By Mark Jerome Walters

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On June 14, 2002, federal wildlife biologist Jeff Burgett drove as usual the gravel road up into the cloud forests of leeward Mauna Loa volcano on Hawaii’s Big Island to monitor the last pair of Hawaiian ravens in the wild. “[They] were right in the same place they always hung out,” he reported. “The female slept a lot and appeared very tired. The male was feeding her a couple of fruits. He tried to prod her, but she seemed unresponsive.” Although Burgett did not know it at the time, his observations that day would mark the final sighting of the species in the wild.

Its passing from the wild was more than a blow to the islands’ declining biological diversity. The ‘alala is sacred in Hawaiian culture and is believed to lead the deceased to the afterlife. Without such a guardian spirit, a soul risks being stranded forever between this life and the next in a twilight of ghosts and night moths with only grasshoppers to eat.

Lost, too, is the raven’s powerful physical presence. A large bird which sometimes displayed parrot-like antics in the treetops, the raven brought a charismatic aura to the forests. It was a noisy bird, with a varied repertoire of calls and cries ranging from a staid caw to a mournful keening that pierced the gray highland mist. As biologist Glenn Klingler once described the calls of a Hawaiian raven that had lost its mate, “I’d wake up and hear the mourning...a terribly high-pitched sound, like an inconsolable moaning.” The bird’s native name, the ‘alala, comes from the Hawaiian word meaning “to cry out like a child.”

The species’ heartbreaking disappearance followed more than three decades of valiant and often bitter struggles by conservationists to save the raven in its natural habitat. Today just over 50 of the birds remain in captivity, with no clear prospect that they will ever be reestablished in the wild.

Although there are many conflicting views on the raven’s future prospects, one thing is agreed: the available scientific information was often insufficient to guide the recovery actions of the past. In retrospect, many of those conservation efforts seem little more than impromptu experiments. With the best of intentions, biologists simply followed what seemed the best course of action at the time, sometimes with detrimental results—birds held in captivity for years without producing offspring, research that may have disturbed nesting pairs in the wild, and reintroductions that resulted in the death of many of the ravens.
These scenarios raise difficult and often painful questions, not only about science but also about the ethics of some approaches to endangered species conservation. These questions concern an age-old medical dilemma: the temptation to intervene versus leaving well enough alone. In short, what role should the ancient admonition of Hippocrates, “First, Do No Harm,” play in endangered species conservation?

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The 'alala was once common throughout the cloud forests of leeward Mauna Loa on the Kona coast of the Big Island, the only area where they were known to live. Visitors to the island in the 1800s commented on the raven’s abundance, but toward the mid-1900s, the bird had become rare. "I found a great change," lamented ornithologist George C. Munro when he visited Kona in 1937. “I saw no flocks, only a few scattered individuals.”

By the early 1970s, only a few dozen birds remained. Federal wildlife biologist Winston Banko warned that “midnight” was “not far off” for the species.

Fearing the worst, biologists in the mid-1970s captured several ravens in an effort to start an impromptu breeding program. But over the years, even as a half-dozen of the birds were captured, almost no offspring survived in the understaffed and underfunded facilities set up by the state of Hawaii. Most of the captive birds grew old without leaving behind a single offspring. Despite this failure—and despite the death of several captive adults—biologists continued to capture wild birds.

Rare, glamorous, and still mysterious, with little having been published on its biology and behavior, the 'alala had become a golden topic for academic research. The bird’s continuing descent toward extinction only increased its allure.

Biologists not only lacked scientific knowledge to breed the birds in captivity; they did not know with certainty why the birds were declining in the wild, although habitat loss due to ranching, feral cattle and pigs, alien predators such as cats and rats, and diseases carried by exotic species were obvious possibilities. Then, in 1978, Stanley A. Temple, an assistant professor in the Department of Wildlife Ecology at the University of Wisconsin-Madison, together with C. John Ralph, a research ecologist at the Pacific Southwest Forest and Range Experiment Station in Honolulu, set out to eliminate all doubt.

They enlisted David Jenkins, a young and inexperienced graduate student, to implement the novel idea of monitoring the birds with time-lapse movie cameras stationed near some of the remaining wild nests. By filming the breeding pairs over the course of several weeks, Temple and Ralph were confident they could find the smoking gun.

Before launching the camera study, Temple and his collaborators solicited the opinions of several biologists. It turned out that there was a considerable body of anecdotal evidence suggesting that close observation of breeding pairs could cause the birds to abandon their nests. In a letter to Temple, Ralph warned of an earlier experiment in which a surveillance camera near a nest apparently caused the pair to abandon the nest. However, in the rush to find answers and implement solutions, Temple in the end downplayed the potential disturbance of the noisy cameras.

All told, during the two years of Temple and Ralph’s study, 11 pairs had been monitored for a least a portion of their nesting cycle. Some 600 meters of film had been captured covering 3800 hours of nesting activity. Of the 11 pairs monitored, many ended up abandoning their nests.

By the time the study ended in 1980, fewer than two dozen 'alala remained in the wild, and nine 'alala lived in captivity—but still no offspring to show for the efforts.

Although it can never be proven that the cameras were to blame, Jenkins—now a wildlife biologist with the state of New Jersey—recalls, “We used Super-8, which made a pretty loud click when the camera went on. Some of these were only a few feet from the nests. The point is, we did a lot of things in our research that we should never have done.” The film, according to Jenkins, was never fully analyzed.

The list of potentially inimical factors for the 'alala’s survival is in the literature, but potential human disturbance is almost never mentioned. In fact, conservationists frequently denied or downplayed possible human disturbance of nests. In so doing, they not only abandoned good science but also replaced the Hippocratic advice with their own: “First, do something—
By 1992, only 11 ‘alala remained in the wild—nine of them on the 24,000-hectare tract owned by McCandless Land and Cattle Company.

For years, Cynthia Salley, one of the ranch owners, refused entry to biologists, citing—among other reasons—disturbance to the birds. Indeed, many biologists were hoping to capture the last individuals to bring new blood and vigor to the failed captive propagation program. Many prominent conservationists, including Peter Berle, president of the National Audubon Society, vigorously argued for capturing the last birds. Stuart L. Pimm, professor of ecology at the University of Tennessee, Knoxville, wrote to John Waihee, governor of Hawaii: “Wild birds must be brought into captivity and brought into captivity now.” Similar refrains came from the Sierra Club, The Peregrine Fund, and many other organizations and individuals.

With the species moving closer to the brink day by day, the urge to do something was understandable, especially if it intuitively seemed like the best course of action. But almost no one from the conservation community addressed the wisdom or ethics of adding birds to a failed breeding program—no one, that is, except Cynthia Salley. Intelligent, articulate, and of fearless disposition, Salley came from a long line of ranchers. And what she lacked in scientific credentials she more than made up for in her convictions about the right of property owners to control their land.

“There are only a few ‘alala left in the world,” she recalled telling the biologists who showed up at her door. “Nine are on my ranch. You’ve got others to try to save. You’ve got one experiment trying to raise them in captivity. And you’ve got other experiments to study them in the wild. Well, I’ve got my own experiment going on here. It’s called the ‘Leave Them Alone Project.’ We’ll compare results in a few years. Meanwhile, stay off my ranch!”

To many conservationists, her argument was flawed ipso facto: it came from the mouth of a rancher. But whatever the scientific strengths or weaknesses of her position, she had laid bare the ethical issue: the imperative to balance potential benefits against potential harm.

Finally, in 1991, the National Audubon Society and the Sierra Club Legal Defense Fund sued the ranch and the US Fish and Wildlife Service (USFWS) to gain access to the birds. After bitter legal wrangling, the parties signed an out-of-court settlement in 1993: Salley would permit limited access to McCandless Ranch. But a funny thing happened on the way to the McCandless gates...

As the warring parties hammered out an agreement, the National Research Council, an independent scientific body in Washington, D.C., published the eagerly awaited *The Scientific Bases for Preservation of the Hawaiian Crow* (1). At the behest of the USFWS, the authors sought to “review all the available information on the ‘alala to determine the steps that would be appropriate to ensure the survival of the species.” Their report would sort opinion from science, separate the interests of the ‘alala from personal agendas, and bring the best data—however scant—to bear on deciding the best course of action for the beleaguered ‘alala . It turned out to be a feat of clearheaded scientific analysis and synthesis—something rare in the story of the ‘alala—and most of its recommendations were succinct, practical, and feasible.

Bucking the advice of almost all ‘alala biologists, the report stated that the ravens should be left in the wild because they had little to offer genetically to the captive flock. Instead, qualified biologists should pluck eggs from the nests of the wild birds—but only after a new, better-funded, and professionally staffed propagation program had been established. Aviculturists would hatch the eggs in captivity, and the wild birds would lay replacement clutches. These actions would maximize benefits while minimizing potential harm. An independent scientific advisory board had found a logical and elegant solution where the involved parties could not.

Within months, so many birds hatched in captivity that some could be returned to the wild for the first time. So began a new era for the Hawaiian raven.

Between 1993 and 1999, more than 40 birds hatched in captivity, 27 of which were returned to the wild.

For a time, the released birds seemed to fare well. But fortunes quickly changed. The young birds succumbed to disease or were taken by their natural predator, the Hawaiian hawk. And, as if the McCandless lawsuit had not left enough bitterness, the mounting failure of the
release program ignited yet another fire—a heated debate over whether to release or not. It was a battle entwined with science, personal opinion, and ethics.

Many members of the ‘alala Recovery Team, the official body set up to advise the US Fish and Wildlife Service, argued that releasing more birds into perilous habitat was a “suicide mission.” Proponents of the release, most notably The Peregrine Fund, argued that ending the release was tantamount to giving up on the species. Both sides had a point. Unfortunately, the science was insufficient to endorse either.

Cyndi Kuehler, a San Diego Zoological Society aviculturist working on contract with The Peregrine Fund, oversaw the successful, revamped captive propagation. Heartbroken and deeply anguished by the death of her charges, she nevertheless argued, “Nature must be cruel to be kind. The death of the weak will permit the strong individuals, and therefore the species, to survive over the long run. I don’t have the answer. All I know is we’ve got to keep pumping ‘em out as long as there are enough birds to do it. That’s the only way we’ll ever save the species in the wild.”

By the end of 1999, 21 of the 27 birds released had died. The few remaining birds were recaptured. The release program had ended. And only three wild birds remained.

The Peregrine Fund blamed the death of the birds on the state’s failure to secure or protect suitable habitat by fencing out cattle, pigs, and other animals or by controlling rats, cats, and other predators. Indeed, the young birds had been released into the same habitat from which the wild birds were slowly disappearing.

In fact, The Peregrine Fund had hoped that continuing to release birds might result in a secondary gain: forcing the state finally to restore habitat for the species. The state did not. The game of chicken had ended. So had the lives of many young ‘alala.

Between January 2000 and June 2002, the last three birds remaining in the wild disappeared. There are currently about 50 birds remaining in captivity.

The tragedy of the ‘alala is more than a story about a single species. It is an all-but-universal parable about the recovery of endangered species. The lure of technology seems to tip the balance toward always “doing something” rather than erring on the side of doing nothing to minimize the risk of harm. Here is a story of doing harm by going to all lengths to do good.

The ingrained need—if not the perceived professional obligation—facing conservation biologists is not unlike that of physicians: to fix and to heal, no matter the risks or the long-term consequences for the profession or their future patients. But desperate actions are almost always experimental actions.

There are no easy answers to the questions left by the ‘alala story. But my conversations with David Jenkins, years after his graduate work in Hawaii, revealed some of the myriad of contradictory and complex motives that drove people to devote years of their lives to the ‘alala. What, exactly, did the raven offer its would-be protectors? And what did the raven’s protectors offer the ‘alala? To most, studying it was neither just a job nor just a passion. It was a life-consuming mission. But each person, in his or her own heroic, misunderstood, or well-meaning way, was altering the fate of a species.

Abandoned questions don’t go away. They shadow those who avoid them. The questions echo and reemerge in the human desire to know right from wrong and to learn to accept that sometimes the best one can do is to do no harm.

**Literature Cited**


**About the Author**

Trained in veterinary medicine and journalism, Mark Jerome Walters is a professor of journalism and media studies at the University of South Florida, St. Petersburg. *Seeking the Sacred Raven: Politics and Extinction on a Hawaiian Island* (Island Press, 2006), is the latest of his four books. Walters first heard of the ‘alala while visiting Hawaii nearly 15 years ago and has been on its trail ever since.