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September 2014



U.S. Fish & Wildlife Service

# Edwin B. Forsythe

*National Wildlife  
Refuge*

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*Wildlife Drive  
Self-guided Tour*



## Habitat for Wildlife



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

The Edwin B. Forsythe National Wildlife Refuge protects more than 47,000 acres of southern New Jersey coastal habitat which is actively managed for migratory birds. The Refuge's location in one of the Atlantic Flyway's most active flight paths makes it an important link in seasonal bird migration. Its value for the protection of water birds and their habitat continues to increase as we develop the New Jersey shore for our own use.

Edwin B. Forsythe Refuge's Brigantine and Barnegat Divisions (Forsythe) were originally two distinct refuges, established in 1939 and 1967 respectively, to protect tidal wetland and shallow bay habitat for migratory water birds such as the Snow Goose, Atlantic Brant and the American Black Duck. In 1984 they were combined under the Edwin B. Forsythe name, in honor of the late conservationist Congressman from New Jersey.

Forsythe is one of more than 560 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 resource 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.

Follow the Blue Goose signs for a leisurely trip along this self-guiding tour route. The tour will take you through refuge wetlands and uplands

## View from the Drive

where you may observe and photograph migratory birds and other wildlife from the roadway. Although refuge habitats may appear untouched, they are actively managed to support a wide variety of native plants and animals. During your tour of the Wildlife Drive, you may see refuge staff members at work. Stops described in this brochure correspond with the numbered Blue Goose signs which will help you better understand both refuge resources and management activities.

## Drive Tips

- Open: Daily, sunrise to sunset
- Speed Limit: 15 mph or less (as posted)
- Length: Eight-mile loop
- Directions: From the Visitors Information Center to Leeds Eco-Trail and Gull Pond Road are two way. Wildlife Drive is one way for the entire 8 mile loop from the intersection with Gull Pond Road.
- Stopping: When stopping to observe wildlife, pull well to one side of the road and leave your car door closed so others may pass. Please DO NOT park and leave your car along the Wildlife Drive.
- Viewing Wildlife: Opportunities are best when you remain in your car concealed from the wildlife you wish to observe.
- Orientation: Numbered paragraphs in this brochure correspond to the Blue Goose signs along the Drive. The brochure map may help orient you to your location as you reach each stop.

## 1. Explore the Leeds Eco-Trail

The Leeds-Eco Trail is a half mile trail that enables exploration of both the salt marsh and woodland and is accessible to physically challenged individuals. The trail is divided into two segments. One segment is a raised boardwalk over the salt marsh where you may see wading birds such



as the Snowy Egret and Great Egret as well as hear and occasionally see a Clapper Rail or a Willet. Looking out from an extension of the boardwalk you will see an Osprey nesting platform. Beginning in early spring and summer, you can observe the Osprey nesting and raising their brood of chicks. In spring and summer you will also see Barn Swallows nesting under the boardwalk. The second segment of the trail is a short hike through a mixed pine and hardwood forest over a wide flat crushed stone trail ending at a raised blind excellent for observing the salt marsh wildlife.

### **2. Gull Pond Vantage Point**

Continue straight to Gull Pond Tower. (A right turn at the intersection begins the eight mile one-way loop around Wildlife Drive.) The water around you is fresh water flowing from Doughty Creek and Lily Lake. The tower provides an excellent vantage point for observing water birds such as Black and allard Ducks, wading birds such as Snowy and Great Egrets, and aerial water birds such as Forster's Terns and occasionally a Black Skimmer.

### **3. Diking to Create Wetland Diversity**

You are driving onto the South Dike, constructed over an old railroad bed which once connected Brigantine Island to the mainland. It is now the southern wall of a dike system which contains two pools of water one fresh and one salt surrounded by the saltmarsh which is visible on your right. These man-made pools

### **4. A Freshwater Oasis**

help to create a diverse wetlands that supports a wider range of wildlife than the saltmarsh habitat would by itself.

Fresh water is a critical resource in the saltmarsh environment. The 900-acre West Pool to your left is specifically managed to attract and support a wide variety of migratory water birds. Each year, waterfowl, wading birds and shorebirds use this site for resting, drinking, feeding and bathing. Watch here for freshwater-loving birds such as Wood Ducks during spring and fall migrations. In fall and winter, look for American Black Ducks and spectacular flocks of Atlantic Brant that fly in daily from nearby salt bays to drink and wash salt residues from their feathers.



*Wildlife Drive*

### **5. Managing Pool Water Levels**

Water depth in the pools is regulated by water control structures along the dikes. Pool water levels are periodically changed to produce abundant wildlife food plants which grow on the muddy bottom and to meet other habitat requirements of wetland mammals and migratory birds. This impoundment receives heavy wildlife use in the fall when waterfowl linger here to feed on the plentiful spikerush plant before heading south for the winter. During the late spring and summer, water

levels are lowered to allow migrating shorebirds access to shallow pools and mud flats for feeding on a variety of invertebrate prey such as worms, insect larva, amphipods, copepods, crustaceans, and mollusks.

Watch for ducks 'tipping up' as they reach down to feed on aquatic plants.



© Nick Kontonicoalas

*Black skimmer*

## 6. View from South Tower: Wetlands and More Wetlands

Climb the South Tower and observe the varied wetland habitats created by diking and water management. Wetlands are the link between land and water and are some of the most productive ecosystems in the world. Each spring and fall, thousands of migrating water birds come here to rest and feed. They are attracted by the water and food plants found in these diverse marshlands. In late fall and winter, look for great dark flocks of Atlantic Brant wheeling over distant salt bays, and for large concentrations of American Black Ducks in the pools. Thousands of Snow Geese rest and feed in the saltmarsh and pools in November and early December.

## 7. Turtle Cove and the Saltmarsh

The waters in the saltmarsh and Turtle Cove are affected by the ocean tides and flow in and out twice each day. Water levels can fluctuate up to two feet at each tide. Low tides expose the muddy channel bottoms in the saltmarsh, inviting shorebirds

to probe for tiny food organisms. At high tide, water at the marsh edge may be deep enough to attract Forster's Terns and Black Skimmers.

Watch for horseshoe crabs spawning at Turtle Cove in May and June and for shorebirds that come to feed on crab eggs. Overwintering Atlantic Brant visit this area to pick up sand or grit which they retain in their gizzards to grind food.

The Turtle Cove shoreline is closed to public access to reduce disturbance to the wildlife that use this area.

## 8. The East Pool: A Salt Water Feeding Ground for Shorebirds

The 700-acre tidal impoundment to your left is open to the salt water tides. Managed to meet the needs of many wildlife species, this pool is a popular shorebird foraging area. Water levels fluctuate with the tides and the mudflats support the rich diversity of invertebrates important in the diets of many shorebirds.



Scott Nielson

*Black duck*

Look for sandpipers and plovers along the muddy edges of the East Pool from August through early September, when large flocks come in to comb these mud flats in search of food.

## 9. Habitat Management Techniques Yield Vital Nesting Habitat

Islands in the East Pool are managed to provide nesting and brood-rearing habitat for American Black Ducks and other species which use this area. Seasonal mowing of dike edges

promotes growth of plants used as wildlife food and nest cover. Watch for goslings starting in April and for ducklings beginning in mid-May.

### **10. Sounds of the Saltmarsh**

From late April through September, listen for the clattering call of the Clapper Rail, one of the more reclusive saltmarsh residents. This henlike gray-brown water bird stalks marsh edges for fiddler crabs and other mud-dwelling prey.

### **11. Where Does This Water Come From?**

Observe closely and you will see the small bridge over one of several access points that allow tidal waters to flow in and out of the pool. Twice daily, high and low tides refresh and renew this pool, introducing new food sources and revealing mud flats for foraging birds. Due to the enclosed nature of the pool, tidal variations in water level are delayed as compared to the surrounding salt marsh. This variation provides visitors a 'time lapse' view of wildlife behavior at different tidal levels.

### **12. Those Ditches in the Pools are Important to Wildlife**

Ditches in the pools provide deeper water in which fish and tiny invertebrates can thrive. These species are important in the diets of wading birds and young waterfowl.

*Great blue heron*



### **13. Is That a Dog House?**

Ditches also promote more efficient pool water circulation. Good circulation helps increase oxygen levels and reduces summer water temperatures in the pools, thus lessening wildlife disease risks.

The tower to the left on the dike separating the West Pool from the East Pool is a nesting platform for Peregrine Falcons. They nest in the igloo-shaped structure on top of the tower, which provides a measure of protection for their young.

Peregrine populations were in steep decline during the mid-20th century, and in the United States they became an endangered species. The birds have rebounded strongly since the use of DDT and other chemical pesticides was curtailed. Captive breeding programs have also helped to boost the bird's numbers in the U.S. and Canada.

### **14. What Am I Looking At?**

In the distance you can see the remains of a fish factory (look for the water tower) that existed for many years and ceased operations in 1972. While in operation, it processed Menhaden for fish meal and oil for non-human consumption. Closer in to the right of the fish factory are the remains of a floating clam factory. Further to the right you may also see a raised island called Shad Island, where for years, material dredged from local waterways has been dumped.

### **15. Saltmarsh Eatouts**

The large, muddy areas visible to your right as you drive this dike have been created by thousands of Snow Geese that stop here each fall to rest and feed. While some species eat only the tips of marsh grasses, Snow Geese have an appetite for the roots. Once they have uprooted and eaten the grasses in an area, they move on, leaving a muddy 'eatout' behind.

## **16. Hiking Trails**

There are several hiking trails which allow visitors to explore the refuge on foot. From here you can access the five-mile Songbird Trail which begins at the Visitor Information Center. Trail cutoffs allow visitors to modify their walk providing a 3.5 mile and a 1.9 mile option. Jen's Trail, a .8 mile loop, is also accessible. A trail map can be obtained at the kiosk near the Visitor Information Center or in the Visitor Information Center.

## **17. Refuge Uplands: Forest and Field**

You have just entered refuge uplands. These fields are maintained in the midst of naturally occurring forest in order to increase habitat diversity for wildlife. Many animal species thrive along the wood/field edge, feeding in one habitat and using the other for cover and nesting. Field vegetation changes are controlled by periodic mowing. If these grassy areas were left unmanaged, the natural process of plant succession would ultimately transform them into forests. Upland edge dwellers such as deer, rabbits and songbirds are frequently visible from the road.

## **18. Fire Lanes, Wildlife and People**

Most refuge upland areas are closed to public access to minimize disturbance to habitat and wildlife. Fire lanes or breaks have been cut through these uplands, however, to help prevent wildfires from spreading and to provide access for refuge management purposes.

Fire lanes are not maintained for public use. While foot travel is permitted on some fire lanes, most are closed to all public entry. Visitors are cautioned not to enter fire lanes posted with 'Area Closed' signs.

Foot travelers are reminded that biting flies and ticks abound, and that ticks may transmit Lyme disease known to be harmful to humans. While biting flies are active mostly in the warmer months, ticks may be active all year.

## **19. What Experiment?**

The Experimental Pool was originally established to identify and analyze the factors which favor the invasion of common reed, Phragmites, in the three refuge impoundments. This area is now a popular viewing platform for observing Wood Ducks and other waterfowl. It is also a good place to view birds such as the Orchard Oriole as well as White-tailed Deer.

## **20. Habitat Recovery after Fire**

A raging wildfire destroyed most of the vegetation in this area in 1965. In 2007, Go Zero Program contributed 981 trees to the refuge to restore this area. The Go Zero® program is designed to help individuals, corporations and companies reduce and offset their carbon dioxide emissions.

You will observe that there are few trees remaining and those that remain are not particularly robust. The condition of the donated trees in this area demonstrates some of the challenges encountered

## **21. This is the Pinelands**

This refuge, on the edge of the New Jersey Pine Barrens, is truly a special place. Today, as throughout history, human beings depend on the health and vitality of the Pinelands' ecosystems. Wander through the region's forests and you will find a surprising variety of scenery, habitats and animal and plant species in this island of biodiversity near the most densely populated part of North America. The Pinelands are the largest surviving open space on the eastern seaboard between the northern forests of Maine and the Everglades of Florida.

The Pinelands are classified as a United States Biosphere Reserve and in 1978 was established by Congress as the country's first National Reserve. It includes portions of seven southern New Jersey counties,

and encompasses over one million acres of farms, forests and wetlands. It contains 56 communities, from hamlets to suburbs, with over 700,000 permanent residents.

## 22. Drive's End

We hope your visit has been pleasant and that you have enjoyed this brief glimpse into the interesting work of wildlife management.

Please stop by our Visitor Information Center and Nature Store where you will find a short multimedia presentation and other informational materials.

Also visit our Web Site and Facebook pages:

[http://www.fws.gov/refuge/edwin\\_b\\_forsythe/](http://www.fws.gov/refuge/edwin_b_forsythe/)

<https://www.facebook.com/ForsytheNWR>

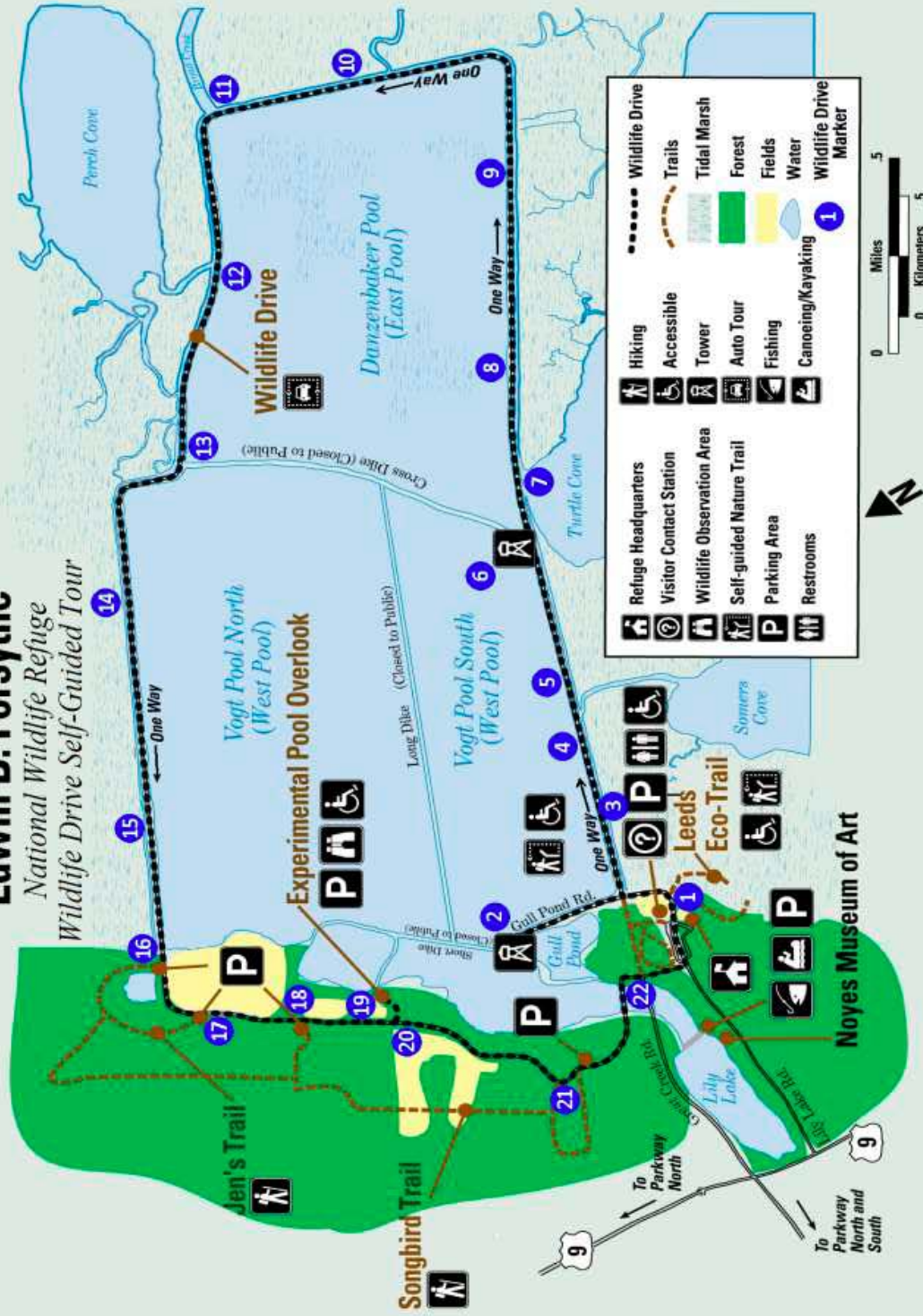


USFWS

*Wildlife Drive at Edwin B. Forsythe National Wildlife Refuge*

# Edwin B. Forsythe

National Wildlife Refuge  
Wildlife Drive Self-Guided Tour



	Hiking		Wildlife Drive
	Accessible		Trails
	Tower		Tidal Marsh
	Auto Tour		Forest
	Fishing		Fields
	Canoeing/Kayaking		Water
	Refuge Headquarters		Wildlife Drive Marker
	Visitor Contact Station		
	Wildlife Observation Area		
	Self-guided Nature Trail		
	Parking Area		
	Restrooms		



9  
To Parkway North  
To Parkway North and South