▲ *Wetlands at Grand Gulf nuclear plant in Mississippi provide a valuable habitat for migratory birds.*

managed and harvested to minimize environmental impact. To provide additional food for resident animals, important tree species such as pecan, black walnut, white oak and hickory are not harvested. Areas opened by harvesting were planted with vetch, peas, rye grass and other plants to add to food supplies and create greater plant diversity.

Large open grass areas that were once staging areas for construction supplies and equipment have been allowed to remain natural, and after several years were planted with pine seedlings. This minimizes erosion and protects local watersheds in addition to diversifying plant life.

Some select open areas near the Mississippi River have been set up as lunch and rest areas for employees and guests. An outdoor pavilion is in place for large-scale activities. Grand Gulf property is open to local sportsmen's clubs and researchers from state agencies and universities.

River Bend—St. Francisville, La. A large portion of the 3,000-acre River Bend site has been registered with the Nature Conservancy as a natural area important for biological diversity. In addition, ornithologists have used the site to observe the annual migration of birds prior to crossing the Gulf of Mexico.

River Bend has been included in Louisiana's Deer Management Assistance Program. The plant also participates in a study of parasites on deer.

The Louisiana Department of Wildlife and Fisheries and the plant helped to restock areas of the state with wild turkey. The plant has established food plots for turkey. Plant personnel and the department have also joined forces on a bass trap-and-release program; and in cooperation with department biologists and students have conducted bird identification and population studies. After Hurricane Andrew, River Bend employees again worked with the department to help restock the Atchafalaya Basin with fish from ponds at the plant.

Waterford 3—Killona, La. Pigeons can create problems at the water intake structure at Waterford 3, so the birds are now captured and taken to a safe place for release.

Grasses and trees have been planted in all open areas at the plant. Previously, there were several runoff ditches from which all vegetation had been removed. The natural growth has now resumed, creating a habitat for small fish and other aquatic species. Waterford also is part of the Lake Pontchartrain Basin Foundation.

Long ago, Native Americans and slaves were buried on the site. To preserve the cultural significance of the area, archaeological concerns are addressed before any construction begins.

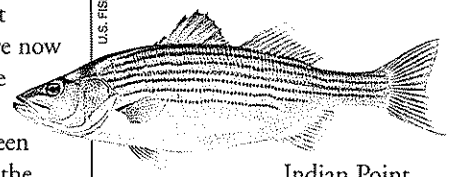
ENTERGY NUCLEAR NORTHEAST

FitzPatrick—Oswego, N.Y. The plant uses a unique system to divert fish from its water intake structures on Lake Ontario.

Underwater transducers produce sounds to keep fish away. The system is based on nuclear submarine sonar technology.

In cooperation with the local Soil and Water Conservation District and Cooperative Extension Service, the plant has sponsored the "Treasured Trees Program" that provides elementary school children with seedlings and environmental information.

Indian Point 2 and 3—Buchanan, N.Y. The plant uses innovative traveling fish screens to protect fish from entering the intake structures and return them to the Hudson River. It also operates a hatchery in conjunction with other utilities to stock the river with striped bass fingerlings.



▲ *Striped bass*

Indian Point employees recently planted 50 tree seedlings on plant proper-

ty and donated 400 more seedlings to surrounding schools.

Pilgrim—Plymouth, Mass. The plant has for the past two years been the primary sponsor of a winter flounder hatchery pilot program located in Chatham, Mass., on Cape Cod.

Winter flounder are a commercially important species, whose population has declined in recent years.

The hatchery was conceived as a research and development project to determine whether the natural population could be augmented with hatchery-raised fish. Each year, 15,000 fish have been raised and released near Pilgrim. Follow-up studies have shown that hatchery-raised fish behave and feed like the wild fish, and that they can survive. Pilgrim plans to buy at least 25,000 fish from the hatchery in 2002 and 2003 and continue the studies. The hatchery eventually hopes to expand operations to produce between 5 and 10 million fish per year, and diversify into other depleted species such as cod and haddock.

Entergy also maintains an extensive forestry program. It manages 1,600 acres next to the Pilgrim plant. This is a protected wildlife sanctuary and conservation area, where many trees are planted each year.

PHOTO COURTESY OF EXELON GENERATION COMPANY

▲ *Oyster dredging on the Chesapeake Bay on the skipjack Martha Lewis, a research vessel partly funded by Exelon's Peach Bottom plant.*

Pilgrim also has a shorefront park and nature trail facility that, when security considerations permit, allows the public to observe tidal pools and marine life, fish and birds. There also is a boat-launching ramp for lobstermen.

Vermont Yankee—Vernon, Vt. Aquatic studies at the Vermont Yankee plant have helped the state of Vermont to establish water quality standards and have helped researchers who are trying to restore Atlantic shad and salmon to the area.

Exelon Generation Company

Exelon subsidiary Exelon Nuclear owns and/or operates 10 nuclear power plant sites with a total of 17 reactors. The company has a central environmental management program that coordinates activities at all its plants. Exelon Nuclear's Mid-Atlantic headquarters in Kennett Square, Pa., helps to maintain nearby Nixon Park, which has nature trails, picnic areas and recreation fields. The Midwest headquarters contributes to river cleanup.

Oyster Creek 1—Lacey Township, N.J. Oyster Creek participates in the Barnegat Bay National Estuary Program in New Jersey as a member of the Scientific and Technical Advisory Committee.

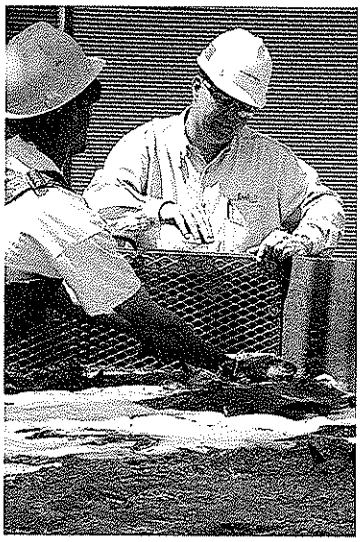


PHOTO COURTESY OF EXELON GENERATION COMPANY

▲ *Exelon, along with several other groups, provided funding for a telemetry study of the American shad in the Conowingo Pond.*

Peach Bottom 2 and 3—Derby, Pa. The Peach Bottom facility helps fund the skipjack "Martha Lewis," which performs environmental research in conjunction with the Chesapeake Bay Heritage Conservancy. Peach Bottom also helps fund shad restoration on the Susquehanna River.

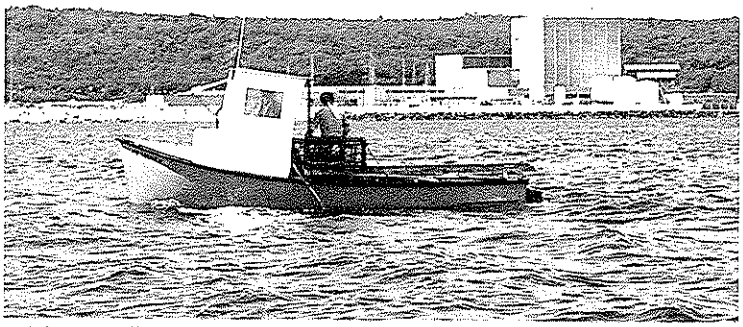


PHOTO COURTESY OF ENTERGY OPERATIONS INC.

▲ *Lobstermen off the shore of the Pilgrim plant.*

Quad Cities 1 and 2—Cordova, Ill. Quad Cities has collaborated with the U.S. Fish and Wildlife Service, Illinois Department of Natural Resources, and the Iowa Department of Natural Resources in efforts to culture and restore local populations of paddlefish. Quad Cities also uses its abandoned spray canal to raise fish during the summer months. Exelon has implemented an aggressive bluebird house program at the site to help restore bluebirds to the area. The plant also works with Ducks Unlimited to place nesting boxes for wood ducks along an inactive cooling canal. Quad Cities provides financial support for the Mississippi River Beautification and Restoration Project.

PHOTO COURTESY OF EXELON GENERATION COMPANY

▲ *Bluebird nest with eggs in one of the many nesting boxes at Exelon's Quad Cities site.*

In cooperation with state and local groups, Quad Cities has opened a bicycle/hiking trail along the edge of its property.

LaSalle 1 and 2—Brookfield Township, Ill. LaSalle, located southwest of Chicago, has dedicated about 40 acres to Pheasants Forever Restoration, along with a 10-acre plot maintained as a natural prairie with beautiful bluestream prairie grass.

Clinton 1—Clinton, Ill. The Clinton plant has installed a new wastewater treatment facility that uses new lagoons, filters and a laboratory that are all environmentally friendly. The facility received the 2001 Merit Award from the Consulting Engineers Council of Illinois. Clinton maintains a beach, recreation area and boat launch.

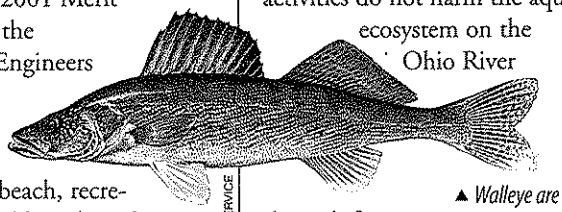
Dresden 2 and 3—Goose Lake Township, Ill. In cooperation with the U.S. Army Corps of Engineers, Dresden provides a de-icing siphon system along the Kankakee River. The system helps prevent ice damage to bridges and homes along the river.

Three Mile Island 1—Middletown, Pa. The Three Mile Island plant provides access to the south end of its site near Harrisburg, Pa., for Elizabethtown College professors and students to conduct environmental research and field studies. The plant also contributes funding to the Environmental Engineering Department at Penn State's Capital Campus. Exelon is also active in a variety of elementary and secondary school environmental education activities near the plant.

FirstEnergy Corporation

Beaver Valley 1 and 2—Shippingport, Pa. Beaver Valley won the 1999 Pennsylvania Governor's Award for Environmental Excellence for its chemical control program. The program eliminated chlorine gas from the plant's water treatment process and reduced the amount of chlorine stored on site. The program reduces the plant's hazardous waste disposal costs by $179,000 per year.

FirstEnergy ensures that plant activities do not harm the aquatic ecosystem on the Ohio River through frequent river bottom surveys and evaluations. The program pays special attention to a bed containing one species each of native clams and mussels about 300 yards downstream from the plant water discharge system. These species were found in 1993 during a survey conducted by the U.S. Fish and Wildlife Service. They had not been seen in Pennsylvania since 1922.



U.S. FISH AND WILDLIFE SERVICE

▲ *Walleye are found in the Ohio River near Beaver Valley.*

Before Beaver Valley was built, 44 species of fish were identified in the Ohio River near the plant. By 1997, 77 species had been found, including game fish such as smallmouth and largemouth bass, striped bass, walleye and muskellunge.

Davis-Besse—Oak Harbor, Ohio FirstEnergy works with the U.S. Fish and Wildlife Service and the Ohio Division of Wildlife to enhance bald eagle habitat at the site's Navarre Marsh. Since 1995, nine eaglets have fledged at the site, including triplets in 2001 and 2002. The plant annually hosts a volunteer eagle watchers workshop for the Ohio Division of Wildlife. Volunteers are trained in observing and reporting the activities of the state's 79 pairs of American bald eagles.

Davis-Besse won the Habitat

U.S. FISH AND WILDLIFE SERVICE

▲ *Since 1995, nine American bald eagles have fledged at Davis-Besse's Navarre Marsh.*

Award from Pheasants Forever for planting 30 acres of upland prairie in 1998; and wetlands at the site have been designated a regional shorebird reserve by the Western Hemisphere Shorebird Network. The site supports the Black Swamp Bird Observatory, the largest migratory bird banding station east of the Mississippi River. Typically, the group bands 10,000 to 15,000 birds during annual migration.

Site personnel regularly maintain Davis-Besse's Lake Erie shoreline dike. The plant built a revetment in the 1980s along the shore to prevent erosion and protect the surrounding wetlands. The revetment encloses more than 700 acres of vital marshland that FirstEnergy leases to the Ottawa National Wildlife Refuge. Davis-Besse and the U.S. Fish and Wildlife Service co-manage the Navarre Marsh area of the refuge. Plant employees control water levels and eliminate undesirable plant life.

FirstEnergy also was the largest corporate contributor to the wetland restoration of more than 900 acres at the Metzger Marsh in western Ottawa County.

Davis-Besse cooperated with the U.S. Fish and Wildlife Service to allow controlled deer hunts between 1998 and 2000, to reduce deer starvation, disease and overcrowding. The plant also annually hosts the Ohio portion of the federal Junior Duck Stamp Art Contest.

Perry—North Perry, Ohio

Eleven hundred acres at the Perry plant were designated in 1993 as an urban wildlife sanctuary by the National Institute for Urban Wildlife. The area has trees, shrubs, streams and ponds; and a habitat for heron, belted kingfisher, ducks and geese. The forested area is ideal for the crane-fly orchid, a rare species in Ohio. The site includes a wetland that contains spotted turtles, an endangered species in Ohio. The environmental staff monitors the turtle habitat to ensure that they are not disturbed. Perry has waste minimization and chemical control programs, and sponsors an annual cleanup day along the road, beaches and transmission corridors. It also plans to start a tree planting program.

Florida Power & Light Company

St. Lucie 1 and 2—Hutchinson Island, Fla. The St. Lucie plant conducts a comprehensive sea turtle program, which includes nesting surveys, research and rescue. Research biologists capture, measure, weigh, tag and release turtles. The plant has a 2.5-mile nesting sanctuary for endangered sea turtles. During nesting season, the public is welcome to join in the plant's nocturnal "turtle walks," where they can learn about the creatures and, if they are lucky, see a turtle lay her eggs.

PHOTO COURTESY OF FLORIDA POWER & LIGHT COMPANY

▲ *Students visiting Florida Power & Light's St. Lucie plant can have a close encounter with marine life at the nature center.*

The Turtle Beach Nature Trail at St. Lucie offers visitors three unique Florida environments: beach dunes, mangrove swamp and tropical hammock. FPL also leases two parks to St. Lucie County, offering fishing and swimming.

There is a marine educational facility that includes a marine touch tank and a living beach dune model. Creatures found in the touch tank may include crabs, lobsters, starfish and fish species found in the waters around the plant. St. Lucie's marine collection program also provides fish species to public aquariums.

PHOTO COURTESY OF EXELON GENERATION COMPANY

▲ *American crocodiles are among the 17 federally protected species at FPL's Turkey Point plant site.*

Turkey Point 3 and 4—Florida City, Fla. Florida Power & Light Co. has won numerous awards for its environmental programs at its two Florida nuclear plants. Most recently, FPL received the Edison Electric Institute's National Land Management Award for its stewardship of 25,000 acres surrounding the Turkey Point Plant. This site contains fresh and estuarine wetlands, subtropical hardwood forests and is home to 26 state protected animal species and 17 federally protected species, including the endangered American crocodile and the wood stork. FPL's 20 years of monitoring at Turkey Point has shown dramatic increases in the number of crocodile hatchlings, from 15 to more than 300 annually. The company also won the Miami Dade Chamber of Commerce Environmental Award in 2000.

The Turkey Point property includes freshwater wetlands and saltwater marshlands that provide habitat for numerous other plants and animals.

These include eagles, osprey, roseate spoonbills and indigo snakes. The company preserves the lands in their natural state.

The Turkey Point cooling canal system adjoins the Everglades Mitigation Bank, and is aiding Everglades Restoration Project efforts.

Nebraska Public Power District

Cooper—Brownville, Neb. The Nebraska Public Power District is co-funding a study of the endangered pallid sturgeon and the threatened sturgeon chub on the lower Platte River, near the Cooper site. The information from the five-year study will be used to determine protective steps taken by entities seeking a water permit.

NPPD constructed a five-acre wetland to mitigate the effect of a parking lot project. The site, previously farmed, is now populated by flora and fauna indigenous to the Missouri River basin in that area of Nebraska.

NPPD is considering a wetland treatment facility unit on an 11-acre parcel of agricultural ground now used to spread effluent from an oxidation lagoon system used to treat sewage. The project would enhance existing wetland acreage in the area.

Nuclear Management Company*

Duane Arnold—Palo, Iowa The plant's environmental programs focus on land and water preservation. It participates in three preservation programs. A prairie restoration program has developed a natural prairie grass area in collaboration with the Indian Creek Nature Center at the plant site. Duane Arnold also participates in a "Tree Forever" program to ensure continual planting of trees. The plant also has converted land at the site into wetlands.

The plant is participating in an effort to introduce peregrine falcons, formerly an endangered species, into the area. A nesting box was installed several years ago, and more recently falcon eggs have been brought in.

NMC has worked with the Iowa Department of Natural Resources to develop the Pleasant Creek State Recreation Area, a state park around a man-made lake that is a backup water supply

U.S. FISH AND WILDLIFE SERVICE

▲ *Several nuclear plants, like Duane Arnold and Kewaunee, are helping to restore the threatened peregrine falcon to its historic range.*

*NMC operates nuclear plants for various owners in the Upper Midwest.

U.S. FISH AND WILDLIFE SERVICE

▲ *Nuclear Management Company has developed a natural prairie grass area near the Duane Arnold Plant in Iowa.*

for the plant. Recreational activities include boating, fishing, swimming, hiking and camping.

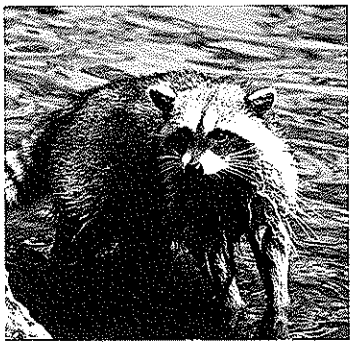
Kewaunee—Carlton, Wis.
A wooded portion of the Kewaunee Nuclear Plant has been set aside as an outdoor educational laboratory. The six acres of woodland border Lake Michigan, just south of the plant. The Kewaunee School Forest is dedicated to the memory of an early owner of the land, who planted many of the trees on the land, and kept it clear of bushes and grazing cattle to preserve the trees, which include many different kinds of pine, Norway and Black Hills spruce, and white cedar. The owners of the Kewaunee plant helped to preserve the forest when it was threatened by erosion in the '80s. The Kewaunee School Forest includes two nature trails with a field-to-forest succession, lake bank, beach, lake and lakeshore gully. It offers a variety of educational materials for users, along with outdoor classrooms.

Kewaunee is also involved in a peregrine falcon project. In 2001, three of the rare falcon chicks were hatched.

Monticello—Monticello, Minn.
The plant is located on about 2,000 acres in two counties. Much of the property contains habitat for wildlife, including bald eagles and peregrine falcon. It abounds with songbirds, pheasants, wild turkeys, grouse, hawks, ducks, geese, deer, fox, brush wolves, raccoons, weasels, snakes, turtles, salamanders and fish.

The plant is participating with other energy facilities along the upper Mississippi River in a project to restore the peregrine falcon to its historic range in the area.

Falcon nesting and hatchings are monitored yearly, and young birds are banded. At Monticello, four young falcons were hatched in the most recent season. The Raptor Resource Project accounts for 40 percent of the young birds hatched in Minnesota and 71 percent in Wisconsin.



U.S. FISH AND WILDLIFE SERVICE

▲ *Raccoons abound near the Monticello plant in Minnesota.*

Monticello also builds and places bluebird boxes at the site in conjunction with the Boy Scouts of America. The scouts also have helped to build and maintain houses for wood ducks.

Plant owner Xcel Energy and operator Nuclear Management Company are working with the state of Minnesota to develop a non-motorized path that will run from the central part of the state to Itasca State Park in the north.

Palisades—Covert, Mich.
The unique sand dune environment of the Palisades plant site provides shelter for the Pitcher's thistle, a plant that is on federal and state threatened species lists. The plant, with a cream-colored leaf and a yellow flower, can grow more than three feet tall. It grows only in Great Lakes sand dunes and human intrusion on the dunes has threatened its survival.

Point Beach 1 and 2—Two Creeks, Wis. The Point Beach site is located on the shore of Lake Michigan, just north of Point Beach State Forest.

The plant is situated along the migration flyway for double-crested cormorants and removed a cooling water intake structure to protect the cormorants.

Bluebird houses dot the edges of open fields on the 1,300-acre plant site. The surrounding forest and grounds provide a haven for deer, squirrels and many other animals. A wetlands site continues in development with the Wisconsin Department of Natural Resources and Ducks Unlimited on plant-owned property.

U.S. FISH AND WILDLIFE SERVICE

▲ *The Fort Calhoun nuclear plant site hosts beaver, mink and muskrat in its wetland preserves, in addition to waterfowl and songbirds.*

Omaha Public Power District

Fort Calhoun—Fort Calhoun, Neb. The Fort Calhoun nuclear plant has received numerous awards for environmental stewardship, from groups including both the Boy Scouts of America and the Girl Scouts of America. The plant's main activities are installing many nesting boxes for song birds, raptors, bats and water fowl. The plant is also involved in a nationwide utility program to mitigate the increasing population of alien species of plants, mollusks and clams that have invaded several U.S. waterways.

The site includes three wetlands preserves, two of which are river backwaters near the plant site and one located in an outlying area in a prairie grass restoration plot. The two wetlands preserves near the plant are about 15 acres each and maintained in their natural state. The only enhancement is the addition of waterfowl and songbird nesting boxes, which attract teal, wood ducks and mallards. The preserves also host deer, raccoons, mink, beaver and muskrat.

The prairie grass acreage is a federally designated wetland. It is being restored after having been farmed. The grassland is irrigated by a center pivot system using biologically treated wastewater from the plant. The effluent contains nutrients such as nitrogen and ammonia. The grasslands provide habitat and food for animals in the area.

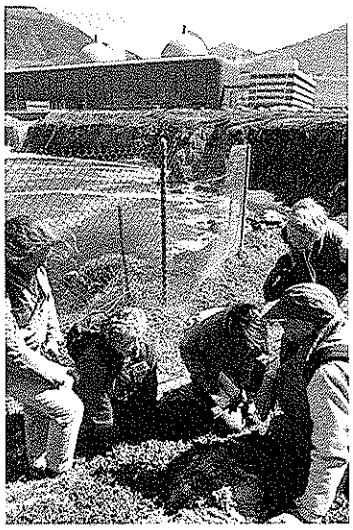


PHOTO COURTESY OF PACIFIC GAS AND ELECTRIC COMPANY

▲ *Lichenologists gather moss near Pacific Gas and Electric's Diablo Canyon plant.*

Pacific Gas and Electric Company

Diablo Canyon 1 and 2—San Luis Obispo, Calif. The two Diablo Canyon reactors are centrally located on a large expanse of coastal lands. The vast majority of the 13,000 acres of controlled lands lying north and south of the power plant are maintained in their natural condition.

The company maintains a comprehensive land management program for Diablo Canyon. Its goals are biodiversity conservation, protection of cultural resources, environmental education and natural resources stewardship. This is accomplished through the application of best management practices for various land uses, including crop agriculture and livestock grazing. A land stewardship committee consisting of archaeologists, biologists, engineers, land planners and community relations representatives oversees the program.

Pacific Gas and Electric Co. developed a geographic information system data base to maintain information on site resources and current land uses. The lands provide habitat for a variety of native plants and wildlife, including threatened and endangered species. The company maintains an inventory of all sensitive species and monitors them regularly for their protection. Vegetation on the site consists of coastal scrub, oak woodlands, grasslands, chaparral, pine forest and freshwater marsh plants. Some of the wildlife that has been studied—in cooperation with state and federal agencies, academic institutions and scientific organizations—includes peregrine falcons, southern sea otter, humpback

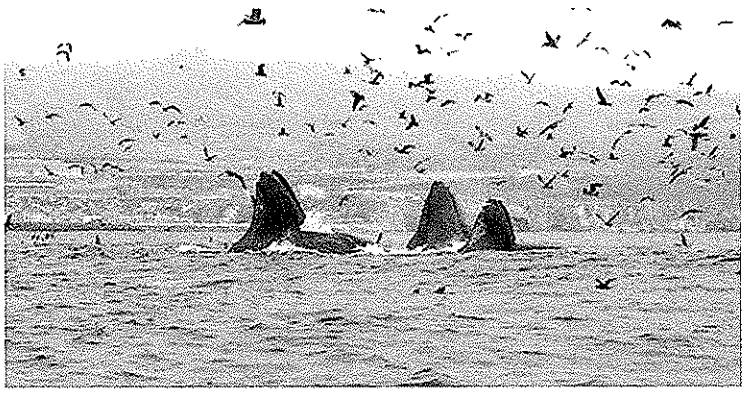


PHOTO COURTESY OF PACIFIC GAS AND ELECTRIC COMPANY

▲ *A pod of humpback whales hunts for small fish off shore of the Diablo Canyon plant.*

and California gray whales and southern elephant seals.

Diablo Canyon also preserves aquatic habitat and controls erosion along streams and roads. Coon Creek, for example, is being preserved to protect steelhead trout and plant habitat on the stream's bank.

The company built a marine biological laboratory at the plant in 1977 to provide research on the marine ecosystem. It has a plant and animal collection, and has conducted and published the results of many investigations. The facility has been used by schools and universities in marine science education programs.

The agricultural and cattle grazing activities at the site are managed to conserve soil, water and native habitats. In 1999, the grazing management program received national recognition as a model of resource stewardship.

The lands are also rich in cultural resources, with evidence of Native American occupation dating back more than 9,000 years. Early inhabitants include Chumash Indians and Spanish and Mexican missionaries and soldiers. The company assesses and monitors the cultural resources in consultation with Native American and scientific organizations.

PPL Corporation

Susquehanna 1 and 2—Berwick, Pa. The plant's environmental activities are focused in the Susquehanna Riverlands Recreation Area, located at the plant site. Susquehanna Riverlands comprises 1;200 acres along the east and west banks of the Susquehanna River. A 400-acre recreation area allows for fishing in Lake Took-a-While or on the old North Branch Canal, hiking on one of three trails, picnicking at one of three pavilions, and other recreation. More than 120,000 people visit each year.

The Pennsylvania Audubon Society also has designated the Riverlands as an Important Bird Area. Adult bald eagles have been observed in the area, suggesting that they are nesting nearby.

The site contains a 100-acre Wetlands Nature Area, set aside as a preserve for observing nature and for environmental education. The Wetlands Nature Area is a mixture of riverside forest and wetlands that has been designated as an Urban Wildlife Sanctuary.

Also at the Riverlands area is Council Cup Scenic Overlook, on the east side of the Susquehanna River. It offers a magnificent 30-mile view of the river valley and provides access to the upland forest. Much of the Riverlands acreage is enrolled in farm-game projects in cooperation with the Pennsylvania Game Commission. The land is open to public hunting. The fishing in Lake Took-a-While has been enhanced by removal of carp and the building and sinking of "porcupine cribs" for fish habitat.

The Susquehanna Riverlands provides for year-round public programming and environmental education, and has received a number of awards. Hundreds of field trips are conducted annually for school and civic groups. Naturalists present programs in schools and for civic organiza-

PHOTO COURTESY OF PPL CORPORATION

▲ *The Council Cup Scenic Overlook near the Susquehanna nuclear plants offers a magnificent 30-mile view of the Susquehanna River Valley.*

tions, and on weekends at the site for the general public. Workshops are conducted for educators throughout the year.

Progress Energy Inc.

With the merger of Carolina Power & Light and Florida Power into Progress Energy, active ecological programs at the company's five nuclear plants continue. CP&L has, for instance, a long history of working with the Natural Heritage Program to preserve rare and endangered plants along its power line rights of way, including transmission and distribution lines from two of its three nuclear plants.

CP&L has supported the North Carolina Adopt-a-State-Park program, funding environmental education programs and an employee volunteer organization. A similar program provides environmental education in South Carolina. Employees and their families from all three CP&L nuclear plants have completed more than 300 improvment projects. The Adopt-a-Park program was recognized by the Edison Electric Institute as the first of its kind by an electric utility.

Brunswick 1 and 2—Southport, N.C. Brunswick has a long-established sea turtle protection program. The program at Progress Energy's Brunswick plant diverts sea turtles from the plant's cooling water intake canal. Brunswick officials work closely with local wildlife officials to rescue imperiled sea turtles and return them to the water. Progress Energy promotes community awareness of sea turtle issues through beach signs and bill inserts.

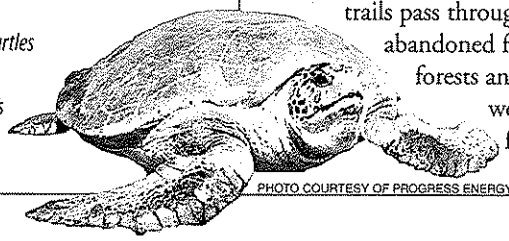
▲ *Hiking is a popular pastime on trails maintained near Progress Energy's Harris plant.*

Harris 1—New Hill, N.C. Progress Energy and the North Carolina Wildlife Resources Commission have developed a wildlife management plan for 2,600 acres surrounding Harris Lake and the Harris nuclear plant, setting aside the land as a wildlife refuge. The company maintains wood duck boxes on the lake. The Harris plant maintains other waterfowl and wild turkey preservation activities. Harris employees also recycle Christmas trees in Harris Lake to establish fishing reefs.

The reservoir at the Harris plant contributes acres of public waters for boating, fishing and other recreational activities. Employees maintain the White Oak Nature Trail at the Harris Visitors Center. Two closed-loop trails pass through an abandoned field, pine forests and hardwood forests. A backyard wildlife area demonstrates the types of plants that attract birds and wildlife. Harris plant lands also have been donated to establish a county park on Harris Lake. The park offers 680 acres with hiking and bike trails.

Land management programs at the Harris plant include a game lands partnership with the North Carolina Wildlife Resources Commission, leasing of land to North Carolina State University for research and teaching, and providing boat ramps to the lake. Progress helps to fund the Natural Resources Leadership Institute at North Carolina State, which trains leaders in natural resource policy and management. The Harris Energy and Environmental Center sponsors programs to provide educational wildlife and aquatics programs for teachers and students.

Robinson—Hartsville, S.C. Progress has registered 4,000 acres, including land at the Robinson plant, for protection of the red cockaded woodpecker in South Carolina's Safe Harbors program. Robinson also offers its public waters on Lake Robinson for boating, fishing and other



▶ *Loggerhead turtles are protected at Progress Energy's Brunswick site.*

PHOTO COURTESY OF PROGRESS ENERGY INC.

recreation. The Robinson plant also maintains wood duck boxes on Lake Robinson, and supports other waterfowl and wild turkey preservation activities.

Robinson employees also recycle Christmas trees for fishing reefs.

Crystal River 3—Crystal River, Fla. The Crystal River site supports a kestrel nest box enhancement study along transmission lines from the plant, winning recognition from Renew America for the program. Crystal River also supported an Eagle Scout project designed to encourage osprey nesting and is working with the Florida Fish and Wildlife Conservation Commission to protect black skimmer nesting sites on islands adjacent to the plant.

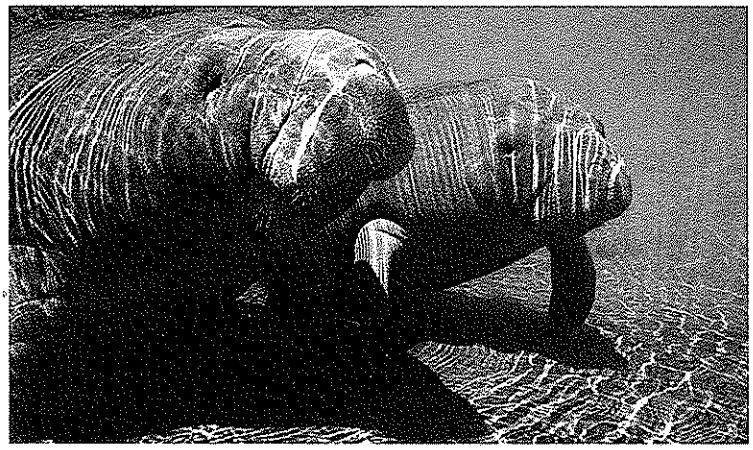
Florida Power operates a multi-species hatchery called the Mariculture Center at Crystal River to spawn and release to the Gulf of Mexico recreationally and commercially important fish and shellfish species. The Center works with the U.S. Fish and Wildlife Service, Mote Marine Laboratory, Harbor Branch Oceanographic Institute, the University of Miami and the Florida Fish and Wildlife Conservation Commission on aquaculture programs.

Crystal River also has a long-established program to protect sea turtles, diverting them from the cooling water intake canal. Crystal River works with the Apalachicola National Estuarine Research Preserve and Clearwater Marine Aquarium on efforts to protect nesting sea turtles. In addition, the warm water in the winter months and the freedom from the danger of powerboats create a welcome habitat for the manatees that congregate near the Crystal River plant.

The Crystal River site has been involved in the restoration of a coastal salt marsh, removing fill from a dike on the discharge canal so that the area is now flush with the tides.

The plant supported the improvement of trails and construction of trail bridges and boardwalks at the St. Martin's Marsh Aquatic Preserve in Crystal River. The company has participated in the designation and development of the Cross Florida Greenway, which terminates on the west coast of Florida just north of the plant.

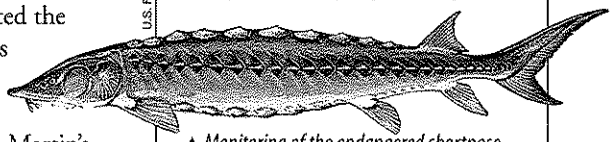
The Crystal River Mariculture Center participates in environmental education opportunities with the local Academy of Environmental Sciences. Florida Power also sponsors the Natural Areas Training Academy run by the Florida chapter of the Nature Conservancy.



▲*Manatee find warmth and freedom from the danger of powerboats near Progress Energy's Crystal River plant.*

PSEG Nuclear LLP

Salem 1 and 2—Lower Alloways Creek, N. J. The Public Service Enterprise Group (PSEG) Salem and Hope Creek plants are located on the Delaware River estuary. The focus of the PSEG environmental program is the Estuary Enhancement Program, an innovative and comprehensive program begun in 1994 and designed to protect the Delaware Estuary and to promote fisheries production through environmental initiatives. PSEG won the 2002 National Oceanographic and Atmospheric Administration Excellence Award in Coastal and Ocean Resource Management. PSEG proposed the program as part of a landmark cooling water discharge permit that was issued by the New Jersey Department of Environmental Protection in 1994 for the Salem facility. The Estuary Enhancement Program is the largest privately funded program of its kind in the country, and perhaps the world, and has won many awards from national



U.S. FISH AND WILDLIFE SERVICE

▲ *Monitoring of the endangered shortnose sturgeon is part of PSEG Nuclear's Estuary Enhancement program.*

U.S. FISH AND WILDLIFE SERVICE

▲ *Ducks and other wetlands inhabitants have benefited from PSEG Nuclear's Estuary Enhancement Program on the Delaware River.*

and state environmental and industry groups. It has been developed and implemented through collaboration with a team of experts in salt marsh restoration, ecology and aquatic biology; independent scientists; environmental groups; natural resource and land management agencies; public officials; and local communities.

The primary feature of the Estuary Enhancement Program (EEP) is a large-scale wetlands restoration program. PSEG is restoring, enhancing and/or preserving more than 20,000 acres of degraded salt marsh and adjacent uplands along the Delaware Estuary in New Jersey and Delaware. Funding is also being provided to the state of Delaware for an artificial reefs program and other environmental initiatives. The wetlands restoration component of the program is providing expanded habitat, shelter and food for fish and other aquatic species, which in turn helps support increased fisheries production. Endangered and threatened species of wildlife, resident and migrating birds and waterfowl also benefit.

In addition to the marsh restoration, PSEG has built eight fish ladders to help river herring overcome barriers blocking migration into their historic spawning grounds. Salem is upgrading its cooling system with state-of-the-art fish protection technology and limitation of cooling water intake to minimize harm to fish. The EEP also includes construction of public use facilities, development of public use programs, installation of educational signs and access to vast natural areas for recreation, education, research and ecotourism.

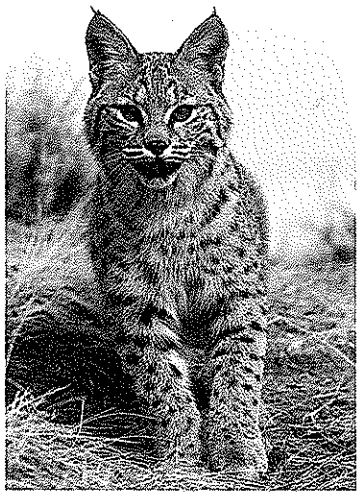
Even prior to the commercial operation of the stations, PSEG Nuclear partnered with various state and federal agencies in understanding and protecting the natural resources in the vicinity of the facilities.

Endangered and threatened species such as the shortnose sturgeon and sea turtles have been monitored since the early 1980s. PSEG Nuclear has worked with the National Marine Fisheries Service to prevent these species from being harmed by station operations. The company also has worked to monitor the osprey population in the vicinity of Salem and Hope Creek. The company has collected feather and eggshell samples to analyze for PCB levels, and has equipped osprey with satellite transmitters to follow their migration between North and South America.

STP Nuclear Operating Company

South Texas Project 1 and 2—Bay City, Texas The South Texas Project (STP) provides diverse habitat areas for birds and other wildlife. STP offers a significant source of water year-round, and key natural resource areas such as wetland and grassland areas necessary to sustain an extensive wildlife population.

The site is a sanctuary for various animals, including threatened or endangered species such as the bald eagle, wood stork, white-tailed hawk and white-faced ibis. The site is also home to bobcats, white-tailed deer and alligators. About 1,700 acres have been set aside to protect and preserve these species.



▲ *The South Texas Project site is a sanctuary for bobcats and other animals.*

The South Texas Project is located on the state-sponsored Great Texas Coastal Birding Trail that spans the entire Texas Gulf Coast. The site harbors an estimated 100 to 150 species of wintering and resident birds. Since 1997, the 15-mile area surrounding the South Texas Project has

U.S. FISH AND WILDLIFE SERVICE

▲ *San Onofre works with the Friends of the Sea Lions to care for sick, stranded or injured sea lions, later returning the animals to their environment.*

had the most bird species nationwide in the National Audubon Society's annual Christmas Bird Count. Black skimmers, least terns, forester terns, gull-billed terns and laughing gulls nest near the 7,000-acre main cooling water reservoir. U.S. Fish and Wildlife Service biologists estimate that more than half the state's breeding adult gull-billed terns nest near the reservoir.

In 1996, the company, in cooperation with various state agencies and Ducks Unlimited, established a 110-acre wetland habitat for migratory waterfowl. The project received a Ducks Unlimited Habitat Conservation Award and U.S. Department of Agriculture Conservation Award. An observation trail adjacent to the wetland habitat allows easy access and viewing by the public.

The South Texas Project also participates with regional and local planning and advisory organizations that address water conservation and competing water resource demands, and supports efforts focused on efficient use of water resources.

Southern California Edison Company

San Onofre—San Clemente, Calif. San Onofre Nuclear Generating Station (SONGS) is a two-reactor nuclear plant located along the beautiful California coast near San Clemente, and the company takes special care to enhance the surrounding environment.

The company has restored 150 acres of wetlands at the nearby San Dieguito Lagoon and has built an artificial kelp reef to ensure the continued supply of kelp to feed marine life. The company also funds a marine fish hatchery as supplementary mitigation for kelp impacts. An advanced fish return system, the only one of its kind in the world, guides fish into a holding area and returns them safely to the sea.

SONGS employees are approved by the California Department of Fish and Game to handle and return seals and sea lions to the environment. They cooperate with the Friends of the Sea Lions organization in the care of sick, stranded or injured sea lions and have won an award from that group for this program.

Ocean water is used as a coolant for plant systems and, during return to the ocean, the warm water travels through a series of fast-mixing diffuser parts that re-mix it with cooler water. This minimizes impacts on marine life.

SONGS sponsors signs along the nature trail at nearby Doheny State Park, offering information on endangered species in the area. Employees at SONGS frequently give presentations on fish and other environmental topics at schools and civic organizations. A SONGS Environmental Protection Group supports employee participation in local community projects, such as beach cleanups and assisting local environmental organizations.

South Carolina Electric & Gas Corporation

Summer—Jenkinsville, S.C. South Carolina Electric & Gas has developed a nature trail at its Summer Nuclear Plant near Jenkinsville, S.C. The trail is a volunteer effort by employees, and is also used by the general public, including school groups. The 1.5-mile trail includes two osprey nesting sites, several scenic lookouts, an outdoor classroom and an amphitheater. Students at a local vocational school built 12 bluebird and eight wood duck boxes for the trail.

Southern Nuclear Operating Company

Farley 1 and 2—Houston, Ala. Farley has one of the largest gopher tortoise colonies in the

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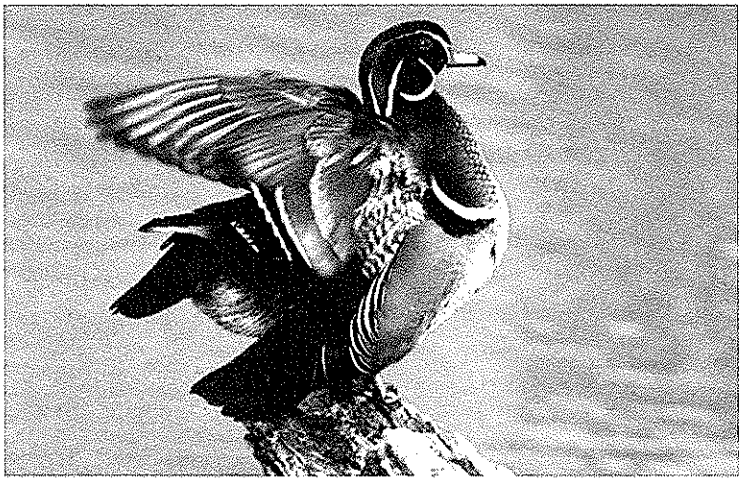


▲*Nesting boxes have been set out by the Hatch plant for wood ducks, bluebirds, barred owls, and bats, along with an osprey nesting platform.*

country, according to biologists. The gopher tortoise is a state protected species. The plant also is host to at least one bald eagle. The company has relocated nesting ospreys from power poles to a platform it installed at the plant. Farley also participates in a bluebird nesting program with the Wildlife Habitat Council and the North American Bluebird Council.

U.S. FISH AND WILDLIFE SERVICE

▲ *Farley has one of the largest gopher tortoise colonies in the country.*

More than 21,000 trees have been planted at Farley, contributing to Southern Company's efforts with the federal Climate Challenge Program. The company also is building a nature trail.

Hatch 1 and 2—Baxley, Ga. Since 1994, Plant Hatch has been a certified wildlife habitat site, as designated by the Wildlife Habitat Council. Company employees have planted food plots for deer, turkey, bobwhite quail and wild turkeys. Nesting boxes have been set out for wood ducks, bluebirds, barred owls, and bats, along with an osprey nesting platform. The plant participates in a bluebird nesting program.

Hatch also has a small gopher tortoise population, and is maintaining the burrowing area and food sources on a sandhill ridge near the plant. The federally listed shortnose sturgeon is present in the Altamaha River near the plant. Southern Company is coordinating efforts with the National Marine Fisheries Service in implementing a recovery plan for the sturgeon.

Hatch has planted more than 8,000 pines and hardwoods recently. The plant also has a nature trail, including an upper sand ridge that contains longleaf pines, slash pines, turkey oaks and water oaks. The trail descends to a dense southern magnolia thicket before looping back to the sand ridge.

Hatch also participates in a Southern Company hands-on environmental program with the Environmental Teachers Corps. The program teaches children from kindergarten through 7th grade environmental awareness.

Vogtle 1 and 2—Waynesboro, Ga. Vogtle has been a certified wildlife habitat since 1993. The plant undertook a long-term pine restoration project in 1990. Vogtle is committed to reclaiming land that was cleared during construction of the site. More than 600 acres have been replanted with longleaf and loblolly pine. Vogtle also participates in the bluebird nesting and environmental education programs listed above.

Tennessee Valley Authority

The Tennessee Valley Authority's Browns Ferry, Sequoyah and Watts Bar nuclear power plants have incorporated wildlife plantings on unused portions of their sites to foster use of the areas by native wildlife. Browns Ferry and Watts Bar have relocated fish from channels and ponds at the facilities to the nearby Tennessee River. All three sites support an active program to monitor the aquatic ecosystems nearby.

Browns Ferry 2 and 3—Athens, Ala. Browns Ferry donated a substantial number of fish collected from internal ponds to the Tennessee Aquarium to increase its collection of native Tennessee Valley fish. The Browns Ferry cooling water forebay provides a refuge area for fish and other aquatic species that is connected

to, but protected from, the nearby Tennessee River. During an employee fishing day, the world-record blue catfish was caught in this channel.

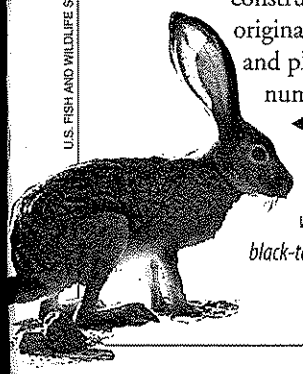
Browns Ferry has identified an important archaeological resource area on a portion of the site, and will protect it from disturbance or development. All three sites have preserved and maintain private cemeteries that were located on plant property, and in some cases have relocated them.

Browns Ferry participates in the Wheeler Watershed Clean Water Partnership, an association of watershed stakeholders and regulators whose goal is improvement of water quality.

TXU

Comanche Peak 1 and 2—Somervell County, Texas The TXU Electric Squaw Creek Reservoir and adjacent shoreline areas offer preferred habitat and nesting for bald eagles, great blue herons and many other species of birds. Activities at Comanche Peak are assessed to ensure the protection of wildlife habitat and nesting areas. The arrival and nesting of thousands of migratory cliff swallows that build their mud nests on various plant structures is factored into plant maintenance activities in order to protect the birds.

The plant has restored more than 90 acres disturbed during construction to its original vegetation, and planted numerous trees and shrubs for beautification. This has also provided new habitat for deer, turkey, rabbit, fox and other species. The station has begun construction of a 2-mile nature trail. Areas of interest include dinosaur tracks, raised cactus gardens, native plants, wildlife feeding areas and an oak tree estimated to be more than 300 years old.



U.S. FISH AND WILDLIFE SERVICE

◄ *Restored land near TXU's Comanche Peak plant provides habitat for the black-tailed jackrabbit and other species.*

PHOTO COURTESY OF WOLF CREEK NUCLEAR OPERATING CORPORATION

▲ *Osprey get good care at the Wolf Creek plant before being released to the wild.*

Comanche Peak's conservation efforts have been recognized by surrounding communities.

The plant has established conservation goals with the Texas Natural Resource Conservation Commission.

The 125-foot-deep waters of the Squaw Creek Reservoir caused the water to become stratified. It stagnated and lost nutrients. To aid water mixing, TXU installed two air bubblers on the reservoir bottom. The results have included enhancement of Comanche Peak's thermal performance, reduction of chemicals and increased levels of dissolved oxygen.

Wolf Creek Nuclear Operating Corporation

Wolf Creek—Burlington, Kan. Wolf Creek won the Edison Electric Institute National Land Management Award in 1996 for development of public access to Coffey County Lake. Wolf Creek has also won several wildlife conservation awards, among them Conservation Organization of the Year by the Kansas Wildlife Federation.

A pair of bald eagles has nested at the lake since 1994. The plant maintains a no-disturbance zone to keep fishermen from bothering the nests. Wolf Creek also aids the U.S. Fish and Wildlife Service in banding young eagles in the nest.

The Wolf Creek land management program balances agricultural production and conservation. Soil conservation is stressed in agricultural leases. Two shallow-water wetlands were constructed to add habitat and reduce erosion. Sixty acres of farmland was planted with native prairie grass and four small wetland dikes were built to reduce flood damage and soil erosion. A buffer strip is maintained around the lake.

The plant also maintains an Environmental Education Area, which includes 700 feet of boardwalks among wetlands habitats. Eagle Scout projects have expanded trails, added wildlife viewing blinds, planted trees and added a barn classroom. The International Brotherhood of Electrical Workers has built a 40-foot silo tower for wildlife observation.

Plant-by-Plant Overview Of Environmental Programs

Company/Nuclear Plant Name	Endangered Species/ Wildlife Protection	Land/Seashore Preservation	Wetland Recovery	Water Protection	Tree Planting	Nature Park or Trail	Environmental Education	Page #
AMERENUE								9
Callaway	X		X	X	X			
AMERICAN ELECTRIC POWER								9
Cook	X	X	X	X	X	X	X	
ARIZONA PUBLIC SERVICE CO.								9
Palo Verde 1, 2 & 3	X	X		X			X	
CONSTELLATION NUCLEAR								10
Calvert Cliffs 1 & 2	X	X	X			X	X	
Nine Mile Point	X	X	X	X				
THE DETROIT EDISON CO.								11
Fermi	X	X	X			X		
DOMINION GENERATION								12
Millstone 2 & 3	X							
North Anna 1 & 2	X	X				X	X	
Surry 1 & 2	X	X		X		X	X	
DUKE POWER CO.								13
Catawba 1 & 2	X	X				X	X	
Oconee 1, 2 & 3	X	X	X	X		X	X	
McGuire 1 & 2	X	X				X	X	
ENERGY NORTHWEST								15
Columbia	X						X	
ENTERGY OPERATIONS INC.								15
Arkansas Nuclear One 1 & 2	X	X					X	
FitzPatrick	X	X			X		X	
Grand Gulf	X	X	X			X	X	
Indian Point 2 & 3	X				X			
Pilgrim	X	X			X	X		
River Bend	X						X	
Vermont Yankee	X						X	
Waterford 3	X	X			X		X	
EXELON GENERATION CO.								17
Braidwood 1 & 2								
Byron 1 & 2								
* Clinton				X			X	
Dresden 2 & 3								

*Operated by AmerGen Energy

Company/Nuclear Plant Name	Endangered Species/ Wildlife Protection	Land/Seashore Preservation	Wetland Recovery	Water Protection	Tree Planting	Nature Park or Trail	Environmental Education	Page #
EXELON GENERATION CO. (Cont.)								17
LaSalle County 1 & 2	X							
Limerick 1 & 2		X						
* Oyster Creek				X				
Peach Bottom 2 & 3		X						
Quad Cities 1 & 2	X	X				X	X	
* Three Mile Island							X	
FIRSTENERGY CORP.								18
Beaver Valley 1 & 2	X			X				
Davis-Besse	X	X				X	X	
Perry	X	X			X		X	
FLORIDA POWER & LIGHT CO.								19
St. Lucie 1 & 2	X					X	X	
Turkey Point 3 & 4	X	X	X				X	
NEBRASKA PUBLIC POWER DISTRICT								20
Cooper	X	X	X				X	
NUCLEAR MANAGEMENT CO.								20
Duane Arnold	X	X	X		X	X	X	
Kewaunee	X					X	X	
Monticello	X					X		
Palisades	X							
Point Beach 1 & 2	X	X	X			X	X	
Prairie Island 1 & 2								
OMAHA PUBLIC POWER DISTRICT								22
Fort Calhoun	X	X	X	X			X	
PACIFIC GAS AND ELECTRIC CO.								22
Diablo Canyon 1 & 2	X	X				X	X	
PPL CORP.								23
Susquehanna 1 & 2	X	X	X	X		X	X	
PROGRESS ENERGY INC.								24
Brunswick 1 & 2	X						X	
Crystal River 3	X	X	X	X		X	X	
Harris	X	X				X	X	
Robinson	X						X	
PSEG NUCLEAR LLC								25
Hope Creek	X	X	X	X		X	X	

*Operated by AmerGen Energy

Company/Nuclear Plant Name	Endangered Species/ Wildlife Protection	Land/Seashore Preservation	Wetland Recovery	Water Protection	Tree Planting	Nature Park or Trail	Environmental Education	Page #
PSEG NUCLEAR LLC (CONT.)								25
Salem 1 & 2	X	X	X			X	X	
STP NUCLEAR OPERATING CO.								26
South Texas Project 1 & 2	X	X	X	X			X	
SOUTHERN CALIFORNIA EDISON CO.								27
San Onofre 2 & 3	X	X	X	X		X	X	
SOUTH CAROLINA ELECTRIC & GAS CO.								27
Summer	X					X	X	
SOUTHERN NUCLEAR OPERATING CO.								27
Farley 1 & 2	X	X			X	X	X	
Hatch 1 & 2	X	X		X	X	X	X	
Vogtle 1 & 2	X	X			X	X	X	
TENNESSEE VALLEY AUTHORITY								28
Browns Ferry 2 & 3	X	X		X			X	
Sequoyah 1 & 2	X	X					X	
Watts Bar 1	X	X					X	
TXU								29
Comanche Peak 1 & 2	X	X		X	X	X	X	
WOLF CREEK NUCLEAR OPERATING CORP.								29
Wolf Creek	X	X	X	X		X	X	

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