



<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. To mark this very special occasion we dedicate this issue of the newsletter to an edited version of the history of the Refuge by Robert W. Mayer, a past president of the Friends of Bombay Hook. In this issue we present the highlights of the founding of the Refuge in 1937 up to 1950. In the next issue of the newsletter we will complete the story.

### **PART I**

## **A BRIEF HISTORY OF BOMBAY HOOK NATIONAL WILDLIFE REFUGE 1937 - 2012**

By Robert W. Mayer

In 1936, the Federal Government, using Duck Stamp revenues, purchased approximately 12,000 acres beginning just south of Woodland Beach and extending south to the Mahon River.

In the summer or early fall of 1936, John F. Herholdt was named the federal game protector for these landholdings. He became Bombay Hook National Wildlife Refuge's first manager on March 16, 1937, when the refuge was formally established.

### **The Early Years and the CCC 1937 to 1942**

An early record of activities on the refuge was Herholdt's *Quarterly Narrative Report to the Bureau of Biological Survey for Bombay Hook Migratory Waterfowl Refuge for the period May 1 to July 31, 1938*.<sup>1</sup> That report mentioned a WPA (Works Progress Administration) project that was active in 1937 and early 1938. The WPA project may have involved surveying of the many properties that were purchased to form the refuge. It was noted that two WPA project foremen assisted the refuge staff in monitoring muskrat trapping during the winter of 1937-38. The WPA also provided partial funding for a secretary who along with the manager and a laborer/patrolman made up the refuge staff.

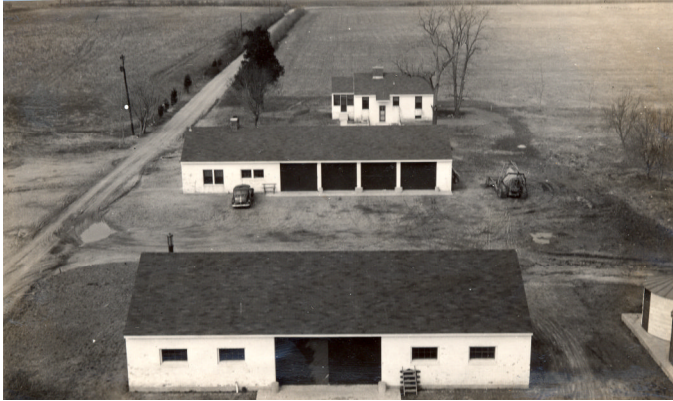
During this period the Bureau of Biological Research developed plans to turn the upland fields and marshes into a wildlife refuge. The most important of the planned alterations of the existing topography was to construct dikes across the inland edges of the tidal marsh to create four freshwater impoundments.

The actual development of the refuge began on April 1, 1938, when Company 3269-C of the Civilian Conservation Corps, the CCC, was assigned to Bombay Hook. This company of 166 African-Americans, known as enrollees, had the task of implementing the plans for the refuge.

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The building program started in 1938, and was basically completed by 1940. At the headquarters site it included the service building with offices for the staff, a large equipment shed, a number of small support buildings, houses for the manager and the laborer/patrolman, and a 90-foot observation tower. They also built a patrol cabin in the marsh at Duck Creek.



*Aerial View of the Original Bombay Hook Headquarters (1940)*

Attention then turned to a marine facility at Whitehall Landing on the Leipsic River. In the spring of 1939, the enrollees built a marine railway. Later in 1939, construction was started on a large boathouse with slips for four boats, and it was completed in 1940. They also built three 16-foot work boats, a 20-foot utility boat, two work scows, and a 50 foot barge that was used in building the impoundment dikes.

In the spring of 1938, the enrollees helped to create a tree nursery with nearly forty-two thousand seedlings that were received from the Soil Conservation Service. In the fall of 1938, twenty thousand black locust seedlings were transplanted from the nursery to locations on the refuge. By the spring of 1939, nearly thirty-four thousand seedlings were transplanted; however only eleven thousand survived because of rodent damage and poor planting practices.

Of all the early projects, none did more to enhance wildlife habitat than the creation of freshwater impoundments. On July 19, 1938, a dragline arrived and construction of Raymond Pool began. The dike that crossed the marsh was three-eighths of a mile long. A "core" ditch was dug through the marsh, then filled with dried clay. The dragline was put on a barge and used as a dredge to excavate material from the marsh and pile it on top of this clay base. In November, 2

1939, the impoundment of Raymond Pool was completed. The CCC enrollees built three cement water control devices, "dressed" the banks and leveled the top of the dike, and in the fall of 1941, they completed the last step by spreading stone on the top of the dike to make a roadway.

During the summer of 1938, CCC workers started their most difficult task: clearing 370 acres of boggy swampland for Sheariness and Finis Pools. This required removal of large trees, as well as vast amounts of poison ivy, cat-briar, and other impenetrable undergrowth. In areas near hard ground they could use a bulldozer to pull stumps, but in wet areas they had to cut and pull out the stumps using only manual labor. Despite their best efforts, they fell far short of their goal, and much of Finis remained a wooded swamp, as did the north end of Sheariness.



*CCC Enrollees Pulling Stumps at Finis Pool*

While work was continuing on Raymond Dike in 1939, construction was started for a causeway that would separate Finis Swamp from what would become Sheariness Pool and would carry a roadway from Finis to Dutch Neck Road. The project also included two concrete culverts that later would be converted to water control structures. In 1941, the causeway was completed, impounding Finis Pool and separating it from Sheariness.

Following completion of Raymond Pool in 1941, work started on the dike across the marsh at Sheariness. From the beginning, this project experienced a series of problems, and on March 18, 1942, CCC Company 3269-C suddenly, apparently with little or no advanced warning, was reassigned "to an Army project." All work on the refuge ceased.

Between 1938 and 1941, a resident pair of bald eagles nested and successfully fledged young eaglets each year, but in 1942, for the first time,

they did not nest on the refuge. During this period a small number of Canada geese stopped on the refuge during migrations, and in 1940 and 1941, snow geese were seen in the outer marshes. The early fall migration in 1941 was "the largest in memory," and numbered 35,000 ducks. The big news, however, was that three white-tailed deer were found on the refuge eating a sharecropper's sweet corn.

From the beginning, Bombay Hook attracted visitors. In the spring of 1938, 19 visitors, members of the Audubon and Linnaean Societies of New York and Philadelphia, visited the refuge, and in the following spring, scheduled bird walks on Saturdays and Sundays attracted 754 visitors. In 1941, Roger Tory Peterson visited the refuge. This was Peterson's second visit to Bombay Hook. Peterson spent a weekend in June of 1938 touring the refuge as a guest of the manager.

### **The War Years and the Army Air Corps** **1943 to 1945**

The Army Air Force took over much of the refuge for three separate programs beginning in 1943 and continuing through 1945. One was operation of a radio direction finder, one was an air-to-ground gunnery range, and the third was a secret aerial rocket research program.

In the summer of 1943, the War Department negotiated use of the refuge's 90-foot observation tower in order to install rotating antennas for a radio direction finder. Five enlisted men from the First Fighter Command operated the antennas of the radio direction finder to give pilots in the area the exact location of their aircraft.

At about the same time, another Army Air Force unit established an air-to-ground gunnery range on Kelly Island. This was a machine gun range for a fighter group located at the Dover Air Base. Pilots strafed targets set in the marsh from P-47 "Thunderbolts" using live ammunition. This was part of their final training before the pilots were shipped overseas. In 1944 one of the P-47 fighters crashed and buried itself in the muck of the marsh. This was the most destructive of the three military activities in terms of its effect on wildlife. Marsh fires were a constant event. Both Kelly and Kent Islands had been prime nesting sites for black ducks and other waterfowl, but now all wildlife left the area.

The third use of the refuge was a secret research project to test new models of rockets

fired from aircraft and to determine where those rockets could be mounted on various types of airplanes. This was a highly secret project conducted by the Research and Development Service of the Air Force.

The research was done on three ranges. The primary range was located in Dutch Neck, and the target area was in Bear Swamp. Planes came in low from the southwest to fire rockets at the target in Bear Swamp in order to test propellant charges, and this range was used almost daily.

The second range was set up initially in the headquarters area, but later moved to the Bear Swamp target area. This was a high explosive range, used to test warheads on the projectiles.

The third range also was built in the headquarters area, and was used to test rocket fuses. For this range the military built a launch pad, a steel framework mounted on a cement base. The launcher was 300 feet long and 8 feet high. Rockets were fired from the launcher at a target set up on the Shearneck Dike just beyond the north end of Raymond Pool, a distance of about 150 yards.

There is no record to indicate exactly when the several the military activities ended on the refuge, but the aerial gunnery range on Kelly Island ended on or before August 14, 1945, as did the radio direction finder station. The rocket research program also was curtailed, but air-to-ground rocket testing continued through 1945 and into 1946.

Aside from the military occupation, very little happened on the refuge from 1943 to 1945.

In 1945, two chemicals were approved for testing, the insecticide DDT and the herbicide 2,4-D. Both were found to be somewhat effective, and neither was thought to have adverse effects.

Although the war was over, the military continued to play a part in refuge life. During the fall migration population counts of waterfowl were made twice each week using small aircraft provided by the military, and, based on these flights, an estimated 130,000 waterfowl visited the refuge that fall. In 1945, a flock of 45 Canada geese remained on the refuge for the entire winter, the first such occurrence. Also, the deer herd now reached sixteen.

**Return to Normal**  
**1946 to 1950**

In the summer of 1946, steps were taken to move forward with Sheariness Dike. Rock ballast was hauled by truck to Whitehall Landing where it was loaded on barges and taken to the site of dike construction. From June through August, 1947, attempts were made to dam Sheariness Gut where it extended into the impoundment area using Wakefield pilings. This construction was completed on October 28, closing the gut, but the next day an incoming high tide washed out all of the pilings. In 1950, the refuge acquired a Bucyrus Erie crane, and later that summer, a pontoon barge was received from the Navy. The pontoon barge was launched in the borrow pit on the marsh side of Raymond Dike, and the Bucyrus Erie crane was loaded on the barge, ready to begin real work on the Sheariness Dike.

In April, 1946, 250 black-crowned night herons descended on a small stand of trees adjacent to Raymond Pool, the largest flock of this species in the region. In the fall of 1949, a flock of 250 Canada geese returned and this time rested in Raymond Pool, attracted by 20 live decoys that were put in Raymond the previous summer. After an absence of three years, snow geese returned to Bombay Hook during the 1950 spring migration. Approximately 3,000 rested on Delaware Bay and fed on the cordgrass meadows of Kent and Bombay Hook Islands during the day.

Thirty-six wood ducks nesting boxes were installed in the fall of 1946, the first wood duck nest boxes on the refuge. In the winter of 1946, six bald eagles were seen on the refuge, and that spring one pair nested, producing three eaglets. In the spring of 1947, one pair nested and again produced three young. The eagles did not nest in 1948, but ten eagles hunted on the refuge, and five immatures chased ducks on Raymond Pool. In 1949, two pairs of bald eagles nested on the refuge, but one nest was destroyed when the tree in which it was located blew down. In the winter of 1949–50, eagles were described as abundant, and that spring, two pairs again nested, but without success.

With the end of the war, the refuge again attracted visitors, primarily bird watchers. In 1948, Bombay Hook was cited as the best bird watching site in the region, and the spring and fall migrations attracted as many as 500 visitors during these periods.

**Sheariness**  
**1951 to 1955**

In January, 1951, work started again on the Sheariness Dike, and by the fall of 1952, one thousand feet of the dike was leveled, graded, and seeded. At the north end, fill was put across the tidal gut between Dutch Neck and Collins Island. After much difficulty, on October 2, 1953, Sheariness Gut that bisected the dike finally was plugged and Sheariness Pool was fully impounded. Fall rains quickly flooded the pool so that the water was two feet above the old marsh level, and immediately Sheariness became the preferred freshwater habitat for waterfowl. Nevertheless, several years would pass before the dike was brought up to its design height. In January and February of 1955, the central section of Sheariness Dike sank. At the end of March this gap was filled, but not brought up to grade because there continued to be some sinking. In October the sinking stopped and fill again was added to bring the damaged area up to nearly its designed height. Following the repairs in October, 1955, no further work was done on Sheariness Dike until August, 1956, when fill was added and the dike was completed. The dike was at design height and the banks were sloped to meet specifications.

The water management plan for the impoundments called for construction of ditches and canals so that water from Finis Pool could be used to fill Sheariness and Raymond Pools, and water levels in Sheariness and Raymond could be lowered by draining water from Sheariness to Raymond, then from Raymond to the salt marsh. In the fall of 1953, they discovered that the drainage system was flawed because it was impossible to drain Raymond. The elevations were wrong, and every high tide in the salt marsh caused a reverse flow from the marsh back into the impoundment. In September work began on another project: construction of a canal from Sheariness Pool to Bear Swamp and the future Bear Swamp Pool so that all four impoundments connected to one another.

*To be continued.....*

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<sup>1</sup> The primary source for this History of Bombay Hook is the Quarterly and Annual Narrative Reports from 1938 to 1999 and the Annual Performance Reports from 2000 to 2011.





### Bird Club



It has been an active spring for the Friends' Bird Club. The highlight – so far – was the April 7 outing at Prime Hook Refuge. Led by naturalists Bill and Sally Fintel, long-time board members of Prime Hook's Friends group, 15 from our bird club had spent the morning and early afternoon at several Prime Hook sites. Participants ranged from brand new birders to the highly experienced veterans, with many people being in-between. It was a great day, and nearly 70 species were identified.



When this newsletter is distributed, the Club's spring outings will be nearly over. On May 27 we will go to Conowingo Dam (contact the email address below for details).



The final spring field trip will be at Bombay Hook on Sunday, June 10, from 9:30 to 12:30. Meet at the Visitors Center.



**Reminder:** the Friends' Bird Club is open to everyone. There are no dues, no regular meetings ....we just go birding! All are welcome, from experts to first-timers, even if you can only attend once or twice. For schedules and last minute updates, email Hannah McLennan at [hmclennan@comcast.net](mailto:hmclennan@comcast.net)



**Volunteers needed:** Bombay Hook's 75th Anniversary Wildlife Festival on Saturday, October 20, needs volunteers. One need is for help with **one-hour** bird walks in the morning or afternoon. You do not need to be an expert birder. Most participants will be brand new to birding and this may be their first time on the Refuge.



The Festival also needs volunteers for many other activities. See the full newsletter article. You can do as little or as much as you would like. This is a very special day for Bombay Hook, so please plan to help.



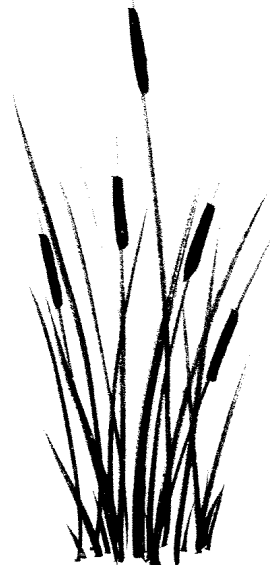
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**The Bombay Hook Visitor Center will close on the weekends starting June 10, 2012 and will re-open on the weekends starting September 1, 2012.**

**Until then...**

**Have a HAPPY SUMMER!!!**



Friends of  
**BOMBAY**  
Hook  
Newsletter

is published quarterly by "Friends of Bombay Hook, Inc. (FOBH)", a non-profit 501(c)(3) organization working in conjunction with Bombay Hook NWR and U.S. Fish and Wildlife Service. FOBH provides financial and developmental support for environmental education programs at the refuge and in communities throughout the region.

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:

Friends of Bombay Hook, Inc.  
2591 Whitehall Neck Road  
Smyrna, DE 19977  
Phone: (302) 653-6872  
Fax: (302) 653-0684

email: [fobhmembership@idv.net](mailto:fobhmembership@idv.net)

<http://www.friendsofbombayhook.org>

**75<sup>th</sup> Anniversary Special Collection**  
**Set of four Ornaments**  
**By Marcia Poling**

Marcia Poling created a special collection of ornaments for Bombay Hook's 75<sup>th</sup> anniversary. The four ornaments are birds commonly found on the Refuge at different times of the year, they are: Northern pintail, Common yellowthroat, Black-necked stilt, and Great blue heron. Each ornament is \$16.50. *If you purchase all four ornaments at one time you receive a 20% discount.*



Marcia Poling of Dover, Delaware, has been painting birds and other wildlife on Christmas ornaments for 15 years. Her love of nature was nurtured by her family, who took her hiking and camping from a young age all over the eastern seaboard, particularly in Maine and Pennsylvania, but also in Canada and the Tetons and Yellowstone. When she and her husband, Tom, turned their yard into a wildlife attracting garden, this, in addition to their love of Bombay Hook, gave her the inspiration for her artwork.

Totally self-taught, Marcia picked up a Christmas ornament one day in 1996 and, wanting to come up with a Christmas present for family members, painted a Cardinal on it. Getting out a field guide, she next tried a bluebird and a hummingbird, and then was off to the craft store for more brushes and paints to expand the selection. When the Friends of Bombay Hook, where she and Tom have been volunteering for many years, expressed interest in selling the ornaments in the Refuge Store, Marcia's second career was launched.



Now she sells almost 3,000 ornaments every year, to wildlife refuges and nature stores from Maine to Washington and Florida to Arizona, and also a line of notecards with designs she has painted for individual customers and as illustrations for a book published by the American Bird Conservancy.



## Annual Meeting

Saturday, June 9, 2012  
10:00 a.m. – 12:00 noon

**Bombay Hook National Wildlife Refuge Visitor Center**

The Friends' Annual Meeting is your opportunity to:

- ✓ Learn the status of projects that the refuge staff has been working on;
- ✓ Find out how the Friends have supported the refuge during the past year;
- ✓ Hear about, and provide your input on, upcoming projects;
- ✓ Meet other members of the Friends;
- ✓ Cast your vote for officers and board members. The board's nominees this year are:

|                                   |             |
|-----------------------------------|-------------|
| <i>Secretary/Membership Chair</i> | Tammy Lewis |
| <i>Board Member:</i>              | Frank Smith |

Nominations may also be made from the floor.

At 1:00 pm, Flavia Rutkosky, U.S. Fish and Wildlife Service, will give an overview of the national program, the Urban Conservation Treaty for Migratory Birds (Urban Treaty), and Keith Russell, Pennsylvania Audubon, will give an overview of the Philadelphia program (Philadelphia Treaty).

Many of us have heard the awful sound of a bird flying into a window or seen a bird dazed and confused after they fly into a sliding glass door. Bird window strikes can be an unpleasant experience that occurs at home. Just imagine the number of bird window strikes that happen in the city. Why not stay after the Annual Meeting and find out about these national programs to help reduce the number of urban bird strikes?





### ***Barbara and Arthur Straughn Retire from Bombay Hook NWR***

Barbara and Arthur Straughn, two employees who were integral to the day-to-day operations of the refuge, retired on February 29. Interestingly, Arthur and Barbara met while working at Bombay Hook and became the only married couple employed fulltime at the Refuge. Although the contributions of each were quite different, together they were the “glue” that kept the refuge’s administrative duties and facilities operating efficiently.

Upon her retirement, Barb had worked 31 years with the federal government, twenty-one of them at Bombay Hook. She transferred to Bombay Hook from an Ecological Services office in Manhattan, Kansas.

Barb’s last position at the Refuge was as the Administrative Officer. She was in charge of the budget, payroll and purchasing. She worked closely with staff members to determine purchasing needs and made sure orders were processed efficiently and delivered in a timely manner. She was one of 10 warrant officers in the field in Region 5 and worked with other refuges to execute procedures for large projects.



***Barbara and Arthur Straughn***

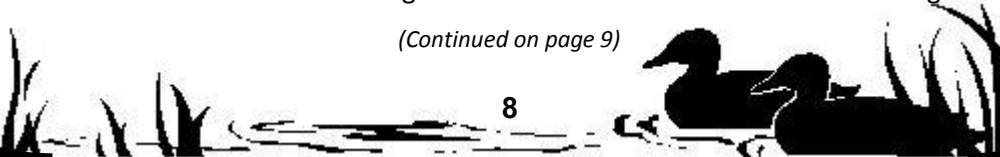
When Barb first started at Bombay Hook, she was encouraged to learn the other jobs in the office and on the Refuge. It was important to management that she and others be able to help wherever they were needed. Barb participated in deer surveys that were conducted at night; duck banding which included traveling through the marsh by boat and bird surveys. Recently, she provided her administrative expertise at the BP oil spill in the Gulf of Mexico.

Barb was the Caretaker for the Allee House for 6 years and lived there with her children. She gave tours of the Allee House on Saturdays and Sundays. She enjoyed speaking to and meeting the people who toured the house including some relatives of the Allee family. She and her children loved living on the Refuge. Christmas was always a special time for Barb’s family on the Refuge. They enjoyed decorating the Allee House and spending time with family and friends. They have many fine memories of holiday gatherings.

Arthur is a native Delawarean who grew up west of Clayton, DE, with his parents and four brothers and two sisters. He graduated from Smyrna High School and the University of Delaware. He always enjoyed an interest in the outdoors, especially hunting, fishing and wildlife observation.

Arthur began working at Bombay Hook in 1986 as an Engineering Equipment Operator, who in truth quickly wore many hats and performed a multitude of diverse tasks. Evidence of Arthur’s work at Bombay Hook is everywhere from buildings and facilities he maintained to the heavy equipment he operated and cared for. Arthur built and maintained all of the waterfowl hunting blinds, deer stands, and wood duck and owl nesting boxes. He restored and created over 15 small wetland areas scattered through the Refuge uplands as well as projects on other refuges and private lands. He was involved in all phases of habitat management from clover and wheat seeding and noxious weed control to water management in the im-

*(Continued on page 9)*







## **Barbara and Arthur Straughn Retire from Bombay Hook NWR**

*(Continued from page 8)*

poundments. He was involved in the establishment of the Refuge's warm season grasslands which are today one of the few areas in the state where wild bobwhite quail are relatively common. He was a qualified wildlands firefighter who participated in numerous prescribed burns at Bombay Hook and other refuges.

Soon after Arthur was hired, he was dispatched to Glynco, Georgia, to the Federal Law Enforcement Training Center where he completed the course to be a Refuge Law Enforcement Officer. He was a key component to the success of the refuge's waterfowl and deer hunting programs.

Arthur also received hazardous materials training which enabled him to assist with oil spill response in the Delaware Bay region primarily retrieving oiled birds. He was called into service during the recent BP oil spill in the Gulf of Mexico and spent several weeks helping with recovery efforts.

Arthur provided invaluable assistance in Bombay Hook's biological monitoring including forest breeding bird point counts, vegetation transects, waterfowl and owl banding, deer surveys, shorebird population monitoring and aerial waterfowl surveys. Arthur assisted the Office of Migratory Bird Management with the annual waterfowl breeding survey in the western Canadian provinces and Northwest Territories where he got to see musk ox, wolves, bears, and other wildlife not normally seen at Bombay Hook.

When asked how work at the Refuge has changed since he started, Arthur noted that work on refuges has become more specialized. Early in his career there was much more participation by the entire staff on different refuge projects, while today there is more of a trend towards specialization. For example, prescribed burning is now accomplished by regional fire teams rather than refuge staff, and refuge law enforcement activities are restricted to one full-time law enforcement officer rather than several "collateral duty officers."

What will he miss the most? The day-to-day sights and sounds of the Refuge and the changes that occur throughout the year. Nothing can compare to a boat ride at dawn to the bay shore to check a duck trap, the annual arrival of the first big flock of snow geese, or the thousands of shorebirds arriving in the spring.

The Straughns' future plans? Barbara will spend more time with her husband, family and friends as she enjoys the freedom that retirement brings. They are looking forward to planning a trip to Alaska. Arthur will have more time to enjoy outdoor activities and to instill his appreciation of the natural world to his grandchildren. Further, his talents as a decoy carver and furniture maker will occupy some of his time and provide treasures for Barbara and family. Fortunately, for Refuge visitors and friends, Arthur will continue to provide boat tours during festivals and other occasions. This will enable the public to take advantage of Arthur's extensive knowledge of the Refuge.

We thank Barbara and Arthur for their many contributions to Bombay Hook and hope they enjoy a long and healthy retirement.

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# News Release

## *National Wildlife Refuge System*



**Bombay Hook National Wildlife Refuge  
2591 Whitehall Neck Road  
Smyrna, DE 19977  
302-653-6872**

**FOR IMMEDIATE RELEASE**

**MARCH 11, 2012**

### **BOMBAY HOOK NATIONAL WILDLIFE REFUGE ANNOUNCES THE 75<sup>TH</sup> ANNIVERSARY CELEBRATION DURING 2012**

Bombay Hook National Wildlife Refuge is celebrating the 75 Anniversary throughout 2012 with children's programs, live animals, workshops, presentations, and tours of the Refuge. The main celebration will be a Fall Waterfowl Festival on October 20, 2012. This is the year to explore the great outdoors and Bombay Hook is the perfect place for your family to explore and participate in the planned activities.

Attached is a 2012 Calendar of Events outlining activities scheduled. For more information on the upcoming events visit the website: <http://bombayhook.fws.gov>. For more information on the history of the Refuge and the celebration contact Tina Watson on 302-653-6872.

Bombay Hook National Wildlife Refuge was established in 1937 with 12,000 acres along Delaware Bay. Over the years, the refuge has purchased additional tracts of land and currently encompasses 16,251 acres. The primary purpose of the refuge is to provide habitat for migratory birds using the Atlantic flyway and for other native wildlife. The Refuge is known for wildlife observation and photography opportunities, environmental education and native plant programs, bird watching, and deer and waterfowl hunting opportunities.

Bombay Hook National Wildlife Refuge is located east of Route 9, north of Leipsic at 2591 Whitehall Neck Road, Smyrna, Delaware.

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. We are both a leader and trusted partner in fish and wildlife conservation, known for our scientific excellence, stewardship of lands and natural resources, dedicated professionals and commitment to public service. For more information on our work and the people who make it happen, visit [www.fws.gov](http://www.fws.gov).

**March 11, 2012**

# *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 will open on **weekends until June 10, 2012**. The Visitor Center will reopen on **weekends on September 1, 2012**. The Allee House is in need of repairs and is closed until further notice. Check the Website for additions or changes.

**Sunday, June 3, 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 set up on the wildlife drive with scopes, binoculars, and field guides to help you identify shorebirds, raptors, and whatever else flies by. Learn how to best use binoculars and scopes.

**Wednesday, June 6, 2012** **From Glory to the Shadows, Atlantic Sturgeon in Delaware by Dewayne Fox (7:00 p.m. – 8:00 p.m.)** Dr. Fox's presentation will provide an overview of Atlantic sturgeon in the Delaware River. He will speak about their historic importance and the February, 2012 announcement listing the Atlantic sturgeon as Endangered under the Federal Endangered Species Act. Dr. Fox received his PhD working with the reproductive ecology and habitat use of Gulf sturgeon at North Carolina State University. In 2003 he took a position at Delaware State University in Dover, DE. He has built a research program that is closely linked to regional fisheries issues. He currently serves as Chair for the State of Delaware's Tidal Finfish Council, a position he has held the past four years. **75<sup>th</sup> Anniversary Event.**

### **Saturday, June 9, 2012**

**Annual Friends of Bombay Hook All Member Meeting (10:00 a.m. – 12:00 noon)**

**Urban Conservation Treaty for Migratory Birds (1:00 p.m. – 3:00 p.m.)** Flavia Rutkosky, U.S. Fish and Wildlife Service, will give an overview of the national program and Keith Russell, Pennsylvania Audubon, will give an overview of the Philadelphia program.

The Urban Conservation Treaty for Migratory Birds Program (Urban Treaty) was created in 1999 to increase citizen awareness and understanding of the importance of urban areas for migratory birds. Many urban areas have developed along rivers located in the four major migratory routes – the Atlantic, Mississippi, Central and Pacific Flyways – and birds are dependent upon these areas for migratory stopover habitat. The Treaty Program is a partnership between a city and the Fish and Wildlife Service, which provides challenge grants and technical assistance to the city. The Treaty city develops and implements bird conservation projects, provides matching funds and in-kind support, and develops additional partnerships. Treaty Program components focus on 1) Habitat Creation, Protection and Restoration (CPR); 2) Hazard Reduction; 3) Invasive or Nuisance Species Management and, 4) Education and Outreach. Currently there are now 19 Urban Treaty cities.

The Philadelphia Treaty became a reality in May 2002. On August 13, 2009, Region 5 announced a \$70,000 Urban Conservation Treaty for Migratory Birds grant to the City of Philadelphia. This agreement is a testament to the high quality of natural areas in Philadelphia and marks a milestone in the Delaware Bay Estuary Project Office's decade old collaboration with several City of Philadelphia land and water resource management departments as well as numerous private sector organizations involved in conservation of Philadelphia's natural resources. **75<sup>th</sup> Anniversary Event.**

(Continued on page 12)

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

(Continued from page 11)

**Sunday, June 10, 2012 Bird Identification Tour with Joel Citron (9:30 a.m. – 12:30 p.m.)** Beginner and experienced bird watchers will enjoy walking a trail looking for songbirds, identifying wading birds and ducks in the impoundments, and watching for eagles. Meet Joel at the Visitor Center.

**Wednesday, June 13, 2012 National Garden Week Celebration "Naturalistic Gardening with Gregg Tepper" (7:00 p.m.)** Gregg Tepper is the Woods Path gardener at Mt. Cuba Center. Gregg has spent the last 20 years growing and studying plants that thrive in the shade. He is particularly interested in ferns, trilliums, lilies, irises, and acid loving plants. Learn how to create a naturalistic garden to delight the senses in your own garden! To register, contact Quentin Schlieder at (302) 653-6449 or [gcsjr@comcast.net](mailto:gcsjr@comcast.net). **75th Anniversary Event.**

**Saturday, June 16, 2012 Purple Martin Program (10:00 a.m. – 11:30 a.m.)** Learn about Bombay Hook's Purple Martin colony, their long migration, and how people benefit from Purple Martins nesting in the area. Joel Martin maintains the gourds and houses at the Refuge and will provide insight on what to consider if you want to start a Purple Martin colony: different types of houses, gourds to use against predators, and how to check the nests. You will also get to see the purple martin chicks!

**Wednesday, June 20, 2012 Down and Dirty Garden Party (9:30 a.m.)** After we perform seasonal maintenance on the landscape at the Visitors Center, we will proceed to a private garden where we will divide and pot plants to take home to enjoy in our own gardens. A complimentary luncheon is included. Space is limited and reservations are required! To register, contact Quentin Schlieder at (302) 653-6449 or [gcsjr@comcast.net](mailto:gcsjr@comcast.net).

**Saturday, July 14, 2012 Forest Loss and Fragmentation – Implications for Rare Birds (1:00 p.m. – 2:30 p.m.)** This presentation will be given by Rick McCorkle, Fish & Wildlife Biologist with the U.S. Fish & Wildlife Service, Delaware Bay Estuary Project office. Rick has spent many years modeling and mapping wildlife habitat in Maryland, Delaware and New Jersey, and has developed a strong understanding of the impacts of forest fragmentation on forest-dependent birds and other wildlife. Rick will describe the forest area requirements for many of these species, and the impacts associated with forest fragmentation. This is a follow-up to a presentation Rick gave a few years ago, and will include an update on the status of several forest-dependent bird species in Delaware. The program will be held in the Visitor Center Auditorium. **75th Anniversary Event.**

**Saturday, July 28, 2012 Delaware Deer and Other Mammals (10:00 a.m. – 11:30 p.m.)** Joe Rogerson, Deer and Furbearer Biologist with the Delaware Division of Fish and Wildlife, will give a presentation on the ecology, life history, distribution, and abundance of white-tailed deer and other commonly observed mammals in Delaware. **75th Anniversary Event.**

**Sunday, July 29, 2012 Shorebird ID Workshop (Call Andy Urquhart for time)** Andy Urquhart and Eric Braun will lead the program. Learn a system to ID shorebirds based on size, structure, habits, and plumage. Half day trip includes both classroom and field work. Reservations required. Call Andy at (302)239-2472 by July 27, 2012.

**Saturday, August 4, 2012 Long-legged Waders (10:00 a.m. – 2:00 p.m.)** A dozen species of long-legged wading birds nest in Delaware and another half-dozen have been recorded in the state. By early August nesting is done and throngs of adult and young herons, egrets and ibises gather in large flocks to feed in Delaware's marshes, impoundments and other waterways. Learn how to identify the species that are regularly seen at Bombay Hook in summer in a short indoor presentation and then head out onto the Refuge Wildlife Drive to put your ID skills to the test. **75th Anniversary Event.**

**Saturday, August 18, 2012 Shorebird and Birding by Impression with Kevin Karlson (8:00 a.m. – 3:00 p.m.)**

- **Outdoor Field Trip – 8:00 a.m. – 12:30 p.m.** : Join author and professional field trip leader Kevin Karlson as he shares a simple and more effective approach to shorebird ID highlighted in his bestselling book *The Shorebird Guide*. With an initial focus on basic impressions of size, shape and body motion for all birds seen, a more effective starting point is achieved for your ID pursuit. Appreciation of this different and exciting field approach is best experienced in field conditions, and Kevin has been fine tuning his teaching approach over the last six years. Beginners and expert level tips will be shared, with something for everyone involved.
- **Lunch – 12:30 p.m – 1:30 p.m.**
- **Indoor Workshop – 1:30 p.m. – 3:00 p.m.** : Kevin will have just completed a comprehensive electronic book on shorebird ID, and will highlight the e-book in the afternoon. It will include many new photos and much information on shorebird ID

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

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that is not included in *The Shorebird Guide*. Participants will learn how to receive the electronic book. Come and share in this innovative new approach to bird ID, with audience participation encouraged with the digitized photo section. Space limited. **Call to register, (302) 653-6872. 75<sup>th</sup> Anniversary Event.**

**Saturday, September 8, 2012 Insects and Humans (10:00 a.m. – 11:30 a.m.)** Scott Berg, entomology Master's student at the University of Delaware, will give a presentation on the close relationships humans share with insect and how we benefit from them. In addition to relying on insects to play their part in our ecosystem, we use insects for food, pollination, clothing, medicine, and even to control invasive organisms. Scott will discuss the many roles of insects in the natural world. He also studies the behavior of a beetle brought to the United States from Asia to help control the invasive mile-a-minute plant. **75<sup>th</sup> Anniversary Event.**

**Saturday, September 15, 2012 FUN FOR KIDS! Monarchs (10:00 a.m. – 12:00 noon)** Cindy Stolson will describe the life cycle of a butterfly, how to identify the male and female Monarch butterfly, outline the migration route of the Monarch to Mexico, and provide information on the conservation efforts to preserve their winter habitat in Mexico. The class will create a life cycle poster, and take a field trip to look for Monarchs and the milkweed plant it relies on to survive. Cindy developed the Monarch Butterfly presentation when she won a grant from MBNA. The grant allowed Cindy to participate with the University of Kansas tagging program of the Monarch butterflies. Cindy and her husband, Jon traveled to Mexico to study the Monarch in its wintering habitat. Cindy taught 2nd grade for 30 years in the Caesar Rodney School District at Arnold Elementary School and W.B. Simpson Elementary School. She has a Master's Degree in Instruction and was named Teacher of the Year in 1986 for the Caesar Rodney School District. **75<sup>th</sup> Anniversary Event.**

**Wednesday, September 19, 2012 Field Trip to Adkins Arboretum (8:30 a.m.)** Adkins Arboretum is a 400-acre native garden and preserve on Maryland's Eastern Shore adjacent to Tuckahoe State Park. It is the only garden in the region that focuses solely on plants native to the Mid-Atlantic Coastal Plain. There are more than 600 species of native shrubs, trees, wildflowers, grasses and ferns with four miles of paved paths. Space is limited and reservations are required. For more information and to register, contact Quentin Schlieder at (302) 653-6449 or [gcsjr@comcast.net](mailto:gcsjr@comcast.net).

**Saturday, September 22, 2012 8th Annual Native Plant Symposium –Bog Gardening with Native Plants (10:00 a.m. – 2:00 p.m.)** This symposium is sponsored jointly by the Delaware Native Plant Society and the Bombay Hook Garden Keepers. Participants will learn about the types of bog plants, many rare and choice, that grow in our region and how they can be used effectively in the landscape. Guest speakers include Bill McAvoy and bog gardening guru Jason Austin, Manager of Rarefind Plant Nursery in Jackson, New Jersey. Bill will discuss Delaware native bog plants and ecology, and Jason will discuss how to grow them successfully in the garden. Jason plans to bring plants for sale. A complimentary lunch is included. Following lunch there will be an optional field trip. The symposium is free but registration is required and space is limited. To register, contact Quentin Schlieder by phone at (302) 653-6449 or by e-mail at [gcsjr@comcast.net](mailto:gcsjr@comcast.net) after September 1, 2012.

**Sunday, September 23, 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.

**Sunday, September 30, 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.

**Saturday, October 6, 2012**

**Ducks Unlimited Presentation (10:00 a.m. – 11:30 a.m.)** Come find out about the history of waterfowl and Ducks Unlimited® (DU), the types of projects active in Delaware and Maryland, and about the partnership between DU and the Refuge System. Jake McPherson, Conservation Specialist, from the Annapolis office, will provide an update on the organization. He works closely with the engineers and conservation staff to identify and carry out wetland restoration projects in Delaware and Maryland. He communicates with government and private organization partners and individual land owners to identify potential projects that will meet DU mission to provide North America's waterfowl with ample habitat. **75<sup>th</sup> Anniversary Event.**

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

(Continued from page 13)

**Backyard Bird Feeding and Watching (1:00 p.m. – 3:00 p.m.)** Learn how to feed birds in your yard and the essentials of bird identification. There will also be information about landscaping to attract birds, helpful Web sites and national programs. **75<sup>th</sup> Anniversary Event.**

**Saturday, October 13, 2012 Enjoying Amphibians, Reptiles and Other Garden-Worthy Creatures (3:00 p.m. – 4:00 p.m.)** Learn from Jim White of the Delaware Nature Society about the many species of salamanders, frogs, turtles, lizards-- and yes even snakes-- that are found in the mid-Atlantic region, and how to create habitat for some of them in your garden or mini-wildlife area. He will also discuss how to attract other water-loving creatures such as dragonflies and damselflies. Water features, plants, animal cover and other critter amenities will be discussed. **75<sup>th</sup> Anniversary Event.**

**Saturday, October 20, 2012 Wildlife Festival – 75<sup>th</sup> Anniversary Celebration (9:00 a.m – 4:00 p.m.)** Check back for a schedule of events.

**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.

**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 Bird-finding 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.

### [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 !”*

### **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

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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)**