



Commitment to Biodiversity

Summary

Entergy's approach to protecting and creating net biodiversity benefits is guided by our [Environmental Vision Statement](#), detailed in our [Environmental Management 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 net positive impact where possible.

Entergy applies a mitigation hierarchy when operating in all areas, regardless of status¹. 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 fully comply 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.

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

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

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 construction and operations. Every time an expansion or permit change is required, operations are re-assessed for their impact on biodiversity as warranted. 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 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 Environmental Management System annually.



We avoid or minimize operating in areas of 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 directly 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.

Minimizing:

Entergy minimizes disturbance to vulnerable species in our vegetation management activities to the extent practicable. Near Conroe, Texas, Entergy manages distribution lines and right-of-ways 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.

Restoring or Offsetting:

Due to the nature of our business, providing safe and reliable power, some biodiversity impacts cannot be avoided. In these cases, we work toward mitigating our impact as appropriate. We've 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 Net Benefits (Best management practices, going above and beyond local, state, and federal requirements)

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 members regarding the advantages to creating these benefits.

We also foster biodiversity awareness among our employees. For example, we encourage employees to humanely remove bee hives 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 volunteered at [Audubon Zoo's Earth Fest](#) this year which Entergy also sponsored.

Avian Protection Plan:

Entergy goes above and beyond compliance to the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and the Endangered Species Act to protect avian resources. We also are an active member of the [Avian Powerline 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 2010. 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.

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 CO₂ emissions as [part of our efforts](#) to be environmentally responsible. Our current

commitment is to maintain CO₂ emissions from Entergy-owned power plants and controllable power purchases through 2020 at 20 percent below year 2000 levels.

Stewardship through External Partnership

Not only do we commit to conserving biodiversity in our operations, we continually work with external partnerships and through corporate investment and philanthropy 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. Entergy's EIF has supported projects by contributing approximately \$35 million in shareholder dollars over 15 years 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, America's Wetland Foundation, The Conservation Fund and Restore the Earth.

Biodiversity-Related Projects over the Years

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, Entergy Helps Restore Wetlands in Greater New Orleans Area
2008	Arkansas Carbon Offset Project in National Wildlife Refuges
2009	Grand Isle black 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 Lower Mississippi Valley, Restore America's Estuaries: Shipe Woods Shoreline Stabilization Project
2013	Entergy Corporation 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, Southwest Michigan Land Conservancy – Black River Preserve enhancements, 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 Valley reforestation project (~2,800 acres), America's 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

Summaries of Select Partnerships and Net 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](#).

Mississippi: Entergy's grant helped leverage up to \$8.4 million from federal, state and local entities to implement bottomland hardwood and wetland restoration practices on existing cropland. The project has the potential to restore at least 4,000 acres of critical wetland habitat in the [Lower Yazoo River Basin in 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.

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 in the areas we serve.