



<http://www.friendsofbombayhook.org>

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## **The 75th Anniversary of Bombay Hook NWR**

This year marks the 75<sup>th</sup> Anniversary of the Refuge. In this issue of the newsletter we continue the edited version of the history of the Refuge by Robert W. Mayer, a past president of the Friends of Bombay Hook.

### **PART II**

## **A BRIEF HISTORY OF BOMBAY HOOK NATIONAL WILDLIFE REFUGE 1957 - 2012**

By Robert W. Mayer

### *Bear Swamp 1957 to 1961*

The problem of carp infestations in Raymond and Shearneck was one of long standing. Previous attempts to poison these fish resulted in large kills, but provided short-term relief. In 1957, five tons of carp were removed from Raymond. One year later Raymond was said to be free of carp, while in Shearneck poisoning did not make a dent in the population. In 1959, rotenone was used to kill carp in Bear Swamp. Despite these efforts, the 1960 study of wetland vegetation noted that carp reduced vegetation in both Raymond and Shearneck. Screens were installed in the water control structures at each of the impoundments in an effort to keep carp from entering from the marsh, but these were only marginally successful.

The major development project during this period was construction of the dike to impound Bear Swamp, along with water control structures and culverts. Work began on the south end of the dike during the summer of 1957, but progress was slow. Work proceeded well during the summer of 1958, and 1,757 feet were cast up on the inside of the dike using a second dragline while the other continued to work on the outside of the dike.

With two draglines working, the spring of 1959 saw the dike just a bit more than half way completed. In late September the refuge acquired three Westinghouse–Le Tourneau scrapers that took solid fill from upland areas and placed it on top of the soft fill that had been thrown up by the draglines. Both draglines were employed in 1960, one working from the south, the other from the north. By summer the dike was nearly complete and by July, Bear Swamp Pool was impounded. The impounding of Bear Swamp Pool was the final step in the plan to construct four freshwater impounded pools that dramatically changed the nature of Bombay Hook. Each had its own characteristics, ranging from slightly brackish to freshwater; each had some vegetation that was unique from the others; but all provided habitats that attracted large numbers of waterfowl, tall wading birds, and shorebirds.

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*Land Acquisitions and the Allee House*  
*1962 - 1964*

In 1961, the refuge covered 13,810 acres; by the end of 1964 the refuge had a total of 15,115 acres. In that period five tracts were added to the land holdings. The McClements farm's 340 acres were deeded to the refuge in 1962, as was the Snow farm's 209 acres. These two tracts and the 16 acre Truitt farm obtained in 1964 solidified the northern boundary of the refuge. The 490 acre Marmino was added in 1963, and the Fischer Tract, the first parcel not contiguous with the rest of the refuge, was obtained in 1964. In 1962, the Federal Government also purchased 11,233 acres to create Prime Hook National Wildlife Refuge which initially was managed by the manager of Bombay Hook.

The McClements farm is the site of the Allee House that was built circa 1753 by Abraham Allee, the son of John Allee (Jan d'Ailly), a French Huguenot who immigrated to America in 1682. In 1706, John Allee purchased Woodstock Bower, and on his death in 1718, Abraham Allee inherited the property, the site where he built the Allee House.

The Allee House is considered one of the most handsome and best preserved example of a mid-eighteenth century plantation house in Delaware. Under an agreement between the refuge and the State of Delaware, the Delaware Archives Commission made minor repairs that were completed in 1966, and The Allee House was opened to the public. For the next six years the Allee House had an average of 1,985 visitors each year. In 1971, the Allee House was placed on the National Register of Historic Places.

At the close of its first twenty-five years, 1962 brought a new emphasis for Bombay Hook. With the completion of the basic physical plan for the refuge in 1961, the task became management of all the physical attributes of the refuge for the maximum benefit of its wildlife.

In the 1950s efforts were made to attract more Canada geese. By 1962, however, the Canada goose population reached the wildlife management objectives for this species, so the objective now was changed, and efforts were directed to increasing the number of ducks.

Weather again was an issue in 1962. This time it was not a hurricane, but a nor'easter that caused

major damage. The storm on March 6, 7, and 8 had winds of 65 mph and extremely high tides. There was only minor wind damage to refuge buildings, but the tides breached all of the dikes and flooded Raymond, Shearneck, and Bear Swamp Pools, causing \$10,000 damage to the dikes and water control structures.

In 1963, ten deer were taken by 1,153 archery hunters, and for the first time, waterfowl hunting was permitted in the Kelly Island area. Thirty blinds erected by refuge staff attracted 587 hunters who killed 319 waterfowl, including 30 geese.

In 1963, Raymond was dewatered in May to control carp, and that led to increased plant growth and also attracted large numbers of shorebirds. In 1964, this was repeated specifically to promote growth and attract shorebirds.

*Managing the Refuge*  
*1965 - 1981*

In the 1960's, 1970's and 1980's, the refuge staff was engaged in many maintenance tasks. For example, the gravel roads required continuous grading and repair, the impoundment dikes were constantly in need of fill and rip-rap because of erosion. The water control structures were maintained, and water levels in the impoundments were manipulated. Herbicides and controlled burning were used to combat phragmites, and controlled burning also was used in the marshes. Equipment and buildings were refurbished.

In 1965, the refuge was designated as a Land and Water Conservation Area, and entrance fees were to be charged from May 15 through December 31. There were three categories of fees: \$7.00 Recreation/Conservation Sticker; \$1.25 Seasonal Pass; or a \$0.25 daily admission fee. There were 35,570 visitors to the refuge that year, but only 2,040 paid the \$.25 daily admission fee, twenty paid the \$1.25 seasonal pass, and 32 paid the \$7.00 sticker. In 1966, These fees were replaced by a voluntary fee of \$1.00 per vehicle or use of a \$7.00 Golden Passport, and the total number of vehicles that used the Golden Passport or paid voluntary entrance fee was 1,407; total number of visitors was 25,988. This voluntary system continued until 1972.

Canada geese peaked on the refuge at 54,000, but 400 died from poisoning by eating lead shotgun shot. Waterfowl hunting was very popular in 1966. Field blinds in the upland area that were added as a second waterfowl hunting area at-

tracted 1,484 waterfowl hunters, and marsh area blinds attracted 923 hunters. In 1967, the Young Waterfowlers Training Program was initiated at Bombay Hook, and 192 boys and girls participated in the hunt. The deer herd reached 100 in 1966, and only archery hunting was open that year, attracting 623 hunters. In 1967, the archery deer hunt attracted 860 hunters and for the first time since 1957, shotgun deer hunting again was permitted and drew 250 hunters.

Three research studies were initiated in 1969. The first was a study of mosquito abatement practices; the second was a study of the effect raccoons have on duck production and raccoon control; and the third was a study of black duck reproduction.

The Youth Conservation Corps (YCC) began as a small pilot program in the summer of 1971, and after three summers as a pilot program, it became a permanent institution in 1974. This was a federal work program for high school age students aged 15 to 18 who performed conservation projects primarily in National Forests and National Wildlife Refuges during the summer months when schools were on vacation.

Bombay Hook was selected as a site for one of the pilot programs for the YCC in 1972. In the first year 20 students were selected from area high schools. Their first major task was to build the Boardwalk Trail, and it was finally completed in 1974. The YCC program has continued on and off again at the refuge. For example, in 2010, two student members stained the newly erected pavilion near the Visitor Center.

Two handicapped hunters participated in the deer hunt in 1979, and one handicapped hunter used a special blind to hunt waterfowl. This was the first time handicapped hunters were able to participate on the refuge. Opportunities for non-ambulatory hunters increased substantially in later years. Special blinds attracted 88 handicapped deer hunters in 1985 who shot 27 deer. The Wheelin' Sportsmen organization has sponsored goose hunts for non-ambulatory goose hunters.

*Public Use  
1981 - 1999*

The Visitor Center/Administrative Building was completed and occupied in September of 1981, but the Visitor Center was not opened. The large storage building on the former headquarters site also was completed.

An Outdoor Recreation Planner (referred to as the ORP) joined the refuge staff in 1983 and initiated a number of public use activities. The Visitor Center was opened to the public in March, and volunteers manned it on weekends while the ORP kept it open during the week. A total of 8,443 visited the Visitor Center during the first year.

A formal environmental education outdoor classroom program was established, and 792 students participated in habitat studies and guided tours. A workshop also was held that attracted 7 teachers. During the year 175 teachers were engaged in activities on the refuge. The ORP also established an effective volunteer program. Volunteers manned the Visitor Center, assisted in environmental education and outdoor classroom programs, and did maintenance work. By 1999, they had contributed 34,100 hours to the refuge.

The State of Delaware loaned four cases of mounted ducks for display in the lobby and auditorium, and local artists displayed their works during the spring, fall, and winter.

In the first full year the refuge had an Outdoor Recreation Planner the number of students who participated in the outdoor classroom program doubled to 1,544, and that number averaged 2,499 students in the years ahead. In 1994 the Delaware Nature Society, under an agreement with the refuge, also did habitat studies on the refuge, and in 1996, brought 1,900 students to the refuge.

A number of exhibits and displays were developed in the Visitor Center in 1984. Refuge programs attracted 2,249 visitors who participated in slide shows, movies, hunter safety and first aid. The Field Day attracted 218 participants. Field Day activities included tours, walks, arts and crafts, cannon net demonstrations, salt marsh interpretation, management techniques, fish seining, insect sweeping, pond study, woodland and plant study, and boat tour of open marsh water management area. Field Days have been held each fall, later known also as Waterfowl Festivals, and beginning in 1990, an Earth Day Festival was added in the spring, and it also was changed to a Migratory Bird Festival.

The major event in 1987 was the celebration of the 50th anniversary of Bombay Hook NWR. Two events were held, one on March 15, and one

on November 1. The March event was attended by approximately 400 people. The November event attracted approximately 1,000 visitors.

Research activities included a continuing study of the use of lead shot in waterfowl hunting, the effects of hunting as a means of snow goose dispersal in the marshes, and study of vegetation in Raymond Pool.

In 1990, Friends of Bombay Hook was established as a nonprofit corporation and as a Cooperating Association with the U.S. Fish and Wildlife Service. Its primary goal was to establish a sales outlet, later the Refuge Store, that would provide income to support the refuge. Friends grew rapidly in terms of its membership, its success in the sales outlet, its financial contributions to the refuge, and the number of volunteers it provided for various refuge activities.

Also in 1990, the Delaware Bay Estuary Program moved to Bombay Hook.

A wheelchair-accessible floating dock was installed on Bear Swamp Trail that was funded by Friends of Bombay Hook, and an Interpretative Kiosk was constructed at the Visitor Center.

It was noted in 1994 that the snow geese were using agricultural fields as well as cordgrass in the marshes, that eat-out areas were fairly stable, and that the mud flats were good for shorebirds that probe in the mud for aquatic insects and crustaceans.

Manipulation of water levels in the impoundments was a major management strategy as reported in 1995. Water levels in Raymond and Shearneck Pools were lowered in the spring to accommodate shorebirds, raised in the fall for ducks and geese, while Bear Swamp and Finis Pools maintained high water all year. In the upland areas, other management techniques, such as cooperative farming to augment food supplies, were employed, but the only active management for the marshes was prescribed burning and snow goose hunts.

A record peak number, 76,521, ducks were estimated on the refuge in December of 1996. This compared with yearly average of about 25,000.

The snow goose population on the refuge that had been increasing yearly reached a peak of 198,500 in 1997. The snow goose eat-out area caused the loss of salt marsh cordgrass at a rate of 80 acres a year, turning a large area of Leath-

erberry Flats and Money Marsh into a bare mud flat. Teamed with the State of Delaware, the refuge staff initiated research on the greater snow goose population, their effects on vegetation, and the effects of hunting as a means for dispersing the geese.

In 1999, Prime Hook National Wildlife Refuge was separated from Bombay Hook. Since Prime Hook was established in 1962, the refuge had been a satellite of Bombay Hook and under the direction of the manager of Bombay Hook.

### Some New Directions 2000 to 2012

Back in 1957, there was enough concern about loss of marshland from erosion at Kelly Island that it was proposed that spoils dredged by the Corps of Engineers from Delaware River could be used to rebuild the lost portion of the island. Today sea level rise along with local land subsidence poses a continuing threat for the marshes along the shoreline of Delaware Bay. From 1937 until 2002, the bay shoreline of the refuge has lost 506 acres, a rate of per 7.8 acres year, from sea level rise and accompanying erosion.

In the period from 1979 to 2002, 12 per cent of the interior marshes, most notably Leatherberry Flats and Money Marsh, were lost. The area covered 1,340 acres, a rate of 58 acres per year. Snow geese eat-out areas resulted in mud flats, and preliminary findings suggest that ebb-tides, those draining out from the marsh, dominate over income tides. This action causes material from the mud flats to be carried out from the marsh, thus lowering the marsh level and resulting in flooding of the area, a condition known as marsh drowning. By the end of this period, instead of cordgrass meadows, the marshes across from Shearneck Pool are a shallow tidal lake.

Friends of Bombay Hook was quite active in the last ten years. In 2003, Friends contributed the largest yearly amount, \$20,190, to the refuge for programs for the Centennial Year that celebrated one-hundred years since the founding of the first National Wildlife Refuge. In 2010, Friends made their largest single contribution, \$10,150 for construction of a dock at Finis Pool that enables school students to safely use dip nets to capture specimens for the freshwater habitat study. Shortly after the Native Plant Garden was established in 1999, The Garden Keepers was organized by members of Friends who had spe-

cial interests in gardening and native plants, and in 2010, a second special interest group, The Friends of Bombay Hook Bird Club, was formed.

Research in 2005 included studies of shorebird use of the snow goose eat-out areas in the marsh, bat species on the refuge, and sea level rise and marsh loss. An interesting study in 2009 investigated the population of the grey fox. In addition to the research studies carried out during this period, the staff monitored many species every year. Monitoring activities included bald eagles, purple martin nest monitoring, forest birds breeding surveys, aerial winter waterfowl surveys, snow goose breeding surveys, bluebird and tree swallow nest surveys, barn owl monitoring, grassland bird surveys, marsh sparrow surveys, shorebird surveys, and deer and carnivore surveys.

Population control was applied to several species: deer, snow geese, non-migratory resident Canada geese, mute swans, muskrats, and snapping turtles. Insecticides were used on phragmites, Canada thistle, and Johnson grass.

The Coastal Delaware National Wildlife Refuge Complex was created in 2007. Bombay Hook and Prime Hood Refuges made up the Complex, and Michael Stroeh was named as Wildlife Refuge Complex Manager in 2008. At the same time, Terry Villanova retired, and Oscar Reed was named as Deputy Refuge Manager of Bombay Hook.

In 2008, a new exhibit was installed in the lobby of the Visitor Center showing a cross section through the refuge from upland forests, impounded pools, Wildlife Drive, the marshes, rivers and guts, to Delaware Bay. Informational and interpretative panels also were placed in the kiosk in the parking area. A Friends volunteer and the ORP developed the schematic design and wrote the draft texts for the exhibit.

In 2010, a pavilion was erected near the Visitor Center. This open-air structure provides cover for picnic tables, a welcome addition for school groups attending classroom education programs.

In 2010, a suit was filed by the Audubon Society against the refuge claiming certain genetically modified crops were grown on the refuge in the cooperative farming program. As a result the refuge suspended all agricultural farming on the

refuge and natural vegetation was allowed to take over the open fields.

The Allee House was closed to the public in the summer of 2009 for necessary repairs.

Beginning in 2010, a marked change was made in research studies. Most of the surveys and monitoring studies were ended or, in the case of waterfowl monitoring, modified and incorporated in the studies known as Saltmarsh Integrity Index and Integrated Waterfowl Monitoring and Management. All attention was directed to the problems in the tidal salt marshes, specifically physical factors effecting the salt marsh habitats and evaluation of the wetlands to better understand implications of sea level rise. These included a hydrodynamic modeling of the marsh that measures water depth and water flow, and sediment cores that measure accumulated sediment. The one exception to the marsh studies was evaluations of uplands for habitat management options for consideration in the Comprehensive Conservation Plan.

A Comprehensive Conservation Plan (CCP) is required every 15 years to describe the desired future conditions of the refuge and provide long-range guidance and management direction to achieve the purposes of the refuge. Bombay Hook is currently engaged in this process that began with public forums in August of 2011 to provide opportunities for people to comment on issues, concerns, and challenges for the Refuge over the next 15 years.

In 2011, the Delaware Tourism Office named Bombay Hook as part of the Delaware History Trail. The refuge is one of thirty-six sites that illustrate Delaware's rich heritage and its place in American History. The refuge's Wildlife Drive also has been listed as one of the top ten scenic drives in National Wildlife Refuges, and the refuge has been recognized as an Important Birding Area by the American Bird Conservancy.

A major project, completed in 2011, was rebuilding and resurfacing all of the roadways on the refuge. Road maintenance was a yearly task since the first years of the refuge, requiring considerable staff time to fill and grade the gravel roadways that caused clouds of dust in dry weather and became rutted and muddy when it was wet. A special transportation grant funded the project that installed new culverts to improve drainage, build new foundations for the

roadways, and installed an all weather stone running surface.

In these seventy-five years the refuge attracted an estimated total of 2,907,257 visitors. The refuge provided recreational opportunities for 114,644 hunters since 1954 when hunting on the refuge first started, 32,174 deer hunters and 82,490 waterfowl hunters. The refuge offered educational opportunities for 49,787 students from 1983 to 2012 who participated in the habitat studies of the outdoor classroom program. Friends of Bombay Hook contributed \$157,258 to the refuge since it was started in 1990. But more importantly, the refuge has provided food, shelter, and a resting place for uncounted numbers of migratory waterfowl and millions of migrating shorebirds. Its marshes have been a breeding place for thousands of ducks, and its uplands are a home for mammals, reptiles, and amphibians. In the refuges first twenty-five years the fields and farms of the uplands and the pristine tidal salt marshes were made into a wildlife refuge. In the next fifty years, These assets were successfully managed to attract and protect wildlife. At the close of these seventy-five years, however, the refuge faces new challenges as it attempts to deal with rising sea levels and flooding of the interior marshes.

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Our readers are encouraged to share comments, provide articles for publication and/or suggestions regarding the refuge as well as notifying us of address changes.

Please direct communications to:

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<http://www.friendsofbombayhook.org>

## *Bird Club Schedule*

All Bird Club field trips are open to everyone from veteran birders to those who never have gone birding. Please join us!

### Sunday, November 18

Bombay Hook Sunset Tour, 3:30 – 5:30 See deer, other mammals and birds, watch waterfowl return to the impoundments at sunset

### December

Christmas Bird count at Bombay Hook or in Middletown

### Tuesday, January 1

Indian River Inlet and nearby areas

### Saturday, January 19

Port Mahon for short eared owls, et al, evening

### February

Blackwater National Wildlife Refuge. Special tour just for our Bird Club

### Saturday, March 23

C&D Canal and the Thousand Acre Marsh

### Sunday, May 5

Millington, MD Wildlife Area

### Saturday, May 11

Spring Bird Count at Bombay Hook

### Mid-May

Cape May Ferry for the spring migration

### Memorial Day Weekend

Conowingo Dam

### Thursday, June 13

Hérons at Delaware City, evening

And more still being planned.....

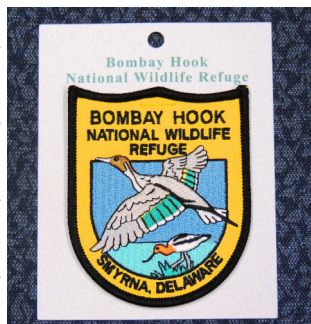
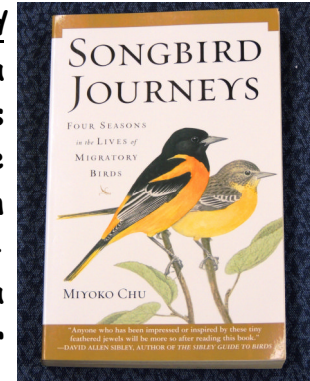
For details (time, meeting place, directions, etc.), last minute schedule changes and additions, or any questions, email [hmclennan@comcast.net](mailto:hmclennan@comcast.net).

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## The Refuge Store

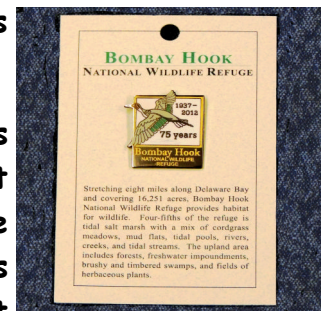
Last Fall's warm fuzzy vests are going on sale in September, while supplies last. Great colors and warm for Fall and Winter days. They will be 20% off along with all of the t-shirts both long sleeved and all of the summer styles.

In honor of the 75th anniversary, we are putting Songbird Journeys on sale now at 75% off while supplies last. It is a fascinating depiction of the incredible journeys migrating birds make across our continents. Great gift giving idea for anyone interested in birds. For the Festival Weekend, all of the 75th anniversary items will be on sale. We have special hats and t-shirts celebrating the 75th anniversary of the Refuge. Marcia Poling also designed a special commemorative version of her ever popular and beautiful ornaments — on sale that weekend.



The new Bombay Hook patches and pins are here. We love the new retro designs.

If you haven't stopped in to see what is in the store, please do and stop to chat about what you like best about the Refuge. We have stuffed animals representing those you might see at



Bombay Hook. We have both the best field guides and newest birding and native plant books. There are \$7.95 plastic coated folding guides for birds and plants. One of the favorite maps shows the migration routes of birds throughout North, South and Central America with some very interesting details about the flights.

Save the date: upcoming the weekend after Thanksgiving a "green Weekend" celebrating "Black Friday" in our own way. We are going to reduce everything in the store 20%, plus all Friends of Bombay Hook will get their usual 10% discount as long as they show their membership cards. If you want to join that day to benefit from the additional 10% discount Friends of Bombay Hook receive every day, you will get the discount as well. "Green" is for the holidays, the savings and for ecology.

The Refuge Store is introducing a new jewelry line: Wild Byrde. Earrings, necklaces and bracelets are available with bird, mammal, native plant, amphibian, and other motifs. It is a very popular line with intricate and beautiful designs

**2012 Native Plant Symposium**  
**By Rick Mickowski**

The Native Plant Symposium is jointly sponsored by the Bombay National Wildlife Refuge “Garden Keepers” group and the Delaware Native Plant Society (DNPS).

The opening speaker, past DNPS president Bill McAvoy focused on three bog type habitats since Delaware does not have any true bogs. Delaware does have Atlantic White Cedar Swamps, acidic fens, and interdunal swales that support plants that like bog-like conditions. Those conditions include high acidity, low nutrient soils, and soil with high organic content from decaying peat and other vegetation.

The Atlantic White Cedar Swamps are characterized by many hummocks and hollows which are in many cases shady and dark with high humidity. Where there are open sunny gaps in the canopy, there is a wide diversity of plant life. There are 28 species of peat moss in Delaware. The plants absorb calcium and magnesium from the rainwater and release hydrogen into the soil, making it extremely acidic.

The Acidic Fens are seepage wetlands usually found adjacent to upland slopes and the water seeps out at the base with eventual outflow to a nearby stream. They are usually dominated by sedges with trees and shrubs along the edges. There are only four locations known in Delaware that still exist and are a source of very rare plants.

The interdunal swales are low depressions behind the primary dunes. They are flooded in the spring and drier in the summer being affected by both groundwater flow and precipitation. There is a layer of peat over firm coarse sand. The dominant plant is bayberry with grasses, sedges and rushes. It is a rare habitat along the Atlantic coastline.

A searchable database of native rare and endangered plants can be accessed via the website [www.wra.udel.edu/delawareflora](http://www.wra.udel.edu/delawareflora). Bill has over 800 photographic images and eventually will add a photographic directory on the site. There are 2,600 species in total. Bill then showed number of slides featuring the plants found in these habitats. Some of these include the northern pitcher plant (*sarraceniapurpurea* var. *purpurea*), southern bladderwort (*utriculariajuncea*), cinnamon fern (*Osmundastrumcinnamomeum* var. *cinnamomeum*), many sedges, roundhead rush (*juncusscirpoides*), yellow-crested orchis

(*Platantheracristata*), cardinal flower (*Lobelia cardinalis* and DNPS 2012 Plant of the Year), swamp pink (*Heloniasbullata*), northern star flower, ink-berry holly (*Ilex glabra*), Delmarva alder (*Alnusmaritima* subsp. *Maritime*), marsh cranberry (*Vacciniummacrocarpon*), and meadow sweet spiraea (*Spiraeatomentosa*).

Jason Austin, Manager of rareFIND Nursery, Inc. in Jackson, New Jersey gave a colorful presentation about “Carnivores in Captivity” which detailed fellow employee Bill Smith’s adventure with creating a large bog garden and container bog gardens. Bill is a key sales person and chief seed grower for rareFIND Nursery. The Bog at Warren Grove is a 30 foot by 10 foot by 2 foot deep man made bog garden holding a collection of over 600 bog plant species. While there are only eight wild species of pitcher plant there are over 3000 registered hybrids. The garden began in 2008 and has grown and matured into a beautiful and colorful bog garden. The same techniques can be used to create container bog gardens using peat moss with very small holes drilled in the bottom of the container. The catalogue features a “Bog in a Box” kit. Plastic pots are used so they won’t crack over the winter. The three key factors to growing pitcher plants are the sandy/peaty soil mix, full sun, and rain water or distilled water. Public water sources usually end up killing the plants. The three don’t are: don’t fertilize the plants, don’t ever let them dry out, and don’t use tap water. And finally, never, ever collect or dig plants from the wild. Purchase them from reputable growers like rareFIND nursery at [www.rarefindnursery.com](http://www.rarefindnursery.com).

Various bog plants were available for purchase and there were two samples of bog gardens in a pot on display. After the presentation, all enjoyed a wonderful buffet style lunch. In addition, one pitcher plant and two gardening books were raffled off to three lucky winners.



A big thank you to Quentin Scheidler for organizing another outstanding symposium!



# **WANTED!!!**

# **BOMBAY HOOK**

# **VOLUNTEERS**

**Needed:** Staffing the Visitor Center • Performing Maintenance Work Around the Refuge • Conducting Environmental Education Programs • Participating in Refuge Surveys, Walks and Tours • Helping with Workshops and Refuge Events • Assisting Refuge Staff and Other Volunteers in Office Work



# **REWARDS**

Contributing to Refuge and Community by Utilizing Needed Skills • Greater Appreciation of Wildlife and the Role of Refuges • Meeting Other Volunteers Who Share Similar Interests • Attending the Volunteer Recognition Dinner Held in December • Receiving the Annual Federal Volunteer Pass for 250 Hours of Volunteer Service Performed

**If you, a family member, or a friend are interested in becoming a volunteer for Bombay Hook, please contact Bombay Hook NWR at (302) 653-6872. For more information about volunteering opportunities, please visit [bombayhook.fws.gov](http://bombayhook.fws.gov)**

# Bombay Hook National Wildlife Refuge

1937 - 2012 Celebrating

# 75

Years of Conservation

2591 Whitehall Neck Road, Smyrna, DE 19977

(302) 653-6872

[bombayhook.fws.gov](http://bombayhook.fws.gov)

## 2012 Calendar of Events

Bombay Hook Visitor Center is **open Monday through Friday** from 8:00 a.m. to 4:00 p.m. year round. The Visitor Center is open on **weekends until December 4, 2012**. The Allee House is in need of repairs and is closed until further notice. Check the Website for additions or changes.

### Saturday, October 20, 2012

**Wildlife Festival – 75<sup>th</sup> Anniversary Celebration (9:00 a.m – 4:00 p.m.)**

**Check the Web site for time changes & updates @ [bombayhook.fws.gov](http://bombayhook.fws.gov).**

#### **Time**

9:00 am– 10:30 am  
9:30 am – 11:00 am  
10:00 am – 12:00 noon  
10:00 am – 11:00 am  
11:00 am – 12:00 noon  
11:00 am – 12:00 noon  
  
11:30 am – 12:30 pm  
11:30 am – 1:00 pm  
12:00 noon – 1:00 pm  
1:00 pm- 3:00 pm  
2:00 pm – 3:00 pm  
3:00 pm – 4:00 pm

#### **Programs**

Bird Walk  
Mushroom Walk  
Boat Ride – Leipsic River to Delaware Bay- first 40 people in line at refuge  
Butterfly program - Children  
Nature Songs and Stories - Children  
Waterfowl Calling Demonstration and Instruction with Al Dager,  
Avery® Pro Staffer, Champion Goose and Duck Caller  
Reptile and Amphibian Program – Children  
Tree/Shrub/Wildflower Walk  
Retriever Trial Demonstration, George McNatt, Delaware Bay Retriever Club  
Boat Ride – Leipsic River to Delaware Bay – first 40 people in line at refuge  
Wildlife Management & History Tour  
Live Birds of Prey Program

#### **Time**

9:00 am – 4:00 pm  
10:00 am – 2:00 pm  
10:00 am – 3:00 pm  
10:00 am – 3:00 pm  
10:00 am – 1:00 pm  
10:00 am – 3:00 pm  
11:00 am – 1:00 pm  
11:00 am – 2:00 pm  
11:00 am – 2:00 pm  
11:00 am – 2:00 pm  
11:00 am – 2:00 pm  
1:00 pm -3:00 pm  
10:00 am – 3:00 pm

#### **Activities - Most of the Day**

Operation Game Theft Education Trailer – DNREC's Wildlife Section  
Wagon Rides  
Family Scavenger Hunt - learning stations- get stickers!  
Build a bluebird house or bird feeder  
Blue Goose visits the Festival  
Archery  
Scales and Tales – Live Birds of Prey Exhibit  
Brackish Habitat – Dip Net  
Freshwater Habitat – Dip Net  
Children's Games & Crafts  
Ornament Decoration  
Bird ID Station on the Refuge

*(Continued on page 11)*

## Bombay Hook NWR 2012 Calendar of Events

(Continued from page 10)

11:00 am – 3:00 pm

Food Vendors

**Free Apples provided by Fifer Orchards ♦♦ Free water provided by Rite-aid**

### Wildlife Exhibitors – All Day

#### Name

Richard Clifton  
Nancy Carol Willis  
Ted L Dutcher  
Karen C Pruitt  
Ellen Lawler  
Maria LibertoBessette  
Ellis C Porter  
Karen Phillips  
Pat Fetchero  
Phill Johnston  
Bob Culver  
Dale Keitkamp  
Roselyn Leach Daisey  
Mike Novalis  
Greg Clark  
Harold Van Dyck  
Melanie Hummer  
David Lychenheim  
John W. Maloney  
Edgar R. Miller  
Geoffrey Blakely  
Brad Barrie  
Larry Hitchens  
Brian McCaffrey  
Leah Dodd  
Derek Stoner  
Tony Senn  
Dawn Webb  
Susan Yost  
Quentin Schlieder

#### Type of Exhibit

Wildlife Art  
Wildlife Art, Children's Books, Educational Information  
Watercolor of Wildlife and Habitat  
Wildlife and Waterfowl Paintings  
Wildlife Art – Watercolor paintings, cards, prints  
Wildlife Art – Paintings and Prints, & Photography  
Wildlife Art  
Leather Carving – Bird Feathers  
Silver Wildlife Jewelry  
Metal Work  
Bird Carvings  
Decorative Decoys  
Wildlife Wood Carvings  
Decoy & Shorebird Carvings  
Decoys, Shorebirds, Songbird Carvings  
Shorebird Carvings  
Nature Photography  
Wildlife Photography  
Wildlife Photography  
Wildlife Photography  
Nature Photography  
Nature Photography  
Nature Photography  
Nature Photography on Tile  
Tri-State Bird Rescue and Research  
Delmarva Ornithological Society  
Ducks Unlimited – DU Habitat Conservation  
DNREC – Delaware State Junior Duck Stamp  
Delaware State University – Claude E. Phillips Herbarium  
Garden Keepers - Native Plant Information – Propagation

### Sunday, October 28, 2012

- **Bird Identification Station (10:00 a.m. – 6:00 p.m.)** Get a close look at the different bird species in the impoundments. Randy Murphy will be on the wildlife drive with scopes, binoculars, and field guides to help you identify shorebirds, waterfowl, raptors, and whatever else flies by. Learn how to best use binoculars and scopes.
- **Tour of the Refuge (11:00 a.m. – 12:30 p.m. & 1:30p.m. – 3:00 p.m.)** Join volunteer Ray Cullom for a tour of the Refuge. Find out how the Refuge is managed for wildlife, visit different habitats, and walk a trail. Meet at the Visitor Center.

### Saturday, November 3, 2012

**Kevin Fleming Photography Seminar (9:00 a.m. - 12:00 noon)** Come to Bombay Hook for a great day of photography. Kevin will lead a seminar and afterwards you can spend the afternoon on the refuge practicing the techniques. You will learn how Kevin Fleming photographs wildlife, nature and landscapes.

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## **Bombay Hook NWR 2012 Calendar of Events**

(Continued from page 11)

He will discuss lens settings, shutter speeds and how to use your camera correctly. Kevin will do a presentation of his Wild Delaware and Wild Delmarva book photographs. The seminar is indoors in a classroom setting and is for photographers with some experience who want to improve their skills. To get the most from this class you should be using a digital DSLR camera (not a point and shoot). Class size will be limited to 20. The price for the 9:00 a.m. – 12:00 noon seminar is \$50.00 and you will receive an autographed copy of Wild Delmarva (a \$50 value). To register call Tina Watson on 302-653-6872 by October 10, 2012. Come spend a day at Bombay Hook and you will be a better photographer! **75<sup>th</sup> Anniversary Event.**

**Saturday, November 17, 2012**      **National Family Volunteer Day (10:00 a.m. – 12 noon)**      National Family Volunteer Day is a great opportunity for families and individuals to make significant contributions to the Refuge while learning about natural gardens and gardening. Light refreshments will be served.

### **Sunday, November 18, 2012**

- **Bird Identification Station (1:00 p.m. – 5:30 p.m.)**      Get a close look at the different bird species in the impoundments. Randy Murphy will be on the wildlife drive with scopes, binoculars, and field guides to help you identify shorebirds, waterfowl, raptors, and whatever else flies by. Learn how to best use binoculars and scopes.
- **Bombay Hook Sunset Tour (3:30 p.m. – 5:30 p.m.)**      Sunset at Bombay Hook can be spectacular as hundreds of geese and ducks come into the impoundments looking for a safe place to spend the evening. Before sunset we will ride through the Refuge sighting birds, looking for deer, exploring habitats and learning how the Refuge is managed for wildlife. At sunset we will watch and listen for waterfowl as they land in the impoundments. Meet at the Visitor Center.

**Saturday, November 24, 2012**      **Wonderful Waterfowl Workshop (9:00 a.m. – 12:00 noon)**      Join Paul Baicich for a presentation and field study on North American waterfowl. Swans, geese, and ducks constitute one of the most interesting and important family groups of birds on the continent. They are found everywhere - at least everywhere there is water or wetlands - and are relatively approachable for study and appreciation. They have provided a sporting avocation to millions of waterfowlers over many decades. This presentation will also describe new avenues of waterfowl appreciation and conservation and then will go out on the Refuge to cover the essentials of practical waterfowl identification at Bombay Hook. Paul J. Baicich is the creator of Great Birding Projects ([greatbirdingprojects.com](http://greatbirdingprojects.com)). He has been an active conservationist and birder since his early teens in New York City. A former editor of the American Birding Association, he edited the "ABA Birdfinding Guides," *Birding*, and served as ABA's Director of Conservation and Public Policy. Paul writes regularly for birding magazines, providing insight to the issue of bird-compatible shade-grown coffee and many other bird related topics. He served as chair of the Bird Education Network (BEN), currently serves on the Management Board of the Prairie Pothole Joint Venture, and is an advocate for the Federal Duck Stamp program. **Call to register, 302-653-6872. 75<sup>th</sup> Anniversary Event.**

**Sunday, December 2, 2012**      **Bird Identification Station (1:00 p.m. – 5:00 p.m.)**      Get a close look at the different bird species in the impoundments. Randy Murphy will be on the wildlife drive with scopes, binoculars, and field guides to help you identify waterfowl, raptors, and whatever else flies by. Learn how to best use binoculars and scopes.

**Sunday, December 16, 2012**      **Christmas Bird Count (6:45 a.m. – 12:00 noon)**      Contact Andy Ednie for details on the Christmas Bird Count at (302) 792-9591 or [ednieap@verizon.net](mailto:ednieap@verizon.net).

### **Important Reminder to Refuge Visitors....**

To protect wildlife and their habitat and to provide the best opportunities in wildlife observation and photography, it is important not to disturb, injure, or damage plants and animals of the refuge. In fact, it is a prohibited act as stated in 50 CFR27.51. This disturbance includes flushing birds and other wildlife or using electronic calls (taping) to lure birds closer for observation or photography. Please remember to take only memories and photographs and leave only footprints.

## **ARE YOU INTERESTED IN JOINING FRIENDS???**

**FRIENDS OF BOMBAY HOOK** is a cooperating association formed with the Bombay Hook National Wildlife Refuge and the U.S. Fish and Wildlife Service. It is a private, non-profit corporation which was founded to promote conservation, environmental education, and better understanding of and appreciation for Bombay Hook National Wildlife Refuge.

Each year more than 3,000 students visit Bombay Hook. They use equipment to study habitats, watch videos about endangered species, and are taught from field guides - all provided by **FRIENDS OF BOMBAY HOOK!**

If you used an Auto Tour Brochure or the Bird or Mammal List, these too have been funded by **FRIENDS OF BOMBAY HOOK!**

Your Membership Dues will make it possible for Friends of Bombay Hook to continue its support of educational and recreational programs at Bombay Hook.

Proceeds from the Refuge Store in the Visitor Center at Bombay Hook also help support the Friends program and activities. Make this your place to buy field guides, books, T-shirts, Posters, and Souvenirs!

### **OUR MEMBERSHIP BENEFITS INCLUDE:**

- 10% Discount on all items sold in the Refuge Store
- Subscription to the Friends Newsletter (published 4 times a year)
- Participation in special wildlife education programs and field trips
- Participation in the Birding Club
- Attendance at the Annual Meeting (held in June)
- Eligibility in the Dover Federal Credit Union (DFCU)
- Opportunity to meet others with similar interests in birds, other wildlife, wetlands, and the environment

And perhaps best of all, the chance to say, *"Thank you Bombay Hook, for all the great times I've had here!"*

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### **MEMBERSHIP APPLICATION**

Submit completed application at the Visitor Center  
(payment by cash, check or credit card) or Mail (with check) to:

*Friends of Bombay Hook  
2591 Whitehall Neck Road  
Smyrna, DE 19977*

Or you can go to [www.friendsofbombayhook.org/membership.html](http://www.friendsofbombayhook.org/membership.html)  
and follow the instructions in applying or renewing your membership

Renewal       New Member

Date: \_\_\_\_\_

\_\_\_\_\_  
Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
City, State, Zip

\_\_\_\_\_  
E-mail

Newsletter Preference:

Print       E-mail (require E-mail address)

### **Membership Plan (Check One)**

	Annual
<input type="checkbox"/> Junior (under 18)*	\$5.00
<input type="checkbox"/> Individual	\$15.00
<input type="checkbox"/> Family	\$20.00
<input type="checkbox"/> Sponsor***	\$25.00
<input type="checkbox"/> Sustaining	\$50.00
<input type="checkbox"/> Corporate**	\$100.00
<input type="checkbox"/> Life***	\$200.00

\*Junior membership: under age 18.

\*\*Corporate sponsorship: includes link to FOBH website;  
no voting privileges or store discount.

\*\*\*Sponsor and Life memberships includes family.

### **Method of Payment**

- Cash (payment at Visitor Center only)  
 Check (payment by mail or at Visitor Center)  
 Visa (payment at Visitor Center only)  
 MasterCard (payment at Visitor Center only)



2591 Whitehall Neck Road  
Smyrna, DE 19977

NON PROFIT ORG.  
US Postage  
PAID  
Permit #159  
Dover, DE

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**A REMINDER...**

**The Friends of Bombay Hook Newsletter is available online @**

**[www.friendsofbombayhook.org/  
friendsnews.html](http://www.friendsofbombayhook.org/friendsnews.html)**

**You can apply or renew memberships @**

**[www.friendsofbombayhook.org/  
membership.html](http://www.friendsofbombayhook.org/membership.html)**