

PHOTO BY EVERETT BUTLER, ARBC.



MILITARY MACAWS

in Guatemala

It's the day after the Day of the Dead in Guatemala's western highlands. The maize harvest is mostly over, and colorful little knots of Mayan children are celebrating their leisure with small, hand-made kites. They have the same motivations as kite-flying kids anywhere: to make the wind a playmate, to loft their ambitious constructions, to leash the elements.

During yesterday's celebrations their parents flew huge fanciful kites over the tombs of ancestors. When they felt the spirits tug on the string, the kite was released to the sky. Communication across the mortal gulf. Mission accomplished.

Now, at sunrise on November 2, 1991, a group of American and Guatemalan biologists is huddled at the foot of Santa Maria volcano. They are about to cast their collective aspirations to the chill winds. They, too, hope to connect with ancestral spirits.

Behind the biologists, eleven Military Macaws croak and groan on their perches in a large enclosure. Macaws seem to dislike silence the way nature abhors a vacuum. They fill it with noise. They don't

**Back
where
they
belong**

*By Chris
Wille*

know that this is the day that some of them get to taste freedom. The eight birds that formed pairs during their incarceration do know that they were rudely separated from their mates the day before; plenty of reason to squawk.

In predawn light, the biologists removed a wire panel from the cage. Now they are waiting for the birds to make the next move. This morning culminates years of work by the biologists; if successful, it will close a 100-year gap in the ecological history of Guatemala.

In the 1870s, a French ornithologist, Adolphe Boucard, reported seeing Military Macaws in western Guatemala. His claim was widely doubted and even ridiculed because he reported

the birds nesting on cliffs, when everybody knew that macaws nest in tree cavities. His was the last official sighting of *Ara militaris mexicana* in Guatemala.

The species once ranged from northern Mexico to Argentina. At present, Military Macaws have a curious distribution, leapfrogging Central America to reappear in Colombia. This particular race is now found only in Mexico, but still on both coasts and

in numbers that one ornithologist described as "holding on, but not safe."

Quite a few Military Macaws are in captivity, especially lone individuals in resort hotels on Mexico's Pacific coast, but, because they are not as brightly painted as other macaws, and because of their poor cage manners, militaries are not so persecuted by the live-bird trade.

It is the only large macaw species that regularly ventures into the highlands (up to at least 2,500 meters). This high living and the fact that it does, as Boucard reported, frequently nest on cliffs, may also make the military less appealing to poachers.

Several species of macaws once ranged widely from Mexico down through the Central American isthmus; all are now greatly reduced. In Guatemala, Scarlet Macaws were last seen on the west side in the late 1960s. By the 1970s, they were gone from almost the entire Pacific Coast, winking out in El Salvador first, then Honduras, Mexico, and Nicaragua. Remnant populations of Scarlets hang on in Costa Rica's west side parks and in Panama.

The Great Green or Buffon's Macaw (*Ara ambigua*) survives in

remaining forests on the Caribbean slope of Costa Rica, Nicaragua, Honduras, and Panama. Some ornithologists believe that this bird is a long-separated subspecies of the Military Macaw. In all, there is an unhealthy dearth of macaw noise in Central America.

The biologists hunkered this morning on the slopes of Santa Maria aim to remedy that unseemly calm, at least in this one valley just a few minutes drive south of Quetzaltenango, Guatemala's second-largest city. The hope is that these eleven captive-bred birds will colonize the valley and establish a stable breeding population.

It's a gamble. Very little is known about "hacking" parrots. There have been only two other scientifically designed attempts to reintroduce psittacines into their native habitat. The United States Fish and Wildlife Service and cooperating state and federal agencies are trying to rebuild the wild population of Puerto Rican Parrots, now down to an estimated 30 birds. A similar consortium, again led by the feds, is releasing Thick-billed Parrots into historically recorded range in Arizona.

This is the first attempt to reestab-

lish macaws. It was designed and financed by two men from different generations, different backgrounds, different ideologies. They share a vast knowledge and love of birds and something else: they are both accustomed to winning.

Richard Schubot is the owner of the Avicultural Breeding and Research Center in Loxahatchee, Florida, and a part-owner of Parrot Jungle in Miami, one of the oldest and most experienced private bird zoos in the country. Schubot is not a biologist. He retired wealthy after a "lifetime of 12-hour days" managing hotels and McDonalds restaurants.

Nine years ago, Schubot says, "I went out to buy my wife a finch, because she wanted a bird, and someone told her finches were quiet. I bought a cockatoo, instead. I spent a lot of money on that cockatoo, because some vet told me it had 'pigeon malaria.' I never found out what 'pigeon malaria' was. Still don't know."

Warming to the recollection the way he warmed to birds, Schubot recalls: "Then I bought a rose cockatoo. Then I went to California and bought 300 parrots."

Like most of us, Schubot didn't have room in his home for 300 parrots, but, unlike most of us, he could do something about it. He quickly bought some land outside of Loxahatchee and built pens overnight.

Now Schubot's avicultural center covers 40 acres, houses 700 birds, and employs 30 technicians and a



The Military Macaws were kept in a large pen specially designed to develop their flight muscles and to acclimate the birds to the Guatemalan climate. Most of the birds formed pairs, and only one bird from each pair was released. As the biologists hoped, the liberated birds returned to their mates at night.

veterinarian. He breeds eight species of macaws and 16 species of cockatoos. He is the world's foremost breeder of the Black Palm Cockatoo.

His center is one of the most sophisticated anywhere. The nursery alone is 17 rooms and 5,000 square feet; there are two rooms just to clean and dry feeding syringes. There is a deluxe kitchen with microwaves and a walk-in refrigerator. Cages are cleaned by dunking them into 500-gallon tanks of disinfectant. His medical lab can produce blood-test results from a sick bird in 40 minutes.

Schubot breeds and sells birds, but he's not running a pet shop. Customers come with references and must agree to his terms, which include a promise of giving the bird two to three hours of "quality playtime" every day.

The birds require social interaction, Schubot says, and you have to spend time with them, "even if it's only watching television together."

At the moment, Schubot reports, the Umbrella (Great White) Cockatoo, Salmon-crested Cockatoo, and Blue-and-gold Macaw are the most sought-after pets. The United States parrot trade is major, estimated by the World Wildlife Fund to involve about \$300 million in annual retail sales. A flamboyant and lovable cockatoo or macaw can fetch thousands of dollars. But Schubot, the retired businessman, says he is not in this business to make money. He claims to be losing \$1 million a year at the Avicultural Breeding and Research Center, "which I don't like, but it's got to be done."

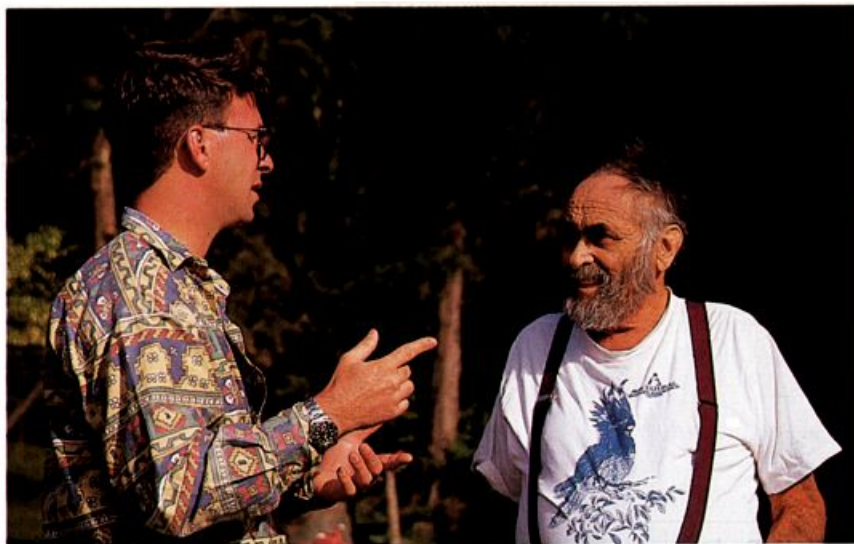
Schubot knows that at least 77 of the world's 332 parrot species are threatened or endangered. He knows that habitat destruction is the main culprit, but that the developed nations' insatiable appetite for flashy feathered pets is contributing to the decline of many species.

The former hotel and hamburger magnate wants to give something

back to the birds. He donated a million dollars to Texas A&M for a program in avicultural research. His center is contributing birds and expertise to the Thick-billed Parrot reintroduction campaign. He is working with the Indonesian government to breed and reintroduce the endangered Rothschild's Myna. And he is supporting this Guatemalan experi-

for the curtain to go up. The cage has been open for an hour, but the macaws haven't budged from their perches. They're emitting those morning noises that make parrot owners so unpopular in suburban neighborhoods.

If you start asking questions about conservation or ecology in Guatemala, you will soon be directed to Jay



Jay Vannini, left, and Richard Schubot, businessmen biologists with a great love of birds and a taste for success.

ment with Military Macaws.

The other two psittacine reintroduction programs—with Thick-billed Parrots and Puerto Rican Parrots—have had mixed results at best. Schubot fervently hopes for success with the Military Macaws to "show what we can do, to prove the value of our knowledge." His very presence this morning at the release site is evidence of his interest in the new project; with delicate health complicated by a borrowed liver, Schubot is risking his life. At 1,600 meters, the air is thin and he is far from medical care.

But Schubot wouldn't miss this moment, nor would his partner in this ecological enterprise, Jay Vannini. The rising sun is blocked by the green shoulder of neighboring Santo Tomas Pecul volcano, and the dawn light is gathering slowly. Even though there's nothing to do but shiver and wait, Vannini bounces from one thing to another; a nervous director waiting

Vannini's top-floor office in a glass tower in Guatemala City. Vannini didn't set out to be a focal point in Guatemala's eco-politics. Like Schubot, he's a businessman, involved in the production and export of coffee, cardamom, and macadamia. He's done well in the unforgiving and risky commodities trade because he investigates for himself every causality, from the pH of the soils on his farms to the credit references of the sheik who buys a boatload of his cardamom. He doesn't follow the pack, and he doesn't believe everything people tell him.

These same traits have made Vannini an important force in Central American conservation. With little formal training in biology, he is an authority on Guatemala's reptiles and amphibians. He has helped identify new species and new distributions of lizards, snakes, and frogs. As a child in Dallas, he developed a fondness for

snakes and kept a study collection of strikingly venomous serpents for 28 years, recently abdicating the hobby because he, his wife, and their 15-year old daughter were all getting jumpy around the house.

Vannini formed and initially



While in the holding pen, the macaws were given fruits and seeds from the surrounding forest so that they would know what to look for in the wild.

funded the Fundación Interamericana de Investigación Tropical (Inter-American Foundation for Tropical Research). Under this umbrella, Vannini and a loose collection of Guatemalan and North American scientists conduct field investigations, publish, and support conservation programs. Many of these efforts are promising enough to win the backing of prestigious international agencies. The macaw project, for example, is partially supported by the World Wildlife Fund.

The foundation selects promising biology students from Guatemala's national university and gives them field experience and an opportunity to work with leading national and foreign scientists. Two of these biologists-in-training, Luis Gaitán and Jorge López, are involved in the macaw release and are now huddled with the group on the hillside.

Vannini attended a boy's school in England and still would not look out of place on a squash court. He fooled with college for a while in California and moved to Guatemala 16 years ago. He can quote with equal enthusiasm from Mencken or P. J. O'Rourke. He has a novel in progress

about the Mayan underworld. He seems to know the name of every living thing in English, Spanish, and Latin, and has the remarkable ability to always be right without being annoying.

Maria José Gonzales, the director of Guatemala's upstart wildlife department and a supporter of the macaw reintroduction says of Vannini, "He not only knows the answers, he can cite references."

This is not the foundation's only experience with hacking birds. The Guatemalans, in conjunction with the Peregrine Fund, were the first to breed and release Bat Falcons. And they were the

first to breed, hack, and radio-track Spectacled Owls. But, since nobody has tried this before with macaws, nobody knows what will happen.

Every attempt has been made to ease the birds' transition from captivity to freedom. They have been in this flight cage for six months, acclimating and learning to eat local wild foods. The birds, representing six bloodlines, are the progeny of wild Military Macaws from Mexico. They were hatched at Schubot's avicultural facility. In fact, the man who helped them pip their shells, Trent Swigert, is here to see their graduation, along with Kevin Clubb, the curator of the avicultural center.

This pilot project was especially designed to reduce risks and maximize opportunities to learn as much as possible, Clubb says.

The holding pen itself is one innovation. It is large, 10 by 20 meters, and irregularly shaped. There is a one-meter trough in the roof so that

birds cannot glide along the ceiling from the high perches to the food box. This forces them to exercise their wing muscles. Native trees grow within the cage.

Vannini chose the release site for its semi-protected forest cover and its location halfway between the last historical sighting of Military Macaws in Guatemala and the Chiapas area of Mexico. The present range of the birds extends over both slopes of Mexico's Sierra del Madre in the state of Chiapas and stops at the Guatemala border. Biologists with Conservation International have reportedly seen Military Macaws in Mexico's exuberant southernmost rainforest, the Selva Lacandona, a biosphere reserve and one of the group's priority "biodiversity hotspots."

The open door of the flight pen looks down on a ravine defined by the Rio Samalá and a highway, and cradles the village of Santa María de Jesús. Across the valley is the darkly forested western slope of Santo Tomas Pecul volcano. This ravine, Vannini says, probably has the same exposure, alti-



Guatemalan biologists Luis Gaitán, left, and Jorge López, right, explained the program to residents of local villages, most of whom had never seen a free-flying macaw.

tude and ecotones of the spot where Adolphe Boucard reported nesting Military Macaws back in 1877.

The biologists hoped that the macaws would develop a social hierarchy in the pen, and they were not disappointed. The alpha pair is a three-year-old male and the oldest bird, a four-year-old hen. Three other

pairs formed and found their place in the pecking and preening order.

The pair bond between macaws, Clubb says, is one of the strongest in nature. The biologists had planned to take advantage of this fidelity by carefully clipping the primary feathers of one member of each pair. The shorn birds would then serve as magnets, keeping their freed mates from drifting out of the valley. This technique is used at Parrot Jungle and other facilities where some birds are allowed to fly free.

The plan, Vannini says, was to wait a few days until the liberated birds had established "site fidelity" and then surgically reinstall the clipped flight feathers of the others. This operation, called "impeding," is used by falconers to repair damaged pinions. But in discussing this formula with Robert Berry of the Peregrine Fund, the biologists hit upon the simpler idea of splitting the pairs with a fence.

Now the birds spend a lot of time at the partition, billing with their mates through the fence like spouses at the jailhouse gate. Even now, on the morning of the great escape, the macaws are ignoring the gaping hole in the wire and paying no attention to the gaggle of biologists shivering in the dawn breeze. Instead, they are watching their mates and creaking like the hinges on a dungeon door.

Except for Vannini, all the naturalists decide to wander down the mountain in search of coffee. Suddenly, the sun, which had been slowly climbing the backside of Santo Tomas, reaches the summit and shoots a golden arrow across the valley, hitting precisely the peak of Santa



The acclimation center was situated on a hillside between two volcanos in an area much like the one where Military Macaws were last seen in Guatemala, more than 100 years ago. For months, the birds were kept in this cage, which was specially designed to develop their flight skills.

Maria. The valley fills with warm light. The observers immediately turn back toward the flight cage. The photographers ratchet down their f-stop rings. The macaws turn up the volume. And then, as if they had been discussing it all along, three macaws leave the perch and fly directly through the open door.

As they spread their wings for the first time in unfettered spaces, the angled sun transforms the military green of their feathers into triumphant, glittering emerald. Their first deep wingbeats reveal flight feathers of remarkable blue. They are suddenly creatures of color and glory. In seconds they are far over the valley, flying heavily, each crosswind taking them by surprise. The penned birds

are shrieking what might be encouragement. The biologists are speechless. One bird hesitates at the gate and then it, too, launches itself into the new world.

A macaw circles back toward the cage and crash-lands in a nearby pine tree. A caretaker rushes over to find it hanging upside down by one talon, the way parrots do, looking bemused. Vannini is watching a bird that has flown nearly up the face of the volcano across the valley. It is circling, fighting air currents, and growing smaller in the binoculars. Vannini is pleading with the macaw under his breath, begging it to turn back. He is tugging at an invisible kite string. But it's too late. The ancient ones have this bird.

"He'll be back," Vannini says confidently, scanning the ridge over which the macaw disappeared.

Flocks of Green Conures speed overhead. Eastern Bluebirds land on the fence. The parrot-lovers eye the conures but ignore the bluebirds and other songbirds, which they call "softbills" in a tone approaching disdain.

Even though she is near the open door, the alpha female elects to stay behind with her mate, choosing fidelity over freedom. Occasionally, one of the macaws circles back over the flight cage. The naturalists look on with the satisfaction of parents watching a child remove her bicycle's training wheels.

Gaitán and López descend to the village to spread the word that the macaws are on the loose. The support of the local people is essential, and the biologists have already conducted

education programs throughout the region, using one deliberately tamed macaw as a prop.

Since the Green Conures and other small parrots in the area are pests in the corn fields, some farmers were wary of hosting what they saw as giant corn eaters. The biologists explained that the macaws would feed in the forest and encouraged the locals to consider them a source of pride, a living souvenir of their natural ancestral heritage.

The first rule of wildlife reintroductions might be: Do no harm. One risk is the introduction of disease. There are two species of Amazona parrots in the area in addition to the Green Conures. To prevent spreading infectious disease or parasites to these wild birds, the Military Macaws were carefully examined and inoculated.

"We wanted to protect wild birds and give these guys every chance," says Kevin Clubb. "They have a lot to learn right away. Fortunately, they are smart, and there are no competitors here."

No competitors, perhaps, but plenty of predators. Jack Clinton-Eitniear, director of the Center for the Study of Tropical Birds in San Antonio, Texas, reports that predators have been a problem with the reintroduction of Thick-billed Parrots in Arizona. It's unfortunate, he says, that the macaws will have no wild birds to coach them in predator response.

"Jay's birds will have to learn about predators by watching someone among them be sacrificed," Clinton-Eitniear says.

Although Clinton-Eitniear was one of the first advocates of the macaw release, he doubts that it will result in a breeding population. "I'm no geneticist," he says, "but I would guess that you would have to release several hundred macaws to keep pace with all the mortality and create a viable population. He'll never get that many birds from the commercial breeders."

The flock size needed to establish

a population is one of the question marks that shadows this project. There are small isolated populations in Central America that seem to be stable. Vannini believes that there are only 30 to 40 Scarlet Macaws left in Belize, and some of the flocks surviv-



Free! The liberated birds immediately tested their wings over the valley. The training in captivity paid off: although they were clumsy at first, the macaws flew strongly.

ing in Costa Rica may be even smaller. If large flocks are necessary to sustain a species of macaws, we can already say good-bye to the Spix's, Lear's, and Buffon's macaws, which exist in limited numbers.

Nevertheless, the question of flock size raises another issue that is sensitive within groups like the one happily watching the Military Macaws flapping over the valley of Santa María de Jesús: How much can commercial breeders, even large-scale breeders such as Schubot, really do to help stop the decline in birds favored as pets?

Many environmentalists look askance at caged birds. Kevin Clubb admits: "Aviculturists call themselves conservationists because they are 'saving birds for the future' and reducing pressure on wild populations by supplying the pet trade. But in the eyes of many conservationists, we are still just consumers of wild birds."

Clubb, Schubot, and other aviculturists hope that experiments such as this macaw infusion will prove that they can be part of the solution. The Military Macaws cost Schubot about

\$500 each to grow and ship; he is willing to put another dozen or so into the project.

Vannini prides himself in being an iconoclast. He enjoys lampooning the scientific establishment by, for example, rediscovering species that

scientists have declared locally extinct (he calls this "snark hunting"). At the same time, he strives to build bridges between factions, such as aviculturists and research biologists, who are sometimes coming at conservation from opposite directions. Perhaps this is because he lives in a society that demonstrates the brutal, dead-end result of

unchecked polarization.

Guatemala has suffered a caste war for 500 years. In their frustration and bitterness, both the guerrillas and the army have achieved a level of violence that Amnesty International rates as one of the worst in the world. In this atmosphere, normally contentious conservationists have little appetite for choosing sides. Vannini is fully aware, for example, of the debate over whether saving single species is futile in the face of full-scale ecosystem destruction. But he does not play into the arguments over ecological ideology.

Conservation, he says, is like business: A mindset framed in desperation and hopelessness automatically puts you at a disadvantage. Schubot, the other half of this ornithological odd couple, agrees. When your business is in trouble, he notes, you have to call on an uninvolved outsider to clear the books. To succeed at conservation or business, these winners agree, set clear, dispassionate objectives and achieve them. Get tangible results. Then set new objectives.

The objective of this particular project was to see Military Macaws flying free over Guatemala's western highlands and to learn as much as possible in the process. Mission accomplished.

By mid-afternoon on Liberation Day, two of the macaws are near the holding pen, staggering around on exhausted wings. The alpha female is still inside, gossiping with her mate through the wire partition. Two birds have flown the coop and are missing. Leaving one young biologist at the site, the rest of the group sets out for Guatemala City.

Vannini turns off the main road to follow a dusty track through the patchwork of agriculture that dominates the highlands — a multihued and many-textured combination of crops that, from a distance, looks like a Mayan quilt. The Indians have farmed this land this way for 2,000 years. He stops in the courtyard of a village, San Andres Zecul, that is carved into the mountainside. A church painted van Gogh-sunflower-yellow dominates the square, but the real worshipping occurs elsewhere.

Vannini and Jorge López thread their way through the narrow cobbled labyrinth of the village until they find a dark, low-ceilinged hut with a flower- and candle-strewn stone altar at one end. After a whispered negotiation with the prayerman, Vannini buys a handful of sky-blue candles. He and the biologist carefully light them on the altar. It's a traditional offering to the Mayan god who presides over new endeavors and protects loved ones from harm.

Postscript: In March, four months after Liberation Day, the five repatriated macaws were doing "almost exactly what we had hoped," according to Jay Vannini. The one unpaired bird "dispersed," Vannini says, using an euphemism for "took off." This loner has been seen by local farmers, however, and apparently is fine. The other four birds have maintained pair

bonds with their still-incarcerated mates and return most nights to roost on the "hacking pen."

All the free and caged macaws have been weaned from prepared food and are eating seeds and fruits from the forest. In April, the six held birds will be outfitted with radio transmitters and released. Richard Schubot's Avicultural Breeding and Research Center is sending three more Military Macaws to augment the flock.

The cage-raised Thick-billed Parrots released in Arizona have been decimated by hawks, but the Guatemalan macaws seem to have an "innate flight response to predators," Vannini says. Although there are a dozen species of big raptors in the area, none of the macaws have been lost. Vannini and the other biologists have seen the macaws react with prudent alarm at the sight of both avian and terrestrial

predators. They have also learned to be wary of people, Vannini reports.

Although they would not be surprised to lose some birds, the Guatemalan conservationists and their counterparts from Florida are gaining optimism that they have restored an important component of Guatemala's natural patrimony. Meanwhile, they have developed a model that can be adapted by others who believe that the first rule of intelligent tinkering is to save all the pieces.

"We can now seriously look at restoring psittacines," Vannini says. "This puts the burden back on the zoos and private collectors, who have been saying that they can't donate birds to restoration efforts until this methodology is developed. The methodology is there, and it's time for them to begin contributing birds to reintroduction programs." ■

Keep Wild Birds Wild

We have macaws and other parrots in a double bind: we are destroying their habitat and robbing their nestlings for pets. The pet trade is especially troublesome because of the incessant poaching and the extremely high percentage of birds that perish during capture, transit and quarantine. In addition, this deadly commerce is unnecessary; most popular pet birds can be bred in captivity, eliminating the need to bleed wild populations.

The United States, with our insatiable appetite for exotic pets, imports about 500,000 birds every year. This is, of course, just the number of survivors and does not include smuggled birds. Parrots are perennial favorites in the pet trade. North American pet dealers import 250,000 parrots a year, and another 150,000 or so are smuggled across the Mexican border.

All but two of the 332 species of parrots are threatened or endangered, and about 40 species are in dire straits under the twin hammers of habitat loss and persecution by the pet industry.

While conservationists work to stem habitat loss in the long term, we

can all help reduce the number of birds lost in the pet mill. Several years ago, the World Wildlife Fund formed a "working group" to discuss this problem. The group included conservationists, aviculturists, and representatives of zoos, humane organizations, and the pet industry, who overcame ancient animosities to develop legislation to address the issue. The result was two bills introduced in Congress last year.

National Audubon Society supports the Exotic Bird Conservation Act, which would, among other things, phase out over five years the importation of wild birds by U.S. pet dealers and encourage captive breeding of birds to fulfill the legitimate demand. This legislation has been stalled in Congress because conservationists and humane groups cannot agree on the details. You could help by making your own views known to your elected representatives. For more information, contact: Jim Waltman, Wildlife Policy Analyst, National Audubon Society, 666 Pennsylvania Avenue SE, Washington, DC 20003. ■