# Commitment to Biodiversity

**Summary**

Entergy's approach to protecting and creating biodiversity benefits is guided by our Environmental Vision Statement, detailed in our Environmental Management System Policy and Avian and Wildlife Protection Standard. Entergy endeavors to support biodiversity through the adoption and implementation of protective corporate policies and by investing in conservation projects and environmental initiatives that conserve biodiversity and local ecosystems and through restoration of wetlands and other important biodiversity habitats.

## Introduction

Our Environmental Vision Statement guides us to develop and conduct business in a responsible, environmentally sustainable manner. It states that we will meet, but preferably exceed, environmental legal requirements and minimize and manage environmental impacts. Above all, we will strive to be a good steward of the land, wildlife, and natural resources in our care.

As a company, this means we maintain, enhance or conserve biodiversity on the land under our care. We strive to eliminate negative impacts from our operations on biodiversity and promote a positive impact where possible.

Entergy applies a mitigation hierarchy when operating in all areas, regardless of status.[1] Our approach is three-fold – managing our operations' impacts by working to comply with local, state and federal biodiversity regulations (maintaining biodiversity), using best biodiversity management practices when practicable (exceeding minimum compliance) and investing in conservation projects that aim to create biodiversity benefits.

## Approach

Entergy's businesses throughout the United States have a goal to comply fully with all environmental regulations including those that govern wildlife conservation. Our management policy, as outlined in our Avian and Wildlife Protection Standard, states:

> All of Entergy's business functions will evaluate their impact on all wildlife as required by local, state, and federal law and will take measures, as required by law, to minimize and/or eliminate this impact. For business functions operating under a Safety, Health and Environmental Management System (SHEMS), biodiversity and wildlife impacts must be addressed as a part of the risk assessment requirement of the system.

Entergy strives to incorporate this policy in all aspects of our business.

[1] Entergy does not operate in World Heritage areas or IUCN Category I-IV protected areas.

Key environmental risks, including threats and impacts to biodiversity, are identified as part of the investment approval and permitting process; projects are required to avoid, minimize or mitigate biodiversity-related risks as needed to complete construction, commissioning and operation. Each business function's environmental leadership team (power generation, utility operations, nuclear) is expected to work with internal project managers to ensure issues are managed appropriately. We strive to ensure that biodiversity-related impact assessments are performed and requirements implemented during applicable project planning, construction, and operations. Major capital projects and permit renewals are re-assessed for their impacts on biodiversity. Examples of these assessments include those conducted at our Waterford 3 and River Bend Station nuclear facilities.

Annual audits are conducted to ensure adherence to our management policy. The entire Safety Health and Environmental Management System is periodically audited by a third-party, including aspects of the standard related to biodiversity protection. These audits occur at the facility or site level, the business function level, and the corporate level. Entergy typically conducts over 30 site-level external audits of its Safety Health and Environmental Management System annually.

We avoid or minimize operating in areas of state or national importance to biodiversity where possible, and mitigate and offset operations where it is not possible using the mitigation hierarchy strategy for all new construction projects. Baseline surveys and protection measures are typically incorporated at the start of any new planning, site development, or new construction project, and we frequently work closely with federal and state wildlife officials before and during construction and operations.

Examples of Entergy's use of its mitigation hierarchy of avoiding, minimizing, and restoring or offsetting biodiversity include:

Avoiding:
Through surveying efforts and consultations with agencies such as the U.S. Fish & Wildlife Service (USFWS), Entergy strives to avoid biodiversity-related impacts. A past example of such avoidance can be seen in the rerouting of a line around eagle-nesting sites during the construction of a transmission line project located in Mississippi. The proposed line route was changed twice to prevent potential adverse effects to local eagle populations.

Another example of avoidance of biodiversity-related impacts is avoiding disturbance of a wetland and nature preserve through spill control planning. Substation reconstruction was occurring in the Boy Scouts Wood Sanctuary in High Island, Texas. This nature preserve in Bolivar Peninsula is maintained by the Houston Audubon Society and contains 60 acres of woods, coastal prairie, and wetlands. The site is home to more than 300 bird species. Construction of sized containment under the oil-filled equipment in the substation ensured that no oil would be discharged into the preserve in the event of an oil spill.

Minimizing:
Entergy minimizes disturbance to vulnerable species in our vegetation management activities to the extent practicable. Near Conroe, Texas, Entergy manages distribution lines and rights-of-way near the W.G. Jones State Forest, which contains a management area for a listed endangered species, the Red Cockaded Woodpecker. Entergy's environmental and vegetation management staff routinely confer with park rangers to ensure Entergy's activities are not disturbing the birds during their breeding and nesting season.

Entergy strives to minimize disturbance to sensitive ecosystems in our construction activities. In southern Louisiana, we used helicopters to bring in supplies to build transmission lines and to avoid unnecessary impacts to the local wetlands. In Arkansas, Entergy has created a Shoreline Management Plan (SMP) for its hydroelectric facilities to manage the resources and uses of the property shorelines. SMPs aim for net environmental and social benefits and were developed in close collaboration with local stakeholders and recreational users of the lakes and regulatory agencies.

Entergy actively manages lakes Catherine and Hamilton, two reservoirs created from the Carpenter-Remmel hydroelectric project. The first dam, Remmel Dam, was built in 1924. Carpenter Dam followed in 1931. The lakes are managed according to our FERC-approved Shoreline Management Plan, and in doing so, a net positive change has been created in the lakes' biodiversity. We work closely with the state wildlife agency Arkansas Game and Fish Commission (AGFC) to maintain healthy fish populations. Some of our measures include keeping the water levels steady during spawning season and facilitating egg harvesting by AFGC to maintain lake stock and contribute to other state lake stocks. Aquatic habitat is protected by preserving the natural lakebed and discouraging invasive aquatic vegetation. To preserve the natural habitat, plans are implemented to minimize or prevent disturbance of sensitive fish spawning and nursery areas, wetlands, and natural rock shorelines. Entergy works with the local stormwater departments to limit runoff into the lakes and encourage the use of best management practices to limit runoff from neighboring areas. Invasive vegetation is discouraged by drawing down during the winter and using sterile grass carp as our primary control measures. To enhance the aquatic habitat, Entergy has worked with AGFC to introduce more fish habitat structures to provide more cover and shelter for juvenile and adult fish.

Entergy has also worked to enhance terrestrial habitat on several uninhabited islands within the lakes, including Electric and Loli's Islands. Electric Island was bequeathed to the Nature Conservancy in the 1980s, and its 118 acres is managed as a nature preserve. Loli's Island was created in 2018 and 2019 in consultation with the Army Corps of Engineers and was planted with native vegetation to create bird habitat.

Another example of minimizing disturbance to sensitive species is our recent work in the Sam Houston Forest. Recently, Entergy ensured that red cockaded woodpecker nests were not disturbed near our construction there. Coordinating with the U.S. Forest and U.S. Fish and Wildlife Service, construction was planned to avoid the endangered birds' breeding and nesting season in 2020. The avoidance of the nesting season and potential take of the species is built into our 30-year easement permit.

Entergy also strives to minimize disturbance of other protected species, including the gopher tortoise. We confer with the Louisiana Department of Wildlife and Fisheries to identify rights-of-ways that are in the tortoise habitat. When a species is listed, the Entergy operations and maintenance departments are educated on how to determine habitat and to avoid disturbance. Maintenance crews are taught what a tortoise and its burrows look like so they can avoid disturbance of their habitat. Similarly, when the Louisiana pine snake was listed recently, the operations department were made aware of the snake's habitat. They will engage with the environmental department and the local wildlife agency to ensure avoidance of the species.

Restoring or Offsetting:

Due to the nature of our business, providing safe, affordable, and reliable power, some biodiversity impacts cannot be avoided. In these cases, we work toward mitigating our impact as appropriate. We have worked with the Army Corps of Engineers and conservation mitigation banks to ensure that our

activities in sensitive areas such as wetlands were mitigated and offset with the creation or preservation of wetlands in the same watershed as our project activities.

As part of our avian compliance, we've retrofitted power poles involved in avian incidents to make them more avian-friendly and consistent with our avian standards for new construction. More discussion of our Avian Protection Plan is found in the next section.

**Beyond Compliance and Creating Ecological Benefits**

Entergy further strives to support biodiversity through employee volunteerism and corporate contributions from the Entergy Charitable Foundation and the Entergy Environmental Initiatives Fund.

We raise awareness and share lessons learned across Entergy's businesses through a Biodiversity Peer Group that meets quarterly. The group examines biodiversity-related legislation, regulation and issues at all levels of government that impact or are impacted by Entergy's operations, to provide a forum for members to discuss these issues and to provide a vehicle for development and coordination of path-forward strategies. The group is also charged with identifying and implementing programs to support biodiversity and to promote awareness and educate employees regarding the advantages of creating these benefits.

We also foster biodiversity awareness among our employees. For example, we encourage employees to humanely remove beehives by partnering with local beekeepers when possible. We conducted a milkweed initiative to encourage employees to grow milkweed in their backyard gardens to help the monarch butterfly. Our employees participate and volunteer in several Earth Day events annually. For example, employees volunteer at Audubon Nature Institute's Party for the Planet, which Entergy sponsors.

**Avian Protection Plan**

Entergy goes above and beyond compliance with the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and the Endangered Species Act to protect avian resources. We are an active member of the Avian Power Line Interaction Committee (APLIC). Using APLIC's Avian Protection Plan Guidelines and its *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*, we devised and implemented our company Avian Protection Plan (APP) in 2011. An APP is a utility-specific document that delineates a program designed to reduce the avian risks resulting from avian interactions with electric facilities.

Some of the provisions of our plan include retrofitting or modifying power poles and lines to prevent avian-caused outages, constructing new facilities in accordance with Entergy's APP standards and APLIC guidelines, reporting avian mortalities to USFWS, and participating with public and private organizations in programs and research.

A recent example of a public avian program includes our work with Wildlife Mississippi to erect an eagle nesting structure in and provide additional financial support for the Fannye Cook Natural Area along the Pearl River in Flowood, Mississippi, near Jackson. This is expected to be one of the largest preserved urban natural areas of its type in the United States – nearly three times the size of New York's Central Park.

Another example of avian protection program helping eagles was our work to keep eagle fledglings safe around our powerlines in Metairie, Louisiana. An eagle pair decided to make a nest in an urban neighborhood, so at the behest of neighborhood representatives, Entergy reduced the risk of electrocution and collision with the nearby powerlines. Pole conductors were covered to prevent electrocution, and diverters were added to the line to prevent collision. The eagles successfully raised young in 2019 and 2020.

**Entergy's Climate Leadership Impact Supports Biodiversity**

Climate change is emerging as one of the top threats to our ecosystem around the globe. This impact could have stark consequences on the quality of biodiversity in the future. Since 2001, Entergy has been a recognized leader in addressing climate change impacts by operating under voluntary commitments to stabilize our $CO_2$ emissions as part of our efforts to be environmentally responsible. Our initial commitment was to maintain $CO_2$ emissions from Entergy-owned power plants and controllable power purchases through 2010 at 20 percent below year 2000 levels. Entergy extended this commitment through 2020, which it ultimately outperformed by approximately 8% both cumulatively and on an annual basis. In 2019, Entergy announced a 2030 climate goal to reduce our $CO_2$ emission rate by half what it was in 2000 In 2020, Entergy announced a commitment to achieve net-zero greenhouse gas emissions by 2050.

**Stewardship through External Partnership**

Not only do we commit to conserving biodiversity in our operations, we also work with external partnerships and through corporate investment and philanthropy continually to enhance important biodiversity areas and habitats.

Entergy invests in projects that support biodiversity through corporate community investment and the company's Environmental Initiatives Fund. Since 2001, Entergy's EIF has supported projects by contributing approximately $41 million in shareholder dollars to conservation groups as external partners. These projects aim for a positive impact in habitat, water quality and purification, and climate through coastal and wetlands restoration in the four states served by the utility. Partners have included The Nature Conservancy, The Audubon Society, Arbor Day Foundation, The Conservation Fund, Ducks Unlimited, and Restore the Earth. A history of environmental improvement projects funded by Entergy's Environmental Initiatives Fund is available here.

**Selected Biodiversity-Related Projects over the Years**

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| 2002 | Entergy Partnerships Create Red River National Wildlife Refuge |
| 2004 | Tensas National Wildlife Refuge Reforestation Project |
| 2007 | Entergy Grants $150,000 to Ducks Unlimited to Restore Louisiana Wetlands, Restore America's Estuaries, Rebuild Louisiana Wetlands, Restore Wetlands in Greater New Orleans Area |
| 2008 | Arkansas Carbon Offset Project in National Wildlife Refuges |
| 2009 | Grand Isle back mangrove and Coastal Bayou Segnette; Tierra Resources Louisiana Wetlands Carbon Sequestration Project |
| 2010 | Lower Cache River Restoration in Arkansas, New White County Facility Helps Return Injured Eagles to the Wild; Krebs LaSalle Environmental LLC Wetlands Mitigation Bank |
| 2011 | America's WETLAND Foundation; Isle de Jean Charles Planting; Equilibrium – Entergy Park, Hot Springs |
| 2012 | National Audubon Society: Restoring Forests of the Lower Mississippi Valley; Restore America's Estuaries: Shipe Woods Shoreline Stabilization Project |
| 2013 | Entergy Awards $500K Grant to the Nature Conservancy, Chef Menteur Pass Wetland Restoration |
| 2014 | Entergy Arkansas Native Species and Vegetation Management Project, Tierra Resources Commercialization Phase II Project |
| 2015 | Development of promotional video of municipal wastewater wetlands restoration partnership in Luling, Louisiana with Tierra Resources |
| 2016 | Tierra Resources – Aerial planting of black mangrove for wetlands restorations; Coastal Conservation Association of Louisiana – Floating Island Project on La-1 in Leeville, Louisiana; Mississippi Wildlife Rehabilitations Inc. – North Mississippi Outdoor Classroom Conservation Pavilion |
| 2017 | Rainforest Alliance and Terra Carbon – monitoring of Lower Mississippi Value reforestation project (~2800 acres); Americas Wetland Foundation – Lake Salvador Shoreline Restoration; The Conservation Fund – Trinity River National Wildlife Refuge; Girl Scouts of San Jacinto Council – Camp Misty Meadows Tree Planting and Wildlife Restoration Project; Ducks Unlimited – White River National Wildlife Refuge Enhancement; Central Arkansas Water – Native pollinator habitat |
| 2018 | The Nature Conservancy – to conserve 18,000 acres of bottomland hardwood, The Roy E. Larson Sandyland Sanctuary and the Saline River; Restore the Earth – Point-aux-Chenes restoration of 200 acres of forest marsh; Coastal Conservation Association to establish a floating island |
| 2019 | Ducks Unlimited – to increase surface water use over groundwater on agricultural lands; Restore the Earth – Bayou Terrebonne Freshwater Diversion Project; The Woodlands Conservancy – seeds to saplings program |
| 2020 | Arbor Day Foundation – Energy Savings tree program; Houston Audubon Society – Coastal Natives Nursery; Restore the Earth – Maurepas Land Bridge reforestation |
| 2021 | Houston Audubon Society - habitat reforestation at Damuth Bird Sanctuary; Restore the Earth – Bayou Terrebonne Freshwater Diversion Phase II |

**Summaries of Select Partnerships and Biodiversity Benefit Goals**

**Partner: Tierra Resources**
Entergy has partnered with Tierra Resources for a number of years to help restore and preserve Louisiana's wetlands. In 2009, Entergy supported their Carbon Sequestration Project. In 2016, Entergy helped fund air-seeding of approximately 100,000 propagules over 22 acres of coastal Louisiana. In 2017, seeding was expanded to more acreage and carbon credits from this restoration were verified.

**Partner: The Conservation Fund**
Entergy and The Conservation Fund restored 100 acres of wildlife habitat in Trinity River National Wildlife Refuge near Houston, Texas. Restoration supports abundant populations of bald eagles, white-tailed deer, alligators, turtles, river otters and a variety of waterfowl. This habitat is also used by neo-tropical birds during the migration and nesting seasons.

**Partner: The Nature Conservancy Fund**
Entergy has donated to The Nature Conservancy through the Environmental Initiatives Fund to sponsor several projects within states in our service territory.

**Arkansas:** TNC is using Entergy funding to restore 500 acres of bottomland hardwood forest. Restoring these forests create wildlife habitat, sequester carbon, and reduce harmful sediment and nutrients entering the Cache and White rivers. In 2018, Entergy provided funds to help restore the Saline River.

**Mississippi:** Entergy's grant helped complete restoration of 3,500 acres of critical wetland and wildlife habitat at Mathews Brake National Wildlife Refuge, an iconic natural landmark in the heart of the Mississippi Delta.

**Texas:** TNC has used the EIF grant to support restoration and management of forest habitats at the Roy E. Larsen Sandyland Sanctuary, including upland and wetland longleaf pine savannas, longleaf pine woodlands, American Beech-Southern Magnolia Slope Forest, Bottomland Hardwoods, and Cypress-Tupelo Swamp. Funding supported the planting of 70,000 seedlings and restoration of 60 acres of longleaf pine forest.

**Louisiana:** Funding from Entergy has enabled TNC to continue efforts on one of the largest floodplain reconnection projects in North America. In the 135-acre restoration of Mollicy Bayou 85,000 trees have been planted. Entergy also funded habitat restoration on Grand Isle, LA.

**Partner: Arbor Day Foundation**
Entergy has partnered with Arbor Day Foundation to give away over 4,700 trees to homeowners to help filter the air and water and create wildlife habitat within urban communities.

**Sustainability**

Entergy's leadership in sustainability and environmental stewardship has been a hallmark of who we are for nearly two decades. In 2002, Entergy's board of directors adopted a visionary sustainability and environmental statement to "develop and conduct our business in a responsible manner that is environmentally, socially, and economically sustainable."

We see environmental stewardship not as a choice, but as a responsibility and an opportunity. Protecting the rich biodiversity and abundant natural resources of our region is a priority.

In addition, our environmental strategy and our business strategy are inextricably linked. We work with our stakeholders to identify needs and opportunities and seek partnerships that lead to positive outcomes.

Leadership in sustainability and environmental responsibility is a critical party of our future too. In 2018, Entergy created a sustainability organization to establish our sustainability mission and manage our sustainability strategy. Entergy's sustainability mission is to create sustainable value for our customers, employees, owners, and the communities we serve through the use of sustainable business practices that integrate environmental, social, and economic objectives and concerns. Protecting the rich biodiversity of our region is a key initiative of Entergy's sustainability strategy.

**Conclusion**

Through compliance with local, state, and federal regulations, incorporating best management practices and promoting stewardship through public partnerships, Entergy is committed to maintaining, enhancing and conserving biodiversity and sustainability in the areas we serve.