fire breaks, growing season prescribe burn, invasive plant control.
DOVES					
DEER	Collect harvest data.	Post-season camera survey before antlers are cast.*** Turn in DMAP records to LDWF.		Browse survey. Work on summer food plots. Fertilize natural deer browse.	
DUCKS/ MOIST-SOIL UNITS		Install new wood duck boxes and clean out existing boxes. Early draw down for moist soil units.	Begin slowly drawing down moist soil units monitor wood duck nest boxes.	Moist-soil plant management/disturbance.	
HOGS		Trap hogs****		Trap hogs	
QUAIL		Prescribe burn/fallow disk.		As needed prescribe burn woody brush areas/avoid mowing-burning all potential nesting areas (2 yr. old native grass areas).	
RABBITS		As needed prescribe burn/disk/mow transition zones.		Escape cover can be created any time during the year as needed.	
SONGBIRDS		Install new bird houses and clean out existing boxes.	Regularly clean bird feeders to reduce disease transfer, prevent nonnative, invasive birds from utilizing bird houses.		
SQUIRRELS					
TURKEY		Prescribe burn/fallow disk/mow for poult habitat.	Listen to gobbling activity prior to hunting season fallow disk/mow for poult habitat growing season burning.	Plant chufa. Growing season burning as needed to improve thick woody brush areas - avoid mowing potential nesting areas.	
WOODCOCK		Future diurnal habitat can be created any time durin the year as needed using clearcuts, shelterwood, group selection.			

*always remember that planting food plots is secondary to natural habitat management; food plots benefit several species including deer, turkeys, quail, and non-game species.

**prescribed burning is beneficial to several species including turkey and quail by providing more open habitat for easy movement through the landscape, grasses and forbs for nesting, food,

***pre-season camera survey more informative/important than post-season camera survey by visualizing buck:doe and doe:fawn ratios and aiding in harvest decisions.

****increase hog trapping effort prior to increases in food availability

FEATURED BIOLOGIST



Fred Haganman, *Forestry Section*

After an illustrious high school football career in the pineywoods of East Texas, Fred graduated from Marshall High School in 1987. Fred subsequently enrolled at Stephen F. Austin St. Univ. in Nacogdoches, TX, where he earned a Bachelor's of Arts in Criminal Justice and Sociology in 1991. In 1993, with new desires and opportunity (funding), Fred went back to school at LSU to begin a career in forestry and wildlife. Initially, Fred's intent was to major in wildlife management. However, Fred soon realized that forestry was a better fit for him. Forestry allowed Fred to better focus on his passion, forest habitat management.

As a biologist manager in the forestry section, Fred is able to manage forest wildlife habitat on a daily basis within his assigned ecoregion, the Gulf Coastal Plain. One habitat management project that Fred is involved in, along with Biologist Forester Ed Trahan, WMA Program Manager Steve Smith, and American Woodcock Study Leader Jeff Duguay, is managing habitat for the American woodcock. These biologists are studying how woodcock respond to timber management designed to create diurnal (daytime) habitat at Dewey W. Wills WMA. In addition to this research project Fred is involved in other habitat management projects and he assists other biologists in various sections and divisions at LDWF, such as the WMA program, hunter education and law enforcement. Fred is also active in other professional areas outside of his daily forest

responsibilities. Fred serves active leadership roles in the Society of American Foresters (SAF) and is the current (2013) State Chair for Louisiana SAF. Fred is also an active member in the Louisiana Forestry Association, Southern Hardwood Forestry Group, and Louisiana Association of Professional Biologists. In addition to the mainstream aspects of his position, Fred is also involved in cooperative efforts with associated groups and government agencies by taking active roles in the Lower Mississippi Valley Joint Venture and the Gulf Coastal Plains & Ozarks Landscape Conservation Cooperative. Fred enjoys his responsibilities within these various groups but states that "what really matters is that fact that forest management is what maintains or creates desirable wildlife habitat." This is what Fred finds to be most gratifying.

Fred had an interesting beginning to his career in forestry. While exploring job opportunities Fred called a former professor of his, Dr. Leroy Schilling. Dr. Schilling gave Fred a directive "Call Kenny Ribbeck, now!" "Yes sir," Fred replied. "No, I mean NOW, hang up the phone and call him!" Schilling exclaimed. Kenny Ribbeck, Program Manager for the forestry section at that time, informed Fred of an opening within their section. The job sounded perfect, the opportunity to manage forests for the benefit of wildlife. Time was running short though, the job announcement closed at 5 p.m. that day. With only hours to spare before the close of business and the closing of the job announcement, Fred was able to find an SF10 application form, get it filled out and faxed in to LDWF's Human Resources office. Although memory does not serve him well, perhaps Dr. Schilling was somewhat obliged to help Fred in his job search. Dr. Schilling had, unknowingly, previously referred Fred to an employer that was a timber thief. It took a few weeks of employment and a little help from Louisiana Department of Agriculture and Forestry law enforcement before Fred had a good idea about what was going on at that company and immediately parted ways. It's been 15-years since that scramble to get his job application in on time. During his 15 year tenure in the Forestry Program with LDWF Fred has seen a lot of changes. One thing that has not changed though is Fred's desire to use his skills, knowledge and talents to manage forests for the benefit of wildlife.

JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Growing season prescribe burn. Invasive plant control.		Invasive plant control. Bushhog/mow roads, fields.	Mast survey. Plant cool-season food plots.* Invasive plant control.	Invasive plant control.		Dormant season prescribe burn.** Invasive plant control.
Plant brown-top millet for first season dove fields.		Manipulate dove fields for hunt- ing plant brown-top millet for second season dove fields.				
Provide mineral supplements.		Apply for DMAP.	Pre-season camera survey.*** Begin deer stand repairs and prep for hunting season	Pre-season camera survey.***	Collect harvest data.	
Moist-soil plant management/disturbance.		Begin partial flooding for teal, begin duck blind repairs and prep for hunting season.	Manipulate moist soil if needed; mow, disc, burn, plow, herbicide.	Start main flooding of moist soil units.		
		Trap hogs****		Trap hogs		
				Fallow disk borders 50 - 100' wide around fall deer plots to improve summer quail nesting-feeding habitat.		
		Escape cover can be created any time during the year as needed.			Disk near cover to improve feeding habitat.	
		Regularly clean bird feeders to reduce disease transfer, prevent nonnative, invasive birds from utilizing bird houses.				Install new bird houses and clean out existing boxes.
			Take a youth hunting during spe- cial WMA youth squirrel hunts.	Install squirrel nest boxes.		
				Plant clover for spring plots.		
				Bushhog to a height of 12-18 inches and/or burn openings managed for nocturnal habitat.		
		Future diurnal habitat can be created any time durin the year as needed using clearcuts, shelterwood, group selection.				

and summer bedding cover for deer, etc.



MattiLynn D. Dantin, Wildlife Biologist/Education Coordinator

It's easy to understand why MattiLynn is such a good fit for the LDWF Education Section. Born and raised along Bayou Lafourche, in the small town of Gheens, La., she was introduced to the joys of the outdoors at a very early age. Some of her earliest childhood memories come from fishing with her father behind their cattle pasture. Yes, MattiLynn grew up on a small farm where her family raised

everything from cattle and horses to rabbits and quail, and everything in between. It's that love and respect for the outdoors and animal husbandry that led her to her first field of study in college.

MattiLynn received her first degree from Nicholls State University in 2005, where she earned her B.S. degree in Agricultural Science with a Minor in both Plant Science and Business Administration. Upon graduation, she wasn't quite satisfied and immediately enrolled into the Nicholls State University graduate program. Her research started with working on the induced spawning of choupique (*Amia calva*) or as other people may know them: bowfin, grindle, grinnel, dogfish, mud fish, or cypress trout. If successful, these spawning techniques could relieve some of the wasteful pressure that was placed on that species for its roe (eggs within the ovarian membrane). After many failed attempts, MattiLynn redirected her focus to another area of study, blue crabs (*Callinectes sapidus*). She later completed her thesis, "Distribution and Relative Abundance of Blue Crab, *Callinectes sapidus*, in the Upper Barataria Estuary," where she earned a M.S. degree in Marine and Environmental Biology from Nicholls State University in 2007.

MattiLynn began her journey with LDWF in November of 2007. When interviewing with LDWF, she was told that the position was for the Aquatic Education Coordinator position in SE LA. She was excited when offered that position. However, it came with a small catch. The position was no longer just for Aquatic Education, but for Hunter Education as well. This only came as a bonus for MattiLynn, as she had developed a fondness for the sport at a very young age. Reminiscing about her youth, she recalls having had more than 20 hunting dogs at one time. Nonetheless, her most treasured trophies came from how many squirrel tails she could collect in a season. Again, she was thrilled to be given the opportunity to be an LDWF Education Coordinator.

She is charged with the coordination and implementation of Aquatic and Hunter Education events in Assumption, Iberia, St. Mary, St. Martin, and Terrebonne parishes. She also helps the other Educators within LDWF at some of their statewide events, such as Volunteer Instructor academies and workshops, FUN camp, YHEC, Summer Fishing Camps, BOW, and more. She's very proud to co-coordinate events like the Terrebonne Aquatic Clinic (TAC) and the Wetland Education Teacher Workshop (WETSHOP). TAC is an educational, hands-on approach to understanding our environment and the sport of fishing. Approximately 1,500 fifth grade students in Terrebonne Parish get to develop their fishing skills every year at TAC. WETSHOP introduces science and history teachers to the importance of Louisiana's coastal shores, wetland loss and restoration efforts so that they can bring that science, information and stewardship back to students all across the state.

Just as most biologist believe, MattiLynn knows that conservation with education and proper management of our state's natural resources is what will allow the continuation of our culture and heritage of "Sportsman's Paradise." She also believes that one of the most rewarding experiences a sportsman can have comes from the excitement of helping a child land his first fish or a novice hunter harvest their first game. So if you or someone you know would like to join our team of Volunteer Hunter Education and Aquatic Education Instructors, please contact your local coordinator today.

Dewey W. Wills WMA

BY STEVE SMITH, LDWF WMA
Program Manager

The Wildlife Division of the Louisiana Department of Wildlife and Fisheries currently manages over 1.1 million acres in its Wildlife Management Area (WMA) Program. The WMA Program's mission is to provide wise stewardship of the state's wildlife and habitats, to maintain biodiversity, including plant and animal species of special concern, and to provide outdoor opportunities for present and future generations to engender a greater appreciation of the natural environment. Habitats within these lands harbor and help conserve a multitude of endangered species, species of concern, and the more common game species that are heavily sought after on these properties. Recreational opportunities range from a variety of hunting and fishing opportunities, to canoeing, hiking, camping, bird watching and berry picking. Habitats range from upland pine-hardwood, to cypress tupelo, pine savanna, bottomland hardwood, brackish marsh, and the list goes on with many globally rare habitat types and plant communities as well. Each issue of the Louisiana Wildlife Insider will feature a different WMA highlighting the WMA's history, unique features, and recreational opportunities.

Dewey W. Wills WMA, located in Catahoula and LaSalle parishes, consists of 63,423 acres. The area is bounded on the north/northwest by Catahoula Lake and Catahoula National Wildlife Refuge. The clearing of vast acreages of bottomland hardwoods within the Mississippi Alluvial Valley in the 1950s and 1960s spurred the state to purchase several remaining forested tracts within this part of the state before they were cleared for agriculture. Extensive agricultural lands border the WMA on the east and south. In 1964, 61,871 acres of what was known as the Callicott tract were acquired by the department. It was named Saline WMA after the large lake and bayou bordering the tracts entire Western boundary. In 1993, the area was renamed Dewey W. Wills WMA, in honor of Mr. Wills, who played a key role in the acquisition of this and several other WMAs in the state. In 2007, the department entered into a lease agreement with LaSalle Parish School Board to include 1,552 acres of school board lands in the WMA. Additionally, two separate tracts totaling 250 acres were added to the WMA in 2011.

The area consists of flat terrain with poorly drained soils that is subject to annual flooding. This tract is interlaced with bayous and lakes. The forest cover is a mixture of bottomland hardwoods, with major overstory species consisting of overcup

DLIFE MANAGEMENT AREA

oak, bitter pecan, Nuttall oak, green ash, American elm, cedar elm and willow oak. The lower elevations subjected to frequent flooding are composed mainly of bald cypress, tupelo, water elm and swamp-privet. At higher elevations, the understory is composed of deciduous holly, hawthorn, green-briar, swamp dogwood, peppervine, rattan vine, dewberry and blackberry, palmetto, and regeneration of the overstory.

The area is actively managed through wildlife-focused forestry practices aimed at providing sustainable wildlife habitat. Within the Mississippi Alluvial Valley, LDWF in accordance with the Lower Mississippi Valley Joint Venture, has developed a set of habitat variables known as Desirable Forest Conditions for Wildlife. Managing habitats to meet these conditions provides necessary habitats for a range of wildlife species, such as Louisiana black bear, migratory songbirds and the common game species. Two greentree waterfowl impoundments are actively managed to provide flooded timber for wintering waterfowl as well as waterfowl hunting opportunity.

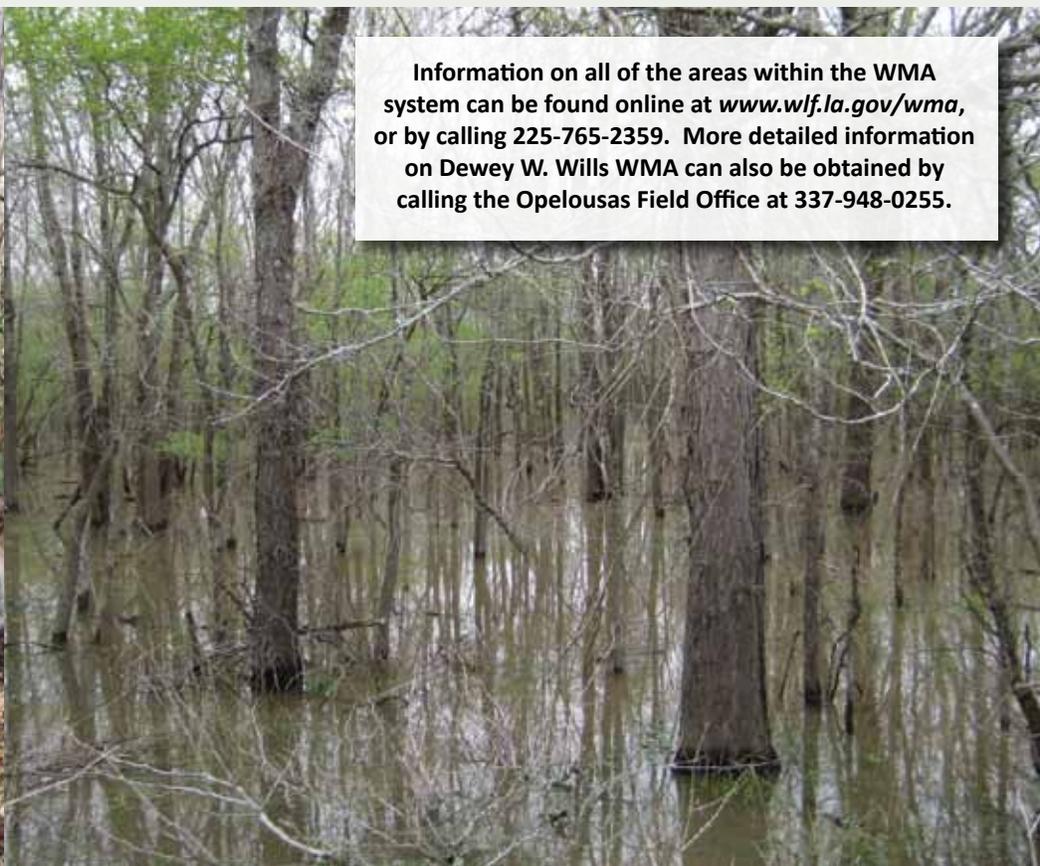
In addition to the conservation value of this WMA, it also provides a huge recreational resource. The WMA is one of the most heavily utilized in the state, with approximately 41,000 user days expended on the WMA each year. In a WMA survey conducted in 2011, users indicated that Dewey W. Wills was the second most utilized WMA in the state. Additionally, the department conducted a Louisiana Deer Hunter Survey in 2012, which indicated that Dewey W. Wills was the fifth most utilized WMA in the state for deer hunters.

Fishing is the major use on the area with approximately 20,000 user days expended each year. The popular Saline/Larto Complex, comprised of Saline and Larto lakes as well as the network of waterways between the two, is a major fishing destination in the state, particularly renowned for its crappie fishing. There are six concrete and three stone boat launches on the WMA as well as several private launches that make these popular waterways easily accessible.

Dewey Wills WMA offers excellent bottomland squirrel hunting, with approximately 4,000 hunter days expended each year. Beginning in 2014, the WMA will offer several Small Game Emphasis Areas. These newly developing areas will combine understory habitat manipulations with forestry practices to promote and maintain suitable understory habitat for rabbit and woodcock, while being accessible areas for hunters to utilize. Some of these areas may also be made accessible for earlier season rabbit and squirrel dog hunting as well as off-season rabbit dog training. The WMA also has very productive deer habitat and is very popular amongst deer hunters, as noted in the survey mentioned previously, with approximately 4,500 hunter efforts each year. The WMA's large acreage, moderately productive soil type, and multitude of wet, difficult to access areas provide the ideal recipe for producing quality deer. The WMA's productivity and season lengths provide a sustainable harvest centering around 350 deer each year, which equates to a deer per 160 acres, more or less. Its location adjacent to Catahoula Lake and surrounding agricultural

areas, combined with the multitude of waterways, also make the WMA very popular and productive for waterfowl hunting. There are areas accessible by boat and walk-in hunting only. A greentree reservoir and an intermittent impoundment, provide managed water for wintering waterfowl habitat and public waterfowl hunting opportunities. Additionally, LDWF plans to construct another intermittent impoundment on the north end of the area that will seasonally impound approximately 3,000 acres for wintering waterfowl habitat and public use.

In addition to hunting and fishing, the WMA provides a variety of non-consumptive uses such as hiking, boating, photography and sightseeing. Each year in early May, on the north end near Catahoula Lake, mayhaws are ripe, and mayhaw pickers visit the area in large numbers to harvest these fruits, primarily for use in pies and jellies. There are four campgrounds on the area, each of which offer tent and RV camping but no electrical or sewage hookups. All of this use is made accessible to users through the extensive network of roads and ATV/UTV trails, as well as boating on waterways throughout the area. A large amount of personnel hours, equipment, time and material is expended each year to maintain the road and trail system. A grant was awarded in 2013 to improve approximately 9 miles of ATV and UTV trails on the area during the summers of 2014 and 2015. A year-round ATV trail located on the Northwest portion of the area adjacent to Catahoula Lake provides ATV riding opportunities throughout the year.



Information on all of the areas within the WMA system can be found online at www.wlf.la.gov/wma, or by calling 225-765-2359. More detailed information on Dewey W. Wills WMA can also be obtained by calling the Opelousas Field Office at 337-948-0255.

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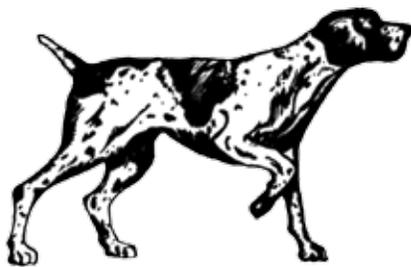
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HABITAT IS THE POINT

Partridge pea (*Chamaecrista fasciculata*) is an upright annual legume that produces bright yellow flowers and grows 2-6 feet tall. This nitrogen fixing plant produces pods with seeds that are an important component in the winter diet of northern bobwhite. Wildlife managers promote this important quail food by planting, prescribed fire or soil disturbance. White-tailed deer will browse the plant, and partridge pea is a larval food plant of the little yellow, orange sulphur, cloudless giant sulphur, and sleepy orange butterflies. Partridge pea is also a preferred forage plant for gopher tortoises.



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LOUISIANA WHOOPING CRANE RE-POPULATION PROJECT INCLUDES PUBLIC AWARENESS COMPONENT

*Restoring a
Louisiana Treasure*
Protect Whooping Cranes



Report Wildlife Violations:
1-800-442-2511



An important part of the Louisiana Department of Wildlife and Fisheries whooping crane re-population project is the public awareness media plan.

The public's role is a key factor in the birds' survival since the cranes will at some point encounter people once they are released into the wild. Alerting the public that the birds are once again part of the south Louisiana ecosystem better prepares landowners, outdoorsmen and birding enthusiasts for a chance encounter with a whooping crane.

The birds are raised as hatchlings at a USGS research facility in Laurel, Maryland. Once released as juveniles into the marshes around White Lake Wetlands Conservation Area in Vermilion Parish they must adapt to their new environment. Predators such as bobcats, alligators and humans with disregard for non-game species regulations are primary threats.

Over a dozen billboards currently display the message around the state that whooping cranes need protection. Support for this outreach is funded by a grant from Chevron, while billboard space is provided by Lamar Advertising. The department's Enforcement Division hotline, 1-800-442-2511, is listed for reporting anyone seen harming whooping cranes.

Whooping cranes are an impressive sight for those fortunate enough to be in the right place at the right time. If you do spot any of these rare birds, we ask that you simply observe them from a distance as they re-settle in Louisiana after a 60-year absence.

**IF YOU ENCOUNTER A WHOOPING CRANE, PLEASE
OBSERVE THEM FROM A DISTANCE AND DO NOT
APPROACH THEM.**

**TO REPORT A VIOLATION AGAINST A
WHOOPING CRANE, PLEASE CONTACT
OPERATION GAME THIEF**

1-800-442-2511

YOU WILL REMAIN ANONYMOUS

*for more information about the return of whooping cranes
in Louisiana, please visit the department's website at:*

<http://www.wlf.louisiana.gov/wildlife/whooping-cranes>