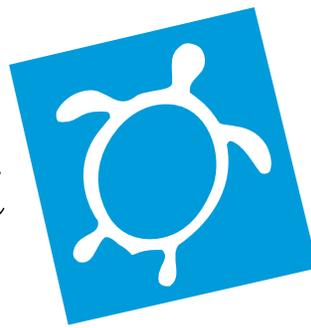


Environment



Hawai‘i

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Sea Turtles In the Soup

What’s good news for the vessels that chase swordfish could be bad news for the loggerheads and leatherbacks that cross paths with them.

The latest biological opinion by the National Marine Fisheries Service pretty much clears the way for more effort directed to swordfish. And, apparently in keeping with the view that if you didn’t see it, it didn’t happen, the NMFS is inclined to remove the requirement that observers be present every time a swordfish vessel leaves the docks. Whether this puts paid to the ever-present threat of litigation over turtle protections is anyone’s guess.

New Biological Opinion on Turtles Pleases Hawai‘i Swordfishing Fleet

In the end, the longliners were worried for nothing. In fact, things may now get a little easier for them.

On January 30, the National Marine Fisheries Service issued its new biological opinion (BiOp) on the effects on sea turtle populations that would result from removing fishing limits on Hawai‘i’s shallow-set longline fleet.

Its conclusion: lifting the limit is not likely to jeopardize any of the six federally listed species that interact with the fishery, including endangered loggerhead and leatherback sea turtles.

The BiOp grew out of a lawsuit filed in December 2009 by the Center for Biological Diversity, the Turtle Island Restoration Network and KAHEA: the Hawaiian-Environmental Alliance over the NMFS’s adop-

tion of a council proposal — known as Amendment 18 — to lift the effort limit on the Hawai‘i-based shallow-set longline fleet.

The amendment also nearly tripled the number of allowable interactions with loggerheads, a change that flew in the face of the impending uplisting of loggerhead sea turtles from threatened to endangered, the groups argued.

To avoid lengthy litigation, the NMFS agreed to suspend the implementation of those portions of Amendment 18 and its associated biological opinion that related to the two turtle species while it prepared a new BiOp.

In the new BiOp, the NMFS determined that the Hawai‘i swordfish fishery will likely

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Abercrombie, Inouye Offices Accused Of Interfering with Hearing on Telescope

The long contested case hearing over the proposed \$300 million Advanced Technology Solar Telescope (ATST) on Maui took an unusual twist last month, with the hearing officer alleging “inappropriate ... pressure and activity by U.S. Senator Inouye’s and the Governor’s offices.”

As a result, on March 23, the Board of Land and Natural Resources, which had appointed attorney Steven B. Jacobson to hear the contested case, met to decide what to do next. In an order addressing the issue, Land Board chairperson William Aila set forth possible actions:

- “1. Striking the report ... from the record;
- “2. Discharging the hearing officer, Steven

Jacobson, as the hearing officer in this case; and

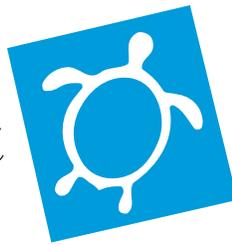
“3. Retaining a new hearing officer to review the record of the proceedings ... and to issue a new hearing officer’s report and proposed findings of fact, conclusions of law, and decision an order. The new hearing officer would be authorized to conduct additional fact finding as necessary.”

A Drawn-out Hearing

Until March 15, the contested case had followed a pretty normal course. The decision prompting the contested case occurred in December 2010, when the Land Board ap-

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Environment Hawai'i



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NEW AND NOTEWORTHY

Anchialine Nightlife: The animals in Hawai'i's anchialine ponds, to the extent they have been studied at all, have been studied mostly during daylight hours. But Troy Sakihara, a biologist with the Hawai'i Department of Land and Natural Resources' Division of Aquatic Resources, recently surveyed 81 such pools at Manuka Natural Area Reserve, on the southwestern coast of the Big Island, during the night as well.

As he reports in the January issue of *Pacific Science*, Sakihara found "significant increases" in the abundance, distribution, and species richness of pool inhabitants during these nocturnal surveys. Not only did he find greater nighttime activity by six native anchialine shrimp, but he also documented two unidentified species as well as a caridean shrimp that had not been seen previously in Hawai'i.

"There is little doubt that the anchialine habitats at Manuka are extremely unique and valuable from a conservation perspective," Sakihara observes. However, "several issues pose immediate and growing threats to the rarity and biological integrity of the anchialine habitats at Manuka," he continues. The biggest threat comes from introduced poeciliids – mostly aquarium fish, such as guppies and swordtails. Also, "the entire coastline is frequently traversed by vehicles and campers," he writes, with two such areas — 'Awili Point and Keawaiki – "in special danger... Fecal coliform bacteria have also been recorded from a few habitats, thus indicating that some pools are directly affected by defecation."

Koa Redux: Jeffrey Dunster, the CEO of Hawaiian Legacy Hardwoods, has registered objections to the cover article in the March issue of *Environment Hawai'i*. Most of them concern the numbers describing projected koa yields. The numbers used in the article with reference to koa growth projections (and numbers derived from them, including returns on investment and carbon offset volumes) were taken from a printed booklet HLH provided to potential investors and government agencies some two years ago.

As was stated in the article, these numbers have been updated. Current HLH projections are based on an assumed basal area for koa of 175 feet per acre, down from the 250 square feet per acre used in earlier projections. Tables describing three potential investment scenarios, using varying trends in the market for koa, may be found on the company's website, www.hawaiianlegacyhardwoods.com. Go to the drop-down menu for "Opportunity." In the tab labeled "Projection Tables" are the company's current projections. According to the website, "One could develop limitless tables just by varying this parameter [basal area] between the reasonable ranges of 150 to 475 square feet per acre."

Dunster was invited to submit a letter to the editor. He had not done so by press time.

Milestones: With sadness we note the passing of two good friends of *Environment Hawai'i*: Kimo Campbell died in February. Don Swerdfeger passed on in March.

Through his Pohaku Fund, Kimo was unstinting in his support of our work. We like to think that, as a onetime journalist himself, he understood, more than many others, the nature of our enterprise and the unique obstacles we face.

Don, a retired Methodist minister, was a stalwart supporter of environmental and peace movements in Hawai'i. Until the last month of his 97 years, he also made near daily patrols of his Hilo neighborhood, where he would scrupulously pick up every scrap of litter that came within view.

Finally, we note the retirement of Orlando "Dan" Davidson as the executive director of the state Land Use Commission. Although he did not set policy, he helped the commission through some of its most trying cases – most notably, perhaps, that involving the 'Aina Le'a development on the Big Island. We wish him well in his retirement.

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Quote of the Month

"I am not about to sacrifice my integrity or breach my ethical responsibilities to make a Senator or Governor happy."

— **Steven Jacobson,**
ATST contested case hearing officer

Renewable Energy Projects Languish As Feed-in-Tariff Program Maxes Out

It started out with a whimper, but the state's feed-in-tariff program has ramped up so fast that renewable energy projects totaling more than 100 megawatts are now sitting idle until room opens up for them.

Under the program, renewable energy producers are guaranteed grid interconnection and standard rates for 20 years. But with only 80 megawatts of electricity allotted to the program statewide — 60 MW for O'ahu, 10 MW for Hawai'i, and 10 MW for Maui, Moloka'i, and Lana'i combined — there simply isn't space for some of the larger projects.

Utah-based Alohi Sun, LLC, which proposes to develop one of the few concentrated solar projects in the state, is one such project.

Under the FIT program, projects fall into three tiers:

- Tier 1 includes projects generating 20 kilowatts or less.
- Tier 2 projects may produce up to 100 kW of wind and hydropower and up to 500 kW of photovoltaic solar (PV) and concentrated solar (CSP) on O'ahu. Tier 2 PV and CSP projects on Lana'i and Moloka'i are capped at 100 kW on Moloka'i and Lana'i. On Maui and Hawai'i, PV projects are capped at 250 kW and CSP is capped at 500 kW.
- Tier 3 projects include all systems larger than the Tier 2 caps, up to 5 MW on O'ahu and 2.72 MW on Maui and Hawai'i. No wind projects on Maui or Hawai'i are allowed in Tier 3.

In November 2010, the state Public Utilities Commission opened Tiers 1 and 2, which saw little action until late last year, as the opening of Tier 3 neared. Then the applications for Tier 2 came flooding in, and on the Big Island, they came so fast they left no capacity at all for Tier 3 projects.

A developer in Ocean View submitted applications for 40 Tier 2 projects at once, according to Alohi Sun's Michael Cole. That left Alohi Sun and three other Tier 3 projects out in the cold, in the reserve queue. (Projects that have been accepted to the FIT program are listed in the active queue.)

Alohi Sun is seeking a sublease of several acres seaward of the Keahole airport runway from the state Natural Energy Laboratory of Hawai'i Authority. In a presentation to NELHA's board in January, Cole said the company expected to produce 4.2 million kilowatt hours/year. Its application under the FIT program is for 5 MW.

Cole told the board he thought many of the Ocean View projects were going to fall through and that he hoped the issue would resolve itself in the next few weeks.

"As soon as we proceed to the 'active' queue, we can move forward," Cole told the board.

The board unanimously approved the project in concept, but as of last month, all four Tier 3 projects in HELCO's reserve queue were still waiting for space to open up.

Across the state, nearly 80 projects totaling more than 103 MW are in the reserve queue, mostly in Tiers 2 and 3. Although the FIT program has about 3.5 MW in available capacity, most of that has been allocated to Tier 1.

For now, space may open up in one of two ways: Projects in the active queue may fall out or the PUC may order an increase in the program's capacity. Under the PUC's 2009 order establishing the FIT program, the Hawaiian Electric companies must file a reexamination report two years after the effective date of the first FIT tariff, which was in November 2010.

"The commission shall thereafter conduct periodic reexaminations every three years," the order states.

Alohi Sun, which was first in line for a Tier 3 project on Hawai'i island, has been waiting since December. So how long can it hold out?

"That's a very good question," Cole told *Environment Hawai'i*. He says that a PUC decision to add capacity to the program is at least a year away. For now, he is waiting for projects to shake out of the Tier 2 queue.

According to Cully Judd, owner of Inter-Island Solar Supply, some solar projects can hold out for only a few months without grid access before they fold.

Ron Richmond, business development manager at Inter-Island, also questions whether all of the projects in the active queue are ready to go or are just squatting.

"That's what happens when you have caps. There shouldn't be any," he says. However, unless those projects meet certain HECO deadlines, they'll eventually be rejected, he adds.

Harry Judd, the independent observer overseeing the feed-in-tariff program, did not respond to questions about queue management by press time.

Reliability Standards Working Group

Whether or not the PUC increases the capacity of the FIT program may depend on what, if

anything, emerges from its reliability standards working group.

The group, which grew out of the FIT docket, was established to vet and address claims made by the Hawaiian Electric companies in 2010 that they could not integrate any more renewable energy on the outer islands without harming their grids. Now including more than 20 representatives from various entities, the group has held several meetings over the past year, which were mediated by an independent facilitator.

Although the PUC has opened a separate docket to cover the group's activities, the commission conceived it as an informal process, says Isaac Moriwake, an attorney with Earthjustice who represents the Hawai'i Solar Energy Association. "So there's been a lot of meetings, but no filings," he says.

After a year of subgroup meetings, which included a lot of talk and rehashing of problems, members are finally getting an idea of what can be achieved and have begun sketching out work plans, he says.

"Obviously we were swimming around for a while. HECO did not seem that interested in finding a solution," he says.

The group has decided to focus on capacity, interconnection procedures, and pricing, and has established a subcommittee to devise reliability standards, a task, Moriwake says, akin to "trying to squeeze a balloon or put your arm around sand."

The North American Electric Reliability Corporation (NERC), which establishes and enforces reliability standards on the mainland, may provide a template, he says. NERC's standards go down to a very technical level and are "hundreds and hundreds of pages" long, but they may help the Hawai'i group put on paper just what constitutes 'reliability.' "Now it's a complete black box," he says.

The group is also trying to address curtailment of renewable energy by utilities when the electricity demand is low. In Hawai'i, utilities are shutting wind off at night, presumably to protect their grids.

"How do we resolve that? We're basically throwing away clean energy," Moriwake says. "Why don't we start paying people for lost revenue or create some kind of transparent policy?"

Finally, the group is exploring "ancillary services," which basically means all other things that make the grid more flexible and keep it afloat.

Moriwake seems to expect little help from the utilities in resolving these issues, noting that while they claim their grids can't handle more renewable power, "they are furiously working with other developers to put in big

Telescope from page 1

proved the award of a Conservation District Use Permit for the construction of the ATST, a project of the National Science Foundation to be built at what is called Science City, atop Haleakala. The area, which is state land under the control of the University of Hawai'i, has been built up over the years with several telescopes and ancillary buildings.

For as long as the telescope has been proposed, a group calling itself Kilakila O Haleakala (Majestic is Haleakala) has opposed it. On February 11, more than two months after the CDUP was granted, the board approved the appointment of a hearing officer—although it stopped short of deciding whether Kilakila was entitled to a contested case. As Jacobson later wrote, “the hearing officer’s designated duties included (i) holding a preliminary hearing on standing, and preparing proposed findings, conclusions, and a recommended decision on standing, and, if appropriate, (ii) holding a hearing, and preparing proposed findings, conclusions, and a recommended decision, on the merits of the CDUA.”

Last July and August, the hearing itself was held over three days, with witnesses called and testimonies submitted. Following that, the University of Hawai'i (which had applied for the permit) and Kilakila were given time to submit their proposed findings of fact and decision, which Jacobson then was to take into account in preparing his own.

That process took a long time. In an article on the ATST that appeared last October in *Nature*, Jacobson was quoted as saying he would issue his recommendation before that month’s end. In December, Jacobson told *Environment Hawai'i* his decision would be issued “soon,” and in no case later than year’s end.

It was not until late February that Jacobson turned in what he now calls his “interim” decision—a rambling, disorganized, and (by

projects like Big Wind. They have their agenda and FIT is not at the top of their list.”

Once the PUC completes its two-year review of the program, it may or may not release another chunk of capacity. But if the reliability standards working group finds that no other projects should be allowed, that issue is moot, he says.

Whether or not the group will be ready to make such a recommendation in time is unclear. Moriwake says that with regard to the group’s overall goal of finding solutions in a short time frame, it hasn’t made any progress.

— T.D.

Jacobson’s own, later admission) incomplete document that was replaced by a more succinct report on March 12. The most significant finding in both reports was unchanged, however: that Kilakila was not entitled to a contested case hearing in the first place, and that the Land Board’s award of a CDUP to the university stood. (In the second report, Jacobson did propose several additional conditions to those that attached to the Land Board’s original permit, mostly setting limits on construction operations.)

Ex Parte Communication

Three days after submitting his amended report, Jacobson sent an email to Lisa Munger and other attorneys who represented the university in the contested case hearing.

“Now that my report and recommended decision are out,” Jacobson wrote, “I need to address the question of whether certain disclosures are required.

“Because of inappropriate ex parte pressure and activity by U.S. Senator Inouye’s and the Governor’s offices, I was essentially required to file the incomplete report and recommendation you received in late February.

“Those pressures did not affect the contents of the interim report, other than its obvious incompleteness, and had no effect whatsoever upon my final report and recommended decision, other than to delay their issuance. I am not about to sacrifice my integrity or breach my ethical responsibilities to make a Senator or Governor happy.”

Jacobson goes on to say that he had consulted “the appropriate ethical offices,” which have advised him that “no disclosures are required as long as (1) neither UHifA [the university Institute for Astronomy] nor its counsel had anything to do with what the Senator’s and Governor’s offices were doing, (2) the Board and courts disregard the interim report and recommendations and consider only the final report and recommendations (to the extent they consider them at all), and (3) Kilakila is not prejudiced by being short-changed in time to respond to the final report and recommendations.”

He concluded by asking Munger and her colleagues directly “whether any of you had anything to do with what the Senator’s and Governor’s offices were doing.”

Instead of replying to Jacobson, Munger forwarded his email to Linda Chow, deputy attorney general assigned to represent the Land Board.

Jacobson prepared a statement for the Land Board to consider at its March 23 meeting, in which he elaborated on his claims of political interference.

While preparing his decision, Jacobson

wrote, “considerable *ex parte* pressure was placed upon me to simply spit out a recommended decision quickly.” That pressure included requiring him to make daily reports to the Health Department and the board’s chair, as well as a suggestion that Chow be given a role in completing the decision.

“I was advised that the pressure was generated by a staffer in U.S. Senator Inouye’s office, and applied through the Governor’s office. I was not asked to recommend a particular result, although the result Senator Inouye’s office wanted from the Board was clear,” Jacobson wrote.

At the Land Board’s March 23 hearing, attorneys for the university and Kilakila urged the board to discharge Jacobson and dismiss his reports from the record.

University attorney Lisa Bail argued that the Land Board could and should issue a decision on the existing record, provided that the parties be allowed to file exceptions. She said the university would not object to the appointment of a new hearing officer so long as the board set a reasonable time frame for a final decision.

It is “inexplicable” why Jacobson took so long to conduct the contested case hearing, Bail said, adding, “The goal is prompt resolution of this case.”

Sharla Manley, a Native Hawaiian Legal Corporation attorney representing Kilakila, had a different goal in mind.

“We’re talking about fairness,” Manley said. “The disclosures made this week call into question whether [Kilakila] can expect a fair hearing.”

After first expressing concern that no secretary or court reporter was present to record the oral arguments being made that day, Manley asked that the board strike other rulings Jacobson had made during the course of the hearing. She also asked for a new hearing officer and that Kilakila be allowed to provide live witnesses so the officer could observe their demeanor and assess credibility.

“Reading a transcript is not sufficient due process,” she said.

Finally, she urged the board to ensure that the actions referenced in Jacobson’s email and minute order response don’t continue to taint the process.

Her filing to the board notes that on March 20, Kilakila filed a state Uniform Information Practice Act request to review all emails and other communication from the university to either Inouye’s office or the Governor’s office.

As of the March hearing, the university had not responded to Jacobson’s original question to the university.

“The silence is deafening. The university has not disclosed what, if anything, they had to

do with what the Senator's or Governor's offices were doing," Manley said.

With regard to Jacobson's allegations about Chow's involvement in the hearing, "much of it is vague," Manley continued. "Our primary interest is to make sure that the things that have occurred are cleansed and we don't know how to do that without more information. ... What has happened is unconscionable. The group we represent is of modest means. We just want to make sure we have an even playing field."

Bail objected to Manley's request that all of Jacobson's orders be stricken and that Kilakila be allowed to present live witnesses. She added that the Land Board hearing was not the proper venue discuss whether the university had communicated with Inouye's or the Governor's offices.

Regarding the effect the political pressures had on Jacobson, "he has said they did not influence his decision. The board is entitled to respond to that," she said.

To this, Manley said it's not Jacobson's state of mind that matters. It's what the reasonable onlooker would think when they heard the facts of the case. Whether or not Jacobson felt his decision was biased because of the pressure doesn't matter under the law, she said.

The Land Board's ruling on the matter was not released by press time.

Earlier Meddling

Jacobson's allegations of meddling by Senator Inouye's office are not the first to have surfaced in connection with construction of the ATST. In a declaration that was submitted by Kilakila to bolster its case, Marilyn Parris, former superintendent of Haleakala National Park, stated that she "was well aware of Senator Inouye's displeasure with my statements/comments against construction of the ATST. His staff assistant, James Chang, office [sic] placed heavy pressure on me to mute objections that the National Park Service had regarding the impacts of the ATST. For example, in a meeting with Mr. Chang he strongly encouraged me to go along with the construction of the ATST project. When I stated it was my job to guard against such extreme impacts to this majestic national park, he indicated they would go to the Secretary of the Interior to override my objections."

Chang now works with the National Oceanic and Atmospheric Administration. He declined to discuss the ATST and referred the question to Peter Boylan, Inouye's press secretary. Neither Boylan nor Donalyn Dela Cruz, spokeswoman for Abercrombie, returned calls for comment by press time.

—*Patricia Tummons and Teresa Dawson*



A view from the Pelekane watershed looks out over the vast landscape that once was covered with dry forest vegetation. This is one of several areas where partnerships are working to restore the Hawaiian dry forest.

Researchers Focus on the Birds, Bees, Flowers, Trees of Hawai'i's Dry Forests

For years, Susan Cordell has been studying Hawai'i's dry forests and looking for ways to break what she calls the "grass-fire cycle." Broadly speaking, that is when grasses get the upper hand over native dry-forest vegetation through the double-whammy of grazing animals and fires.

But now, she told the 200 or so people attending the sixth annual Nahelehele Dryland Forest Symposium, she and colleagues at the U.S. Forest Service's Institute of Pacific Islands Forestry (IPIF) and the University of Maryland have come upon "a natural fire cycle."

"The current dogma," she said, "is that wildfire was a rare disturbance factor in shaping succession and community structure in dry forests. Fires occurred in forests prior to human arrival, yet little is known about the fire history."

To gain a better understanding of the role of fire in dry forests before the arrival of humans, Cordell, Amanda Uowolo, of IPIF, and Kealoha Kinney of the University of Maryland painstakingly excavated soil pits in an area of Pohakuloa Training Area, in the saddle between Mauna Kea and Mauna Loa on the Big Island. Their work, which examined charcoal from the pits to determine the composition of plants, took them back in time to the Pleistocene era, when plant communities consisted of either low-stature shrubs and grassland or mamane woodland.

"In the last 200 years," Cordell said,

"there's been a huge amount of fires that we see in the system – a lot of anthropogenic disturbance, a lot of non-native grasses and the like. But also, over time, there's been a change back and forth between high and low amounts of charcoal, indicating that fire has played a role over the last 8,000 years. We were pretty surprised by that."

She and her co-workers speculate the area of native grassland they studied "served as a highway for lava flows," with the mamane shrubland possibly persisting in areas that were more isolated from the effects of lava flows.

Eight millennia in the past, evidence of the presence of alaha'e was found in the charcoal. The finding, Cordell said, was "very strange. This is very much outside the predicted range of alaha'e."

Either the finding is in error, or "the climate is very different now from what it was eight thousand years ago," she said.

The research has led Cordell and colleagues to think that "the role of nutrients is probably more important than we originally thought," a hypothesis that was supported by research conducted after the devastating 2010 fire that occurred in the mamane woodland area adjoining the Saddle Road.

"After the fire, we thought it was the perfect opportunity to look at post-fire restoration," she said. "The ground was covered with mamane seeds." She and her colleagues fenced off several areas and seeded them with

native species, both in the burned areas and control areas nearby that were not burned. “We got data on the available phosphorus and nitrogen,” she continued, noting there was “a big difference between the burned and unburned areas,” with nitrogen spiking in the burned areas, but phosphorus levels depressed.

“Phosphorus likely limits woodland growth, especially in a mamane dominated system because this species is a nitrogen fixer and likely requires a substantial amount of phosphorus to persist. . . . This tells us that burned areas are highly unsuitable for the recovery of mamane systems.”

In areas of dodonea (a’ali’i) shrubland, “there was an order of magnitude even less phosphorus,” so low, in fact, that “they may not support trees.”

“Can we ever go back to mamane tree land after repeated fires?” Cordell asked. “They’re nitrogen-fixing trees that require phosphorus. We may need to think of things like fertilization if we’re trying to promote mamane back into these systems.”

Next steps for Cordell and her colleagues is to experiment with applying fertilizers – nitrogen, nitrogen and phosphorus, and phosphorus alone – to experimental and control plots, seed them with natives, and see what transpires.



Can Mamane Woodlands Make a Comeback?

Steve Hess, a research biologist with the U.S. Geological Survey’s Pacific Island Ecosystems Research Center, has been studying the subalpine vegetation on Mauna Kea for years. One of the questions he has been addressing is why the mamane woodland exists at all.

“Why is this woodland instead of grassland, or savanna, or steppe – or even thorn steppe?” he asked the audience at the dry forest symposium. (When looks of puzzlement crossed the faces of many of those in the audience, Hess explained the thorn steppe with one word: “gorse.”)

The mamane-dominated woodland was in a precarious position, he continued. Thanks to centuries of depredation by grazing animals and resulting erosion, the organic soil layer that once covered the slopes has disappeared: “Whatever the old soil used to do isn’t done now.” Precipitation – averaging half a meter a year – quickly penetrates what soil is left, making fog-drip under the tree canopy all the more important. “Fog-drip adds 38 percent more precipitation under the tree canopy,” he noted.

Any minor change in climate, precipitation, or temperature in the mamane woodland could “bump that place into a different type of life zone.” And any number of different factors could become that “tipping point:” exotic grasses (“they are very good at robbing moisture, suppressing tree regeneration, and generating fine fuels”); fires (“resulting in the short-term loss of mature trees”); ungulates (“mammalian herbivory is non-existent in the evolutionary history of the mamane woodland, ungulates also pretty clearly suppress tree regeneration, and they alter nutrient cycling”); and finally climate (“long-term temperature and precipitation trends can change, plus you have local loss of fog-drip interception once you lose the tree canopy cover”).

Possible outcomes could transform Mauna Kea into a Yellowstone or Serengeti of the Pacific. “Both are at similar elevations – one tropical, one temperate, both volcanic,” he said. And both have grazing animals.

“Grazers stimulate grass biomass and result in a positive feedback in nutrient cycling,” Hess said. “When grazers crop grasses, plants allocate their energy into roots and less into leaves. So if we look at mamane regeneration and grass cover, we find that where there was more than 60 percent grass cover, mamane weren’t penetrating.”

What you end up with, said Hess, is what he has dubbed “The Ultimate Grass/Fire/Ungulate/Climate Cycle.”

“Ungulates suppress trees and stimulate grasses. Grasses suppress tree regeneration and increase fuels. Fires then promote the loss of the tree canopy and favor pyrogenic grasses. The climate changes, since you get reduced fog-drip interception. You go from woodland, to savanna, to grassland.”

Hess discussed the state’s efforts to remove feral sheep and mouflon from Mauna Kea, displaying a chart that showed increasing numbers of animals removed each year by state-sponsored aerial hunts and public hunting. Since 2005, he noted, “there’s been a dramatic uptick in numbers, with 260 additional sheep per year.”

“We can’t make inferences about the total population,” he said, “but clearly, it’s sufficient to sustain this level of harvest and suggests the population might even be growing.”

“The whole system is a grazing system now,” Hess concluded. “To restore it, you’re talking about going back to a non-grazing system. Quite a few elements would have to be removed to restore that. It’s a big challenge, certainly. But there might be some ways to do that. We don’t know. It really hasn’t been tried. How do you go from having a non-grazing system, then to a grazing system, and then back again?”



Warning: Be Careful What You Wish For

To Donald Drake, a professor of botany at the University of Hawai’i at Manoa, the idea that all alien species are bad is not terribly helpful, at least when it comes to promoting the survival of functioning Hawaiian ecosystems.

Take, for instance, the role of honeybees, not native to these parts. At low elevations, he and his colleagues have found, “honeybees are the most important flower visitors at low- to mid-elevations on Mauna Loa, but beyond 1,500 meters elevation, they drop out and the native *Hylaeus* bees take over.” For native plants that rely on bees for pollination below 1,500 meters, honeybees are key.

“Even within relatively homogeneous plant communities, as you move from place to place across the landscape, the set of pollinators varies,” he told the crowd at the dry forest symposium.

Drake presented a “pollination web” for Pu’u Wa’awa’a, showing pollinators (native and non-native) on one side, and plants (native and non-native) on the other, with lines showing the connections between them. “Alien animals visit all plants, both native and alien,” he noted, but the pattern was very different for native animals, which “visit almost exclusively native plants. They don’t get any resources from alien plants.”

“Does that mean alien plants are not good for native animals?” he asked rhetorically.

“Not necessarily,” he answered. “If you eliminate all alien plants, there is no way to know whether some of the alien animals might put all their attention on the native plants and become strong competitors with native animals.”

On the other hand, if you eliminated all the alien animals, you would eliminate the pollinators of alien plants – “but the problem is, there’s a whole bunch of native plants currently pollinated only by honeybees” and other native plants that rely on alien animals for pollination. “So,” he continued, “this could have potentially negative impacts.”

Alternatively, it’s possible that “if alien animals were eliminated, native animals would start visiting native plants more.”

It is not enough that birds and bees simply visit plants to pollinate them, he noted. It matters just as much how they take the nectar. “On Kaua’i,” Drake said, “the white-eye is the most important pollinator of *Cyanea leptostegia* [a lobeliad],” which it approaches from the front. “For another lobeliad, *Clermontia fauriei*, it approaches from the back, stealing nectar without achieving pollination.”

— Patricia Tummons

Wespac from page 1

interact with 34 North Pacific loggerheads and 26 leatherbacks; of those, seven loggerheads and six leatherbacks would die as a result. Those numbers are only slightly lower than those in the 2008 BiOp.

Although the NMFS did not factor in any benefits that maintaining domestic swordfish production might have, it did, for the first time, calculate how many turtles might be saved by unfettering the Hawai'i fleet. If the United States increased its swordfish effort to 5,500 shallow sets (the historical peak of swordfishing effort in Hawai'i), about 117 loggerheads and 89 leatherbacks would be saved from take by foreign fleets, the NMFS found.

The NMFS recommended that loggerhead and leatherback takes by the Hawai'i fleet be calculated on a two-year basis, rather than an annual basis. It also chose not to require 100 percent observer coverage and recommended that there be no hard caps on the fishery's interactions.

"This is at odds with Amendment 18, which has different values for the incidental take for loggerheads and leatherbacks and hard cap fishery closures in the event of hitting those take limits," states a council report submitted to the SSC in February. The report suggested that the council might want to evaluate whether it wants to continue using hard caps and requiring 100 percent observer coverage.

"Observer coverage is ruinously expensive," council economist Paul Dalzell told the SSC. "We've lived quite comfortably with 20 percent observer coverage in the deep-set fleet."

Fisheries scientist Chris Boggs, who helps NMFS determine when a fishery is expected to hit a regulatory limit, expressed his preference for 100 percent coverage.

"You can do real-time tracking. Without it, you'd have to wait until next year, next quarter, whatever [to find out if a limit was exceeded]. Without 100 percent coverage, you can't have a hard cap," he said.

SSC member Richard Deriso said he couldn't see why Boggs couldn't just extrapolate the take level based on a lower level of coverage.

To Boggs, this was out of the question. "If you count on it, I'll have to apologize for not providing it," he said.

At its meeting in Guam last month, the council asked the NMFS science center to provide the SSC with an analysis of an appropriate observer coverage level that would lead to reliable turtle interaction estimates.



A 'Surprise Ending' To 2011 Bigeye Season

The Christmas gift Congress tucked into last year's Consolidated and Further Continuing Appropriations Act netted Hawai'i-based longliners \$6 million more than they would have gotten if they had been forced to stop fishing bigeye tuna when they were supposed to under an international agreement.

On November 18, the NMFS announced that Hawai'i bigeye landings would soon reach the 3,763 metric ton (mt) annual limit set by the Western and Central Pacific Fisheries Commission to control overfishing. In anticipation of hitting that limit, the agency issued a temporary ruling to close the U.S. longline bigeye fishery in the Western Pacific on November 27.

Unbeknownst to the NMFS, President Obama had signed the act on November 18, which included language allowing U.S. longliners to attribute their bigeye catch to the U.S. Territories, regardless of where they fished, provided they had permission from those governments. As a result, the NMFS withdrew its earlier ruling on November 28.

"The surprise turn of events made things interesting for fishers, fish dealers, and fishery managers," states a report by the NMFS Pacific Islands Fisheries Science Center.

Hawai'i-based longliners caught about 608 metric tons of bigeye, valued at \$6.5 million, after November 27.

'Much Simpler'

At its June 2010 meeting, the council recommended amending its Pelagics Fishery Ecosystem Plan (FEP) to allow the territories to assign up to 750 mt per year of their annual longline bigeye catch limits to U.S. vessels with domestic charter arrangements or similar mechanisms. It also proposed establishing criteria for U.S. vessels operating under charter arrangements to "be further integrated with the Territory's domestic fleet by supporting fisheries development within the Territory."

But before the council could approve such amendments, Congress passed the Consolidated and Further Continuing Appropriations Act, giving American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands the authority to allocate catch limits set by the WCPFC through arrangements with permitted U.S. vessels.

In effect, Wespac staff wrote in its recommendations for the council's meeting last month, the legislation accomplished much of

what the proposed FEP amendment was to establish, "but in a much simpler manner."

The legislation expires at the end of the year, or earlier if the council transmits, and the Secretary of Commerce approves, an amendment to the Pelagics FEP.

Council staff recommended last month that "the Council consider directing staff to develop options for further consideration or to maintain [the amendment] as recommended."

In the end, the council directed its staff to use language in the 2012 appropriations act, any catch attribution arrangements, and any measures that might come out of the WCPFC meeting (held late last month) to develop additional options related to bigeye tuna catch limits and responsible fisheries development in the territories. The staff report will then be considered at the council's next meeting, in June.

In addition, the council recommended that the United States delegation to WCPFC ensure that the territories' catch limits are not reduced and negotiate for a 5,000 metric ton bigeye tuna allocation for the U.S. longliners. The limit takes into account that the Hawai'i longline fishery "primarily fishes in a region that has the lowest fishing mortality on bigeye and that U.S. longline catches at that level will not impact bigeye stock condition," according to a summary of council actions. The council also recommended that increases in bigeye catch by the Chinese longline fishery not be tolerated.

"[T]his fleet has increased its bigeye catch from about 2,000 mt in 2000 to 11,565 in 2009. Longline catches in 2010 are likely to exceed 12,000 mt," the council stated.



Council Director Grumbles Over Migratory Bird Permit

If it had been up to Wespac executive director Kitty Simonds, the National Marine Fisheries Service would have simply let environmental activists sue it over the incidental take of migratory birds by the Hawai'i shallow-set longline fleet.

But counsel with the National Oceanic and Atmospheric Administration preferred a precautionary approach and advised the NMFS to apply to the U.S. Fish and Wildlife Service for a special use permit for the take of birds (primarily Laysan and black-footed albatross) by the fleet, which it did last August.

It was the first time such a permit has been sought for fisheries and was prompted by a lawsuit regarding the council's Amendment

Kaua'i Utility Bursts Pipe Dream Of Independent Hydropower Firm

Linda Rosehill could not have been more emphatic: The Kaua'i Island Utility Cooperative (KIUC) is not interested in buying electricity from Pacific Light and Power (PLP), its partner, Palo Alto-based Orenco Hydropower, or its slated power purchaser, the Kekaha Agriculture Association (KAA).

At the state Agribusiness Development Corporation's meeting on March 15, representatives of PLP and Orenco suggested that KIUC would buy excess power generated by PLP's proposed hydropower plants and sold to the KAA. They also suggested that KIUC would assist them in acquiring cheap financing for their hydropower generators, which

would use water from irrigation ditches on the ADC's Kekaha lands, on leeward Kaua'i.

For the past year, PLP had been in head-to-head competition with KIUC over the use of those ditches. PLP has a lease with the ADC for lands in Kekaha and an agreement to sell power to the KAA, which manages the irrigation infrastructure for the ADC; KIUC does not. Even so, KIUC applied to the Federal Energy Regulatory Commission for a permit, hoping to gain a priority position over PLP. But a decision earlier this year by FERC to let the state settle the matter has cast a new light on the process. PLP, for one, has taken it as an opportunity to seek collaboration.

18, which abolished the effort limit on the Hawai'i swordfish fishery.

Since 2004, the fishery has implemented various measures required under NMFS rules to avoid seabird interactions (i.e., blue-dyed bait, side-setting). It has taken an annual average of 55 Laysan and 20 black-footed albatross between 2004 and 2010, but these levels are "not thought to pose a risk of population-level impacts or change in conservation for either species," according to a January 10 *Federal Register* notice.

Since the fishery as it currently operates is not likely to harm the bird populations, the FWS's preferred alternative identified in the draft environmental assessment (Alternative 2) is to issue the NMFS the permit as requested. Under the permit, fishing regulations would not change, but the NMFS would take steps to study take levels and patterns, possibly identify further mitigation measures, and develop plans for new research to "identify such methods and/or develop proposals to offset or compensate for the seabird take that cannot be practicably avoided," the EA states.

In her comments on the draft EA, Simonds states that while the council also prefers Alternative 2, it has some concerns about the way the NMFS has interpreted the Migratory Bird Treaty Act.

"Based on legal advice received by the Council it is our understanding that the MBTA would need to have specific language inserted by Congress to apply beyond the three mile limit [where federal jurisdiction begins], and therefore may be inapplicable to the Hawai'i longline fishery. Further, if this

fishery has to be permitted, then surely other fisheries with similar or larger seabird takes would need to be permitted, including the various Alaska fisheries which kill thousands of seabirds annually, including documented mortalities of [endangered short-tailed albatross]. This may indeed apply to any other federally permitted activity which presents a hazard to migratory birds such as air traffic or installation of alternative energy sources such as wind farms. The issuance of a single permit for the Hawai'i longline fishery appears in our view to meet the criterion for an arbitrary and capricious application of the MBTA. Thus while the Council is broadly in favor of a process that reduces litigation vulnerability for fisheries under its jurisdiction, it is concerned that this process may result in the Hawai'i longline fishery being embroiled in a welter of litigation brought by environmental groups concerning all federally permitted activities, including fisheries," she wrote.

Finally, she asked that the FWS specifically address the issue in the final EA and final rule for the permit.

At the council's Scientific and Statistical Committee meeting in February, Simonds expressed her confusion over why a permit was necessary when NMFS has been managing the fishery effectively.

"Does this have something to do with [the Department of the] Interior taking over NOAA? Why couldn't this have been worked out between the two services?" she asked Brett Wiedoff of the NMFS Pacific Islands Regional Office.

To this, Wiedoff said the permit has nothing to do with the proposed merger. "It does

"The solution is an effective, low-cost project," Orenco's Carl Spetzler told the ADC. "KIUC brings a lot to the party. We need the time and the runway to get that accomplished. So far it's been direct competition with KIUC. ... We have to get KIUC to the table on this."

Given the history, some ADC board members remained skeptical. ADC board member Mary Alice Evans, deputy director of the state Department of Business, Economic Development and Tourism, asked why PLP's project would be cheaper than KIUC's. Spetzler responded that KIUC is using a hydropower developer who "hasn't done this before" and that his company can get the best equipment.

Even if KAA cannot negotiate a new power purchase agreement with KIUC, PLP's project would still go forward, PLP director Palo Luckett said.



Black-footed albatross

PHOTO: JOHN PIATT

stem a bit from the Amendment 18 lawsuit [regarding sea turtle interactions]. NOAA counsel decided to do this application," he said.

"So the [MBTA] goes beyond three miles. ... It was a change in a legal opinion," Simonds said.

"That's correct," Wiedoff said.

To this, Simonds said she saw the permit as a duplication of effort.

"We don't agree to this giving in," she added. "They should have just let the lawsuit happen. We're used to lawsuits."

She then reiterated her suggestion that other fisheries that take birds be required to get a permit.

"It seems to me, if we have to suffer, everybody else has to suffer," Simonds said.

To date, the NMFS has not applied for special use permits for other fisheries. At its meeting last month in Guam, the council asked the FWS to allow it and the NMFS to be involved in preparing responses to comments on the draft EA.

— **Teresa Dawson**

"We would assume a competitive posture before the PUC [public utilities commission]," he said.

The utility's Rosehill testified that it had already informed PLP that it is not interested in negotiating a new agreement with KAA to buy the excess power generated by PLP's hydros. (KIUC already has such an agreement with the co-op to buy power from existing hydropower plants on ADC's property.) KIUC still intends to pursue its own hydro-power project, she said.

"We have a team with expertise. ... I want to be clear: It's not our intent to enter into a power purchase agreement with PLP or Orenco," she said. "We are a little perturbed that representations are being made that negotiations are ongoing."

She did, however, state that KIUC is "ready to accommodate KAA's needs."

ADC board member David Rietow reminded the board that promoting agriculture is the ADC's primary role.

"One of the ways we help our tenants is to reduce operating costs," and that includes enclosing ditches, he said.

KAA member Landis Ignacio echoed Rietow's remarks and noted that PLP's project—which includes enclosing ditches, growing biofuels, and building a biodigester to manage animal waste—is, first and foremost, an irrigation project and that PLP is also an agricultural tenant. The hydropower component merely makes the infrastructure improvements more affordable, he said.

"When we reduce our water needs, we can restore stream flows ... and reduce discharge off the property," Ignacio said.

It will cost \$20 million to install a pressurized irrigation system at Kekaha, he continued. "Hydropower allows us to capture some revenue. This project is so desperately needed," he said.

Ignacio added that the ADC rejected a hydropower proposal from KIUC in 2010 because it didn't benefit agriculture.

A No-Show

While the utility and PLP continue to compete for ADC resources, it appears that biofuels company Pacific West Energy, LLC, has dropped out of the running. Last year, after Pac West objected to a proposal to award PLP all of the ADC's available lands in Kekaha, the ADC decided to consider leasing 750 acres to Pac West. Recent changes in the location of Pac West's 20 megawatt biomass plant and feedstock sources, however, caused KIUC to rethink its agreement to purchase power from the company. At the ADC's March 15 meeting, no one from Pac West attended, and ADC executive director James Nakatani noted



PHOTO: COUNTY OF KAUAI

Kauai's current landfill has, at most, a decade of capacity left.

that the company had not responded to his request for a status update.



ADC Supports Concept Of Landfill at Kalepa

After searching for more than a decade for a new landfill site, the county of Kauai appears to have settled on roughly 200 acres in Kalepa controlled by the the state Agribusiness Development Corporation (ADC). But it's far from a done deal.

The ADC has not consented to have the landfill on its property, but its members and staff have negotiated an informal agreement: the county may site a landfill at Kalepa if it also builds a pipeline that will provide pressurized water to the ADC's surrounding 6,500 acres.

On March 15, the ADC formally consented to a right-of-entry to allow the county to have access to the proposed landfill site and proceed with an environmental impact statement.

"Siting a landfill, as you can imagine, is no easy thing," county engineer Larry Dill told the ADC board at its meeting last month.

Between 2001 and 2003, the county had identified eight potential sites, all on agricultural lands, but was unable to proceed with a preferred site in Kalepa because of community opposition and environmental justice issues (the site was in a low-income area that was already going to host a power plant). In 2009, the county had identified a potential site in Umi, but landowner Alexander & Baldwin, which farmed coffee on the land, refused to sell.

Then in 2010, the county set its sights on lands in Kalepa owned by the ADC.

During the ADC's meeting last month, board member Mary Alice Evans asked whether the county had any agricultural lands to exchange for the proposed landfill site.

"The loss of 150 acres diminishes the ADC's opportunities," she said.

Dill said the county does not have any lands to exchange and that it has not even explored the idea.

Board member David Rietow then clarified that before many of the ADC's new members, including Evans, joined the board, he and other board members had met with the mayor and agreed that irrigation mitigation would make up for any loss of land or displacement of farmers.

With pressurized water, "the agricultural land now has a higher and better use. Right now, it's too dry even for cattle. That was the logic [behind the agreement] and we're holding the county hostage to that pipeline," he said.

The county is in the process of securing a consultant to conduct irrigation studies and provide engineering and cost estimates for the pipeline, Dill said.

Should the ADC board consent to the landfill, the county expects it would take about eight years to complete construction. With vertical and lateral expansions, the current landfill in west Kauai could last another eight to ten years.

Dill says a landfill at Kalepa would be the last one Kauai would ever need. It's anticipated lifetime is 271 years, effectively "forever," he said, adding that the county aims to divert 70 percent of its waste by 2023. — *T.D.*



For Further Reading

More background on these issues is contained in the following articles, available at no charge to subscribers, at www.environment-hawaii.org. Non-subscribers may purchase a 2-day archives pass for \$10:

- "Kauai Hydropower Company Seeks Accord with Agribusiness Development Corporation," November 2011;
- "Agribusiness Development Corporation Grapples with Conflicts Over Diverted Water in Kekaha," May 2011;
- "Energy Projects Dominate Discussion Before State Agribusiness Board," March 2011;
- "Agribusiness Committee May Reconsider Biofuels Project at Kekaha," January 2011;
- "Agribusiness Subcommittee Approves Renewable Energy Project at Kekaha," October 2010.

BOARD TALK

Board Reduces Fish Farm Bond, Extends Its Deadline for Construction

The controversial open-ocean fish farm proposed by Hawai'i Oceanic Technology, Inc. (HOTI) has won a couple of concessions from the state Board of Land and Natural Resources recently, despite calls from opponents to abandon the project.

On February 24, at HOTI's request, the Land Board reduced the amount of the performance bond the company must initially provide. HOTI's lease for 247 acres of open ocean off the Big Island's Kohala Coast required a \$100,000 performance bond for the first ocean sphere, to be posted 15 days after the lease's effective date of October 28, 2010. When the company was ready to deploy more cages, it would have to return to the Land Board so the amount could be re-evaluated.

Shortly after receiving the lease, however, HOTI asked that it be allowed to post the bond once the first cage was deployed. On February 24, as a compromise, the Land Board directed HOTI to immediately post a bond equal to twice the annual rent (\$3,500 or 1 percent of gross revenues) and pay the remainder once the first ocean sphere is deployed.

On March 9, the board also extended the construction deadlines in HOTI's Conservation District Use Permit. Under the permit, HOTI should have begun construction last October, but as of last month, it was still awaiting a permit from the U.S. Army Corps of Engineers.

Although HOTI did not submit its request for an extension until January, rules of the Department of Land and Natural Resources allow a grace period of one year.

At the Land Board's March 9 meeting, the DLNR's Office of Conservation and Coastal Lands (OCCL) recommended that HOTI be given until October 23, 2013, to begin construction and until October 23, 2016 to complete it.

OCCL administrator Sam Lemmo noted that his office had received 300 to 400 letters opposing the extension, many of them complaining that the project had changed significantly and/or will have impacts on the marine environment. Some of the letters claimed HOTI's construction delay was self-imposed.

Lemmo, however, said he didn't see HOTI's situation as any different from a lot of cases he reviews. "Major projects sometimes take a little longer to get off the ground," he said.

With regard to claims that the project is

fundamentally different from the one covered by the CDUP, Lemmo said that HOTI had not informed his office of any changes.

"I've heard there's been changes made. Apparently the Army Corps permit they filed for has some nuances that are different," Lemmo said. He added that he has told HOTI to let his agency know of any changes as soon as possible.

"A lot of times people make modifications that we can accommodate if they're routine or minor. ... When people come in with material changes—different location, different in nature—then we think of bringing it back [to the Land Board]," he said.

In any case, the OCCL must approve HOTI's construction plans, he said, adding, "I tell them, if they walk in the door with different plans, don't expect us to sign them."

According to Suzanne Shriner of the non-profit Food and Water Watch, HOTI's fish farm—which was originally going to consist of self-propelled, spherical fish cages—is now going to simply be a set of standard net pens.

"We have 2,500 members and 1,700 in the Kohala area that have signed a petition against this project. We would like to see the extension rejected or at the very least deferred until the Land Board meets in Hawai'i," she said.

HOTI's own environmental impact statement acknowledges that if the design reverts to traditional net pens, "they would be required to go through a new environmental review," she said.

Native Hawaiian cultural practitioner Michael Kumukauoha Lee also opposed the permit, arguing that, as proposed, the fish farm could affect his traditional, customary practices. He added that because the Army Corps failed to respond to his comments on the HOTI's permit application, the permitting process is now flawed.

"You can bet your bottom dollar a lawsuit will be flying," he said. "Not listening to us is going to have a major effect on the fishery."

Land Board chair William Aila asked Lee, "From a cultural practitioner perspective, how does a cage in the ocean prevent you from doing traditional customary practices?"

If the cage gets loose and damages the reef,

that would affect his cultural practices, Lee said, noting that cages from another fish farm in west Hawai'i have already been lost at sea.

Despite the concerns raised, the Land Board voted unanimously to extend HOTI's construction deadlines.



Kaua'i Lagoons Resort Habitat Conservation Plan

On March 9, the Land Board approved an incidental take license and habitat conservation plan to cover injuries and deaths of seven federally listed bird species that occur on grounds of the Kaua'i Lagoons resort. The license and plan cover lighting, new construction, and operations at the resort, which is located between two runways at the Lihue airport.

"There are so many birds there, there has been take [during recent construction]. ... The number of birds has been increasing so rapidly, the potential for take will only increase," said Scott Fretz, wildlife program manager for the DLNR's Division of Forestry and Wildlife, at the Land Board's March 9 meeting.

In addition to mitigating take by controlling predators, the resort has established protocols for its employees to help them avoid impacting the birds, he said.

The endangered nene on the property are already being relocated in accordance with Gov. Neil Abercrombie's proclamation issued a year ago. The nene, which have been determined to pose an aviation threat, are being moved off-island as part of a nearly \$8 million, five-year relocation project funded mainly by the state Department of Transportation. The DOT is providing \$5 million, the DLNR is providing nearly \$3 million.

"Do the birds return?" at-large board member Sam Gon asked.

"We've only just begun, but it's really rare for nene to fly between islands," Fretz said. "We do move them to other sites on Kauai, but that doesn't work. ... The only way to solve the problem is to take them off island."

With a handful of listed waterbirds living at the resort, Gon asked whether nene was the main concern.

"Aviation people will say any bird is a threat, but the focus has been on nene. They're big, slow flying, and fly in flocks," Fretz said.

So far, DOFAW has moved 50 of the 90 pairs of nene that bred at the resort last year. More than 200 birds have been removed in total.

Our ideal target was to get all 90, but we're not going to meet that. ... We just need to do this for five years in a row," he said.



Governor Finally Signs New Dam Rules

Last month, Gov. Neil Abercrombie finally signed rules adopted by the Land Board in late November 2010 establishing new fees and requirements for dam maintenance. But despite the DLNR's best efforts to prepare dam owners for the increased fees and standards laid out in the rules, the Hawai'i Cattlemen's Association continues to object to them, according to DLNR water deputy William Tam.

Even so, the group chose not to air its concerns at one last hearing before the Land Board in late January.

"It has been six years since the Ka Loko dam break claimed seven lives, five years since the new Dam Safety Act, and 14 months since this board approved the new administrative rules," wrote Carty Chang, chief engineer for the DLNR's Engineering Division, in his January 27 report to the Land Board.

"Sixty- to eighty-year-old earthen dams served land owners well for decades, but they do not meet modern safety requirements today. The dams must be made safe. That is not an option. ... DLNR must move forward with implementation of the new administrative rules," Chang wrote.

When the DLNR submitted the rules to the governor in January 2011, it was with a request to defer signing them until after the department met with Hawai'i Farm Bureau and state Department of Agriculture representatives, as well as dam owners, to discuss their concerns about how the rules would be implemented.

From February to November 2011, the DLNR held several meetings where dam owners could express their concerns. Chang said he placed the status update on the rules on the board's January 27 agenda to satisfy legislators wanting to give dam owners one more chance to address the board.

Not a single owner attended the meeting, but testimony submitted to the state Legislature indicates that they continue to have concerns about the increased effort and cost associated with upgrading their dams to meet state standards.

"While we might argue that many of these dams and reservoirs have met the safety 'test of time,' some regulators argue that the pas-

sage of time has made them unsafe," wrote Alan Gottlieb in testimony submitted to the Legislature's House Committee on Water, Land, and Ocean Resources for a January 30 hearing. Gottlieb, the government affairs chair of the Hawai'i Cattlemen's Council, continued:

"As an analogy, what would happen if we required all buildings in downtown Honolulu to be retrofitted to today's building standards to withstand a large earthquake, for the safety of the public? Of course that would be impractical and impossible, but this is what is being asked of our state's dams and reservoirs. Furthermore, the new rules and regs use a 'one size fits all' mentality, imposing on dams that barely exceed the regulatory threshold the same requirements as for the largest dams in our state (in some cases over 250 times the size).

"We do not believe that the intent of the Dam and Reservoir safety law is to put farmers and ranchers out of business or to encourage them to decommission existing water resources. We believe these new rules and fees would lead to the closure of many dams and reservoirs, the opposite of what we need in this state if we want to increase our agricultural self-sufficiency and improve our food security."

Testimony by the Hawai'i Farm Bureau Federation also suggested that dam owners continue to haggle with the DLNR over its hazard classifications of their dams.

Chang told the Land Board that the governor was expected to sign the rules soon, now

that the board had given dam owners one more chance to comment on the rules, which the department drafted to carry out the Hawai'i Dam and Reservoir Safety Act of 2007.

Regarding the concern raised by the Hawai'i Cattlemen's Association that the rules force owners to upgrade dams that don't pose any threat, Tam told *Environment Hawai'i* that they need to provide the DLNR with evidence backing their claims before it can even begin to work on a solution.



Feds, State to Prepare EIS For Rodenticide Use in Hawai'i

The State Board of Land and Natural Resources has approved a memorandum of understanding between the U.S. Fish and Wildlife Service and the Department of Land and Natural Resources to jointly prepare a programmatic environmental assessment for rodent and mongoose control using rodenticides in addition to trapping.

"The development of a programmatic impact statement for rodenticide use in Hawai'i will decrease the time and cost associated with preparing compliance documents for future projects that utilize rodenticides," states a February 24 report to the Land Board by DLNR Division of Forestry and Wildlife administrator Paul Conry. — T.D.



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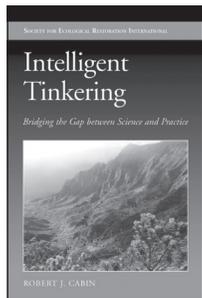
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LETTER

'Intelligent Tinkering' Author
Responds to Review

I am grateful to *Environment Hawai'i* for running a lengthy review of *Intelligent Tinkering: Bridging the Gap Between Science and Practice* in its February issue, but was disheartened by Susan Cordell's grossly distorted overview of my book's content, arguments, and spirit, and by her on-going efforts to portray me as an anti-science zealot. But rather than beating this dead horse by rebutting her accusations once again (gluttons for punishment can read more about our respective views in our 2007 opposing editorials in *Restoration Ecology*), I would like to briefly discuss the larger problem of trying to resolve conservation conflicts with science.

As part of my research for *Intelligent Tinkering*, I interviewed a broad spectrum of individuals within Hawai'i's environmental community. These interviews revealed an incredible diversity of fundamentally different conservation philosophies and battle plans. Many people clearly believed that their perspectives and actions were justified by science and that natural resource management issues in general should be resolved by "the best available science." Ironically, however, these beliefs were driven not by the science itself (which few non-scientists read or understand), but rather their support for the scientists' personal value systems, which tend to be far more environmentally friendly than the general public's.

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I love science; I have devoted most of my life to studying, performing, and teaching it, and if I were king there'd be a lot more of it. But because science is a tool, rather than an ideology or religion, it cannot tell us what to do or believe in, and it cannot resolve our philosophical and practical differences. Even in the rare instances when people agree to base their resource management decisions on a particular research program, they can and often do argue over the best way to perform, interpret, and apply this research in the complex real world. Moreover, the great majority of environmental battles actually revolve around political and philosophical rather than scientific or technical issues.

In addition to the undemocratic nature of putting an elite group of scientists in charge, the track record of "science-based" policies has been mixed at best. Science can be used to legitimize absolutely horrible ideas and actions. To take just one example, consider



An aerial view of some of the experimental plots at Ka'upulehu.

conservation's historically close but generally unacknowledged relationship with racism and eugenics. Throughout the late 1800s and early 1900s, America's world's fairs displayed living indigenous peoples as "hideous brutes fit for extinction" to jeering crowds while leading scientists measured their physical features and intellectual intelligence to publicly prove their white supremacist theories. This science-based eugenic perspective permeated many subsequent conservation programs and helps explain why the dominant scientific view up to the mid-20th century was that because Hawai'i's native species were "inferior," they should be "invigorated" by stronger and fitter alien species.

Throughout my time in Hawai'i, I was continually inspired by my conservation colleagues' passion and dedication. However, I was also saddened by the intensity of the arguments that some individuals and factions had with one another. I believe that rather than futilely trying to resolve our differences with science, we should spend less of our precious time squabbling with each other and more time building greater public support for our collective work. One model I propose and discuss in *Intelligent Tinkering* to help accomplish this goal is to develop inclusive "adopt-an-acre" restoration programs for highly degraded lands that could encourage a diversity of approaches (including academic science!), foster healthy competition and camaraderie, and generate greater public engagement and support for our critically important work. — Robert J. Cabin

Cabin is an associate professor of environmental science at Brevard College in North Carolina. His next book, *Restoring Paradise: Rethinking and Rebuilding Nature in Hawai'i*, will be published by the University of Hawai'i Press later this year.