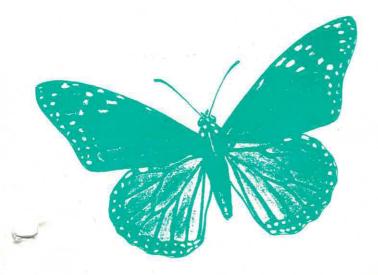
On The Move

Fall 1991

By John LeCavalier

t might start with a dance, a series of sounds, or a sudden change in the weather. But whatever the source, the final call comes from within: an internal alarm clock that signals a time and direction to move.

Most animals move around in search of food and shelter. Some animals leave a home range, travel to another, and then return again. This shuttle from one area to another and then back again is called migration. Migration is an adaptation, a behavior that allows a population of organisms to survive and reproduce. The cycle of motion might involve thousands of miles or thousands of feet. The migration may be a daily circuit of exploration and food-gathering or a lifelong journey, climaxing with a return to the individuals' birthplace. No matter how far or how long, migration is a round trip cycle. Migratory animals know when to leave, where to go, and how to navigate along the way.



As the autumn days shorten and the nights get colder, a restlessness begins to grow. Many birds begin to flock together and at some final threshold, take to the air and move southward. Elk begin moving down from higher elevations to the valley floors. Whales leave the arctic waters and move south along ancient pathways to give birth to their young in warmer and safer waters. Bats, butterflies, fish and frogs, as well as many other animal organisms, all begin their own seasonal cycle of motion - a response to the changing environment and their place within it.

The southward movement of birds coincides with a change in weather conditions, usually beginning after the first cold front passes through from the north. This external stimulus must also be accompanied by an internal physiological readiness. Before migrating, birds put on a layer of fat that will give them energy for their flight, enough that they will not need to worry about seaching for food as they fly. When the external and internal conditions coincide, a threshold is reached and the birds take to the air. Only about 15% of bird species make an annual north-south flight. They move in seach of food, warmer temperatures, and a safe place to give birth to their young. This small percentage of bird species, however, involves huge numbers of individuals.

It seems clear why many birds move south for the cold winter months. Increased sunlight and availability of food offer a better chance to successfully reproduce. What seems less clear is why the migrating birds return northward. What adaptive value is there in flying back to the north, a trip often involving thousands of miles?

The answer is that the flight is worth the rewards. (Continued on next page)

(Continued from page one)
The temperate zone of the northern hemisphere has more than fifty times the land mass of the temperate zone of the southern hemisphere. The arctic tundra has an abundance of insect life that is duplicated nowhere else on earth. The migratory birds take full advantage of sunlight, space and availabilility of a comfortable place to raise their young.

However, not all birds lose their souce of food to cold temperatures, snow, and ice. Chickadees, for example, feed on inactive stages of insect life cycles. They can afford to stay closer to home. Instead of flying southward, they move to the trees where they can search the trunks and limbs for eggs and larvae. Seed-eating birds, like the finches and grosbeaks, can also survive the lower temperatures of winter by foraging in the more protected forest areas. These birds migrate, though not necessarily north and south. In the fall, they move to winter feeding areas, usually to lower elevations where the snowfall and temperatures are less severe. With the coming of spring, these birds again move to the higher elevations to await the next season of snows.

Many insects also migrate to warmer temperatures with the onslaught of the autumn season. The monarch butterfly makes a fantastic journey southward to avoid the killing temperatures of winter. Individual monarchs store fat much like migratory birds. Up to one-half of their body weight may be dedicated to this fat, an adaptation that helps them to survive their long round-trip journey. By late September, the monarchs are moving southward, congregating on the way in groups to wait out the now-cool nights. As the morning sun warms their bodies, they resume their flight.

Monarchs often winter in the same "butterfly tree," where other monarchs have wintered before. During the winter new fat is stored to replace the original fat that was used for the flight southward. With this new fuel and now with fertilized eggs attached to their wings, the female monarchs move northward with the coming of the warmer weather. The female will deposit her eggs on a milkweed plant, the exclusive food of the monarch caterpillars. After she lays her eggs, she dies, ending one of the longest life cycles in the insect world.

As migratory animals and insects move across the land and through the air, some of the largest, and smallest, organisims are traveling their own paths through the oceans. Whales have been observed to travel as far as any living creature on earth. One population of grey whales has its summer range in the Bering Sea and, in the fall, travels southward along the California Coast to the Baja Peninsula. In the shallow warm waters of the Baja Peninsula, the grey whales mate and give birth to their young. When the calves have gained enough insulating blubber to protect them from the cold northern water, the whales begin their journey back home.





Not much is known about how whales communicate and navigate. It is known, however, that in a process called echolocation, grey whales emit low frequency sounds that bounce off objects and enable them to determine the location of underwater landmarks, large objects, and the water's surface. During their journey, individual whales often lunge out of the water and seem to stand on their tails. It is thought that this may be a way of seeing the position of the coastline. Like the birds and butterflies, whales do not eat on their migratory journey. Many of these migrant whales can be seen from the California shore as they make their long journey to and from their breeding grounds.

Daily journeys for food also represent a cycle of movement that has evolved to help populations survive. Plankton, small single-celled, animal-like organisms only slightly larger than the microscopic plants they feed upon, migrate vertically from the upper levels of sunlit warmer ocean waters to the darker and colder waters 1500 feet below. These organisms may travel rates up to 50 feet per hour.

Back on land, honey bees also migrate daily in search for food. In one of the best documented and most sophisticated communication and navigation behaviors (Continuedfrom previous page) known, individual scout bees can identify potential food sources, compare their choice with other identified sources, and make a group decision as to which site is best. The bees then communicate the final decision by flying above the hive in a spiral or figure-eight pattern. These "dances" involve the angle of the sun and "tailwagging," a specific number of shakes of the bee's abdomen, to give both the distance and direction of the food source.

The ability to communicate, recognize a home, and navigate to and from that home is highly developed in migratory animals. Just how much of this behavior is instinctive and how much is learned is not fully understood. What is clear, however, is whatever the organism and wherever the destination, when migratory animals sense the signal, it is time to move. Lingering means death, migration means survival.

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When I last reported to you in the Spring newsletter, we had just completed the capital campaign to protect the open space on the 81 acre Gray Craig Estate which abuts the Sanctuary. I am happy to say that the time is upon us to close on the purchase of land and conservation easements on the estate. The closing is planned to take place in two stages. The first stage should be in early October, consisting of the Town of Middletown parcel, the Water Resources parcel and the building restrictions on the "developable lots". The second stage, consisting of conservation easments on the ridges and old

field area, purchased through DEM Open Space funds, should take place in early November.

Back on the refuge: The Summer ended with much excitement thanks to Hurricane "Bob." The hurricane blew down many trees on the refuge, forcing us to close the trails for the rest of the week, and cancel the last week of summer camp. Luckily, we still had our summer staff on duty, which made the initial clean-up process go quickly.

Natural disturbances such as hurricanes and fires play a role in the ecology of a natural area. Some people have asked what effect "Bob" had on the Sanctuary's habitats and the wildlife therein. Though we may never get an accurate measure of the net effect, there have been both positive and negative consequences.

On the positive side, a number of tree tops were snapped off by the hurricane. Although many of these trees will continue to live, they will become hollowed out, thus creating a future supply of "snags," or den trees, for birds and other wildlife. Since the Sanctuary's woods are relatively young, and lacking in den trees, the habitat management plan for the refuge called for the creation of snags by cutting off some tree tops here and there on the refuge. "Bob" may actually have saved us some labor!

On the negative side, in some areas the blow-downs and broken tree tops were more extensive than we would have liked. It opened up the forest canopy, letting in light where it was once shady. The Sanctuary's large, closed canopy forest environment (by far the largest on Aquidneck Island), is attractive to many migratory woodland birds.

Please note: the Sanctuary has shifted to a new winter schedule. Between Labor Day and Memorial Day we will be closed on Mondays (except holidays). This will accomplish three things: it will give the wildlife a break from the influx of people, it will give us the ability to carry out habitat management projects on a regular basis without having to worry about visitor safety, and it will allow us to shift the staff work schedule to allow us to operate more effectively when we are open.

This Fall promises to be an exciting and busy season with the wrap-up of the Gray Craig Project and continuing clean-up after the hurricane, to add to our usually full schedule. I hope to see you at the Harvest Fair!

Lawrence Taft



World Rainforest Week October 20-26, 1991

Help us appreciate the beauty and importance of the world's tropical rainforests during this week by stopping by our barn and store before or after your hike at the Sanctuary. We'll have free handouts, videos about wildlife in the rainforest, and "Rainforest Crunch" for sale all week to help support the Rainforest Action Network, an organization committed to saving the forests from destruction.

Public Programs

The Sanctuary requires preregistration and advance payment for most of its public programs. In order to meet the desired number of participants for our programs (excluding the Sunday morning bird walks and the Stargazing programs), we often decide to run a Fall Foliage and Natural History program based on the number of Walk pre-registrations. We often do take walk-ins, but cannot always. Refunds will be made if the program is cancelled by the Sanctuary. Otherwise, program credit will be given to participants who cancel, if we are notified a day in advance of the class, or if Morgan, NBS Naturalist will lead the space can be filled from a waiting list.

Star Gazing Thursday evening October 18 9 pm (Cloud date: Fri. Oct. 19)

The Summer skies will gradually change to reveal the Fall constellations and the air will become clear and crisp. The season is a perfect time for star gazing with NBS member and astronomer Bill O'Connell . Bring a blanket, flashlight and binoculars. Preregistration is not required and there is no fee. Call to confirmif cloudy.

Jagged candle-flame. The very shape of Autumn sifts Through the shutters



Saturday, October 26 1:00 pm

Autumn is the most popular season for hiking on the Sanctuary's trails. From the ridges, splashes of vibrant colors can be a visual delight. Hap this walk helping to explain some of the mysteries and fascinations of the fall season. Individual adults and families are welcome.

Fee: \$5 (\$3 NBS members) \$2 children Limit: 15 Pre-registration is required.

Beginner Basket Making Classes

Learn the basics of basket making by enrolling in these two beginner classes taught by Sharon Culberson of Hilltop Gardens. The egg basket will be 8" when complete. The round bottom basket will be perfect for a table display of potpourri. Fall colored strands of forest green, slate blue, and magenta will be available. No experience is necessary. Bring sharp scissors. Extra materials will be available for purchase at the end of the class. Limited to 10 per class. Pre-registration required.

Egg Basket Saturday, October 19 1-4 pm Fee: \$18 (\$16 NBS members)

Round Bottom Basket Saturday, November 16 1-4 pm Fee:\$18 (\$16 NBS members)

Intermediate Basket **Making Classes** These two classes will be taught by Sharon Culberson to those who have already taken a few weaving classes and would like a bit more challenge. The apple basket will be a sturdy 10" basket with a swing handle. Fall colored

weavers will be available. The wine basket will be made to hold two bottles of wine, or one bottle with cheese and crackers. Green and red colored weavers will be provided for a holiday accent. Bring sharp scissors. Extra supplies will be available for purchase after class. Limited to 10 per class. Pre-registration is required.

Double Bottom Apple Basket Wednesday eves. Oct.16 & 23 6:30-8:30 pm Fee: \$30 (\$27 NBS members)

Wine Basket

Thursday eves. Nov. 14 & 21 6:30-8:30 pm Fee: \$27 (\$24 NBS members)



Grapevine Wreath Making Workshop Sunday, October 27 1-3 pm

Weave strands of native wild grapevine with bundles of dried orange and gold flowers such as St. Johnswort, Tansy, or Goldenrods - all known to repel evil spirits. Then, hang the wreath on your door for Halloween. Bring your favorite ribbon for the final touch, or choose one from those provided.

Fee: \$18 (\$15 NBS members) Limit: 12 Pre-registration is required.

Grapevine Holiday Trees Saturday, December 7 1-3 pm

Wrap grapevines around a metal frame to shape into a long lasting tree for the holidays. Some decorations such as bows and dried flowers will be available. Most of the fun will come when you decorate with your own personal favorites at home.

Fee: \$18 (\$15 NBS members) Limit: 12 Pre-registration is required.

Holiday Wreath Making Sunday, December 1 1-3 pm

Enjoy the pleasure of making your own holiday wreath from fresh sprigs of spruce, cedar, pine, and holly. The special technique of making this creation stay "alive" throughout the season will be demonstrated by NBS member, Jocelyn Sherman. Participants are asked to bring a trash bag full of greens (6"-24" boughs) and clippers.

Fee: \$18 (\$14 NBS Members) Limit: 12 Pre-registration is required.

Guided Bird Walks Every Sunday morning 8:00 am

Take an hour's walk through the Sanctuary's trails or down to the shore to identify migratory and resident species of upland and shore birds with Sanctuary Director, Larry Taft. He'll also begin to search the coast for the bay ducks as they move in for the winter. There is no fee for these bird walks and preregistration is not necessary.

Women in Nature Weekend Saturday, Nov. 9 1 pm Sunday, Nov. 10 10 am Rain or Shine!

We would like to welcome women ages 16 and up to join us for these two days of group cooperation games, hiking, natural crafts, fire building and cooking, and sleeping out under the stars. This will be a chance to learn new skills, meet new people, and experience nature in a peaceful way. A list of suggested camping gear and clothing will be sent upon registration. Food for Saturday dinner and Sunday breakfast, tents, and instruction will be provided. Lisa Pritchard, NBS Education Coordinator will help lead the group. Pre-registration is required.

Fee: \$28 (\$22 NBS members) Limit: 10

The Norman Bird Flyer is published quarterly by the Norman Bird Sanctuary, a non-profit 450 acre nature preserve established under the will of Mabel Norman Cerio. Trustee: Rhode Island Hospital Trust National Bank Advisory Committee: Anne Damon - Chairman, Betsy deLeiris-Vice Chairman, Al Marcantonio-Treasurer, Charles Moore-Secretary, Larry Allen, Dickson Boenning, Joyce Botelho, Thomas Gunzelman, Katherine Irving, Sara Meade, Julia Morris, Candace Powell, Ray Rogers, Gay Sheffield, Julie Toland. Director: Lawrence Taft **Education Coordinator:** Lisa Pritchard Naturalist: Hap Morgan Caretaker: Matt Benson Secretary/Receptionist: Sue Van Derhoof Address: 583 Third Beach Road, Middletown, R.I. 02840 (401) 846-2577 Graphics by Lucia deLeiris, Amy Wright and/or UMD Illustration

students. Printing by PDQ on recycled paper with soy ink.

** New Fall Hours **
Open Tuesday - Sunday
9 am - 5 pm
Open on Monday Holidays
Closed
Thanksgiving and Christmas

Program Registration Form
To register for either childrens' or
public programs, please fill in the
form below and send with
payment to us. We still take
registrations over the phone but
you will help us a great deal if
you register by mail. By doing
so, you can deduct \$1 per program!

1. NBS Program:	
Name:	
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Please send this form and pay	-
ment to:	
NBS 583 Third Beach Road	
Middletown, R.I. 02840	



Children's Programs

Down to Earth Day Saturday, October 12 10 am- 2 pm

As an alternative to" Nature Club," this one day of "exploring to the core" will focus on our fresh water areas such as the pond, stream, and reservoirs. Participants should dress warmly, wear shoes that can get wet, bring a lunch and be interested in "getting wet and dirty." Children in grades K-4 are invited to participate. Pre-registration is required.

Fee: \$12 (\$10 NBS members) Limit: 8

After School Hikes Thursday afternoons:

October 17 November 14 3:30-5 3:30-5

Hike away all the energy built up sitting in the classroom! These hikes are for boys and girls in grades 3-6 who would like to explore the Sanctuary's fields, forest, pond, and ridges along with a Sanctuary Naturalist. Please dress for the weather and wear hiking shoes or sneakers.

Fee per afternoon: \$5 (\$4 NBS members)
Limit:10
Pre-registration is required.



Our newest addition, "Bea the Bantam" poses with her friends Sierra Needle and Robin Burkitt.

Nature Club

Saturday mornings 9:30 am-12:30 pm

Join our exciting Saturday morning Nature Club and experience the fun of being in the natural world. Each week will be packed with crafts, songs, games, and hikes. Nature Club is open to boys and girls in grades K-4. We will supply a mid-morning snack and children should dress for the weather. Limit: 20

Fall Session:

11/2: Seeds and Nuts 11/9: Hiking in the Fall 11/16: Indians

11/23: Pioneers

Fee per Session: \$40 (\$36 NBS members)
Pre-registration is required.

Preschool Nature Hour

Wednesdays 10-11 am and 1-2 pm

Our Preschool Nature Hour is a popular program shared by both preschooler (ages 3-5) and parent. Crafts, songs, stories, finger plays, and short hikes will fill this hour-long class. Enthusiastic Parent Volunteers will teach these classes. It's a wonderful and friendly way to introduce your child to the natural world. An adult must accompany a child, and one adult may be responsible for two children. Please dress for the weather.

Early Fall Session:

10/16: Rainbows in the Fall 10/23: Spiders Make Webs 10/30: Bats and Gnats 11/6: Are You a Nut?

Late Fall Session:

11/13: Squirrels in the Woods 11/20: Stone Wall Discoveries 11/27: Snow and Ice 12/10: Let's Help Wildlife

Fee per Session:\$15 (\$12 NBS Members)
Limit:10 child/parent pairs
Pre-registration is required.

Halloween Night Hike

Friday, October 25 7-8:30 pm (Inclement weather date: Sat. Oct. 26)

You are invited to come (if you dare) on this spooky night walk through the Sanctuary trails. The Newport

Children's Theatre will help us with a special "ecological mystery" and a haunted house (for those who dare!). Children in grades K-4 are welcome to participate. (Parents may accompany those who may be frightened). Bring a flashlight and wear comfortable, warm costumes and sturdy walking shoes. Goodies will be served after "woods."

P.S. If you are older than K-4 and would like to participate, we may be able to use your help! Please call us soon!

Fee: \$6 (\$5 NBS members) Limit: 30 children Pre-registration is required.

Children's Holiday Crafts Saturday, December 21 1-3 pm

Children in grades K-4 can experience the joy of creating and giving handmade gifts made from natural materials. Each child will bring home three finished crafts for the holidays.

Fee: \$6 (\$5 NBS members) Limit: 30 Pre-registration is required.

Night Hike and Owl Prowl for Children

Friday, December 6 7-8:30 pm (Inclement weather date: Fri., Dec.13)

Listen for the calls of our native owls during a silent walk through the Sanctuary trails. We'll learn about these and other nocturnal creatures first before we venture out. Dress warmly, wear sturdy shoes, and bring a flashlight, if you need it. Participants should be in grades 2-6.

Fee: \$6 (\$5 NBS members) Limit: 8 children Pre-registration required.

Taking Care of Wildlife for the Winter Saturday, December 14 2-4 pm

Now that the winter season is almost upon us, find out what you can do to help wildlife survive the coldest days. Come learn a few secrets from a wildlife manager. Take home some ideas and a handmade bird feeder. Children in grades 2-6 may participate.

Fee: \$8 (\$6 NBS members)

Limit: 10

Pre-registration is required

Visit the Sanctuary Store for your Holiday Shopping!

(By supporting our store, you support the Sanctuary!)

We have NBS T-shirts, aprons, cozy sweatshirts, posters, birdfeeders, natural history books and field identification guides. (We will also special order books and feeders for you at no extra charge.) And don't forget the kids' stockings -bug boxes, plant presses, bird calls, posters and lots more!

NBS members get a 10% discount on most store items!

Volunteers and Donations

As the Summer draws to a close and the garden blooms of the warm days turn to seeds, we are reminded of all the individuals who helped us during the Summer on small, but important, projects. Thanks to all who contributed, and we hope all of you know that we can always use your enthusiastic help again!

For Gardening:

Sophia Dirham, Sharon Culberson, Ginny Purviance and Jill Hall.

For Office Work and Mailings

Sophia Dirham, Fran and Bob Holmes, The Sanctuary's summer staff (who stayed extra hours to get the newsletter out!), Dave "Dolby" Dolbashian, and Arthur Nelson. For Animal Care and Donations

Alexi and Laura Mazuroski, Michael Kosinski, Mitch Kundrat, Landon Merrill, Mathew Oakley, Liv Ringseisen, Michelle Vivieros, Forster Peabody, Tom Richter, Peter Staley, Star Market, Clements' Market, and an extra big thank you to Adele at Adele's Pet Emporium.

For Educational Assistance and Donations

Marilyn Lyell, Missy Fritsch, Dan Snydacker, Sharon Culberson, Chris Raithel, Chris Cush, and Joan and Kelly Swanson at the The Walrus and Carpenter.

Special Thanks to John Pope who came in with his chain saw and helped with trail clearing after Hurricane "Bob" and Robin Longshaw for her careful eyes!

Fall Volunteer Projects

All the jobs listed below come with a few "perks" such as discounted programming, training, and a chance to work in a comfortable atmosphere with appreciative people!

- -Animal Caretaker for interested kids age 12 or older (2 hours per week) Limited hours available
- -Slide Show Organizer (5-10 hours at your own pace)
- -Office/Reception Worker (2-4 hours per weekday/weekend)
- -Education Docent (2-8 hours per week)

ANIMAL PAUSE

The hurricane brought us a few lost souls- A Leach's Storm Petrel, a pelegic bird living entirely at sea, and some last- of -the- summer juvenile squirrels that had their nesting tree blown down.

Otherwise, most wildlife fared well, knowing instinctively to take shelter in heavy brush and evergreen trees. (Though someone had better warn our goldfinches next time, since they continued to feed on our thistle feeder throughout the entire storm!)

And from the storm, if you still have some brush piled in your backyard, why not keep it there for wildlife?! Brush piles are needed shelters for many animals during the cold weather. Greenery and berries in a brush pile also make food available for those animals not able to reach them in trees.

As Fall comes to town, lots of **Ruby Throated Hummingbirds** are finally making use of our hummingbird feeders. They are gearing up to make their migration to the south where red flowers bloom throughout the winter! Also, **Snapping Turtles** are hatching now after 3-4 months of incubation under the ground. If you find any walking across your lawn or the road — leave them be. Most of the time they know exactly which pond they are looking for.

Come see the new fish additions in our salt water tank. Tom Richter has been diligently restocking the 75 gallon aquarium with local species from the ocean and tide pools. We now have a Bluefish, some gaudy Sea Robins, a Tautog, Scup, a Sea Bass, Silversides, Mummichogs, a beautiful Starfish.

Welcome to "Little Bea", the Bantam chick (see her picture with her friends in this newsletter) and "Boxer" the Box turtle, our new animal additions.

Norman Bird Sanctuary 583 Third Beach Road Middletown, R.I. 02840 Non-Profit Org. US Postage Paid Newport, R.I. 02840 Permit No. 43

To Current Resident or

NORMAN BIRD SANCTUARY Bird Seed Sale

Saturday and Sunday, October 26 and 27 10:00 a.m. to 3:00 p.m.

Throughout the weekend, the NBS store will have bird feeders and accessories for sale.

"Song Maker" quality mixed seed- 25 lbs.

Peanut Butter/Suet Cakes 11 oz.

"Song Maker" - 50 lbs.

Stock up now for the long winter ahead. Feed the birds and help support programs at the Sanctuary at the same time. Order your bird seed now and receive a 10% discount on all new feeders in stock when purchased during this weekend only. This is in addition to the 10 % membership discount!

To order:

Fill out the order form below and mail it with payment to the Norman Bird Sanctuary, 583 Third Beach Road, Middletown, RI 02840. Orders must be received by Friday, October 11, 1991. Make checks payable to the Norman Bird Sanctuary.

Pick up your seed on October 26 and 27 from 10 a.m. to 3 p.m. in the Sanctuary barn.

> Total \$ ____ (RI sales tax is included)

*** MEMBERS: TAKE AN ADDITIONAL 10% OFF ALL FEEDERS IN STOCK***
WITH A PRE-ORDER PURCHASE OF SEED ON "SEED SALE" DAYS OCTOBER 26 and 27

\$ 7.15

\$12.91

\$ 4.00