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U.S. Fish & Wildlife Service

John Heinz

*National Wildlife
Refuge at Tinicum*

*Darby Creek
Canoe Trail*



Introduction



This goose, designed by J.N. "Ding" Darling, has become the symbol of the National Refuge System.

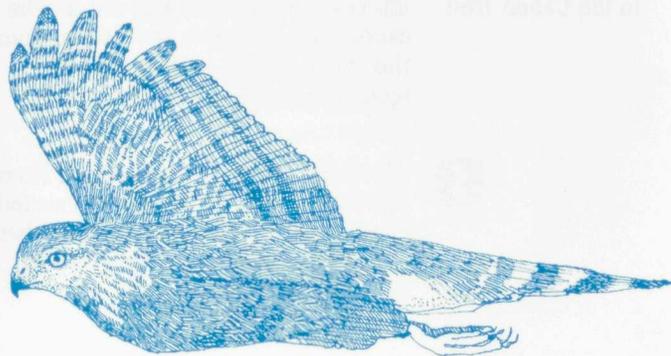
The Interpretive Canoe Trail at the John Heinz National Wildlife Refuge at Tincicum highlights points of interest within and outside refuge boundaries. The highlighted areas designate the recreational opportunities, habitat management practices, and urban pressures that occur here. Use this brochure for waterway orientation and learn about structures and natural features viewable from your canoe.

Darby Creek

The Darby Creek is an ecologically important waterway. It receives the water that drains from 75 square miles of Chester, Delaware, Montgomery, and Philadelphia counties (known as the Darby/Cobbs Watershed), then empties into the Delaware River. The 4 1/2 mile segment of Darby Creek flowing through the Refuge is unique and scenic. It winds through the largest remaining freshwater tidal marsh in Pennsylvania, allowing canoeists to see a variety of plants and animals. Since this portion is tidal, it is only navigable within two hours before and two hours after high tide. Call the Cusano Environmental Education Center (215-365-3118) for tide information.



Turtles



Sharp shinned hawk

Plant and Wildlife Viewing



Yellow pond lily

You may see Canada geese feeding in the fields or a marsh hawk soaring overhead as you enter the creek at the canoe launch. In the creek, the eastern painted turtle or the state-threatened red-bellied turtle may be seen sunning on a log or rock. Hooded mergansers, pintails, shovelers and mallards are a few of the ducks that you may pass. Over 280 species of birds have been seen at the Refuge and approximately 85 have nested here. Least bitterns, great egrets, black-crowned night herons and yellow warblers are some of the species which nest on or near the Refuge. Muskrats, opossum, skunk, woodchuck, deer, fox and raccoon are present as well.

In the spring, you will be treated to an array of wildflowers and migrating birds. By late spring and throughout the summer, young birds will fledge (leave the nest) and mature. In the fall, migrating birds once again return in large numbers. Even during winter months, wildlife can be seen as it adapts to the cold weather.

Interpretive Guide to the Canoe Trail

This guide identifies ten points of interest visible from the water. The canoe trail proceeds southwest from the canoe launch site toward the mouth of Darby Creek.

- 1 The Sunoco Darby Creek Tank Farm serves as a holding area for thousands of gallons of crude oil. This oil is then pumped to Sunoco's refinery along the Schuylkill River.

- 2 The Delaware County Sewer Treatment Plant was closed many years ago. The 6" diameter Delcora pipeline now carries wastewater from southeast Delaware County to Southwest Philadelphia Sewage Treatment Plant. During heavy rains, this pipeline may overflow into the creek.



Muskrat
Robert Savannah

- 3 Action Supply Company, Inc. recycles old, excessed building materials (brick, stone, and concrete) into a useable gravel or fill material.
- 4 The Refuge's water control structure, a 48" diameter pipe, connects the creek with the pond, or impoundment. This allows the water level of the pond to be raised or lowered in accordance with the best management for wildlife.
- 5 The 62 - acre, Folcroft Landfill served as a dumping ground for trash from 1956 - 74. It is monitored by the U.S. Environmental Protection Agency, and the U.S. Fish and Wildlife Service, and is a component of the Lower Darby Creek Superfund site .
- 6 Tincum Marsh is a broad, expansive wetland. Hermesprota Creek flows from the north into the larger channels of Thoroughfare and Darby Creeks.

- 7 As you continue westward, you'll see a steel bridge over a channel. The bridge connects the breached dike for hikers and bikers to continue their trail route. The land south of the bridge and west has been restored to tidal marsh by excavating 170,000 cubic yards of muck dredged from the Delaware and Schuylkill Rivers back in the 1950's. These two marsh restoration sites combine for a total of 44 newly created, wetland acres.

- 8 Another large stream, Muckinipattis Creek, enters Darby Creek from the north.

- 9 The historic Morton Mortensen House is in Norwood's Winona Park. This Swedish house, dates back to the 17th century, and was built by the grandson of one of the signers of the Declaration of Independence.

- 10 The deep water lagoon was formed by dredging. The dredging took place in the late 1960's to obtain ballast (stabilizing material), necessary in the construction of Interstate Highway 95. The lagoon is over 30 feet deep in some sections.



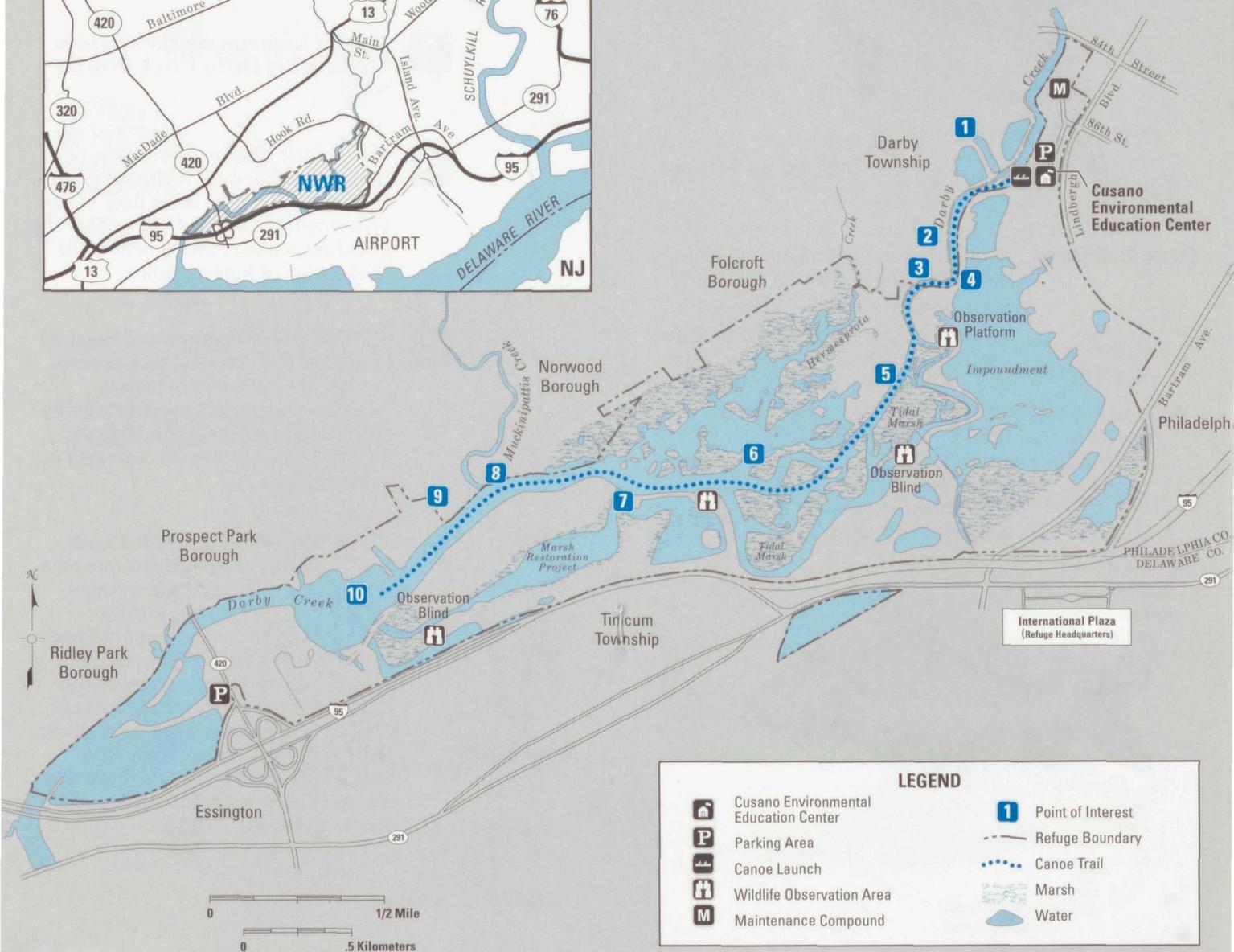
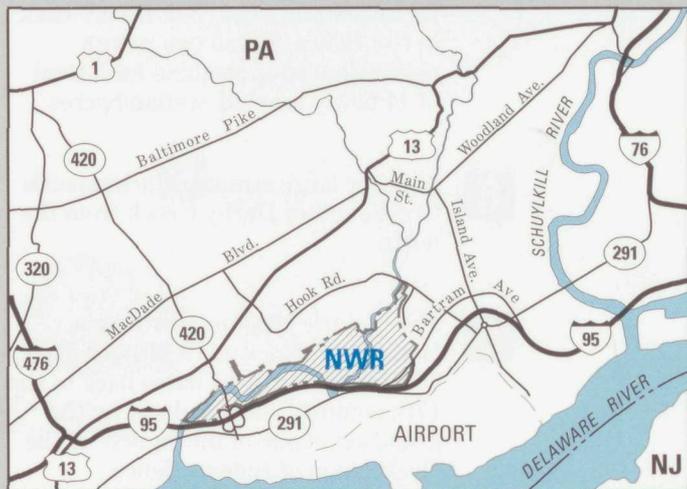
Pickerel weed

This is where our self-guided canoe trail ends. There is a marina one mile downstream. Occasionally, a wake-making motorboat may wander upstream. Turn around and head back to the canoe launch. If you wish to continue downstream, proceed with caution. Governor Printz Park has an access ramp two miles downstream on the Delaware River in Essington. Remember, during low tide there may not be enough water for an immediate return upstream.

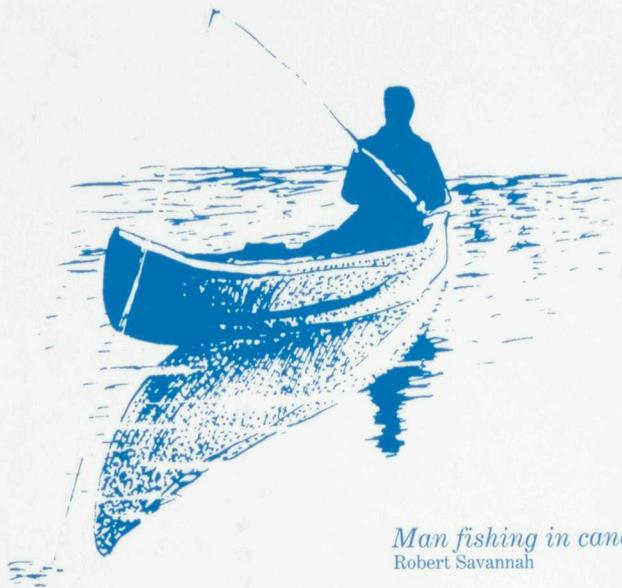
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National Wildlife Refuge at Tinicum

Darby Creek Canoe Trail



LEGEND	
	Cusano Environmental Education Center
	Parking Area
	Canoe Launch
	Wildlife Observation Area
	Maintenance Compound
	Point of Interest
	Refuge Boundary
	Canoe Trail
	Marsh
	Water



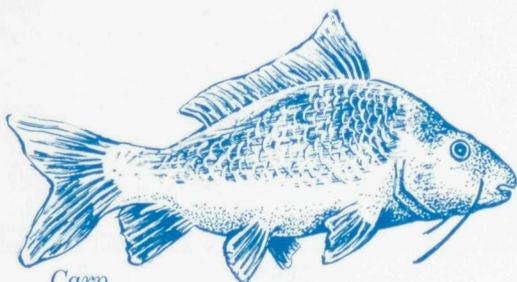
Man fishing in canoe
Robert Savannah

Canoe Trail Ethics

Share the waters. Anglers, canoeists, and hikers should respect each other's right to enjoy the Refuge.

To avoid startling the animals in their native habitat, it is best to view them at a distance. If the wildlife you are watching begin to react to your presence, you are too close.

Do not litter. Litter can cause health hazards to wildlife. For those interested in organized clean-ups, contact the Refuge.



Carp

Canoeing Safety Guidelines



Egret

- Due to tidal water fluctuation, it is best that canoeing take place two hours before to two hours after high tide.
- Always wear a personal flotation device (i.e. Life vest). All persons in the canoe are required, by state boating laws, to have a flotation device.
- Do not bring alcoholic beverages. It is illegal to be under the influence of alcohol or any controlled substance while canoeing.
- Bring an extra paddle.
- We recommend canoeing with a partner or letting someone know your itinerary before heading out. Cell phones or other communication devices are also recommended.
- Know how to swim.
- Tie down gear.
- Know the weather forecast. Be prepared for weather changes.
- Be aware of the daily tide schedule and use caution during times of extreme current conditions.
- Use added caution around other boats.
- A health advisory, issued in 1985 by the Pennsylvania Department of Environmental Resources warns the public not to eat the fish or drink water from Darby Creek!



Bullhead catfish
Robert Savannah

Value of Wetlands

Wetlands provide the basic needs for many animals. Migratory waterfowl need wetlands along the flyways for their continued survival. About 35% of all endangered or threatened plants and animals either live in wetlands or depend on them in some way. Many commercially valuable fisheries and shell fisheries depend on coastal wetlands as fish spawning grounds. Waterfowl, too, use wetlands for hatching and rearing their young. Shallow inland wetlands provide breeding areas, food, and cover for many freshwater fish.



Mallard ducks

Wetlands are valuable to people in subtle ways. They provide natural flood control and drought protection by storing water during heavy rains and slowly releasing the water during dry spells. This reduces downstream loss of life and property. The waters stored in wetlands also have time to soak into soils, recharging the aquifers that provide wells with water. Wetlands also give us cleaner water. When the water spreads out and slows down in wetlands, silt and debris settles out. Wetlands filter out and absorb many pollutants.

Wetlands also provide an excellent means of recreation and education. In recognition of their value, visitors should practice minimum-impact activities. Canoeing, fishing, and birdwatching are some favorites. These can be done while still protecting these fragile natural areas.

Freshwater marshes are the most common variety of wetlands. The freshwater marsh within the Refuge is tidal, as influenced by the Atlantic Ocean over 100 miles away. On the Refuge there are other forms of wetlands that include: ponds, creeks, non-tidal marshes, swamps, bogs, and forested wetlands.

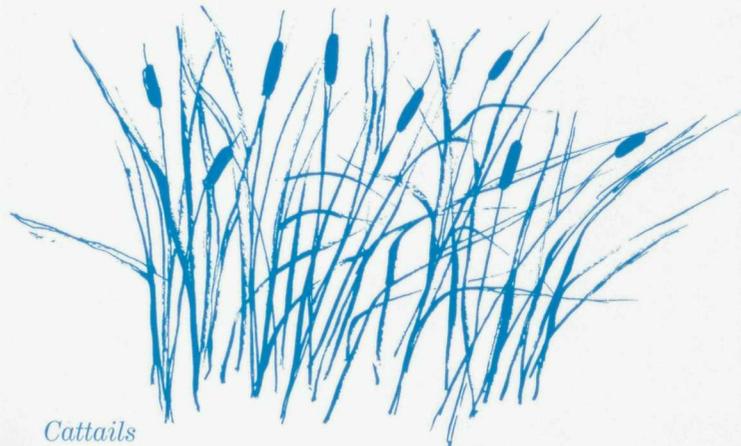
U.S. Fish and Wildlife Service



Painted turtle
Robert Savannah

John Heinz National Wildlife Refuge at Tinicum is one of over 500 refuges in the National Wildlife Refuge System administered by the U.S. Fish and Wildlife Service. The National Wildlife Refuge System is a network of lands and waters managed specifically for the protection of wildlife and wildlife habitat, and represents the most comprehensive wildlife management program in the world. Units of the system stretch across the United States from Northern Alaska to the Florida Keys and include small islands in the Caribbean and South Pacific. The character of the refuges is as diverse as the nation itself.

The Service also manages National Fish Hatcheries, and provides federal leadership in habitat protection, technical assistance, and the conservation and protection of migratory birds, certain marine mammals, and threatened and endangered species.



Cattails

The trails of the John Heinz National Wildlife Refuge at Tinicum are open from 8:00 a.m. until sunset. The Cusano Environmental Education Center is open from 8:30 a.m. until 4:00 p.m.