



OUR NATURAL WORLD

The amazing phenomenon of avian migration — the flight of tens of thousands of birds to Long Island for breeding or rest stops — is the subject of the June issue of “Long Island: Our Natural World,” the fourth in a 13-part series. It’s the story of neotropical songbirds and raptors and of world travelers such as the blackpoll warbler that flies nonstop for as many as 80 hours and the red knot that comes from the southern tip of South America and goes on to the Arctic Circle. We explain how threats such as habitat destruction hurt Long Island’s feathered visitors. Other stories offer tips on bird watching and how to attract flying visitors to your backyard.

ON THE COVER: In an oak tree high above a Bethpage State Park golf course, a red-tailed hawk tends to three hatchlings. Newsday photo by Bill Davis.

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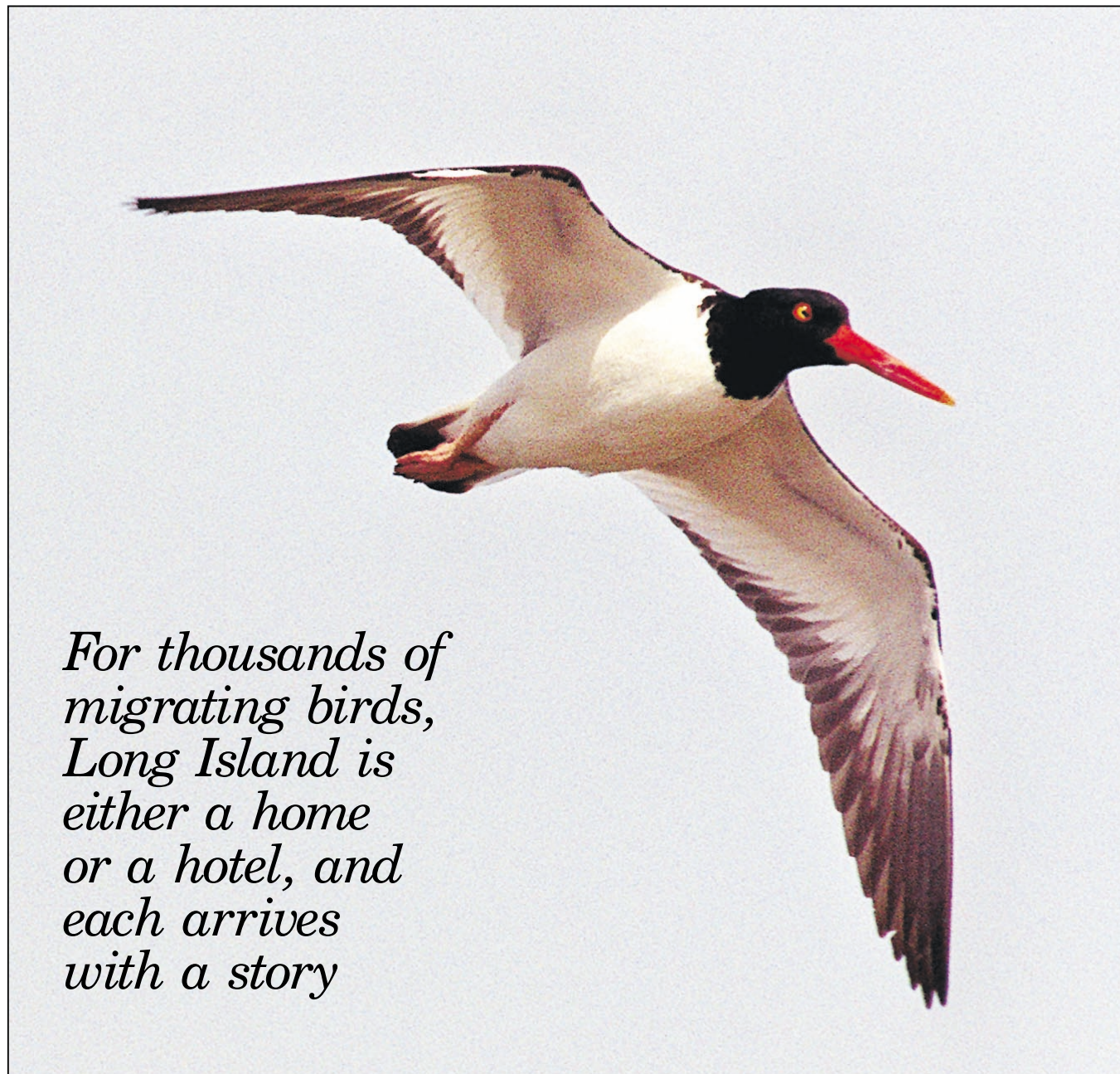
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IN PRINT: In addition to the monthly special sections, the **This Week in Our Natural World** page appears each Sunday with events, nature profiles and ideas for outings. Look for it at the back of the news section.

ON THE AIR: See previews of monthly chapters Saturdays on **WPIX / 11's** “News at Ten.” Tune in to **WKJY / 98.3 FM** and **WBZO / 103.1 FM** on weekends for radio reports on “Our Natural World.”

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For thousands of migrating birds, Long Island is either a home or a hotel, and each arrives with a story

Newsday Photos / Bill Davis

The American oystercatcher migrates from Mexico and Central America. This one was photographed late last month near the Ponquogue Bridge, west of Shinnecock Inlet.

A Long-Distance

By Irene Virag
 STAFF WRITER

They are sojourners from another clime who navigate by the stars and their own inner compasses from thousands of miles away. Many of them fly to Long Island in search of sustenance and to build homes and raise families. Others pass through on their way to more distant territories. Whether they’re here for a day or a season, our shores and waterways are brightened by the pure magic of their presence. And the forests that survive amid our suburbs are alive with the sweet and storied sound of their music and the flutter of their wings.

But each and every one of these travelers is just one small part of a greater miracle — the phenomenon of winged migration. A phenomenon that embraces myriad journeys to our island by more than 200 species of birds from

hummingbirds to bald eagles. Tens of thousands of individual birds. Acadian flycatchers and cerulean warblers and rough-legged hawks and ruddy turnstones and rose-breasted grosbeaks and greater yellowlegs. There are more than 9,000 avian species in the world and about half of them migrate. For those that reach our shore, Long Island is either a destination or a pit stop — a home or a hotel.

Each of these birds has a story to tell — and some of them are truly incredible.

Red knots fly up from Patagonia and Tierra del Fuego and skirt the eastward bulge of South America, taking breaks along the East Coast of the United States on the way to their breeding grounds in the tundra of central Canada as many as 1,000 miles beyond the Arctic Circle. In late spring they show up on our South Shore beaches to graze on the eggs of horseshoe crabs. Their odyssey covers about 7,000 miles and

they can fly from five to eight days at a time without stopping. They fly in large flocks, each bird only 6 inches away from its neighbor.

The blackpoll warbler breeds in the spruce forests that cut a swath to Alaska. When it’s homeward-bound in the fall, it follows an eastward route to pit stops in New England and Long Island. Then it takes an over-water flight to South America that keeps it flapping its wings nonstop for as many as 80 hours. According to researchers, that’s the metabolic equivalent of a human running four-minute miles for a little more than three days. When the black-capped little bird leaves its breeding grounds, it weighs 11 grams, about the same as four pennies. By the time of its departure for Peru or Brazil, it has almost doubled in weight. If a blackpoll warbler burned gasoline instead of body fat, experts say it would get 720,000 miles to the gallon.

Of course, the blackpoll warbler is a blimp compared to Long Island’s only



Great egrets fly here from as far south as Central America. Here, an egret divides its attention between fish and an approaching kayak last July on the Carmans River at the Wertheim National Wildlife Refuge in Shirley.

Miracle of Nature

hummingbird, the iridescent ruby-throated hummingbird, which weighs about one-tenth the weight of a first-class letter. This astounding mighty mite — which can fly up and down and backward and forward — is so hyperactive that its resting heart rate is 480 beats per minute and it needs a sugar fix every 15 minutes to keep going. It leaves its winter home in Central America as early as January and eats its way north to the Gulf of Mexico. A month later, after a final binge, the tiniest of birds is pumped up enough to face its heroic destiny — a solitary nonstop night journey over 500 miles of open water.

Arctic terns hold the record for long-distance flying, passing our shores as they journey from one end of the planet to the other. They breed at the tip of Greenland and on islands north of the Arctic Circle and spend winters in the Antarctic seas.

No larger than a robin, these brave flyers make an annual round trip of about 25,000 miles — almost the same distance as the circumference of the globe. And they probably see more sunshine than any other living creature since they're at both ends of the Earth during periods of 24-hour daylight.

They fly over seas and mountains and their presence on Long Island seems amazing.

It is — and for reasons beyond their dangerous odysseys. Because it is a hub of avian coming-and-going on the

Can you identify the birds of Long Island? Follow the clues in an interactive graphic that will lead you to the correct answers. Go to www.linature.com on the Internet.



Atlantic flyway, our island is a window into the state of birds and perhaps people. A window into our priorities. A reflection of our natural world.

"Migration shows how small the world really is and how interconnected we are on a global scale," says Trish Pelkowski, director of the Theodore Roosevelt Sanctuary and Audubon Center in Oyster Bay. "What happens in the tropics affects what birds we see here and vice versa. Birds don't talk to us with their morning songs and their evening calls. They talk to us with their absence or presence. They are an indicator of the health of the environment."

Pelkowski and other naturalists are worried about what some of the birds are saying — especially little songbirds like scarlet tanagers that need large territories in mature deciduous forests to breed. Their wintering grounds in tropical rain forests are being wiped out and



A yellow warbler near Jamaica Bay at the Gateway National Recreation Area.



A northern parula, a small warbler, seen at Massapequa Preserve.

See **MIGRATION** on N5



A double-crested cormorant takes flight from the Carmans River last September at the Wertheim National Wildlife Refuge in Shirley.

A Miracle Of Nature

MIGRATION from N2

their breeding grounds in the north are being compromised by development.

"Songbird populations are declining," says John Turner of The Nature Conservancy's Long Island chapter. "Grassland birds are even worse off. Birds need food, water and shelter, just like we do, and those things are becoming less and less available to them."

Turner's concern about Long Island is heightened by the fact that its status as a bird center has always been enhanced by its ecology. "We have a great diversity of birds because we have a great diversity of habitats," says Turner, for whom forests and fields are a second home and binoculars an extension of his senses. "Woodlands, ocean beaches, ponds, bays, pine barrens. Most birds have specific habitat requirements. That's why you don't see cardinals at the beach or

gulls in the forest. The whole concept of migration borders on the magical and mystical. Birds fly thousands of miles and turn up in the same neighborhood, maybe even the same tree as the previous year."

In her heart and her experience, Elaine Maas knows this to be true. She is an associate principal of science for the William Floyd School District, in Mastic Beach, and has been teaching children about the natural world for more than 25 years — showing her students a red-tailed hawk soaring just a few miles from their own backyards and telling them about the house wren mother she watched encouraging her young to fly.

Maas sets her seasonal clock by the migrating warblers that bathe in the pond behind her Stony Brook home. "Blue-winged warblers, black-throated blues, black-throated greens, Canada warblers, the strikingly vivid Blackburnians, magnolia warblers. They arrive often on the same calendar day as the year before, between the 12th and 15th of May. Sometimes, I've spotted as many as six species within the same half-hour of time in late afternoon."

The mysteries of migration have always fascinated earthbound humanity. The sight of birds flying in silhouette across the full moon gave rise to a belief that

they migrated there, and the Bible mentions the miraculous appearance of quail for the children of Israel on their journey to the Promised Land. American Indians believed that hummingbirds and other small species hitched rides on the backs of geese. Aristotle wrote of birds taking off for warmer lands when the weather turned cold and described cranes flying from the steppes north of the Black Sea to marshes at the source of the Nile. But he also insisted that some birds transmuted into winter species — redstarts into robins, and warblers into blackcaps. And he evolved a theory of hibernation that persisted for centuries. As recently as 1878, naturalists claimed that swallows flew into the reeds and sank into the mud in states of torpor. For the record, there actually is a bird that hibernates — the northern common poorwill of the American southwest can hunker down in a torpid state and sustain itself for 100 days with one-third of an ounce of fat reserves in its body.

The obvious question is how in the world do migrating birds do it? The answer indicates that birds are anything but birdbrained. Thanks to small crystals of magnetite above their nostrils, they can find magnetic north. Their eyes are attuned to navigational clues from the stars at night and the sun by day. Ex-

See MIGRATION on N7



On a January day, black-bellied plovers in winter plumage walk on the sand at Cedar Beach in Babylon.

Newsday Photos / Bill Davis



Geese fly during fall migration at Fire Island.



A Miracle Of Nature

MIGRATION from N5

periments have shown that indigo buntings can locate the North Star and use constellations as guides on their nocturnal journeys.

Birds also follow coastlines, hills and valleys. Most navigate to within six to 12 miles of their destinations and then depend on visual cues such as trees and ponds. They also hear their way — the low frequency of crashing ocean waves or the howl of mountain winds and even the call of frogs in marshy bogs. And they can smell — the fragrance of a familiar meadow, or the pungent odor of a seabird colony.

Some fly in flocks — geese and ducks in classic V-shaped formations and brown pelicans in synchronized squadrons — and others in mixed groups with birds of various species. Loners like the hummingbird strike out on their own against the elements. For the most part, songbirds have to flap constantly to stay up, which becomes crucial on over-water flights. They travel by night when the air is likely to be calmer and cooler — and when predatory hawks aren't around. Hawks fly by day when it is easier to take advantage of the thermals that aid their trademark glides. Shorebirds such as the Arctic tern that take extra-long trips have little choice but to travel by day and night.

Another question is why do they do it? Long Island is nice but why should songbirds leave the tropics? "The benefits must outweigh the costs," says Marilyn England, Pelkowski's predecessor at the bird sanctuary. "There's an advantage to flying thousands of miles north to a place with more potential food and nesting sites and less competition for them. The benefits are measured in reproductive success. Migratory birds nesting in the north have larger clutches — four to six eggs instead of two to three. They make the journeys for the opportunity to raise more young. They come for food — it's resource-based."

One of the places they come to lies on the edge of the pine barrens, a 500-acre county-owned tract in Yaphank where mosquitoes and ticks and poison ivy lie in wait for the human wanderer, but where nature swallows time and softens the boundaries of the civilized world. Because it lies at the top of a glacial moraine, it is unique for the dry, sandy barrens — with steep slopes and wetlands and red maples and white oaks that are 150 years old and an under story of native dogwoods and viburnums and spicebush. White-tailed deer and box turtles and black racers live in this place but it is the birds of spring that make it special.

Decades ago, the late Dennis Puleston, one of Long Island's most revered naturalists, craned his neck to see the blazing orange throat of a Blackburnian warbler and the chestnut cheek patch of a Cape May warbler coming in on a southerly wind and gave the place a name.

He called it Warbler Woods.

Just after daybreak on a gray spring morning, Marilyn England passes a gully cut by erosion and dirt bikes. She plunges into the woods on an unmarked trail and hikes uphill to the top of the moraine. She stops in her tracks when she hears a few notes from a scarlet tanager. "Listen," she says. "It sounds like a robin with a sore throat." And then the tanager flashes like red neon through the oak canopy and lights up the overcast day.

For the past decade, England has banded tanagers and vireos and orioles and cuckoos in these woods as part of a comprehensive study of migratory landbirds. She sees the tracks of all terrain vehicles on the edge of the forest and once in a while, she hears golfers shouting "fore" on a neighboring course, and she worries about the enclave and its feathered inhabitants.

For now, sights and sounds from faraway places resonate over vernal ponds and through fields of native ferns. England identifies the "wheep, wheep, wheep" of a great-crested flycatcher and the "ku-ku-ku-ku" of a yellow-billed cuckoo. And then, somewhere in the background, a wood thrush sings its flutelike and fabled song. "Ee-o-lay," the cinna-



Newsday Photos / Bill Davis

A chipping sparrow in May at the Theodore Roosevelt Sanctuary and Audubon Center in Oyster Bay.

A red-winged blackbird, left, seen in East Hampton.



A white-crowned sparrow at West End Beach, Jones Beach, last October.

mon-backed little bird sings. Like most birds, its voice box contains two membranes that vibrate to produce sound. But the wood thrush can vibrate each one separately and, in effect, sing a duet with itself.

"Whenever a man hears it, he is young, and Nature is in her spring," Henry David Thoreau wrote of the liquid music of the wood thrush, "wherever he hears it, it is a new world and a free country, and the gates of heaven are not shut against him."

Perhaps that is why Puleston called Warbler Woods, "a little bit of heaven on Earth." Many of the birds in these woods are indeed warblers. Blue-winged warblers and yellow warblers and worm-eating warblers. All are members of a group known as neotropical migrant songbirds — wood sprites from distant lands like Costa Rica and Guatemala and Mexico and Venezuela and Colombia and

even Peru. Birds like red-eyed vireos and common yellowthroats and ovenbirds and Baltimore orioles.

The rush of their wings swells in spring and fall, not that migrating birds adhere to our definitions of the seasons. On Long Island, the northward journey that signals spring migration for most species actually begins when we bipeds are still bundled up in winter jackets. Red-winged blackbirds return in the middle of February, and mourning doves and northern flickers and eastern phoebes follow soon after to build nests. Fox sparrows and rusty blackbirds and American pipits are day-trippers on their way farther north. Belted kingfishers show up as soon as waterways are ice-free. In March, woodcocks peep in the woods and spiral up and down in their mating dances. Ospreys are back on their huge stick nests and piping plovers whistle across the beach.

It is around this time that the raucous calls of waterfowl signal their coming and going. Snow geese honk as they pass overhead en route to nesting places in the Arctic and wood ducks search the edges of ponds and rivers for tree cavities they'll call home. Loons and ruddy ducks that have wintered here molt into their breeding plumages. Properly dressed, they

SEE THE PIXIE CHICKS.

Live video from the OspreyCam, showing a Long Island osprey family nesting in the wild with recently hatched chicks, can be viewed on the Internet at www.linature.com





A Miracle of Nature

MIGRATION from N7

depart for destinations north.

In April and May, wading birds such as glossy ibis and snowy egrets come back. And suddenly it's songbird time. Pine warblers return to breed and Louisiana waterthrushes stop and go on. Purple martins and eastern towhees are among the early birds and then the waves keep coming — gray catbirds and black and white warblers and yellow-breasted chats and indigo buntings and cedar waxwings.

"By early June, spring migration is over," says The Nature Conservancy's Turner. "All the birds that come here to breed have arrived and all the ones that pass through have gone. Just one month later, the southbound journey of shorebirds kicks off fall migration." Sandpipers and sanderlings leave their breeding grounds in the Arctic tundra and tiptoe along our shores by mid- to late-July, nibbling on sand fleas and marine worms and mollusks to bulk up for the next leg of a journey that ends in South America.

In August, neotropical travelers who raised families here are packing up. September brings wintering songbirds like red-breasted nuthatches and white-throated sparrows and dark-eyed juncos who use Long Island as their Florida. Raptors are on the wing — merlins and American kestrels and peregrine falcons and sharp-shinned hawks and northern harriers. They're hot on the tails of the last round of neotropicals that bred farther north. Some raptors save time by eating on the fly, especially peregrine falcons. Forget cheetahs — peregrines are the fastest animals on Earth, flying at speeds of up to 200 miles an hour at altitudes of 2,000 feet. They punch their avian prey to death in the air with their talons, then fly underneath to catch it as it falls. Some of these crow-sized raptors with pointed wings that span 3 feet breed in our region — atop the Nassau County Medical Center and on the Throgs Neck Bridge.

Autumn leaves are not all that mark October.

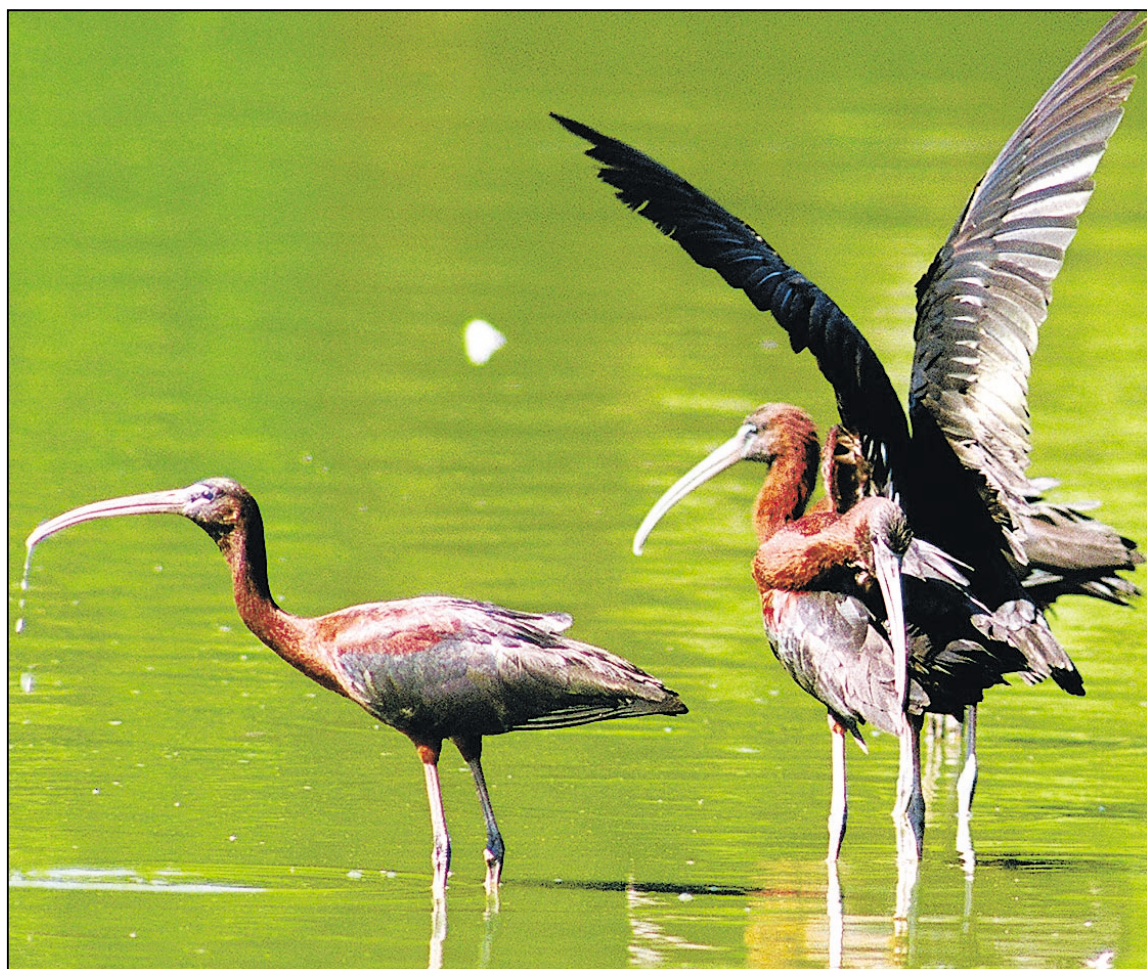
Waterfowl such as brant, gadwell and American widgeon fly in from the north to spend the winter here. In the months that follow, the emerald-heads of mallards glisten in the gathering cold on steel-blue ponds. As is the case with mute swans and Canada geese, they share the water with resident populations of their own kind. The blurred borders of migration seem symbolic of the bittersweet season. As migrating mallards are arriving, blue-winged teals are leaving.

Brook Lauro of Amityville waits for the return of the American oystercatcher around St. Patrick's Day and spies it along South Shore bays breaking open razor clams and mussels with a long chisel-shaped red bill. Lauro, an associate professor of biology at St. John's University, studies shorebirds and waterfowl. She has observed 26 species of ducks on local ponds — hooded mergansers and redheads and northern shovelers and American coot. "What I find most touching about birds is that if you just sit quietly in your own yard and watch long enough, you'll see them do such fascinating things."

Lucky Long Islanders who brave the shore in winter may glimpse one of the most stunning avian visitors — the snowy owl. The 6½-pound bird of prey has piercing yellow eyes and a wingspan of more than 5 feet. Adult males are pure white while the feathers of younger birds — the most likely to be seen here — are speckled with dark, crescent-shaped flecks. The snowy owl is an irruptive species, one that migrates out of necessity when food is scarce — especially voles and lemmings, its staples. If there's enough to hunt and eat, the snowys stay north of the tree line in the Arctic tundra. But when the rodent population crashes, the great predators have two choices — migrate or starve. They'll travel from 300 to 3,000 miles to find food. Long Island lies at the southern limit of their range.

The miracle of migration continues to mark the seasons. But habitat destruction and forest fragmen-

See **MIGRATION** on N10



Newsday Photo / Bill Davis

Glossy ibis, a type of stork about 4 feet tall, at Cow Meadow Preserve in Freeport last July.



Miracle Of Nature

MIGRATION from N8

tation threaten the futures of so many birds. The piping plover's simple nests — little more than scratches in the sand — became victims of beachgoers to the point where the bird was put on the federal endangered species list. The wood thrush is caught between a rock and a hard place. Its winter home in the tropics is a paradise all but lost, its breeding places in the deciduous forests of the East Coast are being carved up for developments. And the songster whose melody inspired Thoreau builds its nest only 4 to 6 feet off the ground — easily accessible to predators.

"Migratory songbirds are taking it on the chin in three directions," says John Turner. "On their breeding grounds, their wintering grounds and along their migratory routes. There's nothing magical about why — birds need food, water and shelter, just like we do, and those things are becoming less and less available to them."

Experts say some avian species are decreasing worldwide — especially neotropical songbirds and grassland species such as meadowlarks and bobolinks and short-eared owls and grasshopper sparrows, currently threatened by a potential rock concert on its favorite Long Island nesting site in Calverton. Even when their long days' and nights' journeys are over, many birds still face peril. Neighborhood cats and red foxes and raccoons are on the prowl. And brown-headed cowbirds are a plague on the houses of smaller, gentler songsters. Cowbirds are "brood parasites." They don't bother to build their own nests but lay their brown-speckled eggs in the homes of unsuspecting warblers, vireos and other neotropical migrants. To add insult to injury, they usually toss one of the hosts' eggs out of the nest. Most foster parents don't recognize cowbird hatchlings as intruders and feed the voracious not-so-little monsters as their own. Even if the host's young are born, the cowbird babies are so much bigger — larger even than adult warblers or vireos — that they gobble up all the food and sometimes push their starving roommates out of the nest. Two years ago, Marilyn England's heart sank when she saw a scarlet tanager unwittingly feeding a cowbird chick in Warbler Woods.

England's banding work in Warbler Woods is part of a California-based project called Mapping Avian Productivity and Survivorship that receives data from 500 banding stations across North America. A summary report on 100 target species is in the works, but there are some troubling signs, according to project director Dave DeSante, who is also executive director of the Institute for Bird Populations, which initiated the study. He cites the wood thrush. "We've lost half the world's wood thrushes in the past 30 years and they're still declining."

The trend is reflected in Warbler Woods. "We're catching fewer wood thrush fledglings," England says. "That could be chance or it could mean they moved their nesting site a few hundred feet and now they're outside my banding station. It's hard to say what it means, but I don't think it's anything good."

It is spring in Warbler Woods and songbirds are building nests in the tree canopy and searching for insects on the forest floor and splashing in the cool woodland ponds. The music of the ovenbird crecendos — "chertee chertee cherTEE CHERTEE CHERTEE" — and a red-eyed vireo sings its high-pitched song over and over all through the day. An oriole joins in. It is good to know the little songbirds have survived their incredible journeys and the miracle of avian migration continues. For now springtime in Warbler Woods is anything but silent.



An adult male
Baltimore oriole
seen in Stony Brook.

Neotropical Birds of Long Island

*Songbirds that come for the season
from as far away as Peru*



A female scarlet tanager photographed in May at Massapequa Preserve.

Newsday Photos / Bill Davis

Take a virtual tour of Warbler Woods in Yaphank, and listen in on a gallery of bird songs at www.linature.com

