Bringing Back the Birds

Protecting and restoring feathered populations and their habitats

By TINA ADLER

Across the United States, birds are either getting killed or pushed out of their preferred habitats by, among others, vacationers building summer homes or just jogging along the beach, loggers shaping forests to their liking, and tanker captains accidentally spilling their cargo along shorelines.

Today, instead of thousands of the common seabirds called murres nesting on Devil's Slide Rock near San Francisco, just a few do. Only one-fifth to one-fourth as many tern fledglings forage along New Jersey's shores as foraged there 100 years ago. About half of the favorite stomping grounds of many birds on the Cape May, N.J., coast have been developed. The Mexican spotted owl has lost so much of its homeland to loggers and fires that the U.S. government considers the bird threatened. Hundreds of thousands of birds died as a result of the *Exxon Valdez* oil spill in March 1989.

To counter such losses, researchers are refining their techniques for improving and protecting bird habitats. The key to such efforts, they say, isn't anything fancy. Mainly, it's a matter of keeping humans out of the birds' way. In many cases, restoration also involves learning in detail what birds live where and what they need to survive.

Thanks to the new conservation research, state and federal laws safeguarding wildlife, multi-million-dollar legal settlements, and the patient efforts of bird lovers, some birds are having their old homes restored or protected from demolition.

Too many hot and weary city and suburban residents, Cape May's huge Victorian homes, open beaches, and quiet atmosphere provide a refuge.

The area serves the same function every year for vast numbers of tired, hungry migrating birds, including at least 15 different raptor species. That's the largest and most diverse group of migrant birds landing in any one spot in North America. "There is no one who has a number of how many birds come to Cape May.... All I can say is I've never seen anything like this place," says Peter Dunne of the New Jersey Audubon Society's Cape May Bird Observatory.

However, development on Cape May is quickly encroaching on the birds' territory, and as a result, their numbers have declined, says Lawrence J. Niles of the New Jersey Department of Environmental Protection (DEP) in Woodbine. For example, only about 20,000 sharp-shinned hawks now grace the peninsula, down from about 60,000 in 1984, according to a recent count by members of the New Jersey Audubon Society. The number of hawks reached a low of 10,000 in 1991.

In the mid-1980s, before intensive research on the Cape's populations began, scientists had little data on how birds use the peninsula, Niles explains. They thought the birds might just stop over briefly, with little concern about where they landed, like tourists checking in at a motel along the interstate.

Recently completed DEP studies reveal that many feathered guests stay for at least a few days, longer if they need fattening up. Also, they care a lot about where they camp. Many raptors prefer deep forests, and they choose upland over wetland woods.

About half of the birds visiting Cape May stay on the lower 10 kilometers of the 30-kilometer-long peninsula. Since 1972, however, more than 50 percent of this section has been developed.

Private conservation groups, DEP, and others have begun a project to protect their winged tourists—and the business they generate. Conservationists met in May with local planning board officials, developers, and tourist industry representatives who appreciate the animals' ability to attract bill-paying birdwatchers.

The need to protect the birds' homes "was a message that resonated for them," Niles says, and many agreed to support the conservationists' plans, which focus on slowing development.

People pose a big threat to endangered shorebirds elsewhere on the New Jersey coast, researchers find. Human intruders include not just developers building homes, hotels, and highways, but the seemingly benign joggers and playful children who unknowingly trample eggs and scare fledglings.

Least terns are on the endangered species list of many states, including New Jersey, where their numbers have dropped from roughly 8,000 at the turn of the century to between 1,700 and 2,000.

Another migratory shorebird, the piping plover, has made it to the federal endangered species list. New Jersey has only about 135 pairs of plovers, up from about 100 pairs a decade ago but far fewer than the 1,000 or so couples that once dotted the beaches, Joanna Burger of Rutgers University in Piscataway, N.J., writes in *A Naturalist Along the Jersey Shore* (1996, Rutgers University Press).

Least terns and piping plovers are small birds that lay their eggs on beaches having little vegetation, explains Burger, who has set up protected areas for them throughout the state. The birds take shelter from wind and sun behind shells and driftwood. The least terns dive for fish in the ocean. Plovers forage for their meals of invertebrates by running along the water's edge.

Throughout the world, terns live in colonies of 30 to 300 pairs. Like some bar-goers, they are only willing to hang out in places hopping with their own kind. To attract terns to a new area, Burger sets out decoys and plays their nesting calls, a ploy now used often in bird restoration projects. Burger, Dave Jenkins of DEP, and their colleagues frequently fence tern colonies from May through July to keep people and predators out while the young birds are maturing.

Piping plovers prove more difficult to attract and protect; they aren't social, and decoys fail to lure them. Also, they nest about 100 meters apart from each other, making fencing impractical. So Burger relies primarily on educating people about the importance of giving the birds the space and quiet they need to survive.

Both species have fairly good hatching rates, thanks to protective parents. Terns dive-bomb any intruders that enter their colonies. Plovers feign injury and hobble away from their nests so a perceived predator will follow them. When they have led the threat sufficiently astray, they fly back to their young.

The parents have less success safeguarding the fledglings, which suffer high

death rates. Young plovers forage near their parents, but when vehicles, joggers, or even night fishermen come by, the juveniles scatter and often get separated from the adults. The parents must round them up, and everyone loses valuable foraging time, Burger explains. Moreover, a gull or other predator often finds the babies before the parents do.

Many birds, including shorebirds, suffer from lead poisoning. Burger finds high concentrations of lead in the blood of least terns but has not yet tested plovers. The lead impairs the fledglings' ability to learn such important lessons as seeking out shade when it's hot, Burger's recent laboratory studies show. Lead-contaminated birds also have difficulty recognizing their parents, so they wander off frequently.

While beach lovers threaten shorebirds' seaside resorts, timber harvesting has until recently posed a serious risk to the habitat of Mexican spotted owls in the United States. Left unchecked, logging would have severely reduced the owls' territory, contends Jim Dick of the U.S. Forest Service in Albuquerque.

However, the federal government in 1993 listed the bird as a threatened species. That presented forest scientists with a challenge: creating stands that keep the owls alive and the loggers in business.

This southwestern relative of the more famous northern spotted owl likes to live in fairly dense stands of conifers, particularly firs or a mixture of ponderosa pine and oak. The bird prefers forests with trees of different sizes.

These conditions make most foresters cringe.

They generally space trees widely, to make it easy for new ones to grow and difficult for diseases and insects to spread. Trees of varying heights growing near each other act as ladders, enabling otherwise benign ground fires to climb to the treetops and engulf an entire forest, explains Carl E. Fiedler of the University of Montana in Missoula.

Nevertheless, federal agencies in December 1995 implemented a new forest management plan that addresses the needs of owls and loggers alike. It applies to Utah, Colorado, Arizona, and New Mexico, where most of the United States' roughly 2,000 Mexican spotted owl pairs reside.

The plan prohibits most logging on the 600 acres surrounding each owl nest, which doesn't quite cover the far-ranging animals' foraging areas, notes Dick. In woods where no owls now live, 10 percent of the pine-oak forests and 25 percent of the mixed conifer forests must remain unlogged, except when logging would make the land more suitable for the owls.

The new plan also endorses an approach proposed by Fiedler and Jack F. Cully Jr. of Kansas State University in Manhattan in the October 1995 WESTERN JOURNAL OF APPLIED FORESTRY. It calls for slightly less dense stands than the government's new prescription, so both loggers and owls can use the same land, the authors explain. Their plan is particularly well suited for restoring the health of sickly logging sites, they argue.

What Fiedler and Cully "propose is great in terms of starting [owl] habitat," says Dick. He adds, however, that sites using their method need monitoring to see if the owls tolerate the lower tree density. "It would be neat if it did work."

As a result of an oil spill and net fishing, the population of common murres on Devil's Slide Rock near San Francisco slid from the thousands to zero. In January, conservationists began to use decoys, mirrors, and recordings of other murres to attract these social birds back to the rock. By July, at least six pairs were nesting there with their chicks.

Compared to conservationists working with government grants and private funding, researchers trying to restore bird populations that suffered when the *Exxon Valdez* tanker spilled oil in the Prince William Sound in Alaska (SN: 2/20/93, p. 126) have it easy. They can dip into a $900 million pot provided by Exxon as part of a legal settlement for restoring the natural resources injured in the spill, explains Craig S. Harrison, an attorney with Hunton & Williams in Washington, D.C., who represents the nonprofit Pacific Seabird Group.

The size of the problem they face is daunting, however. State and federal agencies determined that between 260,000 and 580,000 seabirds died in the spill, Harrison says, adding that those numbers are controversial.

The species that have not yet recovered from the spill and need watching are common murres, pigeon guillemots, marbled murrelets, Kittlitz's murrelets, and pelagic cormorants, says Kenneth I. Warheit of the Washington Department of Fish and Wildlife in Olympia.

Alaskan conservationists, however, are still trying to figure out just how many birds died from the spill. No data exist on which seabird population or geographic region the spill harmed most, according to a draft report prepared by an international team of about 50 scientists organized by the Pacific Seabird Group. They met last fall to discuss how to restore the birds' numbers.

The report is being prepared for the *Exxon Valdez* Oil Spill Trustee Council, which oversees all spill-related restoration activities. The council has responded well to their recommendations, says Warheit, who serves as restoration coordinator for the Pacific Seabird Group.

The scientists outline criteria for determining which populations the spill may have injured and which may need human assistance to return to their former numbers. They recommend that researchers identify different bird populations by analyzing their genetic makeup and monitor the reproductive success of representative colonies.

Researchers define a bird population as a group of individuals that breed together. They often return every year to the same area and exhibit similar behaviors.

Currently, the council's mission statement restricts restoration activities to populations that live where the oil actually reached. This excludes the many migrants injured by the spill that no longer nest in the area, the report asserts. Colonies outside the spill zone need boosting because they can serve as a source of new residents within the polluted area.

Generally, restoration efforts with the highest success rates focus on preventing the death of adult birds rather than on saving fledglings or eggs, the report states. Also, efforts almost always focus on reducing the direct and indirect effects of people. In Alaska, colony restoration may require preventing seabirds from dying in fishing nets, as well as controlling nonnative predators that people have introduced, the authors explain.

"Hands-on manipulation of seabird population demographics," such as rearing animals in captivity and moving them to the wild, generally have a poor success rate, they assert.

Few long-term bird restoration projects exist, because they pose many problems for researchers, says Stephen W. Kress of the National Audubon Society in Ithaca, N.Y. The scientists have little control over many factors that can make or break a bird population, such as a sudden drop in the food supply. Even a long bout of foggy weather can reduce the amount of food the birds can find.

On their travels, birds encounter many dangers that the scientists can't change, including contaminated food and harmful pesticides.

A final risk of expending effort to bring back the freewheeling birds: "A researcher's whole project may get up and fly off," laments Kress. □