

Price: \$5.00

A Bug in the Works

F or the past few years, the state has been working toward the release of a scale insect hand-picked from Brazil to slow the spread of strawberry guava in Hawai'i. Despite the fact that the trees threaten the state's native ecosystems as well as its fruit crops, vocal opponents of invasive species control here stirred enough controversy that government agencies involved in the release have had to delay it – despite having all of its permits in hand – and start the environmental review process all over again.

This month's cover story clarifies some of the public misconceptions about strawberry guava and its soon-tobe nemesis that scientists and resource managers attempted to address at a recent public hearing in Hilo.

IN THIS ISSUE

2

New & Noteworthy

3

Proposed Trash Treatment Plant Gets OK from NELHA Board

5

Planned Waste Plant Could Disrupt Pu'u Anahulu Landfill Operations

6

Sopogy Spurns Bonds in Push to Get Federal Tax Credits for NELHA Plant

NELHA Delegates Contract Decisions

Ű

Fact and Fiction about Waiawi Control

11

Agribusiness Agency Says It Needs More Time to Repair Waiahole Ditch

STRANGERS IN PARADISE

Controversy Flares Over Proposal To Control Waiawi with Scale Insect

The proposed release of a scale insect to control strawberry guava, or waiawi (*Psidium cattleianum*), has sparked an outcry of opposition among some sectors of the public. Yet, although the opposition means a delay in the scheduled release, the scientists most closely involved with the project say they welcome the development as an opportunity to educate the public about what they do and the ways in which their plan can work to the state's benefit.

A draft environmental assessment for the release was published last March. At the time, all signs pointed to an uneventful conclusion to the last step in the regulatory process and, with a state Department of Agriculture permit already in hand, scientists with the U.S. Forest Service were moving forward with plans for field release of the insect, *Tectococcus ovatus.* The initial release was proposed for the state-owned Ola'a Forest Reserve on the Big Island.

Public interest in the project had been minimal, even though daily newspapers across the state had provided articles on the proposed release over the last three years, as the



Potential distribution of *P. cattleianum* on the island of Hawai'i based on moisture and elevation of sites occupied as of 2005 (Kealii Bio pers. comm.).

t three years, as the Forest Service scientists progressed through various state regulatory hurdles. At publicly noticed hearings in 2006 held by the state DOA on the rule changes needed to permit the import of *T. ovatus*, only a handful of people attended. On April 30, 2008, the state



Dense strawberry guava thicket in Hawaiian forest.

Board of Agriculture approved the permit that the Forest Service needed to import the insect. With the public comment period on the draft EA set to close May 23, everything seemed set.

And then, on Sunday, May 18, the Hawai'i Tribune-Herald published a paid display ad. "Urgent! Help Save the Guava" the top line screamed. "Oppose Plan to Release Alien Insect to Kill Strawberry Guava (Waiwi)" [sic]. The ad featured before-and-after photos showing the damage T. ovatus can do to strawberry guava leaves, and then let readers know that the Forest Service would be releasing "an ALIEN INSECT PEST that causes galls on the guava plant, stopping its fruit production. THIS IS A STATEWIDE PLAN WHICH WILL START IN PUNA THIS SUMMER, UNLESS WE STOP IT NOW!" Readers were urged to get their comments in by May 23 to the Forest Service. The sponsor of the ad was identified as "Save the Guava," a campaign of the Good Shepherd Foundation, Inc.

The next day, the *Tribune-Herald* carried **to page 8**



NEW AND NOTEWORTHY

Kona Conservation: On June 6, the state Department of Land and Natural Resources announced that it had accepted a \$1.968 million dollar grant from the U.S. Forest Legacy Program to help complete the purchase of a perpetual conservation easement over 9,000 acres of forest land known as Kealakekua Heritage Ranch. Once that easement is in place, the DLNR will have protected a total of 16,000 acres in Kona through the Forest Legacy Program, making Hawai'i's one of the most successful programs in the nation. (The other protected lands include 4,022 acres that are part of The Nature Conservancy's Kona Hema Preserve and 3,128 acres of McCandless Ranch.)

A DLNR press release on the purchase states that Kealakekua Heritage Ranch, owned by the Pace family, had at one time been slated for intense development: an Arnold Palmer golf course and 500 new houses. That development was to have taken place on the lower portion of the property, with the upper 8,100 acres pro-

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 \$50 individual; \$85 supporting; \$85 corporate and institutional. 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. Facsimile: 808 934-8321. • E-mail:pattum@aloha.net Web page: http://www.environment-hawaii.org

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 © 2008 Environment Hawaiʻi, Inc. ISSN 1050-3285

A publication of Environment Hawai'i, Inc. Directors

Officers

Patricia Tummons President and Treasurer Teresa Dawson Vice President Karen Miyano Secretary

DirectorsEditorialKathy BaldwinAdvisory BoardRobert BeckerBetsy MarstonMary EvansonPaonia, ColoradoLeland MiyanoHelen ChapinMina MoritaHonolulu, Hawai'i



Kealakekua rainforest

tected under a Hawai'i County rezoning ordinance that prevented any subdivision there for 40 years from the date development on the lower portion began.

"The Pace family, however, had a different vision," Greg Hendrickson, ranch manager, said in the press release. "The family is committed to protecting this land from the kind of development planned for it prior to their purchase, and is instead interested in maintaining this Ranch as working lands."

Hendrickson told *Environment Hawai'i* last year no golf course and only 150 houses would be built on the developable portion of the property (See our November 2007 issue available on the web at www.environment-hawaii.org). According to the press release, the 9,000 acres has been valued at approximately \$24 million, more than twice what the family paid for the property in 2004, despite the fact that its development rights for the lower portion were "in limbo" according to county officials.

In exchange for giving up its development rights for the easement area, the Paces will receive two Forest Legacy grants totaling \$4 million and potential tax benefits from donating the remaining value of the land (\$20 million).



Quote of the Month

"This proposal is not attached to reality and I'm disturbed by that."

> — NELHA's Don Thomas on BioEnergy Hawai'i's planned waste-to-energy facility

The easement purchase, which must still receive final approval from the Board of Land and Natural Resources, is expected to be completed in January. The first 4,000 acres of the 9,000-acre parcel were funded for protection (anticipated to be completed in late 2008) last year through a \$2 million grant from the program, which is administered in Hawai'i by the DLNR. The additional \$2 million grant received in June will go toward the purchase of the remaining 5,000 acres.

Watershed Atlases: Some of the state's best stream researchers have recently released one of the most comprehensive sets of data on Hawai'i's watersheds ever complied.

As efforts to establish or amend stream flow standards throughout the islands have increased in recent years, so has the demand for accurate and comprehensive scientific data on the natural resources that rely on streams. Earlier this year, the state Commission on Water Resource Management released five reports on East Maui watersheds that compile a wealth of scientific, legal, and historical information. And in April, the state Department of Land and Natural Resources' Division of Aquatic Resources, in collaboration with the Bishop Museum, released the printed versions of five atlases (one each for Hawai'i, Maui, Kaua'i, Oʻahu, and Moloka'i) covering 436 watersheds throughout the state.

The authors include Darrell Kuamo'o, Glenn Higashi, Robert Nishimoto, and Daniel Polhemus of the Division of Aquatic Resources, and retired DAR administrator William Devick, as well as Louisiana State University's J. Michael Fitzsimons and the Bishop Museum's James Parham and Eko Lapp.

The atlases include species data from a variety of researchers and publications including the Hawai'i Stream Assessment, stream surveys and stocking data by the former Hawai'i Division of Fish and Game, DAR surveys, and Bishop Museum collections.

In addition to compiling natural resource data by watershed, the atlases rank each watershed according to their watershed and biotic elements.

Although the website for the atlases (hawaiiwatershedatlas.com) is still under construction, hard copies or CDs of the reports, which are several hundred pages long and total more than 2000 pages, are available on a limited basis. Call the DAR at 587-0100 for more information.

Trash Treatment Plant Proposed For NELHA Gets OK from Board

A dream, or a nightmare? A visionary solution to Hawai'i's growing problems of rubbish and oil dependency? Or a pie-in-the-sky proposal, completely untethered from reality?

Those were among the conflicting views of a proposal that recently came before the board of directors of the Natural Energy Laboratory of Hawai'i Authority. The board was being asked to give the green light to the plan of BioEnergy Hawai'i, LLC, to build on 25 acres of state land at Keahole a \$70 million, 6 megawatt waste-to-energy plant, desalination facility, wastewater treatment plant, rooftop photo-voltaic installation, and algae farm. The algae, to be grown in bioreactors that will receive the sequestered carbon dioxide produced by the waste processing, would be refined off-site (at an asyet unspecified location) into 8 million gallons a year of biodiesel that would power the fleet of Pacific Waste, the Big Island's largest trash hauling company and sole member of BioEnergy Hawai'i.

Board member Richard Hess put the skeptics' position bluntly: "Everybody blows a lot of smoke," he said, but NELHA needs "a partner that's going to tell us the truth, that'll be frank with us." Some of the statements of BioEnergy Hawai'i, which its principals acknowledged might be a bit overoptimistic, "give us a bad feeling," Hess said.

On the side of the cheerleaders was Ted Liu, head of the state Department of Business, Economic Development and Tourism. The details of the development might have to be worked out, he said, "but it'll be worthwhile to work them out. A new energy climate is going to drive breakthroughs in technology... The race is on to tap algae for its fuel properties."

At the end of a long and often heated discussion, the board ended up approving in concept the request of BioEnergy Hawai'i (BEH) to become NELHA's latest tenant. Now the NELHA staff must work out with BEH final details, including: land rents, a power-purchase agreement between NELHA and BEH, a specific site for the plant (what BEH has proposed is just makai of the Gateway Center on Queen Ka'ahumanu Highway), a firm commitment to carbon-dioxide sequestration and development of biofuels from algae, litter abatement, and the duration of the lease. Although BEH assured the board that no environmental assessment or impact statement would be required, the board also included as a condition that the company would prepare an EIS if it turns out that one is needed.

Baked, not Burned

The principals of BioEnergy Hawai'i–Guy Kaniho of managing member Pacific Waste, Inc., and Larry Capellas, former solid waste chief for the County of Hawai'i–don't like to hear the plant that is at the heart of their proposal called an incinerator. They describe it instead as a waste-reduction facility. And although the process they plan to use involves putting rubbish into a chamber where it is subjected to high temperatures (around 600 degrees Celsius, or more than 1100 degrees Fahrenheit), it does not involve incineration, Kaniho said. "It's more like baking than burning," he told the NELHA board at its May 27 meeting.

Exactly how much would be "baked" was the subject of some discussion at the May NELHA meeting. According to the statements made in the BEH proposal, Pacific Waste at present "collects and disposes of nearly 200 tons of municipal solid waste everyday, at the Pu'uanulu [sic] landfill." All of that – and then some – would evidently be diverted to the NELHA facility; according to BEH's proposal, the waste-toenergy plant would receive some 300 tons per day of trash.

Don Thomas, a University of Hawai'i professor of engineering and head of

NELHA's scientific advisory committee, raised the issue of traffic impacts. To deliver the waste, he noted, there would have to be a truck coming in every eight minutes, "and if eight trucks come in per hour, that means eight go out – a truck going by every four minutes." In comments on the proposal at last December's NELHA meeting, Thomas had also noted that of the reported 300 tons coming into the facility, "fully 90 tons/day (69 tons of 'tramp' and 21 tons of recyclables) will have to be trucked back out – either to the landfill or to recycling centers."

Kaniho, manager for Pacific Waste, replied. "The expectations were high for us to acquire more feedstock, more municipal solid waste. Currently Pacific Waste takes about 35 loads into the landfill per day. That's substantially different from the number at your rate, 90 trucks per day."

Thomas: "That's the number in your proposal."

Kaniho: "We may have misstated ourselves. Currently we're at one third of that." The higher figure was just a projection, Kaniho added, of what Pacific Waste's collection volume would be in four or five years. Kaniho's statement was an admission that the 200-tons-per-day figure given as the current haul of Pacific Waste might have been an exaggeration as well.

Honolulu's HPOWER plant burns up to 2,160 tons of waste per day, with generating capacity of 57 megawatts. If BioEnergy Hawai'i's efficiency were on a par with HPOWER's, it would need to "bake" some 341 tons a day to generate 6 MW.

According to a short video shown to the NELHA board, BioEnergy will remove inorganic materials and recyclables from the waste before processing it. The process itself involves injecting the waste (some of it pelletized) into a "fluidized bed gasifier," which will



BioEnergy Hawaii, L.L.C., Waste-to-Energy Facility, Kona, Hawai'i.

Artist rendering: North East Perspective

produce a synthetic gas (syngas) and an inert fly ash from the stack. "While the technology of gasification is fairly new," the narrator of the video states, "there are examples of successful implementation around the world." One such plant, in Asahi, Japan, the narrator says, was built in an existing residential neighborhood next door to an elementary school.

The syngas will be burned in the facility's electric power plant. Fly ash from the 100foot-high stack will be "mixed with concrete and used in construction," according to the employed by the National Research Council of Canada, a government agency similar to the National Research Foundation in the United States. They attempted to address the board's concerns that the algae part of the proposal might be no more than an effort to paint the project green by adding a fictitious carbon-sequestration and biodiesel production component.

Menova, said Leslie, had developed largescale (40 feet by 40 feet) solar concentrators that "squeeze down" sunlight and "pipe it

"There's still a lot of R&D to be done." — Stephen O'Leary, algae researcher

video. Similar claims have been made for the residual ash from HPOWER, but the ash has yet to be incorporated into any large-scale application.

As a bonus, BEH is proposing to sell the power it produces directly to NELHA and its tenants as well as the nearby Kona airport at a price 10 percent below what they pay for power delivered by the island utility, HELCO. Yet Thomas pointed out that this would not involve any sacrifice on BEH's part: "You offer constant power ... at 10 percent below commercial rates. That's a modest reduction, but at the same time, all of us on the board have to recognize that having NELHA as a captive customer gives you a 60 percent premium over what you would get if you sold your power to HELCO."

Francis Jung, attorney for BEH, replied that while the proposed electricity sale was "a benefit for us, that's true, but it's symbiotic," helping all parties involved.

Thomas was unmoved: "This proposal is not attached to reality," he commented, "and I'm disturbed by that."

A Green Cherry?

A staff report on the BioEnergy Hawai'i project raised concerns that the algae farm, which would occupy 16 of the 25 leased acres, involved an as-yet unproven technology. "The algae portion of the project is a pilot project first," said board member Laurence Sombardier, summarizing staff comments. "The proposal says that if it's not feasible, they may jettison that part."

Hess echoed the concerns: "The important thing is doing something with garbage," he said of the project. "The algae is a throwaway.... They're not even close to a final answer."

BEH had paid to fly in from Canada two "algae people," as Kaniho described them – Scott Leslie, with the private firm Menova, which produces solar concentrating devices, and Stephen O'Leary, an algae researcher down a fiber optic cable to photo bioreactors," where the algae is grown. "In Canada, things tend to freeze in winter, so the open pond idea doesn't work in Canada. That's why we came up with the idea of a closed photo bioreactor, and taking light to it."

In working with BioEnergy Hawai'i, Leslie said, "we want to emphasize that it's our intention to use indigenous species to Hawai'i and have them approved by the Department of Agriculture."

O'Leary said that at present, in enclosed photo bioreactors, "we can grow algae at high densities." His agency's interest in the project "is in screening microalgal strains for maximum growth strains and biofuel production," he said. "There's still a lot of R&D to be done."

> "We don't want just another gasification project here. It needs to come with the CO₂ sequestration and...to produce biofuels."

— Ted Liu, DBEDT director

Deputy attorney general to NELHA Bryan Yee asked what assurance there was "that some good-faith effort would be made to determine the actual economic viability" of the algae farm. On Menova's part, Leslie said, "we would certainly be keen to partake in this... Menova is very interested in moving forward at a rapid rate to do this."

DBEDT's Liu explained that for him, the algae portion of the project was critical. "Are the principals suggesting that we proceed with a gasification project if there was not either a carbon dioxide sequestration component and an algae-based component that also leads to biofuels?" he asked. "We don't want just another gasification project here. It needs to come with the CO_2 sequestration and, ultimately, what's the holy grail to me, using the sequestration to produce biofuels.... The algae isn't just the cherry on top, it's a major part of the project."

Hess again expressed his skepticism:

they're talking about, or are they just putting the best face on it that they possibly can? I'm not seeing a clear picture that what they're promising can be delivered."

"What these guys are talking about is a small

part of the project that makes the project look

and smell good. The bigger picture - trucks,

Thomas reported on his own research into

the state of today's technology with respect to

algae production and algae-based biodiesel:

"The numbers I came up with suggest that

your production rate is a factor of 20 higher

than what is considered the so-called industry standard," he told BEH representatives. To

produce eight million gallons of biodiesel a

year on 16 acres, he said, you'd need to wildly exceed the top yields reported so far, of 55

"The problem that I have with this whole

proposal," he continued, "is similar to this

issue. The proposal makes statements in

absolute terms that this will happen, but

when I research what's behind how this is

going to happen, I find that there is a

disconnect. The proposal says you'll re-

claim 100 percent of the carbon dioxide

generated by the facility. Yet in looking at

design drawings, I don't see any infrastruc-

ture for extracting 100 percent of this CO₂.

There's no reference to that in the design.

When I look at the development and pro-

duction of algae from waste gases, from flue

gases, I'm seeing numbers that range be-

"So, do these people really know what

tween 5 and 40 percent of CO_2 recovery.

pounds per square meter per year.

litter by the side of the road, the smell..."

'A Disconnect'

"I agree completely," replied O'Leary, the algae expert from Canada. "The numbers are about 20 times what is currently available. I was not involved in the proposal that was put forward, and that caught my eye as well when I looked at the proposal."

The projection of being able to produce 8 million gallons of biodiesel a year, O'Leary said, "was based on being able to sequester the entirety of CO_2 . That's a goal to aim for, but as a scientist, I'd never put my neck out so far."

In a telephone interview, O'Leary said that he understood how the numbers in the BEH proposal were generated. "You multiply the amount of CO_2 produced per day and come up with the amount of algae that would be generated by that amount of CO_2 if it were all converted to biodiesel. But

Proposed Waste Plant Could Disrupt Landfill Operations in West Hawai'i

A ccording to Mike Dworsky, Hawai'i County's director of solid waste, on an average day, the West Hawai'i landfill at Pu'uanahulu takes in from 380 to 400 tons of refuse. For each ton delivered, haulers pay a tipping fee of \$85. Waste Management, Inc., which operates the landfill for the county, receives between \$38 and \$40 of that, depending on total volume. The county takes in the rest.

Unless there's a huge growth in waste between now and the time BioEnergy Hawai'i starts operating its plant proposed at Keahole, the amount of rubbish delivered to Pu'uanahulu will plummet dramatically – as will, of course, the county's revenue and WMI's profits. To generate 6 megawatts of electricity, as called for in its

there's a high expectation of what can be accomplished on 16 acres." If you had 200 acres on which to grow the algae, O'Leary said, it might be possible.

Realistically, he said, you could probably achieve a yield in bioreactors of five to ten times the amount of algae that could be grown in an open pond, "but the numbers in the NELHA proposal ... were about 26 times" the growth rates seen in an open pond setting. "By my calculations, I don't see a production of 8 million gallons a year of biodiesel on 16 acres," he said.

And if the volume of waste treated fell short of the amount on which their algae production figures was calculated, the yields would be even less. "If you're only producing half of the CO₂, then you'll only get half the yield of biodiesel. Carbon dioxide is the building block of producing algae," O'Leary said.

A Pass on an EIS?

When the question arose as to whether an environmental impact statement would be required before the plant could be built, Kaniho responded. "Some time ago," he said,



Artist rendering: South West 1 Perspective

plans, BEH will probably need more than 300 tons of trash a day, an amount that approaches the total volume of trash now generated by West Hawai'i residents, visitors, and businesses. Guy Kaniho, operations manager for Pacific Waste, has said that at present the company hauls about 90 tons of trash a day to the landfill.

According to Dworsky, firms that have long-term trash-haul contracts with Pacific Waste have been discouraged by the company from recycling. "Pacific Waste doesn't recycle anything," he said. "And people under contract to them can't recycle, either," being forced to pay more for trash pickups if the volume they put out is reduced, he said.

Dworsky said Pacific Waste principal Kosti Shirvanian had approached the county

"we learned that NELHA already had an EIS and SMA [Special Management Area permit] in place. We inquired with the County of Hawai'i to see if that EIS and SMA applied to our project. Chris Yuen [county planning director] gave us a letter of determination saying that those permits cover our project."

That letter, included in BEH's proposal, was dated March 10, 2008. After a brief recap of the history of SMA permitting for the NELHA site, it concluded that, since "alternate energy research and development" was among the activities proposed when NELHA obtained an SMA permit in 1994, the BEH facility required no additional environmental impact statement or SMA permit.

Yuen clarified to *Environment Hawai'i* that the letter from his agency had a narrower reach than Kaniho gave to it. "Whose decision is it to require a supplemental EIS or not? In this case, it's not really a permitting matter. It's NELHA's decision. The agency leasing the state land, NELHA, has to do the 343 analysis," Yuen said, referring to Chapter 343 of Hawai'i Revised Statutes, the Hawai'i Environmental Policy Act. "Once we don't have a permit issue, we're out of the picture," he said.

As the board discussed the proposal, it became evident that several board members were not buying the argument that BEH was going to get by without having to prepare an EIS. Liu asked Kaniho whether he would be willing to prepare such a document: "Given what's at stake here, it behooves you to consider a supplemental EIS," Liu said. Kaniho a couple of years ago with a proposal to develop, at no cost to the county, a trash incinerator of any type that the county wanted. The corporation counsel's office rejected the idea, Dworsky said, as conflicting with state procurement regulations. When the county later issued a request for proposals from companies interested in developing a waste-to-energy plant, Shirvanian did not respond.

(The county eventually selected Wheelabrator, a subsidiary of Waste Management, to develop the facility, but in May, the County Council refused to give the project the go-ahead. The county is now scrambling to come up with a plan to deal with East Hawai'i waste, including expansion of the Hilo landfill, on life support – regulatorily speaking – for the last decade and a half.)

Written questions concerning the current and projected operations of Pacific Waste were posed to Kaniho. He had not responded by press time. — **P.T.**

consented to that being added as a condition of approval.

Prohibited Uses

One of the points mentioned in NELHA staff comments on the BEH proposal was the fact that the proposed facility seems to run smack into a list of prohibited uses that the NELHA board has developed. Application guidelines tell prospective tenants that among the activities that "shall not be permitted on any lot at NELHA properties" are:

▶ "Junk yards or recycling facilities" (unless carried out in conjunction with a primary permitted use or as part of waste management practices); and the

• "Dumping, disposal, incineration or reduction of garbage or other forms of refuse."

The board seemed unconcerned about dealing with these apparent prohibitions. Deputy attorney general Yee noted that, "Prohibited uses are passed by the board, so if the board doesn't want to follow the list, the board can decide that." However, Yee continued, "the bigger question is, why did the board put that [restrictions on waste facilities] into the list in the beginning? And if the [BEH proposal] is not disposition or disposal, why is it not at least considered reduction? I think it is reduction – but the board can change that."

When board chairman John DeLong asked whether the current Keahole tenants were supportive of the proposal, a representative of the tenants' association assured him they were, citing the prospect of re-

Sopogy Spurns SPRBs in Push to Get Federal Tax Credits for NELHA Plant

ast year, the state Legislature authorized up to \$10 million in special purpose revenue bonds to help Sopogy build a solar-energy plant at Keahole, Kona, on state land administered by the Natural Energy Laboratory of Hawai'i Authority.

That cleared the way for Keahole Solar Power, LLC, owned by Sopogy founder Darren Kimura, to sign a five-year lease for seven acres near NELHA's Gateway Center, where the company proposed to build a 1megawatt solar energy plant using concentrated solar power - a relatively new technology that involves collecting solar heat in curved mirrors, focusing the heat onto pipes containing a fluid, and then using that super-heated fluid to drive a turbine to produce electricity.

But according to John Rei, Sopogy's chief operating officer, the company does not have any intention at present of building the Keahole facility with capital raised through the SPRBs, which benefit lenders by making interest income free of federal taxes and which benefit borrowers by making money available at discounted rates. What is driving Sopogy these days is a federal investment tax credit, which gives investors in alternate power projects a 30 percent deduction for investments they make on projects that are up and running by the year's end. Against that kind of incentive, SPRBs lose their luster.

"We need to move quickly," Rei told the NELHA board at its May meeting. "The investment tax credit of 30 percent is due to expire at the end of this year. We need to have this [plant] turned on prior to December 31, otherwise we don't qualify, and we would take a big hit if that were the case... Every delay we get puts that tax credit in jeopardy."

When Sopogy signed the lease last Octo-

duced electric rates promised by BEH.

Before the final vote, Hess again voiced his concerns about the suitability of the project for NELHA. "The thing that sticks in my mind is, you can tell a garbage dump from 10 miles away from the stuff hanging on the trees." He asked DeLong, "Is there anything in your motion that addresses how the stuff gets here?"

DeLong admitted there was not. A representative of BEH suggested that this issue

ber, land rent was set at \$1,200 per acre per month (instead of the standard \$3,000 per acre). NELHA also is to receive 250 "equity warrants" in the company for each month

the lease is in force. As Rei explained, a warrant is basically an equity position in a company, but with no voting rights.

But even these terms weren't favorable enough. In May, the company asked to renegotiate SOPOGY

Keahole Solar Power, owned by Sopogy founder Darren Kimura, plans to harness solar energy using curved mirrors that superheats fluids to produce electricity.

the lease and scale back the project. As Rei explained in a memo to the board, after the lease was signed, the company "engaged an expert solar developer to finance, own and operate this project, as Sopogy realized it is outside of our skill set to do so. The project developer determined that a 15-20 year power purchase agreement (PPA) was optimal, with a 10-year PPA being the minimum acceptable term in order for this project to pass the economic tests required to qualify for the federal investment tax credit." To do this, Rei continued, Sopogy had to have a lease with at least a 10-year term, which NELHA director Ron Baird had assured him would not be a problem.

But before that problem could be addressed, Rei wrote, the developer pulled out, partly as a result of the "high land lease rate," which "consumes over 75 percent of projected revenues... By way of comparison, the land lease rates for Sopogy's other solar deals, both in this state and in the mainland, are less than 12 percent of projected revenues."

To make its operations economically feasible, Rei said, the company was scaling back its plans by half - to a 500-kilowatt facility.

could be taken up as a condition of the eventual contract. "In the normal permitting process, you have to design mitigation circumstances. You have to provide litter abatement, not only at the facility, but also in all traffic patterns. In a well-run facility, litter and odor don't exist."

DeLong then amended his motion to include litter abatement. When the vote was called, Thomas was the sole dissenter.

— Patricia Tummons

include 1.7 acres of graded land near the Gateway Center that staff had suggested be excluded, and that the lease be extended to 10 years. Board member Richard Henderson made a motion to adopt Baird's recommendations. But for Ted Liu, director of the state Department of Business, Economic Development and Tourism, Baird's recommendations did not go far enough.

For this, it would require four acres instead of seven, and it would also need to have the lease

term extended to 10 years. Finally, Sopogy

was asking the board to approve transferring the ownership of Keahole Solar Power to "another project developer," as yet unnamed.

At the May board meeting, Rei got more

than he dared ask. Baird recommended that

the lease be amended to allow Sopogy to

reduce its acreage, with the retained acreage to

"It would be to NELHA's credit to move forward on this," Liu said, adding that he was taken aback by a land lease requiring 75 percent of the projected revenues. "I wasn't going to make an issue of that, until the issue of warrants was raised."

Those warrants, Liu said, gave NELHA a stake in making sure the project succeeds. "It would seem that given the warrant position, and the overall interest NELHA has in seeing the local-grown entity succeed, we should give the best conditions possible for Sopogy to make it through to the first phase," Liu said. He then suggested that the lease rent should be reduced for now, "stepping it up to where we recoup down the road what we give up early on.'

Board chairman John DeLong expressed mild dissent: "We're trying to accommodate Sopogy by giving them a lower-cost property, giving them the ability to downsize the project.... I think we have taken steps to facilitate Sopogy and help them be successful, but they entered into the lease knowing what the terms are, what the financial situation is. At this point, I think we've done what we need to do to help them be successful."

Then Liu asked Rei whether, under the scaled-down scenario, the land lease was still a large part of the revenues.

"Even more," Rei said.



2007 ANNUAL REPORT

NELHA Delegates Contract Decisions

On June 10, to streamline its contracting process and to ratify current practices, the Natural Energy Laboratory of Hawai'i Authority board granted the power to execute a variety of documents to administrator Ron Baird.

Personnel: With regard to personnel matters, instead of running everything through the state Department of Business, Economic Development and Tourism, Baird now has the authority to execute documents, hire and fire staff, and reimburse staff for business expenses.

Fiscal: Baird was also authorized to approve procurement documents and contracts and internal fiscal documents that are for projects costing less than \$1 million and that are in accordance with an approved NELHA budget. While the NELHA board will no

Board member Richard Hess expressed his strong disagreement with the nowamended motion to cut the rent. "I can't understand why Liu is giving a break to Rei, when he didn't even ask for it." Rei and other Sopogy principals were adults who entered into a legally binding lease with their eyes wide open, he said. At the very least, he added, when the time comes for Sopogy to pay back the foregone lease rents, it should be with interest.

Hess was a minority of one. When the vote was taken, every other board member approved the motion to halve the rent (either for the first 18 months or the first year, the motion was not clear), with Sopogy making up the difference later. The request that it be allowed to assign the lease to the unnamed third party was deferred.

A Question of Equity

Since Ron Baird has taken over the helm at NELHA, he has attempted to negotiate arrangements with prospective tenants that allow NELHA to share in their profits. One of the earliest examples occurred when OCEES was attempting to iron out conditions for building an ocean-thermal energy conversion plant at NELHA. As reported in the August 2007 edition of *Environment Hawai'i*, the plan called for NELHA to provide land, in return for which it would receive "an initial 25 percent interest in the plant and intellectual property to be developed," as well as discounted electricity.

According to Stephen Oney, vice president of OCEES, Baird had thought that longer be involved in approving these types of documents, many of them will still be reviewed by various state agencies, including the contracts office at DBEDT, the Department of Accounting and General Services, and the Department of Budget and Finance.

Real estate: For transactions approved by the NELHA board, Baird now has the authority to execute subleases, rights of entry, and modify lease fees. He is not allowed to approve any consent to mortgage or estoppel documents or grant lease extensions or changes in the location or size of a project.

Legislature: After consulting with the NELHA board's chairperson, Baird may present testimony to the Legislature that is consistent with NELHA board policies.

Baird was also authorized to approve camping permits.

NELHA, "being an independent state agency, could enter into a joint venture with a private entity, but the AG [attorney general] said no." A bill introduced into the state Legislature in 2007 would have allowed NELHA to "acquire, hold, and sell qualified securities," but it failed even to get a hearing.

Bryan Yee, the deputy AG who advises NELHA, told *Environment Hawai'i* that nothing prevents NELHA from holding an equity interest in a company that is also a tenant on land NELHA manages. He said he could not comment on what distinguished the OCEES case from that of Sopogy.

It was clear at the May meeting that special consideration was being given to Sopogy because of the perception of benefit to NELHA in the company's success. But special consideration had been given even earlier, when the rent was being negotiated at the outset. The standard lease rent for NELHA land is \$3,000 per acre per month, or two and a half times the rate that Sopogy and NELHA agreed to in Sopogy's lease. Sopogy president Kimura told the board last year that in return for the discounted rent, Baird proposed that NELHA obtain the warrants - an "exercisable option to purchase stock at a future point in time at a given price."

More SPRBs

This year, the Legislature authorized \$35 million more in SPRBs for Sopogy to be used in building solar power plants on O'ahu. In addition, the board also voted to support the signing of Senate Bill 1793, which would add two new members chosen from NELHA tenants, allow direct communication with the governor's office and the Legislature, and allow NELHA to make its own decisions regarding employees and the purchase of furniture, equipment, and supplies.

In accordance with a request by DBEDT director Ted Liu, the NEHLA board conditioned its support of S.B. 1793 on the execution of a Memorandum of Understanding between NELHA and DBEDT regarding procurement. Before the board's vote, DBEDT's Chris Barron said that the MOU should require NELHA to take full responsibility for its contracts and that state that DBEDT will neither consult with nor answer questions from NELHA about procurement. Barron added that if the NELHA board chose to support bill 1793, Liu said he wanted a "checks and balances process in place."

— *T.D*.

Will those SPRBs languish as well?

According to Rei, that's not likely. He told *Environment Hawai'i* that the company intends to avail itself of all the bonds, including the \$10 million bonding authority given in 2007. "Definitely it is our intent to use them," he said in a phone interview. Using the \$10 million bond for investment at Keahole was a problem, however, "because the project has to be large enough to bring in the low-cost debt financing without any impact to the federal tax credits."

If a project is large enough, he explained, it's possible to segregate out the investments that qualify for the tax credit from those that don't but which can still be financed with money raised through the SPRB. "The \$10 million SPRB can be used anywhere in the state," he said, even though it was originally intended to spur the Keahole plant, which, when first conceived some three years ago, was to be at a larger scale that the 500-kilowatt plant now proposed. "Now," Rei said, "it's not feasible to do a large project at that [Keahole] location.... It's easier now to get a small project through than to do a large project with an intermittent source of energy."

Part of the problem, he said, was because the neighbor island utilities need firm power in their grids more than the intermittent power that most renewable energy providers deliver. On the other hand, he added, renewable energy providers tended to migrate toward the neighbor islands because of their higher electricity costs.

— Patricia Tummons

Strangers from page 1

a front-page article on the planned introduction of the insect. Sydney Ross Singer of Pahoa, the president of the Good Shepherd Foundation, was described as a "conservation biologist" by reporter John Burnett, who quoted Singer at length (although he did not link Singer to the ad). "I think it needs to be controlled," Singer was quoted as saying, "but ... we don't want to make it so nobody can enjoy guavas."

Representative Clift Tsuji, chairman of the House Committee on Agriculture, received so many calls about the proposal in the wake of Singer's ad that he organized an informational meeting, held in a packed lecture hall at the University of Hawai'i-Hilo on June 5.

A Walk-Out

Before the meeting began, Singer distributed handouts to people filing into the auditorium. "The government is planning to attack our strawberry guava by releasing an alien insect pest that will severely damage the leaves and stop the tree from making fruit," the flyer said. It urged people to press Tsuji to allow half the allotted time for "opposing viewpoints and information... After all, this is not only about the forests. It is also about our right to use and enjoy strawberry guava on our private property and in the wild.... Help save our free, wild foods! Help stop this attack on property rights! Help save the environment from these 'environmentalists.' Hawai'i needs food, not bugs."

(On the website of the Good Shepherd Foundation – goodshepherdfoundation.org – Singer states that the group has begun to work "on the problems relating to so-called 'invasive species' and the hazards to the environment, humans, and non-target animals and plants associated with attempts to eradicate and control these populations," which efforts Singer has described as "invasive species hysteria.")

But Tsuji was not moved. When the meeting started, he explained the ground rules: For the first hour, there would be presentations by a panel of scientists from government agen-



Tectococcus galls on strawberry guava leaves in Brazil



Strawberry guava

cies, plus one presentation by Derek Kurisu, of KTA Superstores, on the economic value of strawberry guava. After that, Tsuji would read questions submitted by members of the audience and give the panelists the opportunity to respond.

Singer objected loudly from the audience. Tsuji reminded him that this was not a meeting where testimony would be allowed. After several more outbursts from Singer, Tsuji warned him that if there were another, he would call security and have Singer removed from the hall. Eighty minutes into the meeting, after most of the scientists had made their presentation, Singer again objected to the meeting format. "The public needs to comment," he yelled. Tsuji asked for security to be called. Singer then got up to leave, and urged others in the audience to follow: "People, you should leave. This is a fraud," he said. Around half a dozen people followed him to the exit.

By and large, however, the audience was curious, polite, and attentive. One by one, the scientists addressed issues such as host specificity, the threat of waiawi to native forests, the economic and ecological damages inflicted by the plant, and the difficulty of controlling a species whose population can grow in Hawaiian forests at a rate of 14 percent a year.

Julie Denslow, a recently retired research professor with the Forest Service, noted that strawberry guava affects nearly 80,000 acres of agriculture land. "Strawberry guava fruit provides a food source for a variety of fruit flies, which have a severe impact on soft fruit agriculture in Hawai'i," she noted. "Fruit flies depress the quality and yield of papaya. For papaya alone, fruit flies cost farmers \$7.8 million a year." Some estimates of the "lost opportunity costs" brought about by waiawi, in terms of foregone economic activity, run as high as \$78 million a year.

To control strawberry guava in managed forest areas, she said, costs \$155 an acre for "initial knockdown costs, plus \$123 per acre per year thereafter for maintenance." Overall, maintenance costs of managing strawberry guava on some 132,000 acres of natural areas on the Big Island would come to nearly \$18 million, Denslow said. But with biocontrol, she added, the figure would be just a tenth of that.

Tracy Johnson, the entomologist with the Forest Service who has done the bulk of the research on *T. ovatus*, addressed questions about the potential for the insect to spread beyond the target species. This insect, Johnson said, "is not at all like the wiliwili gall wasp," which spread like wildfire across the entire island chain two years ago. *T. ovatus* "spread passively, with the wind or by crawlers," a juvenile stage in the life cycle. "They can't control where they end up. The gall wasp has wings and is good at flying, finding exactly the right plant. *T. ovatus* can't direct its distribution in this way."

Johnson said that the impacts of release of the insect may "extend across large areas over a period of decades," but for backyard trees, the insect's limited mobility "lowers the likelihood that it will find isolated trees... If it does become a problem, and you want to grow waiawi with lots of fruit, you can always control it with the application of organic oils."

'On the Brink'

Art Medeiros, who works with the U.S. Geological Survey at Haleakala National Park, flew over from Maui for the Hilo meeting. "Our mauka lands are at the brink," he told the crowd. "Is there a future for them, or not?"

"Some people may think strawberry guava is just something in the forest," he said, but, like miconia, strawberry guava isn't just a part of the forest, it *becomes* the forest."

"There aren't too many magic bullets out there," Medeiros said. "In my mind, this is not a minor issue. This is make-or-break. We're either going to protect our forests, or not....I'm working with Hawaiian groups to try to restore koa. We're trying to develop watershed forests that have cultural value, have watershed value, and are home to Hawaiian plants and animals. But it's all dependent on strawberry guava not being the super plant like it is right now. This is a critical issue."

Julie Leialoha, with the Big Island Invasive Species Committee, described the difficulty of controlling strawberry guava. "For those who say we don't want to get rid of strawberry guava because it's good firewood, I say go for it. We've got 80,000 acres of it."

"We need something to stall its spread," she said, "so we can buy time. ... *T. ovatus* won't kill the population, just stall seed productivity."

Roger Vargas, a research entomologist

with the USDA's Agricultural Research Service, outlined the tremendous economic losses associated with the rampant spread of strawberry guava, mainly related to its function as a host for the Oriental fruit fly and Mediterranean fruit fly. "The two species of fruit fly that you find on strawberry guava and common guava are the two worst," he said. "They attack more than 400 varieties of fruits and vegetables and are one of the primary reasons Hawai'i hasn't had successful agricultural diversification."

In recent years, the focus of his work has been on area-wide pest management, Vargas said, trying to increase the production of a variety of different agricultural products in Hawai'i. "In doing these technology transfers to farmers, consistently the No. I problem with every crop you look at – papaya, mango, cherimoya, lychee – was the impact of strawberry guava. Strawberry guava serves as a reservoir for the fruit flies, which go straight to the crops and just destroy most of it. This is an aspect of the problem that can't be underestimated," Vargas said.

Starting Over

At the end of the meeting, Johnson announced that the environmental assessment process would begin anew, so that anyone and everyone who had comments could be assured that their concerns would be addressed.

Johnson told Environment Hawai'i that there were a couple of reasons for restarting the process. "First," he said, "there was confusion over the original notice" published by the state Office of Environmental Quality Control. "The proposing agency was listed as the state Department of Agriculture instead of the U.S. Forest Service," he said. "Since it is the proposing agency that receives comments, there was some confusion about where to send comments. So we ended up getting comments, and so did the DOA. I'm not worried that we missed anyone's comment, but the general confusion leaves me feeling that this justifies a re-doing."

"The other reason," he said, "is that I think we need to improve our EA." The draft EA released in April, he said, "was based on a federal EA, modified to meet state EA requirements. But in talking to more state people, it seems like this EA doesn't adequately address everything required in a state EA. So we're going to improve it based on consultations with state people, making sure we follow all those procedures."

But with permits allowing the insect to be released in hand from both the state Department of Agriculture and the federal U.S.

Fact and Fiction about Waiawi Control

Opponents of the planned introduction of a biocontrol agent for strawberry guava have raised several arguments. Here are the top concerns, along with the responses from scientists with the Forest Service, the USDA Agricultural Research Service, and others:

▶ The insect will attack common guava. No, says Tracy Johnson, the Forest Service entomologist. Johnson has attempted to get the scale insect *Tectococcus ovatus* to infest more than a 80 other plants in 25 families, including common guava (in the same genus as strawberry guava), native Hawaiian plants in the Myrtle family, and even more distantly related plant species. The insect refused them all. Apart from strawberry guava, the only plant that it did colonize was *Psidium spathulatum*, a closely related species from Brazil that is not found in Hawai'i.

► Hunters and gatherers will have no more fruit. Infested trees will continue to fruit, but at a reduced rate, the scientists say.

▶ People who use strawberry guava wood for smoking meat will be inconvenienced. Not likely. Thousands of acres of waiawi thickets will continue to provide meat smokers with ample supplies for generations to come.

► Past biocontrol efforts, such as the mongoose, have been disasters. The mongoose was introduced to Hawai'i more than a century ago, with no environmental review or scientific study done before the sugar planters brought it in. Since the 1970s, no biocontrol agent released in Hawai'i has damaged non-target plants.

► The economic value of products made with waiawi will be damaged. At the Hilo information meeting, a \$3.99 fish scaler, made of two bottle caps bolted to one end of a foot-long stick of waiawi wood, was held out as an example of the economic value of the plant. But stands of waiawi will continue to exist for decades to come, more than enough to saturate world markets for fish scalers.

► Large stands of dead waiawi could fuel terrible fires. Again, not a likely scenario. The biocontrol insect does not kill the plant: Tracy Johnson said in all his testing, even on small plants, none had died after being infested with *T. ovatus.* "This is not a tree killer," he said at the June informational meeting. "Waiawi will persist a very long time with the insect... It just suppresses growth."

Department of Agriculture, why was there a need for an EA in the first place?

"We are proposing an action on state lands," Johnson said, "so the trigger for the state EA is the use of state lands." While past releases of biocontrol agents have been subject only to federal EA requirements, he said, this year, he and colleagues at the state level decided it would be appropriate to go through the state EA process as well. "I am trying to put together as thorough an assessment as I can that captures both the concerns as well as the best science we have."

At this point, he said, there had been no decision as to what agency would have responsibility for determining if the re-drafted EA was sufficient or if a more extensive environmental impact statement would have to be prepared. Paul Conry, head of the state Department of Land and Natural Resources' Division of Forestry and Wildlife, told *Environment Hawai'i* that he would be sitting down with folks from the state DOA to decide which office would be cast in the role of determining agency.

\$ \$ \$

Culture of GM Algae on State Land Needs Environmental Review, Appeals Court Says

The Hawai'i Intermediate Court of Appeals has affirmed a lower-court decision that the state Board of Agriculture must have an environmental assessment or environmental impact statement prepared before allowing the import of genetically modified algae. According to one attorney, the decision has far-reaching consequences for the way the Natural Energy Laboratory of Hawai'i manages its affairs.

The case goes back to 2004, when Mera Pharmaceuticals, a tenant on state land managed by NELHA at Keahole, Kona, applied to the state Department of Agriculture for a permit to import eight genetically engineered strains of *Chlamydomonas* *reinhardii 137c+* algae, or Cr137+ for short. The algae, to be obtained from Duke University, was to be grown in large photo bioreactors, with the intended product being high-value antibodies that might eventually be used in the treatment of diseases.

The permit was required because all *Chlamydomonas* algae are on the Board of Agriculture's list of restricted microorganisms, having been judged to be a "moderate risk" to the environment or public health should they become dispersed.

Neil Reimer, chief of the Department of Agriculture's Plant Quarantine Branch, conducted an initial review of the application, concluding that Cr137+ posed an "above moderate risk." This meant the application had to be run past the Board of Agriculture's Advisory Committee on Plants and Animals before the BOA could approve the requested import permit. On May 5, 2005, the Advisory Committee met and recommended the board grant "conditional approval."

The BOA then held two public meetings at which the Mera application was considered. At the second of these, on June 28, Reimer backed off his initial assessment somewhat, telling the board that Mera's facilities minimized the risk that the algae would escape into the environment. "If zero risk was the standard for allowing import, nothing could be imported into the state," he said, "not even naturally occurring microorganisms." Even if the algae did escape, he added, "it does not appear to be a human health issue." For them to escape and become invasive would only happen "if an unusual chain of events occurred, such as a hurricane blowing the algae into a stream."

With Reimer's testimony in hand, and over the objections of many members of the public, the BOA approved the application, requiring no environmental assessment or environmental impact statement.

The 'Ohana Pale Ke Ao, Kohanaiki 'Ohana, GMO-Free Hawai'i, and the Sierra Club, Hawai'i Chapter appealed the BOA decision to the Third Circuit Court (in Kona). The lawsuit, in which the plaintiffs were represented by Isaac Moriwake of Earthjustice, claimed that at the very least, the BOA should have required preparation of an environmental assessment. Judge Elizabeth Strance agreed, finding that the proposed action did indeed pull one of the triggers in the Hawai'i Environmental Policy Act (Chapter 343, Hawai'i Revised Statutes), in that it involved an "action" on state-owned land. The Board of Agriculture had argued that the action was not covered by Chapter 343, in that Chapter 150A vests the regulation of microorganisms solely with the BOA. And, in any case, if Chapter 343 compliance were to be required, two environmental impact statements that were prepared for NELHA lands (in 1976 and 1985) fully satisfied that requirement.

The ICA rejected both claims. As to the applicability of HEPA, the court wrote: "Although we need not consider it, given the plain language of HRS §343-5, we note that the legislative history of HEPA also supports our conclusion... In enacting HEPA, the Legislature sought to monitor human activity that poses a threat to the quality of the environment, upon which we depend for our collective well-being." While the BOA claimed that Chapter 150A allowed it to be "the 'exclusive' mechanism for importing microorganisms, ... there is no provision in either HRS chapter 150A or chapter 343 that expressly exempts the board from complying with HEPA when it acts on an application for a permit to import microorganisms... Accordingly, the board was required to comply with HEPA and prepare, at minimum, an EA before acting on Mera's application."

The BOA's fallback argument - that previous environmental impact statements covered the proposed action - was similarly dismissed. The first EIS only examined infrastructure to be built at Keahole in support of anticipated energy research. The court picked up on limiting language in the two documents, such as this statement in the first EIS: "Future projects are at present conceptual and the impact of each project cannot be completely defined at this time... An EIS will be prepared, when required, prior to initiation of a proposed future research project to determine the impacts to the site and its surroundings." The 1985 EIS, prepared when about 550 acres of state land were added to the original NELHA site, did mention as an anticipated activity "the culture of various types of micro- and macro-algae," which could be produced "in either raceway, tank or pond culture operations." The court pointed out, however, "there is no discussion in the 1985 EIS regarding the production of micro-algae in photobioreactors. There is also no discussion about the potential environmental impacts of large-scale production of microalgae in raceways, tanks, or ponds, which the EIS mentions are feasible operations..."

The court points out that the two documents were prepared "more than three and two decades ago, respectively," when the facilities at NELHA "were still conceptual or in their infancy stages.... It is clear from the EISs that as the nature and details of individual projects... became known, further HEPA review was expected."

A Disaster for NELHA?

One attorney familiar with the case told *Environment Hawai'i* that the ICA decision will present a real problem for NELHA – which has not always been scrupulous in ensuring that proposed developments fall within limits established by previous environmental impact statements.

"I have a problem with the case, in that it really draws a fine line as to what is covered by an EIS – a much finer line than I would've drawn," the attorney stated. The decision, he continued "is disastrous for NELHA. It can no longer wave a magic wand and say everything is covered. Making freshwater and bottling it and shipping it out – there's nothing in the EIS about that! Where is that? Now you're going to have to look through everything with a fine-toothed comb."

Earthjustice attorney Isaac Moriwake hailed the ICA's action. "I think it's another important decision affirming the requirement of environmental review under Chapter 343," he told Environment Hawai'i. "It simply validates what folks have been saying all along: projects on state land trigger this minimum EA process, which is the first step toward figuring out whether there may be significant environmental impacts. One of the most distressing things about this case was that there was so much resistance to doing even this bare minimum step. This case drives home that point - that the EA should be something that's automatic rather than something perceived as a nuisance that should be avoided at all costs."

Nancy Redfeather, a coffee farmer with GMO-Free Hawai'i, told *Environment Hawai'i*, "Twice now, the courts have ruled that this project had potential dangers for the environment and human health, and that an EA was required." She noted that the plaintiffs' algae expert, Malcolm Brown, from the University of Texas, testified that just a single drop escaping from the project could begin a cascade of reproduction in the local environment.

David Webber, the deputy attorney general who argued the case for the Board of Agriculture, said that while the ruling is very clear, "its impact, and how that affects us going forward, is still under consideration. We're giving that careful review."

The state could still appeal to the Hawai'i Supreme Court, but Webber said no decision had been made on that option.

Agribusiness Agency Says It Needs More Time to Repair Waiahole Ditch

Here it is May 2008 with an order that requires completion in a couple of weeks from now, and this is the first time we're hearing of this....All of a sudden, it's 2008 and it's, 'Oh, sorry, we can't do it. If I go before a judge two weeks before something is due and I had a lot of time, the judge would say, 'You've got to be kidding," Earthjustice attorney Paul Achitoff told the state Commission on Water Resource Management at its May 21 meeting.

At that meeting, the state Agribusiness Development Corporation requested three more years to comply with a 2006 contested case decision by the commission that requires the ADC by June 30 to reduce by nearly 600,000 gallons a day losses from its Waiahole Ditch irrigation system. At the time of the decision, the losses amounted to 2.03 million gallons a day; the commission order requires those losses to be no more than 1.45 mgd as of June 30. To achieve the savings, the ADC is supposed to line two earthen reservoirs reservoirs 155 and 225-that deliver millions of gallons of Windward O'ahu stream water to several large agricultural users in the 'Ewa plain.

But at the commission's May 21 meeting, the ADC claimed it did not have the funds to make those improvements and requested an extension of its system loss permit to June 2011. The ADC also asked to modify its permit by reducing its 2.03 mgd allocation to 2 mgd because it had stopped using 1,000 feet of unlined ditch that was estimated to be losing 30,000 gallons a day.

ADC executive director Alfredo Lee blamed the lack of funds on bad timing. In 2001, the project was estimated to cost between \$2 million and \$3 million and be completed between December 2007 and June 2008. Although the state had secured some funds for the project, no contract for the work was ever executed, and in the years since the project was first proposed, the cost rose to \$6 million. That most recent cost estimate, prepared by the Army Corps of Engineers, wasn't completed until late last year, too late to request capital improvement project funds from the 2008 Legislature, Lee told the commission. He told the board that the ADC and the state Department of Agriculture were planning to request \$1.3-\$1.4 million in capital improvement project funds for the project next vear.

Concerned about the ADC's and DOA's

apparent lack of urgency, commission chair Laura Thielen proposed a two-year permit extension, to June 2010, to get the agencies to "take the project more seriously." Lee dismissed her proposal as unrealistic, stating that the earliest his agency could receive the needed CIP money was July or August 2009.

When Thielen asked him what he would do if the Legislature failed to appropriate funds next year, Lee said he would simply ask again the following year. Since this would mean continued water wastage, Thielen suggested that the ADC consider lining one reservoir using money it already has, and requesting funds to line the second one while work proceeds on the first.

While she acknowledged that it would be cheaper to do both at once, Thielen asked Lee, "Would it be the right thing to do nothing without [all the] money or do part of the project now?" Although Lee seemed more inclined to wait, a number of water commissioners and Achitoff expressed their desire to end water waste as soon as possible.

Achitoff, who represents the parties whose litigation led to the 2006 decision, told the commission, "If you do the arithmetic, the amount of water that has already been wasted, it's enormous." About .58 mgd (or 206 million gallons a year) is estimated to be lost from the reservoirs through seepage. "That's a lot of water that has been wasted and they're asking for three more years of waste...I'm sorry. I don't agree," he said.

In addition to the reservoir problem, commissioner James Frazier was not convinced that the ADC should get credit for reducing waste by .03 mgd when it had not actually measured the amount saved by eliminating the use of the unlined ditch.

Lee responded that the savings estimate was based on the area of the ditch and ponding tests, and added that it's difficult to measure minute changes in flow using existing technologies. With regard to the accusations that the ADC is not taking waste reduction seriously, he handed the commission a long list of improvements that the agency has made over the years to the Waiahole system to reduce losses. The reservoir project "is the only thing we did not do because we don't have \$2 million," he said.

Even so, commissioner Neal Fujiwara chided Lee for not bringing the extension request to the commission sooner. Instead of granting a two- or three-year extension, the commission voted to extend the ADC's system loss permit for three months, during which time the ADC must prepare a contingency plan for the reservoir project and a thorough justification for the proposed .03 mgd reduction. The plan and the justification must be submitted to the commission at its August meeting.

After the commission's vote, Achitoff questioned the legality of the decision. Because the ADCs permit was issued via a contested case decision and order, Achitoff said he wasn't



Help us by making a donation or (finally) signing up for your own subscription.

Sign me up for a □ new □renewal subscription at the □individual rate (\$50) □corporate rate (\$85)

_ I wish to make a donation of \qquad a month through my credit card account for 12 months.

| (rm out torm | below; min | iimum amo | unt is \$20 | a month) |
|--------------|------------|-----------|-------------|----------|
| _ I wish to | make a on | etime dor | ation of S | \$ |

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-t | ime donation: \$ Monthly authorization: \$ |
| Phone No.: | (expires after 12 months) |
| Signature of account holder | |
| name | Mail form to: |
| address | Environment Hawaiʻi |
| city, state, zip code | 72 Kapiʻolani Street |
| ,, | Hilo, HI 96720 |

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



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

Printed on recycled paper

sure it was appropriate for the permit to be modified at a regular Water Commission meeting. Also, notice of such a modification should have been sent to all of the parties to the case, he said, adding that he only found out about the extension request a day before the meeting.

Thielen said that she would take his comment under advisement and consult with the attorney general's office on whether the commission needed to amend its decision. Answering the legal issues "would require more discussion than we can do now," she said.

\$ \$ \$

Commission on the Verge Of Amending Maui Flows

The Water Commission is edging closer to amending the interim instream flow standards for 27 streams in East Maui. In March, it released to the public five Instream Flow Standard Assessment reports – the first of their kind – on each of the surface water hydrologic units that contain those streams: Honopou, Hanehoi, Waiokamilo, Pi'ina'au, and Wailuanui. The reports, which are each about 100 pages long and cover everything from native rights to wildlife habitat to irrigation and domestic water use, will be the basis for any amendments to the interim instream flow standards for streams in those areas.

The comment period for those reports ended on June 10. Since then, the commission's Stream Protection and Management Branch has been compiling and weighing those comments and other scien-



tific data. According to branch staff, IIFS amendment recommendations could be brought to the commission either this month or next month.

For the Native Hawaiian Legal Corporation and its clients, the wait has been far too long. In June 2001, the NHLC filed petitions with the commission to amend the interim instream flow standards of the 27 streams on behalf of Na Moku 'Aupuni o Ko'olau Hui and East Maui taro farmers Marjorie Wallet, Beatrice Kekahuna, and Elizabeth Lapenia. NHLC attorneys Alan Murakami and Moses Haia have argued that their clients use those streams and have constitutionally protected rights to the stream water, which has been diverted by Alexander & Baldwin, Inc.'s East Maui Irrigation Co. and its predecessors for more than 100 years. (The same parties are involved in an ongoing contested case hearing before the Board of Land and Natural Resources regarding a request by Alexander & Baldwin and the East Maui Irrigation Co. for a long-term lease of East Maui water.)

Since the petitions were filed, both public and private parties with an interest in East Maui streams have funded studies by the U.S. Geological Survey to help gather the scientific information necessary for amending the standards. In addition, the commission has worked to verify all of the stream diversions in the five areas and has helped fund aquatic resource studies by the Department of Land and Natural Resources' Division of Aquatic Resources there, as well. While some of that work wasn't completed until May, the Water Commission staff released the five reports for public comment in March.

Despite the abundance of scientific information that has been collected so far, commissioners Meredith Ching and Donna Fay Kiyosaki expressed concerns at the commission's May meeting that the stream branch was thinking too small.



A snorkeler observes fish at a transect during a USGS survey of East Maui streams.

"It's kind of hard to look at a part of the whole picture," Kiyosaki said, referring to the fact that the diverted water serves watersheds outside the five East Maui hydrologic units. "What happens with the rest [of the island?]" she asked.

Ching, who is also vice president of Alexander & Baldwin, Inc., seemed worried that economic data was not aggressively being sought by commission staff. If the IFSA reports are going to be the basis for new streamflow standards, she asked, "How are we going to get economic information in our reports?... Shouldn't we be reaching out to people being impacted?"

In response to Kiyosaki's question, Dean Uyeno of the stream branch said that they would just have to see how the process goes for the five watershed units. In response to Ching, Uyeno noted that some companies aren't willing to provide economic information. Water Commission deputy director Ken Kawahara added that the commission has held a public meeting on Maui, issued a press release, and had posted the IFSA reports and comment forms on its website.

— Teresa Dawson