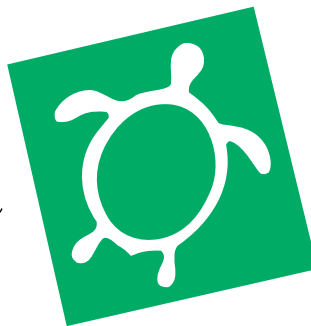


Environment



Hawai'i

a monthly newsletter

Price: \$5.00

'Ohi'a Rules

Koa may be king of the Hawaiian forests, but 'ohi'a is certainly a worthy prince. Any threat to 'ohi'a could jeopardize the health of millions of acres of vital Hawaiian watersheds.

The Department of Agriculture's proposal to put in place a permanent rule to protect 'ohi'a from a potentially lethal rust fungus is therefore welcome news indeed.

The rule (yet to be official) was unveiled at the recent Hawai'i Conservation Conference, held last month. Coverage of that event forms the bulk of this issue.

Another rule – this one promulgated by the Department of Land and Natural Resources to update management of the Conservation District – also merits attention this month.

IN THIS ISSUE

2

New & Noteworthy

3

Changing Climate Has Managers Scrambling to Protect Species

6

Snakes and Slugs, Birds and Trees: Reporter's Notebook

9

Board Talk: Conservation Rules, Hanalei Boating, Logging License, And More

12

Jawmin Emerges From Bankruptcy

DOA's Draft Rule on 'Ohi'a Rust The First to Protect a Native Species

In April 2005, the owner of a nursery in Waimanalo noticed a fungus he did not recognize on an 'ohi'a. A month later, a rose apple tree above Maunawili was heavily infested with a similar rust. Within six months, the rust had spread to all of the main Hawaiian islands, showing up on guavas, rose apples, and even the endangered nioi (*Eugenia koolauensis* and *E. reinwardtiana*).

It took a bit longer than that – until November 2005 – for scientists at the University of Hawai'i's College of Tropical Agriculture and Human Resources to nail down an identification: *Puccinia psidii* Winter, a rust-causing fungus affecting plants in the myrtle family. Native to Central and South America, the rust was thought to have been brought to Hawai'i in shipments of foliage from Florida or a foreign country in the neotropics.

In 2007, the state Department of Agriculture imposed a one-year emergency rule prohibiting the importation of plants in the myrtle family – which includes the 'ohi'a, ubiquitous in Hawaiian forests – from areas known to have the rust. Although 'ohi'a did not appear to be ravaged by the strain of rust that had already landed here, the rule was intended to keep out other strains that might be far more damaging.

Since that emergency rule expired, the state has had no regulation prohibiting the import of Myrtaceae, including some plants (myrtle, waxflower, eucalyptus) whose foliage is common in cut-flower arrangements.

Now, however, the Department of Agriculture has prepared a draft rule that would

make permanent the ban on Myrtaceae.

At last month's Hawai'i Conservation Conference in Honolulu, Carol Okada, with the DOA's Plant Quarantine division, said that the emergency rule was imposed "without the requisite rule-making requirements. It didn't go to experts, didn't go to the public." But with the support of years of research, the DOA is ready to take the



Puccinia rust on 'ohi'a leaves.

PHOTO: FOREST AND KIM STARR

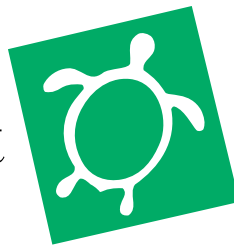
draft permanent rule – to be known as Subchapter 18 – out to public hearings.

Most of the DOA's rules are to protect important agricultural industries, such as sugar, pineapple, and coffee, Okada said. "We have just one forest rule, to protect pine. This new rule will be the first to protect native forests."

The draft rule differs in another key respect from previous DOA plant quarantine rules, she went on to say. "Normally, rulemaking is either to prevent a pest or protect a plant. We want in this case not just to prevent the fungus from coming in, but to protect 'ohi'a." The rule would allow the DOA to take immediate action to pro-

to page 5

Environment Hawai'i



Volume 22, No. 3

September 2011

NEW AND NOTEWORTHY

Riviera Resort Redux: Remember Charles Chidiac's failed efforts to build a resort in one of the remotest areas of the state? It did not end well, with more than 16,000 acres near South Point, on the Big Island, being turned over to creditors and eventually sold to Val Peroff in 2006.

Now Peroff's Nani Kahuku 'Aina is proposing a new development, called Kahuku Village, for the area, much of which consists of barren, 'a'a lava. Near the Mamalahoa Highway (the Hawai'i Belt Road), on the mauka portion of the land, the developer has promised to dedicate 125 acres to state and county agencies for "civic facilities," which could include an elementary school, park, police and fire stations, and an emergency medical facility. Near the ocean will be a mixed-use village on 1,600 acres. Included in the development are 1,050 residential units, two hotels with a total of 600 units, a golf course, commercial area, and a 500-acre "Hawaiian Heritage Center" that "will be empowered to steward and preserve the site's many resources."

The developer anticipates the project cost will exceed \$1 billion.

The draft environmental impact statement for the project was released August 8. Comments close September 21. A final EIS will need to be completed before the Land Use Commission begins deliberations on the merits of the redistricting required before the project can proceed.

New Dolphin Data: "The longer you spend looking at false killer whales, the more you find," said Erin Oleson of the National Oceanic and Atmospheric Administration at the false killer whale take reduction team meeting in late July.

During the most recent Hawaiian Islands Cetacean and Ecosystem Assessment Survey, conducted last year, researchers did, in fact, see a lot more false killer whales (*Pseudorca crassidens*) than they did in 2002. That year, only one was seen, compared to 14 in 2010.

As many as 13 more may have been detected acoustically, but Oleson said that her agency has not yet tried to confirm the species. (The rough-toothed dolphin and the short-finned pilot whale sound similar to the false killer whale, she said.)

What's more, although Oleson stressed that the results are still preliminary, DNA analysis of samples taken from false killer whales suggests that the Northwestern Hawaiian Islands may have a population that is distinct from the pelagic and Hawai'i insular populations.

A stock assessment report based on the survey is expected to be released next year.

Better Late Than Never: O'ahu may become the next island to start mapping its important agricultural lands (IAL) in accordance with Act 233, passed in 2008. Under the law, counties were to begin designating IAL in July.

Until recently, Kaua'i was the only county to attempt to do so. During its last session, the state Legislature adopted a resolution urging the City and County of Honolulu to expend the \$500,000 it had dedicated in its 2010-2011 fiscal year budget to determine its IAL. In July, Kathy Sokugawa of the Honolulu Department of Planning and Permitting told the Hawai'i Economic Development Task Force that the city planned to spend \$200,000 to develop preliminary maps and issue a request for proposals for the job. Once that's done, the city would take those maps to the community and to landowners for comment.

Monk Seal Recovery: The National Marine Fisheries Service is taking comments until October 17 on a draft programmatic environmental impact statement for Hawaiian monk seal recovery actions.

The preferred alternative (Alternative 4: Enhanced Implementation) includes expanding seal translocations, developing methods to modify undesirable seal interactions with humans and fishing gear, deworming young seals to improve their chances of survival, supplementing their diet at feeding stations and using vaccinations to mitigate infectious diseases. Alternative 3 includes all of the items in the preferred alternative except translocations of monk seals from the Northwestern Hawaiian Islands to the Main Hawaiian Islands.

The monk seal population is critically endangered, with the current population estimated at about 1,125 individuals. The population has been declining in recent years at an annual rate of 4.5 percent.

Hearings will be held September 12 in Honolulu, September 13 in Moloka'i, September 14 in Hilo, September 15 in Kihei, and September 17 in Lihue.

A Correction: In our August issue, we reported that the Natural Area Reserves System Commission had delegated its authority to staff to draft right-of-entry conditions for an ordnance survey of the 'Ahihi-Kina'u NAR. We also reported that the right-of-entry would have to be approved by the Board of Land and Natural Resources. In fact, due to an emergency proclamation by Governor Neil Abercrombie (which NARS staff was not aware of at the time of the commission meeting), no Land Board approval was needed.

Environment Hawai'i

72 Kapi'olani Street
Hilo, Hawai'i 96720

Patricia Tummons, *Editor*
Teresa Dawson, *Staff Writer*
Susie Yong, *Office Administrator*

Environment Hawai'i is published monthly by Environment Hawai'i, Inc., a 501(c)(3) non-profit corporation. Subscriptions are \$65 individual; \$100 non-profits, libraries; \$130 corporate. Send subscription inquiries, address changes, and all other correspondence to *Environment Hawai'i*, 72 Kapi'olani Street, Hilo, Hawai'i 96720. Telephone: 808 934-0115. Toll-free: 877-934-0130. E-mail: ptummons@gmail.com Web page: <http://www.environment-hawaii.org> Twitter: Envhawaii

Environment Hawai'i is available in microform through University Microfilms' Alternative Press collection (300 North Zeeb Road, Ann Arbor, Michigan 48106-1346).

Production: For Color Publishing

Copyright © 2011 Environment Hawai'i, Inc.
ISSN 1050-3285

A publication of
Environment Hawai'i, Inc.

Officers Directors

Patricia Tummons President and Treasurer	Kathy Baldwin Robert Becker Mary Evanson Mina Morita
Teresa Dawson Vice President and Secretary	

Quote of the Month

"Bureaucratic obstruction prevented my folks from going after the coqui on the Big Island before it was fully established. An evening stroll in Hilo will show where that got Hawai'i."

— *David Duffy,*
University of Hawai'i

Changing Climate Has Resource Managers Scrambling to Protect Species, Ecosystems

For a few years, questions about the impacts of climate change were hypothetical. Supposing the predictions are true, what then?

After a while, the nature of the questions shifted: What can be done now to mitigate the effects of climate change when it comes?

This year, at the annual Hawai'i Conservation Conference, held last month in Honolulu, the questions are not hypothetical. They're not phrased in the future tense. They are immediate: How do we deal with the impacts of climate change that are beginning to be seen already in Hawai'i's ecosystems?



Silverswords at the Limit

Paul Kruschylnecki, of the University of Hawai'i's College of Tropical Agriculture and Human Resources, has been counting silverswords on Haleakala for years, following on regular censuses of selected areas taken since the 1980s. "In most respects," he said in his conference talk, "this is thought to be a conservation success story." From a point in the 1920s where only a few plants remained, he noted, there was "dramatic recovery, mostly through management actions," with the number of plants growing as the number of browsing animals shrank. "It was a great story," he said.

But it may have been fiction. Starting in the 1980s, researchers began to look more closely at the status of silverswords in plots

established by Lloyd Loope and, later, by Don Drake. "The trend is all downhill," Kruschylnecki said. "Healthy plants shrink and die without flowering."

"Then we began looking at the climate: the mean annual temperature, annual rainfall, et cetera," he continued. "Right now, the most important thing correlating with growth rates is the amount of rain in the dry, summer season." Work by University of Hawai'i geography professor Tom Giambelluca predicts "a slight increase in the number of zero-rain days" over the course of the year as a likely consequence of climate shift, Kruschylnecki said, with most of those days occurring in summer months.

"But a large part of the silversword range wasn't represented" in the established plots, he continued. "We wanted to find out how representative the trends are, so last year, we censused additional ranges, measuring the ratio of live to dead plants, the population size and structure, the degree of shrinkage in the plants. Ultimately, we hoped to see if there were patterns with either elevation or precipitation."

The percent of the live population correlated well with elevation: the lower the elevation, the lower the percentage of live silverswords. "It was a dramatic difference," he said, although there were a few outliers.

"So we tried to explain the outliers. In the process of collecting more data, it became obvious that there were differences in the outlier populations, very specific differences." In some cases, the lower-elevation plants that

were doing well were in an area where there was a lot of other vegetation, even moss, suggesting the presence of a seep at the bottom of a cinder cone. Elsewhere, the healthier plants were growing at the base of a rock outcrop that was capturing the moisture in fog and making it available to the plants. "Probably these are the reasons these particular populations are doing better than others at the same eleva-

tion," Kruschylnecki said.

Overall, the pattern indicates that most populations, across the silversword's entire range, have been declining over the last seven to 14 years, with the decline greater at lower elevations, he said.

"If the trend continues, silversword distribution is moving upslope, exactly what you would expect. It's not really a surprise, but it still had us scratching our heads as to why this was occurring," he said. "We don't know yet, but we have a couple of working ideas."

First, he said, "higher temperatures exacerbate water stress" at lower elevations. Also, it's possible that drought tolerance might increase with elevation; "we don't think this is the main thing, but it could contribute. It's something we're investigating," he said.

"So, is climate change impacting silverswords? Yes, we think so, but we would like more information: better data on wide population trends, understanding why plants are dying, patterns in mortality, and what will happen with the trade wind inversion," he said.

"We're talking about silverswords, but that's not the only life form in this area. There are endemic herbivores, predators, and pollinators. And while it seems in some areas that silverswords are the only plants, a lot of other plants make up alpine and subalpine vegetation. These other plants might be suffering the same effects, but we just don't have the data yet."



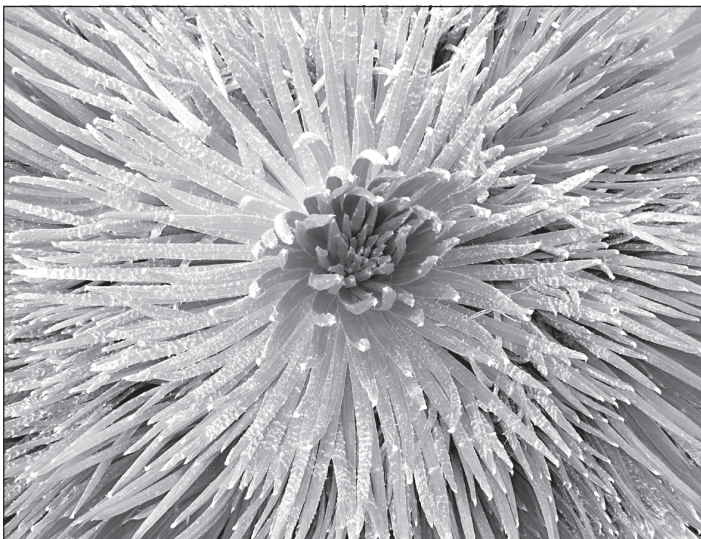
Birds Are Losing Sanctuaries

Ben Paxton of the U.S. Geological Service's Pacific Islands Ecological Research Center (PIERC), presented the results of work that he and numerous colleagues from half a dozen other agencies and institutions have been doing on the effects of climate change on Hawai'i's forest birds.

Paxton noted that avian malaria has resulted in forest birds being restricted to high-elevation forest refuges, away from the mosquitoes that carry the disease. "In areas of high-elevation forest," he noted, "we have a full complement of forest birds. In mid-elevation forests, disease is episodic. We have some birds, but not the full complement. At low elevations, there's rampant disease, little native forest, and few forest birds."

"Conservation efforts have focused on protecting high-elevation refuges. Unfortunately, global warming threatens these refuges and facilitates mosquitoes moving up in elevation."

The result? "Birds will be squeezed into an



A silversword on Mauna Kea

increasingly narrow band of forest, and fifty to 200 years from now, disease will be in all forest refuges.”

The loss of disease-free sanctuaries challenges status quo management, he said, posing a problem “with no apparent solution. . . . Issues are complex, our knowledge is incomplete, and the scale of the problem is daunting. But actions are needed now to keep one step ahead of the threat.”

PIERC’s Andrew McClung discussed the prospect of establishing new populations of the Laysan duck and Laysan finch. Until recently, the home range of these birds amounted to little more than one and a half square miles of low-lying land, prone to inundation by storms, tsunamis, and eventual sea-level rise.

Recent modeling by researchers with the U.S. Geological Survey and the University of Hawai'i at Hilo suggests that under a worst-case scenario — a sea-level rise of 1.5 to 2 meters with unlimited wave run-up volumes and no infiltration — 34 to 40 percent of Laysan Island could be underwater at times.

Beginning in 1967, individuals from both species were translocated to Pearl and Hermes atoll; three of four populations there have been lost, however—most recently during the March tsunami. In 2004 and 2005, Laysan ducks were shipped to Midway. There, the 40 initial founders have grown to 400 birds, where “they seem to be doing well,” Paxton said, “but are vulnerable to disease risk, storms, and tsunamis.” He also noted that the mean elevation of these translocation targets is lower than that of Laysan itself, making inundation of their habitat even more likely.

To maximize the species’ chances of survival over the next century, management options might include such things as “floating islands” (anchored decommissioned ships, for example) or construction of seawalls. However, long-term, “both species will eventually require higher elevation refugia with a low predation risk,” Paxton said.

Black-footed albatross are larger and longer-lived than either the Laysan duck or the Laysan finch, but they face similar problems, as Beth Flint, of the Fish and Wildlife Service, and Crystal Krause, of PIERC, pointed out in their talk. “The entire world population of black-footed albatross is found only on 28 square kilometers,” Flint noted, and 95 percent of the breeding population nests in the Northwestern Hawaiian Islands. There is a small population of black-footed albatross in Japan, she said, but 95 percent of the population nests on the low islands in the Hawaiian archipelago. In addition to sea-level rise and habitat loss, the birds “face a lot of other threats,” Flint said, including inter-

action with fishing gear, invasive vegetation, and land-based contaminants.

This year alone, two-thirds of the black-footed albatross chicks were lost in the two severe winter storms and the March tsunami. “Not only do nests get washed away,” Flint said, “but the actual topography of the land is changed. Land is cut away, and large areas of habitat are erased.”

Apart from the direct effects of storms, changes in ocean chemistry resulting from global warming may also pose threats to the species, Flint said. Ocean acidification and increased average temperatures on the coral and algae reefs that create the islands where these animals nest “are difficult to predict and quantify,” Flint said, but will still have an effect. “We anticipate we’re going to be losing habitat for the black-footed albatross,” she said.

Krause described a range of actions that emerged from a workshop on management strategies to protect the birds. While management of existing colonies, including the removal of vegetation interfering with nesting, should continue, other approaches might be more difficult. Translocation to higher islands may be difficult, she said. Albatross are philopatric—they return to the same nest site year after year. Also, the presence of possible predators of ground-nesting birds on higher islands would need to be addressed.—*P.T.*



FFS Seabird Sites All But Vanish With A Two-Meter Sea Level Rise

From the mountains to the sea, Hawai'i's native birds will suffer as a result of climate change. A warmer climate will shrink the disease-free zone for native forest birds, pushing them to higher elevations. And according to a conference poster by scientists with the U.S. Geological Survey and the U.S. Fish and Wildlife Service, it will also force the 17 seabird species that nest in the low-lying Northwestern Hawaiian Islands at French Frigate Shoals (FFS) to crowd onto ever smaller spits of sand.

The authors — Crystal Krause, Jeff Hatfield, Michelle Reynolds, and Karen Courtot — note that erosion has already significantly reduced nesting habitat at FFS.



A black-footed albatross in flight.

PHOTO: USFWS

For example, at Tern Island, nearly two hectares have been lost to erosion since 1942.

But with a rise in sea level as a result of climate change, some of the smaller islands at FFS will all but disappear by 2100. Research suggests that sea level may rise up to two meters by the end of the century, leaving little room at Tern, which has a maximum elevation of 3.37 meters, and none or next to none at Disappearing, Shark, East and Gin islets, which are roughly two meters high.

With a two-meter rise, not including wave run-up, Shark islet (0.31 hectares) disappears completely, East and Gin islets shrink to 0.03 ha, Disappearing (0.37 ha) shrinks to 0.01 ha. Tern, which has about 13.57 ha of seabird habitat, would have 11.67 ha left.

Even a one-meter sea-level rise (SLR) would cut the land at Disappearing islet to less than a tenth of a hectare and would reduce the dry land at Gin by about 50 percent.

“Seabird nesting habitat in FFS is vulnerable to even modest levels of SLR,” the poster states. “The seawall at Tern Island may prevent massive inundation from sea-level rise before 2100, however, portions of nesting habitat left unprotected by the seawall are vulnerable to SLR. If wave run-up were included, more extensive inundation could occur.”

(This was illustrated in another poster, by Paul Berkowitz of UH-Hilo and Curt Storlazzi and Reynolds of the USGS. They demonstrated that at Laysan Island, inundation areas increase exponentially when wave run-up is incorporated into sea-level rise calculations. For example, the inundation area at Laysan with a two-meter rise in sea level goes from 15.5 ha to 58 ha when run-up is included.)

The potential result of sea-level rise may be an “atoll-wide shortage of nesting habitat for seabirds utilizing all habitat types,” the authors write. “FFS shrub habitat occurs

Rust from page 1

fect 'ohi'a from the Puccinia rust or any other pathogen.

"Whether the rust is there or not, we take the plant, or plant part, or seed," she said. "The only exception is dried, non-living plant materials or tissue-cultured plants grown in sterile media, or by permit." To import by permit, however, is subject to a year in quarantine: "If you bring in cut foliage or anything in the myrtle family, we're taking it for a year. Seeds or plant crops will also go into quarantine."

Finally, the draft rule is novel in that it is the first regulation based on strain differences, Okada said. "All other rules regulate species not known to occur in Hawai'i," a convention that appears in the plant regulations of the United States government and which is also a key element in international trade. "All countries agree that if you have a species or pathogen present, you can't regulate that. So this is one of the first things we're bucking. This is the first test of bucking federal pre-emption."

When asked whether the DOA anticipated trouble over this aspect of the new rule, Okada said that the department was "working on getting all documentation in place." Christy Martin, of CGAPS (Coordi-

almost exclusively at Tern Island [and] continued shoreline erosion threatens scarce shrub habitat for the black noddy, great frigatebird, red-footed booby, and white tern."

They suggest that resource managers can use inundation projections to anticipate vulnerable areas. Continuing efforts to increase nesting habitat (i.e., planting vegetation, adding artificial nesting structures, maintaining the seawall at Tern) is critical as shoreline habitat is lost, they write.

A related poster by Reynolds, Hatfield, Krause, Paula Hartzell, and Elizabeth Flint notes that for the great frigatebird, the red-tailed tropicbird, and the gray-backed tern, populations have already reached Tern Island's carrying capacity.

"A shortage of nest sites may either simply prevent some pairs from breeding, or in some cases, actually reduce the reproductive success of birds that do breed. Species that are already at carrying capacity or exhibit strong density dependence are likely to be the first to respond negatively to small changes in habitat loss due to sea-level rise caused by climate change," they write.

— T.D.

nating Group on Alien Pest Species), who was in the audience, elaborated on the subject, saying Hawai'i representatives had met with a regulator from the U.S. Department of Agriculture. The regulator, Martin said, indicated that the state rule would give the USDA a basis for promulgating a similar federal rule. "So for the first time, we'll be working on trying to get the federal system to help us on this problem."

At the moment, Okada said, the Department of Agriculture was promoting a "buy local" campaign for vendors of cut flowers. "Most flowers in the markets are of foreign origin... When people buy flowers, they're not looking for locally grown stuff. If you buy from Safeway or other stores, you're buying bouquets made from things grown in Brazil, Columbia, and other countries.... So when you go to a store to buy flowers, are you going to be buying something cheap, or something to protect our forests?"

The DOA is also "opening a dialogue with florists and importers," while the University of Hawai'i Hawai'i Economic Research Organization has undertaken an economic analysis of the rule, especially as it could affect florists and nurseries.

Christopher Wada of HERO summarized the group's work to date. A survey of 205 florists and 158 nurseries found that, among florists, only about 20 percent carry products that would be prohibited under the rule. (On Kaua'i, the figure was just 6 percent.) At Costco, no Myrtaceae was in any floral arrangement, since the buyer still believed the 2007 rule was in effect, Wada noted. Safeway reported it ceased using Myrtaceae in 2007 and never went back, using substitute "filler" foliage. A "major florist" on O'ahu reported that Myrtaceae make up less than 1 percent of its sales, Wada said.

Wada said the group conducted a more detailed survey of forest nurseries, talking to about 10. "Four said they do import non-seed material," but overall, nurseries saw the benefit in the quarantine rule, he said. "The cost of a successful invasion would be high... In 2007, a native nursery experienced an 8- to 10-percent mortality rate for 17,000 'ohi'a seedlings and young saplings, even with monthly treatment of a *puccinia*-specific fungicide." Plantations in Brazil, he added, report infection rates of 20 to 30 percent.

The value of protecting Hawai'i's watersheds by keeping out the rust "is expected to be substantial," Wada said. Estimates of the current value of the Ko'olau watershed of O'ahu (where 'ohi'a is the principal component) range from \$4 billion to \$14 billion, he

An Exclusive List

Getting species added to the state's noxious species list isn't easy. Any proposed plant must meet five criteria to be designated. For species that are already in Hawai'i, designation helps to provide the legal authority to control them, including a right-of-entry.

Unless the species meets specific reproduction, growth, impact, control, and distribution thresholds, it can't be added to the list.

For example, if an invasive species in Hawai'i has broad distribution or isn't an incipient population spanning less than five acres, it can't be designated as a noxious weed.

Because of such criteria, very few species are added to the list, says Becky Azama, noxious weed specialist for the Hawai'i Department of Agriculture.

Although she gets two to three requests a year, "There's nothing in the works right now," she says.

Most recently, she's received requests to add mangrove, guinea grass, and the Australian tree fern to the list, but they've made little headway.

"Those are pests in their own areas, they have their problems, but when you look at what criteria they have to fit in, they don't qualify," she says. "A lot of people make suggestions, we tell them the requirements and documentation needs, then we don't hear from them."

She adds that the DOA did add the coqui frog, fire ant, and nettle caterpillar to the list on its own accord.

"If there's something that would be pressing, we wouldn't have to wait. We can do it, if there's a need, depending on resources," she says, noting that her department has lost half of its staff.

— T.D.

noted. "If a virulent strain of the rust were to reduce that by as little as one percent, the potential loss would be huge — \$70 million, possibly even more."

Okada said that the DOA was hopeful the new rule would be in place by December.

— Patricia Tummons

REPORTER'S NOTEBOOK

2011 HAWAI'I CONSERVATION CONFERENCE

Buildup in Guam, Cuts in Inspections Increase Brown Tree Snake Risk Here



Brown Tree Snake

PHOTO: HEAR (HAWAII ECOSYSTEMS AT RISK)

About a dozen species of native forest birds were present and in stable populations” when the brown tree snake (*Boiga irregularis*) arrived in Guam in the late 1940s, said James Stanford of the U.S. Geological Survey and a member of the brown tree snake rapid response team based on Guam.

“Just two species of native birds are still hanging on in very reduced numbers.”

Guam “lost native lizards and bats. The economy was devastated. Forests are showing the effects, since we no longer have seed dispersers. Forests are not regenerating because we lost a link in the chain there. It’s just snowballing. Guam is in a terrible mess because of this snake,” he said.

While people in Guam would like to see the snake eradicated, he told the audience at the Hawai'i Conservation Conference last month, “the most pressing need is management of the Guam snake population, keeping it from spreading.”

The snake population on Guam, Stanford said, ranges between one million and two million animals. Keeping it contained on Guam has been a challenge up to now, but recent developments make the task all the more daunting.

Increasing the possibility that the snake might be carried elsewhere are activities related to the U.S. military buildup in the Commonwealth of the Northern Mariana Islands and Guam. For Rota, Tinian, Saipan, and some far northern Mariana islands, “there’s a super-high critical risk,” Stanford said. The buildup also adds to the risk that the snake might end up in Hawai'i or other

Pacific islands. “Early detection and rapid response capacities are not keeping pace with these issues,” he said.

Pre-departure screening of planes and cargo has been ongoing for years. Despite that, brown tree snakes have made it to Hawai'i, alive, on numerous occasions, he said; “we think they’ve all been captured.” If the snake were to become established in Hawai'i, “you’d see the exact same impacts here as on Guam, but on a larger scale. If Hawai'i had the snake established, you’d become a pariah, just like Guam. It would also put the U.S. mainland at greater risk.”

Yet the future of the U.S. Department of Agriculture’s APHIS (Animal and Plant Health Inspection Service) program in both Guam and Hawai'i is uncertain, Stanford said. “Will brown tree snake control activities on Guam continue during fiscal year 2012? If not, Guam’s trade partners should anticipate an increase in snake arrivals,” he said. (Last month, the Department of Interior approved an agreement between the Office of Insular Affairs and the U.S. Geological Survey, calling for \$1.213 million to be used by the USGS to continue developing and testing tools for capture and control of the snake on Guam.)

On average, the current program removes between 200 and 300 snakes every week from cargo boxes leaving Guam. “Are Hawai'i’s early detection and rapid response capabilities sufficient” to address the possible reduction in Guam screening? Stanford asked.

Several people from Hawai'i have been trained in Guam to respond to possible snake sightings, but Stanford emphasized the need for increased capability in this area. The snake “is a living organism that moves about quite regularly,” he said. “If people report they’ve seen a snake and they’re waiting two days for me to arrive, we’re not going to get many. But if we have people in-house, and can get them out there in 15 minutes or half an hour, we’ll have a better chance of success.”

In other Pacific islands – the Federated States of Micronesia, Palau, Fiji – “we’re much further behind,” Stanford said. “We have a few trained responders here and there, but resources are very limited.”

Stanford’s team has set up an “alien snake

hotline:” 671-777-HISS (4477). “We get on average about 45 calls per year regarding non-native snakes,” he said, including several calls from the U.S. mainland. “We got one from Tulsa in 2010, another May 19, 2011, again near Tulsa.”

For the most part, the hotline is not for residents of Guam, given how ubiquitous the snake is there. But if they see another type of snake, they should definitely call, he said. “We got a call last year from Guam for a non-brown tree snake... Turned out, it was a Honduran milk snake, probably brought illegally to the island as a pet.”

The brown tree snake on Guam “wiped out birds, lizards, and one bat species. It eliminated the poultry business. Small pets, cats, dogs, puppies – gone... For a while, people thought snakes would eat through everything, and the population would then decline, but we’ve got so many other non-native species that are now supporting them,” Stanford said. “They’re now eating a skink from the brown tree snake’s native range. It’s extremely plentiful, so there’s no problem with high predation. As long as we have that skink, the snakes are going to be fine.”

‘Amakihi Face New Threat in Mange

I work with train wrecks, so don’t expect any cute pictures.”

The audience was thus duly warned by Dennis LaPointe, a researcher with the U.S. Geological Survey’s Pacific Island Ecosystems Research Center, but that hardly prepared it for the gruesome photos that he proceeded to display on the large screen in the conference room. One picture after another showed beautiful ‘amakihi (*Hemignathus virens*) beset by horrible, scaly growths on their feet, caused by a mite, *Knemidokoptes jamaicensis*, also known as the scaly-leg mite.

The affected ‘amakihi were found in 2007, when Jacqueline Gaudioso, a graduate student at the University of Hawai'i-Hilo studying plumage coloration, mist-netted a couple of birds with “peculiar lesions,” LaPointe said. She brought them to the USGS researchers, who proceeded to inform Gaudioso that she had discovered the first case of knemidokoptic mange in Hawai'i. Further

surveys found the mite was present at sites from 300 meters in elevation to 600 meters, with the highest densities at the highest elevations.

After that, LaPointe said, he and his colleagues “decided to get some of these birds into the aviary and see what’s happening as a consequence.” Infested birds were taken from Manuka, and clean ones were collected from the Upper Waiakea Forest Reserve.

Over the next 16 months, they tried to discover how the mite was transmitted, but they did not succeed in infecting the clean birds. “As we progressed, we didn’t see anything looking like transmission,” LaPointe said. “Maybe it occurred, but there were no clinical signs.”

What researchers were able to do was observe the progression of mange in the affected birds. “In one case,” he said, “an advanced infestation seemed to resolve itself. Birds start to peck at the lesions, preening them off, but it depends on the individual bird. Another case was the complete opposite: the bird came in with advanced lesions, and the lesions continued to grow. Then there was a drastic drop in lesion size, and a lot of necrotic tissue. Six months out, the bird died.”

In a third case, the bird came in with “early stage” infestation. “Over time, it seems to have resolved the lesions,” LaPointe said. “Then the lesions started growing... We treated the bird with Moxidectin [used to treat mange]. Shortly after the treatment, the lesions started to resolve rapidly.... Moxidectin speeds up the recovery process.”

Three of the captive birds died, allowing LaPointe and his colleagues to speculate on the cause of death. “The intermediate and advanced lesions predispose the birds’ feet to injury and secondary infection, but we don’t know what happens in the wild,” LaPointe said. Very large lesions on the feet may interfere with the birds’ ability to perch or constrict blood flow, leading to necrosis, but, he added, secondary infections are the most likely cause of death.



An amakihi with knemidokoptik mange.

PHOTO: USGS



Hunting of Game Mammals Gets Little Public Support in Surveys

Cheryl Lohr, a graduate student in the University of Hawai'i's Department of Natural Resources and Environmental Management, has been surveying a number of groups to get an idea of public support for hunting of game mammals and game birds in Hawai'i. She presented her preliminary results in a conference poster exhibited.

Lohr and her professor, Christopher Lepczyk, sent questionnaires to hunters, “conservation professionals,” members of the Hawaiian Civic Clubs, farmers, animal welfare advocates, and “random residents.” Questions were intended to gauge the degree to which a given group would tolerate game animals in their environment and how the respondents would like to see those animals be managed.

At the conference, Lohr had results for four game species: axis deer, goats, mouflon sheep, and pigs. She had sent surveys to more than 5,300 residents in the various groups, more than half of them in the “random resident” class. More than 1,600 hunters received questionnaires, as did 643 “conservation professionals,” 49 Civic Club members, 339 farmers or other agriculturalist, and 254 animal welfare advocates. The highest response rate (37 percent) came from animal welfare advocates. Thirty-three percent of conservation professionals returned their surveys; 32 percent of agriculturalists; 29 percent of Civic Club members; 10 percent of the random residents; and just 9 percent of hunters.

Among all the groups, Lohr found, the hunters were alone in wanting to see an increase in game abundance. When Lohr attempted to measure the potential for conflict among the various groups, she found that the greatest potential area of dispute concerned management of axis deer and mouflon, with hunters wanting to see increased populations of both animals (as well as pigs and goats), and practically everyone else wanting to see those populations reduced. With respect to goats and pigs, on the other hand, the potential for conflict was less pronounced.

Lohr hopes to follow up with further analysis of her results, hoping to weigh how important the animals are economically and culturally, the degree to which people derive enjoyment from knowing they are present in the wild, how much damage they inflict on

property or income, the extent to which they pose a health and safety risk for humans and other wildlife and native plants, and how they affect water quality and soil.



The Threat from Above: Peregrine Falcons at Midway

Pity the poor Laysan duck. With its sole population at Laysan Island subject to being wiped out in a single catastrophic event, the Fish and Wildlife Service shipped some of them off to Midway Atoll to start a new population. As Andrew McClung of the U.S. Geological Survey's Pacific Island Ecosystems Research Center noted in a poster at the conference, the ducks were easy pickings for a vagrant peregrine falcon in 2006 and again in 2008. In those years, 4 percent and 2 percent, respectively, of the Laysan duck population were killed by raptor predation. Other seabirds were taken as well, including black noddies, brown noddies, bonin petrels, Tristram's storm-petrels, ruddy turnstones, Pacific golden plovers, and white terns.

Their carcasses were all found on the tarmac at Midway.

McClung concludes that if the abandoned airstrips at Midway were revegetated, the birds might have greater cover against the falcons. Otherwise, “vagrant Peregrine falcons overwintering on small islands could exert adverse effects on populations of endangered birds, with greater risk of significant impact for newly translocated populations.”

The Laysan finches that were transplanted to Midway fared better, with no documented falcon kills. Those that remained behind on Laysan, however, were hit hard by visiting Peregrine falcons in 2008, with at least 80 finches killed (as well as numerous seabirds).

— P.T.



Slug Poison Boosts Rare Plant Survival

Move over Guinness. Sluggo is now the most effective slug killer in Hawaiian forests, thanks to the O'ahu Army Natural Resource Program (OANRP).

For years, beer traps and copper barriers were the best available methods to keep slugs from munching rare native plants in the wild. And although tests revealed that dark beer captured four times as many slugs as Coors Light, beer alone could not tackle the slug problem.

But late in 2010, after several years of working with state and federal agencies, the OANRP won approval from the Hawai'i Department of Agriculture for a Special Local Needs label for Sluggo, an organic iron phosphate-based pesticide that kills slugs upon ingestion.

"This label means that, for the first time, eradication of slugs in a natural area is possible," wrote the OANRP's Stephanie Joe in her abstract for last month's conference.

Introduced slugs (there are no native ones) threaten 59 of Hawai'i's 273 threatened or endangered plant species, Joe said in her presentation. In particular, slugs attack two critically endangered species — *Cyanea superba* and *Schiedea obovata* — that the Army must manage and stabilize if it is to continue training in Makua Valley.

"Slugs alone can affect your outplanting success," Joe said.

So a few years ago, the OANRP began testing Sluggo in the Army's 36.5-hectare Kahanahaiki Management Unit in the Wai'anae mountain range. In addition to testing the pesticide's efficacy against slugs in montane and mesic areas, the Army also studied whether it harmed native snails.

Joe found that while Sluggo did not eradicate the slugs, it caused a four-fold decrease in their numbers in treated plots and did not significantly affect native snail populations. (The Army must also stabilize two species of rare Hawaiian snails.)

Other tests found that Sluggo can improve plant survival. Twice as many *Cyanea superba* plants survived in slug-free areas six months after application than in untreated areas. In fact, *Cyanea* survival in areas without slugs was so robust it equalled that of the invasive weed, *Clidemia hirta*, Joe found. She also discovered that Sluggo had a significant positive impact on *Schiedea obovata* seedling emergence.

While Sluggo appears to be an important tool for rare plant recovery, it cannot be applied if native snails are present, she stressed.

"To ensure native snails are not impacted, make sure slugs really are the problem and have an experienced malacologist survey the area," Joe said, adding that Sluggo can't be applied within 20 meters of any tree containing *Achatinella* snails.

For now, the Army is doing targeted application around plants during the wet season and fruiting seasons, she said. It's also footing the bill — \$3,500 a year — for the label, which is good until 2015.



Rare Plant Recovery: A Landowner's Perspective

There is no better way to dissuade a landowner from [doing conservation work] than to stick them with the responsibility of getting a bunch of permits and doing public hearings," said Stephanie Dunbar Co in her conference presentation on rare plant recovery from a landowner's perspective.

Permitting and hearings should be taken care of by government agencies, said Co, a botanist and daughter of Kip Dunbar, who owns Molokai's 1,100-acre Kainalu Ranch. The ranch has received various state and federal grants over the years to protect its agricultural and natural resources.

"Accounting for approximately 50 percent of Hawai'i's total land area, private lands are critical components to successful restoration efforts throughout all available remaining habitats," Co's conference abstract states.

With a grant from the state Department of Land and Natural Resources' Division of Forestry and Wildlife, Kainalu Ranch has been able to keep the palm *Pritchardia munroi*, also known as lo'ulu, and the tree *Cyanea dunbariae*, a.k.a. haha, from going extinct in the wild.

"[*Pritchardia munroi*] is a species near and dear to my family," Co said, noting that it was named after her uncle James Munro, "who was really good friends with [famed botanist] Joseph Rock."

With a single individual left in the wild, the ranch successfully outplanted 30 more about six years ago, she said.

Cyanea dunbariae, named after her great-grandmother, who showed it to Rock, has only eight adult individuals left in the wild, she said. Her family planned to plant 12 more last month.

With a 2002 grant, the ranch also fenced its upland pasture and planted five acres with 1,000 koa and 500 koai'a to see if they held any forestry potential.

"They've both done well," she said, adding that the ranch's conservation work has been "hugely satisfying."

"Given my family's fine ancestry, we're really concerned with conserving things that are Hawaiian," she said, adding that "everybody needs to do their part."

While her family has strong personal reasons to preserve rare native plants, "rarely does rare plant recovery work positively affect a landowner's bottom line," she said.

Establishing a baseline for threatened and endangered plants, excessive permitting, ex-

cessive public meetings, providing access, the lack of technical and/or financial resources by government agencies, and the requisite in-kind and financial contributions are just some of the challenges private landowners interested in doing conservation face, she said.

Despite the challenges, landowners are likely to participate in projects where they have a good rapport with the partnering agency and individuals, and where there is appropriate technical expertise, assistance with permitting, complete implementation funds, controlled access, and some long-term maintenance funds, she said.

Government agencies need to provide incentives for landowners to undertake conservation efforts and recognize their need to remain fiscally sound, she concluded.

"Understand that long-term biological success requires short-term political and economic incentives," she said.



An Overview: DOFAW T&E Plantings on Kaua'i

We're getting a lot of seedling recovery in mesic forests and are really starting to get a lot of [native plants] coming up on their own. In terms of rare plants, not so much," said Michael Wysong, a botanist and manager of the Kaua'i Natural Area Reserves.

Wysong, who was hired by the DLNR's Division of Forestry and Wildlife in 2007, provided an overview of his agency's success with rare plant restoration on Kaua'i.

Results have been mixed, at best.

Between 1987 and 2007, DOFAW built 44 rare plant exclosures on Kaua'i totaling nearly 120 acres. Thirty-three protected areas contained threatened or endangered species, while 11 were created specifically for outplanting. (Outplanting also occurred in six of the 33 protective exclosures.) Most of the exclosures were less than an acre in size.

Between December 1990 and August 2007, DOFAW outplanted 4,119 threatened and endangered plants representing 53 species. Most species had fewer than 50 individuals planted, he said.

After conducting an inventory of 10 of the 17 exclosures where outplanting occurred, Wysong and his staff found that outplantings survived in seven of them. Overall species survival at all sites was a mere 15 percent, he said, adding that of the 53 species planted, only 33 (62 percent) remained.

Because survivorship was better when more individuals were planted, Wysong concluded that DOFAW needs greater nursery production.

BOARD TALK

Changes to Conservation District Rules Have Natural Resource Managers Worried

“We’re all adults here. What are they really concerned with?” Sam Lemmo said. Then, answering his own question: “They don’t want to be subject to an EA.”

Under the proposed Conservation District rule amendments, an environmental assessment (EA) would have to accompany any application for a Conservation District Use Permit or site plan approval. Unless, that is, the proposed action qualifies for an exemption from Hawai'i's environmental review law, Chapter 343 of Hawai'i Revised Statutes. In that case, an applicant would have to provide proof of a qualified exemption or request that one be granted.

At the August 12 meeting of the state Board of Land and Natural Resources, representatives from both public and private resource management organizations urged the board to remove new language the Office of Conservation and Coastal Lands had only recently inserted into the proposed amendments.

In particular, they wanted to see clarified or deleted the requirement that the Department of Land and Natural Resources grant site plan approval of resource management activities in areas greater than one acre.

Lemmo, administrator of the OCCL, explained to the board that a site plan approval

might require an environmental assessment or an exemption, taking conservationists down a road they'd rather not go.

“I can’t believe they want to put themselves up here” — holding one hand above his head — “and everybody else down here” — his other at table level — “because they’re doing resource management,” Lemmo said.

“I want a *letter*,” he said, referring to site plans, which is one step below a Conservation District Use Permit.

“If you want to put in language that gives them an escape, I don’t have a problem with that,” Lemmo told the board. But, he warned, conservationists are not the only stakeholders the board has to consider.

When it came time to vote, the Land Board approved the rules with several changes, including some recommended by the DLNR’s Division of Forestry and Wildlife and The Nature Conservancy of Hawai'i that reduced the number of resource management activities that require site plan approval.

December Version

Revisions to the state’s Conservation District rules have been a long time coming, with the Land Board approving the last substantial changes more than 20 years ago. Since then, the department has had a lot of time to learn what sections need improving and what outright mistakes need correcting, Lemmo told the board.

The OCCL drafted a suite of changes last December, but decided to wait until after the new administration was in place to request board approval.

The December proposal added renewable power generation, telecommunication, beach restoration, and land and natural resource management as permitted uses in the protective subzone of the Conservation District.

It also amended one section to allow invasive species removal without board or departmental approvals. Previously, the rules required such activities to have a departmental Conservation District Use Permit.

Also exempt from DLNR or Land Board approval under the December version:

- Removal of invasive, dead or diseased trees for non-commercial purposes; removal of trees posing a public safety hazard;
- Basic land management, including routine weed control, clearing of understory, and

tree pruning — involving no grading or grubbing, in accordance with state and federal laws.

- Planting of native and endemic plants and fence maintenance; and
- Clearing of sand or silt from stream mouths, canals, drainage pipes, or other features.

Regarding invasive species removal, native planting and fence maintenance, the proposed rules did include one caveat. It stated, “The department or board reserves the right to require site plan approval, departmental or board approval if it is determined that the proposed action may cause secondary impacts on natural or cultural resources, or the surrounding community.”

One-Acre Trigger

In early August, the OCCL issued a new proposal that included the requirement of a site plan approval for the removal of invasive species and for basic natural resource management activities in areas greater than one acre.

The OCCL’s report to the Land Board does not explain the reason for the change, but a letter Big Island attorney Margaret Wille sent to Lemmo in January indicates that not everyone supports large-scale invasive species removal without some kind of government oversight.

Conservation of mature trees is key to curbing erosion and countering rising temperatures, air pollution, and arid conditions, she wrote.

“For this reason, any proposal to remove or kill mature trees and other substantial vegetation within the Conservation District should be minimized and subject to department oversight and review — regardless of whether the tree is a ‘native’ or ‘non-native’ species,” she wrote.

The new one-acre limit, which seems to address Wille’s concerns, took the conservation community by surprise and representatives from various conservation agencies immediately began submitting testimony against it.

The state’s invasive species committees and watershed partnerships, which receive public and private funds, lack the expertise and resources to prepare site plans, permit applications and environmental assessments, wrote David Duffy, head of the University of Hawai'i’s Pacific Cooperative Studies Unit, which employs most committee and partnership personnel.

“I will have to ask UH lawyers to either prepare them or to sign off on them. Our lawyers are heavily overworked and thus slow. Unfortunately, little fire ants and coqui frogs

He added, “If we put a lot of plants out, to ensure survival of the outplants, we need to better match outplants to their habitat requirements and discontinue outplanting with species or sites that don’t work.”

Better genetic tracking, greater species representation, and prioritized outplanting are also needed. The rarest should come first, he said.

His abstract notes that in the past five years, “focus for rare plant protection on Kaua'i has shifted from an emphasis on individual plant population protection to larger scale habitat and watershed protection.”

Since 2007, larger exclosures totaling more than five thousand acres have been built, mostly by the Nature Conservancy of Hawai'i. Wysong said that once all planned fencing is complete, more than 8,000 acres and an additional 29 species will be protected.

— *Teresa Dawson*

do not need EAs or site plans to invade new territories. In 2001, bureaucratic obstruction prevented my folks from going after the coqui on the Big Island before it was fully established. An evening stroll in Hilo will show where that got Hawai'i," he wrote.

Maui Invasive Species Committee (MISC) manager Teya Penniman pointed out that her agency may remove invasive species across tens of thousands of acres, but only treat a small area at any one time.

In 2010, MISC surveyed approximately 54,500 acres for miconia and removed 54,400 plants over thousands of acres, but treated an aggregate area of only 5.44 acres.

"For pampas grass, in 2010, we surveyed 26,200 acres, removed 4,900 plants, and 'treated' approximately 1/2 acre. Under the proposed rules, work on pampas grass presumably would not trigger requirements to acquire a site plan approval or permit. However, under the draft language it is not clear whether a site plan, permit, or environmental assessment would be required for miconia," she wrote.

MISC has worked with nearly 400 property owners over the last decade, she wrote.

"Under the proposed rules, removal of invasive species in excess of one acre will require site plan approval. What constitutes an acre? Does this mean a contiguous acre? A total of one acre treated for specific species within a one-year timeframe, regardless of the area over which it is proposed? What constitutes a site? Is it defined by property ownership? If the latter, preparation and submittal of individual site plans and environmental assessments will effectively halt our operations as we create plans and wait for approval," she wrote.

Paul Conry, administrator for the DLNR's Division of Forestry and Wildlife, proposed several changes that would have clarified that fence maintenance and "spot treatment" of invasive species and native plantings would not require any departmental or Land Board approvals. New fenced enclosures in an area greater than an acre would require a site plan approval, Conry proposed.

Conry also asked that the board delete the caveat regarding possible board or departmental approvals for invasive species or natural resource management in areas less than one acre.

Lemmo said he thought the rules, as he proposed them, could be interpreted "to the benefit of DOFAW and DOFAW partners."

Responding to a comment by Land Board member John Morgan that his company, Kualoa Ranch, has removed hundreds of albizia without permits, Lemmo said, "That's fine. We have a section [on that]. You can take

out invasive trees."

That said, Lemmo still did not support Conry's recommended language regarding spot treatment because it was "too obtuse" and open to mistreatment.

TNCH's Mark Fox said the one-acre trigger had "caused quite a bit of consternation. It's pretty arbitrary when you're working across landscapes." He added that while he was heartened by Lemmo's interpretation of the rules — that some spot treatment would be allowed — "that's not how they're written."

Fox suggested that the board exempt departmental partnership programs with management plans on file with the department from the requirement to get site plan approval for invasive species removal and resource management.

Bob Nishimoto, a biologist with the DLNR's Division of Aquatic Resources, wanted the board to delete the one-acre restriction altogether.

"We prefer the December version," he said, adding that a one-acre limit would hamper aquatic invasive species removal in areas such as Maunaloa Bay and Kane'ohe Bay.

Environmental Assessments

Lemmo pointed out that the real concern among conservationists was not that a site plan was required for activities exceeding one acre, but that the site plan application needed to be accompanied by an environmental assessment or an exemption. (DOFAW has a new exemption for fencing, but one for invasive species control is still pending before the state Environmental Council.)

"I don't see how it makes any difference," said deputy attorney general William Wynnhoff, noting that any activity or use of Conservation District or state lands can trigger an environmental assessment. He pointed out that the DLNR has already been sued over resource management activities within the Conservation District.

Attorney Greg Kugle said from the audience that the difference is whether the approvals involved were discretionary or ministerial.

Lemmo disagreed. "The issue is what you're *doing*. ... If they do something that violates Chapter 343, they're going to have to pay the piper," he said.

In the end, the Land Board chose not to adopt Conry's recommendation regarding spot treatments, but did include the language Fox recommended regarding departmental partnership programs. The board also approved miscellaneous changes requested by Lemmo and a couple of people owning land in the Conservation District.

The rules must still be reviewed by the

attorney general's office to determine whether any substantive changes were made that would require further public hearings.



New Boating Rules Limit Commercialization in Hanalei

For more than 20 years, commercial boating in Hanalei Bay has divided the community on Kaua'i's north shore. In the 1990s, the state failed to enforce its rules for the area and boating ran amok. In 2000, it tried to ban commercial boating in Hanalei altogether, but lost a subsequent court battle with three boats that had state permits to operate. Since then, the DLNR's management of the area has been in limbo.

On August 12, the Land Board approved a new set of rules — crafted largely by the community — attempting to control commercial activities in Hanalei Bay. The rules, if signed by the governor, would allow the following:

- Up to five commercial boats to operate out of Hanalei Bay. Through attrition, that number could shrink to three. Boats shall carry no more than 30 passengers a day.

- Up to two commercial use permits for kayak tours from the Hanalei launch ramp, with a maximum of eight kayaks per trip and no more than 30 passengers a day.

- Up to eight commercial water sports permits for activities such as diving, snorkeling, surfing or stand-up paddling. Each permit covers one instructor per day, with a maximum of four clients per instructor at any one time.

At the Land Board's meeting, Kaua'i member Ron Agor and Ed Underwood, administrator of the DLNR's Division of Boating and Ocean Recreation, agreed that the bay could probably handle five commercial boats, and noted that the idea to reduce the number to three came from the community.

"This is the first time the board has been interested in solving Hanalei," Brian Lansing told the board. Lansing owns Na Pali Catamaran, one of the three companies that successfully sued the board in 2000 after it voted to ban all commercial boating in Hanalei.

Although the courts found that the state could not limit commerce in navigable waters, Lansing seemed to welcome the current attempt to limit the number of permits to those who had them in 2000.

"We've operated against unbelievable competition," Lansing said of the rise in unpermitted commercial vessels in Hanalei.

He generally supported the rules, but asked that the daily passenger limit be raised from 30

to 45, which would allow his operation to make three, rather than two, trips in a day.

To boatyard owner Michael Sheehan, the limits on commercial boating would have a serious financial impact on his business. He told the board he spent \$1.5 million building a boat ramp in Hanalei to benefit boating in the area.

"I see nothing in the rules that permittees must operate from that boatyard," he told the board.

Although various violations led Kaua'i County to revoke Sheehan's decades-old permits for the boatyard earlier this year, Sheehan said he is negotiating with the county to sell a portion of the yard to expand the county's park.

He also argued that the rules still amount to a partial ban.

"Somebody's going to challenge it. The [federal] commerce clause still rules," he said, adding that he didn't think the rules would solve much because the limits were not rooted in any "scientific, factual basis."

The Land Board ultimately approved the rules as proposed, but board member Agor instructed Underwood's division to monitor the impacts of 150 commercial vessel passengers/day and assess whether the bay could handle 75 more, as Lansing had requested.

"Personally, I don't think it will be an impact, but I'm following the community's lead," Agor said.

Regarding Sheehan's boatyard, Agor said he disliked the fact that vessels use the beach to load their passengers. He recommended that the DLNR assist the county in establishing a central launching area, an effort that could include purchasing the boatyard.



Board Removes Geothermal Zone At Wao Kele O Puna

On August 12, the Land Board unanimously supported the removal of the geothermal resource subzone designation at Wao Kele O Puna, but it was unclear whether the Division of Forestry and Wildlife's recommendation that the removal occur via a contested case hearing was necessary.

In late 2009, the DLNR and the Office of Hawaiian Affairs permanently filled the two geothermal wells on the Big Island property, purchased from Campbell Estate with \$3.4 million in funds from the federal Forest Legacy Program. Under a memorandum of agreement to manage the 25,000 or so acres at Wao Kele O Puna, the DLNR and OHA had to remove the geothermal subzone designation.

The state attorney general's office has determined that, based on a 1996 opinion by then-deputy AG William Tam, removal can only occur after a contested case hearing, DOFAW's report to the board states.

To which, board member David Goode asked, "Who are we contesting with?"

Tam, who is now the DLNR's deputy director for water, took the opportunity to dispute the interpretation of his 1996 opinion. He argued that unless someone contests the removal of the geothermal subzone, "there is nothing to contest. You can simply vote on the merits that the landowner doesn't want to do geothermal and it doesn't fit within the purpose of the purchase. ... A contested case would be a non sequitur; it'd be like form over substance."

"I'm afraid I can't agree with that," said William Wynhoff, the deputy attorney general advising the board. Hawai'i Revised Statutes state that the withdrawal of a geothermal subzone shall be conducted under Chapter 91, which governs contested case hearings. Wynhoff said that unless the Attorney General's office issues a new opinion on the

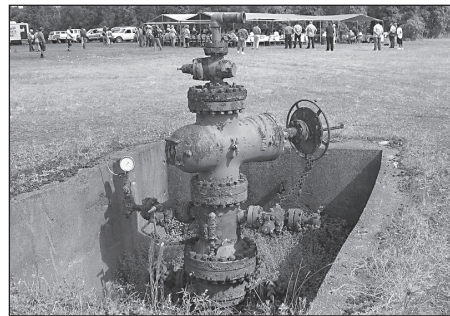


PHOTO: HUNTER BISHOP

One of the abandoned geothermal wells at Wao Kele O Puna.

matter, a contested case will be required.

"I didn't know my question would open up such a lively debate," Goode said.

In the end, the board approved DOFAW's recommendation to authorize the removal of the subzone, a contested case, and the appointment of a hearing officer.



Tradewinds Timber License Ends

Tradewinds Forest Products, LLC, is finally walking away from its timber land license for 9,000 acres within the state's Waiakea Timber Management Area on the island of Hawai'i.

On July 7, the company informed the DLNR that it had been unable to raise the money for its mill and asked that the license be terminated. What's more, the company asked that its obligations to pay \$210,000 in advance stumpage payments and forbearance fees for the latter half of 2010 be forgiven.

"The \$758,500 of past extension fees and advance stumpage fees made by Tradewinds will be retained by the state, and Tradewinds will neither have an obligation to make additional payments under the license nor retain any residual rights to harvest any pre-paid timber. Furthermore, any financial obligations of Tradewinds that may be outstanding will be extinguished," the Division of Forestry and Wildlife recommended in its August 12 report to the Land Board.

Without much discussion or any public testimony, the board unanimously approved DOFAW's recommendation. — T.D.



Sign me up for a new renewal subscription at the
 individual (\$65) non-profits, libraries (\$100)
 corporations (\$130) economic downturn (\$40)

I wish to make a donation of \$_____ a month through my credit card account for 12 months.
 (Fill out form below; minimum amount is \$10 a month)

To charge by phone, call toll free: 1-877-934-0130

For credit card payments: VISA or MC

Account No.: _____ Exp. Date: _____

Subscription Payment: \$ _____ One-time donation: \$ _____ Monthly authorization: \$ _____

Phone No.: _____ (expires after 12 months)

Signature of account holder _____

name _____

address _____


city, state, zip code _____

Mail form to:
 Environment Hawai'i
 72 Kapi'olani Street
 Hilo, HI 96720

We are a 501(c)(3) organization. All donations are tax-deductible to the extent allowed by law.

Address Service Requested

Non-Profit
Organization
U.S. Postage
PAID
Permit No. 208
Honolulu, HI

Printed on recycled paper 

Sandalwood Logger Emerges From Bankruptcy

Jawmin, the company logging sandalwood from former Hokukano Ranch land in Kona, is emerging from its year-long bankruptcy.

On August 12, Bankruptcy Judge Robert Faris granted Jawmin's motion to close the case after Jawmin arranged for a third-party loan to pay off its chief creditor, Hokukano Ranch. The ranch was owed \$8 million in July 2010, when the bankruptcy petition was filed.

According to court records, the loan is being provided by Tango Juliet, LLC, a company whose principal is Honolulu lawyer T.J. Lane. Terms of the \$8 million loan call for Jawmin to pay 15 percent interest per year, plus a loan fee of \$320,000 (4 percent of the loan's face value, deducted before the remaining \$7,680,000 is paid out to Jawmin).

Wade Lee, one of the principals of Jawmin, told *Environment Hawai'i* that this was merely a bridge loan, allowing the company to emerge from bankruptcy. He has lined up funds from the U.S. Department of Agriculture's rural development program and the Small Business Administration that will allow the company to pay off its private debt, but the company had to emerge from bankruptcy before the government funds could enter into play, he said. He anticipates that the Tango Juliet loan can be paid off within 90 days.

Jawmin is required to pay Hokukano Ranch not only the outstanding balance on its mortgage but also fees it incurred during the bankruptcy process, as well as costs incurred by the Chapter 11 trustee appointed by the court.

Meanwhile, Back at the Ranch

At the former Hokukano Ranch property, the sandalwood logging continues, but so, too, does regrowth, according to Lee and Tim Coakley, the principal of Wescorp Pacific, the Australian company now purchasing most of the sandalwood that Jawmin logs. Coakley has visited the site several times. In his most recent trip, he told *Environment Hawai'i*, he observed the sandalwood to be regenerating

quickly. "We are leaving the roots in the ground and they are coppicing like mad," he wrote in an email. "One area I was in had sandalwood higher than my knees at 10 weeks since we harvested that area. Some of the coppice at 10 weeks were even flowering. I think they might have to actually thin the coppiced sandalwood as it might be too thick."

Lee, too, is "very excited right now" over the regeneration. "We have had tremendous success growing plants off sections of root. They are flowering within weeks, since they apparently think they're the same age as the root."

The nursery operation has also been booming, he said, with 50,000 new iliahi trees being grown from seed. Lee is also working to help the manager of nearby Monoha'a Ranch replant sandalwood. "We're helping him get set up with a program we've found to be successful," Lee said. "We've had 72 percent germination of seeds in a one-to-six month period." In addition, he said, "we see lots of volunteer" seedlings.

The 3,000 acres Jawmin owns are incompletely fenced and browsing animals – including horses and feral sheep – range over the area.

Rats are ubiquitous, but "if we band the trees, we can gain access to the seeds before the rats get them," Lee said. "There won't be a seed bank in the soil, but we'll get a lot out of the seeds. Rats are going to be an issue until all of us are old and gone."

According to Lee, Tom Pace, owner of Hokukano Ranch, has recently brought in logging equipment from Washington state and is removing koa and sandalwood from his remaining property at a rapid pace—"probably three times as much as we take."

Pace has also applied to Hawai'i County for approval to subdivide 2,700 acres of Hokukano Ranch into 23 lots, ranging in size from 81 to 237 acres. Pace was asked for comment, but did not respond by press time.

— P.T.



PHOTO: TIM COAKLEY

New sandalwood shoots sprouting from areas logged by Jawmin.

LEVERAGE YOUR SUPPORT OF ENVIRONMENT HAWAII

September 1-30, 2011



give aloha

Foodland's Annual Community Matching Gifts Program

Environment Hawai'i

Our Code is: 77036

Show your Maika'i Card and make a donation to our organization (up to \$249 per person) at any Foodland, Sack N Save or Foodland Farms checkout from September 1-30, 2011.

Foodland and the Western Union Foundation will match all donations up to a total of \$325,000 for all organizations combined.

