

Keeping Tabs on
OSPREYS

Pax River Bands Species to
Study Health & Habits





AILORS AND NATURAL RESOURCE MANAGERS FROM THE NAVAL AIR STATION (NAS) PATUXENT RIVER (PAX RIVER) HELPED A LOCAL NATURALIST TO BAND OSPREYS AS PART OF A 30-YEAR STUDY TO UNDERSTAND THE HABITS OF THIS NOBLE BIRD.

This time last year, Steve Cardano said he was done. The local naturalist was hanging up his pliers after 29 years of banding and cataloging the ospreys that nest along the Patuxent River. He had seen the population creep slowly back from the devastation of Dichloro-diphenyl-trichloroethane (DDT), had learned most of the secrets of a nomadic community that spends half its year in the Chesapeake Bay watershed, half of it in far flung lands such as Venezuela and Trinidad and Tobago. He had banded thousands of birds, logged thousands more. It was time to come off the river, to tabulate and write and analyze, to be scholarly.



The Patuxent River area.



An adult osprey launches from its nest as natural resource managers approach to band the pre-fledgling young that remain behind.

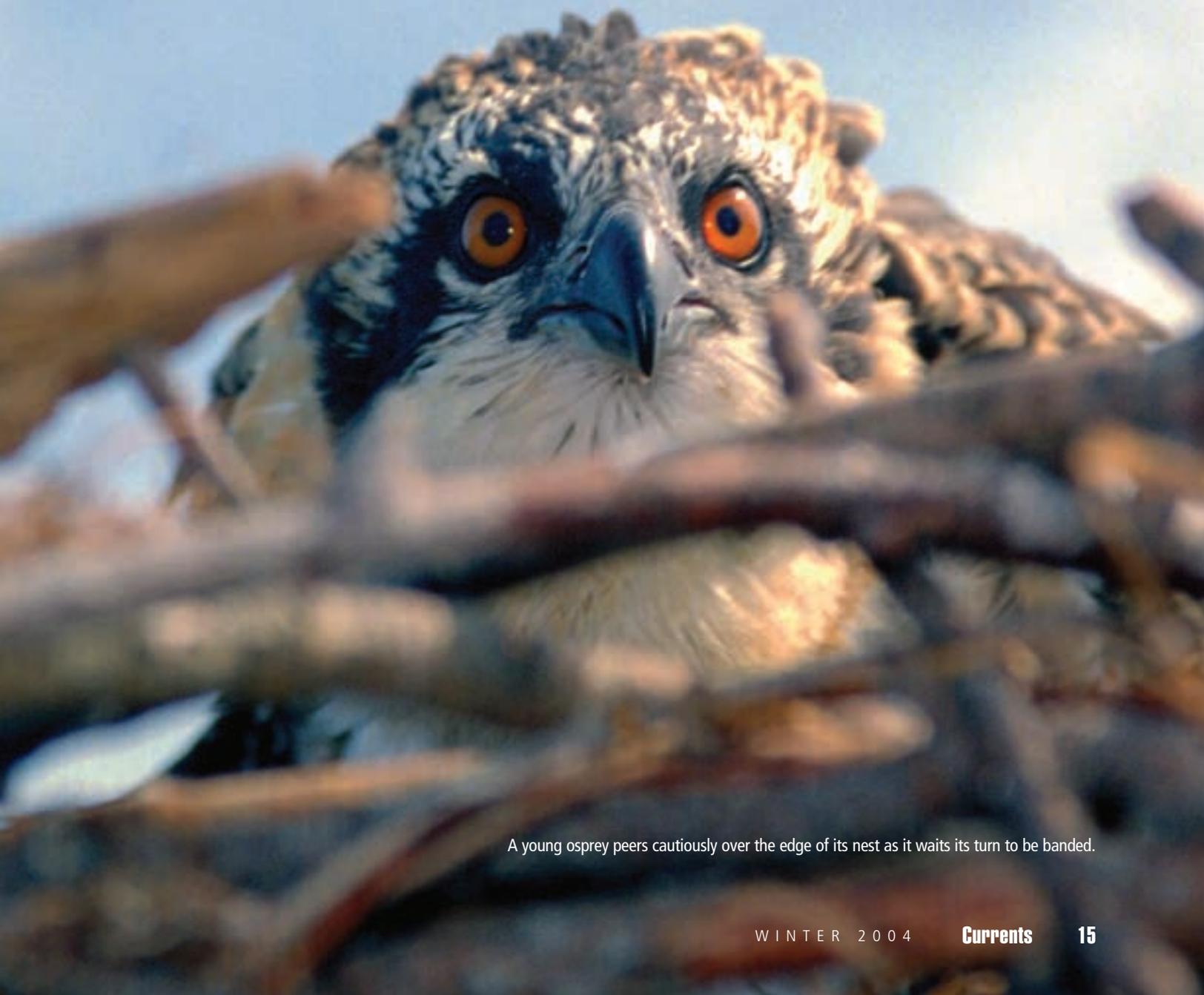
It was something of a surprise, then, when Cardano contacted personnel from Pax River to ask if the Navy would like to help him band ospreys on the lower Patuxent River again this year. Then again, maybe it wasn't.

"So what's the story, Steve?" someone asked him as the 30-foot platform boat from Pax River's boathouse pulled out into the river, en route to the first nest of the day.

And Cardano just shrugged. Said something about how he wanted to make it an even 30 years. Or maybe 31. Addicted, and in denial, and entirely content.

Cardano is director of activities at the Nanjemoy Creek Environmental Education Center, and is a master bird bander licensed by the United States Geological Survey's

With two dozen osprey nests on Pax River alone and thousands of ospreys living along the Chesapeake Bay, the information Cardano has amassed over the years is valuable intelligence—worth its weight in aircraft aluminum.



A young osprey peers cautiously over the edge of its nest as it waits its turn to be banded.

Bird Banding Laboratory in Laurel, MD. He has been banding ospreys on the Patuxent River since 1973, and for the past three years has done it with the Navy's help.

"Steve initially contacted us in 2001, when his boat went down for repairs and it didn't look like he was going to be able to complete his study for that year," explained Tim Smith, Pax River executive director. "We offered the use of a boat and crew from our boathouse, and we've been participating ever since."

The collaboration fits in well with Pax River's overall environmental stewardship mission, but is also beneficial to the base. Aviators at Pax River share the air space over the Chesapeake with more than 300 species of birds throughout the year, according to Jim Swift, a Pax River natural resources specialist. When birds and aircraft meet at high speeds, the results are expensive at best, tragic at worst.



A seven-week-old osprey sporting a new leg band waits to be returned to its nest. The bands are used to track migration and assess mortality trends in the population.





Why Keep Tabs on OSPREYS?

Pax River's efforts to band its osprey population are intended to track the movement of the species, assess population trends and monitor the overall environmental fitness of the Pax River watershed.

For banding, the birds must be old enough that their legs have fully developed—about five to seven weeks—but still too young to fly. If a bird is deemed suitable for banding, a band (issued by the U.S. Geological Survey (USGS)) is placed around one of its legs and crimped closed with pliers.

Banding data from around the country are amassed by the USGS and provide a means of tracking the habits of the osprey and health of the Chesapeake Bay. Studying osprey exposure to contaminants in the Chesapeake Bay provides a good indicator of the overall health of the Bay's ecosystem.

Band numbers are entered into a log, along with the age, weight, nest location and the type of structure or tree on which the nest was built. Members of the

banding study also record the nest location and type, as well as the number of young. These data points are then entered into a massive database of all banding data for bird species across the United States. Reports of sightings of banded ospreys go back to the USGS laboratories, providing insight into migration, mating, life and death of the species.

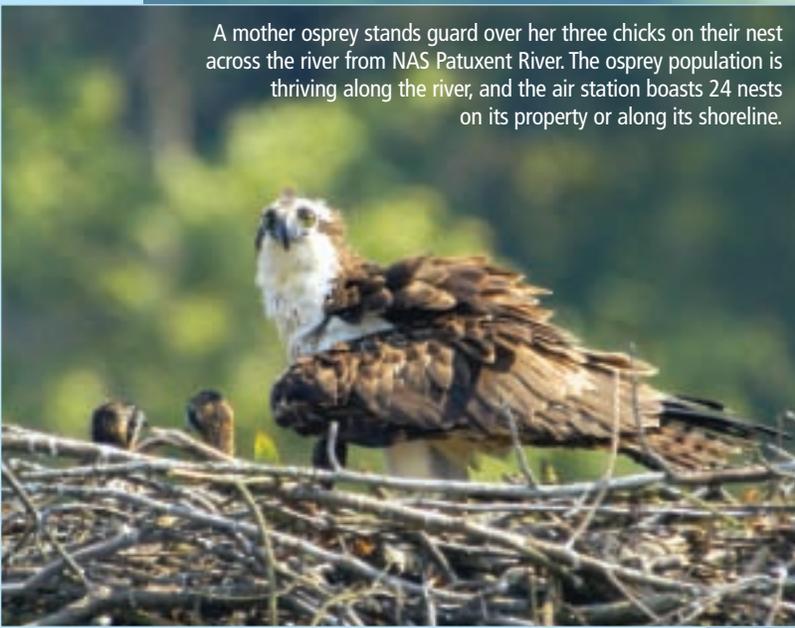
The band recovery data helps USGS assemble a life history of ospreys and other species. By tracking where the ospreys are found and how and when they die, researchers can map migratory routes.

With 30 years of compiled data, Cardano and his colleagues will paint a detailed picture of how the osprey population along the Pax River has changed and adapted over time. The information will help researchers assess the resiliency of the species, the impact of human incursion, and trends in the overall health of the ecosystem over three decades. The study will have a lot to say about the past, present and future stewardship of the Chesapeake Bay watershed.





A mother osprey stands guard over her three chicks on their nest across the river from NAS Patuxent River. The osprey population is thriving along the river, and the air station boasts 24 nests on its property or along its shoreline.



Natural resources specialist Jim Swift hands down a pre-fledgling osprey from a nest atop a channel marker. The bird will be banded, weighed and returned to its home as quickly as possible.



Swift coordinates Pax River's Bird Aircraft Strike Hazard (BASH) program, and is charged with finding ways to fulfill the Naval Air Systems Command's (NAVAIR) flying mission while reducing the threat of a strike. "You reduce the hazard by being aware of what's out there and what's going on," he said. (For more information about BASH programs, see our article entitled, "Border Collies and BIRD RAD: Navy Uses Different Methods To Abate BASHes" in the summer 2002 issue of Currents.)

"It's very rare for one person to have that much experience and that much data," Swift said.

To help with this year's effort, Swift and fellow natural resources specialist Jackie Smith joined



Cardano for bird handling duty. BM1 Patrick Hart captained the boat, and Nanjemoy Creek teacher Gloria Heisserman rounded out the crew.

The drill was familiar for Hart and Swift, who have both gotten their hands dirty—and occasionally bloody—on previous years' outings. As the boat cruises along the river, Cardano scouts nests with his binoculars, knowing all the commonly used sites by heart. When Cardano spots an active nest, usually on a channel

marker, pylon or man-made nest platform, Hart guides the boat alongside and someone grabs the ladder.

Though capable of doing tremendous damage to a human, the adult ospreys usually fly off when the boat approaches. Humans are viewed as predators, Cardano explained, and evolution favors the birds that will return to mate another day rather than fight to the death in defense of a nest. Not all the birds are up on their Darwinian theory, however, and sometimes things get a bit contentious.

As the adults wheel and dive overhead, someone climbs the ladder to the nest and begins handing down the young. Cardano bands the birds when they are five to seven weeks





old, too young to fledge (fly) but old enough to have fully developed legs and talons.

“When you first look into the nest, the young are trying to stay out of sight and laying just as flat as they can, so they’re easy to lift out,” Swift explained. “They’re incredibly soft; their muscles aren’t strong enough to hold their wings up, and their legs aren’t strong enough to support their bodies. All their feathers are new, and you’re struck by how soft and delicate these animals are.

“On the other hand, they still have very sharp talons and sharp, strong beaks,” he added.

With the birds gently restrained, Cardano and Heisserman use pliers to secure the loose-fitting metal bands above the young raptors’ ankles. The numbered bands are issued by the U.S. Geological Survey and bear a phone number to call if the birds are ever recaptured or found dead.

“The band recovery data helps us put together the life history of these ospreys,” Cardano explained. By tracking where the ospreys are found and how and when they die, researchers can estimate life spans, assess threats and map migratory routes. Recently, Cardano has received several band recovery reports from Cuba, a sign of improved communications between the island nation and the United States, he suspects.

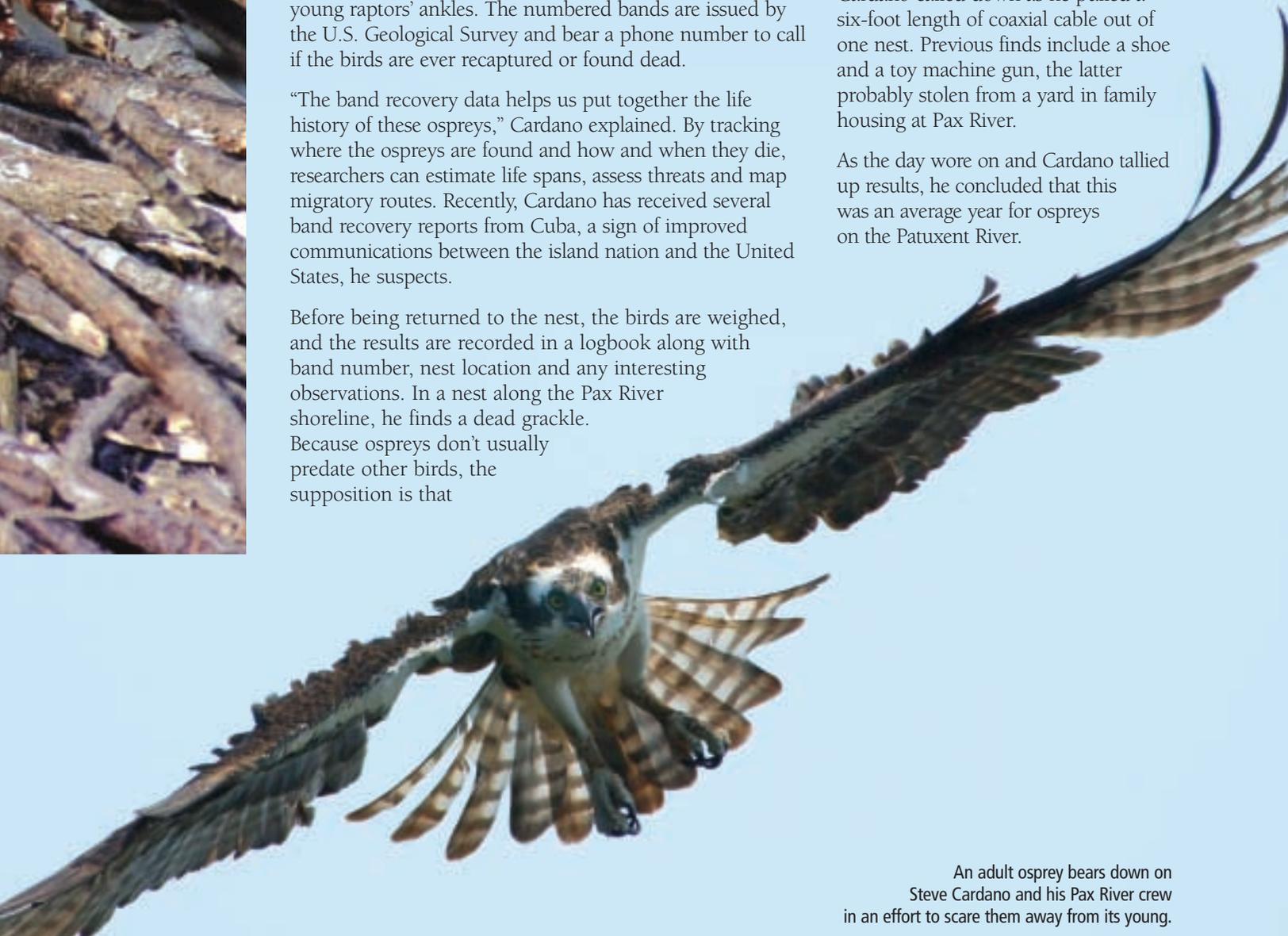
Before being returned to the nest, the birds are weighed, and the results are recorded in a logbook along with band number, nest location and any interesting observations. In a nest along the Pax River shoreline, he finds a dead grackle. Because ospreys don’t usually predate other birds, the supposition is that

the grackle attempted to pillage eggs in the nest and was caught by an angry parent, which made short work of the intruder.

Cardano also collects “ornamentals,” odd bits of decoration the ospreys hoard for their nests. Some are hazardous—discarded fishing line and lures are common. On last year’s trip several chicks were found entangled in line, maimed or starving. Others are more whimsical.

“Hey, these birds are stealing cable,” Cardano called down as he pulled a six-foot length of coaxial cable out of one nest. Previous finds include a shoe and a toy machine gun, the latter probably stolen from a yard in family housing at Pax River.

As the day wore on and Cardano tallied up results, he concluded that this was an average year for ospreys on the Patuxent River.



An adult osprey bears down on Steve Cardano and his Pax River crew in an effort to scare them away from its young.

All About OSPREYS

Natural History, Foraging & Nesting

Ospreys (*Pandion haliaetus*) occur in nearly every corner of the globe, but nowhere as abundantly as the Chesapeake Bay area. The Chesapeake nesting population is the largest known concentration in the world, numbering nearly 2,000 pairs. Ospreys migrate to the Chesapeake every spring, usually around the beginning of March.

Natural History

The osprey, or fish hawk, feeds exclusively on live fish. Its toes and talons are long and sharp for holding onto slippery fish. Ospreys are fairly large birds, with a body length of about 21-24 inches and a wingspan from 4 to 5 feet. Females are larger than males, as is true of most birds of prey. Their habitats include shallow water estuaries, lakes, and rivers.

Foraging

During spring and summer, ospreys find an abundance of medium-sized fish on the Chesapeake to feed their young. Males typically forage far and wide for food, whereas females stay on the nest, or nearby. Ospreys hunt by soaring over water, periodically hovering on beating wings to scan for surface schooling or spawning fish. On breezy days, they let the wind keep them aloft as they search for fish. Cloudy conditions with rippled water lessen the osprey's fishing success, which can jeopardize hungry nestlings.

Upon sight of its prey, the osprey makes a spectacular dive. Folding its wings tightly, it descends swiftly and plunges feet first into the water, often submerging completely. Another technique is to scoop for fish at the surface of the water. Clasp the twisting fish, the osprey takes flight and labors to climb ever

higher. Successful early season hunts often end with a beautiful courtship flight, an undulating display of the male's flight power to its mate.

Nesting

Ospreys usually mate for life and return to the same nest site year after year. Spring courtship marks the beginning of a five-month period when the pair works together to raise their young.

A clutch of three or four eggs is laid by the third week of April. The bulk of the nest and its depressed center help to conserve heat. The eggs, usually mottled cinnamon brown, are about the size of jumbo chicken eggs, and must be incubated for nearly five weeks.

The eggs finally yield their treasures, nearly 2-ounce helpless chicks that can barely beg for food. Amazingly, with a plentiful supply of fish, these balls of fluff will become soaring acrobats in just eight weeks. However, if food is scarce, the chick that hatches from the first laid egg stands the best chance of survival since it can outcompete its smaller siblings and may even push them out of the nest.

Osprey abundance in the Bay region is partially determined by favorable nesting sites. Offshore structures offer protection from terrestrial predators (such as raccoons) and human activity, permit rapid detection and escape from danger, and place the birds near their food supply. Ospreys may choose sites over the water such as duck blinds, navigation markers, or manmade nesting platforms or high trees and utility poles on land.

Source: U.S. Fish & Wildlife Service (www.fws.gov).



FOREGROUND: Steve Cardano (left) places a leg band on a young osprey in the hands of BMC Thomas Truitt.

BACKGROUND: BM2 Kyle Riggin steadies the ladder for Jim Swift, descending with an osprey in hand, while EN1 William Ledford cradles another bird due for banding.

Nanjemoy Creek teacher Gloria Heisserman fastens an identification band around the leg of an osprey chick with Jim Swift and Steve Cardano.

The chicks were a little younger than expected for the time of year, a product of the unusually cold spring. Still, the population is thriving.

“In 1973, there were 22 active nests on the entire Patuxent River,” Cardano recalled. Widespread use of the pesticide DDT after World War II had decimated both bald eagle and osprey populations. “DDT was used to control mosquitoes all along the Atlantic coast,” explained Steve Cardano. “The wicked thing about something like DDT is that it doesn’t degrade in the environment,” he said. “It accumulates up the food chain.”

In 1972, the newly formed Environmental Protection Agency banned the use of DDT, and both eagles and ospreys began a slow recovery.



Although the Chesapeake Bay is a shadow
of its former self, the ospreys tell
a tale of resilience for the ecosystem.





All About OSPREYS

Migration & Threats to Survival

Migration

Ospreys return to the Chesapeake every spring, usually around the beginning of March. By late July, most young ospreys are on the wing. The young and adults begin their southern migration by the end of August to wintering grounds in the Caribbean, Central America and South America. Throughout September, ospreys and many other birds of prey from the northeastern U.S. funnel through coastal Virginia just north of the Bay Bridge Tunnel near the Eastern Shore of Virginia National Wildlife Refuge. More than 100 ospreys sail over the mouth of the Chesapeake during many of these “flight days” along with numerous other raptors ranging in size from bald eagles to kestrels.

Threats to Survival

Although ospreys are now a common sight on the Chesapeake Bay, two to three decades ago they faced extinction along much of the Atlantic coast. For years, osprey production was down because of egg failures caused by extremely thin and easily broken eggshells. This eggshell thinning was caused by DDT—a pesticide that had been in heavy use since World War II for spraying mosquitoes and crop pests. DDT was banned from use in the U.S. in the early 1970s and the osprey and some other affected birds of prey have made remarkable recoveries.

The construction of thousands of artificial nest platforms has also benefited the osprey. However, intensive human development along shorelines still can harm the aquatic environment upon which ospreys depend.

Some areas of the Bay are low in fish abundance and cannot support highly productive osprey colonies. The osprey's high visibility and position at the top of the aquatic food chain make it a valuable indicator species for detecting future habitat destruction, dwindling fish populations, and contamination of the environment.

Source: U.S. Fish & Wildlife Service (www.fws.gov).





For the past several years, Cardano has seen well over a hundred active nests on the river. And though the Chesapeake Bay is “a shadow of its former self,” Cardano said, “the ospreys tell a tale of resilience for the ecosystem.”

“Sitting at the top of the food chain, ospreys are good environmental barometers,” he explained. “If there’s something wrong with the ecosystem, it will usually be reflected in the top predators.”

The fate of the ospreys is tightly woven with the fate of the entire Chesapeake, he says. “They’re environmental barometers. Ospreys are at the top of the food chain. If there’s anything wrong with the environment, it usually is evident in the top predators.” Band recovery and nest site plotting data has allowed Cardano and other researchers to build a picture of the overall health of the osprey population.

The birds also serve as a report card for Pax River’s environmental programs. “Steve’s study is very unusual and very important,” Swift said. “In his data, we see the long term effects of what we’ve done to try to help the ospreys or to benefit the environment in general.”

Eventually, the adolescent ospreys of the Patuxent River will take flight. The mother of one brood will lead her children from the nest to a nearby salt pond, which happens to be on executive director Smith’s property. Every year the ritual is the same, as osprey parents and fledglings use this sheltered spot for what Smith describes as

flight training. “When I go home and I look at my chicks,” he said paternally, “I know that they are here at least in part because we are doing something right.” 📍

Photos by James Darcy.

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