



The Norman Bird Flyer

VOLUME NO. 15 ISSUE 1

A QUARTERLY NEWSLETTER

POETRY IN MOTION: SEA GULLS, FERRY BOATS AND THE UNIVERSE OF BIRDS

by Johnes K. Moore

WINTER/EARLY SPRING 1994

Sea gull watching sounds so prosaic an activity that I hesitate to admit my fascination with these ordinary birds. No one pays much attention to these common denizens of coastal landfills. Their vulgar, scavenger behavior, with its interspecific combat accompanied by raucous commentary, makes dump visits a disagreeable pastime. But when they take off and display their aerial talents, they really have the right stuff, and I enjoy watching the poetry of their motion. Moreover, while their flight behaviors promote much admiration for their grace and skill, they can also tell us something about a bird's universe.

Vineyard Sound is usually fairly windy but the speed of the ferry creates its own vertical wind force. Gulls can readily find the rising column of air that moves with the vessel along its entire trip, especially if there is food to be had. Thus, to the delight of most travelers on the open decks, the birds seem to hang suspended at the edge of the rail, a mere arm's length from the observer.

Consequently, traveling by ferry is a wonderful way to observe a common bird that we seldom take time to regard. Up close, adult gulls are remarkably sleek and clean-looking. Each feather lies in place and the purity of color survives their fondness for dump and beach carrion. As adults, males and females look the same, and those grungy-looking birds in mottled brown are immatures that take up to three years to fledge into adult uniformity. But we have come to the open deck to observe flight behavior, not plumage.

Pursuing the ferry, a single bird seems to be perched, wings outstretched but riding motionless, relative to our observation post on the boat. Yet, all the time, it (he?, she?) makes subtle adjustments as it moves toward the morsel in our hand, much as a space capsule maneuvers for docking. This subtle adjustment represents remarkable control for an animal whose immediate heritage is thought to lie with the dinosaurs.

We usually think of bird flight as an arduous effort of unorganized flapping, like fledglings at the edge of a nest
(Continued on next page)



With few exceptions, we humans live in a visual world, where other senses play a relatively minor role. Even so, our eyesight is poor compared to the sharp resolution of most birds. On the basis of their keen vision, we might expect a bird's universe to be even more visually-oriented than ours, but that is not necessarily so. Aloft, a bird is totally dependent on what it feels against its body so it may move efficiently through a transparent sea. Excellent eyesight doesn't help here except to spot a prey or a potential predator, or in the case of a gull, to scavenge a morsel of food.

The abundance of sea gulls on the coast makes them ideal for studying this tactile perception. And where better to study gulls than from the upper deck of a ferry boat? The ferry from Woods Hole to Martha's Vineyard or Nantucket, for example, is always accompanied by a large contingent of gulls looking for a handout. These birds have learned that travelers on the upper weather decks frequently come armed with snacks which the birds simply take on the wing directly from the fingers of benefactors. Such aerial mess lines are possible because the vessel's flat, perpendicular sides direct the horizontal wind upward, vertically, with considerable

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(Continued from front page) prior to their first flight experience. Slow motion films, however, reveal the wing to be a flexible structure made up of several complicated parts, each with its explicit function.

Understandably, these functions resemble the essential features of a propeller-driven airplane: wings for lift, enabling the craft to remain in the air, and a propeller for propulsion forward. For birds, however, the wing serves both functions. In the bird, the lifting function corresponding to the wing of the plane is found mainly in the inner half of the wing, the portion closest to the body. This "upper arm" moves comparatively little during flight. Because of the construction of the shoulder joint, the natural position of the wing, when extended, tilts the inner half so the forward edge is higher than the trailing edge. Because we are so close to the birds on the ferry, we can easily see the gull's wing from armpit to elbow, with the forward edge slightly raised. This gives the bird maximum lift in the normal relaxed position, an important feature for long distance soaring.

In the case of the propeller-driven airplane, the propeller is set at right angles to the wing, the most efficient position considering the power source. In birds, the outer portion of the wing from the wrist outward is the propeller. Its function and design are entirely different from the inner section. Where the airplane propeller can travel through 360 degrees, a bird's wing tip is limited to less than 180 degrees. It must, therefore, be capable of a quick change of shape and pitch with each beat. It must be able to reverse quickly as well as work as a helicopter blade to lift the bird straight up. Or, if the bird is a glider, as the gull is, it must be able to use this outer portion as a continuation of the inner section to give a greater lifting surface and to aid in balance.

Evolution has designed the wing of each species to best fit that

"The bird pirouettes much like a dancer"

bird's environment. For the most part, the sea gull lives in an environment of long distances and fairly reliable air currents. It must, therefore, rely on gliding for much of its travel. Its wing is constructed on a light, long and narrow scale, which allows for maximum gliding efficiency but poor muscular strength. The gull is a good glider, but a weak flier.

Methods of control and balance for all birds are numerous and highly suggestive of fixed-wing aircraft. A bird is devoid of a rudder and must use its wings for the steering function. In order to dive, the bird directs its wings backward so that the center of gravity is forward of the wing lifting area. This causes it to become nose heavy and it aims downward. Similarly, climbing requires the wings to move forward of the center of gravity making the bird tail heavy and, as a result, it aims upward. Naturally, the horizontal tail surface accelerates this procedure as does the ability of the bird to change the forward angle of incidence of its wings when they are in either the forward or backward positions.

Turns are accomplished by several methods. In one, the gull rotates the propeller tip of the outside wing in order to increase the angle of incidence and thereby the lift on that side, the way an aileron acts on an airplane. The inside wing tip decreases its angle of incidence causing the wing to decrease its lift. A simultaneous forward pointing of both wings causes the bird to become tail heavy and the centrifugal force generated directs the bird around the turn. Another method is similar to a turn executed in a row

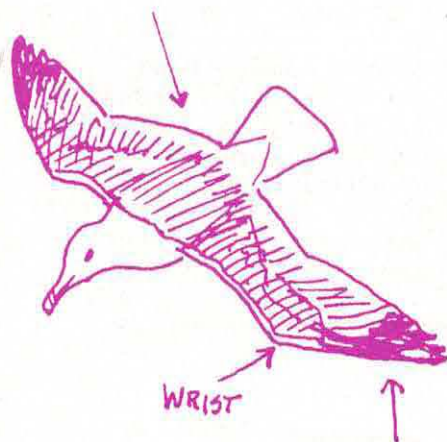
boat, where the oars serve to lever the craft to a new position. The extremely flexible tip of the gull's inside wing twists toward the vertical plane so that the under surface faces forward. This produces a resisting front which drags that wing back and turns the bird. Sometimes sharp turns are made on the glide by dropping the inside wing and rotating the downpointed outer half so that it faces forward as a brake. The bird pirouettes much like a dancer.

The upward angle that wings form with each other is called the dihedral angle and, in airplanes, adds much to lateral stability. If an airplane with some dihedral angle leans to one side, the lower wing will present a greater lift in the horizontal than will the upper wing and so will automatically right the plane. Sea gulls, when in need of better balance when the air becomes rough, increase this angle of their wings in the inner half only, with the outside halves remaining at nearly the same angle with the horizontal. This position is known as the gull wing in aeronautics. The dihedral angle of the inner half of the wing gives lateral stability while the outer half is best placed to take advantage of the current of air which the inner half deflects outward. When fluttering or hovering without forward speed, the gull commonly places its wings in a strong dihedral angle and well forward of the center of gravity so that the body hangs in a partially upright position. This increases the angle of incidence of the entire wing, especially beyond the wrist, so that flapping forces air directly downward, maintaining lift without forward speed.

However complicated the process of flapping flight, as long as a bird's wings are in motion, we are able to understand, at least in some slight measure, how it keeps aloft. But what are we to say when we see a very large bird, such as an albatross or a vulture, sailing for great distances on almost motionless wings, without loss of



INNER PORTION
FOR LIFT



OUTER PORTION
FOR PROPULSION

altitude, or even steadily gaining altitude with no more effort than an occasional adjustment? Such are the flight patterns of many sea birds as well as hawks and eagles soaring over land.

The ferry boat scene offers a hint to this apparently effortless flight. Seemingly, the vertical wind generated by the side of the boat allows the bird to coast downhill on a rising column of air. The importance of the air is obvious: every motion of a bird in flight, every movement of the wings or feathers, must derive the most energy from the air. Air plays a primary role in the flight of any bird. The bird develops the power to lift and to project itself forward from the weight and pressure of the air. In order to do this with maximum efficiency, it must be streamlined so that air flows around it and creates the least disturbance. Air moving past a streamlined surface causes the pressure on the surface to be reduced. From the bird's point of view, the key to flight must lie in its ability to change and to control the pressure on its wing's surface.

What kind of sensory messages can birds be receiving in order to react with the proper mechanical adjustment? The answer must lie in the surrounding air. The gull lives in a sea of air which directs its presence to the bird through the feathers, each of which is connected to a nerve leading to the central nervous system. Imagine a

world not so much of visual images, like ours, but of tactile images where every nuance of wind direction and pressure change is detected with great accuracy and transmitted to an instinctual computer in the bird's brain. What an extraordinary system of kinesthetics! The next time you are close up to a bird take notice to those large number of feathers and think of each one as a sensory organ. The sum total of feathers forms an intricate tactile receiver which the bird learns to read much as the way we learn to read the photons of light recorded on our retinas. Put that idea together with the rising column of air along side of the moving ferry and you have an explanation of how seagulls manage when they are not dump-picking.

Or do we? At the end of our journey, as the ferry slows to enter the slip and the power for motionless flight abates, we may observe something quite contrary to the previous discussion. Some of our soup kitchen birds may resort to laborious flapping but others continue their motionless flight, wheeling off in their relentless search for food as if the ferry were still present, but now there is no obvious rising column of air! How is this possible?

The answer may be found in the thermals or bubbles of warm air that rise from any warmed surface. Sun-warmed surfaces of any kind can provide the necessary vertical air motion for birds to climb effortlessly. We can't see thermals and neither can birds, but they can feel them through their feather sensory system. Once a thermal is located, a bird with the proper wing design can circumscribe the outer edge, and, like Rodger and Hammerstein's Oklahoman hawk, make lazy circles in the sky. Look up on a sunny morning after the thermals have developed, and you may see all sorts of soaring birds taking advantage of this free ride to gain altitudes far out of sight. Getting back down is just a case of an easy, downhill coast involving many miles of horizontal distance. Ask any sailplane pilot.

For birders, the flight behaviors of birds are often diagnostic in species identification, particularly when conditions obscure plumage and coloration. Watching soaring birds, particularly gulls from the platform of

the ferry, can also tell us something of the remarkable way that birds have evolved the tactile senses to take advantage of the vast, invisible ocean of air.

Johnes K. Moore is a retired biologist from Salem State College. This article first appeared in Salem State College's *Sextant* and was republished with permission from the author. We are grateful to Johnes and to his brother, "Tim" who acted as liason.



Grant Received to Conserve Historic Study Skin Collection

The Norman Bird Sanctuary received a \$7,000 grant from the Champlin foundation and a \$3,000 matching gift from Mrs. Theodore Sturtevant to conserve the Sanctuary's stuffed specimen collection which includes the historic "Sturtevant Collection" of bird study skins. Edward Sturtevant, who in 1899, co-authored "Birds of Rhode Island" was an avid collector in the Middletown / Newport area. Many of his specimens are cited in the 1899 publication and as such are significant both historically and scientifically. Most were collected before 1900. The funds will be used to purchase display and storage cases and to train a volunteer intern to work on the collection. (See volunteer job announcement below for more details).

Volunteer Intern Opportunity

The Norman Bird Sanctuary seeks a dedicated volunteer or college intern, to help conserve the historic "Sturtevant Collection" of bird study skins. This is a rare opportunity to help conserve this antiquarian bird collection amassed by one of Rhode Island's premier ornithologists and will commence early in 1994. The successful candidate should have a genuine interest in birds, a sensitivity for fragile antiquarian objects, the ability to focus careful attention to minute, detailed tasks and a minimum of five hours a week to contribute to the project. Training and equipment will be provided at the Sanctuary. If interested, please contact the Sanctuary office.

Public Programs for Winter and Early Spring

Star Walks*

Wed. eves.

Jan. 12; Feb. 9; and March 16 7 pm

Attention stargazers! Have you ever wanted to know more about the stars and constellations but didn't know where to start? Look no further than the Sanctuary this season! Senior Chief Petty Officer Mike Gillispie will show you how you can easily find several major constellations and will also share some of the legends, stories and myths that go along with each one. This is an excellent way to start learning about the stars while enjoying a beautiful winter evening at NBS. Please call the Sanctuary before 5 pm in case of clouds. Fee: Free!

Special thanks to John McDevitt of the Gaudet School Planetarium for his help with our moon and star programs.

Please Note:
Sunday Morning Bird Walks are discontinued until March 6.
See description as follows...

Spring Migration Bird Walks*

beginning March 6 8 am

Sanctuary Director, Larry Taft will lead these early morning hour-long walks to see the last of the rafts of sea ducks and the first of the flocks of shorebirds, robins, and swallows as they make their way north. Wear sturdy shoes and bring binoculars and a field guide. Walks are canceled if the weather is inclement. Fee: Free. Registration is not required.



Owl Prowl*

For Adults: Thurs. Jan. 20 7-8:30 pm

(Inclement weather date: Fri. Jan. 21)

For Families: Thurs. Jan. 27 7-8:30 pm

(Inclement weather date: Thurs. Feb. 3)

Have you ever heard the hooting of the Great Horned Owl or the whinny of the Screech Owl on a cold winter night? If this sounds exciting, why not come join us for a night of owling at the NBS.

Inside, where it is warm, we'll learn about the identification and the habits of our local owls. Outside, in the cold night forest, we'll listen and look for the mysterious night time hunters. Dress warmly! Fee: \$6 (\$5 NBS members). Family Prowl: \$12 (\$10 NBS members as families). Class size per prowl: 12

Valentines Day Moon and Star Walk

Monday eve. February 14 7:30-9 pm



You are invited to join Teacher/ Naturalist Karin Lucci and her husband, Toni as they lead a romantic Valentines' evening walk under the light of the moon and stars. Along the way, we will enjoy the sights and sounds of winter in the woods and fields. The calls of Screech and Great Horned Owls may be heard as they search for a mate this time of year. Tony, the Sous Chef at Le Bistro in Newport, will prepare a very tempting sweet treat for after the walk. Limit: 8 couples. Fee: \$12 (\$9 NBS members) per couple.

Winter Birding on Aquidneck Island's Coast*

Sunday afternoon, Jan. 23 1-4 pm

Whether you've been a bird watcher for years, or are just starting as a beginner, this minicourse may be right for you. The Sanctuary's Executive Director, Larry Taft will teach about the identification and behaviors of many of the sea ducks, shore birds, and bird's of prey that visit the island's coast each winter. The session will be an hour long presentation using slides and stuffed specimens followed by a two hour exploration of the coastline and ponds nearby. Please dress warmly, and bring binoculars and a field guide, if you have them. Fee: \$12 (\$8 NBS members) Class size: 15

Woodcock Walk

Saturday, March 19 5:30 pm

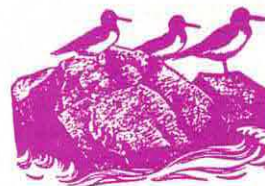
Spring is the courtship time for the aerial artist, the woodcock. The habitat of this ground nesting bird is field and shrubby growth. In the early evening sky of late winter and early Spring, woodcocks come alive with whirling dances and whistles. Come join us on a walk through the woodcock habitat to celebrate Spring and the seasonal ritual of woodcock courtship. Fee: \$5 (\$3 NBS members). Class size: 15

Geology Walk*

Saturday March 26 1-3 pm

Hanging Rock Ridge is one of the most familiar landmarks on Aquidneck Island and has been a curiosity to geologists and artists alike for hundreds of years. On this walk we'll discover the geology of our region and find out the processes that formed the "pudding-stone ridge" and other geological formations and gave us this beautiful Island landscape. Wear comfortable hiking shoes and dress for the weather. Fee: \$6 (\$5 NBS members) Class size: 15

Pre-registration and pre-payment are required for all programs unless noted otherwise



* Programs marked with an asterisk may use specific guides all of which are available in the Sanctuary's Barn Owl Shop.



The Barn Owl Shop
at the Sanctuary
announces...
its grand

Winter "White" Sale

January 15- February 15 1994

Savings of 20-70 % off

Come in to warm up
before or after
your winter hike!

Volunteer News by Susan VanDerhoof



We have two new volunteer faces in the office this season. **Doris Midgley** and **Sharon Schultz** have been busy learning all about the Macintosh computer system and putting their new knowledge right to work on several projects. Thank you to Doris, Sharon and all of our office/store volunteers, **Fran Holmes, Kim Richardson, Judy Sanders, Edith Hall, Kristin Bolles, Pat Gillispie, Paul Sullivan, Susan Logler, Chris Barry, Judy Tucker, Carol Wadner** and **Linda Everitt**, who have helped with mailings, coverage on the weekends, instituting our new inventory system and caring for our store. All of these people have accomplished so much and have allowed the staff to attend to many projects we normally would not have time to do.

Welcome Back! We were afraid **Forster Peabody** had left us for good, but we are glad to see him return not only as our Wednesday Animal Caretaker, but also as a member of our staff serving as Maintenance Assistant. We also welcomed for the first time **Jim Peckham** to the ranks of animal caretaker and as a Ranger. For our animals, each day of the week brings a new, and dedicated volunteer, **Genevieve Boisseau** and **Alicia Coombs** (Sunday), **Megan Decker** (Monday), **Lisa Pritchard** and **Kai Dolbashian** (Tuesday), **Aaron Corey** (Thursday) and **Susan Kevin** (Saturday). Thank you to each of them for their continued dedication and thank you too to all the people who continue to bring us bread, chicken necks and other goodies for our animals. Be sure to stop by and check out our fish tank--see if you can spot our new resident eels! Thanks to **Tom Richter** who cares for our tank, there is always something new to see!

Starting in the Spring, our Education Program will begin using volunteer docents as guides for school and community groups which visit the Sanctuary every day for walks. The recruiting of volunteers to serve as teachers is on-going and the first training session will take place in February or early March. To be a docent, one should have some background and interest in working with children and natural history and be available to teach during school hours Tuesday through Friday. We are fortunate to have **Marilyn Lyell** and **Marybeth Hunte** serving as teachers of our Preschoolers with Parents and Fledgling programs and we would very much like to add to our volunteers in this area. If you would like to be a part of the Education Docent program, please contact Hap Morgan here at the Sanctuary.

Many of our educational programs could not happen without the help of people who donate their time to help make them a success. Thank you to Dan Snyder for his early morning fishing lesson, to Edythe Anthony for her informative class on bats, and to the Sanctuary's Beekeeper, Mike Mitchell for helping us on "Bee Day". We also owe a debt of gratitude to the Newport Children's Theatre for the great job they did on our Night Hike as well as all of their assistants: **Linda, Ron, Jason and Meghan Franklin, Michael Montecalvo, Kevin Killavey, Lindsey Sokol, Eric O'Brien, Alison McDevitt, Elizabeth Elsen, Jackie Cam, Meghan Kelly, Michael Oldford, Cindy Killavey, Maureen Day, Linda Vars, Matt Barabe, Jamie Lurgio, Emily Rinde-Thorsen, Jessica Moreland, Laurie and Martin Bradburn, Alexander Cassagrande, Audra Ferreira, Megan and Clare Decker**. Thank you too to all of Santa's helpers who assisted during our Holiday Crafts program; **Sandy Ottilitge, Mary Talbot, Beth Kehew, Samantha Logler, Jenny Morgan, Jane Barber, Susan Kevin** and **Kristin Bolles**.

Saying goodbye to a volunteer is always difficult, but this Fall it was especially hard for the staff at the Sanctuary to say goodbye to our four volunteer students from St. George's School. Without the extra help of **Ingrid Levin, Tegan Willever, Wuttipong Lertaneksin** and **Pradya Prempraneerach** parts of the Harvest Fair would not have run quite so smoothly. They went above and beyond the call of duty the weekend of the Harvest Fair, working almost as many hours as the staff and lending us a hand just when we needed it most. Since September, they have worked a combined total of close to 275 hours! Our dedicated volunteers have done everything from clearing trails, and working in our garden to baking cookies and decorating the barn. Many thanks to these students, we wish them the best of luck in their future endeavors. We have no doubt they will succeed!

Our Rangers have been a great addition to our volunteer program. Thank you to **Mary Talbot, Jim Peckham** and **Jim Quinlan**. They have been hard at work protecting the Sanctuary's trails from misuse and assisting visitors. The Sanctuary's Ranger program will start up again in the Spring and people are needed to help during our busy season. It's a great way to get some exercise, enjoy the outdoors and help the Sanctuary all at the same time.

The Sanctuary receives a great deal of support from our local businesses. Many thanks to **Micrographix** and **Hodges Badge Company** this quarter for their help with the publication of our newsletter.

This spring, be sure to stop by and see the wonderful Christmas gift of tree swallow houses made by the **Clever Covers 4-H Club** and presented to the Sanctuary in December. Thank you to the club's leaders **Barb and Allen Gifford, Jim Houle** and to all to club members; **Bobby and Laura Gifford, Emily and Abby Houle, Aaron Weymouth, Erika Sabel, Anya Sika, Sarah Peter, Michael Koster, Michael Nugent** and **Carrie Herndon** for all their hard work!

Children's Programs ■ ■ ■ ■ ■

Nature Hours...

Preschoolers with Parents

ages 3-4, with parent
Wednesday 1-2 pm

AND

Fledglings ages 4-5
Fridays 1-2 pm

Join Marilyn Lyell and Marybeth Hunte, NBS Parent Volunteers as they teach both children and parents about nature in the Winter and Spring seasons. Hikes, crafts, stories, and a snack will all be included in these popular hour-long classes. Registration by session only. Children must be at least three years old to participate. Both parent and child should dress warmly.

Winter Session Nature Hours

Jan. 26/28: Tricky Tracks
Feb. 2/4: Do You See Your Shadow ?
Feb. 9/11: We Love Skunks !
Feb. 16/18: Dreaming of Deserts

Early Spring Session Nature Hours

March 16/18: Stonewall Discoveries
March 23/25: Hawks and Owls
March 30/Apr. 1: Funny Finds for Fools
April 6/8: Rabbits

Late Spring Session Nature Hours

April 27/29: Bugs Abound
May 4/6: Bridges to Cross
May 11/13: Senses of Spring
May 18/20: Buzzing with Bees

Class size: 10 child/parent pairs for
Preschoolers with Parents
Class size: 8 children for Fledglings.
Fee: \$20 (\$15 NBS members) per session,
per child.

Junior Stargazers

Wednesday, March 9th 7-8:30 p.m.

Students in grades 2-5 are invited to join Teacher/Naturalist Karin Lucci for an evening of stories and stargazing. Learn how to look for pictures in the night sky and hear some of the legends and myths that will always help you find them. Participants should dress warmly and bring a blanket to sit on.

Fee: \$4 (\$3 NBS members)
Class size: 10

Nature Club

Saturdays 9:30-12:30pm

If you are in grades K-4, love nature and enjoy hikes, crafts, games and having fun then Nature Club is the club for you. A different nature theme will be explored each week and a healthy mid-morning snack will be provided. Please dress for outdoor activities and walking. Hope to see you at the club!

Please note: For the first day of each Nature Club session it is important that all parents and children check in at 9:30 a.m. and meet briefly with Nature Club teacher Karin Lucci. Please make sure that emergency forms are filled out at this time. (See registration form on page 5) Also, Middle school and high school aged volunteers are needed to help out with Nature Club. If you are a student who enjoys teaching young people please contact Karin at the Sanctuary.

Winter Session

Jan.22: Birds in Winter; Jan.29 :Mam-
mals in Winter; Feb. 5: Rocks and
Fossils; Feb.12: Endangered Species

Early Spring Session

March 5: Birds of Prey; March 12:
Winter weeds, seeds and plants; March
19: Rabbits and Rodents: up close and
personal; March 26 :Signs of Spring

Fee: \$48 (\$40 NBS members)
Class size : 10

Pre-registration and pre-payment
are required for all programs
unless noted otherwise

Vacation Weeks for children in grades K-4

Winter Vacation Week for Public Schools

Tues.- Fri. Feb. 22-25
9:30-12:30

Spring Vacation Week for Public Schools

Tues.- Fri. April 19-22
9:30-12:30

Your vacation weeks are coming and what better way to spend them than hiking and exploring the trails and habitats with NBS Teacher/Naturalists. Crafts, songs, games and of course hikes, will round out the weeks of nature study. Don't wait to sign up! These classes fill up quickly. Dress for the weather. A mid-morning energy snack will be served. Fee: \$45 (\$40 NBS members). Class size: 2 groups of ten.

Signs of Winter

Wildlife Walk

Saturday, Feb. 19. 10 am -12 pm

You're invited to join Teacher/Naturalist Karin Lucci as we look for signs of winter life at NBS. Many people think that most animals hibernate during the winter. Come and find out the real story. The signs are there - you just have to know where to look! This program is for children in grades 4-6. Fee: \$4 (\$3 NBS members)



Spring Vacation Week for Private Schools

Tues. - Fri. March 22-25
9:30-12:30

To register for children's programs, please use registration form on page 5

More Children's Programs

Spring Egg Hunt Saturday April 2, 1 pm



Celebrate the return of Spring and warmer weather! Venture through the Sanctuary's buildings and upper trails looking for chocolate covered eggs and other goodies, as part of the search for signs of Spring. Find the extra special "earth eggs" that contain earth loving surprises. Children ages 3-10 may participate in this members-only Sanctuary event. Bring your own collecting basket. Fee: \$7 per child or \$10 per family. Limit: 30 children. Please register early!

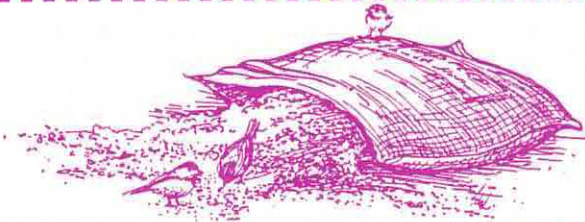


SPECIAL...

An afternoon with "Burt the Raccoon" and his friend John.

Saturday, March 5 1 pm

Some of you may have already met our friend "Burt" at the Harvest Fair this last October. Well, look out because he's coming back! For those who don't know "Burt", he is a puppet who explains how animals live in the forest. This program is designed to entertain and educate. "Burt" really comes alive with fun and humor as he walks among the audience. John Tierney, "Burt's" friend, holds a master's degree in early childhood/special needs from the University of Massachusetts and is currently working on a doctorate in special education. Join us for an entertaining afternoon of environmental education and laughs galore! Fee: \$8 (\$5 NBS members).



Norman Bird Sanctuary Mid-Winter Bird Seed Sale For pick-up on Saturday, February 5 and Sunday, February 6 from 10 am-3 pm 1994

Throughout this weekend, the NBS store will have bird feeders and accessories for sale. Restock your shelves for the rest of the Winter and early Spring season. Feed the birds and at the same time, support the programs at the Sanctuary. You can help further by purchasing a feeder at our store!

To order: Fill out the order form below and mail it with payment to the Norman Bird Sanctuary, 583 Third Beach Road, Middletown, R.I. 02842. Orders must be received by **Friday, January 28, 1994**. Please plan to pick up your seed on Saturday, February 5 and Sunday, February 6, 1994.

Please cut along here and send this form in to us!

Name: _____

Phone: _____

Address: _____

Quantity	Type of Seed	Price per Bag	Amount
_____	Black Oil Sunflower Seed- 25 lbs	\$ 8.00	_____
_____	Black Oil Sunflower Seed- 50 lbs	\$ 14.00	_____
_____	SongMaker mixed Seed- 25 lbs	\$ 7.00	_____
_____	SongMaker mixed Seed- 50 lbs	\$ 13.00	_____
_____	Thistle Seed- 5 lbs	\$ 4.50	_____

TOTAL BIRD SEED FEES: _____

NBS Members subtract 10%: _____

Add 7% sales tax: _____

TOTAL AMOUNT ENCLOSED: _____

Director's Notes

We are still getting lots of positive feedback from our visitors who've stopped by recently, regarding the changes to the Sanctuary's visitor center this past season. If you haven't stopped by during the past nine months you might not know that I'm referring to the new exhibits in the Trilside Museum and the remodeling of the "Barn Owl" museum shop inside the barn.

The "Barn Owl" shop has become a focal point for visitors and now provides a comfortable space where volunteers can help us with reception and information. It is a great place to get educational products that relate to our local natural history, and it is also proving to be a good revenue producer to help support our activities. Many thanks to our volunteer store manager, Chris Thomas.

Well, if you like what you've seen so far - your in for a pleasant surprise! This season we will continue to work on the museum exhibits and we will be restoring our historic specimen collection to put on display in the museum. We will also be constructing new raptor cages that we hope will be an improvement for both the bird and the observer. The new cages will enable the birds to be more comfortable and behave in a more natural way - and by looking more natural, visitors will instinctively recognize that this is a window into nature. Many thanks to the donors who have made these projects possible. We are also planning a self-guided interpretive trail and a volunteer docent program to help us conduct more formal nature walks and guide people around the museum and refuge on organized tours.

With these improvements to our visitor center, we will have greatly enhanced our visitor's experience and will be able to provide better interpretation of the natural environment that we protect.

To help off set the costs of running the Sanctuary (and to try to get less reliant on weather-dependant functions such as the annual Harvest Fair), we will be increasing our entrance fee this Spring. The fee will include entrance to the museum and animal exhibits as well as to the trails. The new fee schedule will be more in line with similar nature centers and museums. We will be keeping our membership rates the same - so membership will be even more of a bargain!

We hope you'll stop by soon and enjoy the improvements we are making. Your comments and suggestions are always welcome!

Best Wishes for the Winter Season

Lawrence Tipt



Animal Pause

"Is it a feeder or a house ?"

Many children and adults can be baffled by the newfangled models of bird feeders and bird houses as they appear to be getting more sophisticated in catalogs, stores, and in backyards. Sometimes the differences between the two structures can be very subtle. The image of people putting birdseed in a wren house, or mounting an empty feeder to a tree is frightening! To make matters worse, one manufacturer even combines the two. (Now who wants to nest where they and a million others have dined ?!)

At the Sanctuary, the staff is often asked by various groups to teach a winter workshop on the construction and placing of bird houses, or to make bird feeders during the summer months. Just as the construction of either feeder or house can give a hint about their purpose, so too can the season in which to mount or fill them. What follows is a short lesson between feeders and houses to clear up any of this unneeded confusion:

Bird Houses:

- Usually a "covered" house with a darkened entrance hole in the middle (remember, bird houses are substitutes for tree holes)

- The size of the hole opening depends on what species you would like to attract i.e. 1 and 1/2" hole will allow almost any cavity nester to enter, smaller hole openings to 3/4" are preferred for those nesters such as chickadees and wrens.

- Cardinals and Robin are not cavity nesters and therefore, no matter how fancy the house, they will not use a bird house.

-Most birds prefer a "weathered house", so the best time to mount one is in late Winter or early Spring.

Bird Feeders:

- Most are usually "covered" but are always open, or have an opening at the base for seed to flow freely.

-The Sanctuary advocates putting bird feeders up in the Fall and taking them down in the Spring. Cleaning should be done annually.

- just as some birds do not nest in boxes, others do not feed from feeders. Species such as warblers and swallows feed only on invertebrates, not seed.

For more information and for more styles of houses and feeders, contact the Sanctuary, or stop by the "Barn Owl" Shop to see our selection for sale.

In the Garden, for Adults and Children

Please join us for the following gardening activities offered at the Sanctuary this Winter and Spring. It's never too early to think "green"!

Children's Garden Club

2nd Wednesday of the month 3:30-4:30

Winter/Early Spring Session: Feb.9, March 9, and April 13)

It's time once again to think about green and growing in the Sanctuary's Children's garden. Led by the enthusiasm of Sharon Culberson, the Garden Club will meet once a month to plan the 1994 garden, prepare the soil, and plant the Spring crops. Wear old clothes. Children ages 5 and up are welcome. Fee for 1994 membership season: \$10. Class size: 16.

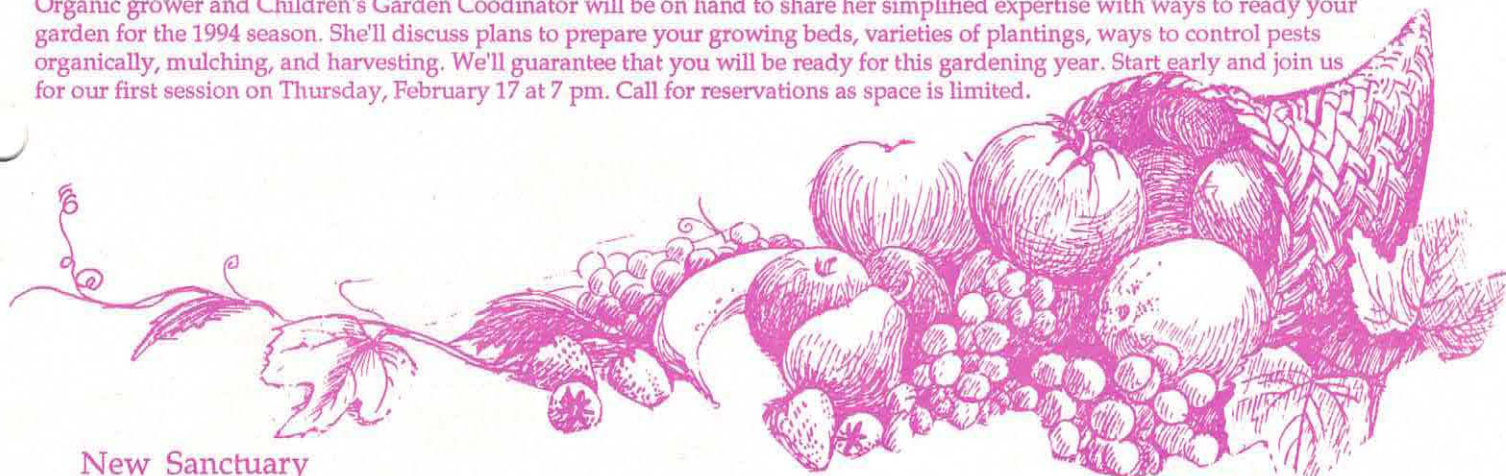
Community Garden Meeting

Sunday, March 13 1 pm

The Sanctuary has approximately 35 garden plots in both 200 and 400 square-foot sizes. These plots are available to members who wish to have an organic vegetable garden on the refuge. Any current member who is interested in having a garden plot for the 1994 season should attend this meeting. Returning gardeners must also attend in order to retain the plots used last year. During the meeting, the Sanctuary's garden policy will be reviewed, the call for a volunteer "Garden Committee" will be requested, and then plots will be assigned. Composting and organic gardening literature will be available for loan. There will be a \$10.00 deposit required (refundable at the end of the season) per 400 foot space. For more information, call 846-2577.

Organic Gardening Information Series

All are welcome to these free informational discussions on the methods and benefits of organic gardening. Sharon Culberson, Organic grower and Children's Garden Coordinator will be on hand to share her simplified expertise with ways to ready your garden for the 1994 season. She'll discuss plans to prepare your growing beds, varieties of plantings, ways to control pests organically, mulching, and harvesting. We'll guarantee that you will be ready for this gardening year. Start early and join us for our first session on Thursday, February 17 at 7 pm. Call for reservations as space is limited.



New Sanctuary

Members ■■■■■■

The following people have joined in the last three months. We thank you for your support.

SUSTAINING

Ms. Dana Gaston
Honorable Claiborne Pell

SUPPORTING

Ms. Stefani Hulitar

CONTRIBUTING

Janna Cole-Pederson
Mr. and Mrs. W.M. Snodgrass
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■ ■ ■ ■ BIRD BOOK COLLECTION ■ ■ ■ ■
DONATED TO SANCTUARY

The Sanctuary is the grateful recipient of an extensive collection of books on birds and bird life that was given to the Sanctuary from the library of Mr. Richard Stackpole. The collection was donated in Mr. Stackpole's memory, from his son, Lewis Stackpole. A Volunteer Librarian is needed to help catalogue the new books and also to help with the general inventory of library collection. If interested, please contact the Sanctuary office.



NBS 1994 WISH LIST

Macintosh Classic or SE Computer
Binoculars
Chain Saw
"Boom Box" with a working tape player

The Norman Bird Flyer is published quarterly by the Friends of the Norman Bird Sanctuary, a non-profit corporation organized to support the mission of the trusts established under the Will of Mabel Norman Cerio. Our mission: to preserve the 450 acre Norman Bird Sanctuary for the protection of animals and birds and for the enjoyment of the public; to assist the Trustee(s) in the overall management and development of the Sanctuary; to conduct programs for children and adults in environmental education and natural sciences; to work with individuals and groups in the region in the preservation of natural habitats and open space.

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Address: 583 Third Beach Rd. Middletown, R.I. 02842
Telephone: (401) 846-2577

Winter/Early Spring Hours: Open Tuesday-Sunday 9 am -5 pm. Closed Mondays except for holidays.

*Please do not bring your dog, or bike on the trails.

*Recycle this newsletter-pass it on to a friend..thank you.