

The westward view from the east islet's Inspiration Point reveals the cliff-covered terrain of Anacapa Island.

Death for Life on Anacapa Island

Past, Present, and Future of Island Restoration Projects

by Matt Kettmann

For such steep, wind-racked, and rugged terrain, the three tiny islets that comprise Anacapa Island overflow with life. During the glowing green springtime on the 700-acre island, sights and sounds of nature overwhelm the human visitor, as nest-tending sea gull squawks, beach-bathing sea lion barks, and open ocean wave crashes are interrupted only by the intermittent wails of the old lighthouse's horn. The blinding yellow coreopsis flowers, purple wild onion blooms, and bright red Indian paintbrush petals serve as perfect cover for the side-blotched and alligator lizards, timid deer mice, Pacific slender salamanders, and a plethora of tweeting songbirds that all call Anacapa home. Throw in the formations of brown pelicans, swooping dives of red-tailed hawks and peregrine falcons, and the unseen, underwater empire of fish, kelp, and crustaceans, it's no wonder that Anacapa Island is considered one of the planet's most dense hubs of life.

But in the past two years, death has also become familiar to the cliff-guarded chain. For a couple of days in the late autumns of 2001 and 2002, a helicopter rained poisoned death upon the archipelago, hitting the east islet the first year and the middle and west islets the second.

The widely publicized goal was to rid the island of thousands of black rats, a nonnative species that most likely began overtaking the island after a shipwreck on Middle Anacapa during the Gold Rush era.

Rats have been the cause of numerous extinctions worldwide and, according to those involved—a wide-ranging team of government biologists, nonprofit scientists, academic researchers, and nature-loving volunteers—the rats on Anacapa were responsible for, over the years, decimating populations of rare native seabirds and, most critically, blocking those species from recovering.

When the 1993 *America Trader* oil spill off Huntington Beach harmed two species—the Xantus murrelet and the ashy storm petrel—that historically have nested on Anacapa, it wasn't too hard for the trustee council of government agencies to say where \$1.5 million of that \$13 million settlement money should go. But when the question became how—and the answer was killing rats with a shower of poison—this potentially groundbreaking step for American environmentalism managed to stir up much public controversy from the environmental activist crowd.

The National Park Service and the nonprofit Island Conservation and Ecology Group led the unusual project. It was to be the first time in this country that a helicopter was used to spread the poison, an important step for biologists who are routinely challenged with cliff-faced islands, high mountain peaks, and otherwise inaccessible terrain. And while the deaths of songbirds and birds of prey such as owls were also expected, it was even more concerning that this would be the first eradication project where an endemic species—the Anacapa deer mouse—would be wiped out. To

counter this, a healthy population needed to be trapped and re-released when the poison had washed away. Though real results won't be known for years, so far the project appears successful. The released deer mice are back in force, the birds are more plentiful than ever, and the reptile and amphibian populations have, quite unexpectedly, exploded as well.

But from a channel-wide distance, many environmentalists on the South Coast have questioned such drastic measures. Workers for the project have been publicly harassed, the *Santa Barbara News-Press* overwhelmingly opposed the project on its editorial pages, and respected organizations such as Surfrider have raised a fuss. And as park managers start more restoration projects—including an upcoming extermination of pigs on Santa Cruz Island—many citizens watch with suspicion. What started as a win-win more than two decades ago, when the 23rd District Congressman Robert Lagomarsino advocated the federal purchase of the Channel Islands to create a national park, has now become a heated area of debate.

Yet in the scientific community, there's really no heat at all. There's complete consensus—even from scientists affiliated with the animal rights movement—that the Anacapa Island restoration was not only a good project, it was essential, both for the survival of the rare seabirds and for the future of island rehabilitation work worldwide. Indeed, a look at the history of restoration projects helps to explain not only how the South Coast's front yard



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As video footage shows, black rats will attack seabird eggs for food (left). That relationship, according to biologists, has hampered the comeback of the Xantus murrelet (chick pictured right).

became a biological battleground, but why the Anacapa project was a fundamental step in the increasingly critical fight against extinction.

Eye on Extinction, Island-Style

Thanks to the human habit of moving plants and animals where we please, the earth's islands have been under attack by introduced species for centuries. Sixty percent of all mammalian extinctions and more than 80 percent of bird and reptile extinctions have been on islands. Of those, more than 60 percent were caused, wholly or partially, by introduced species—one of the "four horsemen of the environmental apocalypse" according to Bernie Tershy, the director of the Island Conservation and Ecology Group (ICEG). (The other three are land conversion, pollution, and over-exploitation, i.e., too much hunting or fishing.)

But for ecologists familiar with evolution, those numbers should not be so staggering. Due to their isolation, island species have not typically developed resistance to outsiders. The island fox of the Channel Islands is the perfect

example. Because it did not evolve with aerial predators, it walks around in the daytime and shows no wariness about the sky. So when the meat-eating golden eagles filled the skies left by bald eagles who ate only fish (they were killed off by DDT poisoning), the foxes became easy prey. (That problem is made worse by the presence of feral pigs, the primary food source for the goldens. Biologists expect the upcoming pig extermination will greatly help that conundrum.)

Cast that situation across the globe on mostly smaller, more defenseless bird and reptile species, and it's easy to see how introduced critters can do disastrous amounts of damage in a very little time. In recent times, seabird populations have suffered the most catastrophic injuries, since they all evolved to be island nesters, but cannot successfully do so with any predators around. None of this is new, historically speaking. Human-led extinctions have been surging since the 1600s, when seafaring explorers carried the most ambitious of black rats to islands near and far.

For such an old problem, it's taken an amazing amount of time to manifest in the formal scientific sense.

Anacapa Island continued ►

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“Even 10 years ago,” Tershy said one morning while watering the lawn of his Santa Cruz home, “if you picked up an ecology textbook, there was nothing about introduced species. Look now, and there’s probably a whole section, if not a whole chapter on invasive species. It’s very well accepted as a huge problem.”

Practically speaking, such a realization presents a clear goal: fix islands now by removing the introduced species that harm them. This was first realized in New Zealand and Australia, two island countries teeming with both rare species and introduced animals. Aside from tough bio-security laws and widespread prevention programs, the Kiwis and Aussies have led the way in eradicating nonnative animals. Only after some success with removing bigger animals such as feral cats did a pair of biologists attempt to eradicate the Eurasian black rats—which inhabit a vast majority of the world’s islands and are responsible for roughly 60 percent of all bird and reptile extinctions.

Before Kiwis Rolley Taylor and Bruce Thomas came onto the scene in the 1970s, it hadn’t occurred to the scientific community that it would even be possible to remove rats. At first, these “globally-known conservation heroes,” as Tershy calls them, tried to poison rats on the tiniest of islands, some the

So in 1995, with scientists Don Croll—who was witnessing the same problems on subantarctic islands—and Jose-Angel Sanchez, Tershy decided to “found a conservation organization that focused on protecting islands by preventing the introduction of species and then, when necessary, removing introduced species.”

ICEG began by saving colonies of seabirds on the islands off of Baja California that were especially



vulnerable to rat predation. Like their New Zealand colleagues, they started with tiny islands and moved to the bigger ones, working with the government along the way, especially through educational projects. One island elementary school even changed the name of their mascot to the shearwater, a bird ICEG was protecting, and the small fishing communities took active roles in eliminating goats, cats, and rats. There’s even apparel to go along with the Baja mission, hats that

son on the cliffs of an island covered and surrounded with native life? Killing all the endemic mice as well as dozens of birds both big and small, common and rare? No one can deny that, at least on the surface, the Anacapa rat eradication project just doesn’t sound good. Furthermore, since animal rights advocates are flat against killing anything, the end result of thousands of dead rats has no chance with them.



Fueled by a love for all creatures, Rob Puddicombe (left) made some bold moves to save the rats. Fortunately for the National Park Service’s Kate Faulkner (right), who led the rat eradication, his efforts failed.

Attempting to thwart a project they see as disgustingly unethical, Santa Barbara wildlife rehabilitator Rob Puddicombe and Scarlet Newton founded the Channel Islands Animal Protection Association. They enlisted the New York City-based Fund for Animals for legal help and successfully stalled the project one month in 2001. However, the Washington, D.C. judge ended up allowing the project to continue. Ironically, they also tried but failed to get the Anacapa deer mouse listed as endangered, a move that would have made the rat eradication all the more necessary.

Puddicombe—who helps bring black rats back to health—decided on a bold move. He and a friend crossed the channel on an inflatable boat a few weeks before the planned poison drop and showered the island with pellets of Vitamin K, an antidote to brodifacoum, the chosen rodenticide. Rangers caught the two men. His friend pled guilty, but Puddicombe demanded a trial, which will be in federal court on June 20.

Walking on Butterfly Beach one recent afternoon, Puddicombe talked about what he sees as unproven science relating the rats to seabirds and a questionable financial link between a Huntington Beach oil spill and Anacapa Island. Citing a favored article from the *New York Times*, Puddicombe suggests that not all invasive species are bad and that some are actually good, such as the exotic zebra mussels that are in the Great Lakes. He believes that studies would show that the rat had successfully integrated into the island’s ecosystem.

With the dark, distant outline of Anacapa peeking over his right shoulder, Puddicombe explained, “The project is based on the perception that invasive species are

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mere size of houses. They stunned the conservation community by succeeding. Soon, bigger islands were freed from rats.

Though he’s dedicated his life to eradication efforts, Tershy even admits that successful removal of rats “seems absurd that it can actually work. We think it’s a little miracle every time.” To date, there’s been more than 100 islands across the globe whose endangered bird and reptile species are no longer subject to black rat predation.

Bernie’s Learning Curve

Though he credits everyone else, Tershy, 41, has himself become recognized as an eco-warrior of legendary proportions. While doing research in Mexico, it occurred to him that the proactive conservation stories he’d been hearing about from Down Under could be written for the islands of Baja California. At that point, the idea of proactive conservation had shifted from theoretical to personal, since he’d developed relationships with the animals—ironically, endemic pack rats—that were on the verge of extinction because of feral house cats. “I realized that if we had started our work five to six years earlier,” Tershy said, “we could have saved other species that are now extinct.”

read: “En Islas No.” (On Islands No.), accompanied by drawings of goats, cats, rats, and sheep. Now, all of ICEG’s Mexico work is in the hands of the Mexican government, which is very supportive of biodiversity efforts, and the Grupo de Ecología y Conservación, ICEG’s sister organization.

Centered in Santa Cruz at the Long Marine Laboratory, ICEG organized and conducted the rat eradication on Anacapa Island. That project, managed mostly by ICEG’s Gregg Howald and the National Park Service’s Kate Faulkner, was landmark not because it was the first to eradicate rats from North American soil—that had been done in Hawaii, American Samoa, the Virgin Islands, and Canada—but because it was the first to employ a helicopter for aerial dispersal of poison. And that groundbreaking intervention wasn’t by accident. Tershy’s group took the project because it was difficult, unprecedented, and sure to be high-profile.

“We try to pick projects that really push the conservation field forward,” Tershy explained.

Stalls in Steps Forward

Success has not come without controversy. A helicopter spraying poi-



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With the lighthouse guarded by fog in the background, the bluffs of Anacapa Island teem with life, as coreopsis trees—adorned with blinding yellow flowers—provide perfect cover for reptiles, deer mice, and songbirds alike.

bad. That's a moral judgment, not a scientific one. They're doing whatever it takes to create their own concept of the perfect Channel Islands ecology. It's an unattainable goal. They're inflicting suffering and death on animals for the sake of some abstract future. That's wrong."

Science Speaks Up

There are few animal rights activists who are scientists, but Marc Bekoff, a professor from the University of Colorado at Boulder, is one of them. With famed primatologist Jane Goodall, Bekoff has founded two nonprofits—Ethologists for the Ethical Treatment of Animals, and Citizens for Responsible Animal Behavior Studies—and written a handful of books addressing animal rights in the scientific realm.

Bekoff advocates thorough assessment of any conservation situation before deciding whether to kill animals or not. Scientists need to continually ask themselves why the seabirds are important, what's the urgency, and what's the practicality of removing nonnatives. In the case of Anacapa, because removing the rats was an urgent necessity, he conceptually backed the project. Yet he continually urges that the conservation field, particularly those involved in species removals, always asks itself, "Is this the most humane way?" Keeping that constant debate alive, Bekoff hopes, will result in balancing little animal pain with the saving of native species.

But Bekoff also warns that there's an inherent problem with the underlying goal to bring ecosystems back to the way they were. "There will never be a time when they were the way they were," he said one day during a lunchtime break between

teaching undergrads the ins and outs of scientific ethics. "Ecosystems evolve. We can't go back."

But, the chorus of conservation workers answers, "We can try." In addition to vigilant prevention measures in the future, eradication projects will continue. Time will certainly tell, but it appears that eradications are beneficial. The debate between animal rights activists and conservationists will also persist, making the underlying philosophy of the scientists involved all the more important.

Perhaps the most decorated scientist in the field of conservation biology is Michael Soule, who's founded a slew of conservation-minded organizations, written a similar slew of textbooks, and currently sits as an ICEG board member. Ethics are always on his mind these days, but his focus is distinct from Bekoff's. Soule explained, "We're the ones who caused the problem, so we have a responsibility ethically to try and fix it in some way that generally benefits the world as much as possible."

Soule gives kudos to the animal rights community for bringing the suffering of individual animals to the forefront, but sees them as shortsighted when it comes to extinctions and introduced animals. "There's no shortage of black ship rats in the world," he said one winter morning from his snow-covered Colorado home. "They're not in any danger, but they cause extinctions of island animals wherever they go. It's come down to the suffering of a few rats versus the persistence of entire seabird lineages. Sure, the rats have the right not to suffer, but do they deserve to stop a seabird species from existing, from persisting in nature at all?"

As everyone involved has found out, there's no simple answer to that question. ■

