The Return Of the Non-Native

To everyone who toiled for years to bring the native forest back to degraded pasture land at Hakalau, the reinvasion of the national wildlife refuge by pigs has to be disheartening. What’s uplifting, however, is to see evidence that the refuge’s staff and its contractor are redoubling their efforts to get the pigs out once again. And to see the koa coming back now on its own, to see the outplanted endangered species flourishing, to see understory plants settle in the shadow of a koa canopy, to hear the song of native birds in what had been a pasture 25 years ago – it’s enough to bring a lump to the throat and a tear to the eye of all but the most heartless.

Shocking as it is, there are those unmoved by Hakalau’s success, and they include the state’s top officials charged with, of all things, protecting Hawaiian forests. How sad.

Pigs Undermine Progress in Restoring Native Bird Habitat at Hakalau Refuge

At Hakalau, the pigs are back. In 2004 and 2005, surveys of the fenced management units at Hakalau Forest National Wildlife Refuge, on the windward slopes of Mauna Kea, showed that six of the eight fenced management units were pig-free and the remaining two were nearly so. Five years later, the most recent survey of invasive species in the fenced units surrounding some 14,000 acres on the higher elevations of the 32,733-acre Hakalau forest unit of the refuge found signs of pig activity nearly everywhere surveyors looked.

“The current distribution of feral pigs is widespread across the refuge,” wrote the team that conducted the survey last November. It found “significantly high feral pig populations within all previously ungrazed-unulate-free units.”

“During this survey,” the authors continued, “out-planted endangered plants were seen rooted up and trampled by pigs. Other native plants, ferns in particular, beginning to re-establish in the understory, were also destroyed. Feral pigs also provide a means of dispersal of some of the weed species” that were also evaluated in the survey report.

What happened?

Two Steps Back

Taking out the pigs in the first place was nothing short of a herculean effort. Fencing the management units took years. Then came the daunting task of removing feral cattle and pigs from the fenced areas. As the animals left, the native forest began to reclaim the land damaged by 150 years of grazing. Helping it along was the backbreaking toil of thousands of volunteers and refuge staff who, over the last two decades,
NEW AND NOTEWORTHY

Pigs in Manoa: While our cover article this month focuses on pigs at Hakalau, on the Big Island, another study just published in Pacific Science looks at pigs in the forests of Manoa Valley, on O'ahu. The study, by a team of researchers at the University of Hawai'i's Department of Natural Resource and Environmental Management, compared runoff from plots where pigs had been excluded to that from plots where pigs were still present.

The article, “Runoff, Sediment Transport, and Effects of Feral Pig Exclusion in a Forested Hawaiian Watershed,” found that the concentration of total suspended solids in runoff from both types of plots was similar. However, authors Dashiell Dunkell, Gregory Bruland, Carl Evensen, and Creighton Litton found that the volume of runoff from the plots without pigs was significantly less than that from the plots where pigs were still present.

The article, “Runoff, Sediment Transport, and Effects of Feral Pig Exclusion in a Forested Hawaiian Watershed,” states that cattle presence has found that the presence of cattle near Waipa island watershed, which is available online at Science Direct, states that cattle presence near water quality monitoring sites was associated with an increase of 99.3 MPN (most probable number)/100 ml of Enterococcus in individual samples. Also, each one percent decrease in riparian canopy cover was associated with a 3.6 MPN/100 ml increase of waterborne Enterococcus.

What surprised the authors was the sheer volume of runoff from the small plots. In wet-season rainfall events (in December and March), “runoff regularly exceeded collection bucket capacity… Despite the fact that runoff plots drained an area of only 5.04 m², the amounts of runoff were extremely large, ranging from 7.5 to >128 liters in December.” That level, they note, was higher than any record reported in previously published literature.

Because the plots had been set up for just a year before the study began, they write, “it may simply have been too early for differences [in TSS] to be detected.” But they did discover “large Psidium cattleianum [strawberry guava] recruitment” to be higher in the unfenced plots. “There were twice as many P. cattleianum saplings and seedlings in the unfenced versus the fenced plots, indicating that pigs may be promoting further plant invasions.

Cattle on Kaua'i: Like pigs, cattle can also wreak havoc on an ecosystem. A new study published in the Journal of Environmental Management has found that the presence of cattle near Waipa stream in North Kaua'i and reduced riparian canopy cover there were associated with higher concentrations of the potentially harmful Enterococcus bacteria.

The research was a collaboration of authors from the non-profit Surfing Medicine International, the University of Hawai'i, the University of Nevada at Reno, and the University of California at Davis. They include Guy Ragosta, Carl Evensen, E.R. Atwill, Mark Walker, Tamara Ticktin, Adam Asquith and Kenneth Tate.

The article, “Risk factors for elevated Enterococcus concentrations in a rural tropical island watershed,” which is available online at Science Direct, states that cattle presence near water quality monitoring sites was associated with an increase of 99.3 MPN (most probable number)/100 ml of Enterococcus in individual samples. Also, each one percent decrease in riparian canopy cover was associated with a 3.6 MPN/100 ml increase of waterborne Enterococcus.

The authors also found that summer samples had substantially higher concentrations of Enterococcus than winter ones.

Summer Conference: Although it’s too late to get the cheap rate, ample time remains to register for this year’s Hawai'i Conservation Conference, which will be held August 2-4 at the Hawai'i Convention Center in Waikiki.

Keynote speakers on this year’s theme, “Island Ecosystems: The Year of the Forest,” will be poet laureate and former Environment Hawai'i board member William Stanley Merwin, as well as William Kostka, executive director of the Micronesian Conservation Trust.

Cost for the entire conference, including lunch coupons, is $370 or $170 for students and interns. One-day rates are also available. Visit http://hawaiiconservation.org/activities/hawaii_conservation_conference for more information.

Quote of the Month

“Looking back, we both feel like idiots, to be honest with you.”

— KapohoKine Adventures, LLC co-owner Anthony DeLellis on the company’s recent violations.
Hakalau Needs to Keep Eyes on the Prize

P

lanning is a good thing. And the 15-year Comprehensive Conservation Plan for the Hakalau Forest National Wildlife Refuge is, by our lights, a pretty good one.

But the thing about planning is this: it should never undercut its own viability.

If you own a home and its roof is leaking, you don’t ignore that while you brainstorm over possible renovations – unless those renovations include razing the house.

By the same token, if you manage a refuge where pigs are anathema to its very survival, you don’t hold off repairing fences while you ponder future options.

Yet for three years, that seems to be exactly what happened at the Hakalau forest unit of the Hakalau Forest National Wildlife Refuge. Under direction from on high to drop everything and complete the plan, everyone on the refuge staff from 2007 to 2010 seems to have been dragooned into the office and chained to a desk. And with little attention or resources directed to field work during this entire time – no pig surveys, no routine fence monitoring or repairs, little pig trapping or snaring by staff – it should come as no surprise that the pigs are back in force at all eight fenced management units at Hakalau.

Small wonder, too, that during this same period, staff turnover should have been so high. By most accounts, work on the CCP took people from the field, people who wanted to be in the field, and put them behind desks. Compounding the misfortunes was the fact that the planning period coincided with the retirement of two key members of the refuge staff.

In short, the Fish and Wildlife Service may have been reaching for the stars in its grand plan for the next decade and a half, but in doing so, it was tripped up by the needed resources that the refuge now has at its disposal – and, in so doing, impair prospects that tasks called out in the long-range plan can ever be realized.

A Rocky Path to the Future
The Comprehensive Conservation Plan anticipates a day when both the Hakalau and Kona units of the refuge are free of ungulates and invasive species, provide habitat for native birds and plants, including some of the most endangered in the world, and are sufficiently large to buffer some of the anticipated impacts of climate change.

The goals are admirable and defensible. But attaining them will require much more than an endorsement from the top levels of the Fish and Wildlife Service, or even from the highest ranks of the Department of Interior. Congress itself will have to embrace the idea that Hakalau needs strong support beyond the meager crumbs – roughly $1.17 million in 2010 — it has been given and, what’s more, that Hakalau deserves such support.

Outplanted Clermontia thriving in Maulua.
DLNR Pursues Incompatible Goals
On Land Adjoining Hakalau Refuge

Like a dagger through the heart, the state-owned Piha tract tears straight through the Hakalau Forest National Wildlife Refuge. Technically, Piha is part of Hawai‘i’s system of forest reserves, set aside in the early part of the 20th century to protect watershed values. Over the years, however, forest reserves, unless they have been put into the Natural Area Reserves System, have come to be regarded by hunters and state managers alike as the legitimate and almost exclusive domain of sportsmen.

Piha is a good example. On the 2003 draft management guideline maps of the Department of Land and Natural Resources, the upper portion of the Piha tract – the part that adjoins fenced management units of the Hakalau refuge on the north and south – is designated for mixed use, with the uses including some forestry products, pig and sheep hunting, and recreation.

Yet the only use at Piha is hunting. There are no published hiking trails in the area, no camp sites, and no other visitor amenities that might attract recreational enthusiasts. According to DOFAW’s Hilo office, which issues permits for personal-use gathering of foliage, there are no more than a handful of requests each year for Piha.

Roger Imoto, Big Island administrator for the DLNR’s Division of Forestry and Wildlife, said the area was managed for sustained yield hunting and that it would be fair to describe it as a de facto game management area. Both Scott Fretz, wildlife program manager for DOFAW, and DOFAW administrator Paul Conry disputed that characterization, saying that sustained yield was a term that applied only to the state’s officially designated game management areas. Under DLNR management guidelines, Piha falls into the A-2 class of hunting areas, where “game management is an objective integrated with other uses,” instead of being the primary objective, as it is in GMAs (class A-1). According to the guidelines, in A-2 areas, “habitat may be manipulated for game enhancement. Game populations are managed to acceptable levels using public hunting.”

But when it comes to Piha, there is no management whatsoever. The state has no idea how many pigs are in the area nor how many are removed by hunters. Joey Mello, a wildlife biologist for DOFAW on the Big Island, said that there’s no hunter check-in station for upper Piha. Hunters are supposed to phone in their catch to DOFAW, but, he added, “I don’t know if they report how much the catch is. Our data is pretty sketchy. We rely on the honor system.”

Fretz said that areas like Piha are “a kind of gray area... It’s not a controlled category,” where there are no bag limits and no closed seasons. Nor, he said, is it “technically” a GMA.

At present, hunting rules for the upper Piha area would indicate that the state regards it as an area where pig production is to be encouraged. There are daily bag limits (two pigs and one sheep per hunter per day). Dogs, which help track prey, are not permitted. And hunting is allowed only on weekends and state holidays.

Fretz was asked why the restrictions on the upper Piha area were so strict. Dogs were not permitted, he said, so that the area could be used for “stalker-type hunting.” As for the weekend-only restrictions, he said, that went back to plantation days, when workers were free only on weekends.

Making hunting at Piha even more daunting is the fact that there are no roads leading off Keanae Road (the unpaved road around the eastern mid-level slope of Mauna Kea) into Piha. From Keanae, hunters have to hike into Piha. (Some refuge staff suspect, however, that hunters gain access to Piha by following the fenceline road inside the Maulua unit and cutting fences to get to the animals.)

Fretz noted that DOFAW was proposing changes to its hunting rules statewide, although no changes are in the works for the upper Piha area. The proposed changes were pretty much limited to NARS units and other areas of high conservation priority, he said, while a wholesale re-evaluation of hunting rules awaits the revision of DOFAW management guidelines for all the islands. Asked when that might happen, Fretz said that guidelines had been completed for O‘ahu, but after the economic downturn occurred, no further progress had been made. He couldn’t say when work on the guidelines would start up again.

According to Fretz, the draft hunting

Editorial from page 3

with invasive plants. With the state making little effort to manage its resources at Piha, the area will continue to provide a seed source for weeds that can be carried into the refuge by animals or blown in by the breeze.

The benefits to keeping Piha under the present management regime are minimal, by any measure. The Department of Land and Natural Resources has utterly no idea the extent to which the hunters use the area – and make no mistake about it, hunters are the only ones who go near the place on anything approaching a regular basis. There is no attempt to manage pig populations there – for sustainable yield or anything else. While hunters may whine about loss of their hunting grounds, the lack of documented use of the area should put paid to claims that upper Piha has real value to them.

The legislation establishing Hakalau allows it to acquire land by donation or purchase, but it cannot acquire public (state) lands by purchase. If the state wants to see the area managed in a fashion consistent with the objectives of the refuge (and why shouldn’t it?), the state can either enter into a joint management agreement, as it has done in the case of the Papahanaumokuakea Marine National Monument, or it can undertake compatible management activities on its own.

For a start, the Division of Forestry and Wildlife should be asked to revisit its so-called “management” guidelines for upper Piha. At the very least, bag limits and hunting-day restrictions should be lifted when the Board of Land and Natural Resources takes final action on the draft hunting rules that will soon come before it for a vote.

There is no reason whatsoever for the state to continue to ignore the damage it is causing to its own natural resources by ceding Piha to the hunters. The presence of the refuge has been a boon to Hawai‘i and its imperiled birds and plants – and even to the Hawai‘i visitor industry, with hundreds of volunteers from all around the country working at Hakalau every year. Relegating Piha to the status of a pig nursery, for the dubious benefit of a handful of hunters, is a slap in the face to all who have labored for the last quarter century to make Hakalau the amazing place it has become.

—— Patricia Tummons
In the greenhouse at Hakalau, varieties of Clermontia await outplanting.

rules are nearly in final form and should be forwarded to the Board of Land and Natural Resources for its approval within a few weeks. (For more on the hunting rule revisions, see the article in the January 2011 issue of Environment Hawai‘i, “State’s Proposed Hunting Rules Fail to Protect Forest, Critics Say.”)

“The approach that I’m taking is to set the management guidelines and then follow through with rules,” Fretz said. “If anyone has an issue with how Piha is being managed, they should question and try to influence what the division has set as the management goals for the area.”

Piha is not the only state-owned land of concern to Hakalau. On the north side of the refuge boundary lies upper Laupahoehoe, which also is part of a state-owned forest reserve. Under the draft hunting rules, the same limits apply there as at Piha.

**Conservation?**

DOFAW administrator Conry was asked what the state had done to promote conservation in the area, which is described on DOFAW management guideline maps as having “considerably disturbed” vegetation. He mentioned that the state had released a biocontrol agent for banana poka in the Piha area a while back. “It’s an area we’re definitely interested in making sure we’ve got the watershed protected there and the animals under control,” Conry said in a phone interview. “But if the question is: is it going to be fenced and the animals removed? I don’t know where it is as far as our priorities are concerned.”

With the development of the Mauna Kea Watershed Alliance, Conry added, “we can look forward to additional management efforts there in the future… [and] work toward better landscape-level management. That’s been a model that’s worked across the state.” (The watershed alliance consists of large landowners, both public and private, and was established two years ago. Last month, the state began recruitment for a coordinator who would oversee volunteers in “restoring and monitoring native vegetation and conducting other management activities… [and] in controlling invasive weeds and other threats to watershed and native habitats…”

Imoto was asked whether anyone had approached him about managing state forest reserve lands in a fashion more compatible with the goals of the neighboring refuge. He responded that he had recently talked about this with refuge manager Jim Kraus, but no one else. “I haven’t discussed it with staff, and don’t know if we’ll consider that or not,” he told Environment Hawai‘i.

**Cattle**

Baron Horiuchi, the refuge’s horticulturist, said he has noticed some outplantings have been damaged by pigs. But, he added, he is also afraid of cattle getting into the refuge. At the height of the recent drought, a bull broke through a refuge fence and knocked down two large ‘ohi’a trees, he said. “They [the trees] didn’t come back. They’re dead.”

Many of the cattle are descendants of the remnant herd left on by a former lessee on land belonging to the state Department of Hawaiian Homes Lands, which adjoins the refuge on the west and along part of the southern boundary.

According to a DHHL staffer, before the drought, the wild herd numbered in the thousands. At present, there may be as many as 1,500 head of cattle. In April, a contractor to the agency began to remove the cattle, a process that is estimated to take up to three years.

Once the cattle are gone, however, the DHHL has no plans to put ranchers back on the land. Instead, the DHHL commission has approved what it is calling the ‘Aina Mauna Legacy Program, a 100-year plan to restore native forest to some 56,000 acres of land it owns in the area. An environmental assessment for the program is to be released by mid-summer.

---

**Keeping Pig Numbers in Check Is an Elusive Target**

In sustained yield hunting, says Scott Fretz, “the level of harvest from year to year should remain and some level, and that level should be the maximum or optimal that you can get out of it, without overharvesting so it causes the population to decline.”

And if the hunting effort is not sufficient, he says, “it is probably going to cause damage, especially in Hawaiian ecosystems. Animals are going to overgraze, or they might suffer from malnutrition or dehydration. You’ll see some kind of effects that are undesirable.”

While it is not actively managed, the Piha tract does have pigs. And given studies on the reproduction of wild pigs in Hawai‘i, striking a balance between hunting pressure and reproduction would seem to be a difficult task, even with tightly supervised management.

Given the year-round breeding season of pigs in Hawai‘i, keeping the population at a constant level requires far more hunting pressure than would appear to be applied at Piha. In 2006, researchers with the U.S. Geological Survey’s Pacific Island Ecosystems Research Center and refuge biologists looked at the relative efficiency of hunting and snaring in reducing the pig populations at Hakalau. They found that keeping pigs at a stable number would require taking out 43 percent of the population every year. Anything short of that and the population will increase quickly.

—P.T.
planted some 400,000 koa seedlings in the former pasture land. Today the young trees are flourishing and many of Hakalau’s native bird species, including some that are federally listed as endangered, are moving upslope to areas that had not seen forest birds for decades.

Some 43 miles of ungulate-proof fence enclose the upper 14,150 acres of the Hakalau forest refuge and divide it into eight management units. These range in size from the largest, at 5,000 acres (Shipman, which includes most of the refuge outbuildings and greenhouse), to the smallest (Middle Honohina, at 550 acres, and Pua Akala, at 500). Middle Honohina was the first to be declared pig-free – in 1989, just four years after the refuge was established.

Once the fences are up, they require constant maintenance. Tree-falls, vandalism, and corrosion can cause breaches. During the recent drought affecting broad swaths of the Big Island, feral cattle from former ranches on neighboring Department of Hawaiian Home Lands were breaking through the fences in search of lush vegetation and water.

But after 2005, refuge staff and management were preoccupied with tasks other than fence patrols and maintenance, snaring, and the rest of the activities essential to keeping the management units pig-free.

Interviews with former and current staff suggest a number of factors that tended to relegated ungulate control to the back burner:

- Management of the Kona unit of the Hakalau refuge. This 5,300-acre unit on the leeward slope of Mauna Loa was acquired in 1997 as a promising release site for captive-reared ‘alala. However, litigation over access to the site lasted until 2005, by which time the Kona unit staff had been reassigned elsewhere within the Fish and Wildlife Service and funds for fencing had been lost. Using Hilo-based staff to work in the Kona unit has taken significant personnel resources away from the Hakalau forest.

- Developing a Comprehensive Conservation Plan (CCP). Starting in 2007, refuge management – under strict orders from national Fish and Wildlife Service administration – had to devote considerable effort to preparing a 15-year plan for the refuge. This three-year project, mandated by Congress, also took time and energy that otherwise would have been spent in the field. Current refuge manager Jim Kraus estimates that roughly three-quarters of his time in his first two years on the job was spent on this effort.

- Loss of key people. Dick Wass, who had been manager of the refuge since its establishment, and Jack Jeffrey, its biologist whose remarkable bird photographs have given Hakalau’s small feathered inhabitants much-deserved fame nationally and internationally, both retired in 2008.

- Difficulty in retaining staff: Kraus says high staff turnover has made running the refuge much more difficult. Field crew are no sooner trained than they quit; a biologist hired to replace Jeffrey left within a year; a replacement (from Alaska) is scheduled to come on board this month.

Kraus says that of the eight people he’s hired, “only two are still here.”

- Addressing charges of mismanagement brought by a University of Hawai‘i scientist. These charges, having to do with protection of the Hawai‘i ‘akepa (Loxops coccineus coccineus), a critically endangered bird, resulted in a three-day workshop in 2008 involving top ornithologists from around the country who closely scrutinized the priorities and conduct of refuge staff.

“Hakalau is a habitat island under as-

One management element that became a casualty of stresses on refuge resources was the periodic survey of pig activity, as indicated by scat, wallows, digging, sightings, and the like. These surveys had been conducted each year from 1997 to 2005 and were fairly rigorous, following a set of established transects that ran the length of the refuge’s fenced units. They were useful in helping refuge staff direct their efforts to potential problem areas but were suspended for five years.

No one seems to recall exactly why. According to one person interviewed (who did not want to be publicly identified), the refuge administration asked that teams conducting annual bird surveys at Hakalau also note the presence of pig sign wherever they happened to see it. But with surveyor’s eyes scouring the treetops for birds, their reports of pig sign were sketchy and no substitute for the rigorous pig surveys that had been done in the past.

Reports of staff efforts to control pigs, obtained through a federal Freedom of Information Act, suggest that field crews spent very few days in pig-control efforts in recent years. In the Upper Honohina unit, for example (Unit 5 on refuge maps), from March 2009 to March 2011, just 2.5 person-days were spent controlling pigs (eight pigs were caught in this period – seven in September 2010 alone). In the Upper Maulua unit (Unit 4), no snares were set from November 2005 to April 2011, an effort requiring nine person-days and yielding 13 pigs. (Again, eight of those pigs were caught in one month alone – February of this year.) In all of 2006, 2008, and 2009, there was no effort at all reported on pig snaring in this area.

By 2008, says Jeffrey, pigs were seen in the Middle Honohina unit, which had been pig-free for nearly 20 years. This was despite the fact that, according to refuge records, field crews had given this unit a disproportionately share of their attention: more than 27 person-days between 2006 and April 2011, resulting in the catch of 53 pigs.

All totaled, from the records provided to

Fenced management units at Hakalau
Environment Hawai‘i, it seems that refuge staff spent about 163 person-days from 1998 to 2011 devoted to pig-reduction efforts.

In addition to the efforts of refuge staff, there has been the work of a contractor, paid to patrol the three makai units of the refuge. The initial contract began in 2007 and has been extended multiple times. It now runs through October 31 of this year.

When that contract expires, “our intent is to set up a new contract,” says Kraus. “We’re at the end of the string with that one, and we want to expand on it as well.”

The Plan

Last month, the Fish and Wildlife Service made public the 15-year Comprehensive Conservation Plan for Hakalau, the product of three years of intensive effort by refuge staff. As described in the 559-page document, a fundamental “common feature” to each task in the CCP is the construction of “ungulate-proof boundary fencing and sequence of management actions.”

“Establishing perimeter boundary fencing is a critical first step in habitat protection and restoration to deter major threats to the ecosystem and their impacts to wildlife population and species recovery,” the plan states. “Once fences are established, the standard management strategy sequence would be to remove ungulates, then concentrate on invasive species control … while simultaneously restoring habitat through native plant outplantings.”

Readers of the plan might be forgiven for thinking that for the upper areas of Hakalau, these tasks have already been ticked off the to-do list. “Most of the fenced portions of the HFU [Hakalau Forest Unit] are pig free,” the plan states, relying evidently on the 2004 and 2005 surveys of pig activity within the fenced management units, which were the most recent surveys available during the years in which the plan was being prepared.

No one associated with the refuge, however, is defending that characterization these days. In last month’s press release announcing the availability of the plan, Kraus is quoted as saying, “Refuge staff and volunteers are rightfully concerned that our efforts to re-establish our rare native plant heritage and maintain healthy populations of birds are at risk from pigs that have slowly regained entry to the refuge. I hope this plan will help us overcome the challenges we face, but we will need continued public and partner support to get the job done.”

In an interview with Environment Hawai‘i, Kraus said that it will take “serious mobilization … to resolve the pig situation. Half the battle is making people aware.”

Don Palawski, to whom Kraus reports in Honolulu, stressed that no one was attempting to paper over the hard truth. “We want to let people know of the problem – of the pigs’ return, he said, especially within the service itself.

But whether the resources needed to repair existing fences, build new ones, and remove and keep out the damaging wild pigs and cattle will be available is a huge question.

According to the plan, just to meet current management tasks, the refuge staff, now numbering seven, will need to be increased to 15. To meet all the challenges identified in the CCP, staff will need to be increased to 26, including six workers – three field crew, one park ranger/volunteer coordinator, a wildlife biologist, and a law enforcement officer – assigned to the Kona unit of the refuge.

Last year (federal fiscal year 2010), the total budget for the refuge was $1.1 million, covering seven full-time employees and five so-called term employees (workers who are hired for a defined term and who do not enjoy civil service protection). “If there’s no significant injection of funds on a substantial level,” Kraus says, “we can’t hold our own.”

Given the impasse over spending in Washington, however, the entire refuge system still has no budget for the current fiscal year, which will end September 30. “We’re in a wait-and-see mode,” says Palawski. But, he adds, “we’re going to get whatever we can to do the fences and maintain them.” Finding the funds, however, “is a very serious problem.”

Keeping the refuge going, says Kraus, is “kind of like being in a leaky boat that just keeps springing more leaks… I’m really concerned about it as a manager, because the investment made is definitely at risk.”

— Patricia Tummons

For Further Reading...

Since 1997, Environment Hawai‘i has reported on events and issues at the Hakalau Forest National Wildlife Refuge. Selected articles include:

“At Hakalau, Hunter Pressure Over- rides Conservationists’ Concerns,” November 1997;

“Emma’s Column: From Desolation to Forest,” July 2000;

“Jack Jeffrey: Love for Birds Inspires his Art,” July 2002;

“Government Pays $8 Million for Refuge, but Has No Legal Access,” October 2003;


“Eight Years after Purchasing Land, Federal Government Finally Gains Access,” April 2005;

“On the Trail of the Moa Nalo,” February 2006;

“UH Professor Takes Long-Running Feud with Feds into Court of Public Opinion,” November 2009.

All articles are available online at www.environment-hawaii.org. Click on the “Browse our Archives” link in the right-hand corner of the home page to be taken to a page with links to each year of publication. Full access is available to paid-up subscribers or to those who purchase a two-day archive pass ($10).

Also of interest:


“Efficacy of Feral Pig Removals at Hakalau Forest National Wildlife Refuge, Hawai‘i,” by Hess et al., published in Transactions of the Western Section of the Wildlife Society, 2006. A pdf of this article is available through a link in the EH-xtra section of our home page.
Land Board Fines Eco-Tour Company For Cutting Trail in Conservation District

Sam Lemmo couldn’t believe what he was hearing.

KapohoKine Adventures, LLC, was arguing that it cut a trail through the Conservation District in Honoli’i, Hawai’i, merely to allow neighboring hunters and gatherers to gain access to Honoli’i Stream and not for any commercial tours to the secluded pool at the trail’s base.

Company co-owner Gary Marrow and his attorney, Thomas Yeh, tried to make that case to the state Board of Land and Natural Resources last month. They were apparently unaware that board members had testimony to the contrary from one of the trail builders and copies of advertisements (with what appears to be a picture of the site) for a “Fly and BBQ/Swim” tour at $395.08 to the “KapohoKine private sanctuary.” The ad suggests guests wear bathing suits so they can kayak and swim in a lake fed by a 40-foot waterfall (towels and “noodle” floats provided).

“I do not understand how somebody could sit in front of you, a commercial tour company, and represent to you they’re not economically benefitting from their clients walking over the trail down to the river. I must have brain damage,” said Lemmo, administrator for the state Office of Conservation and Coastal Lands (OCCL), at the Land Board’s May 13 meeting in Honolulu.

During discussion of Lemmo’s recommendation that the Land Board fine KapohoKine, as well as property owner Teresa Prekaski, $16,500 ($15,000 for Conservation District violations plus $1,500 in administrative costs), a number of people, including two who had helped build the trail, contradicted some of the representatives Marrow and Yeh made about the intent and extent of the work done.

The Land Board ultimately chose to approve the recommended fines even though some members thought they were generously low. The board also gave KapohoKine 120 days either to remediate the trail and restore the land or to file for an after-the-fact Conservation District Use Permit for the trail and commercial recreational use.

Continued commercial use of the trail without a CDUP would incur fines of $15,000 a day, the board decided.

For the Pigs

It all started early last October, when Prekaski asked the OCCL for permission to construct a 190’-by-4’ trail from the top of Honoli’i Gulch down to the river.

“I am farming sweet potato on the property and the pigs are creating a lot of problems,” she wrote. And because it had become impossible to reach the river due to the invasive plants, she said, she planned to remove ka’ili ginger, staghorn ferns, and guava trees and plant native species.

“I would like to get started and get rid of these pigs and rejuvenate the forest,” she wrote.

A month later, Lemmo responded that the landscaping Prekaski described would require a Conservation District Use Application for either a departmental or Land Board permit, and could also require an environmental assessment. He then asked for more information on the project’s scope to assess what kind of permit and assessment would be required.

A week later, Prekaski revised her opinion on the trail’s condition, stating in her response that the trail “is actually in pretty good shape.” To answer Lemmo’s questions, she wrote that she planned to remove guava trees and ferns from about 600 square feet along the trail and at a small viewing spot at the gulch’s rim, use guava limbs as steps, and sprinkle the trail with cinder to prevent slipping. She was also growing hundreds of koa trees to replace the guava, she wrote.

On November 24, Lemmo informed her that the work required a Conservation District Use Application for a departmental permit.

“Staff has determined that the proposed project is minor in scope and may be considered an exempt action,” Lemmo wrote.

Although he had written in bold letters that the work required a permit application, none was submitted before KapohoKine employees began work on the trail. On December 30, Department of Land and Natural Resources director and Land Board chair William Aila issued Prekaski a notice of alleged violation and order regarding the construction of a trail, stairs, and walkway platforms to support commercial tour operations. Aila warned Prekaski she could be subject to fines of $1,000 a day if illegal activities did not cease.

In May, the OCCL moved to fine the company and Prekaski for constructing a trail in the Conservation District for commercial purposes.

‘Heartache’

At the Land Board’s May 13 meeting, Prekaski was nowhere to be found. But Yeh, representing KapohoKine, admitted that the company should have filed a Conservation District Use Application. However, he said, the work was so minor (hand clearing of less than 2,000 square feet), it probably would not have needed a permit. He added that under the OCCL’s own guidelines, violations covering less than 2,000 square feet should incur fines of only $1,000 to $2,000.

Yeh argued that a trail to the river already existed and that KapohoKine merely restored it. He also claimed that nothing prohibits commercial use in the Limited subzone of the Conservation District.

“You can do what you want unless it’s prohibited,” he said.

A clearly shaken Marrow explained that he proceeded without filing a CDUA because Lemmo’s last letter to Prekaski suggested that the work may be exempt from permit requirements. Marrow claimed that when he called the OCCL’s Audrey Barker (who is no longer with the agency) to clarify what was required, she told him, “I can’t tell you to do it. I can say as long as you adhere to the rules and regulations, you should be fine.”

When Maui Land Board member Jerry Edlao told Marrow that he should have
Les than a week after the state Board of Land and Natural Resources fined KapohoKine Adventures, LLC, $16,500 for Conservation District violations at Honoli’i, Hawai’i County planning director Bobbi-Jean Leithead-Todd delivered more bad news to the company: The airstrip on the Agriculture portion of landowner Teresa Prekaski’s property, which KapohoKine uses for its helicopter tours, is off limits, for now.

The Planning Department had initially issued the company a notice on January 12 that the airstrip was a grandfathered use of agricultural land, but reversed itself a month later. On February 3, the department directed KapohoKine to prove that the airstrip was a non-conforming use. (A non-conforming use is one that does not conform to current regulations, but existed before their adoption. Any non-conforming use that ceases for more than a year may not be legally resumed.)

Among other things, the county asked for documentation from 1967 to the present of continuous use.

Hilo attorney Thomas Yeh, who represents KapohoKine, responded on March 31 with maps, declarations from people who said they used the airstrip over the past several years, and other materials.

But a May 18 letter from Leithead-Todd indicates that the Planning Department was most interested in activities pre-1967.

“We just focused on filling the gaps [between 1967 and the present],” Yeh told Environment Hawai’i. After reading the letter, Yeh said, it appeared that the county had shifted its focus.

Leithead-Todd had determined that for the airstrip’s use to be considered non-conforming, it had to have been continuous since June 17, 1963, when the state’s land use law was established, and September 21, 1965, when the county established rules regarding non-conforming uses.

She pointed out that neither a 1965 aerial photo by the state Division of Forestry nor a 1966 USGS map, which Prekaski’s neighbor Gwen Herrington submitted, showed any airstrip at Honoli’i.

Former Murray Air pilot Al Carter, who began crop-dusting sugarcane in November 1966, also informed the department that the only available airstrips at the time were at Pepe’ekeo and ‘Alae. He said his first flights to the Honoli’i airstrip were in late 1967 and early 1968.

“In conclusion, I have determined that there is enough evidence to prove that the Honoli’i Airstrip was not established prior to June 17, 1963 or September 21, 1966,” Leithead-Todd wrote. This directly rebutted Yeh’s claim that a C. Brewer map showed the airstrip had been there since 1961.

She ordered KapohoKine to cease and desist all helicopter operations and landings on the property within 30 days and not resume them until it 1) prepares an environmental assessment (and possibly an environmental impact statement) for its use, 2) receives a special permit from the county Planning Commission, and 3) obtains a CDUP from the DLNR for activities, use and structures in the Conservation District or provides a letter from DLNR stating that a CDUP is not required.

If her department continues to receive complaints of helicopter landings, she added, “we will treat this as a violation complaint and follow up with an inspection and possible corrective action, which may include daily fines.” The Hawai’i County zoning code allows for fines of up to $500 a day.

“It’s a little frustrating,” Yeh says of the fact that the county raised issues that his clients were not aware of when they were gathering the requested information.

Yeh was asked whether his clients planned to appeal the county’s decision or obtain the necessary permits. His clients were still weighing their options, he replied.

— T.D.
see the harm in his guests walking down to see the waterfall.

Regarding photos submitted to the Land Board showing kayaks resting alongside the stream, which Marrow admitted had been set up for his guests, chair Aila asked whether the company had charged to use them.

Marrow said no, it was not part of any tour. “It’s available there if they want to do it. Anyone is allowed to kayak or swim in the river. ... It’s not something that we publicize. It’s just an accessory,” he said.

KapohoKine co-owner Tony DeLellis, who identified himself as “the co-ignorant person in this thing,” added another explanation for why the work was done. Last year, the company lost access to its zip line site. Loath to lay off workers so close to Christmas, he directed some of his zip line workers to start rehabilitating the trail.

“Looking back, we both feel like idiots, to be honest with you,” DeLellis said, adding that his company never tried to willfully mislead the DLNR.

Neighbor Gwen Herrington, who showed the board pictures of KapohoKine’s recent tours to the site, also presented photos showing how dense the forest was before the trail clearing and testified that there was never a pre-existing trail at that site, although there are others in the area.

When Kaua’i Land Board member Ron Agor asked Herrington how she would feel if KapohoKine gets permits for its uses, she replied that she’s not against tourism, “but having helicopters land behind your home or where you want to retire and thinking of having people screaming up and down the river for the rest of my days, no, that is really shocking. It truly is. But things happen, so we will have to live with it.”

**Trail Work**

Contrary to Marrow’s and Yeh’s representations, testimony from two men who had helped build the trail suggested that not only was enhancing the company’s tours the driving reason behind the work, but that some, if not all, of the trail was new.

Lucas Hubbard, who led the trail work, assured the Land Board there was a pre-existing, partly visible trail and that the restoration, for the most part, followed it.

The work, which began in late November, took a little over two months to complete, he said.

“We didn’t flag anything. They came to me and told me we’re going to build a zip line and that zip line goes right over that waterfall, parallel to the stream. We wanted to float over native endemic forest. ... so we’re doing the island a good deed if we’re taking the guava out of there,” he said.

Gon mentioned that testimony from Sean McLonville seemed to contradict Hubbard’s account somewhat.

McLonville notified the OCCL last December that he had also worked on the trail, clearing vegetation and doing some “major” digging into the hillside. He wrote that the trail required the construction of several switchbacks, which increased the trail’s length.

“There was no trail in the beginning and we started from scratch,” he wrote, adding that after scouting the trail and removing “large amounts of plants and trees,” his crew cut into the hillside and moved large rocks and boulders.

The trail, he claimed, was originally meant to be a feature of KapohoKine’s helicopter tours — “a spot to land and a trail, which visitors could hike down to swim.”

“As the trail neared completion, I was told it was to become the location of a new zip line built and funded by KapohoKine. The purpose was solely for increasing revenue and continuing their ‘Helicopter waterfall tour,’” he wrote.

With regard to whether or not a trail existed, Lemmo told the board that whatever was there was “extremely, extremely unpronounced.” In any case, Lemmo said, nothing changes the fact that the company improved the land for commercial purposes.

**Harsh Words, Meek Fine**

After reviewing testimony, reading the company’s advertisements, and seeing photographs of recent tours to the site, Land Board members concluded that the work done was not a mere rehabilitation and that it had been done for commercial purposes. And they and Lemmo had some harsh words for KapohoKine.

“Starting a business in Hawai‘i is not the easiest thing to do, and to be successful, as you’ve been, is a wonder. I, too, am in business and it’s a very competitive business and it really, really irks me when competitors don’t follow the rules. What happens is it hurts the environment, it hurts the client, and it makes the industry as a whole look bad,” Edlao said. “If you had taken that one step [and applied for a permit], it could have opened a can of worms for you, but as a business, it’s something that you have to deal with.”

Addressing Yeh’s argument that commercial trail use is allowed because no rules expressly prohibit it, Lemmo said that Yeh misunderstands how Conservation District rules are designed. If a use is not identified in the rules, it’s prohibited, Lemmo explained, adding that the closest identified use that might allow for a commercial tour operation in the Limited subzone is a private park.

Gon frowned on the idea of allowing anyone to apply for an after-the-fact permit that would allow them to benefit commercially from significant unauthorized improvements in the Conservation District.

“That’s a very bad precedent to set,” he said. And when Agor moved to accept staff’s recommendation, Gon said he could not support it if it includes an option to apply for an after-the-fact CDUP.

“Two months’ work on a steep way down to a pool, coupled with an advertisement for a ‘Fly and BBQ’ just doesn’t strike me as something I want to support with an after-the-fact permit,” he said.

Despite Gon’s arguments, Agor said he didn’t think the Land Board should prevent a private property owner from applying for a permit. Ultimately, the department will determine whether or not it should be granted, he said.

Goode agreed that KapohoKine has a right to apply for a permit. He also suggested that the fines could be much greater than $15,000. Lemmo could have recommended additional fines for grading and for the apparent flauting of the DLNR’s December order to stop illegal activities, he said.

“I think you’re being generous,” he told Lemmo. Edlao estimated the fines could have been as much as $40,000.

“That was more than a restoration. ... For you to come here and say it was just a restoration is kind of unsettling for me. If you did something wrong, admit you did wrong and let’s move on,” Edlao told Yeh.

The board then voted to approve the OCCL’s recommendations. Gon was the lone dissenter and Hawai‘i island Land Board member Rob Pacheco, who owns the Hawai‘i Forest and Trail tour company, recused himself from the matter early on.

Yeh told *Environment Hawai‘i* that KapohoKine is reviewing whether or not it will continue to use the trail and apply for the CDUP.

**Board Allows Shark Killing**

At French Frigate Shoals

For the fourth time since 2006, the Land Board is allowing federal monk seals
researchers to kill Galapagos sharks at French Frigate Shoals that attack pups or exhibit predatory behavior close to shore. The decision comes despite opposition, for the first time, from the state Office of Hawaiian Affairs.

Although efforts to cull the rogue sharks have had minimal success in recent years, their removal is still critical to the survival of the endangered seal, which has a dwindling population of roughly 1,100 individuals, according to Charles Littnan, lead monk seal scientist with the National Marine Fisheries Service.

The seals suffer from a suite of threats, including starvation and entanglement in marine debris, but shark predation is the greatest concern at French Frigate Shoals, he told the board at its April 24 meeting.

Of the 835 pups born there since 1997, 206 of them have been attacked by Galapagos sharks, Littnan said. After failing to deter pup predation via harassment and relocating females, NMFS researchers have settled on culling. Research has determined that removing 20 individuals would have an imperceptible impact on the shark population, which ranges from about 670 to 1,700 at FFS.

Littnan said that the Northwestern Hawaiian Islands lobster fishery discarded hundreds of thousands of pounds of bait into the water in the early 1990s and may have inadvertently increased the Galapagos shark population beyond the natural carrying capacity at French Frigate Shoals. As the fishery dwindled in the latter part of the decade (it closed altogether in 2000), the sharks may have turned to the seal pups as a food source, he said.

“It would be imprudent to think this will resolve itself naturally,” Littnan said.

This year, he asked that the Land Board allow camping because sharks often take pups in the early morning or at night when people aren’t around. Normally, researchers are confined to their vessels at night.

He also asked to employ a new technique, originally designed to catch seals, called surprise netting.

Although scientists seem convinced that killing the sharks is the best way to deal with the problem, some native Hawaiian cultural practitioners believe just the opposite. One told the Land Board that while he understood that monk seals needed protecting, there must be other methods available to control the sharks, which he said are his ‘aumakua (a family or personal god).

“You do not solve anything in the world by killing. ... All life is important,” he said.

Trisha Kehaulani Waston, a NMFS consultant and member of the native Hawaiian working group that advises the Papahanaumokuakea Marine National Monument Management Board, held a different view. She noted that in Hawaiian culture, the octopus, or tako, is the physical manifestation of the god Kanaloa, yet “most people eat tako poke.”

She added that the NMFS has “bent over backwards” to conduct its work in a culturally appropriate manner. The remains of the one shark scientists managed to kill in the NWHI last year went to native Hawaiian drum and weapons makers.

“Sharks are taken every day. You can find them at the market. But of those taken last year, only one had to be given to Hawaiian cultural practitioners,” Waston said.

In the past, OHA has either supported or kept silent on proposals to cull sharks in the Northwestern Hawaiian Islands. This year, however, OHA’s native Hawaiian working group could not reach a consensus on the proposal and decided that it no longer likes the way the matter comes to them, OHA’s Heidi Guth told the Land Board.

“You’re asking us to choose between natural creatures. ... We’re not willing to do that,” she said.

Because some native Hawaiians oppose shark culling for religious reasons, Guth said, OHA could not agree with the rest of the Monument Management Board that there are no factors that would make the issuance of the permit inappropriate.

For this permit and others, the native Hawaiian working group wants to be consulted with differently, with more mutual respect, Guth said. “At this point, it’s more one side versus the other. ... Perhaps Kehau [Waston] can help with this,” she said.

Waston noted that discussions to identify the needs of native Hawaiians and where those needs can be addressed in the permitting process have already begun.

For the Land Board’s part, support for the project was not wholehearted. Maui member Jerry Edlao, who had grilled Littnan about whether all other methods to help the pups had been exhausted, said he would not approve any more permits to kill sharks in the future.

Big Island member Rob Pacheco, who moved to approve the permit, said that while he appreciated OHA’s position that the consultation process needs improving, he disagreed with the notion that the permit pitted one species against another.

“Monk seals are on the brink of extinction. Galapagos sharks are not. We’re talking about taking a few individuals,” he said.

In the end, the board unanimously approved a permit to NMFS scientists Frank Parrish and Alecia Van Atta to monitor and remove sharks at French Frigate Shoals.

### Board Denies Contested Case On Parker Ranch Lease Extension

On May 13, the Land Board quashed Margaret Willie’s dream to access a...
portion of state land in Waimea, Hawai‘i, leased by Parker Ranch, Inc., when it denied her request for a contested case hearing on the board’s February decision to extend the ranch’s leases for 20 years.

Willie, who lives adjacent to the 2,600 acres leased by the ranch has suggested that in addition to ranching, the board should consider developing a perimeter trail around the property for the public and for commercial tours.

The DLNR, based on advice from deputy attorney general William Wynhoff, decided Willie is not entitled to a contested case hearing because the lease extensions were not land dispositions and because she has no property interest.

Big Island board member Robert Pacheco agreed with the department’s analysis, but also agreed with Willie that public/recreational access is needed in the area and he encouraged the department to discuss the possibility of developing a trail with Parker Ranch.

“It’s not going to happen between Ms. Willie and Parker Ranch. I can tell you that much,” he said, adding that he’d like public access to be a condition of future leases that block access to forest reserves.

Three permits, the board had to determine that all of the activities associated with each permit have been evaluated as a single action, that the exemption for scientific research with no serious or major environmental disturbance seems to apply, and that cumulative impacts on sensitive environments, as well as overall impacts, will be, or will probably be, minor.

When at-large board member David Goode said he would have liked to have been advised earlier of the change, member Robert Pacheco suggested that the board has implicitly endorsed the exemption when it approved permits in the past.

When asked by state Sen. Jill Tokuda, DOFAW administrator Paul Conry said that this time, money is available to implement at least some features of a new master plan.

“We just don’t want to do another study,” he said.

Conry added that ponds for endangered wetland birds are expected to be constructed next year. According to senior HHF planner Ron Sato, a draft environmental assessment for the project should be completed in July.

As for the master plan, Sato said the whole process will probably take a couple of years to complete. Just acquiring a Conservation District Use Permit takes six months, he said.

— Teresa Dawson