

Audubon

03.2004

Barn Owls

The New Face
of Pest Control?

Audubon Center

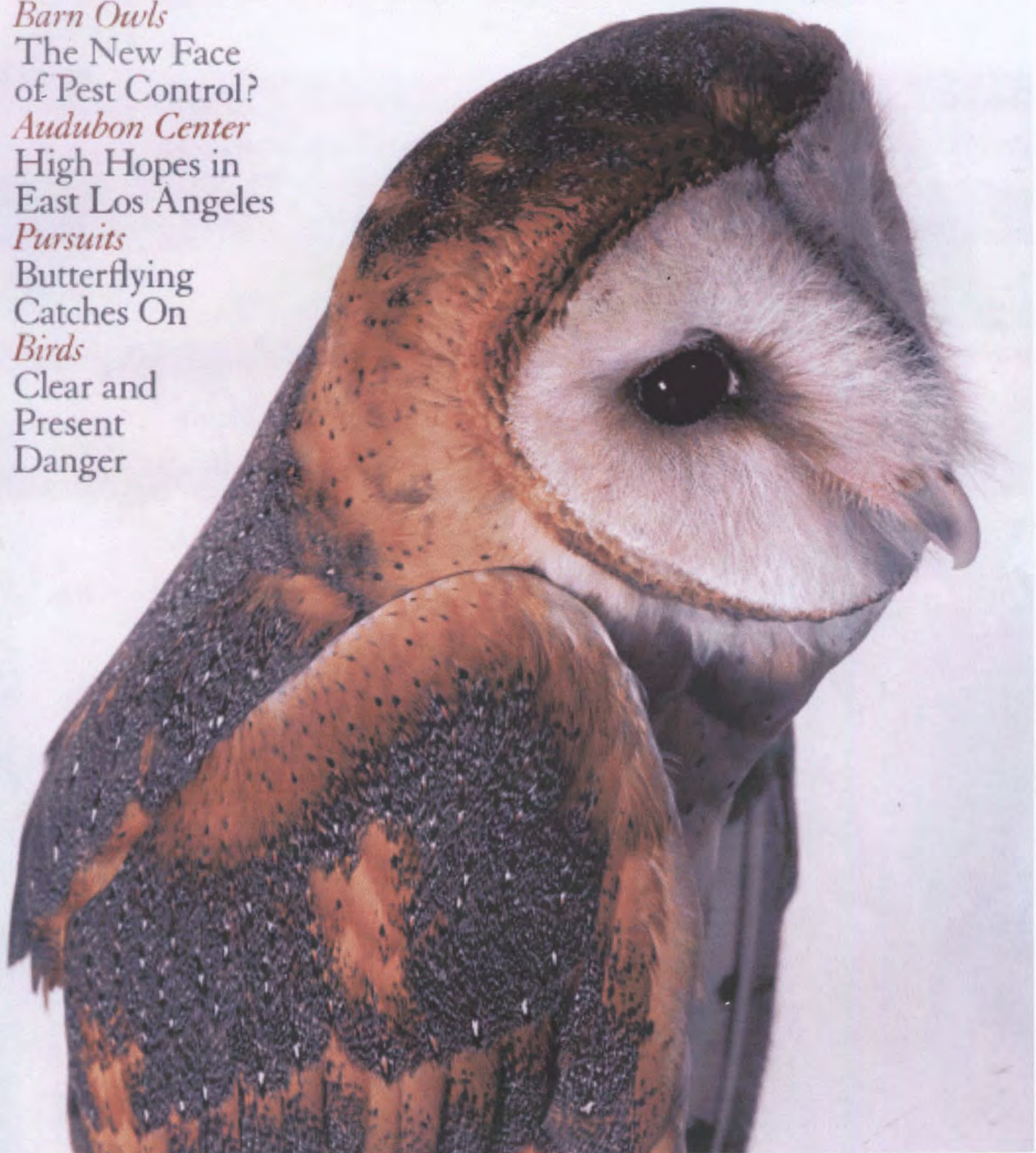
High Hopes in
East Los Angeles

Pursuits

Butterflying
Catches On

Birds

Clear and
Present
Danger





THE PROOF IS IN THE PELLET

STUDENTS IN CALIFORNIA'S CENTRAL VALLEY HAVE ALL SPOTTED EVIDENCE THAT THE BARN OWLS THEY RAISE AND RELEASE FEAST IN NEIGHBORING FIELDS—AND THAT'S JUST FINE WITH THE FARMERS. BY EATING A STEADY DIET OF GOPHERS, THE RAPTORS REDUCE THE NEED FOR POLLUTING AND COSTLY PESTICIDES.

BY KENNETH BROWER

photography by angela wyant / owl portrait by james balog

CHARLIE FORD'S SIXTH GRADERS SAT FOUR to a table, each student confronting the riddle of a barn-owl pellet. Working deftly, using straightened paper clips as probes, the students picked the pellets apart. It was forensic science, and they were solving dozens of murders. ¶ The evidence under scrutiny was gray and sausage-shaped, a bolus formed in the gizzards of owls. Like other raptors, owls shape indigestible material—bones, beaks, claws, teeth, fur, feathers, the exoskeletons of beetles—into pellets they regurgitate. Retrieve a pellet, and you have yourself a streamlined little time capsule packed with dietary information. ¶ Outside, the temperature in Clovis,



FIG. 1
Barn-Owl Pellet
(actual size)

Barn owls usually swallow their prey whole but can't digest material like fur and bones. Their gizzards form these parts into compact pellets, which the birds regurgitate several hours later. Most barn owls produce about two pellets a day; these pile up under owl boxes, proof of a voracious appetite.

on the outskirts of Fresno in California's great Central Valley, had risen to 102 degrees, but inside Redbank Elementary it was cool, and the kids worked patiently. Now and then came murmurs of appreciation as tablemates showed one another some new prize: a nearly complete gopher skull; a perfect vole jawbone; a hair-thin ulna still attached, miraculously, to its radius. Such attentiveness from sixth graders was eerie.

One wall of the classroom was a photo gallery of owls: snowy, barn, screech, great horned, great gray. The facing wall was a gallery of hawks. Birds of prey are infused throughout the curriculum. The students chart the owls' growth rates in math class, write raptor essays in English, focus on the birds in science. Visiting lecturers introduce the students to great horned owls, kestrels, red-tailed hawks, and golden eagles.

I asked Ford whether his sixth graders ever failed to catch the raptor bug.

"No," he said. "There's not a kid that goes through the program that won't be touched somehow by a live bird of prey. It magnetizes them."

"I got the whole thing," a boy I'll call Peter announced, a little too loud. He held up a mouse femur he had just extracted from his pellet.

"He's been my tough nut this year," Ford told me thoughtfully. "He's a kid who used to take his gun and blow birds away. 'Shot eight hawks! Shoot 'em all the time,' he'd tell me. He doesn't say that anymore. What he says now is, 'Mr. Ford, I saw a red-shoulder the other day.'"

Peter set down his scalpel—the straightened paper clip—and held up his owl pellet, admiring it as a connoisseur might admire the red in a glass of wine. "If I ever go back

to juvenile hall, send me a couple of these things," he said.

The students have ample opportunity to appreciate pellets, as well as the raptors themselves. They and students at neighboring Tenaya Middle School—120 in all—raise orphaned barn owls right in their classrooms. The 12-year-old program is the only one in the country with the federal license required to do so. The Fresno Wildlife Rehabilitation Center provides the owlets, and the students provide the daily care. When the birds are ready to fly, they test their wings and hunting skills in the school's custom-built flight cage and then are banded and released.

A study of barn-owl nest boxes up and down the Central Valley confirms what the students have already discovered by dissecting owl pellets: Pocket gophers, which tear up agricultural fields and girdle crop trees, causing millions of dollars in damage, make up two-thirds of the barn owls' diet. When the students began releasing owls, neighboring farmers began erecting nest boxes, and now everyone from weekend growers with five acres of land to corporate farms with thousands of acres have boxes in their fields.

The strategy is an example of integrated pest management (IPM), a movement to reduce pesticides in the environment by using more ecologically sound techniques. Barn owls lessen the need for alternative methods of controlling gophers, such as baiting, trapping, fumigating, or simply flooding them out. This, in turn, reduces the risk of poisoning scavengers, like coyotes or birds, which may prey upon the dying gophers, and also the odds of secondarily harming humans—for instance, by improperly using a toxic gas. Because barn owls work 365 nights a year, they also reduce the amount of human labor.

"We had three or four people full-time doing anything and everything to try and take care of gophers and replace the trees that they're eating," says Gary Smith, owner of Professional Ag Resources Inc., a company that looks after agricultural property for absentee owners. "Now we're down to just one guy a couple days a month."



FIG. 3

The contents of barn-owl pellets reveal exactly what these birds are eating. It's reassuring news for farmers: The delicate bones of pocket gophers are a common discovery.

THE STEEL OUTER DOOR OF THE AVIARY OPENED to an inner door. The little atrium between served as a kind of pressure lock, separating the captivity within from the freedom without. DO NOT OPEN DOOR, WILD OWLS INSIDE, a sign warned.

Ford and I entered. The floor was a drip painting à la Jackson Pollock, executed in white owl guano on gray concrete. The room was long and narrow, about 24 feet by 8 feet. Its close air was sharp with that parched, alkaline, guaniferous odor you smell in any bird colony. Toward the back, from a horizontal perching pole that ran the width of the room, a row of young barn owls stared.

There was something un-owlish about them. Most owls—the typical owls—belong in the big family Strigidae. Barn owls belong to a small family—Tytonidae. Barn owls are slimmer than their strigid cousins, and their facial disks are long and heart-shaped as opposed to circular. The barn owl looks like a typical owl elongated in a fun house mirror.

As Ford stepped toward the birds, they emitted a loud, collective hiss. "Like an air compressor," he observed. More



FIGS. 4 THROUGH 6

Like the sixth graders at Redbank, seventh graders at Tenaya Middle School in Fresno become quickly absorbed teasing apart owl pellets for undigested finds. Top right: Science teacher Dennis Christiansen often uses Rosie, an 11-year-old barn owl, to illustrate how these birds are uniquely adapted to be such master predators.

like angry root beer, I would have said. Against this chorus I heard solo warnings—the muted click and clomp of beaks. The more combative of the owlets made themselves big. Each formed a *W* with its wings, tilted the top surfaces toward us, dropped its chin to its feet, and swung its head from side to side, glaring balefully. “It’s called toe dusting,” Ford said.

One owl, lifting off the perch, spread its wings. They seemed nearly to span the room. (The bodies of barn owls are just midsize, yet they have a large wingspan, three and a half feet across.) The bird flew close overhead. On its return flight, I felt the wind of its wing strokes on my neck. Had this been a great horned owl, I would have suffered lacerations. Barn owls can be farmer-friendly in more ways than one.

CATHY GARNER’S CELL PHONE RANG. I WAS IN A van with the energetic founder and prime mover of the Fresno Wildlife Rehabilitation Center, driving toward the Sierra foothills and the Brighton Crest Golf Course and Country Club. Garner wanted to check on some barn-owl nest boxes that the golf course had put up for gopher control on its greens.

“*Man de mi corazón,*” she cried into the phone in Spanish. The caller was Angel de la Cruz. By the time he reached the sixth grade, de la Cruz had already joined a

gang. His two best friends would soon fall—one stabbed; the other shot—to gang violence. De la Cruz was luckier. He became extraordinarily knowledgeable about raptors and turned his life around, helping Fresno Wildlife to raise all kinds of animals and to speak about them in public.

“He had an edge,” Garner said after she hung up. “He wanted to be different, he wanted to be special, he wanted to feel macho. He needed the kudos. Well,” she said, pulling into Brighton Crest, “he found out he could get great kudos without having to do something illegal. He could be even more unique than they were. Because how many kids get to handle great horned owls? Now he’s the first one to graduate high school from either side of his family.” [Editor’s note: De la Cruz was killed in a car accident after this story was reported.]

A fleet of golf carts waited outside the clubhouse. Led by staffer Brent Hillen, we traveled in a three-cart convoy up the fairways. At the sixth hole, we flushed a barn owl from its box in an oak. On the seventh hole, another owl poked its head out its entry to stare. “Young bird,” said Garner. “Doesn’t have the full face yet.” At subsequent holes, we flushed more barn owls from their boxes; most of them were young birds trying out their long, pale wings. All six of the nest boxes seemed to be working. Garner was delighted.

On the 12th hole, Hillen led us to a granite outcropping

at the edge of the green. The boulders were insinuated by dead roots from the old oak that, until it had broken in February, had shaded this green. "When the groundskeepers started to drop the snag, they heard all this hissing inside," said Hillen. "They thought it was snakes. When they looked in, they saw all these eyes—seven baby owls." The homeless owlets then led the groundskeepers on a merry chase down the fairway, until they were finally captured and sent to Fresno Wildlife to be raised.

Hunkering down by the granite, Hillen called our attention to the gray-brown earth beneath. We bent close. Gopher skulls and ribs and vertebrae and the assorted bones of various other rodents glinted everywhere. This was not earth at all. It was owl conglomerate. Decade upon decade of owl pellets, compressed by time and rain into sediment, packed the

cracks between the boulders—thick veins and lodes of raptorial soil. From the cracks the sediment spilled downhill to form an apron at the base of the outcropping. There were hundreds of thousands of bones. The evidence was chilling—a monument to the ruthless efficiency with which barn owls hunt, and to the great dent they make in rodent populations.

IT WAS NIGHT, BUT STILL VERY WARM, WHEN I REACHED Robert Nielsen's farm outside Caruthers, south of Fresno. The darkness smelled of growth and fertility. A tall cinder-block wall surrounded a courtyard. On a flagpole at the gate, a lanyard clacked softly in the hot night breeze.

Nielsen, a trim, friendly man of 40, has 700 acres in almonds and grapes. He began building nest boxes 11 years ago, after reading an article on IPM. He now has 40 boxes.



BUILD IT AND THEY WILL NEST

Thanks to an alliance between Bruce Norton, field manager for Sunsweet, and a high school shop class in California's Central Valley, West Coast barn owls have now come to expect four-star accommodations. Scrap plywood from the field bins used by the California dried-fruit cooperative has been reincarnated as the "nature condo."

The students build each owl box to include a foyer with a partition—to prevent raccoons from reaching

in to nab chicks—and a trapdoor that enables the farmer to clean out pellets. Unlike in previous designs, the front has no perch, which serves only to tempt nestlings outside, where they may fall or be picked off by a hawk. It also has a smaller, elliptical hole, just the right size for barn owls but too small for great horned owls, their principal predator.

"Every grower wants to minimize the amount of his labor," says Norton, "whether it's time putting

down bait or time checking traps. I have a photo of the inside of a box: 2 baby owls and 13 dead gophers. You can't refute that. There are 13 dead gophers in that box. They were alive somewhere in your orchard."

Seven years and 9,000 condos since the project first began, Norton is still taking scrap plywood bound for the dump and bringing it to students, though the high school shop class has switched from one in

Merced to one in Madera. The students learn an entrepreneurial skill and raise money for scholarships (\$40,000 so far); the growers buy the boxes—and long-term pest control—for a very reasonable \$34.95; and the owls get a good, safe home. "It's a win-win for everybody," says Norton. "Except for the gophers." —K.B.

For more information, contact Bruce Norton at 559-675-0923.

"Owls work so well, it's amazing," he said. "It's kind of scary to think how many gophers must be out there. The owls make piles and piles of dead gophers, and it never stops. The results are obvious—you can't argue with the bone pile."

We walked toward a big open shed where bottom-dump trucks and stacked flat trailers and one huge "raisin-vac" sat under a high metal roof. From its direction, we heard an insistent *shiiish, shiiish*—the hunger entreaties of young barn owls. Nielsen shined his flashlight past the shed's corner, illuminating the nest box. It was mounted atop a pole overlooking the first rows of his vineyard.

Inside the shed, Nielsen played his light across the iron beams above. "There's one that sits right up there during the day," he said, his voice echoing off the corrugated ceiling. Nielsen swung his flashlight to the concrete floor beneath the perch and, in the pool of light, there were four owl pellets and one dead gopher.

We paused on our way back across the courtyard to listen to the *shiiish* of the insatiable young owls.

"You can sit in the yard, and they're out here screeching all night long," Nielsen said.

"It doesn't bother you?" I asked.

"No," said the farmer. "It's a good sound."

We listened some more to the good *shiiish* of the owls and the soft clack of the flagpole lanyard. The Nielsen house was big. The estate flew its own flags, like a little republic. It struck me that this barn-owl business had brought together very disparate elements of valley society: the former gang member Angel de la Cruz, the golfers at Brighton Crest, the grower Robert Nielsen, and, of course, the students at Redbank Elementary. All had found niches for themselves in the ecosystem of the owl.

TWENTY REDBANK SIXTH GRADERS HAD GATHERED in the waning light of day to release a batch of owls. Cathy Garner's husband, David—a burly postman by day, a Dr. Dolittle by night—pulled on gloves and entered the school's aviary. I followed. The room hissed at us. As an owl attempted to fly over his head, David deftly caught it in midflight, snagging the legs with a gloved hand. Outside, a hand was crimped around its leg and the owl was assigned to Courtney Hudgins, a ponytailed sixth grader. Courtney pulled on plastic goggles and heavy work gloves, and followed the owl bearer out to the baseball field.

"Right-handed or left?" Cathy asked. Courtney was a righty. Cathy demonstrated the dexterous release: gloved right index finger inserted between the owl's legs, from tail side forward. Remaining fingers wrapped around the front of the legs in a firm grip. Left hand cupping the back of the owl, just below the shoulders. Owl turned away from you. Owl flung as high as you can fling it.

Near the top of its launch, Courtney's owl blossomed wings and flapped away to the east. The crowd cheered. We released a second owl, then a third. As it skimmed the treetops beyond the school parking lot, the third owl was mobbed by a pair of blackbirds—the first of the slings and arrows of owlish fortune awaiting it in the greater world.



FIG. 7

Once orphaned barn owls have fledged, they graduate from classrooms to flight cages to test out their wings.

New owls began appearing. I saw four at once in different quarters of the dusky sky—a return of inmates released on previous evenings. Fresno Wildlife maintains a kind of halfway house atop the eco-center—"rooftop dining," Cathy calls it—a place to feed released birds for a while, easing their transition to life in the wild.

David brought out another owl—this one for me. At the grassy edge of center field, I gripped my owl in the correct manner. We exchanged a final glance. Then I turned the sharp, deeply curved beak away from me, gathered myself, and tossed the owl as high as I could. It flew a beeline across the field, straight toward the tall fence of the backstop. The cheers of the crowd died in their throats. "Not the fence!" Cathy cried.

A moment before the collision, the owl seemed to sense the problem. It ceased flapping and set its long wings. There was an instant of indecision. Then, at the last possible millisecond, the owl flared to sheer straight up the fence, like a pop fly, and lofted itself over the backstop. It was all improvisation and instinct.

What I will always remember about my owl, I think, is the grace and sudden virtuosity of its barnstorming. What my hands will remember is the weightlessness. It was as if I had thrown my hands high with nothing in them. What I had tossed up was immaterial—just silence of flight and acuity of vision and perfection of hearing. I had tossed up pure appetite and loosed it on the world. ♣

KENNETH BROWER, the son of seminal environmental leader David Brower, has written for *The Atlantic Monthly*, *Smithsonian*, and *National Geographic*. His first article for *Audubon*, on the *Palau Archipelago of Micronesia*, ran in 1976.