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Searching for the Ivory Bill



Sara Barker and a team of researchers find conclusive evidence that brings the ivory-billed woodpecker back from 'extinction'

BY GERRY BOYLE '78

For ornithologists, conservationists, and backyard birders, it would be a dream come true. After more than 60 years of presumed extinction, the ivory-billed woodpecker was reported spotted by expert birders in a dense Arkansas swamp. It appeared that “the Grail Bird,” a ghostly symbol of one of America’s ravaged natural habitats, had returned from the past.

Within days Sara Barker '94, a project leader at the Johnson Center for Birds and Biodiversity at Cornell University, had begun recruiting the team that would search for and collect evidence that the bird still existed. Barker’s first challenge: to lure the best birders and scientists to the Arkansas Mississippi Delta without ever uttering these words: “ivory-billed woodpecker.”

“I had to convince seventeen people that they wanted to go work down in Arkansas on a ‘biodiversity project,’” Barker said, back at Cornell this summer. “I couldn’t tell them [in advance] what we were doing. I said, ‘An inventory of bottomland hardwood swamp and bottomland hardwood forest.’”

An understatement, but true. Fourteen months later, the search teams (including Barker, an energetic former Colby ski

racer) had indeed done an exhaustive—and exhausting—inventories of the wild and primeval swamps in southeastern Arkansas. They’d encountered herons, warblers, owls, flying squirrels, ducks, many poisonous snakes—and at least one ivory-billed woodpecker.

The news was big, and not just in the bird world. The official Cornell Ornithology Lab paper breaking the ivory-bill discovery was the cover story of the prestigious journal *Science*. The report made the front page of *The New York Times* and countless other newspapers around the country, was featured on National Public Radio, was heralded at a strobe-popping press conference in Washington, D.C. Nature Conservancy President Steven McCormick began his column in last summer’s magazine with these words. “We’ve found the bird.”

So just how big a deal is this *really*? “I think this probably is the most exciting [bird-related] story of the last fifty years,” said Herb Wilson, the Leslie Brainerd Arey Chair in Bioscience and a nationally known ornithologist.

And Barker, Wilson’s former student, was in the thick of it.

Sara Barker '94 on the Cache River in eastern Arkansas, where searchers saw and heard the ivory-billed woodpecker, long thought extinct.



It should be pointed out that Barker has not seen the ivory-billed woodpecker, though one of her close colleagues at Cornell has. “I lay awake nights,” dreaming of the day, she said. But her inside account of the sightings and the painstaking scientific buttressing of the bird’s rediscovery make for a cloak-and-camera detective story, an example of rigorous scientific inquiry, and a feel-good tale of cooperative conservation.

The ivory-billed woodpecker may be elusive now, but in its time it was one big, showy bird. Twenty inches long, with a red Woody Woodpecker crest, prominent white bill, and startling black and white wings, the birds caught the eye of naturalist and artist John James Audubon when he prowled southern rivers in the 1820s. But the birds declined with the logging of forests in the South, and by the 1890s ivory bills had become rare.

President Theodore Roosevelt saw the birds on a hunting trip in northeastern Louisiana in 1907. “They were noisy but wary, and they seemed to me to set off the wildness of the swamp as much as any of the beasts of the chase,” the outdoorsman wrote. By 1935 the birds had dwindled to the point that the founder of the Cornell Laboratory of Ornithology, Arthur “Doc” Allen, and others camped underneath an ivory-bill nest in Louisiana, recording and photographing the birds with the refrigerator-sized equipment of the time. Subsequent observations were made in 1944, the last time the bird’s presence was irrefutably documented—until last year.

Over the last six decades, there have been tantalizing reports of sightings of ivory-billed woodpeckers in the southern U.S. and in remote mountains of Cuba. The more credible sightings have prompted all-out searches, including one by a Cornell team dispatched to the Pearl River region of Louisiana in 2002. That team found ivory-bill evidence (large tree cavities and trees with bark peeled rather than chiseled), but no birds.

Then last year an expert birder named Gene Sparling reported in great detail sighting an ivory bill during a kayaking trip on the Cache River in Arkansas. A subsequent search by two more experts, including Cornell’s Tim Gallagher, yielded another sighting—one so definite, so momentous that it left the scientists in tears. It also provided a video, shot from a canoe, that scientists say shows an ivory-billed woodpecker in flight.



During the ivory-bill search, Sara Barker '94 confers with her husband and fellow Cornell ornithologist, Elliott Swarthout.

“Tim came back and went into our director’s office and our director honestly thought [Gallagher] was going to tell him he had an incurable disease,” Barker said. “He was white, gaunt, looked like he’d seen a ghost.”

And Gallagher had, in a way. The bird that had flown past him had been nothing more than a specter for 60 years. Within minutes, hushed phone calls were being made. One of those calls was to Barker, in her book-lined office on the second-floor of the lab. A decade after leaving Colby to begin her ornithology career, she was about to embark on the conservation experience of a lifetime.



Barker grew up on a country farm outside of Cleveland. As a child she rode horses, carried home stray animals, watched birds at her grandmother’s bird feeder. A competitive athlete (an attribute that would prove helpful in her future career), Barker came to Colby planning to do science—maybe physical therapy—and to ski race. She had already moved from medical science to the environmental side when she did a program for field biologists in Kenya the first semester of her junior year. In the field most of her

time in Africa, Barker learned to identify 120 different birds by sight and sound. Barker returned to Colby and her life took another irrevocable step when she took an ornithology course taught by Wilson. “Something about that guy,” Barker said, smiling as she recalled her first professional mentor. “I’ve talked to Sarah Goodwin [’04], another Colby grad who works at the lab now. The first thing we said to each other was, ‘Herb!’ I loved his ornithology class, our birding trips and excursions. He’s such a nice guy, so bright, so sincere. There’s just some loveable quality about him.”

Wilson, for his part, still can recall Barker’s enthusiasm and delight as she began to learn about birds and their behaviors. “She was absolutely captured by birds, no question about it,” he said.

Barker’s passion for birds led to a summer internship at the Cleveland Zoo. Her assignment: figure out why the zoo’s Chilean flamingos weren’t reproducing. “I actually made a lot of environmental suggestions, changes to their habitat—the pen they were in, the vegetation. They had greater reproductive success the next year. Whether I can attribute it to my work, I don’t know.”

The zoo gig dovetailed with a senior in-

dependent study that further refined her flamingo study. And after Colby, Barker hit the ground running.

She landed an internship studying the palila, an endangered finch species in Hawaii. Barker captured birds with nets, affixed transmitters to them, did radio tracking. She lived in a tent camp at 7,200 feet with a bunch of other budding scientists. With Colby and Wilson as her foundation, she was on her way.

Studying sexual selection in northern cardinals and working with a Cornell graduate student; monitoring tree swallows and other cavity nesters in upstate New York; examining territory demography of ovenbirds; working on a boat in Maryland studying sora rails, capturing more than 1,000 of the shorebirds and banding them. Barker was in heaven.

Eight years ago she returned to Cornell, where she is now project leader at the ornithological lab. Barker runs outreach projects relating to conservation science, such as providing land managers guidance for improving habitat for songbirds like the scarlet tanager, the cerulean warbler, and forest thrushes.

And then, early in the spring of 2004, the ivory-billed woodpecker winged its way into her life.

After the report of the sightings came into the lab, word spread, but not like wildfire. “Everything was very secretive,” Barker said. “People were not talking about it. We were not allowed to tell anybody, even within the lab. ... They wanted it completely hush-hush. If you were brought into the fold, then you had to sign a confidentiality agreement. You were essentially not allowed to speak to anybody about it. What made it a lot easier for me is that my husband [fellow Cornell Ornithological Lab scientist Elliott Swarthout] was involved in it as well, which was really nice.”

But she couldn’t tell her family. She couldn’t tell her friends, for whom the biological inventory cover story smelled fishy. “My friends all thought I was nuts,” she said. “Why are you going to Arkansas? What are

you doing down there?”

What Barker was doing was assembling a highly skilled search team, carefully selected from all over the country. “It’s pretty remote in some of those areas and you need some tough and hardened folks who can actually hack it in the field,” she said.

Actually they needed to hack it in trackless cypress and tupelo swamps, in this case in eastern Arkansas’s Cache River National Wildlife Refuge. Among the last of the bottomland hardwood forests, the primeval-seeming delta swamps are dark and deep, home not only to birds but also to mosquitoes and poisonous cottonmouth snakes. Barker said she teamed with another searcher who stepped out to check a small stretch of walkable woods. “He said, ‘I saw eleven cottonmouths in a hundred feet. I’m getting back in the boat,’” she recounted.

The searchers were prepped with an orientation session that included everything from reminders of confidentiality to comparisons of ivory-billed and common pileated woodpeckers. A full-time crew lived in tiny Cotton Plant, Ark., outside of not-

much-bigger Brinkley, Ark., for five months, supplemented by reinforcements who joined the search in week-long stints.

In the swamp, the searchers ran transects through the disorienting terrain, dividing the area into sectors that all had to be carefully observed. Dressed in commando-quality camouflage, the scientists and birders floated slowly through the swamps in flat-bottomed boats and canoes. They sat in blinds, placed specially made computerized listening devices on some 150 trees. Some even scanned the forest canopy from a bucket atop an 80-foot boom.

And they did all this while trying to remain anonymous—no small task in Brinkley, population 3,600. “You can’t bring twenty people into a community and just disappear,” Barker said. “And all this equipment. ... The UPS man was driving by an access to the bayou and Bobby [Harrison] was down there unloading his boat. The guy drove by, stopped, backed up and said, ‘Hey! You with Cornell?’ Bobby said, ‘No. Why? Do you have a package?’”

The reasons for all the secrecy were twofold. For one, there was concern that premature news that the ivory-billed woodpecker had been sighted would bring throngs of enthusiastic birders who would drive the woodpecker deeper into the swamps. For another, The Nature Conservancy—joining with Cornell in something called The Big Woods Conservation Partnership—was quietly buying up land in the area, a process that would have been immensely more complicated had word leaked out. Ultimately the group acquired 18,000 acres of prime ivory-bill territory in the 14 months leading up to the announcement.

The under-the-radar planning also included federal agencies, among them the U.S. Fish and Wildlife Service. In this case, an extinct species would suddenly become an endangered species, with all of the associated need for habitat protection and land-access management. Would land have to be closed to the public? If so, how much and where?

Eating Crow

Even the skeptics are converts.

A trio of scientists who planned to publish a rebuttal of the claim that the ivory-billed woodpecker had been rediscovered said in August that they had been convinced.

Initially the ornithologists’ announcement, that they did not believe that the Cornell University team had proven that the bird was alive, dampened the celebration of the ivory-billed woodpecker’s return. But before the rebuttal appeared in print, the skeptics said their minds were changed, not by a video purported to be of the ivory bill, but by new recordings of its characteristic call.

When they wrote their rebuttal, the three scientists—Richard O. Prum of Yale University, Mark B. Robbins of the University of Kansas, and Jerome A. Jackson of Florida Gulf Coast University—had not heard the digital recordings made in the Cache River National Wildlife Refuge in 2004.

Those recordings prove that not one, but two, ivory-billed woodpeckers exist, the scientists said. In a statement, Prum said the rebuttal paper was moot. “The thrilling new sound recordings provide clear and convincing evidence that the ivory-billed woodpecker is not extinct,” Prum said, in a story published by *The New York Times*.

Sara Barker ’94, Cornell’s project leader for the Arkansas search, pointed out that during the debate both sides declared their willingness to be proven wrong. In the end, she wrote in an e-mail from the Cornell lab, “the scientific process prevailed.” —Gerry Boyle ’78

“What we wanted was a chunk of time before the announcement to actually develop this plan with the agencies,” Barker explained.

But all of this hinged on the strength of the team’s case. Was this the irrefutable re-discovery of the ivory-billed woodpecker? Or was it just one more tantalizing but inconclusive glimpse?

Five months of intense searching (quantified by Barker as 21,000 searcher hours) had yielded seven well-supported sightings of the ivory bill, 15 sightings in all. The team had located several cavities similar to those made by ivory bills and dissimilar to those made by pileated woodpeckers. Though all of the 17,000 hours of digital recordings had not been analyzed as this story was being written, scientists had singled out what they think are three instances of the distinctive “double-rap” ivory-bill knocking heard on the 1935 tapes.

For a visitor to the Cornell lab in June,

acoustics expert Russell Charif played both the original recordings (recently retrieved from storage and digitized) and the new recordings on a computer used for spectrography. On the monitor the sounds showed as blips amid flat stretches. Lab staff, including Barker, hunched around the computer in rapt silence as they listened to what could be the second known recording of an ivory-billed woodpecker. The file played, emitting a blur of insect noise, the calls of other birds. And then a nasal call sort of like the sound of someone holding their nose and saying the word “kent.” The call is thought to be the birds’ way of keeping track of each other in the forest. And the 2004 calls, from two locations, sounded to a lay birder’s ear just like the call of nearly 70 years ago. “They’re pretty similar,” Charif said of the two sounds. “And they’re pretty similar quantitatively when we measure it on the spectrogram.”

The Cornell experts have not completely

ruled out the possibility—albeit slim—that the calls were those of jays, seen in the area where the sounds were retrieved. Jays are mimics, after all. “But then you have to say to yourself, they had to learn this from something,” Barker said. “So does that mean ivory bills are there [making the calls]? We just don’t know.”

But downstairs, more conclusive evidence was waiting.

In a high-tech studio, lab staffer Ben Clock loaded a digital file into a studio computer. The video began to play, at first showing a man in the bow of a canoe moving slowly through the coffee-colored waters of a tree-filled swamp. The camera was mounted on the canoe’s thwart. The canoe moved slowly, and suddenly a large bird came into view from the left. It veered away and remained in view as it flew off between the trees.

“You have the black primaries and the white trailing edge [of the wing],” Barker

The ivory-billed woodpecker search team convenes at dawn for another day searching the swamps of the Cache River National Wildlife Refuge in Arkansas.



whispered, intently watching the video screen.

The video was played and replayed. It was blown up and slowed down. It was enhanced for clarity, and with each refinement it became more and more clear. Barker confessed that she was a doubter until she heard Gallagher's impassioned first-hand report, then convinced beyond a reasonable doubt when she saw the video. "Even the people who were the most skeptical said, 'What else could it be?'" Barker said.

Nothing else, the team had concluded, other than an ivory-billed woodpecker, flapping out of the hazy past and into the living, breathing present.

The ivory-billed woodpecker went public in April. Like many of the team members, Swarthout, Barker's husband, had been in Arkansas for five straight months. For the duration of the search, Barker had switched from the Big Woods bayous to Cornell in three-week stints.

Back in New York, the team cleaned up and excitedly prepared to meet the media. Barker e-mailed her family-and-friends list the night prior to the Washington press conference. Her message: "You want to listen to NPR in the morning." Along with thousands of others across the country and the world, they did. Barker's mysterious comings and goings of the past months finally were explained.

By June the media frenzy had eased, and the Cornell members of the team had settled back in at the lab, a sprawling faux-barn sort of building on the wooded outskirts of Ithaca. There was a sense of calm elation among the scientists, who were fielding hundreds of congratulatory e-mails, sorting through sheaves of expense receipts from Arkansas—and trying to figure out what to do next.

The party was over; the ivory bill was here to stay.

Moving from extinction to the brink of it, a creature suddenly joins the ranks of highly protected endangered species. In the case of the ivory-billed woodpecker, plans



The last photograph of an ivory-bill Woodpecker, Singer Tract, Louisiana 1935.

were set in motion before the announcement to form a U.S. Fish and Wildlife Service recovery team. With the newly formed Big Woods Conservation Partnership—made up of Cornell scientists, Arkansas conservation officials, and The Nature Conservancy—federal scientists came up with a plan of habitat protection, public access, and continued searching for clues of the ivory bills' behavior in the 21st century. How had the birds adapted to their vastly reduced habitat? Had their feeding habits changed? What sort of range does an ivory-billed woodpecker now have?

One of the first steps, undertaken by Swarthout, field supervisor for the ivory-billed woodpecker study, involved writing a comprehensive report on the Arkansas search and habitat for the feds. "We're trying to describe what lessons we learned from last season," said Swarthout, a soft-spoken ornithologist who has worked extensively with another endangered species—the Mexican spotted owl. "What went well, what didn't, how we can improve it."

The intent, of course, is to return to Arkansas in the fall to continue the search. The

hope is that the team will see the ivory bill again and will see a second specimen, if possible. After all, it's unlikely but possible (until proven otherwise) that the birds on the video and audio are the last in existence. Barker, who observed one of the last wild Hawaiian crows, doesn't think so. "I believe there's more than one," she said. "I just don't think we've found it yet. I can't say how many ... but I honestly believe that if they've persisted for this long, there has to be a breeding pair out there."

Ivory bills have a large home range, she said. The area where the bird was seen is a long narrow corridor. She hopes that somewhere in the deep, dark swamps, the birds are roosting and nesting. And if they are there, perhaps one day Barker will see one?

She waved the idea off as though it were too much to wish for, at least aloud. "As much as I would love to see the bird, it's not about me," Barker said. "I just want us to be able to learn more about the ecology of the bird and continue to preserve its habitat. If I don't see it, just to know that I've been involved in the efforts that have brought about habitat conservation is enough for me, really. As much as the birder in me wants to see this bird, it's still more about the effort than anything else. And about what it can do for conservation."

She noted that the area where the ivory-billed woodpecker was seen was slated to be dredged in the 1980s, but Nature Conservancy efforts kept it intact. Now the ivory bill serves as an example of what can be accomplished—that in the area of conservation, it's still possible for dreams to become reality.

"This is as hopeful as it gets for someone in my field," Barker said. "It's a tough field to be in sometimes because you see a lot of things disappearing, a lot of habitat destruction. There's a lot of negativity, so to have something like this, to think that we haven't destroyed it all, that this bird still persists—there's so much hope out there. It's *such* a positive message." 🦉