

## **FORFWORD**

My Friends -

I am fortunate to follow predecessors that acted proactively on bequest of forward thinking staff to manage our great Wildlife Management Areas (WMAs) and Refuge system. Those staff being the ones entrusted by YOU, the citizens of our great state, to manage the tremendous wildlife resources associated with the fields, prairies, sloughs, bayous, swamps and forests across the state. At a time when land values were based primarily on their ability to grow agricultural crops, those managers knew inaction by the Department would result in the continued loss and degradation of one of the nation's greatest bottomland hardwood ecosystems; the Mississippi Alluvial Valley (MAV) bottomland forests. These forests were being cleared extensively in that portion of the state to grow agricultural crops, providing the landowners with a steady income flow they were not receiving from the forests on those lands. Over 80 percent of the bottomland hardwood forests in the MAV portion of our state were cleared for agricultural production during the middle of the 20th century. These clearings were a tremendous loss of important, quality wildlife habitat that is still impacting wildlife populations today.

My predecessors, working with Department staff and an overwhelmingly supportive state legislature, were successful in utilizing Department funds to initiate an aggressive land acquisition program, with an emphasis placed on acquiring remnant bottomland hardwood forest tracts within the Mississippi Alluvial Valley. The forward thinking of these individuals also captured the interests of other conservation minded entities

as additional land and funding donations have and continue to come forth, adding more properties to the Department's Wildlife Management Area and Refuge program. The WMA program was well received by the hunters and fishers of our state, as these lands provided quality wildlife recreational pursuits and opportunities for the sportsman. The land acquisition program also incorporated lease agreements with private and other government land ownerships, enabling the Department to provide a wider variety of wildlife habitats for recreational pursuits.

As lands were acquired and/or enrolled in the WMA program, personnel were hired to perform the management tasks on these areas necessary to provide access to the public and monitoring of activities allowed on the WMAs. Hunting seasons and general rules and regulations were adopted by the Louisiana Wildlife and Fisheries Commission, based on recommendations of professional staff working on these WMAs and surrounding private lands. Development plans were established for each WMA, based on the federal aid 5-year planning cycle, providing staff and administration a continuing forward- looking aspect of needs for sustaining the wildlife resources of these areas as well as the demands of the public. The WMAs have become well known for the quality of the habitats they represent and the tremendous wildlife resources associated with these lands.

Continued planning is necessary to maintain optimum use of these properties for our public. The Conservation Fund has been one of those private entities that continue to be strong partners with LDWF in securing lands for the WMAs and negotiating proactive agree-

ments that allow us to improve our WMA holdings and capacities. This WMA Strategic Master Plan is yet the result of another cooperative endeavor with The Fund, helping us with an outside view of how we can move our public land management program forward in a professional and proactive manner, while meeting the wildlife resource needs and societal desires.

Our history has brought us to our current standing, but we cannot rest, as much is still needed in certain areas of the state to ensure a viable wildlife resource is sustained amidst the continuing draw on our natural resources from an ever expanding human dimension on the landscape. We must identify and prioritize issues threatening our wildlife resources, develop appropriate mechanisms to thwart those threats, including fee acquisition or conservation easement purchase of critical habitats, and continue to educate our public on the importance of our mission as the wildlife and fisheries agency of the great Sportsman's Paradise.

Please, help us make it happen, for you and all of our future generations, Louisiana.

Robert J. Barham Secretary

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## **EXECUTIVE SUMMARY**

Both residents and visitors to Louisiana are attracted to its wild places, abundant hunting and fishing opportunities and the biodiversity of the state. The challenge is to provide access to these special landscapes at an adequate scale that facilitates public enjoyment without degrading natural resources for future generations. The Louisiana Department of Wildlife and Fisheries (LDWF) manages a network of more than 1.6 million acres of public lands. The purpose of this Master Plan is to guide LDWF's landscape level management of this network of lands and to highlight opportunities for enhancing the network in the future.

Goals for the Master Plan are to:

- Sustain a range of facilities and uses for the public to enjoy LDWF lands
- Provide a green infrastructure vision for LDWF to implement and manage landscape scale conservation
- Identify focused restoration efforts to maximize positive impact for ecosystems and leverage partner resources
- Provide a comprehensive vision for landscape scale adaptive management for both LDWF lands and other partners

- Provide the public, LDWF personnel, and key stakeholders with a useful reference document on important information and policies
- Promote adaptive management through research and monitoring

Many compelling reasons exist for LDWF to craft a big picture plan for its network of lands. Planning helps an organization become more responsive, nimble and proactive in its interactions with the public and conservation partners as well as in meeting management and funding challenges. In a 2010 national survey, the Land Trust Alliance (the Alliance) found that conservation organizations that had conservation plans protected twice as much land as organization without plans. A compelling vision for the future can inspire the public to take action. Conservation plans make an organization more efficient, able to manage change and balance competing needs.

In 2008, LDWF underwent a performance audit by the Legislative Auditor. The report found areas for improvement in tracking acreage of LDWF lands, outlining land acquisition processes and the need for a comprehensive plan to guide property management activities. The Master Plan is one of several of LDWF's long-term efforts to respond to the audit report and maintain strong bonds of trust with the public.

Wildlife Management Areas + Refuges

KEY

Louisiana Parishes

WMAs + Refuges





## Louisiana Department of Wildlife & Fisheries - Wildlife Management Area Master Plan



The Master Plan represents a landscape scale vision for the future of LDWF. As part of the Master Plan a green infrastructure network was developed to connect the state's wildlife management areas (WMAs) and refuge systems through a series of wildlife corridors.

The Master Plan links site level management plans for individual WMAs and organizational priorities reflected in the LDWF strategic plan. Like a site plan, the Master Plan assesses the current resource management issues facing LDWF, examines the on-going efforts of LDWF and its partners, and examines gaps in the LDWF portfolio of lands. Spatially, the Master Plan focuses on a proposed green infrastructure network designed to highlight future opportunities for conservation and corridors to connect LDWF lands together. The Master Plan provides guidance on a land acquisition process for LDWF as well as how to strategically use other tools and programs to implement LDWF's statewide vision.

## LDWF Mission Statement

To manage, conserve, and promote wise utilization of Louisiana's renewable fish and wildlife resources and their supporting habitats through replenishment, protection, enhancement, research, development, and education for the social and economic benefit of current and future generations; to provide opportunities for knowledge of and use and enjoyment of these resources; and to promote a safe and healthy environment for the users of the resources.







## STATE OF THE STATE

Louisiana offers residents and visitors a range of landscapes from vast forests to remote barrier islands and immense wetlands systems. Within these landscapes exist special places such as prime hunting spots, fishing holes, birdwatching areas, and other sites that make Louisiana the "Sportsman's Paradise." The Louisiana Department of Wildlife and Fisheries (LDWF) Master Plan's green infrastructure network identifies the landscape level connections of these special places, in order to appropriately conserve and restore Louisiana's rich tapestry of ecological and recreational assets.

To begin planning for the future, an understanding of the current state of public lands in Louisiana and the trends and threats at work within the state is critical. Over the years substantial planning has occurred, and reviewing these plans helps identify work that LDWF can undertake as an agency and opportunities in which it can collaborate as a partner.

# PUBLIC LANDS IN LOUISIANA

Louisiana covers over 33 million acres and is home for 4.5 million residents. However, Louisiana is a dynamic natural system, with an ever shifting balance between what can be classified as land and what is considered as open water. The state's vast river systems deposit sedi-

ment, building new land in the Mississippi and Atchafalaya River deltas. Simultaneously, wave action from hurricane storm surges and increased flooding from rising sea levels erodes Louisiana's coastline and wetlands at an alarming rate. Keeping this state of flux in mind, acreage figures of public lands represent an important story of public investment.

Federal and state agencies own and manage roughly 3.3 million acres or 9.7 percent of Louisiana. LDWF's wildlife management areas (WMAs) and refuges cover over 1.6 million acres or roughly 4.4 percent of the state. Other state-owned lands, including State Parks, also contribute to the inventory of public lands.

Federal agencies also are significant land stewards. The U.S. Fish and Wildlife Service (USFWS) manages an extensive series of refuges, covering over 600,000 acres. The United States Department of Agriculture's (USDA) Forest Service's Kisatchie National Forest covers over 603,000 acres. The National Park Service (NPS), with the Jean Lafitte National Park and other sites, manages close to 20,000 acres of public land. The United States Army Corps of Engineers (USACE) and the Department of Defense (DoD) both have extensive land holdings within the state. Interestingly, many lands are leased by LDWF from USACE and DoD and are included in the WMA and Refuge system.

## Louisiana Protected and Managed Lands Network

## KEY

Louisiana Parishes



WMAs + Refuges



Other Protected Lands

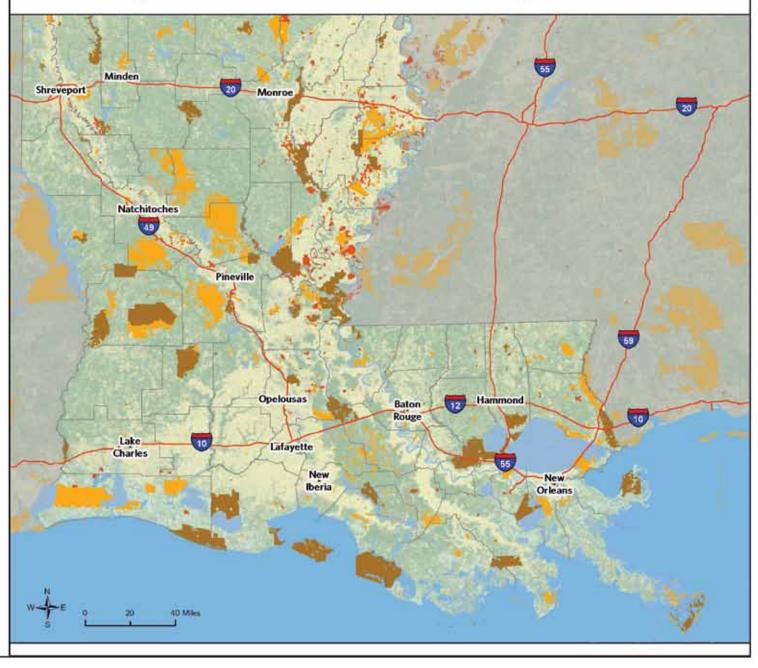


Easements





Louisiana Department of Wildlife & Fisheries - Wildlife Management Area Master Plan



In addition, several national and local nonprofit conservation organizations operate in the state and protect land by both fee acquisition and conservation easement, including The Nature Conservancy, Orleans Audubon Society, Coastal Land Trust, Coastal Plain Conservancy, and the Land Trust for Southeastern Louisiana. Ducks Unlimited, also known as America's Wetlands Trust, is a national nonprofit responsible for over 41,000 acres of easements.

## POPULATION TRENDS

In planning for future use of LDWF lands, examining population trends provides guidance as to how LDWF may best serve the public interest. As of July 2011, the state's population is estimated at 4,574,836, marking a 1.4 percent increase from the 2000 census. Over the past decade, the impacts of hurricanes Katrina and Rita have caused swings in population at the parish level. The U.S. Census Bureau forecasts that by 2020, the state population will be 4,719,160 - a population increase of over 3 percent.

Overall, Louisiana's population appears to be shifting from rural areas to metropolitan regions. An estimated 70 percent inhabit urban or suburban areas. According to analysis by Dr. Troy Blanchard of Louisiana State University, southern Louisiana will continue to be

the fastest growing region of the state. The parishes of Ascension, Livingston, St. Tammany and St. John the Baptist have experienced increases in population over the past decade and are forecast to continue this growth. The top parishes for growth through 2020 are expected to be Livingston, St. Tammany, Ascension, St. John, Plaquemines, Bossier, and DeSoto. These population trends support LDWF's aspirations to secure the assets currently managed and to expand its holdings, where feasible and appropriate, in order to serve the state's growing numbers.

Population growth brings about many changes on the landscape level. According to the Louisiana State Wildlife Action Plan (SWAP) completed by LDWF in 2005, habitat destruction, land conversion and fragmentation are leading threats to ecosystems in Louisiana. The SWAP is a statewide plan for the conservation of rare and declining species, and the habitats that support such species. The SWAP identifies 317 Species of Greatest Conservation Need (SGCN), and provides information on the threats to these species as well as conservation strategies. The SWAP also provides detailed information on 38 terrestrial habitats, 12 aquatic basins, and five marine habitats that are critical to the conservation of SGCN. and strategies to protect and conserve such habitats. As causes of these threats, the SWAP lists residential development, commercial/industrial development, converIn planning for future use of LDWF lands, examining population trends provides guidance as to how LDWF may best serve the public interest. As of July 2011, the state's population is estimated at 4,574,836, marking a 1.4 percent increase from the 2000 census. The U.S. Census Bureau forecasts that by 2020, the state population will be 4,719,160 – a population increase of over 3 percent.



sion to agriculture or other forest type, and the development of infrastructure such as pipelines and roads.

As highlighted in the SWAP, many parishes in the Upper West Gulf Coast Plain and northern portions of the Mississippi River Alluvial Plain are declining in population. The top parishes forecast to experience population loss through 2020 include: Madison, Tensas, East Carroll, Winn, Concordia, Vernon, and Catahoula.

In addition, projections indicate that the state's population is growing older with a 5 percent increase in the state's retirement age portion of the population. Estimates show that 17.6 percent of the population will be composed of persons 65 years of age or older by 2030. Therefore, LDWF must anticipate this demand for facilities designed with an aging population in mind. Improved access for wheelchairs for bathrooms, boardwalks, shooting ranges and visitor centers are examples of the needs of an older population.

# TOURISM AND OUTDOOR RECREATION TRENDS

Louisiana is a significant tourist destination. Understanding the sources of visitors to Louisiana is critical

to LDWF efforts to capitalize on tourism. Texas is the largest source of tourists visiting Louisiana, accounting for 25 percent of all visitors. The Texas cities of Houston and Dallas/Ft. Worth are the leading cities for visitors to Louisiana. Mississippi and Florida are also significant sources of visitors to Louisiana accounting for 6 percent each of tourists to the state. By studying the reasons that draw residents of Texas to Louisiana, LDWF can maximize its existing strengths with this market.

Trends among user groups of LDWF WMAs and refuges are factors to consider in planning for state lands. According to the Outdoor Industry Foundation, Louisiana's active outdoor recreational economy contributed more than \$4.7 billion to the state's economy, generating over \$225 million in state tax revenue and supporting 48,000 jobs.

In surveys conducted for the Louisiana Statewide Comprehensive Outdoor Recreation Plan (SCORP), the most important recreational activities were fishing, crabbing and crawfishing, with 62 percent of residents participating in these activities. Other important activities were walking-hiking, camping, public access to water, and hunting. These results suggest that LDWF efforts to improve and maintain access to waterways are broadly supported by the public. Facilities for camping are popular with the public. However, if LDWF embraces

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this priority, additional resources would be required to maintain those facilities to meet public expectations for campgrounds with modest services. According to the SCORP, trends in travel indicate that shorter, more frequent weekend trips for recreation are more popular than longer season vacations. If this trend holds, it may mean that more of the state's recreational tourism will be from within the state or from the nearby states of Alabama, Arkansas, Texas, Florida and Mississippi.

Hunting and fishing are extremely important activities on LDWF WMAs across the state and are central to the mission of LDWF. In 2014, the LDWF licensing section processed over 2.4 million transactions for an estimated 800,000 customers. Individuals may hold multiple licenses, and the figures reflect transactions by residents and nonresidents. The number of hunters, anglers and wildlife viewers fluctuates each year depending upon a wide range of variables such as the health of the economy, weather events, and lifestyle trends.

As hunting and fishing licenses are a major revenue source for LDWF, there is a need to monitor trends among LDWF's key user groups. Increasing the diversity of funding sources for LDWF is a sound strategy to provide stable funding. Exploring new fee structures for different user groups such as bird watchers, expanding hunter education programs to bring new people into the sport, and supporting environmental education to secure general public awareness are all solid methods for securing a promising future.

One of the key assets of Louisiana is its abundant birdlife. Louisiana attracts more than half of the birds of America either as permanent residents or as migrants in the Mississippi and Central flyways, according to a 2004 study by the ecotourism firm FERMATA in assessing opportunities for a state birding trail. This dramatic occurrence draws both bird watchers and hunters to Louisiana. One of the most insightful recommendations from the FERMATA report was to focus on attracting

more Texas visitors to engage in wildlife viewing experiences not available within their own state.

## LIFESTYLE TRENDS

The national trends of increased obesity and a sedentary lifestyles are strongly observed in Louisiana. For example, in 1990, roughly 12.3 percent of the state's population was considered to be obese, where as in 2011, 31.7 percent were classified as obese. Nationally, watching TV is the top after school activity chosen by all children ages 8 to 18. In a recent Centers for Disease Control survey, 70 percent of children in Louisiana have a TV in their bedroom. According to the Bureau of Labor Statistics, Louisiana ranked second in the country for watching the most television at three and a half hours per day. According to the United Health Foundation, Louisiana ranked 49th in the country in overall health. One of the factors in the Foundation's ranking was physical activity; adults were asked if they had participated in any physical activity at some point within a 30day period. Based on the responses, Louisiana ranked 47th in the country. These national trends have major implications for the future of public health of Louisiana residents and the use of LDWF lands.

## INVASIVE SPECIES

Ecosystems have evolved over thousands of years, with plants and animals finding distinct niches in often harsh landscapes. The introduction, both intentional and unintentional, of exotic species of plants and animals upsets this careful, complex and subtle balance that has been worked out on the landscape for centuries. Most importantly, invasive species threaten to displace native species, which are often a central motivation for the conservation of protected lands.

According to the Louisiana State Wildlife Action Plan, there are over 230 invasive plant and animal species in



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the state. Invasive species are broken into four tiers, with Tier 1 species being the most problematic. Tier 1 species are those that experience severe or widespread negative impacts to wildlife and natural communities. They include species such as feral hogs, giant salvinia, Chinese tallow, and the red imported fire ant. The SWAP provides strategies to deal with invasive species in the state. Public land stewards should address any invasive issues on their properties to reduce natural resource damage.

The purpose of the Louisiana Comprehensive Wildlife Conservation Strategy (2005), referred to in this report as the Louisiana State Wildlife Action Plan (SWAP), was to provide LDWF and other conservation groups with a strategy for the conservation and management of Louisiana's fish and wildlife resources, with an emphasis on species of conservation concern and associated habitats. By promoting proactive conservation, the SWAP is intended to reduce the need for future listings under the Endangered Species Act. There are four primary goals of the SWAP, all of which are closely related to the LDWF Master Plan. The first goal of the SWAP is Species Conservation, which is directly tied to the Master Plan, as LDWF properties are and will continue to be critical to maintaining healthy populations of all species of wildlife in Louisiana. The second goal of the SWAP is Habitat Conservation, which is also clearly connected to the Master Plan, as LDWF properties often provide the best and most reliable opportunities to achieve largescale habitat management and conservation. Public Outreach and Education, the third goal of the SWAP, cannot and will not be achieved without the opportunities for conservation education provided by LDWF WMAs, as these areas often provide the public with their best access to natural systems, thereby increasing public appreciation and support for conservation. Finally, the fourth goal of the SWAP, Partnerships, is clearly linked with the Master Plan, as some of LDWF's WMAs are made available via such partnerships, thereby increasing opportunities for both conservation and public access. The SWAP is intended to be a "living

document", in that it will evolve over time to mirror the changing conservation landscape in Louisiana. Therefore, the SWAP must be revised every 10 years, at a minimum. LDWF, with input from partners, is currently working on the first comprehensive review and revision of the SWAP, which will be completed in 2015.

## COASTAL LAND LOSS

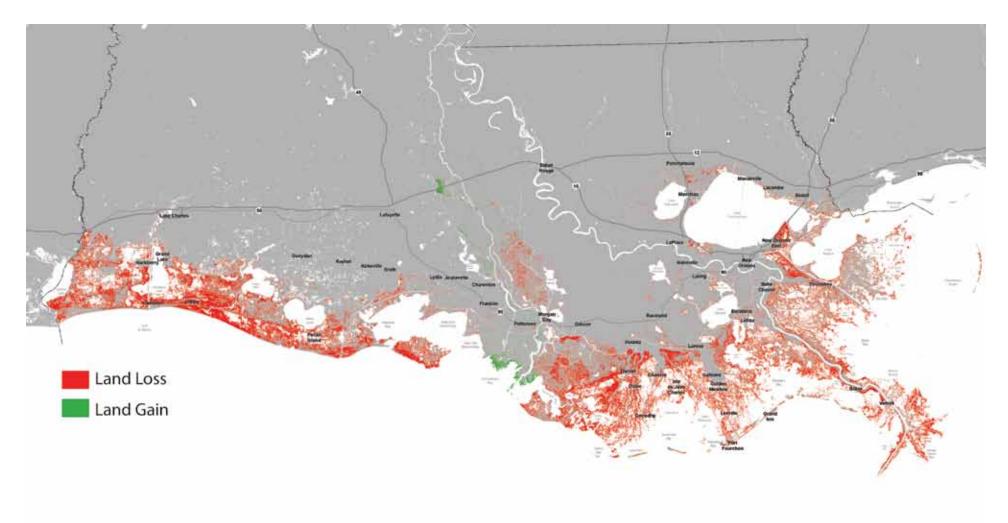
According to the Coastal Protection and Restoration Authority, Louisiana has lost over 1,883 square miles of land since the 1930s. If dramatic action is not taken, the state could lose an additional 1,756 square miles of land over the next 50 years. Complex factors are at work behind these changes, which are attributed to sea level rise, coastal subsidence, and damage by storm events. By the year 2100, ocean levels could be 24 to 47 inches higher than today, based on a continued average subsidence rate of 8 to 31 inches per century and midrange sea level rise model estimates. State and federal governments have launched ambitious efforts to restore coastal barrier islands, replenish coastal areas with sediment, and restore marshlands. LDWF plays a vital role in the planning of such coastal restoration projects on properties it owns and or manages.

LDWF's vast network of coastal WMAs and refuges is directly impacted by changing sea level and increased flood events. As LDWF assesses areas to invest resources, understanding the future impacts of changes in sea level and the degree of land loss may help inform those discussions.

## PAST PLANNING EFFORTS

The state of Louisiana has benefited from many planning efforts over the years. Over 40 regional and statewide plans were reviewed and assessed for relevance to this Master Plan. Brief summaries of the LDWF Strategic Plan and the SWAP and other agency plans are provided



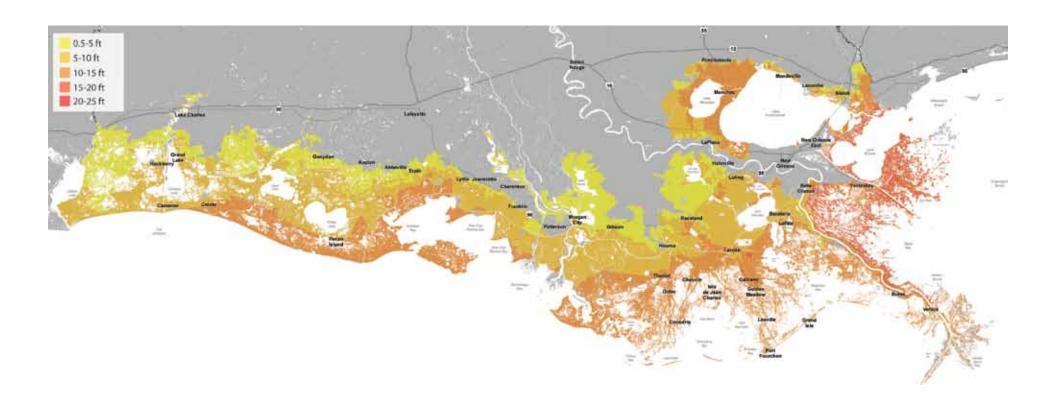


## FIGURE 1

Predicted land change along the Louisiana coast over the next 50 years if we do nothing more than we have done to date. Red indicates areas likely to be lost, and green indicates areas of new land. This map is based on assumptions about increases in sea level rise, subsidence, and other factors. (Estimate based on less optimistic scenario of future coastal conditions.)

#### Map provided by:

Coastal Protection and Restoration Authority of Louisiana. 2012. Louisiana's Comprehensive Master Plan for a Sustainable Coast. Coastal Protection and Restoration Authority of Louisiana. Baton Rouge, LA.



## FIGURE 2

This figure shows generalized estimates of flood depths for a 100 year flood 50 years from now, once the landscape has degraded and with no additional flood protection. These flood depths represent a broad planning level evaluation of overall flooding risk. This map is based on assumptions about increases in sea level rise, subsidence, and other factors. (Estimate based on less optimistic scenario of future coastal conditions.)

#### Map provided by:

Coastal Protection and Restoration Authority of Louisiana. 2012. Louisiana's Comprehensive Master Plan for a Sustainable Coast. Coastal Protection and Restoration Authority of Louisiana. Baton Rouge, LA. along with how the Master Plan relates and implements portions of these planning efforts. The expansive nature of the LDWF Master Plan is such that many of the recommendations of other planning efforts can be achieved through the implementation of the Master Plan. Identifying areas of collaboration among government, nonprofit, academic and other partners is critical for the full implementation of the LDWF Master Plan.

The strategic plan for LDWF established several goals, activities, and objectives that can be facilitated through the Master Plan. The overall goal for the Wildlife Program is to enhance and conserve the habitat necessary to maintain the state's species diversity and optimum distribution and densities of wildlife populations, and to increase the opportunities for the public to enjoy outdoor experiences including hunting and fishing. LDWF tracks rare, threatened and endangered species and habitats as one method of measuring conservation success or to identify areas that need improvement.

The green infrastructure network crafted within the Master Plan supports the goals of the LDWF strategic plan by articulating an interconnected system of protected lands that provides habitat for both federally listed species as well as other non-listed wildlife. By examining several different habitat and landscape types, the green infrastructure network will assist LDWF in conserving the biodiversity of the state. Another benefit

is that green infrastructure networks frequently provide opportunities for outdoor recreation for the public and help support viable populations of game species. Through the thoughtful implementation of the green infrastructure network, LDWF can make strong progress on the delisting of federally listed species, as the network will provide protected and managed habitat and will help focus habitat restoration efforts.

The LDWF strategic plan objective of sustaining an average of 800,000 annual users of the WMA and Refuge system is supported by efforts articulated in the LDWF Master Plan. Users have an impact on the network of LDWF lands, and only through wise planning can these impacts be addressed. Hunting license fees and other user fees are the key source of LDWF revenue, so keeping user groups interested in the LDWF network of public lands is also vital. Balancing public use with natural resource management is the nexus of sustainability and is at the heart of the vision established by the Master Plan as well as an objective of the LDWF strategic plan.

The SWAP is intended to provide guidance to both LDWF and other conservation organizations throughout the state on how best to direct conservation dollars and effort to benefit rare and declining species. This proactive approach to conservation is intended to limit future Endangered Species Act listings. The goals and strategies detailed in the SWAP can be applied to both

private and public lands, and provide valuable information on how management of WMAs and other LDWF properties can provide maximum benefits to SGCN. The importance of such public lands to the conservation of SGCN will become even more pronounced in the future, as development pressure increases on private lands.

The overarching framework of the Master Plan focuses strongly on management and protection of viable terrestrial and aquatic habitats for a wide range of species. A comprehensive green infrastructure network is a sound approach to preserve a diverse and rich ecosystem and minimize future listings of species under the Endangered Species Act. Many of the opportunities for conservation identified in the green infrastructure network will be sites that are appropriate for management and restoration of listed species as well as sites that are in prime condition and require protection through acquisition or other mechanisms. Although many of the species of concern used in the green infrastructure network are federally listed species, there are a significant number of non-listed species that have been used to create the network design, including state species of concern.

The green infrastructure network developed for the LDWF Master Plan highlights advantages of connecting the state's WMA and Refuge system through wildlife corridors. The success of the restoration efforts proposed

Another planning effort that warrants attention is the Comprehensive Master Plan for a Sustainable Coast. After Hurricanes Katrina and Rita, the Louisiana Legislature created the Coastal Protection and Restoration Authority (the Authority) in 2005 and required that this new agency develop a plan for a safe and sustainable coast. In 2007 the Authority released its first Master Plan highlighting many land protection and restoration projects. In January 2012 the Authority released an updated draft plan for the coast with a 50-year time horizon. Based on the latest research and models, the projects endorsed by this draft plan may, over 30 years, reverse the level of land loss to coastal erosion to actual land gain. In the final analysis, 145 projects were proposed in the Master Plan ranging from restoration to structural protection.

within the Master Plan for a Sustainable Coast will have a significant impact on the success of LDWF planning efforts. In addition, the green infrastructure network identifies areas for conservation of inland wetlands and riparian areas that will improve the disaster resistance of Louisiana to storm events. Wetlands and riparian floodplain areas often serve as storage areas for flood waters. If these flood prone lands are developed, the water that would have been stored is moved more rapidly downstream, increasing the severity of flood damage as well as increasing the pace of the flood event. A green infrastructure network that conserves wetlands and aquatic areas will help store floodwaters and slow the pace of flood events in the downstream areas.

The 2010 Louisiana Statewide Forest Resource Assessment and Strategy, more commonly known as a Forest Action Plan (FAP), analyzed forest conditions and trends across the state and incorporated three overarching national priorities: conserving working forest landscapes, protecting forests from threats, and enhancing public benefits from trees and forests.

The FAP features a map of eco-cultural regions and priority areas that overlays nicely with many of the landscape level priorities of LDWF. The Florida Parish priority area is eligible for Forest Legacy funding and reflects six of the eight state level issues, including suitability for longleaf pine regeneration and the likelihood of increased pressure from suburban development. LDWF has a natural interest in partnership within this region regarding longleaf pine as a prime habitat for the red-cockaded woodpecker (RCW) and the gopher tortoise. Providing increased access to outdoor recreation and hunting and fishing for nearby populations would also be a shared priority between LDWF Master Plan and FAP.

The FAP also highlights two other priority areas. First, the Terrace Flatwoods region of central and western Louisiana draw attention to the longleaf pine ecosystem and overlaps with significant WMAs and lands owned

by the forest products companies and Timber Investment Management Organizations (TIMOs). Linking the forest lands of Louisiana with Texas would help improve the long term viability of wildlife corridors. Second, the Upper Louisiana Delta highlights 10 parishes from the Arkansas border down to Avoyelles Parish. This region has been the focus of partnership efforts to conserve forested habitat, promote corridors for the Louisiana black bear, and restore bottomland hardwoods ecosystems.

In the revised Louisiana State Wildlife Action Plan (SWAP), which will be completed in 2015, Conservation Opportunity Areas (COAs) will be identified throughout the state. These COAs will be specific areas where conservation dollars and effort can be concentrated to provide the most benefit to SGCN and their habitats. Many factors will be considered in the process of identifying COAs, including:

- Occurrence of S1, S2, and S3 species.
- Occurrence of S1 natural communities.
- Location of Critical Habitat for Federally listed species.
- Presence of existing conservation lands (including WMAs).
- Opportunities for wildlife corridors.
- Projected development and population growth.

Once identified, COAs will help LDWF and other conservation groups in prioritizing habitat management, habitat protection, and land acquisition.

The Coastal and Estuarine Land Conservation Program Plan (CELCP) evaluates land conservation opportunities in order to aid efforts to protect and conserve habitats that provide environmental, historical, aesthetic, and recreational benefits for the public. Wetlands, shorelines, and adjacent uplands are listed as CELCP priority areas. Important ecological aspects of these priority areas are biotic production, corridors/connectivity and/or core conservation areas, migrating bird habitat, and landscape processes and functions. Special consider-

ation was applied to coastal forest as well as landforms such as cheniers and natural levees that serve as protection and allow for the coast to be more resilient from hurricanes. The LDWF Master Plan's emphasis on coastal ecosystems, corridors and conserving chenier ridges is a shared priority. Chenier restoration is a priority for both LDWF and the Gulf Coast Prairies Landscape Conservation Cooperative.

State plans for tourism were examined for the LDWF Master Plan. The Department of Culture, Recreation and Tourism commissioned two reports by FERMATA on the viability of coastal and inland birding trails as an approach to diversify tourism, educate the public on the outdoors, and promote conservation. The core of these two reports offers a detailed assessment of major birding trail routes and an inventory of existing facilities including WMAs. A total of 24 WMAs and the Booker Fowler Fish Hatchery were recommended as significant sites along the bird trails.

## LDWF MASTER PLAN GOALS

Based on an analysis of a wide range of state and regional plans, surveys and meetings with LDWF staff, the following goals have emerged for the Master Plan. Many of these goals were produced by other government planning efforts as noted. However, these goals present an opportunity for collaboration.

## Sustain a range of facilities and uses for the public to enjoy LDWF lands

- Maintain an annual average of 800,000 users of the WMA and Refuge system (LDWF strategic plan)
- Incorporate American Wetland Birding Trail list of WMAs into evaluation of funding priorities for WMA infrastructure improvements such as parking facilities, nature trails, boardwalks and observation platforms

## Provide a green infrastructure vision for LDWF to implement and manage landscape scale conservation

- Expand LDWF holdings by 5,000 acres per year (Vision 2020 + other plans)
- Accelerate acquisition of wetlands and grasslands from private landowners in the prairie region
- Identify Important Bird Areas (IBAs) and partner with appropriate organizations to implement conservation strategies
- Continue efforts to support the conservation of remaining migratory bird habitat
- Investigate potential land acquisitions for habitat for rare, threatened and endangered species
- Continue to work with U.S. Fish and Wildlife Service (USFWS) and other partners to implement the recovery plan for all threatened and endangered species
- Work with landowners and other partners to initiate or continue the implementation of Partners
  In Flight (PIF) bird conservation plans, conservation plans developed for amphibians and reptiles, and federally endangered and threatened species recovery plans
- Work with organizations such as Ducks Unlimited (DU), National Wild Turkey Federation (NWTF), The Conservation Fund (the Fund), and USFWS to assure quality habitat distribution across the landscape

#### Provide the public, LDWF personnel, and key stakeholders with useful reference documents on important information and policies

- Provide accurate acreage for LDWF owned and managed lands
- Provide a template to guide site management plans
- Provide summary/outline of land acquisition process and project selection criteria as reference for agency staff, partners, and the public

## Identify focused restoration efforts to maximize impact for ecosystems and leveraging partner resources

- Promote increased acreage and natural management of longleaf pine
- Restore wetlands and chenier ridges
- Rebuild barrier islands and ridges. (Master Plan of Coastal Protection and Restoration Authority)
- Sustain a diversity of coastal habitats including cypress swamps, marshes, ridges, and barrier islands (Master Plan of Coastal Protection and Restoration Authority)
- Restore bottomland hardwood forest restoration as per Forest Breeding Bird Decision Support Model
- Pursue tactical acquisition of available coastal prairie











## LANDSCAPE SCALE VISION AND OPPORTUNITIES

One of the primary goals of the Louisiana Department of Wildlife Fisheries (LDWF) Master Plan is to identify and assess future land acquisition and restoration opportunities. This section examines opportunities beyond the individual wildlife management area (WMA) or parcel level, focusing instead on large, statewide or multiparish scale acquisitions and restoration opportunities.

# WHAT IS GREEN INFRASTRUCTURE?

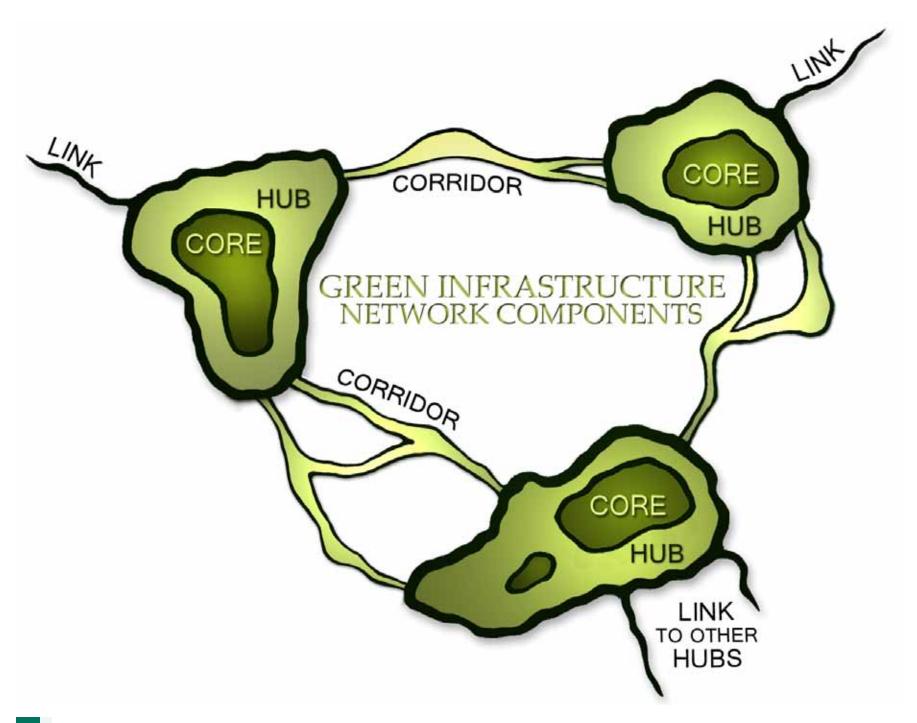
Just as communities must direct strategic development to maintain and enhance quality of life, communities also need strategic conservation to accommodate development while maintaining a healthy environment. The infrastructure that sustains a community is both built (e.g., roads, utilities) and natural (e.g., drinking water, clean air, forests).

A green infrastructure network is an interconnected system of natural areas and open spaces that conserves ecosystem values, helps sustain clean air and water, and provides benefits to people and wildlife. Once designed, a green infrastructure network provides a framework that can be used to guide future growth and land conservation decisions to accommodate population growth while preserving community assets and natural resources.

Green infrastructure has become a popular term, referring to everything from green roofs to ecologically friendly stormwater management systems and large networks of natural areas. What these different usages have in common is the basic recognition that our built environment and our ecological environment are connected and strongly interrelated. For the context of this project, our definition of green infrastructure is at the landscape scale - illustrating an ecologically-based network of public and private lands. Green infrastructure planning reaches beyond an individual parcel or park scale. It is the big picture vision for a region or state.

The green infrastructure network consists of core areas, corridors, and hubs that provide essential habitat to endangered and threatened species as well as other important species that link to broader natural functions and processes at the ecosystem scale. Core areas contain well-functioning natural ecosystems and provide high-quality habitat for native plants and animals that meet a minimum size threshold based on landscape conditions. These are the nuclei of the green infrastructure network.

Corridors are linear features that link core areas in order to allow animal and plant propagule movement between them with the goal of creating viable and persistent metapopulations. Often these corridors can be used for passive recreation such as hiking and biking, and when combined with water corridors offer oppor-



tunities for canoeing, rafting, and fishing. In creating corridors, the landscape between core areas is assessed for its linkage potential, and conduits and barriers to wildlife and seed movement are identified.

Hubs provide breathing room for plants and animals, ecosystems and people. Hubs are aggregations of core areas, other habitat, and other natural land divided by major roads or gaps and meet a minimum size threshold based on landscape conditions. Hubs are intended to be large enough to support populations of native species, serve as sources for emigration into the surrounding landscape, and link areas outside the extent of the analysis area for a particular project.

Umbrella and keystone species native to an area are used to determine size, connectivity, and other thresholds in the green infrastructure network design. Umbrella species are a species or group of species, such

as forest interior dwelling birds, whose habitat needs overlap those of other animals and plants. Keystone species are those with an important role in ecosystem function, such as pollinators and top carnivores. Habitat preferences of umbrella and keystone species help identify core areas and hubs. Connectivity requirements of less vagile (i.e., mobile) species (e.g., amphibians and small mammals) are used to model corridors. When sufficient habitat is protected to sustain umbrella and keystone species, other important components and microhabitats are encompassed and are more likely to be protected as well.

Gray infrastructure refers to traditional man-made structures, such as roads, railways, airports and sewers that bind a community together and help improve the efficiency of our economy. This infrastructure is planned and maintained, and is considered to be a basic necessity and a necessary investment in our collective future.

We believe that green infrastructure provides equal value to communities and requires the same level of attention, care and concern.

The LDWF Green Infrastructure Network is a central tool to aid LDWF staff in assessing the landscape opportunities. It is a statewide green infrastructure network most recently updated in 2010. A brief summary of development of the network is provided.

In 2008, The Conservation Fund (the Fund) received a Section 6 Cooperative Endangered Species Conservation Fund grant entitled: "Determining Mitigation Needs for NiSource Natural Gas Transmission Facilities - Implementation of the Multi-Species Habitat Conservation Plan (MSHCP)." As part of this planning effort, the Fund created a 13-state green infrastructure network to help find the best locations for mitigation for impacts to federally listed species as part of the NiSource MSHCP.

## Partial list of 40 major plans reviewed by the Fund of some of the major plans reviewed

- Performance Audit of the Louisiana Department of Wildlife and Fisheries Office of Wildlife (2008)
- Louisiana: Vision 2020 Master Plan for Economic Development (1999)
- Louisiana Department of Wildlife and Fisheries Strategic Plan 2011-12 through 2015-16 (2010)
- Louisiana Comprehensive Wildlife Conservation Strategy (CWCS) (2006)
- Concept and Development Plan: America's Wetland Birding Trail: Red River Leg, Mississippi River Leg and Zachary Taylor Parkway Leg (2007)
- Concept and Development Plan: America's Wetland Birding Trail Along Louisiana's Great Gulf Coast (2004)
- Louisiana State Comprehensive Outdoor Recreation Plan (SCORP), 2009
- Restoration, Management, and Monitoring of Forest Resources in the Mississippi Alluvial Valley: Recommendations for Enhancing Wildlife Habitat by the Lower Mississippi Joint Venture, 2007

- Open Pine Landbird Plan West Gulf Coastal Plain/Ouachitas, 2010
- Southeast United States Regional Waterbird Conservation Plan, 2006
- Gulf Coast Joint Venture: Chenier Plain Initiative, 2001
- Gulf Coast Joint Venture: Mississippi River Coastal Wetlands Initiative, 2002
- Forest Legacy Assessment of Need (2005)
- Louisiana Statewide Forest Resource Assessment and Strategy, 2010
- Coastal Impact Assistance Program Plan, 2009
- State of Louisiana Coastal and Estuarine Land Conservation Program Plan (CELCP) May 2011
- Louisiana Comprehensive Master Plan for a Sustainable Coast, Draft January 2012

During the fall of 2008, the Fund convened a focus group meeting in Louisiana to begin reviewing the design of the green infrastructure network. Following a short presentation on the green infrastructure design method, the Fund staff distributed a six-page feedback form to solicit information on current species distribution, current research and fieldwork, and species that were no longer present within the state. Participants were also asked to comment on umbrella and keystone species criteria, and thresholds for core areas for forest and wetlands. Similar questions were listed for feedback on assumptions for the delineation of wildlife corridors. Next, participants were asked to review a GIS data quality assessment report and a bibliography of state planning documents. Participants were asked to add missing GIS layers or planning documents that were in development so that these products could be incorporated into the MSHCP green infrastructure network design. The Fund transcribed and analyzed the input provided at the state focus group meetings.

During this period, the Fund staff continued to contact individual focus group participants to obtain additional GIS layers, scientific literature, or clarification of comments made on the input forms. The draft green infrastructure network design protocol document, completed in 2009, defined scales, established criteria and thresholds, identified keystone/umbrella species, and

outlined green infrastructure network elements (e.g., core forests, core wetlands, hubs, and corridors).

Starting in the spring of 2010, the Fund staff modeled core areas, hubs, and corridors of the green infrastructure network. The wetland core areas portion was completed in May 2010, and associated wetland corridors were delineated in August 2010. Staff relied on the National Land Cover Database's wetland classes, as this was the only data consistently available across all 13 states. Based on peer-reviewed literature on habitat needs of focal species, wetlands greater than or equal to 370 acres (150 hectares) were selected as core wetland areas. Wetland connectors were manually identified using National Hydrographic Data (NHD) in three NHD regions (2, 5 and 6). Staff added the stream valleys and riparian cover along these connector streams to identify wetland corridors.

Modeling work on the forest core areas began in March 2010 and was completed in September 2010 for the 13-state study area. The Fund used the "National Green Infrastructure Assessment" developed by the United States Environmental Protection Agency (EPA). This assessment uses a morphological spatial pattern analysis (MSPA) to identify hubs and links.

The LDWF Green Infrastructure Network is a central tool to aid LDWF staff in assessing the landscape opportunities. It is a statewide green infrastructure network most recently updated in 2010.







Next, the Fund examined the peer reviewed literature on umbrella/keystone species, and with feedback from state officials, created a matrix of focal species with acreage thresholds matched to both state boundaries and ecoregions. By using ecoregional boundaries, the Fund was able to cross reference each ecoregion to a suite of focal species and consequentially to a size threshold needed to sustain a viable population of those species. These thresholds indicate the minimum forest acreage that can accommodate the needs of many forest-dependent species. A caveat on the interpretation of focal species thresholds is that this method is an attempt to broadly characterize a landscape; it does not state that these species actually occupy these forest core areas. Focal species thresholds are broad indicators, providing general clues as to ecoregional habitat quality and viability. For Louisiana, more than 37 species were utilized as umbrella and/or keystone species, including the Louisiana black bear, river otter, cerulean warbler, red-cockaded woodpecker, king rail, Bachman's sparrow, mole salamander, and wild turkey.

In September 2010, the Fund began using a least cost path model to identify optimal connections between core forest areas, preferring intervening forest and avoiding urban areas and roads. Forest corridors were at least 656 feet (200 meters) wide, based on interior forest bird requirements and a study that showed that corridors greater than 656 feet (200 meters) wide generally had less than 10 percent exotic invasive plants. A width of 984 feet (300 meters) was preferable. Concurrent to the analysis on core areas, the Fund modeled hubs for the overall green infrastructure network. As hubs provide a protective buffer around core areas, a critical step in creating hubs was to sufficiently buffer the core forest and wetlands to include edge transitions and protection from disturbances and pollution.

In 2011, LDWF invited the Fund to craft a Master Plan for the WMA and Refuge system, with the green infrastructure network serving as both the cooperative match for the partnership between LDWF and the Fund as well as a key element to be used in developing Master Plan recommendations. In February 2012, the Fund staff met with field staff across Louisiana, providing an orientation to the project and the green infrastructure network design. Surveys on field staff priorities and site management challenges were reviewed. Acquisition opportunities and improvements to facilities were discussed. Over 40 national, regional and state-level planning studies were reviewed by the Fund to assess long-term trends to key natural resources and opportunities for collaborative implementation of the Master Plan.

In March, the Fund staff met with LDWF headquarters staff to review the information collected, assess the priorities to be addressed within the Master Plan, and to ascertain the level of policy issues to be elaborated upon within the document. GIS analysis of the distribution of species of concern and other resources was conducted and reviewed by LDWF.

The green infrastructure network covers over 16 million acres - an impressive 48 percent of Louisiana. The vision map illustrates the major core areas both as they relate to LDWF lands and new opportunities. Major corridors for wildlife and recreation are illustrated as general concepts, capturing the overall flow and connectivity of the network.



The U.S. Fish and Wildlife Service and NiSource have embarked upon a Multi-Species Habitat Conservation Plan (MSHCP) that, when completed, will allow NiSource to operate under a single, consolidated permit for the next 50 years.

The MSHCP's unprecedented scope geographically, over 6.4 million acres; duration, 50 years; number of species, 75 federally listed — took NiSource and the USFWS to The Conservation Fund. They sought the Fund's assistance in determining the best locations for mitigation using its strategic conservation assessment and planning expertise and its conservation leadership services for convening stakeholder groups throughout the affected states. When the MSHCP is issued, NiSource mitigation dollars will leverage both state and federal conservation funds and provide significant conservation benefits.





## TACTICAL ACQUISITIONS

A significant number of the LDWF's WMAs is leased from other government agencies and private landowners. While the public use and LDWF's management practices of these leased lands often make these non-state owned WMAs indistinguishable from areas currently owned by the state, the leased areas may be subject to future change of ownership and/or lease agreements.

LDWF maintains several WMAs on active military bases, USACE lands and USDA Forest Service lands. While these federal landowners are the most stable partners for joint management, the possibility does exist that these lands may be no longer needed by the federal agency at some point in the future.

Several WMAs are Section 16 lands; acreage provided to the State of Louisiana by the federal government for management uses that fund public schools. In Louisiana, many of these lands are still owned by the State Land Office. However, they are under the complete management, control and authority of the Parish School Boards. Several school boards have leased their section 16 lands to LDWF. Considering the budget challenges faced by Parish School Boards, it is possible that a direct revenue source may be sought for these lands. Many of the leased WMAs are owned by forest products companies or TIMOs. These lands can be sold at any time to another private owner that may not possess the same stewardship ethic or interest in public use.

In addition to leased WMAs, TIMOs and forest products companies are significant landowners across the state. According to Louisiana Statewide Assessment of Forest Resources, forest products industry owns approximately 10 percent or roughly 1.4 million acres of the state's forests. Expanding WMAs through the purchase or lease of additional private timber lands may be an outcome that benefits both the economy and the environment. Timber company lands have advantages over other landownership types in that the properties are often more consolidated and have a well-documented land management history.

Many of the leased WMAs are owned by forest products companies or TIMOs. These lands can be sold at any time to another private owner that may not possess the same stewardship ethic or interest in public use.

## LEGEND

Potential Anchor Areas

Potential Connections

Wildlife Management
Areas and Refuges

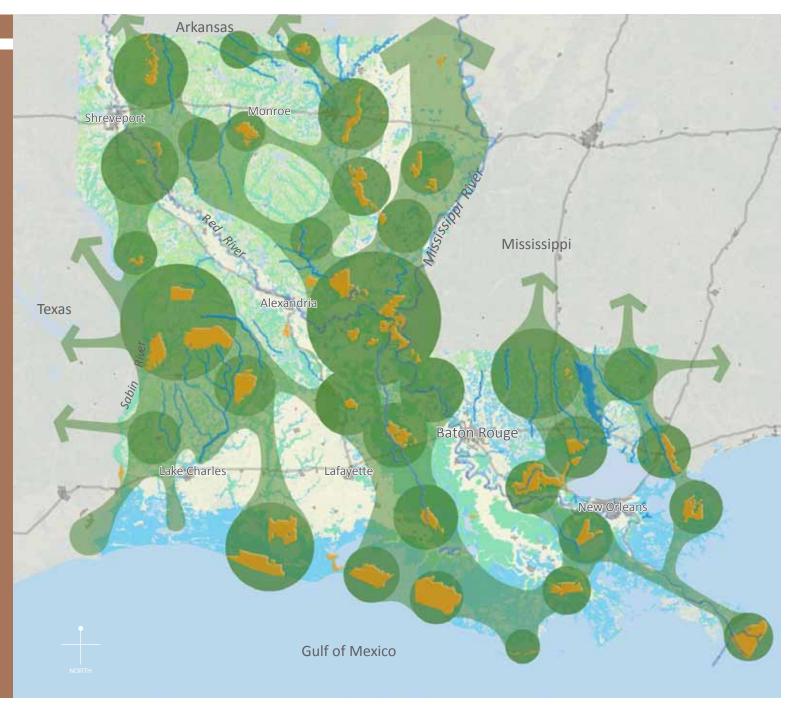
Scenic Rivers

Major Rivers

Green Infrastructure
Network

## LDWF VISION MAP

Based on the latest peer-reviewed science and map-based analysis, this conceptual graphic illustrates the landscape scale vision of the LDWF green infrastructure network, highlighting major opportunities for conservation and movement flows for nature. The vision map is intended to be inspiring and thought-provoking but should not be used as the basis for local and site-based land use planning and decision-making.



## **NEW OPPORTUNITIES**

LDWF has a diverse portfolio of lands that represent a wide range of ecosystems and provide a great variety of public uses for outdoor recreation. Based on surveys and meetings with LDWF staff, several gaps in LDWF's portfolio have been identified. As LDWF considers management decisions of existing lands and evaluates expanding or acquiring new lands, reflecting on how these decisions strengthen the department's overall portfolio will be crucial to the long term success of the agency.

## **Urban Refuges**

With over 70 percent of the state's residents living in urban areas, LDWF benefits from having a presence near the state's major cities. Research clearly demonstrates that exposing children at an early age to the outdoors is linked with their activities as adults. Surveys with anglers have found that 85 percent started fishing before the age of 12 and 92 percent started before the age of 17. More than 90 percent of adult hunters were introduced to hunting before the age of 20.

A great example of LDWF's outreach is the Waddill Outdoor Education Center, a 237-acre wildlife refuge near the city of Baton Rouge that annually draws over 11,000 visitors. The center serves as a magnet for environmental education activities for the region's schools, bringing over 1,700 children to participate in a range of programs. The refuge has extensive facilities including an archery range, shooting range and ponds for fishing. Over 2,000 participants attended the National Hunting and Fishing Day, and the site hosts many tournaments for archery and shooting.

The Fund analyzed the number of WMAs and Refuges within 50 miles of major urban areas in Louisiana. Figures were calculated based on a center point within each urban area, or "centroid," with a 50-mile radius.

City	Number of WMAs and Refuges	
New Orleans		11
Baton Rouge		12
Shreveport		4
Lafayette		7
Lake Charles		5
Monroe		10

Key factors that LDWF can replicate from the Waddill refuge's success are the innovative quality of the programs offered, the wide range of facilities provided, and the close proximity of the refuge to a major population center. The catchment area for the center's educational activities is roughly a 50-mile radius or one-hour drive. Assessing populations and potential audiences within a 50-mile radius of potential centers will provide LDWF with insights into the market size of local visitors and who will be the most frequent and supportive audience. Expanding facilities on LDWF lands – such as Salvador WMA, near urban areas and offering education programs, youth hunts, and family activities is crucial for making sure Louisiana remains the "Sportsman's Paradise."

## Marsh

## **BRACKISH MARSH**

Brackish Marsh presettlement acreage was estimated to have been between 500,000 and 1 million acres with 50 to 75 percent remaining today (Smith, 1993). At present the total acreage of brackish marsh is increasing due to shifts in marsh salinity levels (LNHP 1986-2013). Stable, viable examples of brackish marsh are rare in Louisiana. This community supports 42 species of conservation concern. This habitat is important for many species of waterfowl, and wading and shorebirds. State owned



areas of this community type are mainly managed to preserve and improve wintering waterfowl habitat. These activities are necessary as levee construction and channelization of waterways altered their hydrology and many canals have been cut in the marsh for navigation and oil and gas exploration that serve as avenues for salt water intrusion. Brackish marsh in the Chenier Plain will continue to deteriorate due to lack of sediment deposition by long shore currents which occurred historically when the Mississippi River shifter further west. LDWF areas that have brackish marsh include Marsh Island Refuge and State Wildlife Refuge. Marsh Island and State Wildlife contain 70,000 and 13,000 acres of brackish marsh respectively. Biloxi WMA (40,000 acres), supports mostly brackish marsh. Other refuges and WMAs containing brackish marsh include Pointe-aux-Chenes WMA and Rockefeller Refuge.

#### FRESHWATER MARSH

Freshwater marsh has undergone the largest reduction in acreage of any marsh type due mainly to salt water intrusion, canal dredging, and commercial, industrial and residential development. Presettlement acreage was estimated at 1 to 2 million acres, but has been reduced by 25 to 50 percent of this original extent (Smith, 1993). This community supports 35 species of conservation concern. Important species that utilize this habitat include the roseate spoonbill, king rail, and



mottled duck. LDWF properties in the Chenier Plain include the White Lake Wetlands Conservation Area with 52,000 acres of freshwater marsh, and Rockefeller Wildlife Refuge with over 25,000 acres of fresh marsh. In the Deltaic Plain of southeastern Louisiana, LDWF lands with freshwater marsh include Atchafalalaya Delta WMA, Salvador WMA, Timken WMA, and Pass-a-Loutre WMA. Other coastal wmas with small amounts of freshwater marsh include Pearl River WMA, Joyce WMA, and Maurepas Swamp WMA. LDWF should prioritize freshwater marsh acquisitions over any other type of marsh due to the vast array of threats against this habitat type, and the large number of species that it supports.

#### INTERMEDIATE MARSH

Intermediate marsh acreage is decreasing due to salt water intrusion, canal dredging, and commercial, industrial, and residential development. Presettlement acreage was estimated at 100,000 to 500,000 acres, but has been reduced by 50 to 75 percent of this original extent (Smith, 1993). LDWF properties that include intermediate marsh are Rockefeller Refuge, Pass-a-Loutre WMA, Pearl River WMA, Biloxi WMA, and Manchac WMA. This community supports 37 species of conservation concern such as the reddish egret and many rail species.



#### SALT MARSH

Salt marsh us estimated to have occupied 500,000 to 1 million acres in presettlement times, with an estimated 50 to 75 percent remaining (Smith, 1993). It is one of the few Louisiana natural communities that is increasing in acreage, due to salt-water intrusion resulting in shifts in marsh salinity levels (LNHP 1986-2013). Salt marsh is most extensive on the deltaic plain of southeast Louisiana. LDWF properties that include salt marsh habitat are managed to preserve and improve wintering waterfowl habitat. Salt marsh supports 41 species of conservation concern such as the American oystercatcher and sandwich tern. LDWF properties that include this habitat type include Biloxi WMA, Marsh Island Refuge, Rockefeller Refuge, and State Wildlife Refuge.

## **Barrier Islands**

Louisiana's barrier islands are important breeding and nesting habitat for birds, as well as for sea turtles, marine fish, and invertebrates. These islands were formed from old shorelines of abandoned, eroding deltas of the Mississippi River. Since deltaic processes have been altered due to the leveeing of the Mississippi River, no new barrier islands are expected to form. Current chains of islands include the Chandeleur Islands, Grand Isle, Grand Terre, Timbalier Islands, and Isle Dernieres. Major efforts are underway to conserve this critical habitat including the installation of breakwaters, pumping of new substrate, and vegetation restoration projects. This community supports 46 species of conservation concern. LDWF's Isle Dernieres Barrier Islands Refuge is critically important for birds species, such as brown pelicans. Any opportunities to acquire remaining barrier islands, not already owned by LDWF should be pursued. Timbalier and East Timbalier Islands are currently owned by State Lands and would be considered priority acquisitions for LDWF.



## Forested Wetlands BOTTOMLAND HARDWOOD FOREST

Bottomland hardwood forests are forested, alluvial wetlands that are associated with large rivers systems. This community serves as habitat for 34 species of conservation concern, including the Louisiana black bear. As stated in the SWAP, it is estimated that between 50 to 75 percent of the original pre-settlement acreage of this community has been lost. Bottomland hardwoods are found throughout Louisiana, but are the predominant natural community type of the Mississippi River Alluvial Plain. These forests are characterized and maintained by a natural hydrologic regime of alternating wet and dry periods following seasonal flooding events. They are important for the maintenance of water quality, providing a productive habitat for wildlife resources, and are important in regulating flooding and stream recharge. The Louisiana WMA system is mainly composed of this community type, with over 300,000 acres. Any future bottomland hardwood acquisitions should serve as corridors linking fragmented forest patches.



#### CYPRESS-TUPELO-BLACKGUM SWAMP

Cypress-Tupelo-Blackgum swamps are forested, alluvial swamps found along rivers and streams, but also occurring in backswamp depressions and swales. The soils are inundated or saturated by water on an almost permanent basis, except for periods of extreme drought. Neither bald cypress nor tupelo gum seeds germinate underwater, nor can young seedlings survive long submergence. Establishment of young trees can only occur during periods of exceptionally long drought, which is why these species tend to occur in even-aged stands. Statewide loss of this community is between 25 to 50 percent of original presettlement acreage. LDWF WMAs have over 97,000 acres of cypress-tupelo-blackgum swamps. This community supports 19 species of conservation concern, including the alligator snapping turtle, Swainson's warbler and Rafinesque's big-eared bat.

#### HARDWOOD FLATWOODS

Hardwood flatwoods are found in northwest Louisiana on Pleistocene Red River channels, and on Macon Ridge in northeast Louisiana. This community supports 21 species of concern such as the Louisiana black bear. Acquisitions on areas in Bossier and Webster parish would be advantageous, but the priority area for land acquisition is the Macon Ridge. This area contains the largest area of hardwood flatwoods left in the state. This area is also very important due to the projected population levels during the next century. Acquisition now of priority areas will ensure the future existence of this natural community type. Priority parishes include West Carroll, Richland, Franklin, and Morehouse in northeast Louisiana.

## SPRUCE PINE HARDWOOD FLATWOODS

Spruce Pine Hardwood Flatwoods is a natural mixed forest community found in the western Florida Parishes in southeast Louisiana. This community was historically the primary habitat type in East Baton Rouge historically, and was also found in East Feliciana, Ascension, and

Livingston parishes. This community supports 22 species of conservation concern. Presettlement acreage is estimated at 50,000 to 100,000 acres with less than 10 percent remaining. This habitat is seriously threatened by population growth. Due to extreme rarity of this community and its narrow range opportunities to conserve or purchase this community type should be acted upon.

## **Coastal Forests**

## COASTAL LIVE OAK-HACKBERRY FOREST (CHENIER)

Coastal live oak-hackberry forest (chenier) is a community formed on abandoned beach ridges primarily in southwest Louisiana. These beaches were stranded by deltaic sedimentation by the shifting of the Mississippi River. These ridges are composed primarily of fine sandy loams with sand and shell layers. Most ridges are between 4-5 feet above sea level. Cheniers are important storm barriers limiting saltwater intrusion. This community is critical stopover habitat for trans gulf migrating birds. Of the original 100,000 to 500,000 acres of presettlement habitat, only 2 to 10 percent remains. Most of this acreage is in poor condition, with many areas unrecoverable. Threats continue today from fragmentation, development, mining, oil and gas extraction, road and utility construction, overgrazing, and saltwater intrusion caused from levees ponding storm surge. Any opportunity to acquire grazed but undeveloped cheniers should be considered a priority for LDWF. This community supports 21 species of concern as well as hundreds of species of migrating birds.

#### LIVE OAK NATURAL LEVEE FOREST

This natural community is found in southeastern Louisiana on natural levees and on islands within marshes and swamps. Live oak typically dominates the overstory, but other species commonly found include cherrybark oak, nuttall oak, honey locust, and sweetgum. Dwarf palmetto is the most common plant found in the un-

derstory and midstory. Since this forest type is found only on natural levees which are higher in elevation and drier than the surrounding areas, it was the first area to be cleared for agricultural and residential development. Of the original 500,000 to 1 million acres in Louisiana, 10,000 to 50,000 remain, 1 to 5 percent of presettlement extent. The remaining remnants today are altered and fragmented, and continue to be threatened by residential development, roads, utility installation, overgrazing, coastal erosion and saltwater intrusion. The majority of levee forests are in private ownership, so acquiring tracts for conservation purposes is important for the survival of this community. There are 23 species of conservation concern in the community, including the American woodcock and the wood stork.

#### SALT DOME HARDWOOD FOREST

Salt dome forests are restricted in occurrence to St Mary and Iberia parishes. They are found on loess-derived silt loams of salt domes in coastal Louisiana. There are five salt domes in Louisiana, which are Jefferson Island, Avery Island, Belle Isle, Cote Blanche, and Weeks Island. Cote Blanche and Weeks Island are the two highest quality sites. Opportunities to conserve these areas should be a priority. There are 22 species of conservation concern associated with this community, including the Louisiana black bear and the Southeastern Myotis.

## **Prairies**

## COASTAL PRAIRIE

There were once 2.5 million acres of coastal prairie in Louisiana, today less than 1 percent remains. Coastal prairie exists today in isolated patches on rangelands, and along railroad right of ways. Coastal prairie vegetation is vegetation is extremely diverse and is dominated by grasses. The disappearance of coastal prairie can be attributed to rice and sugar cane production, oil exploration, and residential and commercial development. Coastal prairies support 30 species of conservation concern, including the whooping crane, ornate box turtle,

and the crested caracara. Coastal prairie restoration/conservation is a priority for LDWF and also for the Gulf Coast Prairies LCC. LDWF LNHP is currently restoring coastal prairie remnants on private lands in Calcasieu and Cameron parishes. Any opportunities to promote stewardship on these remnants or to acquire any prairie sites should be considered the number one conservation priority for LDWF.

#### CALCAREOUS PRAIRIE

Calcareous prairies are typically small in size, and found in the uplands of northwest, western, and central Louisiana. The herbaceous flora is very diverse, and is dominated by grasses, composites, and legumes. There were an estimated 2,000 to 10,000 acres of this community type historically in Louisiana, today, there is only 5 to 10 percent remaining. Threats to calcareous prairies consist of conversion to food plots, loblolly plantations, oil and gas activities, and lack of prescribed fire. Calcareous prairies contain 13 species of conservation concern, including the northern bobwhite, and the endemic Mer Rouge pocket gopher. The acquisition of calcareous prairies along with surrounding calcareous forests is a need for LDWF.

#### SALINE PRAIRIE

Saline prairies are found in northwestern Louisiana, and are typically small in size. The presettlement acreage is estimated to be less than 2,000 acres, with 10 to 25 percent remaining. The soils have high levels of sodium and magnesium in the subsoil close to the surface horizons. These characteristics have created extreme conditions for plant growth. These conditions consist of high alkalinity, poor movement of water and air in the soil, resistance to wetting that can induce drought conditions, resistance to drying once saturated, and sodic horizon in the subsoil that acts as a dense claypan and is resistant to root penetration. The plant community includes salt tolerant forbs, grasses, and grass-like plants. Saline prairies support the endangered plant earthfruit (*Geocarpon minimum*), which is only found

on this community type. Most saline prairies are found on private property, so any chance to acquire this globally rare habitat type would be important for LDWF. This community supports 12 species of conservation concern including the American woodcock, the endemic saline prairie scarab beetle, and loggerhead shrike. Threats to this community include conversion to food plots or loblolly plantations, damage by feral hogs, residential and commercial development, and oil and gas exploration.

## Longleaf Pine Savannahs and Forests

According to the Regional Working Group for America's Longleaf, across the southeastern United States, only 3 percent of the historic longleaf pine forests remain. From the SWAP, nine natural communities contain aspects of longleaf pine systems; the following section focuses on the four major classifications.

#### WESTERN LONGLEAF PINE SAVANNAH

Savannah is a term that is used to describe expansive herb-dominated areas with few, scattered trees. Pine savannahs are floristically rich, herb-dominated wetlands which are naturally sparsely stocked with longleaf pine. All the species indigenous to pine savannahs have evolved over millennia with a regime of frequent (every one to four years) lightning season fires, and most depend on fire for their perpetuation in nature. These habitats historically dominated the Gulf Coastal Plain flatwoods regions of southwest and southeast Louisiana. In the west gulf coastal plain, pine savannahs contain pimple mounds, while these formations are absent in savannahs in the East Gulf Coastal Plain. Pine savannahs are subject to a highly fluctuating water table, from surface saturation/shallow flooding in late fall/winter/early spring to growing season droughts. Soils are hydric, nutrient poor, acidic, and low in organic matter. The soils for eastern and western types may be underlain by an impeding layer so they are slowly permeable and water runs off the surface gradually. The endangered plant American chaffseed (Schwalbea americana) is found in western pine savannahs on two sites. Fire frequency is a major factor controlling species occurrence and community structure. Without frequent fire, shrubs and trees would gain dominance and eliminate most of the herbaceous flora. Pine savannahs often have flatwoods ponds embedded within them. These ponds are small, natural depressional wetlands that are critically important for many rare species of amphibians including the southern crawfish frog and the eastern tiger salamander. Western pine savannahs support 29 species of conservation concern. Western longleaf savannahs and their imbedded communities are highly threatened. This habitat occupied between 1

to 2 million acres historically and now only 1 to 5 percent remains. The best examples of this habitat occur in Beauregard and Allen parishes. Threats to this habitat include conversion to industrial pine plantations, residential/commercial development, fire exclusion/inappropriate fire regime, hydrological alterations, contamination by chemicals, fragmentation, and damage from planting/harvesting activities. LDWF currently does not own or lease any western longleaf savannahs. If there were the opportunity, then properties in Beauregard and Allen parishes would be a priority.

#### **EASTERN LONGLEAF PINE SAVANNAH**

In the East Gulf Coastal Plain, pine savannahs are commonly associated with mesic pine flatwoods intermingled on slight rises and low ridges, and typically grade down slope to slash pine-pondcypress/hardwood forest, bayhead swamp, and/or small stream forest (LNHP 1986-2013). Soils in eastern longleaf savannahs are hydric, very strongly acidic, nutrient-poor fine sandy loams and silt loams, low in organic matter. Presettlement habitat was a very open canopy (less than 50 percent canopy cover), with the scattered trees almost exclusively longleaf. Historically the eastern Florida Parishes of Louisiana were dominated by extensive stands of longleaf pine. Today, less than 1 percent remains of the original 100,000 to 500,000 acres of eastern









longleaf pine savannah. Threats to this habitat include conversion to pine plantations or pastures, residential and commercial development, fire exclusion/inappropriate fire regime, hydrological alterations, chemical contamination, oil and gas exploration, road expansions, and fragmentation. Eastern longleaf pine savannahs support 43 species of conservation concern such as the eastern spadefoot toad and Henslow's sparrow. In light of the significant losses of this community and its importance to wildlife and plant species, it is critical that LDWF prioritize properties available in the EGCP for acquisition. Currently, LDWF has Lake Ramsey WMA which is a small example of an eastern longleaf pine savannah. Rapid population growth on the north shore of Lake Pontchartrain threatens this habitat, demanding rapid conservation action.

#### WESTERN UPLAND LONGLEAF PINE FOREST

This community occurs in the hilly uplands of western and central Louisiana. These forests are dissected by small to large creek bottoms. Longleaf pine is the dominant, and sometimes the only overstory species in locations with frequent fire. In other less fire maintained areas, a number of overstory associated can occur such as shortleaf pine, post oak, and blackjack oaks. Western upland pine forests historically dominated large areas of the lower west gulf coastal plain, however much of this habitat has been converted to loblolly plantations or developed. The estimated presettlement acreage is 2 to 4 million with an estimated 10 to 25 percent remaining. This natural community supports 45 species of conservation concern including red cockaded woodpecker, little metalmark, and the long tailed weasel. This community types support the Louisiana pine snake, a federal candidate and a priority trust species for LDWF. Opportunities to acquire occupied Louisiana pine snake areas should be pursued, as Louisiana has the only extant population of this species.

### EASTERN UPLAND LONGLEAF PINE FOREST

This community type is located in uplands of the central

and eastern Florida Parishes of Louisiana. It is characteristically bisected by small to large branch or creek bottoms. Longleaf pine is the dominant overstory species in locations where fire has frequently occurred. Areas where fire is less frequent or suppressed have other dominant species such as shortleaf pine, loblolly pine, sweetgum, and post oak. Historically this community type dominated the eastern Florida Parishes, but now only 1 to 5 percent of the original 1 to 2 million acres remain. Land conversion, development, and industrial timber production were the initial factors of habitat loss. Today, remaining forests are threatened by fire suppression. This natural community supports 35 species of concern. The gopher tortoise and the red-cockaded woodpecker are two federally listed species that are associated with this natural community. Due to the projected population increase in the eastern Florida parishes, any opportunities to acquire tracts of this community type should be considered a priority for LDWF.

## **Upland Hardwoods**

## MIXED HARDWOOD LOBLOLLY

Mixed Hardwood Loblolly forests are usually comprised of 20 percent or more loblolly pine in the canopy. Without fire, this forest type will transition toward hardwood dominance. A threat to this community is the conversion to pine plantations. This community supports 37 species of concern including the long tailed weasel and the eastern spotted skunk.

## SHORTLEAF PINE/OAK-HICKORY FOREST

Shortleaf pine/oak-hickory forests were historically the most prevalent community in the Upper West Gulf Coastal Plain, and covered 4-6 million acres of Louisiana. Only 5 to 10 percent of this original acreage remains, much of which is in degraded condition. This community supports 42 species of conservation concern. This habitat type should be considered very important for restoration and for land acquisition.

#### SOUTHERN MESOPHYTIC FOREST

This natural community is only found in the Tunica Hills in Louisiana. Tunica Hills WMA is the largest conserved example of this habitat. Southern mesophytic forests support 28 species of conservation concern. Opportunities to add to the Tunica Hills WMA should be pursued, especially on those adjacent private lands that support Webster's salamander. This species is found in one area adjacent to the WMA and nowhere else in the state.

#### **CALCAREOUS FOREST**

Calcareous forests occur on calcareous substrata in the uplands of central, western, and northwest Louisiana. Calcareous forests are usually adjacent to calcareous prairies. Historically this community was composed of 50,000 to 100,000 acres in Louisiana, with 25 to 50 percent remaining. Much of the remaining forests today are fire suppressed. Acquisitions of calcareous forests would be a benefit to LDWF. This community supports 16 species of concern.

# **Riparian Forests**

Louisiana is largely defined by its relationship to rivers and stream systems. Adjacent to these water bodies are significant habitat that serves as corridors for wildlife, provide recreational opportunities, and increase water quality. LDWF's Natural and Scenic Rivers program highlights the importance of rivers and streams to Louisiana

as a natural resource as well as a cultural asset. The program monitors and protects over 80 streams and stream segments in Louisiana. Opportunities to permanently conserve riparian forests would be advantageous both for wildlife and for water quality.

## **SMALL STREAM FOREST**

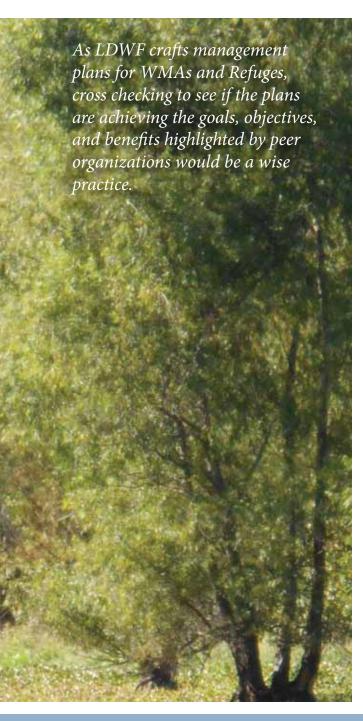
Small stream forests are relatively narrow wetland forests occurring along small rivers and large creeks in central, western, southeastern, and northern Louisiana. These forested wetlands are critical components of the landscape filtering surface and subsurface flows, improving water quality, and storing nutrients and sediment. There is currently 25 to 50 percent of Louisiana's original small stream forests remaining. This community supports 44 species of conservation concern.

#### BATTURE

Batture habitats develop on the slope between the natural levee crest and major streams/rivers. This is a pioneer community which first appears on newly formed sand bars and river margins. This community occurs along the Mississippi, Atchafalaya and Red rivers, as well as along other smaller rivers. Batture habitats support 27 species of conservation concern and serve as important corridors for the Louisiana black bear along the Mississippi River. Although the batture community is relatively common along waterways, it is often degraded.







# SITE SCALE VISION AND OPPORTUNITIES

The Master Plan is designed as a big picture vision for the future of the WMA and Refuge programs for the Louisiana Department of Wildlife and Fisheries (LDWF). This vision rests on strategic acquisitions that will expand current WMA/Refuge holdings while actively pursuing new lands and the management of these lands moving forward. The following section provides guidance on site level management plans to help LDWF staff craft management plans for each WMA and refuge in a consistent and timely manner. Finally, each WMA and refuge is documented and described as a general reference and benchmark for future evaluation.

# LAND ACQUISITION PROCESS

LDWF and Louisiana Wildlife and Fisheries Commission (LWFC) have the authority to acquire land by purchase, lease, or donation to further the mission of LDWF. To help decision makers evaluate opportunities and investing resources, many conservation organizations develop project selection criteria. The following section outlines an approach for using information from the Master Plan in a project selection criteria to help decision makers better evaluate projects.

# Mission

Land acquired by the Louisiana Department of Wildlife and Fisheries ("LDWF") and the Louisiana Wildlife and Fisheries Commission ("LDWF") for the express purpose of establishing wildlife management areas, wildlife refuges, public hunting grounds, upland game preserves, and wildlife sanctuaries is the most effective means to protect, conserve, replenish, and to manage the natural resources and diverse wildlife habitat of this state. The Land Acquisition Program, traditionally performed by the Office of Wildlife, was restructured in 2008. The Legal Section performs the due diligence and core land acquition functions of the program, working closely with the Office of Wildlife staff along with the Sellers, Donors, Lessors and other Transferors of property to the state. This administrative adjustment was in response to LDWF's challenge to meet the demands of strategic programmatic objectives and the overall departmental mission to manage, conserve, and promote wise utilization of Louisiana's renewable fish and wildlife resources and their supporting habitats through replenishment, protection, enhancement, research, development, and education for the social and economic benefit of current and future generations; to provide opportunities for knowledge of and use of and enjoyment of these resources; and to promote a safe and healthy environment for the users of the resources. The LDWF and LWFC have acquired approximately 1.5 million acres of land for the purpose of providing recreational opportunities and to conserve the state's diverse natural resources indigenous to the area.

# **Statutory Authority**

Lands managed under the Wildlife Management Area (WMA) System were acquired pursuant to specific statutory authority for dedicated and perpetual uses, and with restricted and dedicated funds. LSA-R.S. 56:6(23), 56:109 and R.S. 56:781 give LDWF and LWFC authority to acquire land by purchase, lease, or donation to further the mission of LDWF. Through LWFC resolution and Gubernatorial Proclamation the lands are perpetually dedicated for the primary use as WMAs, wildlife refuges, public hunting grounds, wildlife sanctuaries and preserves, and recreational areas. These are the only express uses for said lands. R.S. 56:782 and 109(A). Any other use is a violation of law.

Further, the primary funding sources used to acquire LDWF properties are derived from fishermen and hunters' license fees, royalties, permits, and other revenues which are irrevocably dedicated and deposited in a constitutionally established fund, i.e. the Conservation Fund. R.S. 56:10 and 631; La Const. Art VII, Sections 4, 9, 10-A and 10.2. Said funds are to be used solely for programs and purposes of conservation, protection, preservation, management, and replenishment of the state's natural resources and wildlife, including use for land acquisition or for federal matching fund programs which promote such purposes, including the administration of the LWFC and investigation of fish and wildlife. R.S 56:25, as well as Federal law, expressly prohibit any other use and expressly prohibit the diversion of any monies accrued and inured to the state from said sources.

Likewise, the Wildlife Habitat and Natural Heritage Trust Fund (WHNHTF) is a similarly established fund comprised of license fees, grants, private donations, and the like; and a major funding source for the acquisition and management of LDWF lands pursuant to the foregoing purposes. R.S. 56: 1921 et seq; La. Const. Art IX, Section 1. LDWF is mandated by state laws, the federal government and the Louisiana constitution to maintain said properties acquired with federal dedicated monies in perpetuity and to use funding for no purpose other

than the express statutory use. The diversion of such license fees categorically interferes with the primary purpose and use of LDWF and LWFC owned land.

In addition to the statutory authority, most of the conveyance/contractual documents which correspond to the property under LDWF management and control contain perpetual use and dedication language that expressly prohibits any other use and expressly provides for reversionary clauses if disposed of.

Buildings and other improvements located on and contained within the boundaries of the WMA constitute the entire facility. Therefore if the facility is essential and critical to the overall mission of the LDWF, then the buildings thereon share that characteristic and should not be disposed separately.

With respect to facilities leased for the operation and development of wildlife management areas, wildlife refuges, public shooting grounds, or other outdoor recreational areas, LDWF and LWFC are without authority to dispose of any such property; they have no ownership interest therein.



# **Programmatic Selection**

Through a prescribed selection process of the land acquisition committee, comprised of key LDWF program administrators and the land acquisition attorney, programmatic needs are identified and the following criteria are applied to ensure wise decision making. The selection criteria include the following sections:

- Connection of the land acquisition with the departmental mission.
- Examination and documentation of the public benefit(s) of the acquisition.
- Evaluation of the feasibility of the acquisition.
- Consideration of the long term stewardship responsibilities of the land acquisition.
- Capacity of staff to effectively manage and operate the land within the WMA system .
- Fiscal responsibility.

# Procedure

In order to provide consistency and parity in making land conservation and acquisition decisions, the LDWF has created guidelines and procedures for the land acquisition process. These guidelines and procedures are consistent with peer organizations, and are in line with the Land Trust Alliance's Standards and Practices. The Land Trust Alliance is the national trade association for nonprofit land conservation organizations. Moreover, and in addition to industry standards, the LDWF land acquisition program must comply with all state laws and regulations, including state oversight. The Facility Planning and Control (FPC) Section of the Louisiana Division of Administration is the agency that provides oversight for land acquisition projects funded through capital outlay; albeit undergirded by constitutionally established and dedicated LDWF funding sources. Although most land acquisition projects are categorized as capital outlay projects, some projects do not fit within this category. However in the interest of transparency and consistency, LDWF submits to FPC review for concurrence on the land closing process to ensure compliance with the provisions, definitions, and standards established by statute and constitution as well as long-range policies and goals established by the legislature and governor for capital outlay projects.

To ensure that state funds appropriated for land acquisition are used properly, LDWF submits and FPC must review and approve the following information on each land acquisition project:

- State Certified General Appraisal.
- Preliminary title opinion attesting that LDWF and LWFC will have good, clear, and merchantable title upon execution of the Act of Sale, or title insurance.
- Phase I environmental assessment, prepared by an environmental professional according to current ASTM standard practice, that also considers asbestos containing material, lead based paint, lead in drinking water and wetlands.
- Draft Act of Sale with warranty that the property is free of CERCLA defined hazards and petroleum products identified in the environmental assessment as existing or suspected.

Along with the forgoing requisite documentation, LDWF must submit a Request for FPC Concurrence in Real Estate Closing form. FPC must concur that the sale is ready for closing.

Once purchased, the lands are established and perpetually dedicated for use as WMAs, wildlife refuges, public hunting grounds, wildlife sanctuaries and preserves, and recreational areas by LWFC resolution. The public shall be notified of such establishment by publication for 30 days in the newspaper published or having circulation in the parish where the land is situated. Thereafter, no use shall be made of the lands inconsistent with the said dedicated uses.

# Overall Project Need and Support

- Is the property consistent with the mission of LDWF, its strategic plan and the master plan for WMAs and refuges?
- Does the property leverage the resources of other public agencies or private organizations?
- Does the property help protect and expand the diversity landscapes within the LDWF portfolio including: prairies, grasslands, upland hardwoods, longleaf pine, riparian areas, chenier ridges, bottomland forests and coastal forests?
- What this the likelihood of conversion of the property to a nonconservation oriented use? Please select one of the following:
  - a. Conversion likely within the year
  - b. Conversion likely with two years
  - c. Conversion likely between three to five years
  - d. Conversion unlikely in the near future.

# Feasibility

Factors that may preclude the involvement of LDWF: A property may meet the selection criteria favoring a land protection proposal and still may not be accepted if one or more of the following considerations apply:

- The property lacks basic public access facilities such as parking lots or boat ramps or would require a significant investment to construct adequate facilities.
- The proposed project is part of a development proposal that, overall, is likely to have significant adverse impacts on conservation resources.
- Adjacent properties are being, or are likely to be, developed in a manner that would significantly diminish the conservation values of the property in question.
- The property is prohibitively expensive to clean up.
- The property is not large enough to be significant for its purpose.

- Ethical or public image problems exist in association with the acceptance of this project.
- The property has legal, tax or title or landowner issues that will make the transactions overly burdensome.
- Is there reason to believe that the land/easement would be unusually difficult to manage/enforce?
   For example, multiple or fractured ownership, frequent incidence of destructive trespassing, fencing restrictions, irregular configuration, or other reasons.

## NATURAL RESOURCES AND WILDLIFE

- Does the property protect habitat for species of concern or federally listed rare and endangered species?
- Does the property benefit game species and/or provide additional habitat for game species and/or high priority waterfowl?
- Does the property provide a buffer to an existing conservation easement, park, preserve, WMA, refuge or other protected land?
- Does the property provide a corridor connection to other protected lands that are important for movement of wildlife?

## **AQUATICS AND WETLANDS**

- Does the property protect surface or underground waters, or provide natural control of flooding?
- Does the property contribute to the restoration of rare aquatic species?
- Does the property provide additional habitat for aquatic game species?
- Does the project protect or restore wetlands for priority migratory birds, national priority wetland areas, or regionally important wetlands?

#### PUBLIC BENEFIT AND STEWARDSHIP

- Does the property provide hunting and/or fishing access for an underserved region of the state?
- Does the property provide hunting and/fishing opportunities for game species that is in great public demand?
- Is there public access to a waterway from the property(ies)?
- Are there any current or anticipated local economic benefits associated with the project should protection occur?
- Does the property contain or have potential to provide features of educational, historical, archeological or scientific value?
- Is there active management on the property to enhance wildlife habitat?
- Has forest management occurred on the project site?

## **FUTURE PROPERTY PLANNING**

- Are there any exotic or invasive species found on the property or adjacent to the project area? If so please elaborate.
- Are there roads or facilities associated with the project site? If so, what is the condition (excellent, good, fair, poor) of these roads/facilities, and what is the likely budget for future maintenance?
- Are there potential points for expanded public access in the future (parking areas, roads, waterways, boat ramp sites, trail connections)?
- Can the site accommodate school groups and school buses?
- Are there significant restoration activities, such as large scale prescribed burns, that need to occur for the property to be fully usable for its intended purpose? If so, please elaborate.

- Are there facility needs or facility shortages in the region, which this particular property is well suited to fulfill (shooting range, wetland board walk)? If so, please elaborate.
- If there is a forest management plan, is it Best Management Practice compliant? (Please include the acreage of the forested portion of the project under forest product management.)

# MANAGEMENT PLANS FOR DEPARTMENT LANDS

According to Revised Statute 56:109.2, LDWF is required to "manage wildlife management areas, wildlife refuges, public hunting grounds and recreation areas in a manner to support, promote and enhance public hunting, fishing, and recreational opportunities." One of the fundamental responsibilities of LDWF is the thoughtful stewardship of its network of WMAs and refuges. The rich diversity and wide range of uses means LDWF is faced with equally diverse management challenges including species management, and guiding the degree and type of public access. The department has set the goal for development and completion of comprehensive and uniform management plans for all LDWF lands within three years. The purpose of this section is to provide guidance on how to approach WMA management planning and how the Master Plan can contribute to the development of individual WMA and refuge management plans.

Many peer organizations, including the USFWS and the Land Trust Alliance (the Alliance), have released guidance on why management planning is important and what elements need to be included within a management plan. As LDWF crafts management plans for WMAs and refuges, cross checking to see if the plans are achieving the goals, objectives, and benefits highlighted by peer organizations would be a wise

practice. According to the Alliance, management plans are needed to:

- Protect the resources LDWF must know what key resources are on the property and how to manage those resources so that they are sustained.
- Communicate management objectives within the organization as well as to future managers - Documenting resources, tracking how a resource is managed, and making sure that this institutional knowledge is transferred is critical to the health of the resource as well as to ensure public funds are well managed.
- Control damaging uses LDWF must be specific in how the public is allowed to use the land and how to address threats to the natural resources.
- Build public support and credibility Management plans help build public confidence that the organization is a responsible and respectful steward of the public's trust and funding.
- Utilize the Louisiana Master Naturalist Program to get public involved in conservation issues on WMAs and refuges.

As a manager of a national network of refuges, USFWS has considerable experience in management planning. Periodically the USFWS evaluates the management of the Rockefeller Wildlife Refuge as required by the deed of donation of gift of the land to the state. According to USFWS, management plans need to provide the following information:

- A clear statement of management direction
- An understanding of management actions on and around the property to the public and government officials
- Assurance that management actions, including land protection and recreation/education programs, are consistent with the mandates of the WMA and Refuge system
- A basis for the development of budget requests for operations, maintenance, and capital improvement

In Louisiana, WMA and refuge management is complex and occurs a variety scales, including multi-state, state-wide, regional, and local or stand level. Regardless of scale, WMAs must meet the unique wildlife and habitat resource management requirements present on each WMA or refuge. When managing resources, planning looks beyond the WMA, state, Joint Venture (JV), Landscape Conservation Cooperatives (LCC), and even domestic boundaries to prioritize habitat and wildlife variables and to secure necessary funding and support. With the aid of decision matrices provided through JVs, information sharing with partners, or upcoming LCC research, long-term management can be better aimed at achieving desired future habitat conditions of not only individual WMAs, but also the surrounding landscapes. As stated earlier, it is imperative that LDWF garners information from other state, federal and NGO bodies in order to effectively address and manage wildlife and associated habitat needs.

The bulk of the LDWF WMA and refuge ownership is found in the Lower Mississippi Alluvial Valley (LMAV) and coastal areas. However, LDWF continues to lease out properties to add recreational opportunities for their public users. LDWF lands are primarily managed under a grant administered by the USFWS, the Wildlife Restoration grant. This grant was originally funded by the Pittman-Robertson Act which is an excise tax on firearm and ammunition sales and was to be used for wildlife conservation programs. The Act was amended in 1970 to add receipts from handgun sales and again in 1972 to add most archery equipment and components. With these amendments, hunter education, firearm safety, bowhunter education and shooting ranges became eligible for funding. The tax is remitted by the manufacturer's to the USFWS and then distributed back to individual states with monies based on license sales and land area. States then use the monies to fund programs such as LDWF's WMAs and refuges. With this funding comes specific reporting requirements of management activities on the lands. Every WMA or refuge is unique and has specific management requirements. WMA managers must be flexible in identifying

and adjusting planning and execution to meet these unique demands. Every activity occurring on WMAs and refuges has a defined purpose that links back to one of the "Programs" specific to certain wildlife or habitat goals. Examples of program focus areas are white-tailed deer, waterfowl, wild turkey, etc. Program managers work extensively with WMA and refuge biologist to identify goals, objectives and management strategies for each program. The WMA program along with these other programs support each other and are critical to each programs success. While each section is ultimately responsible for its program, success and/or failure depends on the biological and technician staff of each WMA or refuge.

These programs and how they support the WMA program are:

# **RESIDENT SMALL GAME PROGRAM**

Wildlife Management Areas play an important role in the LDWF Resident Small Game (squirrels, rabbits, bobwhite) Program. WMAs provide public hunting opportunity for thousands of small game hunters. Small game hunting is the avenue by which many people are introduced to hunting and still enjoy. Many private tracts of land are leased for deer hunting and the long deer seasons limit small game hunting opportunity on



much of the private land in Louisiana. The geographic distribution of WMAs and a hunting season structure that considers the needs of small game hunters, makes WMAs a very important destination for small game hunters in Louisiana.

The Resident Small Game Program relies on WMAs to provide information that serves as an indicator of small game harvest, populations and habitat conditions. For instance, many of the mast surveys that are used to indicate annual mast abundance across the state are conducted on WMAs. Hunter success as measured through bag checks on WMAs and self-clearing permits are indicators of statewide hunter success and small game populations.

Much of the knowledge and experience the department staff has gained as come from management work on WMAs. For instance, much of the practical experience regarding the management of habitat for bobwhites has come from experience on WMAs. WMAs serve as a laboratory to experiment and evaluate hunter harvest strategies, prescribed burning regimes, timber harvest prescriptions, mechanical/chemical manipulations and other management tools. Population monitoring and research in conjunction with various management strategies provide regionally-based information that can be utilized to manage private land as well as other tracts of public land.

#### WILD TURKEY PROGRAM

Wildlife management areas have played an important role in the restoration of wild turkeys in Louisiana. Many of the wild turkeys that were trapped and relocated during the department's 30-year effort to restore wild turkeys came from WMAs. The WMAs were among the first tracts to be restocked and once populations became established, these WMAs became the source for restocking public and private land throughout Louisiana.

Since wild turkeys require relatively large blocks of habitat, the WMAs are key to maintaining local turkey

flocks. In an increasingly fragmented landscape, the large blocks of well-managed WMA habitat provide a reservoir of wild turkeys that disperse beyond the WMA boundaries. In many cases, loss of the WMA habitat would result in a decline or loss of local wild turkey populations.

WMAs provide some of the best wild turkey habitat in Louisiana and are popular with turkey hunters. Nearly 30 WMAs provide wild turkey hunting opportunity. Some WMA turkey hunts are limited to lottery applicants while others are non-lottery. Youth lottery turkey hunts are very popular and their success led to the establishment of a statewide youth turkey season in 2004.

The wild turkey program utilizes WMAs to conduct research, experiment with habitat manipulations and serve as demonstration areas to exemplify sound wild turkey management. Recent research has investigated the effects of hunting season structure on harvest rates, wild turkey hen productivity, survival and habitat use, impacts of nest predation by raccoons and response of wild turkey gobblers to hunting activity. Wild turkey research and management work on WMAs contributes to a better understanding of wild turkey ecology and management across the spectrum of habitats that occur in Louisiana.



# WATERFOWL PROGRAM IMPLEMENTED ON WMAS

Louisiana is arguably the most important wintering area for waterfowl in the United States. Millions of ducks and geese have utilized the coastal bays and marshes, flooded swamps, agricultural fields, inland lakes, river backwaters and oxbows for hundreds of years. Those habitats provide for the needs of a large proportion of Mississippi Flyway waterfowl during migration and winter, and for those of breeding wood ducks, mottled ducks, and a growing number of whistling ducks. The wetlands of Louisiana and their associated waterfowl attract hunters, birdwatchers, and scientists alike.

Waterfowl hunting is incredibly popular in Louisiana. An estimated 97,500 active hunters in 2011 harvested 2.83 million ducks, more than any other state by a large margin, and 75,000 geese. In 2006, an estimated 74,000 waterfowl hunters spent \$43.1 million on waterfowl hunting related expenses, \$1.3 million in state taxes and \$4.4 million in federal taxes, and supported 1,101 jobs in Louisiana. Hunter-opinion surveys conducted by LDWF in 2005 and 2010 showed that nearly 25 percent of waterfowl hunters hunt primarily on public lands and nearly 40 percent hunt on public lands at least once during the season. LDWF's WMAs provide the largest share of that public waterfowl hunting opportunity, and as the costs of leasing private land for hunting increases, WMAs provide an increasingly import resource for recruiting and maintaining hunters.

The objective of the Waterfowl Program is to manage waterfowl resources and wetlands to provide for optimum wildlife benefits and quality outdoor experiences. Optimal wildlife benefits are generated in part through participation in cooperative, large-scale population monitoring and habitat management activities guided by groups like the Joint Ventures of the North American Waterfowl Management Plan and the Mississippi Flyway Council. Because waterfowl are migratory, habitat required to meet their life-history needs must be provided in many locations up and down the flyway, and differ-

ent habitat is required in different parts of the flyway. Louisiana's role in continental waterfowl management is to maintain sufficient migration and wintering habitat to provide adequate food resources for a target number of ducks and geese to survive and attain adequate body condition to return to the breeding grounds and reproduce successfully. Population goals and associated habitat requirements are set through scientific working groups of the Gulf Coast and Lower Mississippi Valley Joint Ventures. The latest report from the Waterfowl Working Group of the Lower Mississippi Valley Joint Venture estimates that Louisiana is providing only 2/3 of the Duck Energy Days necessary to adequately support our target population of wintering waterfowl in that Joint Venture. Addressing that deficit requires additional wetland habitat or better management of existing habitats to provide those additional food resources. The responsibility for meeting those energy goals is shared among state, federal, and private lands, and habitat projects on WMAs is one of the primary activities of the Waterfowl Section.

Creating, enhancing, and maintaining wetland habitat on WMAs also serves to provide for quality outdoor experiences. Duck habitat is also duck-hunter habitat, and more and/or better-managed wetland habitat improves the quality of hunting for our waterfowlers as well as providing food for wintering ducks.



Although habitat management is the primary focus of the Waterfowl Section on WMAs, those properties are also important for population management, research, and hunter recruitment. Wood ducks are a key species for waterfowl hunters in forested wetlands, and they are one of two popular waterfowl species that breed here in Louisiana. Consequently, we can directly influence our own huntable waterfowl population by enhancing breeding habitat for wood ducks. The Wildlife Division maintains and monitors about 2.000 wood duck nesting boxes to enhance productivity of locally-raised birds and recent habitat projects have considered maintenance of brood-rearing habitat. Wood duck boxes are maintained in areas where they are used by nesting hens and successfully hatch and rear young. Otherwise, they are moved to more productive locations. In addition, monitoring of wood duck population is done almost exclusively through banding programs because it is impossible to accurately estimate population size in their forested wetland habitat using traditional survey methods. Wood ducks are banded in nesting boxes when they are being monitored, and are captured using rocket nets and banded prior to the hunting season. WMA staff and properties provide opportunity to band the birds which provide the data to inform and support harvest management decisions. The success of banding programs provided the data used to increase the daily bag limit from two to three in 2008.

WMAs also provide important sites for research activities and experimental management. Recent examples include determining species, number and habitat use by shorebirds on Ouachita, Bayou Macon, Red River, Boeuf, Sherburne, and Buckhorn WMAs. Much like the North American Waterfowl Management Plan provides habitat objectives for conserving target waterfowl populations; the U.S. Shorebird Conservation Plan sets similar objectives for shorebird habitat. Those data are used to inform management decisions for shorebird conservation, which is also a responsibility of the Waterfowl Section. We are looking for ways to integrate shorebird habitat with that for early-migrating waterfowl during a

time of the year when wetland habitat is usually limited to maximize management impacts to multiple wildlife resources. Experimental application of herbicides to maintain breeding habitat for mottled ducks and evaluating their breeding success is being conducted at Atchafalaya Delta WMA, and further mottled duck research is being conducted via banding on the Atchafalaya Delta and Pointe-aux-Chenes, and Pass-a-Loutre WMAs. Mottled ducks are the other waterfowl species that breeds in Louisiana, and maintaining habitat to increase production directly benefits both the mottled duck population and our hunters. Islands in the Atchafalaya Delta quickly convert from early-successional grasslands where mottled ducks nest, to willow forests, which is not suitable nesting habitat. Herbicides may be useful in maintaining the grassland component beneficial to mottled duck nesting.

Lastly, WMAs provide youth hunt opportunities for young waterfowl hunters at Sherburne, Bayou Pierre and Ouachita WMAs. These hunts are free from the normal competition of regular duck hunting, and a young person can experience waterfowl hunting and hopefully get hooked on the experience and become a life-long participant.

WMA property and managers are integral to the success of the Waterfowl Program in Louisiana through the habitat they provide for waterfowl, waterfowl hunters, and waterfowl researchers.

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#### WMA DEER PROGRAM OBJECTIVES

The primary objective of the Deer Program on most wildlife management areas (WMAs) is to manage for maximum sustained yield. This is the population level that produces the most annual recruitment (deer available for harvest). This allows the highest amount of recreational hunting opportunity, while maintaining a balanced deer herd and insuring advanced regeneration of our forests. White-tailed deer are considered keystone herbivores and can negatively impact desired plant species regeneration as well as the habitats of other wildlife species if their populations are allowed to become too high.

Either-sex days are the primary tool for female harvest and keeping deer populations within carrying capacity. A series of mandatory check either-sex hunts manned by LDWF personnel are held annually on over 30 WMAs to gather important biological data such as weights, % lactation, antler development and age structure. This information is vital in determining the health of the deer herd.

In the early breeding areas, either-sex hunts begin in October. In later breeding areas either-sex hunts are in December. Many WMAs have a traditional Thanksgiving either-sex hunt that draws many families year after year. The hunts are favorites for camping and spending quality time in the outdoors. The 2007-2011, five-year average hunter effort for mandatory check either-sex

hunts on WMAs is 26,378. The average harvest for that period is 2737 (one deer per 9.6 efforts).

Bucks only seasons provide additional hunting opportunity typically later in the season. Hunters targeting older aged bucks often take advantage of the late season opportunities. WMA archery hunters typically enjoy full length outside seasons. Deer hunting on WMAs occurred on over 1 million acres during the 2011-2012 season. The total estimated harvest was 5,343 deer.

Browse surveys are performed on a regular basis to develop several vegetative indicators. LDWF biologist perform a series of transects to document habitat conditions. Transect locations are selected according to habitat or forest stand type. The total number of woody species is tallied to provide an index to plant diversity. Typically, the more floristically diverse a tract is, the higher the carrying capacity given adequate overall browse availability. Means are calculated for the number of plants browsed per transect, the number of species per transect, and the number of species browsed per transect. Browse availability is estimated on a scale of 1 to 5; with 1 being little to no browse, and 5 being optimal browse availability. This information can be used to help make forest management decisions, as well as determine deer harvest goals. Browse surveys on WMAs are performed at least once every three years.

#### WMA FOREST MANAGEMENT PROGRAM

The LDWF WMA Forest Management Program is charged with the rehabilitation and stewardship of the forest resources and associated wildlife habitat present on LDWF-owned WMAs. Responsible management of the State's forestlands becomes increasingly important as land use changes, specifically urbanization, have affected the historic capacity of the ecosystem to accommodate healthy wildlife populations. The WMA Forestry Program manages timber to improve wildlife habitat, maintain habitat diversity within Wildlife Management Areas, provide recreational opportunity for our various

user groups, and at the same time grow high quality, healthy forest.

#### **OBJECTIVES**

The objectives of the WMA Forest Management Program are to enhance wildlife production while maintaining the native flora and fauna characteristic of the areas, to provide quality wildlife oriented recreational opportunities for the public, and to develop forest stands consisting of a wide variety of tree species which are diverse in diameter, age and structure. Aesthetic qualities of the areas are to be considered in forest management prescriptions. Educational and research opportunities are to be promoted to further our understanding of the ecological/environmental factors associated with the diverse habitats represented. Additionally, the production of quality forest products is to be maintained, as it plays an important role in the environmental and sociological atmosphere of the areas.

#### **ACTIVITIES**

**HABITAT INVENTORY -** A detailed forest inventory is carried out to evaluate current habitat conditions for each WMA owned by LDWF. The information gathered gives managers a closer look at many habitat components which allow for sound management decisions. The Forestry Section inventories approximately 50,000-70,000 acres, consisting of one to several entire WMAs, each year to assess habitat conditions on WMAs throughout the state. A forest inventory is a systematic sampling of the forest resources present within a landholding. Unlike a basic forest inventory, used primarily to appraise timber value, LDWF forest inventories include data on both forest and wildlife habitat components. This additional data allow LDWF Wildlife Division personnel to make long-term management decisions while providing a better picture of the current wildlife and forest habitat conditions. During the inventory process tree measurements are recorded which include species, diameter and height. With this information managers can calculate timber volume, diameter distribution, and

species composition. Trees are also classed based on their crown position and condition. Additionally, the amount of sunlight penetrating the overstory, midstory and understory vegetation is recorded as well as the hydrologic-forest type. The understory and ground vegetation are sampled to determine the density and species composition of seedlings and saplings found on the area. Vine abundance, snag density and other factors which have species specific value are also acquired.

Due to the extensive land base the LDWF owns, all of the acreage cannot be monitored and intensively managed annually. Therefore, an entry schedule has been developed based on the complete forest inventory of each WMA. To ensure that no area is overlooked, WMAs are divided into management units called compartments. These units range in size from 500-2000 acres and are delineated using natural and man-made boundaries such as roads and waterways. All WMA compartments are scheduled for review on an entry schedule of 10-20 years, depending on the number of compartments on a given WMA and the vegetative growth rate for that particular WMA. For most WMAs, at least one compartment is entered and evaluated each year. The order in which compartments are entered for management is based on the current forest and wildlife habitat conditions found during the forest inventory process and their need for enhancement. LDWF Forestry Section assesses approximately 15,000-20,000 acres annually and develops compartment prescriptions which detail the forest management practices that will be used to enhance wildlife habitat within each compartment. Approximately 6,000-8,000 acres are managed through timber harvest each year to enhance wildlife habitat for both long and short-term benefits.

#### PRESCRIPTION DEVELOPMENT

The information gained from these forest inventories allows LDWF to make the best decision on how a timber stand should be managed to benefit wildlife. The forest prescriptions set objectives and outline the methods

which will be used to accomplish the desired habitat objectives for each timber stand. Compartment prescriptions are detailed documents that include a general description of the compartment, a location map, the current condition of each forest type found within the compartment, soil type and hydrology of the area, and habitat conditions for various game and nongame wildlife species. Management prescriptions detail specific management objectives, any potential management concerns, and methods that will be used to enhance or sustain the forested stands and associated wildlife habitat. LDWF biologists review the compartment inventory and evaluation, determine the forest and wildlife habitat objectives, and discuss various management options for specific areas within the compartment. After extensive habitat analysis, a draft prescription document is developed.

Each compartment prescription is reviewed by several WMA Biologist and Louisiana Natural Heritage Ecologists. Upon completion each prescription is posted on LDWF's website for additional in-house and outside public review for 30 days. These additional comments are reviewed and the prescription is adjusted as appropriate.

#### TIMBER HARVESTING

Timber harvesting is often the most effective means to meet the management objectives detailed in prescription documents. Habitat is manipulated by managing the amount of light which is filtered through the overstory canopy. By carefully selecting which trees will be removed and which will remain, timber harvesting can be used to create understory vegetation, increase tree species diversity, enhance structural diversity, develop regeneration, and improve the health and vigor of residual trees. This manipulation of the forest makes it possible for desirable wildlife habitat to be created.

Depending on the management objectives, LDWF foresters will use one, or a combination of harvesting

methods including: individual-tree selection thinning, group selection thinning, shelterwood harvest and clearcutting. Individual-tree and group selection harvest are used to develop and/or maintain desired forest conditions considered necessary for sustaining wildlife populations. A combination of thinning and clearcutting is used to maintain species diversity by eliminating the domination of a single tree species or association of species to create conditions unfavorable to normal plant succession and species diversity. Shelterwood and clearcutting systems are used as necessary in managing stands of limited species composition, with minimum desirable regeneration stocking, or as required to improve habitat conditions of specific wildlife species. A combination of shelterwood and clearcutting is often used to release established regeneration for further development.

Although revenue generation is not the principal goal of the timber management on these department lands, it certainly is a secondary goal. The Forestry Program cannot manage timber stands for wildlife without timber sales, wherein the purchaser and his logging contractor are the tool to achieve the habitat manipulation. If the prescribed treatment is not economically feasible, it will not sell. Additionally, in-kind services may be a part of the bid proposal to enhance the infrastructure on a



given WMA. It is important to put some proceeds back into improving the timber stands and the management ability (primarily access) of those stands. These in-kind service projects may include, but are not limited to: improving roads, bridges, culverts, soil stabilization, site preparation, chemical and mechanical treatments, tree plantings and other forest management related activities.

The revenues derived as a result of each timber sale are deposited into an account earmarked as federal aid income. These funds are used on Federal Aid projects administered by the Wildlife Division which include the purchasing of additional timber/ recreational lands and the stewardship of those lands.

#### REFORESTATION

The function of the reforestation program is to facilitate the restoration of forested habitat through three broad areas of focus: 1) restoration of old field sites, 2) enhancement of existing forested areas and 3) research.

The establishment and mission of the reforestation program have been largely influenced by LDWF's land acquisition program, particularly in the Mississippi Alluvial Valley (MAV). Within the MAV, land acquisition was initially focused on protecting critical forested habitat. Eventually, marginal croplands were sought to expand or connect existing WMAs. The ultimate goal was to create larger blocks of forested habitat by restoring these former bottomland hardwood forests.

Restoring forested habitat on old field sites involves considerable planning and effort. Simply planting trees back on the site is not complete restoration, but it is an essential step in the process, and the department has done so on over 20,000 acres since 1968. Re-establishing the natural plant community, and the functions associated with it, is the objective. Careful attention is given to selecting tree and shrub species which are best suited to the soils and current hydrologic conditions of the restoration site. Over 30 species have been used to

restore the variety of sites found throughout the statewide WMA system; individual fields are planted with four to 12 species of trees.

Reforestation is occasionally used in conjunction with timber harvesting, to enhance the quality of existing forested habitats. Though natural regeneration is the preferred and most frequently used approach to perpetuate hardwood forests, on rare occasions, artificial regeneration (planting trees) is needed to ensure that there are enough young trees to develop into a fully stocked forest for the future. Another reason to plant trees in an existing forested area is to introduce a particularly desirable species that is lacking. This may be done, for example, to accelerate succession by planting oaks under an overstory of pioneer species such as cottonwood, then removing enough of the overstory to allow the oaks to develop.

"Research" is essential to improving upon reforestation techniques and approaches. Data and information gathering occur at varying levels of intensity, from carefully designed, statistically sound, peer reviewed studies, to day-to-day data recording, to anecdotal observations. By studying and observing the development of older plantations, it became apparent that changes were needed. In the early 1980s, fields were planted with only 200-300 seedlings per acre and they were almost exclusively hard mast species (primarily oaks and some pecan). The anticipated volunteer establishment of light-seeded trees did not occur consistently. The current approach is to plant 435 trees per acre, of which only 30 percent to 60 percent are hard mast. This greater diversity and higher stocking creates a stand of better quality trees which can be managed more effectively in the future, eventually resulting in more resources and better habitat for wildlife.

Trees have been planted on over 30 WMAs and wildlife refuges throughout the state.

#### RESEARCH & MONITORING

Research is an important part of our forest management program on the WMAs. Just as continuing education is important to maintaining employees' skills and knowledge of new technology in any job, research provides managers insight into new management practices or techniques that can be applied on the job, thus insuring optimal benefits of the WMA's forest/wildlife resources.

Research projects are not only geared at learning about the growth characteristics and management techniques used on the WMA forests, but also at the interrelationships of the forests with certain wildlife species of management concern, including white-tailed deer, grey and fox squirrels, wild turkey, bobwhite quail, migratory birds, small mammals, and even insects. LDWF foresters work jointly with the state universities, federal and state government agencies, and private corporations to attempt to unravel some of the questions we have regarding the best methods to sustain suitable wildlife habitat components in our forested systems for the long-term, while providing short and long-term recreational benefits to WMA users.

#### **GROWTH MONITORING PLOTS**

In order to monitor how LDWF's habitat management activities affect the long-term health and development of forestlands found on its WMAs a long-term monitoring system was developed. LDWF began establishing growth monitoring plots (GMPs) as a form of continuous habitat management survey in the spring of 1988. This system of permanent monitoring plots is used to obtain baseline information concerning ecological values and general forest composition as well as monitor change in habitat composition and growth on state owned WMAs. GMPs are distributed across all state owned WMAs throughout all major forest types, including areas of managed and unmanaged forest. LDWF has established approximately 500 plots distributed across 463,752 acres and establishes new plots as additional

land is acquired. Plots are measured every 10 years with a visit to three to four WMAs each year for the measurement of approximately 50-60 plots annually. LDWF uses the information gathered to asses various forest habitat management approaches, to suggest modification to its present approach to ensure survival of important ecological systems, to measure diversity of woody and herbaceous vegetation, and to tract and better understand natural ecological trends and changes. These permanent plots are to be used indefinitely to monitor micro and macro habitat conditions and to provide invaluable information for both short and long range management decisions.

# NATURAL HERITAGE PROGRAM COORDINATION WITH WMA AND COASTAL OPERATIONS PROGRAMS

The Natural Heritage Program works with LDWF's public lands programs in the following ways:

- partner for coastal restoration grants.
- classify natural community types on public areas.
- document species of conservation concern on public areas.
- coordinate on management plans.
- partner to conduct surveys such as MAPS, piping plover surveys, waterbird nesting colony surveys, etc.
- prioritize land acquisition goals.
- provide technical assistance to public lands staff concerning plant and animal species.
- coordinate on oil spill response.

# Infrastructure Planning

Each WMA or refuge possesses an intricate infrastructure that is designed to promote the most effective management of the property that meets the needs of wildlife, wildlife habitats and the public. This infrastructure design begins before acquisition and continues as a living "process," as priorities change and shift over time. Certainly, as new research or funding becomes

available, opportunities to improve upon existing infrastructure are presented. However, the addition to infrastructure or changes in management strategies and techniques produce challenges to which WMA managers must respond. Many technological and software advances make addressing such challenges easier, as suggestions and proposed responses can be outputted efficiently and effectively through computer access and data entry. WMA staff must welcome these options in order to best utilize manpower and resources.

Infrastructure planning, development and maintenance are required for long-term operations in order to effectively meet program goals. Clearly, there are huge investments made throughout each stage of planning and development, so it is critical to maintain these investments so that the wildlife and habitat benefits are realized. Because these investments are paid in part through Pittman Robertson, maintenance actions are reported annually by the Federal Aid coordinator as part of fulfilling LDWF's part of the grant.

The management and infrastructure variables reported on are:

BUILDINGS - most WMAs have offices, shops, bunkhouses and meeting rooms available. Office and bunkhouse rooms are utilized for management and research purposes. Since most WMAs/refuges are remotely located, personnel and researchers utilize overnight stays to efficiently conduct management and research. Buildings are often furnished with a basic equipped kitchen including appliances, restrooms, showers, beds, and linens. Some facilities have laundry units; all future developments will include laundry facilities. Many WMA headquarters have meeting rooms available for various functions: hunter education, WMA staff meetings and cooperative partner meetings are all held on WMA properties. The availability of meeting space on WMAs makes the planning and logistics easier for in-house training and field tours. Shops and sheds provide secure equipment storage, organization, and shelter, which increases machinery lifespan and reduces maintenance

costs. Organized tools and maintenance items allow efficient operation of maintenance activities by reduction of manpower and time spent on supply purchases.

**DAMS & LEVEES** - dams and levees are utilized primarily for waterfowl and water management, although secondary uses exist. Levee and dam maintenance involves repairing damage from both mother nature and animals (beaver, nutria, feral hog) and is necessary for the management of moist soil units, marsh units, wood duck box program and greentree reservoir management, to name a few. Dams and levees are also designed to be used as access points for users and personnel.

BRIDGES - bridges serve as not only entry points for personnel to access interior property for maintenance and management activities but also as public access areas. Both vehicular and ATV/UTV bridges are maintained. Bridges must be designed and maintained with management activities in mind. LDWF activities routinely require heavy machinery (road graders, tractors) and heavy trucks (tandem dump trucks, log trucks) to utilize these bridges.

ROADS & TRAILS - WMAs and refuges have intricate road and trail systems. Roads are used for primary access for public vehicular traffic for both recreational and private use. The general public travel the roads to commute daily from homes to work or other personal reasons. Roadways must be designed to withstand heavy traffic during the fall and winter when weather conditions make routine maintenance difficult. LDWF personnel and contractors utilize the road system to access areas where management activities are ongoing. Roads are designed to handle heavy, wide loads without interruption/inconvenience to the public. Many trails are on WMAs/ refuges: nature trails, ATV trails, Handicap ATV trails and UTV trails, to name a few. Each designated trail type presents its own set of challenges. ATV and UTV trails are designed and maintained to provide recreational trail use for the public, while maintaining access for LDWF staff and contractors to continue management activities, such as mowing and forest management.

**PUBLIC USE FACILITIES** - Kiosks are utilized to gather and obtain valuable public user data on WMAs and refuges. Most primary access points have Kiosks providing self clearing permits (SCP) to "check in" and "check out" of the areas. Maintenance of these structures is important to continue data collection. LDWF managers use the information to identify areas and activities where more opportunity may be needed to provide an improved visitor experience.

**BOUNDARY MARKING** - WMA personnel maintain visible arked boundaries on all department-owned and leased properties. Boundary marking material generally consists of posts, paint and signage. Personnel maintain boundaries to officially post ownership and WMA designation to help public users identify their location so that they can abide by the correct regulations. Well maintained and posted boundaries also facilitates enforcement of WMA rules and regulations.

**FIREBREAKS** - Firebreaks are established and maintained on those WMA and refuges that had an historic fire component. Firebreaks allow personnel to maintain control of prescribed fire activities. Most fire activities are on either pine dominant or marsh habitats.

**VEGETATION CONTROL** - personnel maintain vegetation along roads, levees, dams, trails, camping areas, kiosks



and facilities. Some of the vegetation control is maintenance, other control is management. Equipment choices ranging from lawn mowers and string trimmers to flex wing rotary cutters and tractors are utilized to accomplish these measures.

ANIMAL CONTROL - every year, man hours are expended on nuisance animal control. Most of these measures have historically been centered around trapping and removing nutria and beaver, but feral swine now demand a significant amount of time and resources. Control of these nuisance species and their damaging activities is needed to prevent significant damage to wildlife habitat and plant species.

**PROJECT ADMINISTRATION** - with so many management activities, the need to plan and report the actions occurring on the land is necessary. Personnel report on budget, time spent, work accomplishments, and needs to their respective administrative groups.

MANAGED HUNTS - managed hunts give managers the opportunity to acquire important biological and user data. Managed hunts are held for dove, waterfowl, deer, and turkey. Special hunts, such as youth, Becoming Outdoor Woman (BOW), and physically challenged managed hunts are held on several WMAs to recruit potentially new hunters.

BIOLOGICAL INFORMATION - WMA and refuge biologists work with program managers to collect biological data to help guide management of respective programs. Research projects, deer collections, turkey trapping, wood duck banding, Chronic Wasting Disease sampling, and browse surveys are all accomplished to help manage the wildlife and wildlife habitats in a responsible and scientific manner.

**WATER LEVEL MANAGEMENT** - Water management is accomplished to help the Waterfowl section goals and objectives toward habitat and human dimension needs. WMAs and refuges have an intricate network of pumps, flumes, water control structures, moist soil units, and

greentree reservoirs that demand an enormous amount of time, supplies and equipment to maintain. These impoundments and their associated network of water supply are managed for birds and waterfowl, both resident and migratory.

**CUSTODIAL FUNCTIONS** - Facilities are repaired and maintained to ensure continued use and longevity. All facilities must be inspected periodically to ensure that they all have the proper safety equipment installed and available.

**EQUIPMENT MAINTENANCE** - Heavy equipment is used to maintain the vast and diverse infrastructure on the WMAs and refuges. Maintenance is imperative to continue operation and continued lifespan of these mandatory but expensive items.

MINERAL AND SEISMIC INSPECTIONS - The broad land base supports the need for mineral and seismic activities. Staff time is spent coordinating with independent contractors and companies to ensure that WMA/Refuge regulations and interests are being observed.

**FOREST MANAGEMENT** - LDWF staff spends time on managing forest habitats for the needs of wildlife and forest resources. Inventory, Growth Monitoring Plots (GMPs), timber marking, harvests, and reforestation activities are all reported.

These activities represent only some of the management activities currently being accomplished on Louisiana's WMAs and refuges. The diversity of habitats, objectives and goals demands flexibility in management techniques in order to meet the needs of the resources as well as those of the public users of WMAs and refuges throughout the state.

# LDWF Committment to Planning

The Master Plan can help in the preparation of individual management plans of WMAs and refuges by providing:

- Summary of threats and acquisition needs for LDWF
- Information on connectivity of WMAs and refuges to surrounding lands and resources
- Resource inventory information and sources of more detailed data
- LDWF goals and objectives for landscape scale conservation
- Snapshots of partner goals and resources that might benefit the management of LDWF lands
- Consistent descriptions of LDWF properties
- Highlight important ecosystems, species, and public uses that are significant or are underrepresented

The amount of detail required within each plan will vary with the complexity of the resources, public use issues, and expected future management of the property. LDWF has committed to complete management plans for all properties within three years. Within the first year, LDWF will complete one management plan for each ecoregion to test viability of the plan outline. During that time, LDWF will also train staff in the process, and will identify any new issues that require attention in a site management plan. The department will examine and update all plans every 15 years, unless significant changes occur before the end of that cycle. Examples of changes that would require an earlier update to the management plan are:

- 1. dramatic expansion of the WMA/refuge
- 2. significant changes in land use
- 3. measurable changes in public use, or
- advances in scientific practices with clear management implications.

Monitoring and evaluating management planning practices to ensure that the LDWF is effectively managing properties is critical to LDWF's overall success. LDWF has committed to developing a monitoring plan for the periodic site inspection and will strive to consistently document such inspections. LDWF has a long-term monitoring program that assesses habitat and forest resource change over 10-year periods as a result of anthropogenic and natural causes on all department properties.

# LDWF MANAGEMENT PLAN OUTLINE (APPROVED MAY 9, 2010)

#### **TITLE PAGE**

#### **TABLE OF CONTENTS**

#### **INTRODUCTION**

- Physical Description (location, geography, habitat type, hydrology)
- History and Origin of the Property
- Purpose/Need
- Goals/Objectives
- Important Considerations of Sale or Deed of Donation

#### STATUS OF BIOLOGICAL AND PHYSICAL RESOURCES

- Wildlife and Fisheries Resources
- Timber or Botanical Resources
- Endangered Species
- Mineral Resources (description of past or ongoing exploration, detail should be limited)



 Physical Facilities (description, purpose, condition, needs, and how the facility contributes to meeting the management objectives)

#### **EXISTING USES**

- Public Access
- Hunting, Trapping, Fishing
- Other Compatible Uses
- Non-compatible Uses (horseback riding, ATVs, cashing, overnight camping, etc.)

#### **EDUCATION/OUTREACH**

#### **RESEARCH AND INVENTORY**

<u>MANAGEMENT PRACTICES</u> (should include specific objectives, current conditions and practices, and desired conditions)

- Species Specific Management
- Water Unit Management
- Agricultural Land Management
- Forest Management
- Threatened or Endangered Species
- Exotic, Invasive and Nuisance Species

<u>FUTURE THREATS AND ACQUISITION NEEDS</u> (Guided by Land Acquisition and WMA Master Plan)

<u>PLAN IMPLEMENTATION</u> (present condition and future needs)

- Funding
- Staff
- Partnerships

#### FIGURES AND APPENDICES

#### **LITERATURE CITED**

#### **APPROVAL PAGE**







# OFFICE OF WILDLIFE-COASTAL AND NONGAME RESOURCES DIVISION WILDLIFE MANAGEMENT AREAS AND REFUGES

# Atchafalaya Delta Wildlife Management Area

# SIZE, LOCATION, AND HISTORY

Atchafalaya Delta Wildlife Management Area (WMA) consists of 137,000 acres in southern St. Mary Parish, and is surrounded by Atchafalaya Bay. The property is state owned and has been managed by the Louisiana Department of Wildlife and Fisheries (LDWF) since 1977.

#### **DESCRIPTION OF LANDSCAPE**

Atchafalaya Delta WMA encompasses two major deltaic systems: the Wax Lake Delta and the Atchafalaya River Delta. These two deltas are the only significantly accreting marsh lands in coastal Louisiana. The habitat of the WMA is dominated by tidal riverine freshwater marsh-

es, and also offers a great deal of diversity from upland forested ridges to freshwater marshes. A majority of the WMAs are tidal marshes and mudflats bisected by numerous passes and natural waterways.

Dominant plant species found on the WMA include black willow, freshwater threesquare, delta duck potato, cattail, bull tongue, and cut grass. Dominant submerged vegetation includes Eurasian milfoil, pondweeds, and eelgrass. Exotic problematic species on the WMA include water hyacinth, Chinese tallow, giant salvinia, and Roseau cane.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this WMA is strictly by boat from one of the public boat launches throughout the parish. There are no roads onto or through this WMA. The two major waterways that provide access to the WMA are the Atchafalaya River and the Wax Lake Outlet (also known as Calumet Cut). There is a campground on each of the two deltas established for primitive tent camping only. Each campground has primitive restroom facilities, but no electrical or water service.

The WMA headquarters is located on the Atchafalaya Delta on Amerada Pass, and the facility is generally manned to provide assistance to the public.



#### PUBLIC USES ALLOWED ON THE WMA

The largest recreational use on the WMA is waterfowl and deer hunting. Of all the Coastal and Nongame Resources Division WMAs, Atchafalaya Delta is the top WMA in the recreational hunter effort annually for deer and waterfowl hunting. Other forms of consumptive recreation are rabbit, feral hog, nutria, and rail hunting. Each year a lottery hunt is offered to the public for recreational alligator trapping as well.

Also popular is fresh and saltwater fishing. Fishermen commonly pursue largemouth bass, a variety of catfish, blue crabs, and redfish. However many more species are common including speckled trout, crappie, black drum, bluegill, and sunfish. Non-consumptive activities that are also popular include, boating, birdwatching, and photography. Commercial fishing is also allowed on Atchafalaya Delta, and the popular species targeted include, brown shrimp, white shrimp, blue crabs, a variety of catfish, and mullet.

# Biloxi Wildlife Management Area

# SIZE, LOCATION, AND HISTORY

Biloxi Wildlife Management Area is located in St. Bernard Parish approximately 40 miles east of New Orleans and is bordered on the west by Lake Bourne. The WMA covers 35,644 acres and is owned by Biloxi Marsh Lands Corporation; it has been leased to LDWF since May 1957.

### **DESCRIPTION OF LANDSCAPE**

Biloxi WMA is comprised of tidal intermediate, brackish, and saline marshes. Marshes are bisected by many natural bayous, lagoons, duck ponds, and canals. A few remnant oak ridges exist on the southern boundary that outline the historic banks of the Mississippi River. Dominant plant species found on the WMA include black rush, marsh hay cordgrass, and threesquare. The dominant submerged vegetation is widgeon grass. Exotic problematic species are Roseau cane.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this WMA is strictly by boat from one of the public boat launches throughout St. Bernard, St. Tammany, and Orleans parishes. The primary and closest launching point is Hopedale. There are no roads onto or through this WMA. Major waterways that boarder the WMA include Lake Bourne, Bayou Malo, Bayou LaLoutre, and Lake Boudreau.

#### PUBLIC USES ALLOWED ON THE WMA

The largest recreational use on the WMA is saltwater fishing. Fishermen commonly pursue redfish, speckled trout, flounder, sheepshead, black drum, and crabs. Commercial fishing is also allowed in the state waters of the WMA. Waterfowl hunting is also very popular on the WMA and hunter success is generally good to excellent. Non-consumptive activities that are also popular include, boating, birdwatching, and photography.

# Isle Dernieres Barrier Islands Refuge

# SIZE, LOCATION, AND HISTORY

Isle Dernieres Barrier Islands Refuge (IDBIR) has been managed by LDWF since 1992, and ownership was transferred in 2000. The 2,980-acre refuge is a series of barrier islands consisting of Wine Island, East Island, Trinity Island, Whiskey Island, and Raccoon Island in extreme southern Terrebonne Parish.

This refuge is a series of saline tidal barrier islands that consist of high dune to low saline marsh habitats. These islands are extremely important to nesting waterbirds and are home to one of the largest colonial waterbird colonies in the Gulf of Mexico. Raccoon Island is the largest colonial waterbird rookery west of the Mississippi River and home to one of the largest colonies of nesting brown pelicans.

#### DESCRIPTION OF LANDSCAPE

The refuge ranges from low dune herbaceous habitat to low tidal saline black mangrove and smooth cordgrass marsh. It also includes tidal sand flats that are void of vegetation. Raccoon Island is protected on the south and east side by a series of 16 segmented rock breakwaters and an eastern rock groin.

The dominant plant species found on the refuge include black mangrove, marsh elder, smooth cordgrass, bitter panicum, sea purslane, seaside dropseed, and seashore paspalum. The dominant exotic species on the refuge is Roseau cane.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this refuge is strictly by boat from Cocodrie, Bayou Dularge, Houma, or Grand Isle. There are no roads onto or through this refuge.

Most of the refuge is off limits to public access except for a small portion on Trinity Island where the public is permitted to use the beach. The islands are restricted due to their importance to many threatened and endangered species and abundance of nesting birds. The refuge's primary purpose is to serve as a wildlife sanctuary. Hunting and commercial activities are prohibited.

## PUBLIC USES ALLOWED AT THE REFUGE

Saltwater fishing is very popular immediately adjacent to this refuge. Primary species targeted include speckled trout, redfish and black drum. Non-consumptive activities that are also popular include birdwatching, and photography.

# Lake Boeuf Wildlife Management Area

# SIZE, LOCATION, AND HISTORY

Lake Boeuf Wildlife Management Area is located in Lafourche Parish near Raceland. The WMA was purchased from the Nature Conservancy on Dec. 18, 1998. It encompasses 789 acres and is just south of Lake Boeuf.

#### DESCRIPTION OF LANDSCAPE

Lake Boeuf is a cypress tupelo swamp with a small ridge bisecting its center. The WMA is frequently flooded by heavy rain events and stays flooded for a prolonged time due to poor drainage. The swamp is surrounded on the north by fresh marsh. Two pipeline right-of-ways that are cleared and maintained on the WMA and two canals that cut through the WMA as well.

Dominant plant species found on the WMA include bald cypress and tupelo. Exotic problematic species found on the WMA are water hyacinth and common salvenia. Rare species found on this WMA include floating antler fern and cypress knee sedge.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this WMA is strictly by boat from Theriot Canal boat landing. The only self-clearing permit station is also at this public landing. There are no public roads onto or through this WMA. Major waterways that boarder the WMA include Halphen Canal, Theriot Canal and Foret Canal.

## PUBLIC USES ALLOWED ON THE WMA

The largest recreational use on the WMA is deer and small game hunting. Waterfowl hunting and fishing are rarely pursued. Non-consumptive activities that are also popular include birdwatching and photography. Nighttime activities are prohibited.

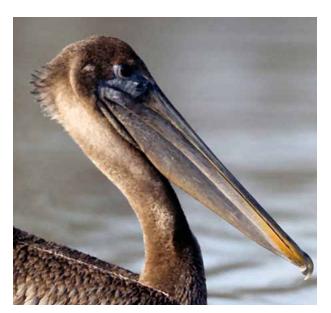
# Pass-a-Loutre Wildlife Management Area

# SIZE, LOCATION, AND HISTORY

Pass-a-Loutre Wildlife Management Area consists of 115,000 acres in southern Plaquemines Parish at the terminal end of the Mississippi River. Pass-a-Loutre WMA was the first WMA in the state and was established by an act of the state legislature on Nov. 1, 1921, the opening day of waterfowl season. The WMA is located approximately 10 miles south of Venice.

#### **DESCRIPTION OF LANDSCAPE**

Pass-a-Loutre WMA encompasses most of the Mississippi River bird foot delta. The WMA is comprised of a multitude of passes, canals, cuts, and crevasses. It has a wide diversity of habitats ranging from riverine fresh marsh, tidal mudflats, intermediate marshes, brackish marshes, saline marshes, small barrier islands, and various depths of marine habitat. There are also a few upland canal and dredge spoil banks. The WMA is influenced by tide, wind, and river stages.



Dominant plant species found on Pass-a-Loutre includes Roseau cane, cut grass, delta duck potato, and lantana. The dominant woody species is black willow. Dominant submerged vegetation includes Eurasian milfoil, pondweeds, and coontail. Exotic problematic species on the WMA include water hyacinth and Chinese tallow.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this WMA is strictly by boat from one of the public boat launches throughout the parish. There are no roads onto or through this WMA. There are six campgrounds on the WMA established for primitive tent camping only. Each campground has a self clearing permit station as well as the headquarters. WMA headquarters is located on Dennis Pass and the facility is manned to provide assistance to the public.

## PUBLIC USES ALLOWED ON THE WMA

The largest recreational use on the WMA is fishing. Both freshwater and saltwater opportunities are very popular as the area provides one of the most diverse fishing opportunities in the state. Fishermen pursue a large variety of species on the WMA from bass, catfish, redfish, speckled trout, to mangrove snapper and tarpon. Waterfowl hunting is also very popular on the WMA, and hunter success is generally good to excellent. Other forms of popular consumptive recreation include deer, rabbit, feral hog, nutria, and rail hunting. Each year a lottery hunt is offered to the public for recreational alligator trapping as well. Non-consumptive activities that are also popular include, boating, birdwatching, and photography. Commercial fishing is also allowed on Pass-a-Loutre, and the popular species targeted include, brown shrimp, white shrimp, blue crabs, catfish, and mullet.

# Pointe-aux-Chenes Wildlife Management Area

# SIZE, LOCATION, AND HISTORY

Pointe-aux-Chenes Wildlife Management Area is a 35,266 marsh tract in Lafourche and Terrebonne parishes. The WMA was purchased in 1968 along with Salvador WMA from the Humble Oil Company, which marked the first purchase of marsh acreage by LDWF. Pointe-aux-Chenes is also comprised of several leases from Apache Corp, Bully Camp Realty, and other private leasers. The WMA is between Galliano and Montegut and bisected by the town of Pointe-aux-Chenes.

#### DESCRIPTION OF LANDSCAPE

Pointe-aux-Chenes WMA is an intermediate to brackish marsh complex with a coastal forested ridge running through it also known as Point Farm. Forty percent (13,855 acres) of the WMA is under active management and is contained in water management units known as Montegut, Pointe-aux-Chenes, Grand Bayou #1 and Grand Bayou #2. Management units were established to control water and salinity levels to protect sensitive marsh habitat for wildlife and recreational users. Similar to other marshes in Terrebonne and Barataria basins, these WMA wetlands are quickly eroding due to subsidence, tropical storms, and wind generated wave energy.

Point Farm is a 1,000-acre tract planted mostly in bottomland hardwood species. The property also has a dove field that is managed to provide forage for a large host of birds including doves. It also provides excellent hunting opportunities as well.

The dominant vegetation on the WMA is marsh hay cordgrass, salt grass, smooth cordgrass, and marsh elder. Submerged aquatic vegetation is comprised primarily of widgeon grass, and a small amount of Eurasion milfoil may be found in the properties' northeast corner. The problematic exotic species is Chinese tallow.

# VISITORS, PUBLIC ACCESS AND FACILITIES

This WMA is accessible by boat and road. LA 665 runs through the heart of the WMA, and Point Farm Road provides access to Point Farm. The headquarters facility is manned seven days a week to assist the public and enhance recreational opportunity.

There are two boat launches on the WMA. The first is the Grand Bayou boat launch which provides access to the St. Louis Canal and into the Grand Bayou #1 management unit. The other is the Island Road launch, which provides access to the Pointe-aux-Chenes Unit. Both launches are accessible by LA 665.

A public primitive campground is also available on the WMA located across LA 665 from the headquarters facility. In addition, there are two wildlife observation towers on the property a short walk from LA 665.

#### PUBLIC USES ALLOWED ON THE WMA

Saltwater fishing is the most popular attraction to Pointe-aux-Chenes. Fishermen commonly pursue redfish, speckled trout, flounder, shrimp, and crabs. Other species harvested include black drum, sheepshead, and croakers. Waterfowl hunting is also very popular on the WMA, and hunter success is generally good to excellent. Non-consumptive activities that are also popular include boating, birdwatching and photography. Commercial fishing is allowed only in select locations on the WMA. Nighttime activities are prohibited.

# Marsh Island Refuge

# SIZE, LOCATION, AND HISTORY

Marsh Island Refuge was donated to the state in 1920 by the Russell Sage Foundation; established by Margaret Olivia Sage in honor of her late husband. The refuge still enjoys management oversight by the foundation. This refuge is a large island in southern Iberia Parish between Vermilion Bay and the Gulf of Mexico. It is 76,664 acres in size.

#### DESCRIPTION OF LANDSCAPE

The refuge is mostly tidal brackish and intermediate marsh. Most of the marsh is managed by a variety of fixed and variable crest weirs that dampen the erosive energy of daily tidal exchange and provide improved habitat conditions for wildlife.

The dominant plant species found on the refuge include marsh hay cordgrass, smooth cordgrass, black needle rush, salt grass, and freshwater threesquare. Dominant submerged vegetation includes Eurasian milfoil and widgeon grass. Exotic problematic species on the refuge include Chinese tallow and Roseau cane.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this refuge is strictly by boat primarily from Cypermort Point. There are no roads onto or through this refuge. The major waterway providing access to this refuge is Vermilion and Cote Blanche bays.

Ten water management structures (weirs) on the refuge are popular attractions for fishermen. These structures are primarily fixed crest weirs with walkways across the top of them for the public to enjoy for fishing, cast netting, and crabbing. Hunting, nighttime activities, and commercial fishing are prohibited on this refuge.

# PUBLIC USES ALLOWED ON THE REFUGE

Saltwater fishing is very popular on this refuge. Primary species targeted include speckled trout, redfish, black drum, blue crabs and shrimp.

Non-consumptive activities that are also popular include, boating, birdwatching, and photography.

# Rockefeller Wildlife Refuge

# SIZE, LOCATION AND HISTORY

Rockefeller Wildlife Refuge (RWR) lies within the southeastern portion of the Chenier Plain Region of southwestern Louisiana in Cameron/Vermilion parishes (between approximately 92º54' E and 92º30' E longitude). RWR borders the Gulf of Mexico for 26.5 miles and extends inland toward the Grand Chenier ridge, a stranded beach ridge 6 miles from the Gulf. When it was deeded to the state in 1914, RWR encompassed approximately 86,000 acres. However, since then the property has lost approximately 14,000 acres (16.6 percent acreage loss) and currently stands near 72,650 acres, the loss of acreage is primarily due to shoreline/beach erosion.

The origins of RWR start with E.A. McIlhenny, who became interested in creating a wildlife refuge on a large tract of land located in western Vermilion and eastern Cameron parishes totaling 86,000 acres. On July 12, 1913, he purchased the property for \$212,500 using \$27,500 cash and \$185,000 of donated monies. On May 20, 1914, he sold the property to the Rockefeller Foundation for preservation and protection of migratory birds. Through the encouragement of McIlhenny, the Rockefeller Foundation agreed to allow the Conservation Commission of Louisiana to control the lands for a period of five years, and on Sept. 25, 1914, the state formally accepted the care of the property. The property was donated to the state on Dec. 18, 1919. The State of Louisiana officially accepted the lands in 1920; creating the Rockefeller Wildlife Refuge.

#### DESCRIPTION OF LANDSCAPE

The coastal marshes on the RWR occupy an elongated basin confined by the high Grand Chenier Ridge to the north and the lower sea rim beach to the south. Prior to major man-made landscape changes, freshwater reached this basin through precipitation and drainage from surrounding ridges, thus creating deep freshwater

rush marshes near the chenier ridge. The rush marsh zone was vegetated primarily by bulrush (Scirpus californicus), giant cutgrass (Zizaniopsis miliacea), sawgrass (Cladium mariscus), and cattail (Typha sp.). Freshwater ponds in this zone contained various species of algae, frogsbit (Limnobium spongia), bladderwort (Utricularia macrorhiza), water pennywort (Hydrocotyle sp.), duckweeds (Lemna spp. and Spirodela spp.), and exotic water hyacinth (Eichhornia crassipes). Originally brackish (interior marsh zone) to saline (sea rim marsh zone) marshes occupied the lower two-thirds of the area, which was drained by dendritic tidal channels. A series of low salinity marsh ponds was situated at the inland extremities of the tidal marsh and supported widgeongrass (Ruppia maritima). The brackish interior marshes were densely vegetated with leafy-threesquare (Scirpus robustus) and wiregrass (Spartina patens), while the sea rim marshes contained saltgrass (Distichlis spicata), hogcane (Spartina cynosuroides), iva (Iva frutescens), and oystergrass (Spartina alterniflora). The distribution of vegetation zones that constitute major wildlife habitat types on the refuge has been altered considerably over the past 40 years due to the management of areas via water control structures/levees.

The average elevation of the RWR marshes is approximately 0.8-1.0 feet. NAVD 88. Normal tides are contained within the channels and canals, and the amount

of water covering the marsh is governed by weather conditions, primarily precipitation and wind direction. While the average tidal fluctuation in the area is 1 foot, extremely high tides associated with southerly winds from storms flood the interior marshes at least once or twice a year, bringing in marine mud and saltwater. The introduction of saline mud creates a firmer marsh than is present in the Deltaic Plain because it prevents the formation of highly organic marsh peats. Creation of leveed impoundments on the refuge (beginning in 1954) has to some degree restricted the input of saline water and mud to only the unimpounded areas nearest the Gulf. However, extreme high water can overtop or even break the levees and can cause the impounded areas to be subjected to higher salinities than are desirable under the management program. During periods of drought or prolonged northerly winds, which cause low winter tides, the marsh is subject to extreme low water. Extended low-water periods expose the marsh to the threat of fire, with the possibility of intense peat fires that create new lakes at the cost of loss of vegetated marshlands.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Estimates show that the refuge receives on average 100,000 annual visitors, with recreational opportunities as the largest attraction on the refuge. The majority of

public use involves some type of consumptive activity. Fishing is the most popular public recreational activity on the refuge. Finfish angling is done year round in efforts to catch species such as largemouth bass, catfish, red drum, spotted sea trout, and southern flounder, while shellfish include crabs and shrimp. The majority of consumptive use is attributable to sport crabbing, shrimping, and fishing. Oystering has been closed for several years across the refuge due to a contamination concern issued by the Louisiana Department of Health and Hospitals, but crabbing and shrimping still remain very popular. Annual production of blue crabs and white/brown shrimp seems to drive the annual recreational use on RWR today, with more than 75 percent of the recreational activities being attributed to the harvest of these organisms. No commercial take of any species is allowed across the refuge, which includes banning the use of crab traps, nets, or trawls.

In addition to fishing, birdwatching is becoming more popular on the refuge, with the RWR listed as a stop on the Creole Nature Trail, as well as America's Wetland Birding Trail Creole Loop. RWR also permits access to bird watchers to the Nunez Woods property, which is located approximately 1/4 mile west of Price Lake Road; this private property is a quality example of intact chenier habitat with live oaks, hackberries, palmettos, and deciduous hollies. Visitors must check in at RWR headquarters before visiting Nunez Woods.

One consumptive activity not permitted on the refuge is hunting. Hunting is not allowed due to the game preserve status given to RWR in the original deed of donation; some regulated trapping is allowed for furbearers and alligators. Along with hunting and commercial fishing, other non-compatible human uses prohibited are overnight camping, horseback riding, ATV riding, geocaching, commercial guiding/tours, swimming, and canoeing/kayaking. The last two are primarily for safety reasons due to the abundance of alligators and the potential for negative interactions with large alligators. Public vehicle access on RWR is limited to 6 miles of



interior roads; all accessible from LA 82. These provide dry land access for recreational fishing, with the most popular area being Price Lake Road, located along the western boundary of RWR. There is also an observation tower for birdwatching on Price Lake Road. In order to access the majority of the refuge, there are three boat ramps that are open to public use. Two of these ramps are state owned, maintained by RWR staff, and are free to the public. These ramps, located by Joseph Harbor Canal just off LA 82 in Cameron Parish, are very heavily used and received significant damage from Hurricanes Rita and Ike. The launch located by the East End Locks was repaired following Ike, while the Joseph Harbor launch improvements have been planned and will soon be initiated. The third ramp, Rollover Bayou Landing, is a private, fee-based launch near Pecan Island, Louisiana (Vermilion Parish), which is located along the eastern most boundary of the refuge.

Public facilities include temporary restrooms at Price Lake Road and Joseph Harbor. The refuge also has a bunkhouse, which is only available for visiting researchers and groups working on the refuge.

## PUBLIC USES ALLOWED ON THE WMA

Please refer to the refuge rules and regulations for permitted activities. In addition to fishing, crabbing, and shrimping, other common activities include birdwatching and sightseeing. Kayaking or canoeing is not permitted on the refuge due to potential conflicts with large alligators.

# Salvador Wildlife Management Area

# SIZE, LOCATION, AND HISTORY

Salvador Wildlife Management Area is a 30,180 marsh tract in St. Charles Parish. The WMA was purchased in 1968 along with Pointe-aux-Chenes WMA from the Humble Oil Company, which marked the first purchase

of marsh acreage by the department. The WMA is approximately 11 miles southwest of New Orleans and is bordered by Lake Cataouatche on the east and Lake Salvador on the south.

#### **DESCRIPTION OF LANDSCAPE**

Salvador WMA is a tidal fresh marsh complex that is bisected by several oil and gas canals and contains several duck ponds. On the north end of the property the WMA has a meandering cypress swamp which follows the many historic distributary channels of the Mississippi River through the marsh. Also at this location is the outfall of the Davis Pond Mississippi River diversion. This large diversion allows nutrient laden fresh waters from the Mississippi River to flow through the marsh complexes of the WMA. The WMA has benefited greatly from this project as it has significantly lowered the salinity regime and increased vegetative abundance and diversity.

The dominant vegetation on the WMA is bull tongue, maiden cane, and cattail. The dominant woody vegetation is Chinese tallow, black willow, bald cypress, and live oaks. There is a huge diversity of submerged aquatic vegetation which is lead in abundance by Eurasion milfoil, hydrilla, and coontail. Problematic exotic species include hyacinth, giant salvenia, and Chinese tallow.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this WMA is strictly by boat from one of the public boat launches in St. Charles or Jefferson Parish. The popular access points are from Pier 90, Bayou Segnette, and Bayou Gauche. There are no roads onto or through this WMA. LDWF has a headquarters facility on the WMA which is manned on a sporadic basis when projects are implemented on the WMA.

# PUBLIC USES ALLOWED ON THE WMA

Freshwater fishing, especially for largemouth bass, is the leading recreational use on the WMA. Salvador WMA has some of the premier bass fishing found anywhere in the state. Other species targeted by fishermen include catfish, crappie, bream, and redfish. Waterfowl hunting is also very popular on the WMA, and hunter success is generally good. Non-consumptive activities that are also popular include boating, birdwatching, and photography. Salvador WMA also supports several pair of nesting bald eagles. Neither commercial fishing nor nighttime activities is allowed on the WMA.

# State Wildlife Refuge

# SIZE, LOCATION, AND HISTORY

State Wildlife Refuge is the oldest refuge in Louisiana. This refuge was donated to the state in 1911 by Mr. Edward McIlhenny and Mr. Charles Ward to be managed as a wildlife refuge. This 13,000-acre refuge is located in southern Vermilion Parish between Vermilion Bay and the Gulf of Mexico. It is bordered on the west by the National Audubon Society's Paul J. Rainey Sanctuary and on the east by Southwest Pass.

#### DESCRIPTION OF LANDSCAPE

The refuge is tidal brackish and intermediate marsh. Most of the marsh is managed by a variety of fixed crest weirs that dampen the erosive energy of daily tidal exchange and provide improved habitat conditions for wildlife.

The dominant plant species found on the refuge include marsh hay cordgrass, smooth cordgrass, black needle rush, salt grass, and freshwater threesquare. Dominant submerged vegetation includes Eurasian milfoil and widgeon grass. Exotic problematic species on the WMA include Chinese tallow and Roseau cane.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this refuge is strictly by boat primarily from Intracoastal City. There are no roads onto or through this refuge. The major waterway that provides access to this refuge is Vermilion Bay.

There are nine water management structures (weirs) on the refuge that are popular attractions for recreational fishermen. These structures are fixed crest weirs and some have walkways across the top of them for the public to enjoy for fishing, cast netting, and crabbing. Hunting, nighttime activities, and commercial fishing are prohibited on this refuge.

#### PUBLIC USES ALLOWED ON THE REFUGE

Saltwater fishing is very popular on this refuge. Primary species targeted include speckled trout, redfish, black drum, blue crabs and shrimp. Non-consumptive activities that are also popular include, boating, birdwatching, and photography.

# St. Tammany Refuge

# SIZE, LOCATION, AND HISTORY

St. Tammany Refuge was purchased in 1938 from the Great Southern Lumber Company and is located on the northern shore of Lake Pontchartrain in St. Tammany Parish. This 1,309-acre acquisition was part of a much larger acquisition by the state. The property is managed under a Memorandum of Understanding with the USFWS and is included in Big Branch NWR.



#### **DESCRIPTION OF LANDSCAPE**

The refuge is a low tidal brackish and intermediate marsh that is approximately 10 miles long and no wider than 1,300 feet along the lakeshore.

The dominant plant species found on the refuge include marsh hay cordgrass, black rush, and freshwater three-square. Dominant submerged vegetation is widgeon grass. Exotic problematic species on the refuge include Chinese tallow and Roseau cane.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this refuge is strictly by boat. There are no roads onto or through this refuge. The major waterway that provides access to this refuge is Lake Pontchartrain.

Hunting is allowed on the refuge under the rules and regulations of Big Branch NWR.

#### PUBLIC USES ALLOWED ON THE REFUGE

Saltwater fishing is very popular on the shores of Lake Ponchartrain. Primary species targeted include speckled trout, redfish, black drum, blue crabs, and shrimp. Freshwater fishing occurs within the interior streams and ponds. Non-consumptive activities that are also popular include birdwatching and photography.

# Timken Wildlife Management Area Size, Location, and History

Timken Wildlife Management Area is a 3,000-acre marsh island also known as Cuba Island. The WMA is owned by the City Park Commission of New Orleans and was leased to LDWF on Jan. 1, 1996. It is located in St. Charles Parish and between Lakes Cataouatche and Salvador 7 miles southwest of New Orleans. Timken WMA is also immediately east of the larger Salvador WMA.

#### **DESCRIPTION OF LANDSCAPE**

Timken WMA is a tidal fresh marsh complex that is bisected by oil and gas location canals. The WMA is located near the outfall of the Davis Pond Mississippi River Diversion and has benefited from this restoration project.

Dominant plant species found on the WMA include bull tongue, cattail, and maiden cane. There are a large variety of submerged aquatics on the WMA including Eurasion milfoil, hydrilla, and coontail. Exotic problematic species on the WMA include water hyacinth, Chinese tallow, and giant salvenia.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this WMA is strictly by boat from one of the public boat launches in St. Charles or Jefferson Parish. The popular access points are from Pier 90, Bayou Segnette, and Bayou Gauche. There are no roads onto or through this WMA.

#### PUBLIC USES ALLOWED ON THE WMA

The largest recreational use on the WMA is fresh and saltwater fishing. Popular species pursued included largemouth bass, crappie, catfish, and redfish. Hunting for waterfowl and rabbit is also very popular. Other consumptive recreational opportunities enjoyed on the WMA include deer, gallinule, and rail hunting. Commercial fishing and nighttime activities are not permitted on the WMA. Non-consumptive activities that are also popular include birdwatching and photography.

# White Lake Wetlands Conservation Area

## SIZE, LOCATION AND HISTORY

White Lake Wetlands Conservation Area (WLWCA) is a 70,965-acre unit located along the western boundary

of Vermilion Parish. WLWCA is bounded on the south by White Lake, and the northern boundary is 7.4 miles south of Gueydan at the south end of LA 91. Lafayette is 32 air miles northeast, and Lake Charles is 40 air miles northwest. On July 8, 2002, BP America Production Company, preceded by Amoco Production Company, donated the property to the State of Louisiana. A cooperative agreement between the State and White Lake Preservation Inc. for management of the property was executed. On July 1, 2005, the property was transferred from White Lake Preservation Inc., to LDWF.

#### DESCRIPTION OF LANDSCAPE

The 52,085 acres of marsh in the WLWCA tract are classified as fresh marsh, and most of the area depends solely on rainfall to increase the water level.

Common vegetation in the marsh at WLWCA includes, but is not limited to, the following: spikerush (Eleocharis parvula), maiden cane (Panicum hemitomon), bull tongue (Sagittaria sp.), buttonbush (Cephalanthus occidentalis), Walter's millet (Echinochloa walteri), sprangletop (Leptochloa fascicularis), slender fimbry (Fimbristylis autumnalis), water-shield (Brasenia schreberi), white water lily (Nymphaea ordorata), bullwhip (Scirpus californicus), southern swamp lily (Crinum americanum), sawgrass (Cladium jamaicense), cattail (Typha latifolia), spider lily (Hymenocallis caroliniana), roseau cane (Phragmites australis), rattlebox (Daubentonia texana), coontail (Ceratophyllum demersum), southern naiad (Najas quadalupensis), Eurasian milfoil (Myriophyllum), fanwart (Cabomba caroliniana), and floating heart (Nymphoides aquaticum).

Along the shoreline of White Lake, only the northwestern portion supports woody vegetation. This woody vegetation occurs on the south side of the Florence canal. This vegetation includes: black willow (*Salix nigra*), waxmyrtle (*Nyrica cerifera*), Chinese tallow (*Sapium sebiferum*), live oak (*Quercus virginiana*), swamp red maple (*Acer rubrum*), and American elm (*Ulmus ameri-* *cana*). The remainder of the WLWCA shoreline is marsh vegetation.

Additional habitat variation can be found along the GIWW spoil banks and throughout the agricultural leases on the property. The vegetation ranges from woody overstory with dense undercover, woody overstory with sparse undercover, shrub/brush/grass, and a berm between spoil and marsh or spoil and agriculture.

The most sought after game in this area are migratory waterfowl, including mallard, gadwall, northern pintail, blue-winged teal, green-winged teal, northern shoveler, snow geese, and greater white-fronted geese. Freshwater fish, including largemouth bass, sunfish, catfish, and crappie are also pursued on the area. Alligators and a variety of other herpetofauna are common on WL-WCA. Numerous species of birds, including neotropical migrants, utilize this conservation area during fall and spring migrations.

## VISITORS, PUBLIC ACCESS AND FACILITIES

The White Lake Wetlands Conservation Area Birding and Nature Trail is a 2-mile trail on the northern boundary of the WLWCA property. It is open to the public daily from sunrise to sunset with no fee or permit required. The trail is located on 32 acres and features a covered pavilion with tables, two educational kiosks, bridges, and an observation tower.

WLWCA offers up to 100 Fishing Lottery Permits each year at a cost of \$40.00 per permit. These permits allow fishermen to access the Florence Canal and some location canals off the Florence Canal from sunrise to sunset from March 15 through Aug. 15.

Various types of waterfowl hunts are offered. These lottery hunts include teal hunts, youth hunts, marsh hunts, group marsh hunts, and rice field hunts.

Dates were established for the use of WLWCA lodge and other facilities for non-consumptive group activities including nature photography, birdwatching, educational field trips and business retreats. There were a total of 9 day-trips and 8 overnight trips made available for public booking during 2011.

In addition, the general public has the opportunity to lease WLWCA property that goes out on state bid. These opportunities allow the public to lease agricultural property that can be farmed and hunted and marsh property that can be hunted.

# PUBLIC USES ALLOWED ON THE CONSERVATION AREA

Please refer to the WLWCA rules and regulations (Title 76, Part III, 335) for permitted activities. In addition to lottery hunting and fishing, birdwatching and photography are very common activities on the Conservation Area. Also, contract trapping for alligators and alligator egg collection are allowed each year.



# WILDLIFE DIVISION -WILDLIFE MANAGEMENT ARFAS

# **WEST GULF COASTAL PLAIN**

# Alexander State Forest Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Alexander State Forest (ASF) Wildlife Management Area (WMA) is comprised of 7,955 acres owned by the Louisiana Department of Agriculture, Office of Forestry (LOF) and operated as a WMA by the Louisiana Department of Wildlife and Fisheries (LDWF). It is located in south central Rapides Parish about 10 miles south of Alexandria, off US 165, and 1 mile east of Woodworth. In 1963, LDWF entered into an agreement with the landowners to operate the area as a WMA. Indian Creek Lake covering approximately 2,600 acres was constructed in 1970.

#### **DESCRIPTION OF LANDSCAPE**

Topography of the area is gently rolling hills interlaced with several creeks and intermittent streams. Soils are typical of southern pine forests with relatively low fertility. The forest overstory is predominantly loblolly pine with scattered stands of longleaf and slash pines. Much of the timber is managed as pine plantations. However, creek drainages have been maintained in hardwoods. In addition, red oak, blackgum, sweetgum, hackberry, beech, water and willow oaks are widely scattered across the forest.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Due to the presence of the reservoir, education center/shooting range, and recreation area, ASF WMA hosts a large number of users not engaged in hunting activities. Most hunting on the area is for white-tailed deer. Waterfowl, squirrel, and rabbits are the next most popular game animals on ASF WMA. Fishing, camping, and shooting are major activities on the area year around. ASF WMA primary access is via US 165 or I 49. LA 613 runs through the northern end of the area between the two major highways. Additional access is available to the interior via improved and unimproved secondary roads.

An education center is owned and operated by the on a 44-acre site within the WMA. The center is used for a variety of educational programs. The shooting ranges are located on the grounds. A 100-yard rifle range, 50-yard pistol range, and a shotgun range are used in education programs and are also available to the public during specified times. Information on range hours and fees is available at (318) 484-2212.

Two boat ramps are located on Indian Creek Lake. Sport-fishing is the major activity on the lake. Water-skiing and swimming are also popular recreational uses. Camping facilities and launches are operated and maintained by the Office of Forestry. Trailer and tent accommodations are available with electricity, water, bath houses, and swimming areas. A fee is charged for the use of these facilities. For camping information, telephone the Indian Creek Recreation Area at (318) 487-5058.

#### PUBLIC USES ALLOWED AT THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, fishing, camping, and shooting are major activities on the area year around. Trapping for furbearers is allowed.

# Bayou Pierre Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Bayou Pierre Wildlife Management Area consists of 2,632 acres located in extreme northwest Red River and east-central Desoto parishes, 20 miles south of Shreveport. The WMA was established in 1992 when 1,173 acres were deeded to LDWF by the USDA Farmers Home Administration. The 875-acre LLCR tract (Desoto Parish portion) was acquired in 1999. In 2011, the 582-acre Steele Tract was acquired from the Nature Conservancy. The tracts making up Bayou Pierre WMA were cleared in the early 1900s for farm land. As they have been incorporated into the WMA, management has been geared towards restoring the natural bottomland habitat that existed prior to the land being cleared.

#### **DESCRIPTION OF LANDSCAPE**

Bayou Pierre WMA lies in the Red River Alluvial Valley and is bisected by Bayou Pierre. The area contains soil that drains poorly and is subject to periodic annual flooding. The terrain is essentially flat with only a 5-foot change in elevation across the entire area. There are drainages, wet weather ponds, sloughs, reforested areas, grasslands, and supplemental food plots that create habitat favorable to supporting a diversified wildlife community. Plant species present on the WMA include a variety of bottomland herbaceous plants and grasses, as well as a variety of oaks, ash, elm, and other tree species common to the Red River Alluvial Valley.

LDWF has developed wildlife habitat featuring four distinct types; a 160-acre moist soil waterfowl refuge, 800 acres in ridge and swale/reforested bottomland hardwoods, 200 plus acres of reforested hardwoods, and the remaining acreage being managed in planted dove fields and open grasslands. The wildlife habitat has benefited from several cooperative projects among the department and the National Fish and Wildlife Founda-

tion, Ducks Unlimited, American Energy Producers, and the USDA's Natural Resources Conservation Service.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Hunters represent the highest use of this WMA with the most sought after species of game being white-tailed deer, dove, and rabbits. Waterfowl hunting is limited to lottery hunts and is normally excellent during those lottery hunts. The WMA can be accessed from LA 1 via Yearwood Road to Lacoup Road which leads to the WMA. Further access is by Clinton Road off of Lacoup Road. For the portion of the WMA in Red River Parish and to the Desoto Parish portion, access is via Ivory Lane from Red Lick Road. Access to the interior of the WMA is by foot or by an ATV/UTV trail on the Desoto Parish side of the WMA. A primitive camping area is located near the intersection of Clinton and Lacoup roads.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting and trapping, other common activities include birdwatching, hiking, and sightseeing. Trapping for furbearers is allowed except in areas designated as waterfowl refuges.

# Ben Lily Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Ben Lily Wildlife Management Area is a recently acquired addition to the Wildlife Management Area System. This area was purchased in 2013 by LDWF from The Nature Conservancy. The property was named in honor of Benjamin Vernon "Ben" Lilly, a noted outdoorsman who spent some of his early years in Morehouse Parish and who, in the early 1900s, guided President Theodore Roosevelt on a hunting expedition in northeast Louisiana. This 247-acre area is located in north-central Morehouse Parish adjacent to Chemin-a-haut State Park with which it shares its northernmost

border. The remainder of the area is bordered by Bayou Bartholomew, which is statutorily designated as a Louisiana Natural and Scenic River.

#### DESCRIPTION OF LANDSCAPE

The property consists of 140 acres of hardwood reforested fallow fields, with the remaining 107 acres being a corridor of mature hardwood bordering Bayou Bartholomew. Prior to LDWF acquisition, the Nature Conservancy reforested the fallow fields with site specific hardwood species.

Dominant tree species are Sugarberry, Ash, Native pecan, Cherry bark oak, Water oak on the upper elevations, and Nuttall Oak and Bitter Pecan on the lower elevations. The understory consists of rattan, trumpet vine, and dewberry. In the reforested areas fescue is the predominate grass. Understory composition in these areas will change over time as trees mature and natural successional processes occur.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access to this area is through Chemin-a-haut State Park by vehicle. The adjacent state park provides amenities such as camping, playgrounds, pick nick areas, and hiking trails. In conjunction with the state park, LDWF is currently constructing a parking area and launch for canoe and kayak access into Bayou Bartholomew. Additionally, LDWF plans to provide a trail through the property for horseback riding, which will be a continuation of an existing horseback riding trail on the state park.

## PUBLIC USES ALLOWED ON THE WMA

Due to its size and juxtaposition to the state park and Bayou Bartholomew, the primary uses of the area are uses that are already provided on the state park, such as hiking, horseback riding, photography and sightseeing. Canoeing and kayaking in Bayou Bartholomew are also popular, and it is anticipated that this use will increase with the development of the parking and launch facility. Fishing is also available on Bayou Bartholomew. Primary species targeted include largemouth and Kentucky bass, bluegill and catfish.

# Bodcau Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Bodcau Wildlife Management Area is comprised of 33,776 acres owned by the U.S. Army Corps of Engineers (USACE). It is operated as a WMA through a license agreement between USACE and LDWF. It is located approximately 17 miles northeast of Bossier City in Bossier and Webster parishes and derives its name from the major bayou that bisects it from its northernmost point at the Arkansas-Louisiana state line to its southernmost tip nearly 30 miles to the south. USACE originally purchased the property and constructed a dam and flood reservoir with the primary purpose to control downstream flooding. Bodcau was established as a WMA in 1954 and is one of the oldest WMAs in the department's Wildlife Management Area System.

#### **DESCRIPTION OF LANDSCAPE**

The area is long and narrow with an average width of 1.5 miles. The area contains a wide range of wildlife habitat ranging from cypress swamps to upland pine and hardwood forests interspersed with grasslands and open fields. Many species of grasses and forbs that are typically found in states west of Louisiana can be found growing in the grassland areas. There are numerous seasonally flooded sloughs, beaver ponds, a 1,600-acre green-tree reservoir, and large areas of flatland, bottomland, hardwood forests. One unique feature of the area is that the bottomland forest rapidly merges with the upland forest on a series of ridges that extend into the bottomland area. Dominant tree species in the bottomland forests include bald cypress and water, overcup, willow and cow oaks. Shortleaf and loblolly

pine, white, red, and cherrybark oaks, sweetgum, and elm trees dominate upland forests. Understory species in the bottomland area include poison ivy, honeysuckle, rattan, buttonbush, and swamp privet. Upland understory species include blackberry, honeysuckle, poison ivy, beautyberry, and sawbriar.

Ivan Lake, a man-made reservoir located on Bodcau WMA provides thousands of hours of fishing and small boating recreation. Bodcau Bayou and its overflow can provide excellent bass and bream fishing in addition to crawfishing opportunities during certain years.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Hunters and fishermen represent the majority of the users, but due to the diversity of the WMA, good access, and close proximity to the Shreveport - Bossier City area, it also receives rather high use by people camping, sightseeing, hiking, birding, and horseback riding. White-tailed deer, squirrel, rabbit, waterfowl, dove, and turkey hunting opportunities are available on the area. The primary access to the area is by traveling north on LA 157 from I-20 at Haughton to the community of Bellevue and then following the signs. LA 157, LA 160, and LA 2 also cross the WMA, and there are a number of local roads that provide access to the interior. Additional access to the interior of the WMA is by seasonal use ATV/UTV trails as well as a few year-round ATV/ UTV trails that provide access to fishing areas. Camping areas consist of an improved camping area, Tom Merrill Recreation Area, which is operated by USACE and located on the south end of the WMA off of Bodcau Dam Road, as well as several primitive camping areas throughout the WMA. There are boat ramps available at several locations to access the bayou as well as on Ivan Lake, and there are three shooting ranges (200-yard rifle, 50-yard pistol, and shotgun) and an archery range available on the southern end of the WMA off of Bodcau Dam Road. Information on range hours is available at (318) 326-3225.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. Trapping for furbearers is allowed.

# Camp Beauregard Wildlife Management Area

### SIZE, LOCATION AND HISTORY

Camp Beauregard Wildlife Management Area was established in 1992 and is comprised of approximately 12,500 acres. It is owned by the Louisiana Army National Guard (LANG) and operated as a WMA by LDWF. It is located in northeast Rapides Parish with some acreage in southeast Grant Parish, approximately 8 miles north of Alexandria. The WMA's primary purpose is troop training; public use being secondary and allowed to the extent possible given current training needs.

#### **DESCRIPTION OF LANDSCAPE**

The terrain is characterized by gently rolling hills in the upland areas. Soil types are largely sandy loams in the hills with heavy clays in the larger drainages. The upland overstory is dominated by pine plantations. There are isolated areas with hardwood stands in the hills. Water oak, post oak, hickory, red oak and sweetgum are the most common tree species in creek bottom areas. The Flagon Creek bottom is a frequently flooded hardwood area of about 800 acres. It is a typical Louisiana bottomland forest with cypress, overcup oak and bitter pecan as the dominant overstory species. The understory development in the upland area varies considerably depending on the degree of overstory closure. Some plantations that have not been recently thinned have little if any understory. Those areas with good understory development support French mulberry, blackberry, greenbrier, yaupon, trumpet creeper, rattan, and other browse plants. The Flagon Creek bottom has swamp privet, water elm, mayhaw and swamp snowbell as the more common understory plants.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Hunting is by far the most popular recreational activity on Camp Beauregard. White-tailed deer and squirrel generate the most hunter interest. Other available activities include fishing, retriever training, hiking, birdwatching, and horseback riding. Camping is permitted on a limited basis in the LANG recreational area. Access is from US 165 and LA 116. There are five self-clearing permit stations located at primary entrance points. All users are required to obtain a special Camp Beauregard WMA permit available free of charge from the LDWF Pineville office and the LANG Range Central office. Recreational users should be aware that the area serves as a military training ground and is subject to be closed to public access during training exercises. Closed areas are indicated on maps posted at the self clearing stations.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, common uses are fishing, retriever training, hiking, birdwatching, and horseback riding. Camping is permitted on a limited basis in the LANG recreational area. Trapping for furbearers is allowed.

# Clear Creek Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Clear Creek Wildlife Management Area consists of approximately 54,000 acres located in southwestern Vernon Parish, 20 miles west of Leesville. This area is owned by Hancock Forest Capital Partners and provides LDWF with a free lease allowing the public to utilize the area for recreational opportunities while the property owner maintains the forest management rights. In return for the free lease, LDWF provides in-kind service to Hancock Forest Capital, such as road grading and mowing, in order to offset loss of revenue to the landowner.

Clear Creek WMA was first leased from Lutcher-Moore Lumber Company in the mid 1960s and was known as Lutcher-Moore WMA. Boise Cascade bought the property from Lutcher-Moore and renamed the area Boise Vernon. In 2005, Meriwether Louisiana Land and Timber, LLC, purchased the acreage from Boise Cascade and renamed the area Clear Creek WMA.

#### **DESCRIPTION OF LANDSCAPE**

Major topography consists of gently sloping hills interspersed with small creek bottoms with occasional hardwood flats. Clear Creek WMA is managed as a mono-culture loblolly/slash pine plantation on a 30-year rotation. The overstory is composed of longleaf, slash, loblolly and shortleaf pine along with red oak, blackjack oak, and post oak. Creek bottoms have an overstory of water oak, willow oak, white oak, beech, sweetgum, and magnolia. The understory plant growth on sloping hills is sparse and consists primarily of wax myrtle, yaupon holly, dogwood, and huckleberry. The creek bottom understory varies from sparse to dense relative to crown canopy. Species found are red bay, white bay, red maple, blackgum, gallberry, and sweet leaf. In addition, honeysuckle, greenbriar, blackberry, dewberry, rattan, and huckleberry can be found on this habitat type. The most sought after game species are white-tailed deer, turkey, squirrel, rabbit, hog, and woodcock. As Clear Creek WMA is located a few miles east of the Sabine River, bald eagles, Mississippi and swallow-tailed kites, as well as various raptor species can be viewed traversing the area on occassion.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Deer hunters comprise the largest user group on this WMA. Major highways crossing through the area are LA 464, LA 8 and LA 111. There are six permit stations located throughout the area where the public can access the required self clearing permits to enter the WMA. One primitive camping area is available to the public free of charge located off LA 464. Other full service

campgrounds can be found at nearby Anacoco Lake and Vernon Lake.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities and game season dates. In addition to hunting and trapping, other common activities on the WMA include birdwatching, sightseeing, wildflower identification, and hiking.

# Elbow Slough Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Elbow Slough Wildlife Management Area is a 160-acre tract located in southeastern Rapides Parish near the intersection of LA 1 and LA 3170. The WMA was established in 1989 when the property was deeded to LDWF by the USDA Farmers Home Administration. The land that makes up the WMA was being used as cropland prior to being a WMA. After becoming a WMA, approximately 100 acres were planted to native hardwood species in the early 1990s. A 40-acre impoundment was constructed and is managed to provide seasonal shallow water habitat to benefit migratory waterfowl, shorebirds, and wading birds. The remaining acreage is in natural water and planted fields.

#### **DESCRIPTION OF LANDSCAPE**

Elbow Slough WMA lies in the Red River Alluvial Valley. Terrain is flat with heavy clay soils that are poorly drained. There are both natural and managed wetland areas, reforested areas, grasslands, and supplemental food plots that create habitat favorable to supporting a diversified wildlife community. Plant species present on the WMA include a variety of bottomland herbaceous plants and grasses, as well as a variety of oaks and other tree species common to the Red River Alluvial Valley.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Hunters represent the highest use of this WMA even though hunting opportunities are limited due to the size of the tract. Despite the small size, success is usually good for dove and rabbits. Hunters should take note that the use of non-toxic shot is required for all hunting. Additionally, birdwatchers use the area, as it is known for attracting numerous waterfowl during the winter, as well as shore birds and wading birds. The WMA can be accessed from LA 3170 just west of LA 1. The entrance to the majority of the area and the check-in location is on the southern side of LA 3170 just west of LA 1. Access to the interior of the WMA is by foot.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, birdwatching is another common activity on the WMA.

# Fort Polk Vernon Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Fort Polk-Vernon Wildlife Management Area is located in south central Vernon Parish, 10 miles southeast of Leesville. The WMA consists of 105,545 acres jointly owned by the U.S. Army (65,000 acres) and the U.S. Forest Service (40,545 acres). This area has been part of the LDWF Wildlife Management Area System since the early 1960s and until recently was named Fort Polk WMA. The name change was made to better reflect the co-ownership of the property. The WMA is under a Memorandum of Understanding between LDWF and the landowners, giving LDWF authorization to operate it as a WMA.

#### **DESCRIPTION OF LANDSCAPE**

Fort Polk-Vernon WMA has several forest types. The acreage owned by the U.S. Forest Service has mature

longleaf pines undulating over rolling hills with bottomland hardwoods draining the upland sandy soils. The acreage owned by the U.S. Army is consistent to an uneven aged pine/hardwood component with Savannas present on the western section. Soils are generally low in fertility with acidic characteristics commonly found in upland pine habitats; creek bottom areas have more fertile soils.

Seventy percent of the upland areas is dominated by longleaf pine. Other species present are blackjack oak, sandjack oak, red oak, and post oak. The understory is sparse, composed of wax myrtle, dogwood, huckleberry, yaupon holly, French mulberry, and seedlings of overstory regeneration.

Creek bottom habitat consists of willow oak, water oak, cow oak, beech, sweetgum, blackgum, and magnolia. The understory contains red bay, white bay, sweetleaf, ironwood, wild azalea, dogwood, deciduous holly, and arrowwood. The most sought after game species are white-tailed deer, turkey, squirrel, rabbit, dove, woodcock, and quail.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Deer hunters comprise the largest user group on the WMA although turkey hunting is also very popular.

Major highways crossing through the area are LA 10, LA 399, LA 463, LA 469, LA 184 and LA 467. There are no campgrounds located on this WMA, however, camping is allowed on the U.S. Forest Service property south of the WMA (Lookout Road).

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities and game season dates. All visitors on Fort Polk-Vernon WMA must check the map at one of several check stations for "open areas" before entering the property. Some or all of the acreage may be closed at one time or another due to military training. The required self clearing permits are also available from these stations. Annual military permits are also required in addition to the self clearing permit. See hunting pamphlet for contact information.

In addition to hunting and trapping, other common activities on the WMA include fishing, sightseeing, hiking, wildflower identification, and birdwatching. Fort Polk-Vernon WMA is a popular birding area with numerous species of non-game birds present, including the endangered red-cockaded woodpecker.

# Jackson Bienville Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Jackson Bienville Wildlife Management Area is comprised of 25,089 acres owned by the Weyerhaeuser Company and is operated as a WMA through a lease agreement between Weyerhaeuser and LDWF. It is located in Bienville, Jackson, and Lincoln parishes, 12 miles south of Ruston in North Central Louisiana. Jackson Bienville WMA, originally established in 1951, is one of the oldest WMAs in the department's Wildlife Management Area System. Over time, the area has seen changes in ownership, size, and style of timber management. It was one of the original places in northern Louisiana where turkeys were stocked, did well, and provided to be trapped relocated, and established in many other areas of northern Louisiana. It was also the first WMA to have a liberal either-sex deer season which provided research data that led to the expansion of either-sex hunting opportunities throughout the state.

#### **DESCRIPTION OF LANDSCAPE**

The terrain on Jackson Bienville WMA is primarily gently rolling hills bordering Dugdemona River and five intermittent streams. Approximately 10 to 20 percent of the area can be considered bottomland. Weyerhaeuser intensively manages the area for timber. Habitat is highly diverse due to the varying timber harvest schedule, the interspersion of the hardwood areas, and over 40 miles of utility rights-of-way. Adding to the diversity is the substantial acreage Weyerhaeuser has committed to providing nesting and feeding habitat for numerous colonies of red-cockaded woodpeckers, a federally listed endangered species. Major habitat improvements are derived from a prescribed burning program conducted by Weverhaeuser associated with its management for red-cockaded woodpeckers. Additional supplemental habitat management is conducted by LDWF through vegetation manipulation, fallow discing, and some planting on the right-of-way and some of the take out rows in pine plantations.



Forest cover is predominantly pine, except in the bottomland regions where water, willow, overcup, and cow oak, sweet and black gum, beech, and various other species of hardwoods dominate. Understory vegetation, which is dense, consists of a variety of shrubs, vines, and annuals. Species comprising the understory area are French mulberry, dogwood, honeysuckle, grape, muscadine, maple, sweetleaf, wax myrtle, blue beech, beggarweed, and greenbriar.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Hunters represent the majority of users. White-tailed deer, squirrel, rabbit, waterfowl, dove, and turkey hunting opportunities are available on the area. Also unique to this area is that it is one of the few WMAs that still contains a significant population of bobwhite quail. Numerous access routes are available for entering the area with the major access being US 167 and LA 147. There is an extensive system of gravel roads available for use by the public. Further access to portions of the interior of the WMA is available via seasonally open designated ATV/UTV trails.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, users enjoy activities such as hiking, sightseeing, horseback riding, and birding. Trapping for furbearers is allowed.

# Loggy Bayou Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Loggy Bayou Wildlife Management Area consists of 6,381 acres and is located in the southern most part of Bossier Parish. The WMA is owned by LDWF, the U.S. Army Corps of Engineers, and the Louisiana State Land Office. The WMA was originally established in 1973 and has been added to over time. The original land

purchased consisted of approximately half over-grazed cattle pasture and half severely over-grazed, poor quality, bottomland forest. Wildlife Division personnel recognized the need for improving the forest component of the area. In response to the need, several hundred acres of agricultural fields were planted in the early 1970s and 1980s in preferred oak species. Additional acreage has been acquired and is being improved via the U.S. Army Corps of Engineers' mitigation project related to the Red River Waterway Project. Other recent improvements to access have been done in conjunction with natural gas development activities on the WMA.

#### **DESCRIPTION OF LANDSCAPE**

Loggy Bayou WMA lies between Loggy and Red Chute bayous and Lake Bistineau in the Red River Alluvial Valley of northwestern Louisiana. The area is one of the few remaining bottomland, hardwood areas remaining in northwest Louisiana. The terrain is flat with approximately 90 percent of the area being subject to annual flooding from backwaters of the Red River.

Dominant tree species are sugarberry, ash, elm, honey locust, native pecan, overcup oak, water oak, and Nuttall oak. The latter four species are not abundant, but are sparsely scattered throughout the forest area. Several hundred acres of the open fields have been planted in native pecan, Nuttall oak, water oak, and cherrybark oak seedlings. Underplanting of the same seedlings has been done in forested areas. The understory consists of red haws, rattan, trumpet vine, and dewberry. In the field areas, poison ivy, vetch, and fescue predominate along with hardwood and honey locust sprouts.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Hunters and fishermen are the primary users. Whitetailed deer, squirrel, rabbits, waterfowl, and raccoon hunting opportunities are available on the area. Hunting for eastern wild turkey is limited to lottery only. Sport and commercial fishing is permitted on the area, with fishermen concentrating their efforts on catfish, gar, buffalo, and carp in Loggy and Red Chute bayous. Bass and several species of bream can also be found in the bayous. Access to the southern portion is via US 71 and via Poole Road. Access to the northern end of the WMA is via LA 154 and to a walk in area via Houghton Road. There are a number of seasonally open ATV/UTV trails on the WMA as well as one year-round trail. There is a primitive camping area on Poole Road. An improved boat ramp is located on the southern portion of the area on Loggy Bayou at the end of Poole Road.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting and fishing, other common activities include birdwatching, hiking, and sightseeing. Trapping for furbearers is allowed.

# Peason Ridge Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Peason Ridge Wildlife Management Area is located 18 miles north of Leesville in the corners of Sabine, Natchitoches and Vernon parishes. The WMA consists of 51,004 acres owned by the U.S. Army and is an active military installation. Peason Ridge WMA has been a part of the LDWF Wildlife Management Area System since the early 1960s. The WMA is managed under a Memorandum of Understanding between LDWF and the U.S. Army giving the LDWF authorization to operate the area as a WMA.

#### DESCRIPTION OF LANDSCAPE

The terrain consists of gentle to high, rolling hills interspersed with creeks and greenheads. Longleaf pine is dominant on some hills, while a mixture of loblolly pine, longleaf pine, red oak, blackjack oak, and post oak can be found on other ridge habitats. Some portions sup-

port mixed pine stands of longleaf, loblolly, and shortleaf pines. Groves of sandjack oak can be found in the middle of Peason Ridge WMA along with large open grassland ranges having little or no forest cover. Creek bottoms and greenheads support an overstory of water oak, beech, magnolia, sweetgum, red maple and ash. Understory species include dogwood, buttonbush, French mulberry, wild azalea, witch hazel, hawthorn, red bay, sweet bay, blackgum, arrowwood, and overstory seedlings.

The most sought after game species are white-tailed deer, turkey, squirrel, rabbit, dove, woodcock and quail.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Deer hunters comprise the largest user group with turkey hunting also being popular on Peason Ridge WMA. The WMA also has the state's only fall lottery turkey hunt.

Major highways accessing the area are LA 117, LA 118, and a parish road off of US 171. There are no campgrounds located on this WMA, however, camping is allowed on the U.S. Forest Service property within the Red Dirt Preserve Area north of the WMA off LA 117.



#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities and game season dates. All visitors on Peason Ridge WMA must check the map at one of several check stations for "open areas" before entering the property. Some or all of the area may be closed at one time or another due to military training. The required self clearing permits are also available from these stations. Annual military permits are also required in addition to the self clearing permit. See hunting pamphlet for contact information.

# Sabine Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Sabine Wildlife Management Area is comprised of approximately 7,554 acres. It is operated as a WMA by LDWF through lease agreements with the various landowners. The WMA is located in central Sabine Parish approximately 5 miles south of Zwolle. Originally established in 1953, Sabine WMA is one of the oldest WMAs in the LDWF Wildlife Management Area System. Over the years it has changed ownership several times. In conjunction with changes of ownership, the size of the WMA has varied.

#### **DESCRIPTION OF LANDSCAPE**

The terrain varies from rolling hills to creek bottoms. Topsoils are primarily sandy loams over red clay subsoils. Soil fertility is low to moderate. The area is managed by the landowners for the commercial production of pine timber and pulp. As such, most of the property is in pine plantations. Although the primary overstory species is loblolly pine, there is also a scattering of red oak, post oak, white oak, hickory and sweetgum. Understory species include yaupon, French mulberry, hawthorn, sassafras, black cherry, wax myrtle, huckleberry, and dogwood. The creek bottoms have an overstory comprised of beech, willow oak, water oak, red maple, black gum, magnolia, southern red oak and sweetgum.

Understory species include ironwood, dogwood, wild azalea, deciduous holly, and overstory regeneration.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Hunting is by far the most popular recreational use on the WMA. The biggest interest is in hunting white-tailed deer. In addition to the regular deer hunts, a special lottery for physically-challenged participants is conducted annually. Turkey hunting is restricted to lottery only. Squirrel, rabbit, and dove are the most commonly pursued small game species. Raccoon, opossum, armadillos, along with numerous other species of small mammals can also be found on Sabine WMA. Birders can observe a variety of neotropical migrants, raptors, and local nesting birds at various times throughout the year. LA 6 and US 171 are the major roads providing access to Sabine. Timber company roads provide additional access to the interior of the WMA, as well as a limited number of seasonally open ATV trails. Most of the roads and all of the ATV trails are closed to motorized vehicles March through mid August. Bicycle, horseback, and walking access are allowed during this period. A primitive camping area is available in the northeast corner of the WMA.

## PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, popular non-consumptive uses include horseback riding, sightseeing, and birdwatching. Trapping for furbearers is allowed.

# Sabine Island Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Sabine Island Wildlife Management Area is located in west-central Calcasieu Parish between Vinton and Starks along the Sabine River state-line with Texas. The WMA consists of two islands with a total of 8,695 acres jointly owned by the Office of State Lands (6,775 acres),

Calcasieu Parish School Board (1,280 acres), and Rayonier Inc. (640 acres). The area is leased to LDWF free of charge for the conservation and management of all wildlife resources within the WMA. Sabine Island WMA has been a part of the LDWF Wildlife Management Area System since 1968; providing an abundance of recreational activities for the public to enjoy.

#### **DESCRIPTION OF LANDSCAPE**

Sabine Island WMA is comprised of two islands of low terrain within the Sabine River System and subject to annual flooding. The slough/ridge habitat classification yields to high bluffs towards the northern portion of Big Island. The forest cover is composed of two major timber types: cypress-tupelo comprising approximately 85 percent with the remainder categorized as pine/hardwood. The pine/hardwood component consist of white oak, cow oak, water oak, overcup oak, willow oak and sweetgum mixed with loblolly pine. The major understory plants found are green briar, rattan, arrowwood, honeysuckle, blackberry, dewberry, and seedlings from overstory regeneration.

The most sought after game species are white-tailed deer, squirrel and waterfowl. The area offers excellent fishing year round for both recreational as well as commercial users. Due to its location and abundant waterways, much recreation is derived from water skiing and boating. Avid bird watchers may be treated to soaring bald eagles, golden eagles, brown pelicans, Mississippi kites, swallowed-tailed kites, as well as various raptor species while boating along the many bayous associated with Sabine Island WMA.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Squirrel hunters comprise the largest hunter user group on the area. Fishing and boating are very popular for the non-hunting segment and enjoyed year round. Access to Sabine Island WMA is by boat only with the majority of people launching at Niblett Bluff Park off LA 109 at the end of Niblett Bluff Road. The required self

clearing permits can be obtained from the north launch within the park. Camping is not allowed on the WMA, but Niblett Bluff Park offers a full service campground for RVs and tents as well as cabin rentals.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities and game season dates. In addition to hunting, fishing, and trapping, other common recreational activities include birdwatching, wildlife viewing, boating, skiing and canoeing.

# Soda Lake Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Soda Lake Wildlife Management Area is comprised of 2,500 acres owned by the Caddo Parish Levee District and the U.S. Army Corps of Engineers and leased to LDWF. It is located in Caddo Parish about 15 miles north of Shreveport; approximately 1 mile east of LA 1. The WMA was established in 1969 with 1,300 acres leased to the state by the Caddo Levee Commission. In 2002, an additional 1,200 acres was added after having been acquired by the U.S. Army Corps of Engineers as mitigation lands related to the Red River Waterway Project.

#### **DESCRIPTION OF LANDSCAPE**

Soda Lake WMA lies in the Red River Alluvial Valley along the banks of Twelve Mile Bayou. The entire area is located in an area that historically was a seasonal lake that flooded during late winter and spring. A similar water regime continues today with only the bluffs located on the western edge of the area remaining above flood level. The lower elevation habitat is broken woodland consisting of willow, cottonwood, ash, hackberry, and overcup oak. Due to annual flooding, the understory is very sparse containing rattan, peppervine, dewberry,

and sawbriars. Open areas support wild millet, smartweed, and several species of grasses.

The rugged escarpment of Twelve Mile Bayou located on the western edge of the area supports a diverse, old growth forest. Approximately 35 acres in size, a unique, natural, upland plant community of shortleaf pine, oak, and hickory can be found there. Dominant species include shortleaf pine, sweetgum, white, post, cherrybark, shumard, and cow oaks. The dominant trees are estimated to be 100 to 130 years old. Two state-rare plants, American alumroot (*Heuchra americana*) and lowland brittle fern (*Cystopteris protrusa Bernh*) have been found growing on the north and east facing bluffs.

LDWF manages the area primarily as a refuge for migrant waterfowl and songbirds. However, Soda Lake WMA also provides year-round habitat for a diverse population of resident songbirds, game and non-game mammals and insects. A cooperative agreement among LDWF, Ducks Unlimited and the Caddo Levee District helps to maintain a series of moist soil impoundments that provide excellent waterfowl and birdwatching opportunities. In addition, timber stand improvements are being made on the portion of the WMA owned by the U.S. Army Corps of Engineers.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Hunters and fishermen are the primary users. White-tailed deer, squirrel, and rabbit hunting opportunities are available on the area. Access to the southern/west-ern portion is via LA 173. Access to the northern/east-ern portion of the WMA is via LA 169. At present, access to the majority of the interior of the WMA is by walk-in access only. There are plans in place and some progress made towards development of an ATV/UTV trail and a boat launch.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting and fishing,

other common activities on the WMA include birdwatching, hiking, and sightseeing. Trapping for furbearers is allowed.

# Walnut Hill Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Walnut Hill Wildlife Management Area is a 595-acre tract of land acquired from the Farmers Home Administration. The property is located in Vernon Parish approximately 2 miles east of Slagle, on LA 121. The WMA incorporates several small tracts of land north and south of LA 121. Walnut Hill WMA has been part of the LDWF Wildlife Management Area System since the mid 1990s. Historically, the land was used primarily for dairy cattle farming.

#### DESCRIPTION OF LANDSCAPE

Walnut Hill WMA consists of a thick undergrowth of wax myrtle and sweetgum with regenerated hardwood and pine trees.

The area offers limited rabbit, deer and quail hunting opportunities due to the small acreage and thick habitat conditions presently found on the area.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities and game season dates. Deer hunting on the area is archery only; small game is shotgun only.

# West Bay Wildlife Management Area

# SIZE, LOCATION AND HISTORY

West Bay Wildlife Management Area consists of approximately 58,000 acres located in north central Allen Parish near the town of Elizabeth. The area is jointly owned by Hancock (35,000 acres), Roy O. Martin Lumber Company (16,000 acres), and Forest Investments (7,000 acres). Forest Capital Partners, a subsidiary of Madison Dearborn, is the entity that oversees the timber management and production for Meriwether L.L.T. All three landowners provide the department with free lease agreements allowing the public to utilize the area for recreational opportunities while property owners maintain forest management rights. In return for the free leases, LDWF provides in-kind service in the manner of road grading, mowing, and nuisance wildlife control in order to offset loss of revenue to the landowners.

West Bay WMA has been in the LDWF Wildlife Management Area System since 1948 when the first lease was signed with La-Boyka Company for 18,000 acres, creating one of the oldest WMAs in the state. The landowner name was changed several times over the years and was most recently known as Boise Cascade, with growth increasing to 35,000 acres. In the early 1960s, the LDWF leased 20,000 acres from Kirby Lumber Company, which was later purchased by Louisiana Pacific. During the same time period, 3,000 acres were added belonging to J.A. Bell Lumber, later known as Quatre Parish Company. In the late 1980s, additional property was leased from Boise Cascade and Louisiana Pacific to bring the total size of West Bay WMA to 62,000 acres. Acreage adjustments through land sales have brought the WMA to its current size of 58,000 acres.

#### **DESCRIPTION OF LANDSCAPE**

West Bay WMA consists of a mono-culture loblolly/slash pine plantation with creek bottoms transecting through-

out the area. Soils are generally low in fertility with acidic characteristics commonly found in upland pine forests. However, creek bottom areas are more fertile with a more neutral soil type. Timber management is on a 30-year rotation, producing pulpwood for local mills.

The forest cover is composed of pine plantations with scattered hardwoods along streambeds with the topography being flat in nature. Pine/hardwood stands can be found on the edge of upland sloughs called baygalls. The most common hardwood species are water, white, red willow, cow oak, blackgum, beech, and hickory. Other common species found in the overstory and midstory include dogwood, redbay, sweetleaf and sweetgum. Understory composition varies with habitat type; baygall areas include yaupon, rattan, arrowwood, greenbriar and deciduous holly. The pine plantation understory consists primarily of blackberry, dewberry, huckleberry, greenbriar, and numerous annual legumes. The most sought after game species are white-tailed deer, turkey, squirrel, rabbit, hog, and doves.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Deer hunters comprise the largest user group followed by small game enthusiasts. Major highways accessing the area are LA 10, LA 112 and LA 26. There are eight permit stations located throughout the WMA where the public can access the required self clearing permits. Three primitive camping areas are available for the public, free of charge, located on LA 112, Tom Jeff Road and South River Road; see WMA map for specific locations. A full service campground can be found in the town of Elizabeth, just north of the area.

## PUBLIC USES ALLOWED ON THE WMA

Please refer to the rules and regulations for permitted activities and game season dates. In addition to hunting and trapping, other common activities on the WMA include scouting, hiking, birdwatching, wildflower identification, sightseeing, and berry picking.

# Union Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Union Wildlife Management Area is comprised of 10,978 acres owned by the Plum Creek Timber Company and leased to LDWF. It is located in northern Union Parish, approximately 4 miles west of the town of Marion. The WMA was established in 1949 and was the original WMA in LDWF's Wildlife Management Area System.

#### **DESCRIPTION OF LANDSCAPE**

Topography of the area is primarily rolling hills interlaced with several creeks and intermittent streams. Major creeks are Big Cane, Tick, and Meridian. Elevations range from 110 to 240 feet above mean sea level. The forest cover is dominated by loblolly pine mixed, in some stands, with southern red oak, white oak, hickory, post oak, sweetgum, shortleaf pine, elm, and blackgum. Cherrybark oak, Arkansas oak, cow oak, and red maple are present. Beech and water oak occur, especially along the streams.

The majority of the area is managed for the commercial production of Loblolly pine timber. Crown closure varies with the age of managed pine timber stands, with much of the area having a brushy understory. Common woody understory plants include American beautyberry, Japanese honeysuckle, yellow jessamine, greenbrier, sumac, American holly, flowering dogwood, hawthorn, persimmon, grape, arrowwood, huckleberry, salt bush, black cherry, American elder, blackberry, and poison ivy.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Hunters are the primary users. White-tailed deer, squirrel, rabbit, and dove hunting opportunities are available on the area. Turkey hunting is also available through the limited lottery hunts. Access to the WMA is by LA 549 and LA 551, plus Concord Road. Additional access to the interior of the WMA is by several parish and company roads and by seasonal use ATV/UTV trails. Primitive camping is located on Post Mill Road.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, other common activities on the WMA include horseback riding, hiking, and sightseeing. Trapping for furbearers is allowed.

# **EASTERN GULF COASTAL PLAIN**

# Hutchinson Creek Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Hutchinson Creek Wildlife Management Area is 129 acres and is located in St. Helena Parish approximately 4 miles northeast of the city of Greensburg. The WMA is accessed from Jaeger Road, off of LA 441, and approximately 3 miles north of LA 10. Travel approximately 1 mile down Jaeger Road and take a left at the WMA sign onto a dirt road, traveling another 1/3 mile to the WMA entrance. Hutchinson Creek WMA was transferred to LDWF in 1993 from the Farmers Home Administration.

#### **DESCRIPTION OF LANDSCAPE**

Hutchinson Creek WMA is bordered on the north by Hutchinson Creek. South of the creek is approximately 70 acres of oak/gum/pine forest. Much of the remaining acreage is naturally regenerated pastureland, consisting of loblolly pine and mixed pine/hardwood. A narrow 8-acre strip along the eastern boundary of the WMA was reforested in longleaf pine by LDWF soon after acquisition. Game species found on this WMA include white-tailed deer, wild turkey, squirrel, rabbit, mourning dove, and woodcock. Numerous additional species of wildlife, including a variety of birds and herpetofauna, utilize this area as well.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Squirrel and archery deer hunters are the largest user groups on the WMA, followed by turkey and rabbit hunters. The check station kiosk where the public can acquire the required self clearing permits to enter the WMA is located at the WMA entrance.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to the activities listed above, hiking, sightseeing, and birdwatching are other outdoor recreational activities common on Hutchinson Creek WMA.

# Joyce Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Joyce Wildlife Management Area is a 27,487-acre tract located in southern Tangipahoa Parish south of Ponchatoula. The 12,809 acres that originally comprised the WMA was donated by the Joyce Foundation in 1982. In 1994, an additional 2,250 acres was donated to LDWF by the Guste Heirs. The 8,364-acre Salmen/Octavia Tract was acquired in 2008, and the 2,729-acre Dendinger Tract was acquired in 2010. An additional 851 acres and 484 acres are leased from the Joyce Foundation and the Tangipahoa Parish School Board, respectively.

#### **DESCRIPTION OF LANDSCAPE**

This entire area is a wetland within the Pontchartrain Basin and consists primarily of cypress-tupelo swamp. A large portion of the area is a dense shrub-marsh community with red maple, wax-myrtle, red bay, and younger cypress-tupelo. A 500-acre fresh marsh of primarily maiden-cane is located on the northern portion of the property. Recently, a Limited Access Area (LAA) was established in the northwestern corner of Joyce WMA. The LAA prohibits the use of internal combustion engines year-round (see WMA map for specific location).

The most sought game animals on Joyce WMA include white-tailed deer, waterfowl, rabbit, and squirrel. Freshwater fish, including largemouth bass, sunfish, and catfish are also pursued on the area. Alligators and a variety of other herpetofauna are common on this WMA. Bald eagles and osprey nest in and around the WMA. Numerous other species of birds, including neotropical migrants, utilize this coastal forest during fall and spring migrations. Resident waterfowl, including wood ducks, mottled ducks, hooded mergansers, and black-bellied whistling ducks, are found on the area year round. Over 50 wood duck nesting boxes are maintained and monitored on the area.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Deer hunters comprise the largest user group on this WMA. Access into the interior of the property is limited. There are no roads that lead into the swamp. Common means of access are several abandoned logging canals that enter the area from the west off of US 51. These old logging runs are narrow, and travel is limited to pirogues and canoes during moderate-high water periods. Access by outboard motor is limited to the upper reaches of Middle Bayou and Black Bayou, as well as the Tangipahoa River and Bedico Creek. There is a public boat launch on North Pass at US 51. Other access points include Lee's Landing and Traino Landing, south of LA 22. Check station kiosks where the public can acquire the required self clearing permits to enter the area are located at major points of entry to the WMA.

An elevated boardwalk "Swamp Walk" constructed in 1990 provides WMA visitors with the opportunity to view the swamp interior and observe the associated wildlife and vegetation.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, trapping, and fishing, other common activities on the WMA include sightseeing, boating, birdwatching, and frogging.

Trapping for alligators and nutria is allowed each year. Please note that Joyce WMA is a site along the American Wetlands Birding Trail.

# Lake Ramsey Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Lake Ramsey Wildlife Management Area is 796 acres and is located in St. Tammany Parish, approximately 6 miles northwest of Covington. Lake Ramsey WMA is most often accessed from Lake Ramsey Road off of LA 25, but can also be accessed from US 190 via Penn Mill Road to Horse Branch Road. Recognizing the threatened status of high-quality longleaf pine savannahs and the many unique native species the habitat supports, LDWF acquired this WMA in 1992. Since then, The Nature Conservancy has acquired additional adjacent lands that have enlarged the area now under conservation management.

# **DESCRIPTION OF LANDSCAPE**

The WMA consists mainly of longleaf pine savannah habitat. Associated features on the WMA include bayhead forest, small river floodplain forest, and an

upland sandy stream (Tchefuncte River). The longleaf pine savannah is frequently burned to perpetuate the wide variety of ground cover plant species that occur in this habitat. At least 18 rare plant species are known to occur on this WMA, making it one of the most significant savannahs remaining in eastern Louisiana. This unique open savannah has evolved historically through the regular occurrence of fire. Prescribed fires will remain a critical and necessary management tool for the continued maintenance of this rare habitat. Game species found on this WMA include white-tailed deer, wild turkey, squirrel, rabbit, mourning dove, and woodcock. Numerous additional species of wildlife, including Henslow's sparrow and a variety of herpetofauna, utilize this area as well. The LNHP and WMA/ Forestry Programs have initiated restoration of longleaf pine through seedling planting efforts and subsequent loblolly pine removal on the WMA.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Deer (archery) and small game hunters are the largest user groups on this WMA. Additional activities include trapping, hiking, and birdwatching. The check station kiosk where the public can acquire the required self clearing permits to enter the area is located at the southwest corner of the intersection of Lake Ramsey Road and



Horse Branch Road. The parking area for the north tract is accessed from the north side of Lake Ramsey Road just before the entrance to Lake Ramsey Estates (Note: Lake Ramsey Estates is a private subdivision). Parking on the south tract is located on the west side of Horse Branch Road south of the "S" curve. Adjacent to the south tract of the WMA off of Horse Branch Road, a Nature Trail originates on The Nature Conservancy property and extends onto the WMA.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to the uses listed above, sightseeing, wildlife viewing, and photography are other outdoor recreational activities common on this WMA.

# Manchac Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Manchac Wildlife Management Area is a 8,328-acre tract, located in the uppermost portion of St. John the Baptist Parish, south of Pass Manchac. The WMA is approximately 17 miles North of Laplace, and 15 miles south of Hammond. It was acquired by LDWF from E.G. Schlieder in 1975.

#### DESCRIPTION OF LANDSCAPE

The topography is characterized by flat, low marshland subject to flooding, especially with easterly winds. Major vegetation in the past was originally bald cypress, but nearly all of this has been logged from the area leaving an open fresh/intermediate marsh. Predominant vegetation includes bulltongue, smartweed, wiregrass, leafy threesquare, and cattail. Common submerged aquatic vegetation (SAV) includes southern naiad, sago pondweed, fanwort, and coontail. A strip of cypress/tupelo is present along the Lake Pontchartrain

shoreline. The canopy is generally open and the understory consists of black willow, red maple, palmetto, baccharis and assorted grasses. There is a large, shallow pond known as "the prairie" near the Lake Pontchartrain shoreline. This 700-acre pond is heavily utilized by waterfowl hunters. Pirogues and mudboats are the major means of transportation in the prairie. However, a Limited Access Area (LAA) has been established on a portion of the prairie and prohibits the use of internal combustion engines from September through January (see WMA map for specific location).

The most sought after game on this WMA are waterfowl. Waterfowl commonly harvested on the WMA include gadwall, teal, wigeon, scaup, mottled duck, mallard, and shoveler. Other species hunted include coot, rail, gallinule, snipe, rabbit, and squirrel. Freshwater fish, including largemouth bass, sunfish, and crappie are also pursued on the area. Alligators and a variety of other herpetofauna are also common. Both bald eagles and ospreys are often sighted on the area. Numerous species of birds, including neotropical migrants, utilize this area during fall and spring migrations. Resident waterfowl, including wood ducks, mottled ducks, hooded mergansers, and black-bellied whistling ducks, are found on the WMA year round. Wood duck nesting boxes have been located at various locations to help offset the lack of mature cavity trees on the WMA.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Waterfowl hunters comprise the largest user group on this WMA. Access to the interior of the area is presently limited to various waterways, including Galva Canal, Cecil's Canal, Red Louie Canal, and Schlieder's Ditch. The WMA can also be accessed on Pass Manchac and the Lake Pontchartrain shoreline. The WMA headquarters are located on the Galva Canal. The two check station kiosks where the public can acquire the self-clearing permit required to enter the area are located off of Pass Manchac at Schlieder's Ditch and on Galva Canal at the WMA headquarters.

#### PUBLIC USES ALLOWED AT THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, trapping, and fishing, other common activities on the WMA include boating, birdwatching, and sightseeing. Trapping for alligators and nutria is allowed each year.

# Maurepas Swamp Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Maurepas Swamp Wildlife Management Area is a 103,374-acre WMA, located approximately 25 miles west of New Orleans and along the south shore of Lake Maurepas west to near Sorrento. In the summer of 2001, two tracts totaling some 61,633 acres were donated to LDWF by the Richard King Mellon Foundation. The 8,179-acre Martin Tract was acquired in 2007. In 2008, the 2,241-acre Boyce Tract was acquired. The 1,400 plus-acre Rogers Tract was purchased by the Conservation Fund in 2007 and leased to LDWF until it was acquired in 2012. In the fall of 2011, a partnership with The Fund added 29,630 acres of land to the WMA, joining the existing east and west tracts for public outdoor recreation use.

#### **DESCRIPTION OF LANDSCAPE**

Major topography consists of flooded cypress tupelo swamp. Water levels in this area are influenced by rain, wind, and tide. Heavy rains accompanied with east winds can cause extensive flooding of the area for days at a time. Additional plant species present on the WMA include bulltongue, cattail, cutgrass, smartweeds, submerged aquatics, red maple, American elm, Nuttall oak, water oak, obtusa oak, and sugarberry. Invasive species include water hyacinth, Bidens sp. "fourchette," and an aquatic fern called common salvinia. The presence of this invasive vegetation has made much of the area unsuitable for the large numbers of waterfowl that historically overwintered in this vast swamp.

The most sought after species of game on this WMA are white-tailed deer, squirrels, and rabbits. Freshwater fish, including largemouth bass, sunfish, and crappie are also pursued on the area. Alligators and a variety of other herpetofauna are common on this WMA. Bald eagles and osprey nest in and around the WMA. Numerous other species of birds, including neotropical migrants, utilize this coastal forest during fall and spring migrations. Resident waterfowl, including wood ducks, mottled ducks, hooded mergansers, and black-bellied whistling ducks, are found on the area year round. Over 50 wood duck nesting boxes are maintained and monitored on the area.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Deer hunters comprise the largest user group on this WMA. The majority of access into the area is by boat, but there are several portions of the property that can be accessed by foot. Numerous boat launches are located throughout the four parish area encompassed by the WMA. Major highways crossing through the area are I-10, I-55, US 51, US 61, and LA 641. Major waterways in the area are Blind River and The Reserve Flood Relief Canal. There are 13 permit stations located throughout the area where the public can acquire the required self clearing permits to enter the area. A 1/2-mile long Nature Trail is located on the WMA on the east side of US 51 approximately 1/2 mile north of Peavine Road in Laplace. Two tent-only camping areas were established in 2012. One camping area is located on the New River Canal and the other on Reserve Canal.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, trapping, and fishing, other common activities on the WMA include boating, birdwatching, sightseeing, and frogging. Trapping for alligators and nutria is allowed each year.

# Pearl River Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Pearl River Wildlife Management Area is a 35,618-acre tract, located approximately 6 miles east of Slidell, La., and approximately 1 mile east of the town of Pearl River. LDWF acquired the original 15,580-acre Baronne Tract in 1971. In 1972, the Misslou and Dreyfus Tracts were acquired, totaling 1,185 acres. The Green/Rhodes Tracts totaling 9,952 acres were added to the WMA in 1973. Between 1984 and 1985, the two Iwanta Tracts totaling 8,104 acres were acquired. Between 1972 and 1999, numerous smaller tracts totaling 211 acres were acquired by LDWF. In 2011, The Nature Conservancy donated the 587-acre White Kitchen Tract to LDWF.

#### **DESCRIPTION OF LANDSCAPE**

Pearl River WMA lies in the Pearl River floodplain. The terrain is flat, drainage is poor, and the area is subject to annual flooding. Habitat varies from a bottomland hardwood forest in the northern 50 percent, to cypress tupelo in the next 30 percent and an intermediate type marsh in the southern 20 percent. The mixed hardwoods are made up of water oak, Nuttall oak, cow oak, obtusa oak, overcup oak, live oak, bitter pecan, hickory, beech, magnolia, sweetgum, and elm. Much of the bottomland hardwood forest was devastated by Hurricane Katrina in 2005. Although the habitat is recovering, access to the interior remains difficult due to the open canopy and associated thick understory.

The most sought after game animals on Pearl River WMA include white-tailed deer, squirrel, rabbit, and waterfowl. Feral hogs are abundant and provide additional hunting opportunities. Freshwater fish, including largemouth bass, sunfish, crappie, and catfish are also pursued on the area. At certain times throughout the year, saltwater anglers pursue speckled trout, redfish, flounder, sheepshead, and black drum in and around

the marshes south of US 90. Alligators and a variety of other herpetofauna are common on this WMA. Bald eagles and osprey nest in and around the WMA. Numerous other species of birds, including neotropical migrants, utilize this area during fall and spring migrations. Resident waterfowl, including wood ducks, mottled ducks, hooded mergansers, and black-bellied whistling ducks, are found on the area year round. Over 80 wood duck nesting boxes are maintained and monitored on the area.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Deer hunters, small game hunters, waterfowl hunters, and shooting range users comprise the largest user groups on this WMA. Access to Pearl River WMA is available from Old Hwy 11 and by boat from ramps located on and around the WMA. Boat launches are located along US 90 at White Kitchen, Middle River and the East Pearl River, as well as at Davis and Crawford Landings. A boat ramp is located at the end of Indian Village Road, but parking is very limited. The ramps along US 90 and those at Davis and Crawford Landings have ample parking space. Check station kiosks where the public can acquire the required self clearing permits to enter the area are located throughout the WMA. Camping is available only at the Crawford Landing camping area. A boardwalk is located on the White



Kitchen Tract at the junction of US 90 and US 190 and a Nature Trail is located on the WMA off of Oil Well Road. A rifle range is present on the WMA and is available for public use at specified times (visit www.honeyisland.org or call 985-643-3938 for additional shooting range information). Please note that when the Pearl River gauge at Pearl River, La., reaches 16.5 feet, Old Hwy 11 and all hunting, except waterfowl, will be closed.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations (link) for permitted activities. In addition to the activities listed above, other common outdoor recreational activities available on the WMA include boating, birdwatching, sightseeing, crawfishing, and frogging. Contract trapping and a public lottery for alligators is allowed each year. Trapping on the WMA is allowed. There is also a hog with dog season each February on Pearl River WMA. Please note that Pearl River WMA is a site along the American Wetlands Birding Trail.

# Sandy Hollow Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Sandy Hollow Wildlife Management Area is a 3,693-acre WMA, located approximately 10 miles northeast of Amite, La., in Tangipahoa Parish. The North Tract is primarily accessed from Oil Field Road off of LA 10 or Verberne Road from LA 1061. The South Tract is accessed from N. Jackson Road off of LA 10 or Jackson Road from LA 1061. LDWF acquired the initial 3,056-acre tract in 1986, primarily for the management and research of northern bobwhite quail and upland game birds, Additional smaller tracts/inholdings were acquired over the next decade, bringing the total LDWF-owned acreage to 3,512. In 1995, LDWF entered into a lease with the Tangipahoa Parish School Board for a 181-acre tract.

#### **DESCRIPTION OF LANDSCAPE**

The majority of the WMA consists of upland longleaf pine habitat, with hardwood drains located throughout the area. The longleaf pine habitat is primarily managed with prescribed fire to promote the herbaceous vegetation associated with upland longleaf pine and to control undesirable hardwood vegetation. There are four large fields on the WMA totaling 43 acres that are managed for doves and other wildlife throughout the year. Game species found on this WMA include white-tailed deer, wild turkey, squirrel, rabbit, mourning dove, quail, and woodcock. Numerous additional species of wildlife, including the gopher tortoise and Henslow's sparrow, utilize this area as well.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Deer and dove hunters comprise the largest user groups on Sandy Hollow WMA. Additional activities include rabbit, squirrel, quail, woodcock, and turkey hunting. Check station kiosks where the public can acquire the self clearing permits required to enter the WMA are located near the main access points to the WMA (three kiosks on the North Tract, one kiosk on the South Tract).



Camping is allowed in the designated camping area adjacent to the WMA headquarters on the North Tract. Covered pavilions are located on both tracts.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations (link) for permitted activities. In addition to the activities listed above, hiking, sightseeing, and horseback riding are other outdoor recreational activities common on this WMA. Field trial courses and Bird Dog Training Areas have also been established on the WMA.

# Tangipahoa Parish School Board Wildlife Management Area

## SIZE, LOCATION AND HISTORY

The Tangipahoa Parish School BoardWildlife Management Area consists of three separate tracts totaling 1,643 acres. In 2003, LDWF entered into an agreement with the Tangipahoa Parish School Board to free-lease these tracts, with the intent of both parties being to better manage wildlife and insure continued public access. The first tract, containing 347 acres, is located south of LA 16 approximately 4 miles north of Loranger, La., and is accessed from Neal Road, west of Briar Patch Road and LA 445. The second tract, containing 649 acres, is also located south of LA 16 approximately 2 miles northeast of Husser, La., and is accessed on the east via Hillcrest School Road from Dummyline Road. The third tract, containing 647 acres, is located north of LA 38 approximately 6 miles northeast of Kentwood, and is accessed via Brumfield Lane.

#### **DESCRIPTION OF LANDSCAPE**

The first tract consists of upland pine habitat and contains a various age timber stand with scattered hardwoods. The second and third tracts both contain longleaf pine, loblolly pine, and mixed pine/hardwood habitats. All tracts are managed by the landowner for timber pro-

duction. Game species found on all three tracts include white-tailed deer, wild turkey, squirrel, rabbit, mourning dove, northern bobwhite (quail), and woodcock.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Deer hunters comprise the largest user group on this WMA. Turkey hunting and small game hunting are also common on the area. At the main entrance and parking area for each tract, there is one check station kiosk available where the public can acquire the self clearing permits required to enter the area.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to the activities listed above, hiking, sightseeing, and horseback riding are some of the other outdoor recreational activities available on the Tangipahoa Parish School Board WMA.

# Tunica Hills Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Tunica Hills Wildlife Management Area encompasses 5,906 acres and is owned by LDWF. The WMA is composed of two separate tracts lying northwest of St. Francisville in West Feliciana Parish. The North Tract (2,346 acres) lies immediately adjacent to the Louisiana State Penitentiary. The South Tract (3,560 acres) lies south of LA 66. From 1991-1995, LDWF acquired 3,366 acres of the WMA and added the remaining 2,540 acres from 1999-2004.

## **DESCRIPTION OF LANDSCAPE**

Terrain on the area is characterized by rugged hills, bluffs, and ravines. The area lies at the southern end of the "loess blufflands" escarpment that follows the east bank of the Mississippi River south from its confluence with the Ohio River. These blufflands offer a diverse and unique habitat that supports some species of plants and animals not found elsewhere in Louisiana.

The forest type on the area is classified as upland hardwood, with some loblolly pine and eastern red cedar mixed in on the ridge tops and creek terraces. Hardwoods consist of American beech, American holly, flowering magnolia, cherrybark oak, water oak, cow oak, hickory, sweetgum, Osage orange, hackberry, eastern hophornbeam, ironwood, yellow poplar, elm, maple, and other less predominant species. The understory varies from dense in younger areas of timber to fairly open in older areas. Common understory species are oak leaf hydrangia, two-winged silverbell, trifoliate orange, pawpaw, flowering dogwood, sweetleaf, spicebush, blackberry, and switchcane. At least 20 species of plants classified as rare in Louisiana are found on this area and two of these species have not been found to occur anywhere else in the state.

The most sought after game animals are white-tailed deer, followed by small game and wild turkey. Eastern chipmunks are found on the area. Infrequently, black bear tracks are observed. Numerous snake species are common in the area, including canebrake rattlesnakes and copperheads. Resident and migratory bird species are abundant on the area, including several that are rare elsewhere in the state, such as the worm-eating warbler and the Coopers hawk.

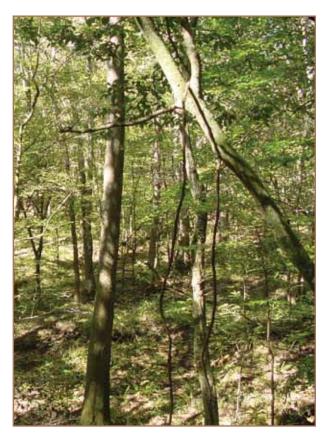
## VISITORS, PUBLIC ACCESS AND FACILITIES

Deer hunters comprise the largest user group on this WMA. The North Tract is accessed from Farrah Davis Road off of LA 66, approximately 14.3 miles west of US 61. A check station kiosk where the public can acquire the self clearing permits required to enter the area is located on the WMA approximately 3 miles down Farrah Davis Road from LA 66. The South Tract (3,560 acres) has a few different access points, but is most commonly accessed by driving 17.3 miles west on LA 66 from US

61 to Old Tunica Road. Continue on Old Tunica Road for about 1 mile to enter the WMA. The Old Tunica Road is a portion of the scenic Natchez Trace System and has been used for travel since colonial times. Three check station kiosks are located on the South Tract. A tent-only camping area is located off of Parker Road on the South Tract. Access to both tracts is provided by a series of trails. All-Terrain-Vehicles are only allowed on designated trails from September through February. The Tram Trail is a year-round ATV Trail.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations (link) for permitted activities. In addition to the activities listed above, Tunica Hills WMA is open to a variety of outdoor recreational activities, including, trapping, birdwatch-



ing, hiking, horseback riding, bike riding, sightseeing, and photography. A nature trail and three hiking trails are present. Please note that Tunica Hills WMA is a site along the American Wetlands Birding Trail.

# MISSISSIPPI ALLUVIAL VALLEY – NORTH

# Bayou Macon Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Bayou Macon Wildlife Management Area is located in East Carroll Parish approximately 3.5 miles east of Oak Grove and 7.5 miles northwest of Lake Providence. Bayou Macon is 6,919 acres and was purchased by LDWF in 1991.

#### **DESCRIPTION OF LANDSCAPE**

Topography is flat with relatively poor drainage. Two intermittent streams, Brushy and Buck Bayous, are located on the area. Almost 1,150 acres of reclaimed agricultural fields have been reforested. Overstory timber species present on this bottomland hardwood area include Nuttall oak, overcup oak, bitter pecan, sugarberry, red maple, honey locust, rock elm, sweetgum, willow oak, and green ash. Common understory vegetation includes deciduous holly, swamp dogwood, trumpet creeper, rattan, Japanese honeysuckle, swamp privet, pawpaw, dewberry, peppervine, hawthorn, greenbrier, and persimmon.

## VISITORS, PUBLIC ACCESS AND FACILITIES

LA 2 transects the northern portion of the area. Schrock Road crosses the southern portion. Parking areas are provided. Interior vehicle access is restricted to allterrain vehicle trails. There is a wildlife viewing trail which is almost 4 miles in length. Three waterfowl impoundments totaling 170 acres were constructed in 2006 through partnership with Ducks Unlimited. There is one primitive camping area on Bayou Macon WMA at the present time. Two permit stations located a major entrances provide self clearing permits and maps.

#### PUBLIC USES ALLOWED ON THE WMA

Hunting opportunities are available for deer, squirrel, rabbit, woodcock, dove, and waterfowl. A lottery hunt for wild turkey is held each year. Trapping is permitted for raccoon, opossum, beaver, and other native furbearers. The river otter and American alligator are present, but their taking is not permitted. This WMA is an official site along the American Wetlands Birding Trail and birdwatching is encouraged. Louisiana Black Bear are sometimes observed on the area.

# Big Colewa Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Received as a donation made available through the FHA, Big Colewa Bayou Wildlife Management Area consists of six separate units totaling 899 acres within West Carroll Parish. Most of the property was farmland prior to being acquired by LDWF.

#### **DESCRIPTION OF LANDSCAPE**

The limited forest resource on the various tracts includes timber species such as willow oak, water oak, sweetgum, sugarberry, sassafras, cedar elm, American elm, pignut hickory, and delta post oak. Bald cypress, green ash, bitter pecan, overcup oak, and black willow are found along small stream drainages. Principle understory and midstory species are palmetto, rattan, greenbrier, trumpet creeper, poison ivy, peppervine, Japanese honeysuckle, hawthorn, deciduous holly, and

swamp dogwood. Approximately 400 acres of agricultural land have been planted in hardwood trees by department personnel.

## VISITORS, PUBLIC ACCESS AND FACILITIES

There are no camping areas on Big Colewa Bayou.

#### PUBLIC USES ALLOWED ON THE WMA

Archery hunting for deer is available along with rabbit hunting. Deer gun hunting is permitted on the Bearskin Unit, by appointment, for wheelchair-bound persons. The most popular sport on Big Colewa Bayou WMA is dove hunting in the sunflower fields planted by department employees on the Bearskin Unit.

# Big Lake Wildlife Management Area

#### SIZE, LOCATION AND HISTORY

Big Lake Wildlife Management Area is located in Franklin, Madison, and Tensas parishes, 12 miles east of Gilbert. Big Lake WMA is comprised of approximately 19,231 acres, including seven small lakes with the largest approximately 160 acres in size.



#### **DESCRIPTION OF LANDSCAPE**

Flat and generally poorly drained, the terrain varies from 55-65 feet mean sea level. Seasonal flooding occurs dependent on water levels within the Tensas River basin, but periodic flooding may occur anytime after periods of localized heavy rainfall. Abandoned and active mineral exploration and production sites, roadways, pipelines, and open-water lakes, sloughs, and bayous provide diversity throughout the area. Seven small lakes, which total 200 acres, and six small bayous with a combined length of 25 miles can be found on the area.

Most of the forested component of the management area consists of relatively closed overstory canopy with a fairly dense understory. Major timber species composing the overstory are Nuttall oak, overcup oak, willow oak, water oak, American elm, sweetgum, bitter pecan, sugarberry, green ash, cedar elm, and honey locust. Additional overstory species include black willow, sycamore, persimmon, red maple, cypress, and box elder. Understory species include rattan, grapevine, dewberry, *Rubus sp.*, *Crataegus sp.*, deciduous holly, swamp dogwood, American elder, switchcane, Baccharis, buttonbush, *Smilax sp.*, *Vitis sp.*, and poison ivy. Invasive species include trifoliate orange, water hyacinth and other nuisance aquatic plants.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Major access routes to the area are LA 4 and LA 610. LDWF maintains a system of all-weather gravel roads throughout the area, and numerous ATV trails provide access to the interior of the area. Several hiking trails follow old pipeline rights-of-way.

#### PUBLIC USES ALLOWED ON THE WMA

The most popular game species are deer, squirrels, rabbits, raccoons and turkey. Limited waterfowl and woodcock hunting opportunities are also available. A youth lottery turkey hunt is held each year on the weekend prior to the regular turkey season.

Trapping for furbearers is allowed, and the species available are raccoon, nutria, mink, beaver, bobcat, coyote, fox, and opossum. A lottery hunt for alligators is scheduled each year. Sport and commercial fishing are popular, limited only by the acreage of available water. Bass, bluegill, crappie, and catfish are caught by recreational fishermen, and commercial fishermen take carp, buffalo, drum, gar, and catfish. Four improved boat ramps have been constructed.

During the northward spring migration, Big Lake WMA is visited by dozens of species of passerine birds, and the area is a very popular birdwatching destination. Resident bird species are common throughout the year, and the diverse habitat types found on the area produce an assortment of birdwatching opportunities. The American Bird Conservancy has recognized Big Lake WMA in its Important Birding Areas Program Research Activities.

Big Lake WMA along with the adjacent Tensas River National Wildlife Refuge is home to a thriving population of the Louisiana Black Bear. Reported sightings, nuisance complaints from adjacent landowners, and vehicle collisions are increasing.

# Boeuf Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Boeuf Wildlife Management Area is located in Caldwell and Catahoula parishes, 10 miles southeast of Columbia and is 50,971 acres in size. The majority of the area was purchased by LDWF during the period 1977 to 1981. Additional property was added over the next 20 years.

#### DESCRIPTION OF LANDSCAPE

The terrain is flat and poorly drained, with numerous backwater lakes, sloughs, and bayous. The majority of the area is subject to frequent flooding from Boeuf River and Bayou Lafourche. Eight bayous are located on the area and their combined length encompasses ap-

proximately 30 miles of waterways. There are 26 lakes located on the WMA totaling 1,800 acres. All lakes and bayous are subject to annual overflow.

A significant portion of Boeuf WMA consists of prior-converted farmland that has been partially reforested with bottomland hardwoods. The forest overstory is a relatively closed stand of mixed bottomland hardwoods. Major species are Nuttal oak, water oak, willow oak, overcup oak, American elm, sweetgum, bitter pecan, honey locust, sugarberry, willow, sycamore, persimmon, cedar elm, red maple, box elder, and cypress. Understory species include rattan, *Rubus sp.*, *Crataegus sp.*, swamp dogwood, *Vitis sp.*, deciduous holly, *Smilax sp.*, *Baccharis*, and poison ivy.

### VISITORS, PUBLIC ACCESS AND FACILITIES

Major routes to the area are LA 4, LA 559, LA 133 and LA 848. Parish roads provide access to the interior from the north, south, and west, with Boeuf River providing boat access along the eastern boundary. LDWF maintains a system of all-weather gravel roads and numerous ATV trails that provide access. Boat launches are available on most area lakes. Seven permit stations located at major entrances are provided to meet self-clearance requirements. Three primitive camping areas are available on the WMA. The Bayou Crew Nature Trail is located in the interior of the area.

#### PUBLIC USES ALLOWED ON THE WMA

Game species available for hunting include deer, squirrels, rabbits, raccoons, ducks, turkeys, quail, doves, woodcock and snipe. Alligator hunting is permitted by public lottery. A 1,800-acre greentree reservoir and 4,000 acres of moist soil impoundments are managed for waterfowl and other wetland species. These areas along with the natural waterways, sloughs, and brakes offer excellent waterfowl hunting and viewing potential. Several dove fields, planted annually in brown-top millet are available to hunters.

Birdwatching opportunities are excellent. Bucks Brake located in the Hebert area contains a rookery that provides habitat for many species of wading birds, egrets, and wood ducks. Boeuf WMA is visited by numerous neotropical migrant birds and shorebirds, and is home to large numbers of passerine and wading birds. Louisiana black bear frequent this area and reported sightings are on the increase. Bald Eagles are often observed.

# Buckhorn Wildlife Management Area

#### SIZE, LOCATION AND HISTORY

Buckhorn Wildlife Management Area is located in Tensas Parish, 14 miles west of St. Joseph. The area is comprised of 11,262 acres situated in the Mississippi River alluvial flood plain. The original 8,955 acres was acquired in 1995. Approximately 2,300 acres of priorconverted farmland were added to the WMA between 2001 and 2003, the majority of this acquisition has been reforested or developed for wetland management.

#### **DESCRIPTION OF LANDSCAPE**

Topography of the WMA is characterized by undulating ridges and swales, with elevations ranging from 50 to 70 feet MSL. More than 8,000 acres of bottomland hardwood timber are found on the area. Major species are water oak, willow oak, Nuttall oak, overcup oak, sugarberry, sweetgum, tupelo gum, sweet and bitter pecan, ash, honey locust, willow, and elm. The forest canopy is dominated by mature timber with a moderate mid-story of less dominant trees and shrubs. The understory is dense in nearly all locations, with palmetto, rattan, greenbrier, dewberry, Baccharis, buttonbush, and switchcane found in most all wooded areas. An additional 650 acres of agricultural land is currently being reforested and/or managed as public dove hunting fields.

No major streams are located on the area, but six small bayous occur, providing approximately 13 miles of wa-

terways. Six small lakes are located on the area, including Marydale Lake, the largest at 115 acres, Saddletree Lake, and Turkey Lake. All lakes and streams are subject to backwater flooding from the Tensas River, and all receive turbid runoff from the surrounding agricultural areas.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Major access routes to the area are LA 4 and LA 128, and parish roads such as Clydesdale Road and Honeysuckle Lane provide additional access. The department maintains a series of all-weather gravel roads, ATV trails and hiking trails which provide interior access. Boat launches are provided on most area lakes. Four permit stations are located at major entrances to the WMA to meet self-clearance requirements. There are no camping areas. The 1.5-mile long Brushy Lake Nature Trail located adjacent to the Clydesdale Road provides a unique opportunity to enjoy both aquatic and terrestrial aspects of the bottomland hardwoods ecosystem. There is a swamp boardwalk available for public use. There is a 5-acre native grass restoration site on the area.

#### PUBLIC USES ALLOWED ON THE WMA

Game species available for hunting are deer, squirrels, rabbits and raccoons. Several waterfowl impoundments are available for hunting during the winter months. Buckhorn WMA does not support a significant wild turkey population, and the area is closed to turkey hunting. Because of the dense understory, small game hunting can be difficult. However, deer hunting is extremely popular with both archery and gun hunters, and hunter success rates are generally high because of the large deer population.

Trapping for furbearers is allowed, and the species available are raccoon, coyote, bobcat, fox, nutria, mink, beaver, and opossum. Buckhorn is included in the public lottery hunt for alligators.

Fishing on Buckhorn WMA is seasonally popular and also limited by the lack of available aquatic habitat. However, bass, bream, crappie, white bass, and catfish can be caught by sport fishermen, and commercial fishermen take buffalo, carp, gar, catfish, and freshwater drum.

Diverse habitats attract a variety of non-game bird species, both migratory and resident. Spring birdwatching is popular on the area, especially during periods of the northward migration, and the extensive forested areas provide birdwatchers with opportunities to view transient bird species. Bald Eagles are frequently observed. Buckhorn is a site along the American Wetlands Birding Trail. The Louisiana black bear frequents this area and observations have increased in recent years.

# Floy Ward McElroy Wildlife Management Area

## SIZE, LOCATION AND HISTORY

In 1990 Floy Ward McElroy Henry donated a 681-acre tract in Richland Parish, 2 miles north of Rayville, to LDWF for the purpose of establishing a wildlife refuge and WMA. Mrs. McElroy retained use of the property until her death in November 2000. Mrs. McElroy mandated that the Floy Ward McElroy Wildlife Management Area be restricted for outdoor education and hunting activities. The WMA is not open to vehicular traffic on a daily basis.

#### **DESCRIPTION OF LANDSCAPE**

At the time of donation the property consisted of pastures with scattered hardwood timber, a band of hardwoods along the Boeuf River, and one stand of approximately 20 acres of mature bottomland hardwoods. Sloughs and backwater areas are found along the Boeuf River which borders the property for a distance of 4 miles. Cattle production was the primary use of the tract during Mrs. McElroy's ownership. After Mrs.

McElroy's death, the cattle were removed and LDWF reforested the bulk of these open pastures.

Hardwood species on the area include water oak, willow oak, cherrybark oak, cow oak, Shumard oak, overcup oak, Nuttall oak, white oak, post oak, hickory, sweet pecan, bitter pecan (water hickory), sweetgum, sycamore, basswood, elm, cypress, swamp cottonwood, persimmon, and honey locust. The forest was originally fragmented with many of the trees occurring along old fencerows and river scars.

A swamp-like 32-acre pond was created in the early 1980s when beavers impounded a scar of the Boeuf River. Permanent water has killed most of the timber on the site, except cypress. Black willow, water elm, and buttonbush are present. This wetland is providing habitat for wood ducks, wintering waterfowl, wading birds, shorebirds, alligators, and wetland mammals.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Public access is by US 425/Hwy 137. An interior access road, restrooms and parking areas have been constructed. ATVs are not permitted. There is as observation tower located at the beaver pond. Deer stands and food plots are provided for the youth hunting program that has been established by LDWF.

#### PUBLIC USES ALLOWED ON THE WMA

The donor of the property required the primary public use of the WMA to be conservation education and with a focus on youth, allowing hunting as it fit into LDWF's Education Program. Public access is restricted to youth hunting by pre-selection lottery and educational programs. Hunting is provided for deer, squirrels and doves.

# Ouachita Wildlife Management Area

#### SIZE, LOCATION AND HISTORY

Ouachita Wildlife Management Area, 13,331 acres in size, is located in southeast Ouachita Parish, approximately 7 miles southeast of Monroe. It is bordered on the north by the Russell Sage WMA and on the east by Bayou LaFourche. The original purchase of 3,124 acres of bottomland hardwood habitat was consummated in 1975. A large addition was made in 1984 when 5,621 acres of agricultural land was purchased. An additional 896 acres was added in 2002.

#### **DESCRIPTION OF LANDSCAPE**

Ouachita lies within the Bayou LaFourche flood plain and is subject to annual winter and spring flooding. Elevation of the area ranges from 55 to 62 feet mean sea level. The forest canopy contains a mixture of bottomland hardwoods that are grouped into two major timber types: oak-elm-ash and overcup oak-bitter pecan (water hickory). Minor acreages of cypress-tupelo gum and pure black willow are also present. Individual species of trees present include Nuttall oak, honey locust, cedar elm, sweetgum, sugarberry, willow oak, and delta post oak. Common understory species are swamp privet, rattan, poison ivy, deciduous holly, grape, palmetto, trumpet creeper, persimmon, and hawthorn.

Department personnel planted almost 4,000 acres of hardwood seedlings in order to restore the property to its former forested condition. The site was cleared for farming in the 1960s. A series of waterfowl management impoundments totaling approximately 1,700 acres were constructed in cooperation with Ducks Unlimited. Levees were upgraded on another 455 acres of impoundments in 2001 utilizing Ducks Unlimited funds. The waterfowl impoundments are heavily utilized by waterfowl as well as numerous non-game birds. An observation tower has been constructed which provides for public viewing of waterfowl.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Public access is via LA 15 which crosses the northern portion of the WMA. There is a system of internal gravel roads and ATV trails. One camping area, eight acres in size, is available. This site is primitive in nature except that a source of drinking water is provided. An observation platform is located in the waterfowl refuge north of LA 15. Five permit stations located at major entrances provide self clearing permits and maps.

#### PUBLIC USES ALLOWED ON THE WMA

This WMA is an official site along the American Wetlands Birding Trail. Game species available for hunting include deer, squirrel, rabbit, snipe, dove, and waterfowl. Among the ducks wintering on the area are blue-winged teal, green-winged teal, mallard, shoveler, pintail, and wood ducks. Trapping is permitted with available furbearers including raccoon, mink, nutria, muskrat, opossum, beaver, coyote, and bobcat. The river otter and American alligator are present, but trapping for these species is not allowed. Waterfowl impoundments are managed in a manner which provides a favorable water regime for crawfish production. The Louisiana black bear is sometimes observed on the area.

# Russell Sage Wildlife Management Area

#### SIZE, LOCATION AND HISTORY

Russell Sage Wildlife Management Area is located in Morehouse, Ouachita and Richland parishes, approximately 7 miles east of Monroe and 10 miles west of Rayville. This tract was acquired in 1960 and is the first state-owned WMA in Louisiana. Russell Sage WMA includes 16,993 acres owned by LDWF. In August 2011, an additional 4,955 acres was added based on a donation by International Paper, bringing the total acreage to 21,948. The newly donated area, north of the existing WMA land owned by LDWF, includes prime waterfowl habitat known locally as Wham Brake.

#### **DESCRIPTION OF LANDSCAPE**

Located within the Bayou LaFourche flood plain, this WMA is flat and poorly drained. Elevations range from 58 to 63 feet above mean sea level. Numerous sloughs and shallow bayous meander throughout, and backwater flooding occurs annually. Two major timber types are on the WMA. The predominant type is overcup oakbitter pecan (water hickory); the other is oak-elm-ash. Much smaller acreage of other types is also present, including willow-cypress-ash and oak-gum. Timber overstory species include Nuttall oak, sugarberry, overcup oak, bitter pecan, bald cypress, cedar elm, green ash, honey locust, red maple, tupelo gum, and American elm. Cottonwood, water oak, and other higher ground species are located on canal spoil banks throughout the management area. Understory species present include deciduous holly, roughleaf dogwood, dewberry, peppervine, greenbrier, poison ivy, rattan, swamp privet, persimmon, buttonbush, climbing dogbane, and palmetto.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Access is provided by US 80 and I-20, which bisect the area. Interior, all-weather roads and ATV trails are maintained by LDWF. There are two greentree waterfowl impoundments on Russell Sage totaling 2,400 acres. The Wham Brake unit contains a 4,000-acre impoundment. There is one primitive camping area located north of US 80. There are five permit stations located at major entrances which provide self clearing permits and maps.

#### PUBLIC USES ALLOWED ON THE WMA

Hunting is available for deer, squirrels, rabbits, water-fowl, raccoons and woodcock. Russell Sage is a consistent producer of quality deer. Squirrel hunting is particularly popular on the WMA and hunters experience good success. The impoundments provide excellent hunting for mallards and wood ducks along with several other species. Wading birds and other non-game species utilize the impoundments as well. The Wham Brake unit supports a diversity of wetland birds and water-

fowl. This WMA is an official site along the American Wetlands Birding Trail, and birdwatching is encouraged. Trapping is permitted for raccoon, beaver, coyote, nutria, mink, bobcat, fox, and opossum. The river otter and American alligator are present, but taking of these species is not allowed. Louisiana black bear are sometimes observed on the area.

# Sicily Island Hills Wildlife Management Area

#### SIZE, LOCATION AND HISTORY

Sicily Island Hills Wildlife Management Area is located in northeast Catahoula Parish, 6 miles west of Sicily Island, Louisiana. The WMA is comprised of approximately 7,524 acres with 2,021 of these acres acquired by LDWF in December 1980. International Paper Company donated an additional 4,159 acres. Additional property was added between the years of 1984 and 2002.

#### **DESCRIPTION OF LANDSCAPE**

The topography is extremely rugged with high ridges dropping sharply into creek bottoms with elevations ranging from 35 to 245 feet MSL. The area is unique in Louisiana and supports a diverse group of plants and



animals including rare and endangered species. Four small streams, totaling 10 miles in length, meander through the WMA. Big Creek, the longest stream, is rapidly flowing with a sand, gravel and sandstone-ledge bottom. Several waterfalls are found along the stream.

The forest overstory is a mixture of loblolly-shortleaf pine and upland hardwoods. The timber component consists of a variety of uneven-aged timber species, with a relatively closed canopy. The predominant tree species are magnolia, sweetgum, blackgum, loblolly and shortleaf pine, hickory, elm , ash, white oak, southern red oak, post oak, beech, cherrybark oak, red maple, water oak, and hophornbeam. Important species in the understory are flowering dogwood, arrowwood, rattan, huckleberry, buckeye, *Smilax sp.*, blackberry, *Vitis sp.*, deciduous holly, *Baccharis*, oak leaf hydrangea, silky camelia, *Crataegus sp.*, downy serviceberry, and sourwood.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Major routes to the area are LA 8 and LA 915. A series of all-weather gravel roads and ATV trails provide access to the interior of the area. Boeuf and Ouachita Rivers supply boat access to the western portion of the property.

Sicily Island Hills offers many recreational opportunities for the outdoor oriented public. There are two primitive camping areas and three nature trails, including a rugged 7-mile long hiking trail. Big Creek Nature Trail winds through stands of mature pine-hardwoods and passes many scenic points of interest including several waterfalls. Three permit stations are provided at major entrances to the WMA to meet self-clearing requirements.

#### PUBLIC USES ALLOWED ON THE WMA

The most popular game species are white-tailed deer, squirrels and wild turkey. There is a substantial population of turkeys and a public lottery hunt is conducted annually. A youth lottery turkey hunt is held each year

on the weekend prior to the regular turkey season. Woodcock, rabbit and raccoon hunting is also available. Louisiana black bear frequents this area and sightings are on the increase. Annually, Sicily Island Hills is visited by numerous neotropical migrant bird species, and is home to large numbers of other birds. Bald Eagles are frequently observed on the area.

# MISSISSIPPI ALLUVIAL VALLEY – SOUTH

# **Acadiana Conservation Corridor**

#### SIZE, LOCATION, AND HISTORY

Acadiana Conservation Corridor WMA consists of approximately 2,285 acres located in the parishes of St. Landry, Evangeline, Avoyelles, and Rapides. This scenic easement area lying between the I-49 right-of-way westward to the Bayou Boeuf-Cocodrie Diversion Canal, begins north of the community of Washington, and extends northward to the southern portion of Rapides Parish. This tract of land was transferred from the Louisiana Department of Transportation and Development to LDWF in 2002, as a scenic right-of-way and for public recreational use.

#### **DESCRIPTION OF LANDSCAPE**

This WMA is classified as bottomland hardwoods, with the main overstory species being bitter pecan, overcup oak, sugarberry, swamp maple, water elm, and honey locust, with other species occasionally occurring. Understory vegetation is typical for such poorly drained lands, which has standing water for considerable periods after heavy rainfalls. Common understory species include deciduous holly, smilax, poison ivy, blackberry, dewberry, rattan, and peppervine, along with annual grasses and sedges. Palmettos are present throughout the understory.

# VISITORS, PUBLIC ACCESS, AND FACILITIES

Deer Hunting, along with hog hunting during the deer season is allowed by means of archery only. Firearms are not allowed on this WMA due to its close proximity to I-49. Access to this WMA is by boat only, with boat launches available in the community of Washington on Bayou Courtableau and at LA 29, on the west side on I-49, in Bayou Cocodrie.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, other activities include birdwatching, sightseeing, along with boating and fishing in Bayou Cocodrie which parallels the entire WMA. Numerous species of birds, including neotropical migrants, utilize this bottomland hardwood area during migrations.

# Attakapas Wildlife Management Area

#### SIZE, LOCATION, AND HISTORY

Attakapas Wildlife Management Area consists of approximately 27,930 acres located in the parishes of Iberia, St. Martin, and St. Mary. This WMA is located about 20 miles NW of Morgan City and 10 miles NE of Franklin. The 25,730-acre tract of land owned by LDWF, was acquired in 1976, with an additional 2,200 acres acquired by the U.S. Army Corps of Engineers in 2006, for public recreational use.

#### **DESCRIPTION OF LANDSCAPE**

The topography of this WMA is characterized by flat swampland subject to periodic flooding and siltation from the Atchafalaya River. Areas adjacent to the Atchafalaya River and spoil banks from dredging activities provide upland habitat and refuge areas during high water periods. Many pockets of the management area have silted in and will continue to increase land-towater ratio. The main overstory species in the swamp portions of the area are cypress and tupelo, with overcup oak, sugarberry, swamp maple, water elm, and honey locust occurring on the upland areas. Understory vegetation species on the upland tracts include deciduous holly, smilax, poison ivy, blackberry, dewberry, elderberry, and goldenrod, along with annual grasses and sedges. Greenbriar, peppervine, pokeweed, switch cane, and palmettos are also present throughout the understory. Common swamp plants include lizard tail, alligator weed, smartweed, coontail, pennywort, and water hyacinth. In 1992, after Hurricane Andrew caused widespread destruction to the overstory canopy, LDWF reforested most of the ridge areas along the river with cypress, ash, elm, water oak, Nuttall oak, cherrybark oak, cow oak, and other upland species.

## VISITORS, PUBLIC ACCESS, AND FACILITIES

Access to this WMA is by boat only, with boat launches available at Myette Point, at Parish Road 123, off of LA 87, NNE of Charenton off of LA 326, above Morgan City on LA 70, and off LA 75 at Bayou Pigeon Landing in Iberville Parish. Self-clearing Permits are available at eight locations on the WMA and at access points to the WMA on private property.

#### PUBLIC USES ALLOWED ON THE WMA

Species most sought after on Attakapas WMA include white-tailed deer, rabbits, waterfowl, and squirrels. Hogs are also a very sought after species on this area. Alligators are also allowed to be removed from the area on an annual basis. Numerous species of birds, such as hawks, owls, shorebirds, and neotropical migrants utilize the area. Bald eagles and osprey nest and forage in and around the WMA. Freshwater fish, such as largemouth bass, bluegill, catfish, gar, bowfin,

and white perch are pursued by WMA users. Crawfishing and frogging are other recreational opportunities taken advantage of on this WMA. Furbearer trapping is allowed. Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, other activities include birdwatching, sightseeing, boating, camping, and fishing in Atchafalaya River, which parallels the entire WMA.

# Dewey W. Wills Wildlife Management Area

#### SIZE, LOCATION AND HISTORY

Dewey W. Wills Wildlife Management Area consists of 63,423 acres located approximately 20 miles northeast of Alexandria and along the south shore of Catahoula Lake south to Larto Lake. In 1964, 61,871 acres of what was known as the Callicott tract was acquired by LDWF, and 1,552 acres being leased from LaSalle Parish School Board was added to the WMA in 2002.

#### **DESCRIPTION OF LANDSCAPE**

The area is flat, poorly drained land that is subject to annual overflow. This tract is interlaced with a large number of bayous and lakes. The forest cover is a mixture of bottomland hardwoods. The major overstory species are overcup oak, bitter pecan, Nuttal oak, ash, elm, and willow oak. The understory of the flats or lower elevations is composed mainly of swamp-privet, reproduction of the overstory, and native grasses and forbs. At higher elevations, the understory is composed of deciduous holly, hawthorn, mayhaw, smilax, swamp dogwood, peppervine, rattan vine, dewberry, blackberry, palmetto, and reproduction of the overstory. The timber was harvested prior to department ownership, creating an open canopy, and the removal of livestock competition was all that was necessary to stimulate understory production. At present, the forest canopy has closed, and browse plants have been reduced. In recent years a very serious combination of conditions known

as Oak Decline has developed on the area. As a result, large numbers of trees have died. The forest management program, including harvests, has been modified to counteract this threat.

## VISITORS, PUBLIC ACCESS AND FACILITIES

Recreational fishing comprises the largest user group on this WMA, followed by white-tailed deer, waterfowl, and squirrel hunting. The area has ample access by road and boat. The major highway crossing through the area is LA 28. Major waterways in the area are Saline and Larto lakes, and the associated complex of waterways known as the Saline/Larto Complex. The area has six concrete and three stone boat launches to access waterways within the WMA. There are nine permit stations located throughout the area where the public can acquire the required self clearing permits to enter the area. A 1/2-mile long Nature Trail is located on the WMA on the far north end, just off of LA 28. There are four primitive camping areas are on the area. They each offer tent and RV camping but no electrical or sewage hook-ups.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, trapping, and fishing, other common activities on the WMA include boating, birdwatching, camping, and sightseeing. Self clearing Permits are available at nine locations on the WMA. LDWF contracts beaver trapping as well as a contract alligator harvest each year. A recreational alligator season is available. Trapping for furbearers is allowed each year.

# Elm Hall Wildlife Management Area

# SIZE, LOCATION, AND HISTORY

Elm Hall Wildlife Management Area consists of 2,839 acres and is located in Assumption Parish, about 5 miles

west of Napoleonville on the northeast corner of Lake Verret, with the western boundary of the WMA fronting the lake. This land was acquired from The Conservation Fund in 1998 for public recreational use.

#### **DESCRIPTION OF LANDSCAPE**

The topography of this WMA is characterized by naturally flooded cypress-tupelo swamp, which remains flooded year round. There is a slight elevation in the topography moving east through the area towards a more bottomland hardwood area, which receives periodic flooding. Bayous and oilfield canals provide access and diversity to the WMA. The main overstory species in the swamp portions of the area are cypress and tupelo, with sugarberry, swamp maple, and black willow occurring in the bottomland areas. Cottonwood, sycamore, and oaks occur on the oil field canal spoil banks. Common swamp plants include lizard tail, alligator weed, smartweed, buttonbush, elephant ear, duckweed, and water hyacinth.

#### VISITORS, PUBLIC ACCESS, AND FACILITIES

Access to this WMA is by boat only, with boat launches available at: Attakapas Landing, at the end of LA 401, on LA 70 in Pierre Part, and at the end of LA 402. A houseboat mooring site and primitive camping area are located on the corner of the WMA, near the edge of Lake Verret.

Species most sought after on Elm Hall WMA include white-tailed deer, rabbits, waterfowl, and squirrels. Hogs, nutria, beaver, and otter are also present on this area. Alligators are also allowed to be removed from the area on an annual basis. Numerous species of birds, such as hawks, owls, shorebirds and neotropical migrants, utilize this area. Bald eagles and osprey nest in the cypress trees surrounding Lake Verrett and forage in and around the WMA. Freshwater fish, such as largemouth bass, bluegill, catfish, gar, bowfin, and white perch are pursued by WMA users. Frogging is another recreational

opportunity taken advantage of on this WMA.

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, other activities include birdwatching, sightseeing, boating, camping, and fishing. Self clearing permits are available at three locations on the WMA. Furbearer trapping is allowed.

# Grassy Lake Wildlife Management Area

#### SIZE, LOCATION AND HISTORY

Grassy Lake Wildlife Management Area consists of 12,983 acres located approximately 30 miles northeast of Marksville in Avoyelles Parish. In 1976, LDWF made the initial purchase of 11,860 acres from SW Improvement. Additional acquisitions in 1980 of 83 acres from Roy O. Martin, and an additional 1,040 acres in 1981 from DOTD, has increased the WMA acreage to 12,983 acres. Grassy Lake WMA is located within the Red River floodplain.

#### **DESCRIPTION OF LANDSCAPE**

Grassy Lake WMA is a backwater area for the Red River. Seasonal flooding from the Red River occurs annually on Grassy Lake WMA. The area is described as low, poorly drained, with numerous small lakes and narrow ridges along the bayous and river. Primary forest over-story species are represented by bitter pecan, overcup oak, and sugarberry. Lower elevations exhibit cypress, bitter pecan, green ash, swamp privet, and button bush. Mid-story species include deciduous holly, hawthorn, roughleaf dogwood, and swamp privet. Under-story plants include smilax, peppervine, trumpet creeper, rattan, rubus, Virginia creeper, and poison ivy. Invasive species include Chinese tallow, water hyacinth, hydrilla, and common salvinia.

# VISITORS, PUBLIC ACCESS AND FACILITIES

WMA users on Grassy Lake have numerous recreational pursuits. Freshwater fishing, waterfowl hunting, small-game hunting, and deer hunting are the most popular activities. The majority of the WMA is accessible by vehicle. The WMA has four small lakes that provide fishing, boating and waterfowl hunting opportunities. There are concrete boat ramps on Smith Bay and Grassy Lake with dirt ramps on Red River Bay and Bayou Chenier. Vehicle access is provided by LA 451 which will access the log road leading to the entrance of Grassy Lake WMA.



Over 20 miles of roads and ATV trails provide great access for WMA visitors. There are three primitive campgrounds. In addition, there are five self clearing permit stations available for WMA visitors. The weigh station is located on the North Bayou Natchitoches Road adjacent to Bayou Natchitoches Bridge #2.

The most sought after game species include white-tailed deer, fox squirrels, eastern wild turkey, feral hogs and swamp rabbits. Furbearers include beaver, raccoon, mink, otter, nutria, bobcat, opossum, fox, and coyotes. Louisiana black bear is also a resident of Grassy Lake WMA. The lakes provide great habitat for numerous reptiles and amphibians. The abundant cypress and buttonbush lakes provide both foraging and nesting habitat for wading birds. The area also provides great habitat for wintering waterfowl and other water birds. Many forest birds, including neotropical migrants, utilize the bottomland hardwood forest and riparian areas along the Red River.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. Permitted activities as listed in the rules and regulations pamphlet include, but are not limited to, hunting, fishing, camping, trapping, boating, birdwatching, and sightseeing. Recreational lottery alligator hunts and commercial alligator hunting is allowed. Furbearer trapping is allowed. Crawfishing and frogging are other recreational opportunities taken advantage of on this WMA. Grassy Lake WMA is a site along the Wetlands Birding Trail.

# Little River Wildlife Management Area

#### SIZE, LOCATION AND HISTORY

Little River Wildlife Management Area consists of 4,164 acres. It is located in Grant Parish, approximately 8 miles northeast of Pollock, with Camp Hardtner Road

forming the western boundary and being bounded on the east by Little River. The initial tract was acquired in 1989 from the Louisiana Department of Transportation and Development, with smaller tracts added in 1995, 1998 and 2003.

#### **DESCRIPTION OF LANDSCAPE**

The area is primarily bottomland hardwoods. Common tree species include overcup oak, bitter pecan, and willow oak. There are also several cypress-tupelo sloughs. Swamp privet, water elm, mayhaw, and overstory regeneration make up the midstory. Understory species growth varies greatly with elevation. The higher areas within the floodplain support green briar, blackberry, and pepper vine as well a variety of annual forbs and grasses. Areas of low elevation have very limited understory growth. The upland sites are forested in pine plantations and stands of mixed pine-hardwoods. A tremendous variety of tree and understory species is found in these areas. The majority of Little River WMA normally floods seasonally from late winter through spring.

# VISITORS, PUBLIC ACCESS AND FACILITIES

Recreational fishing comprises the largest user group on this WMA, followed by squirrel and white-tailed deer hunting. There is also waterfowl, wild turkey, rabbit, and woodcock hunting available. Good fishing is available on the river as well as in the small lakes on the area. The area has ample access by road and boat. Two stone boat launches are located on the area, allowing users to launch smaller boats into the river. The nearest major highway is US 165. The major waterway in the area is Little River. There are also several small lakes within the area. There are two permit stations located on the area where the public can acquire the required self clearing permits. There are four primitive camping areas; each offering tent and RV camping but no electrical or sewage hook-ups.

#### PUBLIC USES ALLOWED ON THE WMA

Please refer to the WMA rules and regulations for permitted activities. In addition to hunting, trapping, and fishing, other common activities on the WMA include boating, birdwatching, camping, and sightseeing. Trapping for furbearers is allowed each year. Self clearing permits are available at two locations on the WMA.



# Pomme de Terre Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Pomme de Terre Wildlife Management Area consists of 6,434 acres located within the Bayou des Glaises-Big Bend Levee System in Avoyelles Parish. The initial acquisition of 3,911 acres from Walker in 1975 was followed by 80-acre acquisition in 1976 from Roy O. Martin; 1,372 acres from Magee in 1985; 180 acres from Lemoine in 1986, and 890 acres from Hilcliffe Farms in 1992. Pomme de terre WMA is a low, poorly drained bottomland hardwood forest with open water found in the south central portion of the WMA on Sutton Lake. Run-off water from surrounding lands flows through the WMA en route to Bayou de Glaises and eventually the Atchafalaya River. All water is released through the protection levee by water control structures.

#### **DESCRIPTION OF LANDSCAPE**

Pomme de Terre WMA serves as a catch basin for surrounding lands within the Big Bend Levee System. The area is described as low, poorly drained with lakes, swamp and narrow ridges. Approximately 60 percent of the WMA is covered by water. Primary forest over-story species are represented by Nuttall oak, willow oak, sweet pecan, and water oak. Lower elevations exhibit cypress, bitter pecan, tupelo gum, green ash, swamp privet, and button bush. Mid-story species include deciduous holly, hawthorn, roughleaf dogwood, and swamp privet. Under-story plants include smilax sp., peppervine, trumpet creeper, rattan, rubus, Virginia creeper, and poison ivy. Invasive species include Chinese tallow, water hyacinth, and common salvinia. Approximately 800 acres of farmland were reforested by LDWF in the early 1990s, accomplished through direct seeding of acorns and seedling plantings.

WMA users on Pomme de Terre WMA participate primarily in waterfowl hunting, small-game hunting, and deer hunting. The WMA can be accessed from LA 451 near Hamburg. There are two public entrances along the south boundary of the WMA. An additional 7 miles of ATV trails provide additional access. The WMA has one boat launch on Sutton Lake and one primitive campground adjacent to the launch. There is a self clearing permit station at each of the two public entrances on the southern boundary.

#### PUBLIC USES ALLOWED ON THE WMA

Game species most sought after include white-tailed deer, fox squirrels, and swamp rabbits, with feral hogs now providing additional hunting opportunities. Wild turkey harvest is allowed by youth lottery only. Furbearers include beaver, raccoon, mink, otter, nutria, bobcat, opossum, fox, and coyotes. Louisiana black bear is also a resident of the WMA. Sutton Lake and the Pomme de Terre Swamp provide great habitat for numerous reptiles and amphibians. The abundant cypress and buttonbush lakes provide both foraging and nesting habitat for wading birds. The area also provides great habitat for wintering waterfowl and other water birds. Many forest birds, including neotropical migrants, utilize the hardwood forest.

Please refer to the WMA rules and regulations for permitted activities. Permitted activities as listed in the rules and regulations pamphlet include, but are not limited to, hunting, fishing, camping, trapping, boating, birdwatching, and sightseeing. Commercial alligator hunting is allowed. Crawfishing and frogging are other recreational opportunities taken advantage of on this WMA. Furbearer trapping is allowed.

# Richard K. Yancey Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Richard K. Yancey Wildlife Management Area consists of 69,806 acres located between the Mississippi and Red Rivers in Concordia parish. In 1965, LDWF made the initial purchase of 12,595 acres from Hale (Ellis). Additional acquisitions of 4,009 acres from Maxwell in 1968; 12,978 from Magnolia in 1970; Additional acquisitions of 3,593 from Davis and Carr Point in 1975; 6,490 acres from Lee in 1976; 7,722 acres from Yakey in 1993; 128 acres from J.C. Gilbert in 1994; 167.5 acres in 1997; 2,040 acres from Canal Land Company in 1997; 2,913 acres from Anderson-Tulley in 2001; 1,433 acres on Union Point in 2002; 1,125-acre TCF tract later that year; 975 acres through accretion; and 12,802 acres of leased land from USACOE have increased the WMA acreage to approximately 69,806 acres. Richard K. Yancey is located within the Red River and Mississippi River flood plain with the northern half with the exception of the batture receiving levee protection. The southern portion of the WMA located below the protection levee along with the batture is subject to periodic flooding by the Red River and Mississippi River.

#### **DESCRIPTION OF LANDSCAPE**

Richard K. Yancey WMA is described as low, poorly-drained with numerous small lakes, narrow ridges and sloughs. The northern portion of the Richard K. Yancey WMA is a sump created by the Red River levee, while Cocodrie Bayou drains the area through a control structure into the Red River. During high river water levels on the Red River, the control structure is closed, thus creating wet conditions within the levee protected area. Some relief is provided by the Tensas-Cocodrie Pump Station up stream. The area below the Red River levee functions much differently. WMA lands below the protection levee are subject to back-water flooding from the Red River. Primary over-story species include Nuttall oak, sweet pecan, sugarberry, sycamore, elm,

honey locust, and overcup oak. Lower elevations exhibit cypress, bitter pecan, green ash, swamp privet, and button bush. Mid-story species include deciduous holly, hawthorn, roughleaf dogwood, and swamp privet. Common under-story plants include smilax sp., peppervine, trumpet creeper, rattan, rubus sp., Virginia creeper and poison ivy. Invasive species include Chinese tallow, water hyacinth, hydrilla and common salvinia.

In 1969, LDWF began reforestation of a 600-acre tract of farmland acquired in 1968. This is the oldest hardwood plantation currently actively managed by LDWF and has served as a learning ground for reforestation of over 25,000 acres of additional farmlands acquired by LDWF as well as other bottomland restoration projects in the WMA.



Richard K. Yancey WMA offers a diversity of outdoor recreation opportunities. Freshwater fishing, waterfowl hunting, woodcock hunting, turkey hunting, feral hog hunting, small-game hunting, dove hunting, and deer hunting are the most popular activities. The majority of the WMA is accessible by vehicle and ATV. The WMA offers boating and fishing opportunities on numerous levee pits, bayous, and lakes. Lower Sunk Lake and Hog Pen Lake offer improved access with concrete launches. Water recreation is available on many other small lakes and bayous including Dobbs Bay, Pat's Lake, Catfish Bayou, Cocodrie Bayou, Grand Bay, Lake Sostein, Silver Lakes, Long Bayou, Moreau Lake and Blackhawk Lake to name a few.

Primary vehicle access is from LA 15 which can be accessed from the north by Ferriday or from the south via LA 1 at Lettsworth. Additional access is provided into the interior by LA 910 and by a combination of all-weather and unimproved roads. ATVs are allowed on designated trails which provide access into remote areas. There are five primitive campgrounds and seven self-clearing permit stations available for WMA visitors. There are four weigh stations for mandatory deer check hunts. Deer must be weighed on Richard K. Yancey WMA during the mandatory deer check hunts.

# PUBLIC USES ALLOWED ON THE WMA

Richard K. Yancey offers a diversity of outdoor recreation opportunities. Freshwater fishing, recreational crawfishing, and frogging are extremely popular. In addition, numerous hunting activities are allowed on the WMA. Most sought after game species include white-tailed deer, feral hogs, waterfowl, eastern-wild turkey, squirrels, rabbits, woodcock and doves. In addition, furbearer trapping is allowed on the WMA. Common species trapped include beaver, raccoon, mink, otter, nutria, bobcat, opossum, fox and coyotes. The Louisiana black bear is also a resident of Richard K. Yancey WMA. The Lakes provide great habitat for all aquatic

life including freshwater fish, reptiles and amphibians. Freshwater fishing, recreational crawfishing, and frogging are extremely popular. Freshwater fish such as largemouth bass, bluegill, black and white crappie, blue and channel catfish, garfish, and bowfin are pursued by WMA users. In addition, alligators are removed annually through a recreational lottery hunt. The abundant cypress and button-bush lakes provide both foraging and nesting habitat for wading birds. The area also provides excellent habitat for wintering waterfowl and other water birds. Exposed mud flats along the batture and lake edges late summer provide available habitat for migrating shorebirds. Additional acreage is intensively managed on the Yakey Tract for shorebirds as well as wintering waterfowl and wading birds. Portions of the Yakey Tract have been reforested within the impoundments to provide greentree reservoirs for waterfowl. Many forest birds, including Neotropical migrants, utilize the large bottomland hardwood forest. The large cottonwoods along the riparian areas are important for the swallow-tailed kite.

Please refer to the WMA rules and regulations for permitted activities. Permitted activities as listed in the rules and regulations pamphlet include, but are not limited to, hunting, fishing, camping, trapping, boating, birdwatching, and sightseeing. There is an experimental hog dog hunting season permitted in February. Recreation lottery alligator hunts are allowed. Lottery You Deer hunts are held each winter. Furbearer trapping in allowed.

# Sherburne Wildlife Management Area

## SIZE, LOCATION, AND HISTORY

Sherburne Wildlife Management Area, located in the Morganza Floodway System of the Atchafalaya Basin, in the Parishes of Pointe Coupee, St. Martin, and Iberville. This WMA, which consists of 43,618 acres, is about 1 mile East of Krotz Springs. In 1983 the Sherburne/

Slaughter and Jumonville tracts of land, totaling 11,780 acres, were acquired by LDWF. U.S. Fish and Wildlife Service initiated acquisition of land in 1986, and has since acquired 15,220 acres from several different landowners. The U.S. Army Corps of Engineers began purchasing land from several different landowners in 1990 and has acquired 16,618 acres since the initial acquisition. These lands are managed as one unit by LDWF for public outdoor recreational use.

#### DESCRIPTION OF LANDSCAPE

The major topography of this WMA is classified as bottomland hardwoods with four dominant tree species associations, which include cottonwood-sycamore, oak-gum-sugarberry-ash, willow-cypress-ash, and overcup oak-bitter pecan. Reforestation has occurred in the past, with a variety of species planted including, but not limited to, water oak, Nuttall oak, cypress, and ash. Mid-story species include regeneration of overstory species along with red mulberry, box elder, maple, and swamp dogwood. In areas where habitat improvement has occurred through forest management practices, the ground cover is very dense and provides excellent habitat for many game and non-game species. Ground cover is sparse in some areas due to shading and prolonged inundation. Common understory species include rubus, elderberry, fern, rattan, trumpet creeper, Virginia creeper, poison ivy, and many herbaceous plants.



Sherburne WMA offers numerous outdoor recreational activities. Small game hunting, white-tailed deer hunting, turkey hunting, waterfowl hunting, and fishing are the most popular activities. The majority of the WMA is accessible by vehicle and ATV. Additional access to some of the more remote areas on Sherburne WMA is available by boat. Three improved boat launches can be found on the WMA. There are two primitive campgrounds. Fishing is popular in both Big Alabama Bayou and Little Alabama Bayou. Crawfishing on the South Farm is popular during the spring and early summer. Lottery waterfowl hunt opportunities are available on the South Farm with additional lottery opportunities for youth hunters. The shooting range receives year-round use and is open year around during daylight hours. The ranges consist of both pistol and 100-yard rifle ranges. Additional skeet ranges are available. Self clearing permits are available at the WMA entrances along LA 975, South Farm, and the WMA headquarters along Big Alabama Bayou.

Access to this WMA is by vehicle on all-weather roads or by boat via bayous that traverse the WMA. From US 190, travel south on LA 975, from I-10, travel north on LA 975 to access the WMA. Boat launches available on the north end of Big and Little Alabama bayous and the South end of Big Alabama Bayou on Landing Road.

## PUBLIC USES ALLOWED ON THE WMA

Species most sought after for hunting on Sherburne WMA include white-tailed deer, wild turkeys, rabbits, waterfowl, and squirrels. Hogs have become prevalent and are also sought after when pursuing other game. Nutria, bobcats, beaver, and otter are also present on this area. Alligators are allowed to be removed from the area on an annual basis. Numerous species of birds, such as hawks, owls, shorebirds, and neotropical migrants, utilize this area. Bald eagles and swallow-tailed kites nest in trees and forage in and around the WMA. Freshwater fish, such as largemouth bass, bluegill, cat-

fish, gar, bowfin, and white perch are pursued by WMA users. Frogging is another recreational opportunity taken advantage of on this WMA.

Please refer to the WMA rules and regulations for permitted activities. Permitted activities include, but are not limited to, hunting, fishing, boating, shooting range, camping, trapping, birdwatching, and sightseeing. Furbearer trapping is allowed on portions of Sherburne WMA. Youth lottery waterfowl, deer, and turkey hunts are held on the WMA. Sherburne WMA is a site along the Wetlands Birding Trail.

# Spring Bayou Wildlife Management Area

## SIZE, LOCATION AND HISTORY

Spring Bayou Wildlife Management Area consists of 12,078 acres located approximately 4 miles east of Marksville in Avoyelles Parish. In 1966, LDWF made the initial purchase of 11,578 acres from 16 different landowners. Additional acquisitions of 40 acres in 1967; 400 acres in 1969; 88 acres in 1983, and 400 acres in 1985 have increased the WMA acreage to 12,078 acres. Spring Bayou WMA is located within the Bayou Natchitoches Basin and is a portion of the Red River backwater area. The many sloughs, bayous, and lakes which make

up a large portion of the WMA were formed many years ago when the Mississippi River and later the Red River flowed through this area. These channels were later abandoned as the rivers moved eastward. The result is a series of long finger-like lakes that provide abundant opportunities for outdoor recreation and wildlife.

#### **DESCRIPTION OF LANDSCAPE**

Spring Bayou WMA serves as a catch basin for lands north and west of the complex as well as a backwater area for the Red River. The area is described as low, poorly drained with numerous finger lakes and narrow ridges. Approximately 40 percent of the WMA is covered by water. Primary forest over-story species are represented by Nuttall Oak, overcup oak, and water oak. Lower elevations exhibit cypress, bitter pecan, green ash, swamp privet, and button bush. Mid-story species include deciduous holly, hawthorn, roughleaf dogwood, and swamp privet. Understory plants include *smilax sp.*, peppervine, trumpet creeper, rattan, rubus, Virginia creeper, and poison ivy. Invasive species include Chinese tallow, water hyacinth, hydrilla, and common salvinia.

In the late 1980s, LDWF reforested abandoned farmland it had acquired, adding to the acreage of bottomland hardwood restored since 1969.



WMA users on Spring Bayou are very diverse. Freshwater fishing, waterfowl hunting, small-game hunting, and deer hunting are the most popular activities. The majority of the WMA is accessed by boat. The WMA has three boat launches with two additional public launches adjacent to the WMA. Primary vehicle access is from both LA 1 and LA 107, which lead to LA 1190. Secondary access is available from the communities of Bordelonville and Mansura. There are two primitive campgrounds and one improved campground which offers water and electricity. The improved campground consist of 15 campsites which are available at a per night charge. Six self clearing permit stations are available for WMA visitors. Each of the five public boat launches has a self clearing permit station.

#### PUBLIC USES ALLOWED ON THE WMA

Most sought after game species include white-tailed deer, fox squirrels, and swamp rabbits. Furbearers include beaver, raccoon, mink, otter, nutria, bobcat, opossum, fox, and coyotes. The Louisiana black bear is also a resident of the WMA. The lakes provide great habitat for numerous reptiles and amphibians. The abundant cypress and buttonbush lakes provide both foraging and nesting habitat for wading birds. The area also provides excellent habitat for wintering waterfowl and other water birds. Many forest birds, including neotropical migrants, utilize the Spanish moss draped forest.

Please refer to the WMA rules and regulations for permitted activities. Permitted activities as listed in the rules and regulations pamphlet include, but are not limited to, hunting, fishing, camping, trapping, boating, birdwatching, and sightseeing. There is a youth lottery turkey season. Recreational lottery alligator hunts and commercial alligator hunting are allowed. Crawfishing and frogging are other recreational opportunities available. Furbearer trapping is allowed. Spring Bayou WMA is a site along the Wetlands Birding Trail.

# Thistlethwaite Wildlife Management Area

# SIZE, LOCATION AND HISTORY

Thistlethwaite Wildlife Management Area consists of 11,100 acres located between the communities of Washington and Lebeau in St. Landry Parish. In 1966, LDWF began leasing Thistlethwaite WMA from the Thistlethwaite Heirs. The initial lease was for a period of twenty-five years with subsequent leases extending for 10 years per lease. Deer were stocked on Thistlethwaite WMA in 1961 to boost deer numbers with an initial stocking of 40 deer. The first deer hunt was held in 1965. Since then, Thistlethwaite WMA has become well known for its white-tailed deer hunting. Rich soils and diverse food sources produce a healthy and productive herd on Thistlethwaite WMA.

#### DESCRIPTION OF LANDSCAPE

Thistlethwaite WMA is a diverse bottomland hardwood forest dominated by palmetto in the under-story. The diverse composition of over-story species makes this a productive site for wildlife. Primary forest over-story species are represented by Nuttall Oak, cherrybark oak, overcup oak, cow oak, sweetgum, red maple, hickory, willow oak, and water oak. Lower elevations exhibit cypress, bitter pecan, green ash, swamp privet, and button bush. Mid-story species include deciduous holly, hawthorn, roughleaf dogwood, basswood, and box elder. Under-story plants include *smilax sp.*, peppervine, trumpet creeper, rattan, rubus, Virginia creeper, French mulberry, and poison ivy. Invasive species includes Chinese tallow.

# VISITORS, PUBLIC ACCESS AND FACILITIES

WMA users on Thistlethwaite participate in many outdoor activities. Small game hunting, deer hunting, and waterfowl hunting are the most popular activities. The majority of the WMA is accessible by vehicle. Twenty-three miles of limestone roads are maintained

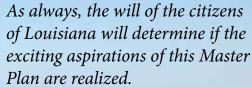
on Thistlethwaite WMA to enhance public access and opportunity. An additional 10 miles of ATV trails are maintained to enhance access for the physically challenged. Hunters may not utilize ATVs on any other roads or trails on Thistlethwaite WMA. An additional 15 miles of access trail and right-of-way are maintained; no motorized vehicles are allowed on these trails. Primary vehicle access is from LA 10 near I-49. The WMA is east of the Lebeau exit. All WMA visitors must enter Thistlethwaite WMA at the main entrance along LA 10 and Plant Road. Camping is prohibited on Thistlethwaite WMA. Self clearing permits are available at the WMA entrance on Plant Road.

#### PUBLIC USES ALLOWED ON THE WMA

Most sought after game species include white-tailed deer, fox squirrels, and swamp rabbits. Furbearers include beaver, raccoon, mink, otter, nutria, bobcat, opossum, fox, and coyotes. Louisiana black bear has been observed on Thistlethwaite WMA. Many forest birds, including neotropical migrants, utilize the diverse hardwood forest. Wild turkeys can be found on the WMA, but the population is low and sightings are rare. Three stockings have occurred (1965, 1972 and 1993), but birds were unable to maintain huntable populations due to the thick palmetto understory.

Please refer to the WMA rules and regulations for permitted activities. Permitted activities as listed in the rules and regulations pamphlet include, but are not limited to, hunting, fishing, trapping, birdwatching, and sightseeing. Furbearer trapping is allowed. Thistlethwaite WMA is a site along the Wetlands Birding Trail.







# CONCLUSION

This Master Plan is a long-term vision for the Louisiana Department of Wildlife and Fisheries (LDWF) to guide the conservation and management of the special places that make Louisiana the "Sportsman's Paradise." At the site level, the Master Plan provides LDWF with a framework for assessing individual wildlife management areas (WMAs) and refuges within a science-based network of natural resource areas. The formal project selection criteria outlined within the Master Plan creates a transparent process that focuses LDWF's future land acquisition decisions, treats all landowners fairly, and uses public funds wisely. LDWF has committed to having site level management plans for all WMAs and Refuges within three years. The Master Plan provides guidance to LDWF in creating flexible yet rigorous management plans to achieve its important strategic goals.

The LDWF Green Infrastructure Network proposed within the Master Plan covers more than 16 million acres of Louisiana. The majority of the land within the network is privately owned and should remain so in the future. The Master Plan provides strategies for LDWF to help landowners continue the sound stewardship of their lands. The Master Plan can help key partners focus conservation efforts, raise public awareness, and increase the resources available for land conservation, restoration and stewardship.

The future holds some exciting possibilities for LDWF. Imagine, with an expanded portfolio of WMAs and Refuges that represent the full range of ecosystems across the state, there will be something for everyone to explore and discover. Consider a network of new facilities near the state's population centers bringing the next generation of anglers, conservationists, and sportsmen into contact with wildlife and the heritage of Louisiana. See the vast expanse of restored coastal prairies, the working landscape of rice farms, the majestic longleaf pine forests. Walk along new corridors connecting both wildlife and people across Louisiana. Taste the fresh grilled fish after a great day out on the water. This could be the future.

As always, the will of the citizens of Louisiana will determine if the exciting aspirations of this Master Plan are realized. It is a big vision that will reshape LDWF, and it is an endeavor that requires collaboration. It is up to each one of us to find our unique role and help carry forward the vision of the LDWF Master Plan.

