

FRIENDS OF BOMBAY HOOK

Newsletter



Monarch on Milkweed
Photo by Karen Dever



Vol. 32, No. 2
September 2022

Our Mission Statement:

The Friends of Bombay Hook is a not-for-profit corporation working in conjunction with Bombay Hook NWR and the U.S. Fish & Wildlife Service (USFWS). It supports and enhances educational and recreational programs at Bombay Hook, provides volunteer services and financial assistance and serves as a link between the Refuge and the public.

The Visitor Center/Blue Heron Gift Shoppe will be reopening on the weekends and weekdays starting September 1st. Come in for all your gift-giving needs!!!

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.

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Bombay Hook Visitor Services Update By Josh Smith, Visitor Services Manager

I'm finally getting my feet under me. It's been an interesting first summer in the First State.

As we head into fall, I'm starting to coordinate and plan programs. So far, we have four things on the calendar. In September, we're looking to do backyard birding and monarch butterfly programs with Terry Willis and Eileen McLellan. The monarch program will hopefully include tagging some butterflies before they migrate to Mexico. Bruce Lantz will conduct a bluebird box program in October and clean the bluebird boxes along Dutch Neck Road. We will also participate in the Friends of Bombay Hook Adopt-a-Highway clean-up and hope to add many more great Environmental Education opportunities.

Autumn also brings the hunting seasons. Most of the hunts occur outside the areas commonly used by visitors. There are, however, three days in which the HQ area will be closed: November 14 and 18, and December 14. On those days, the public can access the Auto Tour loop via Dutch Neck Road. The Bear Swamp and Finis areas will be closed on October 10, 12, 14, November 11, 12, 16, December 12, 15, and January 20. Visitors will still be able to access Raymond and Shearness Pools on those days.

You may have noticed the new Visitor Center is taking shape. We hope construction will wrap up around the end of the year. Once complete, we'll start setting things up with all new interpretive exhibits and office furniture. If things go as planned, we expect a grand opening in the Spring.

VOLUNTEERS NEEDED! We can always use more Visitor Center volunteers, especially once we move into the new building. I anticipate having a volunteer at the front desk in addition to the Friends volunteers at the Blue Heron Gift Shoppe. If you or someone you know may be interested, please email me at Joshua.smith@fws.gov.



Hello Friends!

As most of you know, we close our store on weekends during the summer to give our dedicated volunteers a much-needed break. We are still open weekdays from 9:00 a.m. - 4:00 p.m., depending on volunteer availability. If you are making a special trip, please call ahead.

We are currently offering 3 styles of t-shirts. We have long-sleeved unisex and ladies cuts and a short-sleeve unisex. We hope to have a winter season sweatshirt or hoodie out later this year in time for the holidays.

Bird-friendly coffee, teas, local honey products, jewelry, books, puzzles, hats, and much more.....come out and see us!



Photos by Karen Dever

As we near the completion of the new Visitor Center, we will look for new products to introduce to the store. Do you have any suggestions? Shoot me an email and let me know at fobh@comcast.net.

Thank you for your support!

Karen Dever
Store Manager



Did you know that you could donate to Friends of Bombay Hook simply by shopping through Amazon?? If you shop on *Amazon Smile*, Friends will receive 0.5% of eligible purchases made.

To shop on *Amazon Smile*, simply go to smile.amazon.com from the web browser on your computer or mobile device; sign on if you have an existing Amazon account; and choose *Friends of Bombay Hook* from a list of charitable organizations. It's a great way to shop while donating for a good cause.



Orange Butterfly Weed (Asclepias Tuberosa)

Have you ever spotted this bright orange gem along the roadside or perhaps in the Bombay Hook pollinator meadow?? With its striking color, it is a favorite of many gardeners.

A member of the milkweed family, its Latin genus name, *Asclepias*, honors the Greek god of medicine, Asklepios. The species name *Tuberosa* refers to the root. This butterfly weed grows upright and in clumps from about 1-3 feet tall. This plant thrives in rocky open woods, meadows, prairies, fields, and roadsides. The butterfly weed does not have the milky-sapped stems like other milkweeds, but it has spindle-shaped seed pods.

This plant proliferates from seed, but it will take two to three years to produce flowers. If the pods are left on the plant, it may self-seed. Once established, the Butterfly Weed has a long tap root, so it does not usually transplant well, so it is best to leave the plant undisturbed.

Who else loves the *Asclepias Tuberosa*? Many different types of butterflies sip the nectar, and Monarch Butterflies lay their eggs on the leaves, feeding their caterpillars. Songbirds and hummingbirds will also pay a visit to this beauty.

After the recent report of Monarchs now being on the endangered list, please consider adding native plants to your gardens to help the Monarch survive. (Photos by Karen Dever)



A Word About Native Plants.....What Are They Anyway?

(Taken online from the NWF website)

Native plants have formed symbiotic relationships with native wildlife over thousands of years and therefore offer the most sustainable habitat. A plant is considered native if it has occurred naturally in a particular region, ecosystem, or habitat without human introduction.

Exotic plants that evolved in other parts of the world or were cultivated by humans into forms that don't exist in nature do not support wildlife as well as native plants. Occasionally, they can even escape into the wild and become invasive exotics that destroy natural habitats.

Native plants help the environment the most when planted in places that match their growing requirements. They will thrive in the soils, moisture, and weather of your region. That means less supplemental watering, which can be wasteful, and pest problems that require toxic chemicals. Native plants also assist in managing rainwater runoff and maintaining healthy soil as their root systems are deep and keep soil from being compacted.

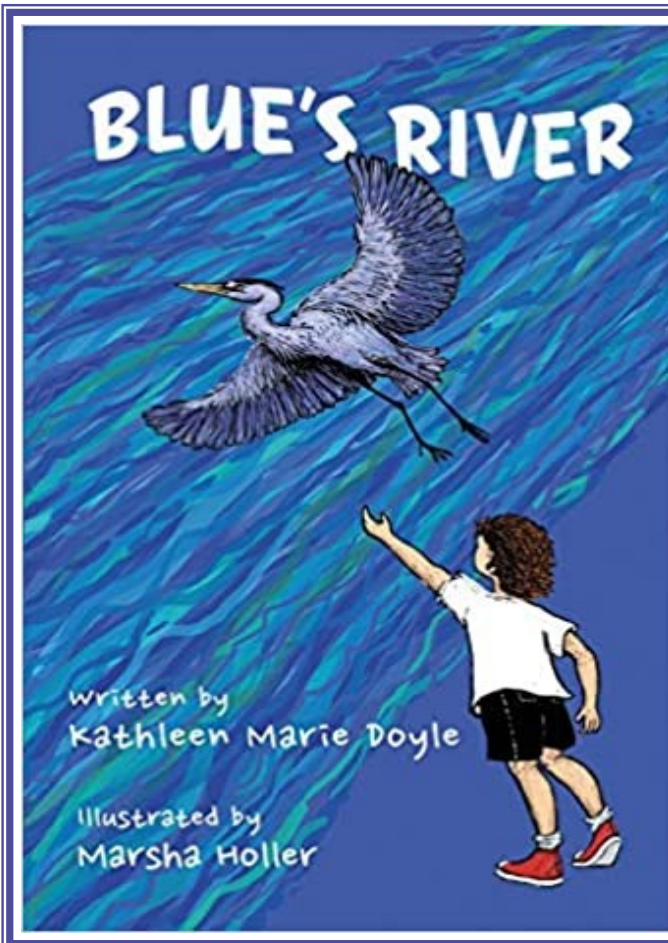


Eagle Scout Dan built, stained and delivered benches and picnic tables for the Refuge as part of his Eagle Scout Project.

Thank You Dan!!

Photos by BJL





Please join Friends of Bombay Hook in welcoming Kathy Doyle (*Author*) and Marsha Holler (*Illustrator*) to the Refuge on Sunday, October 9 at 1:00 p.m.!!! The event is **FREE to the public** and a wonderful program for children (of any age!) and their families. **Registration is required for this program by telephone at (302) 653-6872 or via email at fobh@comcast.net, as seating is limited.**

Blue's River will be available to purchase that day at the Blue Heron Gift Shoppe.

Thank you for your support!

Great Blue Herons, Watersheds, and You

Presentation by Kathleen M. Doyle, author of *Blue's River*
Demonstration by Marsha Holler, illustrator of *Blue's River*

Great Blue Herons love Bombay Hook! Come find out why. Kathleen Doyle, author of *Blue's River*, will teach you about the elegant Great Blue Heron and what led her to write a children's book about a very specific heron named Old Blue. You will learn where these beautiful birds live, how they live, the dangers they have faced throughout history, and the dangers they face today.

You will also learn about the importance of watersheds. Humans and Great Blue Herons require water, and our water comes from our watershed. Find out what a watershed is and where your watershed is located. Learn about the types of actions that can be harmful to watersheds and what actions are helpful.

Ultimately, Great Blue Herons and our watersheds rely on all of us to take better care of them. Learn about specific things that you and your family can do to be good stewards of the environment.

Lastly, learn how to draw a Great Blue Heron! Marsha Holler, illustrator of *Blue's River*, will tell you how she approached illustrating *Blue's River*, and she will give you tips on how to draw your own Great Blue Heron!

Kathleen Marie Doyle is a writer and teacher committed to education, the environment, and democracy. She earned her BA in Social Thought and Political Economy at the University of Massachusetts Amherst and her MAT at Brown University. She recently retired from the classroom after teaching secondary Social Studies in Delaware for 32 years. Blue's River is her second book. Look for her online at KathleenMarieDoyle.com.

Marsha Holler is an artist and graphic designer with roots in printmaking. After a career in screen printing her artwork on apparel, she now indulges in creative wanderlust. She journeys with a sketchbook, whether it's on an interstate or in her own backyard. She and her husband live outside of Dover, Delaware.

Summertime Refuge Fish Kills

In late July 2022, a fish kill was reported at the north end of Bear Swamp. For Refuge visitors unfamiliar with seasonal events around the impoundments, the sight of hundreds of dead fish can be very concerning. The staff biologists monitor fish kills on the Refuge and manage these events to prevent more complicated situations. However, minor fish kills are typical in some years in the hot summer months.



Photo by KD

In late spring and summer, impoundment water levels are allowed to drop to promote vegetation growth for fall and winter visiting waterfowl. Over time sediment buildup can prevent a constant draining of the impoundment. Fish can become trapped and concentrated in tiny shallow pools. The Refuge staff periodically cleared this sediment material from the drainage channels. These clear channels drain the impoundments evenly, allow any problem fish to be flushed out, and minimize the death of trapped fish. However, a small amount of water is typically maintained for other wildlife and replenished by weekly rainfall.

Low oxygen levels in small shallow pools can also cause summertime fish kills. Shearneck Pool and Raymond Pool are fed by creeks or ditches. Bear Swamp relies only on water collected from surrounding meadows and forest habitats. Summer heat waves and periods of minimal rain are all factors that can diminish pool oxygen levels and create dead zones. Hot weather increases water temperatures. As the water temperatures rise, the amount of dissolved oxygen in the water decreases. Fish species often seen in the summer kills are White Perch (*Morone americana*), Gizzard Shad (*Dorosoma cepedianum*), and Common Carp (*Cyprinus carpio*). Typically, these species get through the slush gates from the tidal waters into the impoundments when they are small. Over the years, the slush gate designs have improved to where they do a good job keeping out problem fish.

A concern with fish kills in the impoundments is the decaying fish that are not eaten by wildlife. Refuge biologists manage the situation to prevent botulism that has not been seen at the Refuge for many years.

Another type of fish kill seen on the tidal side of the Refuge is caused by extreme low tides. In the late spring and early summer, fish are focused on moving upstream to breed. With fast-moving low tides, these fish often become trapped on the mudflats. Refuge visitors are attracted to the feeding frenzy of eagles, gulls, and herons often seen along the creek edge of the Auto Tour.

2022-2023 Season Hunting Dates

For all Refuge deer hunting information, stop by the Visitor Center or contact Bombay Hook NWR at (302) 653-9345. The lottery drawing is for the Headquarters Area only, while all other areas will use a tag board and sign-in sheet for hunting selections.

HUNTING APPLICATIONS MUST BE POSTMARKED BY OCTOBER 3, 2022.

**Headquarters Area
(Beware of closed areas)**

Shotgun Dates for 2022

Monday, November 14

Friday, November 18

Wednesday, December 14

Hunter orange, long-sleeve T-shirts will be available during hunting season at the shop inside the Refuge Visitor Center.

Fascinating Facts about the Pipe Organ Mud Dauber (*Trypoxylon politum*)

- ◆ A giant wasp commonly seen in the Pollinator meadow at Bombay Hook from May to September.
- ◆ This wasp sports a gleaming black body color.
- ◆ Mud Daubers are important plant pollinators.
- ◆ These wasps are very gentle, and the males have no stinger.
- ◆ The female wasps only sting humans in self-defense.
- ◆ These wasps gather and feed on three types of spiders.
- ◆ Females collect mud and paralyzed spiders for their nests.
- ◆ Females will then build long vertical mud tubes in parallel lines.
- ◆ Females can be heard buzzing while they work inside their mud tubes.
- ◆ These mud tubes with individual cells become the wasp nest.
- ◆ Inside the mud cells, eggs hatch into larva and spin a cocoon case for winter.
- ◆ The following summer, the larvae emerge as a new adult from the mud nest.
- ◆ The spiders are left in the nest cells for the hatching larvae to eat.
- ◆ Male wasps guard the mud nests against predators and other males.
- ◆ A small bird called a Tufted Titmouse is a common wasp predator.
- ◆ In summary, these wasps rarely sting, don't bite, don't chew wood, and are excellent masons.



Photos by BJJ

Special Guests

Under the leadership of Patrolman First Class Anthony Smith, the Dover Police Youth Academy took a trip to see our beautiful Refuge! Josh Smith, Visitor Services Manager, started them off with a movie



and then took the kids on a tour of our Refuge!

The Friends of Bombay Hook was proud to sponsor the buses needed for the trip! Thanks for visiting, and we hope you all had a great experience! (Photos by KD)



The Outdoor Classroom: Auto Tour Information

At Bombay Hook NWR, the Auto Tour offers abundant information about Refuge habitats and the types of wildlife that visit them. Around a dozen large information signs are placed strategically along the Auto Tour. Some signs describe a specific habitat type, such as freshwater pools or tidal salt marshes, while others describe essential details about the upland forest habitat.

The biodiversity at Bombay Hook offers habitat opportunities for many species of wildlife. Some of the Refuge wildlife are year-round residents, while others are only seasonal visitors. Many information panels explain the groups of wildlife that use the Refuge. Wading birds and shorebirds are important seasonal visitors with specific species depicted on the information signs. Raptors, owls, and forest birds are also illustrated along the Auto Tour and its trails.

In the fall and winter months, migrating waterfowl arrive and winter over the impoundments and salt marshes along the Auto Tour. Information panels are present illustrating common waterfowl species you might see.

When the Refuge Visitor Center is closed, visit the card rack by the restrooms. You will find an assortment of information brochures and trail maps to help you enjoy your visit.



Photos by BJL

PURPLE MARTIN

BOMBAY HOOK NATIONAL WILDLIFE REFUGE 2001-2022

summary year(s)	2001	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	21	22	totals	
first egg laid	5/5	5/20	6/8	5/14	5/28	5/11	5/16	5/10	5/20	5/15	5/14	5/9	5/19	5/18	5/17	5/30	5/28	5/14	5/15	5/13	5/21	22	5/21
total # of eggs(E)	109	190	164	283	235	390	428	475	451	511	438	518	493	374	358	413	468	459	508	492	536	536	8293
total # hatchlings(Y)	99	152	135	224	195	352	389	441	391	469	355	448	369	301	234	317	388	353	388	318	461	461	6779
total # fledglings(F)	95	148	127	176	191	297	366	423	334	340	322	317	337	250	197	299	365	312	354	254	401	401	5905
last fledge date	8/7	8/8	8/19	8/28	8/4	8/6	8/5	8/4	8/25	8/4	8/10	7/29	8/18	7/27	8/4	8/15	8/20	8/10	8/10	8/3	7/31	108	1679
pairs(P)	24	41	36	54	54	77	89	99	101	103	80	105	92	72	67	89	96	98	99	95	108	108	21yrs
% eggs that hatched (Y/E)	2001	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	21	22	22	avg
% hatchlings fledged (F/Y)	91	80	82	79	83	90	91	93	87	92	81	86	75	80	65	77	83	77	76	65	86	86	82%
% Overall Success (F/E)	96	97	94	79	98	84	94	96	85	72	91	71	91	83	84	94	94	88	91	80	87	87	87%
fledglings/pair(F/P)	87	78	77	62	81	76	86	89	74	67	74	61	68	67	55	72	78	68	68	52	75	75	74%
available nests(N)	3.96	3.61	3.53	3.26	3.54	3.86	4.11	4.27	3.31	3.30	4.03	3.02	3.66	3.47	2.94	3.36	3.80	3.18	3.58	2.67	3.71	3.71	3.52
% occupancy(P/N)	53	83	83	83	58	95	106	103	107	108	104	112	112	115	90	90	100	100	102	98	115	115	115
this year 2022	68	65	65	93	81	84	84	96	94	95	77	94	82	63	74	99	96	98	97	97	94	94	2022

location	12 TGCON	12SG	T14	4TGCON	Gemini east	Gemini west	2022	totals
first egg laid	5/26	5/28	5/21	5/27	5/26	5/21	5/21	5/21
total # of eggs(E)	60	57	73	18	159	169	169	536
total # hatchlings(Y)	50	55	68	9	134	145	145	461
total # fledglings(F)	44	48	64	4	123	118	118	401
last fledge date	7/17	7/31	7/12	7/16	7/31	7/29	7/29	7/31
pairs(P)	12	12	14	4	31	35	35	108
% eggs that hatched (Y/E)	83	96	93	50	84	86	86	86
% hatchlings fledged (F/Y)	88	87	94	44	92	81	81	87
% Overall Success (F/E)	73	84	88	22	77	70	70	75
fledglings/pair(F/P)	3.67	4.00	4.57	1.00	3.97	3.37	3.37	3.71
available nests(N)	12	12	14	4	35	38	38	115
% occupancy(P/N)	100	100	100	100	89	92	92	94
eggs/pair	4.54	4.63	4.56	5.24	5.06	4.81	4.80	4.96
				4.47	5.48	4.93	5.36	5.19
				5.34	5.19	4.68	4.88	5.13
				4.64	4.64	4.68	4.88	5.18
				4.96	4.96	4.68	4.88	4.96
				4.96	4.96	4.68	4.88	4.96
				4.96	4.96	4.68	4.88	4.96



SG supergourds T14 wood house TGCON (Troyergourds)

HOW CAN YOU SUPPORT FRIENDS???

Donate or Become a Member!

In 2020, the **FRIENDS OF BOMBAY HOOK (FOBH)** celebrated its 30th Anniversary! Without memberships, donations, and proceeds from the Blue Heron Gift Shoppe, we surely would not exist today. Throughout the years, we have been able to aid Bombay Hook NWR by supporting environmental education programs, fund transportation for field trips to the Refuge for school children, purchase audio/visual equipment, secure grants, paid for internships, purchased new chairs for the auditorium and for outside programs to name a few. Because of our supporters, we continue with our mission!

TO DONATE OR BECOME A MEMBER:

Please fill out the form below and mail your check to **FRIENDS OF BOMBAY HOOK, 2591 Whitehall Neck Road, Smyrna, DE 19977.**

Or go to www.friendsofbombayhook.org and follow the prompts to either donate or obtain membership. And you can always stop by the Visitor Center during gift shop hours to do it in person! We would love to see you! The Blue Heron Gift Shoppe is operated by volunteers and is only open when the volunteers are present. If you are uncertain of days and hours, please call ahead.

MEMBERSHIP BENEFITS include voting privileges at the FOBH Annual Meeting; 10% discount on merchandise sold at Blue Heron Gift Shoppe; and eligibility to join the Dover Federal Credit Union.

ALL donations are tax deductible.

FRIENDS OF BOMBAY HOOK, INC. is a 501(c)(3) non-profit corporation founded to promote conservation, environmental education, and a better understanding of and appreciation for Bombay Hook NWR.

MEMBERSHIP / DONATION 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*

Membership Donation

Date: _____

Name

Address

City, State, Zip

E-mail

Newsletter Preference:

Print E-mail (require E-mail address)

Method of Payment

- Cash (payment at Visitor Center only)
 Check (payment by mail or at Visitor Center)
 Credit/ Debit Card (payment at Visitor Center only)

Membership Plan (Check One) **Amount**

- Student (under 18) \$5.00
 Individual \$15.00
 Family \$20.00
 Sponsor** \$25.00
 Sustaining \$50.00
 Corporate* \$100.00
 Lifetime** \$200.00

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

**Sponsor and Lifetime memberships include family.

Donation (Check One) **Amount**

- Miscellaneous \$ _____
 Allee House \$ _____
 Capital Improvement Campaign \$ _____
 Memorial for: \$ _____