

# Environment



# Hawai'i

a monthly newsletter

Price: \$5.00

## *Bigeye Through The Looking Glass*

**W**hen I use a word," Humpty Dumpty said in a rather scornful tone, "it means just what I choose it to mean — neither more nor less."

Humpty Dumpty would have loved the way the Hawai'i Longline Association and its friends in Congress have played with the international rules governing catches of bigeye tuna in the western Pacific. Quotas are defined away. Activity "integral" to the development of territorial fisheries is whittled down to mean no more than the trade of the proverbial bowl of pottage. Vessels belonging to the territorial charter fleet never have to enter its waters — indeed, they need venture no further from their home port than the stand-off buffers around the Main Hawaiian Islands.

Moving from the ocean deep to the mountain peaks, the other major articles this month focus on some of the issues raised in the contested case hearing over construction of the Thirty Meter Telescope proposed for Mauna Kea.

### IN THIS ISSUE

**2**

*New & Noteworthy: Irradiator, Shearwaters, And Rare Plant Patrol*

**9**

*Native Hawaiians' Beliefs, Practices Argued in TMT Case*

**11**

*Lake Waiau Is Shrinking*

**12**

*Haleakala Solar Telescope Contested Case*

## Federal Law Gives Hawai'i Longliners Free Rein to Ignore International Quota

**I**t was the closure that didn't happen. On November 18, the *Federal Register* published a notice that the Hawai'i longline tuna fishery in the Western Pacific (west of 150° W longitude) would be closed from November 27 until the end of 2011. The closure, the National Marine Fisheries Service announced, was the result of the fishery being expected to reach on that day its 2011 quota of 3,763 metric tons of bigeye tuna, or ahi, established under a conservation and management measure adopted by the Western and Central Pacific Fisheries Commission in 2008.

The very same day of the announcement, however, President Obama signed into law an appropriations bill for the Departments of Agriculture, Commerce, and Justice. Tucked into the fine print, toward the end of the Commerce part of the bill

(Section 113), was language that did away with the 2011 closure — and, for good measure, ended the prospect of any similar closure this year, should the WCPFC quota for the Hawai'i longline fleet be approached again.

The specific mechanism for doing this was to shift the allocation of the catch of bigeye so that it would not be logged as catch by the Hawai'i longliners. Instead, under certain conditions, the catch could be counted as part of the haul of "U.S. Participating Territories" (American Samoa, Guam, or the Commonwealth of the Northern Mariana Islands) — never mind the fact that, under the new law, the boats landing the fish won't have to go anywhere near these islands.

Under the WCPFC management rule, the **to page 3**

## Long, Drawn-Out Contested Case Over TMT Permit Enters Final Phase

**F**or scientists looking for clues to the formation of the universe at its very edge, nearly 14 billion light years away, the Thirty-Meter Telescope proposed to be built on Mauna Kea is the holy grail of astronomy.

To the several Hawaiians contesting its construction, it's the mountain itself that is holy. Building another telescope near its summit would be sacrilegious, they say, and infringe on their protected rights to worship their deities and celebrate their culture in accordance with tradition and custom.

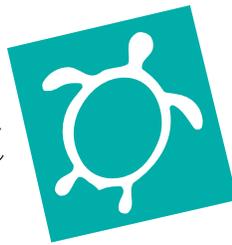
Sorting out their competing claims falls to attorney Paul Aoki, the hearing officer who presided over the long contested case over the decision last February of the Board

of Land and Natural Resources to grant a Conservation District Use Permit to the University of Hawai'i-Hilo for construction of the TMT. (The telescope is to be built by a private non-profit entity, the TMT Observatory Corporation, based in Pasadena, but the application for the CDUP was made by the university.)

The six-day hearing stretched over six weeks, from mid-August to the end of September and, in the annals of contested cases, has to rank as one of the more colorful ones. In addition to the testimony of environmental planners, scientists, an archaeologist, an entomologist, and a botanist —

**to page 5**

# Environment Hawai'i



Volume 22, No. 7

January 2012

## NEW AND NOTEWORTHY

**Irradiator Loan Guarantee:** The irradiation facility proposed now to be built in Kunia, O'ahu, has moved forward to the point where it is working out details of financing. Last month, the U.S. Department of Agriculture Rural Business Cooperative Service published a notice announcing it was considering Pa'ina Hawai'i's application for a loan guarantee to build the "agricultural products processing facility" at Kunia Village, site of the former Del Monte Plantation.

The loan is to be provided by the Pacific Rim Bank to Pa'ina Hawai'i, LLC (which holds the Nuclear Regulatory Commission's permit) and to Pacific Agriculture Research Company, LLC. The latter business was formed in March 2011 by Michael Kohn, principal of Pa'ina Hawai'i. Filings with the Department of Commerce and Consumer Affairs state that its purpose is "irradiation research."

The value of the loan is \$2.5 million, according to Shirley Heatherly, a business program specialist with the USDA in Honolulu. The amount that would be guaranteed by the USDA is \$2 million, or 80 percent of the face value of the loan.

**Shearwater Nesting Surges:** At windswept Mo'omomi, The Nature Conservancy of Hawai'i has boosted the wedge-tailed shearwater population by clearing dense stands of kiawe that have invaded large portions of the sand dunes there.

"It's an indicator we're doing something right," preserve manager Ed Misaki told the Natural Area Reserves System Commission in November. "The birds first invaded the really good area and are now moving into the area where we removed kiawe."

The conservancy's 921-acre Mo'omomi Preserve in northeast Moloka'i was once home to 30 bird species, about one third of which are now extinct, according to the conservancy's website. Wedge-tailed shearwaters are one of the few species that remain.

**Rare Plant Patrol:** After more than a decade as state botanist, Vickie Caraway is leaving the Department of Land and Natural Resources to join the U.S. Fish and Wildlife Service.

And at perhaps her last Natural Area Reserves System Commission meeting last November, Caraway, who helped create the DLNR's lauded Plant Extinction Prevention Program, urged conservation agencies to put more effort into monitoring and managing rare plant populations.

PEPP's staff have been hailed as heroes in the news media, but the program is a "victim of its own success," Caraway said.

"[Conservation] partners say, 'If it's an endangered species, PEPP will take care of it,'" she said.

The problem is, the PEPP focuses only on sustaining the 200 or so native species that have 50 or fewer individuals left in the wild. Currently, some 600 plant species are listed as threatened or endangered.

With organizations, such as The Nature Conservancy of Hawai'i, relying heavily on the PEPP to monitor rare plant populations, Caraway said, "There's a lot of species that are going to be falling through the cracks if you just rely on PEPP [which covers] only 200 rare species."

Of Hawai'i's 1,300 native plants, about half could be listed as endangered and probably will be the way the U.S. Fish and Wildlife Service is going now, she said, adding that she would like to keep more species from moving onto the PEPP list.



PHOTO: FOREST AND KIM STARR, USFWS

A gated access and roadside railing prevent vehicles from damaging the dunes in which the birds burrow, and since 1999, the conservancy has overseen the removal of nine acres of kiawe. It has also trapped more than 1,000 cats and mongoose, as well as a few dozen rats.

As a result, shearwater nesting has skyrocketed, going from two active nests in 1999 to a record high of 546 last year.

### Quote of the Month

*"You are killing/ruining my precious mountain and all for what? To see the stars? To see space and the planets? I mean come on, what if someone took away the one thing you loved the most and destroyed it?"*

— **Kapulei Flores**

### 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 © 2012 Environment Hawai'i, Inc.  
ISSN 1050-3285

A publication of  
Environment Hawai'i, Inc.

#### Officers

Patricia Tummons  
*President and  
Treasurer*  
Teresa Dawson  
*Vice President and  
Secretary*

#### Directors

Kathy Baldwin  
Robert Becker  
Mary Evanson  
Mina Morita

**Fish from page 1**

territories have no limit on the amount of bigeye that can be caught, so long as the catch is taken by vessels that participate in a scheme to develop the territories' domestic fisheries. The new law allows American Samoa, Guam, or CNMI to enter into agreements with Hawai'i-based boats stating that the vessels "are integral to" their domestic fishery, "provided that such arrangements shall impose no requirements regarding where such vessels must fish or land their catch."

There's one other requirement, too: that any vessels participating in such an arrangement have to make deposits into the Western Pacific Sustainable Fisheries Fund in support of the territory's Marine Conservation Plan. That fund is managed by the Western Pacific Fishery Management Council (Wespac), whose executive director is Kitty Simonds. According to the Senate Appropriations Committee report on the bill, the language setting up this exemption from WCPFC quotas for the Hawai'i fleet merely "clarifies management of highly migratory fish stocks."

Something else occurred on November 18, along with signing of the law and publication of the closure notice: the Hawai'i Longline Association, which represents most of the longline vessels based in Honolulu, presented to NMFS' Pacific Islands Regional Office (PIRO) in Honolulu a signed agreement with the government of American Samoa, effectively allowing the fleet unlimited catches of bigeye during the peak holiday season.

**Reassessment?**

The *Federal Register* notice announcing the closure received virtually no coverage in the daily media. Neither did the passage of the appropriations bill for Agriculture, Commerce, and Justice.

However, on December 2 the *Honolulu Star-Advertiser* featured a story on the front page of its local news section, headlined "Ban canceled on longline fishing for bigeye tuna." According to the article, NMFS "decided against imposing a ban on Hawai'i longline fishing for bigeye tuna for this year, after reassessing the catch amounts."

Reassessing catch amounts had nothing to do with suspension of the announced closure, however. According to PIRO administrator Michael Tosatto, since the catch logged from November 18 until the year's end is attributed to American Samoa, technically, the quota set for Hawai'i boats would not be exceeded. As of mid-November, the estimated bigeye catch stood at 96 percent of the Hawai'i quota.

According to a notice rescinding the closure that appeared in the December 1 *Federal Register*, "as of the implementation date of the Act (November 18, 2011), the Hawai'i Longline Association . . . had entered into an arrangement with the Territory of American Samoa. Pursuant to the Act, on November 18, 2011, NMFS began assigning catches by U.S. longline vessels fishing in the western and central Pacific to American Samoa. As a result, NMFS no longer expects that the fishery will reach the 2011 catch limit."

The agreement, obtained by *Environment Hawai'i*, was signed well before the appropriations act passed Congress. There is no date given for the signatures of either Sean Martin, president of HLA (and member of Wespac), or Ray Tulafono, director of the American Samoa Department of Marine and Wildlife Resources. The agreement itself, however, says that it took effect November 1, more than two weeks before the appropriations bill became law. The agreement lasts through December 31 2012.

In return for selling its bigeye allocation to HLA, the government of American Samoa is having HLA pay a total of \$250,000 into the sustainable fisheries fund.

**International Injury**

For years, fishery managers have been concerned over the health of bigeye tuna stocks in the Pacific Ocean, and in response, the Western and Central Pacific Fisheries Commission was established to try to impose an equitable international management regime for catches of bigeye, other tuna species, and other pelagic fish.

The 2008 conservation and management measure was the commission's first effort to ratchet down catches of bigeye, in hopes that the stocks would rebuild. As *Environment Hawai'i* has reported in the past, the Hawai'i longline fleet avoided the harsh cuts that were imposed on other fisheries, with its quota reflecting a 10 percent reduction over average catches earlier in the decade, where other fisheries were subject to 30 percent curbs.

What the impact of the new law will be on Pacific bigeye stocks is not clear, but at a minimum, it probably will not help bolster the U.S. delegation's efforts to get other fishing nations to accept further cuts in their quotas. Tosatto said that one of the issues the U.S. delegation wants to raise is how to tighten up WCPFC language on what constitutes charters that qualify as "integral" to the responsible development of island states' fisheries. It is possible, he said, that the new U.S. law could encourage efforts by other countries to "add rigor to the charter scheme — could spur people into tightening things up."

Or, he added, "it could backfire."

Further complicating matters is the fact that CMM 2008-01 expired on December 31. At a meeting scheduled for early December, the commission was expected to approve a new management measure. That meeting was cancelled, however, after the main power plant in Palau (where it was to be held) was knocked out in November.

The chairman of WCPFC is Charles Karnella, international fisheries coordinator at NMFS' Honolulu office. When asked what would happen on January 1, Karnella replied, "Good question."

"We're trying to figure out how to do something intercessionally," he said, adding that he had been in touch with representatives of other commission member states.

As of mid-December, no new time or place for the commission's next meeting had been set.

**Paving the Way**

The Hawai'i longline fleet has chafed under the WCPFC quotas ever since they were imposed. In 2009, the longliners were shut down the last two days of the year because of the quota being met. In 2010, the closure began on November 21, meaning the fleet had to fish in the Eastern Pacific to meet the high holiday demand for ahi.

In response to NMFS' environmental assessment on implementation of CMM 2008-01, the longliners asked — and received — permission to have the post-quota catches of vessels holding dual permits from Hawai'i and American Samoa be included as part of the American Samoa catch, so long as the fish were taken in waters outside the 200-mile exclusive economic zone surrounding Hawai'i.

That, however, left most of the 120-plus longline vessels out of luck, since only about a dozen hold permits for both jurisdictions.

As early as 2009, the HLA tried to exploit the special treatment given to "small island developing state members and participating territories." The 2,000-MT quota was given them, no questions asked — and they have no quota at all if they are "undertaking responsible development of their domestic fisheries." That year, the first one in which the longline fleet was operating under WCPFC quotas, the HLA struck an agreement with American Samoa assigning to the Hawai'i fleet 1,500 metric tons from the American Samoa allocation. The fish could be caught anywhere and landed anywhere. For this, the HLA proposed a payment of \$225,000. In rules intended to make U.S. fishing regulations consistent with the WCPFC management measure, however, NMFS required that

any charter agreements that the U.S. territories might make would only qualify as being “integral” to responsible fishery development if the fish taken by the charter fleet were landed in the territory. (For background, see the September 2009 cover story in *Environment Hawai'i*.)

In 2010, the Senate Appropriations Committee, chaired by Daniel Inouye, inserted the language that would legitimize the HLA agreement into the Commerce appropriations bill, but it did not make it off the Senate floor. In 2011, the language was included in the Senate-passed bill. When it made it out of the House as well – around November 1, according to Tosatto – the HLA “re-engaged with American Samoa,” signing the new agreement.

### Quota Questions

The HLA-American Samoa agreement states that the territory “assigns to the [HLA] Vessels the Territory’s unused bigeye tuna Quota for 2011 and 2012,” while also stating that use of the term “quota” is “not intended to imply that the applicable [conservation and management measures] establish a specific limit for bigeye tuna catch that is applicable to the Territory. Territory’s quota may be without limitation.”

Will the Hawai'i fleet even be catching fish against the Hawai'i quota in 2012, then? Tosatto was asked. “You hit on a key issue,” he said. “We’re still evaluating the language in the agreement.”

If NMFS determines that American Samoa has a quota of 2,000 metric tons of bigeye, then the entire American Samoa quota could be hit by May, given the usual catch of the Honolulu fleet, Tosatto said. He added that this could mean the American Samoa fishermen, who usually catch no more than 300 or 350 MT of bigeye annually, would be prohibited from landing bigeye for the remainder of the year. But, he added, “I don’t believe it was the intent of American Samoa to give all 2,000 tons” to the HLA.

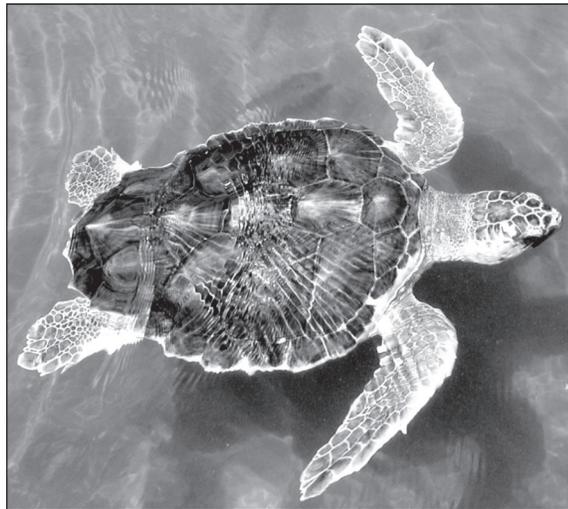


## Council Debates NMFS Projections Of Longline Impact on Loggerheads

By January 27, the National Marine Fisheries Service must release a new biological opinion (BiOp) on the impact of the Hawai'i shallow-set longline fleet on the North Pacific populations of leatherback and loggerhead sea turtles. Leatherbacks have been on the endangered species list for

years, while loggerheads were only recently added to the list. Specifically, the service is evaluating the impact of 5,500 sets/year, the estimated maximum number of sets the Hawai'i fleet would likely make without any effort limit.

Preliminary NMFS analyses assuming the maximum effort level determined that the fishery would likely take (harass, injure or kill) one humpback whale and 35 loggerheads, 23 leatherbacks, two olive ridleys, and four green sea turtles.



Loggerhead sea turtle.

PHOTO: NOAA

Of the 35 loggerheads taken, about seven turtles (18.8 percent) would likely die, Patrick Opay, NMFS PIRO endangered species branch chief, told Wespac at its October meeting. Of the 23 leatherbacks taken, about five turtles (22.4 percent) are expected to die.

The take and mortality rates, based on hooking data since 2004, differ from estimates NMFS scientists provided to the council in 2008, when the council’s recommendation to lift effort limits on the longline swordfish fleet was still being formulated. At that time, the service estimated that the fleet would take 46 loggerhead and 19 leatherback turtles, and kill three adult females of each species.

Last summer, the U.S. District Court approved a settlement between NMFS and environmental groups regarding the service’s 2009 decision to increase the cap on loggerhead interactions from 17 to 46. Under the settlement, the fleet is limited to 17 loggerhead takes until a new BiOp comes out. (The cap on leatherbacks was unchanged, at 16. On November 18, the swordfish fleet was shut down for the remainder of the year after NMFS announced the 16th leatherback interaction had been recorded.)

At the council meeting, chair Manny Duenas said he felt the mortality estimates were too high, given that the fleet has had only

one observed loggerhead death since 2004.

Opay said his agency had based its estimates of post-hooking mortality on a 2006 NMFS technical memo and that “there’s always gonna be discussion about whether the rate is too high or too low.”

In a November webinar, NMFS and council staff revisited the post-hooking mortality issue, since, as the council’s Eric Kingma pointed out during the October meeting, more recent peer-reviewed research suggests a different post-hooking mortality rate than the estimate in the 2006 memo. How or whether the information presented during the webinar is included in the BiOp remains to be seen.

At the council meeting, NMFS Pacific Islands Regional Office administrator Mike Tosatto said that the service is not constrained to using agency-endorsed memos. “Leeway is there for us,” he said. Responding to council member and Hawai'i Longline Association president Sean Martin’s statement that the settlement has led the industry to question NMFS’ objectivity, Tosatto assured him, “We’ll be really objective.”

### ‘Conservation Banking’

While discussing the kinds of information NMFS planned to consider in its analyses, Duenas asked whether the council-funded effort to boost turtle nesting in Japan and Mexico would be included. Tosatto responded that “conservation banking,” as it is called, may someday be included in BiOps, but “the science just isn’t there yet.” He added that data on transfer effects is at a similar stage. Both may be included once things are ready “to move from words to numbers,” he said.

If NMFS ever does include conservation banking in its analysis of impacts to leatherback and loggerhead populations, it may be too late. The council’s Asuka Ishizaki reported that funding for the council’s turtle programs has been reduced by more than 80 percent, allowing for only “bare bones” nesting beach projects for the two species.

Council executive director Kitty Simonds encouraged non-governmental organizations to step in.

“[The Nature Conservancy] may be more involved. They’re the ones who have the money,” she said.

— Patricia Tummons  
and Teresa Dawson

### TMT Permit from page 1

the types of witnesses one usually expects to testify in such cases – there were Hawaiian songs, hula, chants, genealogies, and personal statements of revealed religion.

By the end of November, the applicant and the petitioners, collectively, had submitted to Aoki their respective proposed findings of fact, conclusions of law, and decision and order. The next step in the process is for Aoki to draft his own findings and recommendations, which is expected to occur sometime this month. After that, his findings will be forwarded to the Land Board for a final decision.

Of course, final need not mean the end of things. Whatever decision the board takes may be appealed in the courts.

### An Unusual Case

The dispute was unusual in several respects.

First, there is the sheer size and scope of the project. The Thirty Meter Telescope, if built, will be the largest optical telescope in the world. Its dome will be just under 190 feet high, and the facility (including support buildings and apron) will occupy roughly five acres. It will not be built on the summit ridge of Mauna Kea, but rather is proposed for the northern plateau, an area of relatively flat terrain jutting out from the northern slope of the mountain about 500 feet below the area where most observatories are now clustered.

Then there is the number of petitioners involved in the contested case. Seven petitions were received; the Land Board granted standing to six of them.

Although each petitioner was deemed to have interests distinguishable from those of the general public, in many instances, their interests were not uniquely theirs.

Four of the petitioners claim to engage in traditional and customary Hawaiian practices on the summit – Clarence Kukauakahi Ching, the unincorporated group Mauna Kea Anaina Hou (led by Kealoha Pisciotta), the Flores-Case 'Ohana, and Paul Neves. They argued that the telescope construction would offend their beliefs and interfere with their practices.

Another petitioner, the nonprofit group KAHEA: The Hawaiian Environmental Alliance, also claimed in its petition that its members included Native Hawaiian cultural practitioners.

Ching stated that he was also interested in protecting trails, which he has hiked extensively – an undertaking that he says allows him to follow in the footsteps of his Hawaiian ancestors. Petitioner Deborah

Ward also claimed to have hiked the trails and enjoyed the mountain's cultural and natural resources for 40 years.

Ward, a member of the environment committee of the Office of Mauna Kea Management, also claimed a special interest in protecting the wekiu bug (*Nysius wekiuicola*), which, at the time the contested case hearing began, was a candidate species for listing under the federal Endangered Species Act. KAHEA likewise claimed an interest in protecting the mountain's natural resources.

To underscore further the close ties between the petitioners, during the course of the hearing, Pisciotta, the president of Mauna Kea Anaina Hou (and its representative during the hearing) mentioned that she had been elected president of KAHEA as well.

Most, if not all, of the petitioners have, at one time or another, represented themselves as part of something called the Mauna Kea Hui, which, for the duration of the contested case hearing, was featured on the KAHEA website.

Although the telescope, with an estimated construction cost of \$1.1 billion, is the project of the TMT Observatory Corporation, the University of Hawai'i at Hilo was the applicant for the CDUP. The observatory corporation is a nonprofit, founded in 2003 by the University of California, the California Institute of Technology and the Association of Canadian Universities for Research in Astronomy. Since then, the U.S.-based Association of Universities for Research in Astronomy and research arms of the Japanese, Chinese, and Indian governments have joined in the project. The Gordon and Betty Moore Foundation has provided much of the corporation's initial funding.

### The Background

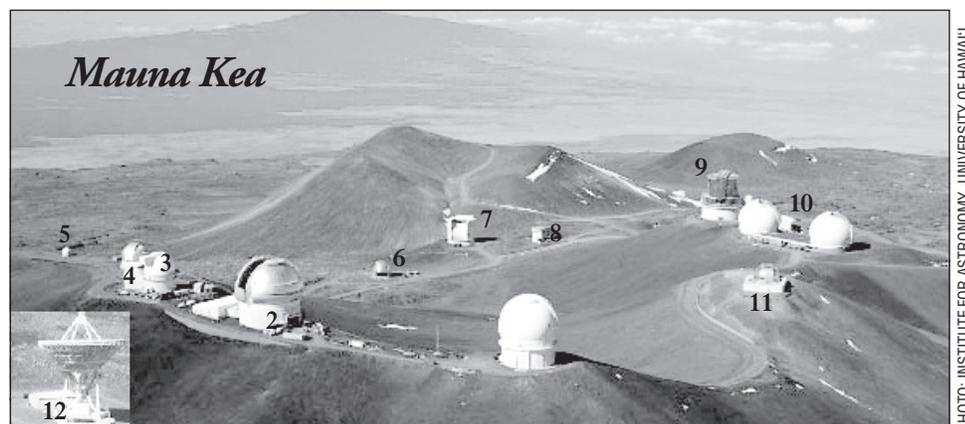
Over the last decade, the development of

new telescopes on the summit of Mauna Kea has become fraught with controversy, as environmentalists and Native Hawaiians have claimed the siting of observatories on the mountain has destroyed natural resources and has interfered with the Hawaiians' traditional, customary, and religious practices.

To address these concerns, the University of Hawai'i, which has a lease from the Department of Land and Natural Resources to develop astronomy on 11,288 acres of the mountain, adopted a master plan for the summit in 2000 (not submitted to or approved by the Land Board) and a comprehensive management plan (or CMP, approved by the Land Board in 2009) that sets forth ways in which natural resources, archaeological sites, and the practices of Native Hawaiians will be protected, among other things. Several of the same petitioners in the TMT case have sued over the Land Board's denial of their request to have a contested case hearing over adoption of the CMP. The 3<sup>rd</sup> Circuit Court rejected their claims; an appeal is pending before the Intermediate Court of Appeals, which heard oral arguments in November.

Also, the university established the Office of Mauna Kea Management (OMKM), which is administered through the University of Hawai'i at Hilo, to oversee astronomy-related activities, commercial operations, and other activities within the leased area, including such things as snowplow operations, road closures during inclement weather, ranger employment, and the like.

Excluded from the university lease area is the 3,900-acre Mauna Kea Ice Age Natural Area Reserve, administered by the Department of Land and Natural Resources. This consists of a large, wedge-shaped parcel of



1. Canada-France-Hawai'i Telescope; 2. Gemini Telescope; 3. UH 2.2 meter Telescope; 4. United Kingdom Infra-Red Telescope; 5. UH Hilo Educational Telescope; 6. Caltech Submillimeter Observatory; 7. James Clark Maxwell Telescope; 8. Submillimeter Array; 9. Subaru Telescope; 10. W. M. Keck Observatory; 11. NASA Infrared Telescope Facility; 12. Very Long Baseline Array. The proposed site for the TMT is not visible in this photo: it is at a lower elevation and lies beyond the Subaru Telescope.

3,750 acres south of the summit area, containing an adze quarry used by Hawaiians from about 1100 A.D. up to the time of Western contact, and Lake Waiau, a small impoundment; and a smaller, 150-acre square parcel to the west of the summit, which encompasses Pu'u Pohaku and contains one of the few examples of permafrost in the tropics.

In 2007, the TMT Observatory Corporation began to consider candidate sites for the telescope. Five sites were considered – three in Chile, one in Mexico, and Mauna Kea. In September 2008, the University of Hawai'i published an environmental impact statement preparation notice for the project, and in May the following year, the draft EIS was released for public comment. In July 2009, the TMT opted to go with the Mauna Kea site rather than build in Chile. The May 8, 2010 *Notice* published by the state Office of Environmental Quality Control announced that Governor Linda Lingle had accepted the final EIS for the project. None of the petitioners or any one else, for that matter, challenged its adequacy during the 60-day window provided for legal action.

On September 2, 2010, the University of Hawai'i submitted its Conservation District Use Application on behalf of the TMT.

The Land Board held hearings on the CDUA on the Big Island in December. On February 25, 2011, it voted to approve the CDUP for the project. The contested-case hearing petitions were received thereafter.



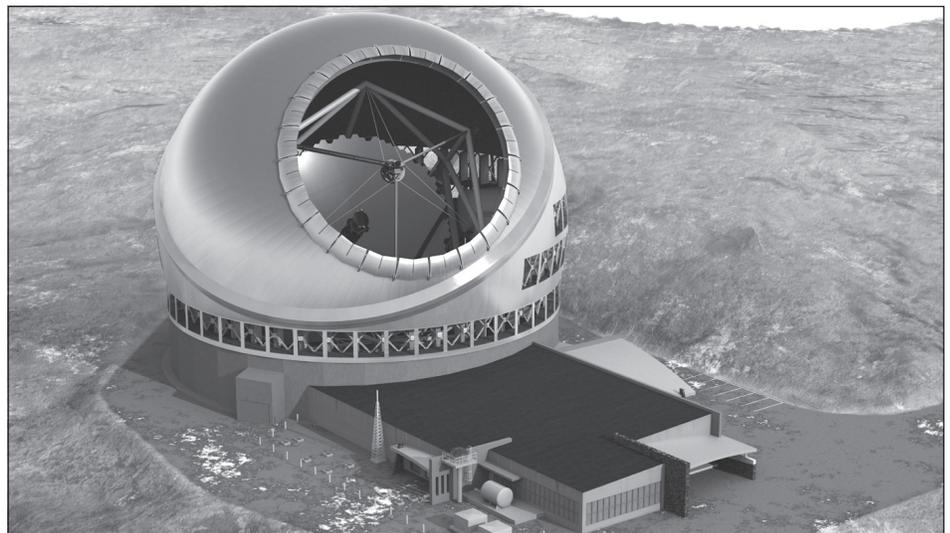
## Meeting the Criteria

Whether or, if so, how, the telescope would meet the eight criteria listed in the DLNR's rules for Conservation District permits was supposed to be the framework within which questions and testimony were to be posed during the contested case hearing.

But, as the hearing progressed, that framework was stretched to include a variety of issues.

The DLNR's rules on Conservation District uses state that, before granting a permit, the Land Board is to "apply the following criteria:"

- The project is to be consistent with the purpose of the Conservation District and the objectives of the subzone where the use will occur;
- It is compliant with the Coastal Zone Management Act, where applicable;
- It will not "cause substantial adverse



An artist's rendering of the TMT complex.

ILLUSTRATION: TMT OBSERVATORY CORPORATION

impact to existing natural resources" in the surrounding area;

- It will be "compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel";
- It will preserve or improve upon existing physical and environmental aspects of the land, "such as natural beauty and open space";
- No subdivision will be allowed that may increase the intensity of land uses; and
- It will not harm public health, safety, and welfare.

The parties disagreed as to whether all criteria had to be met. The university's attorneys – primarily Tim Lui-Kwan, Ian Sandison, and Jay Handlin, of the law firm Carlsmith Ball – argued that not all need be met (although, in any event, they said, the project met them all). The petitioners, on the other hand, maintained that the project failed to meet even one of the criteria.

### *Public Health, Safety, Welfare*

Much of the hearing dealt with the question of whether the TMT was an affront to Native Hawaiian religion and practice. Two of the witnesses the petitioners presented to bolster this position were David M.K.I. "Kawika" Liu, a physician practicing on Moloka'i, and Kehau Kauanui, an associate professor of anthropology and American Studies at Wesleyan University.

Liu was offered as an expert in public health and Native Hawaiian health issues, although he asked to restrict his qualification to "public health relating to Native Hawaiians." Liu claimed that colonialism and the Hawaiians' loss of self-determination affected their health adversely. The presence of telescopes on Mauna Kea was a

continual reminder of their loss, he said. "The continued construction on Mauna Kea's upper regions against protests by Native Hawaiian cultural and religious practitioners is a grave example of colonial impositions on our self-determination," he stated in his written testimony.

"This ongoing violation of Hawaiians' religious and cultural attachments to Mauna Kea is linked to a colonial, systemic deprivation of self-determination that is materially detrimental to Native Hawaiian health, individually and as a people," he continued. "Colonization itself cannot be separated from ill-health." What Native Hawaiians were suffering, he said, was "multigenerational trauma" – "a loss of self-esteem, fatalism, and a deterministic worldview that particularly impacts Native Hawaiians. It is a kind of historical consciousness, an individual and group awareness of past events that create a tense political context, cultural discontinuity, loss of cultural cohesion, and loss of social moorings. All of these factors can lead to substance abuse, family disintegration, and suicide. ...Projects such as the Mauna Kea telescope may further contribute to Native Hawaiian health disparities, both now and in the future."

In his oral testimony, Liu acknowledged that no data existed to link telescope construction to the health of Native Hawaiians. "The data does not exist," he said. "It has not been specifically researched, and the reason is, we don't even have – there's several tools used to collect data nationally – tools that are not being used specifically that collect for Native Hawaiians on a population-level basis, such as is being done on the continent."

"My research applies to how broad mechanisms, such as historical trauma in

the past, may relate to health," Liu testified. He then gave the example of someone who is "a lineal descendant or a cultural practitioner who is on the island and opposed to construction. This person probably, unfortunately, may already have risk factors, such as age, gender, weight, hip circumference, cholesterol, blood pressure, which may or may not have reached pre-disease or disease state. But the research that others have done and which I'm doing, as well, suggest that things that have happened in the past, such as the overthrow, or more recently, statehood, or loss of lands in adverse possession cases, or situations such as this, may directly affect a person's health."

He linked opposition to the TMT to the struggle for self-determination. "We can't control if someone is a male. We can't control history. But we can control the stresses a person is under," he said. "That's why the struggle for self-determination is so important to health. To me, that's the important thing about the TMT case. Certainly, there are Hawaiians who will not be affected. One can't totalize. But for people, the higher their traditional affiliation, the higher their connection to this, the more they'll be affected."

He acknowledged that some Native Hawaiians were "very supportive" of the TMT project. "But, also, there are Hawaiians who are very opposed to it that will be affected," he continued. "What that means in the long term, over their life span, I can't tell you, but I can say to a degree of medical certainty that they will be affected."

Liu faced tough questioning from attorney Jay Handlin, who challenged what Liu described as his hypothesis of multigenerational trauma affecting Hawaiian health, pointing out that neither Liu nor anyone else had done any of the necessary long-term studies to support the notion.

"As we sit here today," Handlin said, "is it fair to say your postulation of multigenerational trauma has not been validated?"

"I'd say that's true," Liu acknowledged.

Handlin continued: "So your opinion that [telescopes] are bad for the health of Native Hawaiians is premised on your hypothesis of multigenerational trauma being correct?"

Liu disagreed. "No," he answered, "it's based on my discussions with the petitioners. And it's not multigenerational trauma. It's stress loads."

He went on to suggest that historical trauma may not even be perceived by those who suffer from it. "People have visceral reactions to certain things... For example, the theory originated among Holocaust

survivors; children had worse health than survivors. They were exposed to something during their upbringing that led to heart disease and other factors... I would imagine that evidence will show in the long run that many Native Hawaiians are subject to historical trauma even if they believe they are not affected by it. That's because, at an unconscious level, one can talk of cultural DNA as a means of transmitting historical memories... For example, you can drive by a parcel that used to be a kuleana, or even seeing an American flag."

Handlin asked if Liu had studied whether the health of Native Hawaiians who oppose the telescope is any different from the health of supporters. He answered by saying he had had no time to do that. He also said he had not studied whether the health of Hawaiians who don't know anything at all about the telescopes is different.

"If you did those studies, and there was no difference, that would undermine your hypothesis?" Handlin asked.

"That's the basis of science," Liu answered.

Handlin then asked whether the word "telescope" ever appeared in any of Liu's articles relating to public health issues concerning Native Hawaiians.

"I don't remember," he replied. "I don't believe so."

On cross examination, Liu stated that none of the mitigation measures offered – painting the dome silver (so as to make it less noticeable from a distance), setting up a fund to benefit the community and develop a work force, and other measures – would offset the harm to Native Hawaiians. "To people with strong cultural affiliation," Liu said, "these would not be ameliorative facts to the construction" of the telescope.

Kehau Kauanui gave her testimony via phone from the mainland. She claimed that the proposed telescope construction "is a textbook case of 21<sup>st</sup> century colonialism ... [that] relies on structural violence and cultural violence." It was, she continued, "the domination of physical space by the colonizer."

Under Hawai'i law, she continued, it is illegal to desecrate a place of worship by defacing, damaging, polluting, or otherwise mistreating it "in a way that the defendant knows will outrage persons." The construction of the TMT, she said, "would constitute a violation of this state law."

"The telescopes are a constant reminder of the state's willing degradation" of Hawaiians' culture and religion – and of their well-being in general, she testified.

There was, she maintained, a "different

epistemological framework" between the University of Hawai'i and Hawaiians. "The university has called Hawaiians backward-looking... [but] to be backward-looking in Hawaiian epistemology is to be forward-looking. The future of Mauna Kea is at stake in this case. To even characterize the petitioners as backward-looking is a colonial gesture... [It] subordinates Hawaiians to the notions of civilized people who advance scientific progress."

In his cross-examination, Handlin brought out the fact that Kauanui had in 2009 signed a statement, along with several other Native Hawaiian scholars, attesting that further construction of telescopes on Mauna Kea would be illegal.

"Given that, no matter what the university proposed to do with respect to the Thirty Meter Telescope or with respect to where on Mauna Kea they proposed to put it, as long as they were proposing to build a telescope on the summit area of Mauna Kea, you're categorically opposed," he offered.

Yes, she replied.

Under friendlier questioning from Pisciotta, Kauanui said that she had seen no documents relating to the TMT application that addressed the concerns of the petitioners that Native Hawaiian burials might be disturbed.

Pisciotta then asked whether state laws protected cultural practices of Native Hawaiians. "No," Kauanui responded.

"When the Department of Land and Natural Resources approved this plan [for the TMT], do you believe that was again state power?" Pisciotta asked.

"Yes," Kauanui said. "That was state abuse of power."

Handlin then followed up by asking Kauanui if she was claiming that the site proposed for the TMT was "a sacred burial ground." (Archaeological surveys found no burials anywhere near the proposed TMT site.)

"Any actual telescope on Mauna Kea affects burials there," she replied, "whether directly on top of burials or not." She added that the laws against desecration were not tied to burials alone. "They're also against temples of worship," she said.

In addition to the testimony of Liu and Kauanui, several of the petitioners also spoke about the way in which they felt construction of the TMT would affect their cultural practices.

Arguing the contrary position were witnesses for the university. TMT project manager Gary Sanders outlined the ways in which the corporation would benefit the

community. There are the economic benefits to the community in the construction and operation of the telescope; around 300 workers will be employed during construction, while 140 or so will be hired for the telescope's operation. Then there is the establishment of The Hawai'i Island New Knowledge (THINK) Fund, to which the TMT Corporation will, as soon as telescope construction begins, give \$1 million a year for scholarships and programs to advance scientific, technological, engineering, and math curriculums at all educational levels. Also, the TMT has committed to partnering with the county, the university, and the state Department of Education to train local residents for jobs at the telescope.

### Flora

The testimony of Clifford Smith, emeritus professor of botany at the University of Hawai'i and author of, in his words, the "rather stodgy tome," *The Lichens of Great Britain and Ireland*, focused on the flora of the summit area.

"The lichen flora is the richest element of the summit flora," he said, although the number of lichen species and total biomass is low. He characterized the lichen flora as "stable and mature," with no indication of pollution or disturbance.

Few of the lichens grow on the surface, causing the summit to appear to be barren land – a statement that the petitioners jumped on.

Kalani Flores said in his cross examination. "You state in your written testimony ... the summit area is barren land. Are you referring there's no flora at all?"

"Barren land is where you cannot see vegetation," Smith responded. "You go up, and you cannot see vegetation."

"So that is a misstatement?" Flores asked.

Smith replied with an emphatic "No."

"There's vegetation there," he continued, "but at a frequency of point one percent – short ferns and mosses. You stand on the mountaintop and you cannot see it."

Flores then inquired about the species that were collected whose identity had not yet been determined by Smith. "There's a possibility some of these species who have not been identified could be in danger?" Flores inquired.

"I would doubt it, quite frankly," Smith replied. "Most of these species are very widely distributed on top of the mountain ... very widely distributed, down to 10,000 feet."

Flores then honed in on one species of concern, the Douglas bladderwort, a fern. Smith said that it was a species of concern most probably because it had not been suffi-

ciently collected. "Because it's a species of concern," he added, "nobody's collecting it anymore... It sort of freezes things."

Ching and Ward questioned Smith about the prospect that non-native plants could be transported to the summit during construction and operation of the telescope, noting that the pest species fireweed has already been spotted near the summit.

Smith said he had recommended to the Office of Mauna Kea Management that it eradicate fireweed by pulling and bagging it. "In fact, one of the rangers already does that," he noted. Beyond that, he said, "there are already pretty well established hygiene rules for both people and vehicles for moving from areas where there are known threats to areas where they are not found. I'm sure they're going to be implemented, even before this program comes into existence."

When Lui-Kwan asked that Smith be qualified as an expert in botany, Paul Neves objected. "Who is not an expert in here?" he said. "I'm a cultural practitioner, I'm an expert. We have a different standard."

Aoki, the hearing officer, ruled that Smith was qualified as an expert botanist.

### Fauna

At the time the contested case hearing began and until well after the last of the closing arguments was heard, the wekiu bug was a candidate endangered species, with the U.S. Fish and Wildlife Service considering whether it should be formally listed or not.

Jesse Eiben, who has studied the wekiu bug since 2005 and wrote his Ph.D. dissertation on it, was a witness for the university on the subject.

The area chosen for the TMT site, he stated in his testimony, "is largely comprised of habitat not inhabited" by the wekiu bug, which prefers "small, loosely packed rocks." Further, he said, it was "highly unlikely" that construction in the designated site would have an impact on the overall population of the insect.

On October 26, the Fish and Wildlife Service announced in the *Federal Register* that it had removed the wekiu bug from the list of candidate endangered species. Five days later, the university's attorneys wrote to Aoki, asking that he take "official notice" of the bug's new status and include as part of the record the *Federal Register* notice. The letter noted that the petitioners had, in their opening brief, argued that the TMT project would have "a substantial and adverse impact" on the wekiu bug. Further, they stated, the bug was "the cornerstone of petitioner Deborah Ward's written direct testimony, which devoted fully sixteen of its twenty-one pages to

a 'case study' of the wekiu bug and how, in Ms. Ward's view, the TMT project will adversely affect this species."

That elicited a strong response from the petitioners. On November 7, they informed Aoki that they did not object to the *Federal Register* notice being entered into the contested case record, so long as Ward's statement disputing the FWS decision, along with several attachments, was included as well.

In her statement, Ward referred to several documents, including the final EIS for the TMT and the Conservation District application. She also noted that results of the most recent two years of wekiu bug surveys have not been made available to the public. Ward quoted an email from Eiben, who said that he disagreed with the statement in the *Federal Register* that the bug's population was stable. Although there was no evidence to suggest the population was in decline, he added, "that still does not mean the population is stable."

Rather than have a hearing on whether to admit Ward's statement, the university attorneys instead withdrew the request to add the *Federal Register* notice to the record.

But the bell had been rung, regardless of the notice being in the record or not. On November 16, Aoki issued a minute order stating that he had granted the applicant's request to take official notice of the decision and was denying the petitioners' request to augment the record with Ward's statement.

### Subdivision

A point that Marti Townsend, an attorney and program director for KAHEA, attempted to make several times in her cross examination of the university's witnesses, was that the TMT project would entail subdivision of the area leased to the university, and would thus violate the DLNR's rules disallowing subdivision in the Conservation District whenever it would facilitate development.

In their proposed findings of fact, the petitioners argued that the very designation by the university of an "astronomy precinct" of 525 acres out of the 11,288-acre leased parcel constituted an impermissible subdivision, while issuing a permit for the TMT project "would further the improper subdivision."

The university argued that no such subdivision has occurred or will. The petitioners, the university states in its proposed findings of fact, had contended that subleases to other observatories involved such subdivisions, since, among other things, they contain "metes and bounds descriptions." However, the university stated, the sublease documents submitted as exhibits to demonstrate this contained no such descriptions.

— Patricia Tummons

## Native Hawaiians' Beliefs, Practices Are Argued in TMT Contested Case

One of the thorniest issues to arise during the contested case hearing over a Conservation District Use Permit for the Thirty-Meter Telescope was what weight and deference would be given to the claims of petitioners that its construction would offend their religious beliefs and interfere with their religious practices. Under the state Constitution, state law, and precedent set by numerous court cases (including *PASH* and *Hanapi*), Native Hawaiian traditional or customary practices are entitled to protection.

The issue arose early in the proceedings with the proposed participation of Mo'oinanea, described by E. Kalani Flores (one of the two members of the petitioner Flores-Case 'Ohana) as the "nature spirit and guardian of Lake Waiau" who "presently resides on the summit of Mauna a Wakea."

On behalf of Mo'oinanea, Flores petitioned to have her formally admitted as a party to the contested case. According to his petition, Mo'oinanea "has never been previously consulted regarding this and other projects on this sacred mountain. Therefore, she wishes her express concerns to be disclosed." Her participation in the proceeding "would provide insight not previously disclosed in this CDUA," Flores wrote. "This information is significant in order to avoid obstructing the piko/portal on the summit of Mauna a Wakea that connects with Ke Akua (The Creator) and 'Aumakua (Ancestors). This is a major portal for the life forces that flow into this island."

In arguing for Mo'oinanea's involvement in a preliminary stage of the contested case hearing, Flores, an associate professor of Hawaiian lifestyles at the Hawai'i Community College in Hilo, acknowledged that "there's probably no precedent in other contested case hearings of a petition being filed on behalf of someone such as Mo'oinanea." Still, Flores continued, she qualifies as a person who has "some property interest in the land" and who "does reside" on the summit.

Also, Flores said, the definition of "person" in the DLNR's administrative rules "is broad and inclusive enough to admit Mo'oinanea" as an "appropriate individual."

"Mo'oinanea ... does have human blood in her. She does have a genealogy. We have a genealogy for Mo'oinanea that extends back four generations," Flores said. Not only does she have physical attributes, she also has, according to Flores, a voice, which she "has

presented ... to us family members of the Flores-Case 'Ohana."

Tim Lui-Kwan, an attorney representing the University of Hawai'i at Hilo, which had applied for the permit, opposed Flores' request. "With all respect to Mr. Flores, we're not here to argue whether or not he actually believes. We can take him at his word that he actually believes that Mo'oinanea is an entity." But, he continued, "legally, under the definition provided in the rules Mr. Flores referred to, Mo'oinanea is not a person."

Kealoha Pisciotto of Mauna Kea Anaina Hou spoke up in defense of Flores' contention. This particular contested case, she said, "does involve the question of our religious beliefs and uses, ... which include the practice of honoring Mo'oinanea."

Also, she went on to say, "part of our cultural belief is that things that are of the spirit world also have a human form or physical form. ... To deny her a place would be a very major pono'ole, unrighteousness."

Before the hearing ended, Flores attempted to bolster his case, conceding that "this may be a concept that many cannot understand." Of Mo'oinanea, he said, "you could say she's a spirit, but yet she's not." In the petition, she is described as a nature spirit "because that's the only English terminology that can be placed on that."

"She has humanality connected to her," he continued, and if not everyone can see her, "it's just that she resonates at a different vibration, and at a different vibration which some are not open to seeing or hearing that particular vibration." Flores then read into the record an affidavit he had made, attesting to Mo'oinanea having authorized him and three family members—Pua Case, her daughter, Hawane Rios, and Case's and Flores' daughter Kapulei Flores—to act on her behalf and to exercise "all of her legal rights and powers." That, Flores argued, should dispense with the argument that she could not represent herself. "We say that she could have standing, represent herself with the assistance of a cultural interpreter. ... We are saying she can be here present and have a cultural interpreter to be able to interpret what is being said, or questions that is posed to her and what is her responses, so as such, we offer that as well."

Aoki recommended that the Land Board deny status as a petitioner to Mo'oinanea, and on June 23, the board did just that.

But that was not the last mention of Mo'oinanea. When the parties presented their witness lists, the demi-god appeared again. Kapulei Flores, age 11, submitted written testimony on behalf of Mo'oinanea. Kapulei claimed that she has the "gift of seeing and communicating with ancestral guardians, divine beings, and nature spirits."

"Mo'oinanea has said that she and others feel that these telescopes already on the mountain are blocking their views and the areas they used to live at," Kapulei said in written testimony. "She says that when the other observatories were built, no one got permission from them to build on their home, nobody said they could. There is a *piko*—Hawaiian for navel—"on the top of the mountain that is sacred and the telescopes block the *piko* that connects with Ke Akua and 'aumakua. They wished that the observatories were never there and they don't like the roads either but if they had to choose between observatories and people coming up, they would choose the people way over the observatories."

Kapulei said that Mo'oinanea told her that the TMT "might change and affect the weather patterns on the mountain and in the areas below such as Waimea." It has, she continued, already damaged the sleeping area of Poliahu.

If telescopes continue to be built atop Mauna Kea, "some spirits might have to move off [the] mountain," Kapulei said. "If they leave Mauna Kea it might never snow on the mountain ever again because Poliahu would have to leave too and she would have to leave the place she was born and lived all his [sic] life."

"You are killing/ruining my precious mountain and all for what?" her testimony concluded. "To see the stars? To see space and the planets? I mean come on, what if someone took away the one thing you loved the most and destroyed it? Well that is what you are doing to my mountain, one of the most things I love dearly, and all for what, space?"

In the end, Kapulei Flores' testimony was not received into evidence. According to Pua Case, Kapulei "was prepared to be here. She is the direct communicator with Mo'oinanea." Kapulei had attended the fourth day of hearings (out of seven), but, Case said, "she became ill after that" and would be unable to testify.

"When told she was not going to testify," Case continued, "she became very upset... She had objections because we refused to let her testify. She said, 'I have worked too hard for this. I love my mauna and Mo'oinanea.'"

The decision to pull Kapulei from the witness lineup settled the arguments over

whether to accept testimony from Mo'oinanea.

But the petitioners had other witnesses who testified on Mo'oinanea's behalf or relayed what she had said from Kapulei Flores.

There was, for one, Diana LaRose, who, she claimed, had been termed a "sensitive" since the age of 5. "I can communicate with animals, forces of nature, and the Earth," she said in testimony to the hearing officer. "All native people whom I know say that the top of a mountain is where the mountain spirit dwells. Her home is the most sacred place. Out of respect they do not go there except when called to do vision quests or ceremonies." The TMT, she said, would be "desecration" to the mountain.

LaRose claimed to have seen Mo'oinanea and drew a picture of her wearing a white dress, sitting on a rock with Lake Waiau in the background. A green lizard-like tail peeks out from under her skirt. The drawing "has been verified" as being Mo'oinanea "by people I didn't even know," LaRose said.

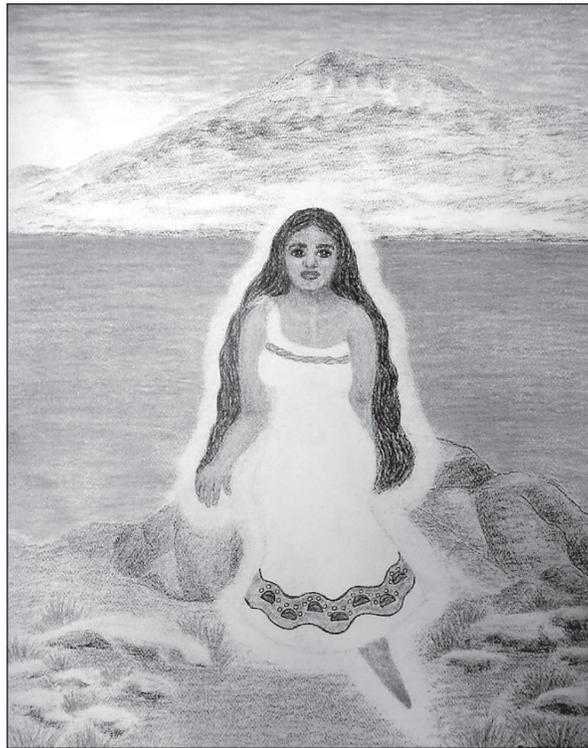
Kalani Flores said in his testimony that Mo'oinanea had spoken of the past uses by Hawaiians of Lake Waiau. Mo'oinanea, he said, "is fine with people putting their *piko* [umbilical cords] in the lake, but you have to have roots to the mountain."

### **Supernatural Signs**

Mo'oinanea might have been the only spirit in the history of the Land Board to have had a contested case petition filed on her behalf. But, according to the petitioners, she was not the only supernatural entity to express concerns over the presence of all telescopes, and in particular the proposal to build the TMT, on Mauna Kea.

In his written testimony, Flores stated that on May 8, he and other family members conducted a ceremony on the summit of Mauna Kea, during which "a guardian force of nature from the depths" of the mountain delivered a warning. "He is a guardian who came from the very depths of the mountain, way below the crust of the ocean floor," Flores stated. "He was filled with sadness because of the observatories on her [Mauna Kea's] shoulders and breasts were causing such desecration." Other guardians also had been "awakened and are on alert" regarding the TMT proposal, he said. The guardian, Flores said, "declared that those who are planning to cause further desecration on Mauna a Wakea are 'ignorant and lost,'" and intimated that dire things would happen if the project went

forward. "There's those on the mountain that have said there will be an impact," Flores said in his closing statement. "What's on the mountain is at capacity. Any more will go beyond what the mountain can take," he said. Those on the mountain "won't retaliate – someone piles all these rocks on your head, and you have to shake them off. The shaking, and removal of things, [is] in order to set back harmony and balance."



Portrait of Mo'oinanea by Diana LaRose (2011). This was one of the petitioners' exhibits.

Flores also stated that the mountain "has a harmonic oscillation with Mount Shasta in California and Mount Fuji in Japan. What that means, [there is] energy vibration between these three mountains and others. What happens here, as proposed, will affect those in Japan and on the continent in California. Everything's interconnected."

In written testimony, Flores addressed other aspects of Mauna Kea that may have escaped the notice of science. The mountain "anchors a very complex multi-dimensional over-fold ... through its very conscious geometric grid, complex frequencies, and unique electromagnetic field. The summit is also an area where vortexes of energy occur. Vortexes distribute energy outward in what is termed electrical vortexes, and inward in what is termed magnetic vortexes. Mauna a Wakea is an inward and outward vortex-portal complex." In support of that claim, Flores submitted a photo taken in March this year showing a hole in the cloud cover right above Mauna

Kea, which he said illustrated the opening of the portal to the heavens.

(A more mundane explanation of the cloud phenomenon was provided by Derek Wroe, lead forecaster at the National Weather Service in Honolulu. "One possibility is that the layer of air aloft was disturbed by the presence of the mountain, causing a small area of lift directly over Mauna Kea. This lift could have caused additional cooling in the cloud layer, which then produced some ice... Once the ice formed, the supercooled water nearby quickly froze, forming snow, which then fell out." Wikipedia notes that this type of cloud formation is also called a "fallstreak hole" or a "hole punch cloud.")

### **Findings of Fact**

The beliefs of the Hawaiian petitioners were not challenged during the contested case hearing by attorneys for the University of Hawai'i-Hilo, the hearing officer, or the university witnesses. The university did present three Native Hawaiian witnesses – master Polynesian navigator Chad Babayan, Jacqui Hoover, director of the Hawai'i Island Economic Development Board, and Wallace Ishibashi, Jr., business agent for ILWU Local 142 – who expressed their views that nothing about the TMT offended their religion or culture or interfered with their practices. Babayan testified, in fact, that Polynesian navigators used the summit of Mauna Kea as a landmark in their voyages, but that they engaged in no ceremonies or observations from the summit to inform their navigational skills, rebutting the claim of Pisciotta that observations from the summit were important to navigators.

In their joint proposed Findings of Fact, Conclusions of Law, and Decision and Order, the TMT opponents state the religious views of Flores, Kealoha Pisciotta, and other Hawaiian petitioners as uncontested fact.

For example, Mo'oinanea is said to have been "born on the summit of Mauna a Wakea and assumed the responsibility as guardian of Lake Waiau from her mother, Melemele, who was the former guardian of this sacred body of water," according to finding of fact (FOF) No. 306. FOF No. 309 states that Poli'ahu and other ancestral *akua*, *'aumakua*, and *kupua* connect with Ke Akua (The Creator) on the summit. "They wish to have no other observatories on the mountain for if they continue to build, some spirits might have to move off [the] mountain."

There's FOF 311, referring to Mauna Kea as

the “piko” of the island: “When we understand the three piko of the human anatomy” – the umbilical navel, the genital navel, and the head navel, or fontanel, according to Flores’ testimony – “we may begin to understand how they manifest in Mauna Kea. Mauna Kea as the fontanel requires a pristine environment free of any spiritual obstructions.”

Dozens of other claims made by the Hawaiian petitioners relating to their religious beliefs appear in the proposed FOF/COL/D&O as undisputed facts.

The university argued that such beliefs are not grounds for denial of the Conservation District permit. “In terms of the claims of violations of religious beliefs,” Tim Lui-Kwan said in his closing statement, “... courts have uniformly denied recognition of religious beliefs as a basis for stopping any kind of an action like this.” The Establishment Clause of the U.S. Constitution, he noted, prevented the official recognition of any religion. “As a result, he said, what the analysis should focus on is “whether any state action or proposed action is actually interfering or otherwise restricting the free exercise of your religion. In this case, no evidence was presented that a constitutionally protected, recognized right pursuant to *Hanapi* and *PASH* was actually violated.”

The rights that do enjoy legal protection, Lui-Kwan said, relate to practices, not beliefs. On this score, Lui-Kwan said, “the petitioners have not met their burden of proof that the project would violate or interfere with their constitutional rights.” To show this, he said in remarks directed to the petitioners, “you have to demonstrate that the traditional and customary practice or right you’re claiming is deeply rooted, which requires under *PASH* that this usage or practice goes back at least to November 25, 1892. Nothing was ever submitted by any of the petitioners claiming this cultural right. The only thing we’ve actually seen from them is that somehow sacred viewplanes are now being violated and infringed on.”

Statements in the university’s proposed findings of fact are even stronger. Noting that the petitioners have objected to the present policy of the Mauna Kea Management Board of discouraging the stacking of rocks and erecting other permanent structures, the university argued that the modern rock-stacking involves “the placement or erection of any solid material on land.” If this occurs on land in the Conservation District, “and if they remain on the land for more than 30 days ... then under the express terms of the Conservation District rules, there is a ‘land use’ that requires a permit.” — **P.T.**

## Rapid Shrinkage of Alpine Lake Worries Resources Managers

Mauna Kea’s Lake Waiau, considered by some native Hawaiians to be a portal to the spirit world, seems to be disappearing.

The water level has dropped radically in recent months, and with high elevation temperatures in Hawai'i increasing three times faster than those at lower elevations, evaporation is a likely explanation, says Lisa Hadway, head of the Big Island branch of the Natural Area Reserves System (NARS).

In wet years, the lake spans just under two acres and is about 10 feet deep. On average, the depth is about half that, but in dry times, it’s been as low as half a meter. Although the water level has fluctuated greatly with climate changes, the recent decline has been unusually rapid and severe.

“This is extremely alarming,” Hadway told the NARS Commission in November as she showed commissioners pictures of a once-submerged spring that, during the contraction over the past few months, has become exposed.

Located 13,020 feet above sea level, the lake lies within the Mauna Kea Ice Age NAR and is the highest alpine lake in the Pacific.

The shrinkage has garnered increased scientific interest in the lake and researchers will likely be seeking state permits to study the phenomenon, Hadway said.

While some believe permafrost maintains the lake, it’s largely held that it’s perched on an impermeable layer of ash. Hadway, who noted that an El Niño event caused the lake’s water level to drop in the 1970s, told the commission, “My sense is it’s evaporating.”

“It’s perched on something. If you lose it, no rainfall in the world will keep it there,” said NARS Commissioner John Stinton, a geologist.

In any case, “Somebody better start studying it pretty soon,” commissioner Pat Conant added. — **T.D.**



USGS employee standing in front of Lake Waiau to show scale of the shallow lake.

PHOTO: USGS

Environment



Hawai'i  
a monthly newsletter

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 onetime donation of \$ \_\_\_\_\_

(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

Give us your email address and we'll sign you up for online access to our extensive archive of past issues.

\_\_\_\_\_

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



## Haleakala Solar Telescope Also Disputed In Protracted Contested Case Hearing

In addition to the contested case hearing over the Thirty Meter Telescope, this past summer saw another hearing, over another telescope – this one proposed for Haleakala.

As with the TMT case, the contested case hearing over the Advanced Technology Solar Telescope (ATST) involved the University of Hawai'i applying for a Conservation District Use Permit on behalf of the party that would actually build the telescope, which in the case of the ATST is the National Solar Observatory, funded by the National Science Foundation.

Many of the same issues presented themselves as well, such as infringement on Native Hawaiian rights and disruption of viewplanes.

But there are also significant differences between the projects and the way in which the issues have been addressed.

Most significant, perhaps, is the fact that the groups and individuals opposing the telescope's construction joined forces in one umbrella organization, Kilakila 'o Haleakala (Hawaiian for "Majestic Is Haleakala"), a group incorporated in 2006 for the purpose of educating the public about the ATST. During the contested case hearing, it was represented by attorneys with the Native Hawaiian Legal Corporation (David Kimo Frankel, Sharla Ann Manley, and Camille Kamalie Kalama).

As a result, the controversies were better framed, if no less impassioned.

### **The Project**

The ATST was approved by the Board of Land and Natural Resources on December 1, 2010, and the Conservation District Use Permit was issued just a day later. The project includes the dome structure (143 feet high, 84

feet wide) housing the four-meter telescope, a support and operations building; a utility building linked to the telescope by an underground utility tunnel; and parking. Total cost to design and build the telescope is estimated at around \$300 million. Construction is estimated to take between six and seven years.

Although near the summit of Haleakala, the proposed telescope site is in the general subzone of the Conservation District, on part of an 18,166-acre parcel transferred to the University of Hawai'i by executive order in 1961, for scientific purposes. Access to the entire so-called "science city" complex of observatories is restricted to authorized personnel and Native Hawaiians wishing to exercise their traditional and customary practices.

The observatory would be visible from the visitors center at Haleakala National Park. Unlike the TMT, which would be built on a site some 500 feet below the elevation of existing observatories on Mauna Kea, the ATST would be on a higher elevation than the 117-foot-tall Advanced Electro-Optical System (AEOS) telescope, which is part of the Department of Defense's Maui Space Surveillance System complex. It would also be higher than the highest point of Haleakala, Pu'u 'Ula'ala.

### **Mitigation**

The university has attempted to get buy-in from the community in general, and Hawaiians in particular, by having the National Science Foundation agree to give Maui Community College \$2 million a year for ten years to support an educational initiative intended to "address the intersection of traditional Hawaiian culture and science." In January,

Charles Kauluwehi Maxwell was contracted by the NSO to provide cultural monitoring services and serve as the project's cultural specialist.

The ATST has signed an incidental take permit and has agreed to conservation measures to protect two endangered species, the 'ua'u (Hawaiian petrel, *Pterodroma phaeopygia sandwichensis*) and the nene (Hawaiian goose, *Branta sandvicensis*). An ungulate-proof fence is to be built, to connect with that around Haleakala National Park. The ATST is to initiate long-term predator control of rats and mongooses, which is another measure to protect the ground-nesting birds, undertake a monitoring and reporting program on petrels and geese, and install traffic-calming measures on roadways to reduce vehicle strikes on nene. The ATST has also agreed to begin a program to propagate and outplant silverswords on state land.

Kilakila 'o Haleakala disputed the impact and adequacy of the proposed mitigation measures. In its proposed findings of fact, it stated that there was no nexus between, on the one hand, the harm done to a cultural site and to the ability of Hawaiians to exercise their traditional practices there, and, on the other, the measures proposed, including the cultural monitor, "sense of place" training, and renaming of roads within the science city complex, among other things.

### **Next Steps**

The hearing officer in the contested case, Steven Jacobson, has had the proposed findings of fact, conclusions of law, and decision and order from the parties to the case since September. In an article published in the journal *Nature* on October 13, Jacobson stated that he would hand in his recommendation "next week."

In early December, Jacobson told *Environment Hawai'i* that he would issue his recommendation "soon." — **P.T.**