

SB3090 SD1

RELATING TO GOVERNMENT.

Establishes the Mauna Kea Management Authority. Limits the number of telescopes that may be authorized on Mauna Kea. Authorizes the renegotiation of leases, subleases, easements, permits, and licenses pertaining to Mauna Kea. Requires that revenue derived from activities on Mauna Kea be shared with the Office of Hawaiian Affairs. Provides that the Mauna Kea Management Authority may not alienate lands except as provided by law. Excludes Mauna Kea lands from the definition of "public lands." Provides for free access to Mauna Kea for traditional cultural purposes. Establishes police powers and provides for enforcement of laws on land under the jurisdiction of the Mauna Kea Management Authority. (SD1 PROPOSED)



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
Senate Committees on Higher Education
and
Water and Land
Monday, February 12, 2018 at 1:15 p.m.
by
David Lassner
President, University of Hawai'i

LATE

SB 3090 Proposed SD1 – RELATING TO GOVERNMENT

Chairs Kahele and Rhoads, Vice Chairs Kim and Gabbard, and members of the committees:

Thank you for the opportunity to provide official University of Hawai'i testimony regarding SB 3090 Proposed SD1. Respectfully, the University of Hawai'i cannot support this bill as written.

It should be noted that due to the extraordinary breadth and severe impact of this bill as written there are multiple UH testimonies today. They all contain information that the Legislature may find useful in its deliberations. This testimony represents our official position.

Fundamentally, we believe this bill is based on a premise that is not correct, that the current management structure has failed and must be completely replaced. In fact, the 2014 State Audit reported that *“We found that UH has developed several management plans that provide a comprehensive framework for managing and protecting Mauna Kea while balancing the competing interests of culture, conservation, scientific research, and recreation.”*

The complexity of balancing these competing interests is probably more of a challenge on Maunakea than anywhere in Hawai'i, and UH has not shied away from its responsibilities over these past years as we have developed plans and subplans with deep community consultation that have been approved by the Board of Regents and Board of Land and Natural Resources in full sunshine. As a result of this work, UH stewardship of Maunakea was honored externally on two occasions in 2017. This included the highest recognition of preservation, rehabilitation, restoration and interpretation of the state's architectural, archaeological and cultural heritage from the Hawai'i Historic Foundation, and the Pūalu Award for Culture and Heritage from the Kona-Kohala Chamber of Commerce.

The extremely critical 1998 Audit was based on an assessment of roughly the first 30 years of stewardship since the beginnings of astronomy on Maunakea. Since that time, UH has created open, transparent and effective processes and we are proud of the dedicated work of our rangers, the volunteer Maunakea Management Board, the volunteer Native Hawaiian advisors of Kahu Ku Mauna, the Office of Maunakea Management and the 'Imiloa Astronomy Center. All of these are part of our work to manage and preserve, to educate and discover. There is of course more to be done and we are actively working every day to continue to improve.

That said, UH has also consistently and publicly expressed our willingness to consider alternate models of management. UH agreed to support the Governor's 10-point plan, which represents a significant change with the return to DLNR of 10,000 acres as requested. UH is in regular conversation with Mayor Kim and we are inspired by his vision to make Maunakea a global exemplar of peace and harmony where indigenous culture and the best science in the world coexist synergistically in a truly awesome environment. And when legislators became interested in crafting a completely new approach, we expressed a willingness to consider their proposals. This is all consistent with the formal public position of the Board of Regents, which I wholeheartedly support, to move to a more collaborative model of management that engages more than just the University.

The testimony provided by many others today will point out multiple issues with this bill as written. So we will share here just a handful of key high-level concerns about fundamental approach that appears to underlie this bill as written.

- 1) Such a bill should establish a clear vision and commitment that astronomy and culture must coexist on Maunakea. Without that fundamental underpinning, whoever is responsible for stewardship will be accused of failure by those who do not accept the vision.
- 2) The bill would result in a dramatic increase in the cost of management, beginning with all the paid members of the new board, all the new executive positions, and all the new staff to work with the new board and executives. The bill does not explain the questionable premise that all these new costs can be covered by extracting more dollars from a smaller number of observatories and from commercial tourism.
- 3) The management regime proposed explicitly excludes the involvement of anyone directly engaged in astronomy, education or research relating to Maunakea. We believe that for these enterprises to thrive on the mauna requires expertise and knowledge about them.
- 4) Finally, the complete exclusion of the University from the education and research mission associated with Maunakea would likely result over the long-term in the loss

of inspiring astronomical science and engineering in Hawai'i, and an associated decrease in economic investment and vitality.

Being unable to support this bill as currently written does not mean the University is opposed to change. In fact, the opposite is true and that is why we share these concerns.

At the same time, we are continuing to move forward.

Internally, we are now planning some work that will restructure our internal programs to make them more efficient, clear and accountable. We will also increase the synergies between science and culture, including for visitors and workers on the mauna. This restructuring will be led by our new Senior Advisor on Maunakea.

Externally, the Board of Regents recently passed a resolution calling for a more collaborative approach to stewardship, with greater external engagement by other stakeholders. We will continue to engage with the Mayor of Hawai'i Island and the Governor around ideas and initiatives for improvement. And we would be happy to engage meaningfully with the Legislature if that is desired.

But please know that we are not sitting idle waiting for the Legislature or the Mayor or someone else to create a path forward for all of us. Even as we collaborate with others, we are working toward the long-term improvements in management that will be needed for the next stages of collaborative stewardship under any model. This is all completely consistent with the activities we must and will undertake as we begin to update the Comprehensive Management Plan for Maunakea, as is necessary for any living document to usefully serve in a highly dynamic and complex environment.

Thank you for this opportunity to provide University of Hawai'i testimony on SB 3090 Proposed SD1.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
Senate Committees on Higher Education and Water and Land
Monday, February 12, 2018 at 1:15 p.m.

by
Robert McLaren, Interim Director
and
David Lonborg, Interim Associate Director
Institute for Astronomy, University of Hawai'i at Mānoa

LATE

SB 3090 Proposed SD1 – RELATING TO GOVERNMENT

Chairs Kahele and Rhoads, Vice Chairs Kim and Gabbard, and members of the committees:

Thank you for this opportunity to offer testimony on SB 3090 Proposed SD1. While UH supports the Legislature's interest in working with the community toward an inclusive vision for Maunakea's future and an appropriate collaborative management structure, we cannot support the specific measures being proposed here, and therefore must respectfully **oppose** the bill in its current (and proposed SD1) form. Our reasons for taking this position are outlined below.

Lack of Justification for Proposed Changes

The bill appears to be based on an assessment that current UH management of Maunakea is not only inadequate but also essentially beyond repair. However, the bill does not mention any specific criticism of UH management, and it offers only a two-sentence justification for the proposed sweeping changes:

Since 1998, four audits by the state auditor have been critical of the management, stewardship, and protection of Mauna Kea. Although significant changes have occurred on Mauna Kea since the 1998 audit, negative experiences over the past 50 years have eroded public confidence and demonstrated the critical need for fresh leadership centered on a new organizational structure, management system and procedures.

A careful reading of the recent audits will reveal that the "significant changes" are in fact ongoing major improvements in management by the University. Granted there is still more to do, but none of these audits suggests that UH is either unable or unwilling to complete these requirements. And none of them suggests that scrapping the current UH management should be considered. So although some individuals may have lost confidence, the auditor certainly has not, and in our experience the vast majority of the general public has not either.

The controversy over astronomy development, and most recently over the Thirty Meter Telescope, is sometimes cited as a symptom of bad management. We do not agree with this diagnosis. This controversy is very real, but it arises from a fundamental disagreement about the appropriate use of Maunakea, and that is a matter of policy and vision not a matter of management in the usual sense of that term -- i.e. where management is the implementation of policy, but not policy itself.

Lack of Vision Regarding the Future of Maunakea

Respectfully, the bill lacks a clear vision of the intended Maunakea future that the new management authority would be expected to promote, nurture, and defend.

The current vision of Maunakea arose in the mid-1960's, when Governor John Burns responded to an initiative from Hawai'i Island residents to establish astronomy on Maunakea as a new source of economic activity after the 1960 tsunami that devastated downtown Hilo. The University was identified as an essential partner in this undertaking, and as the local home for the associated research enterprise. From the outset, the State adopted the policy that if world-class astronomy was to come to Hawai'i, then the people of Hawai'i, through their University, would be full participants in the scientific endeavor and not simply landlords and bystanders. This basic philosophy led to the creation of the Institute for Astronomy and of the Mauna Kea Science Reserve, with its specified purpose as a University-managed asset for scientific research, in particular astronomy. Accordingly, the relationship between the University and the other observatory organizations was deliberately developed as that of a scientific partnership and only secondarily as a landlord-tenant. Benefitting from this scientific partnership, the University has developed into one of the world's pre-eminent centers for astronomical education and research. At the same time, the growing quality of the University's astronomy program and its advocacy for Maunakea attracted the world's premier new telescopes to Hawai'i, the most recent example of course being the TMT.

The Maunakea observatories have played an essential role in almost every major astronomical discovery of the past 40 years. It is the symbiotic relationship between the unique qualities of the Maunakea site and the scientific excellence at the University that has produced the remarkable astronomy development on Maunakea. Without this relationship the initiative started by Hawai'i Island residents and championed by Governor Burns might well have failed, and even if it had proceeded, the scientific and educational benefits would have gone almost entirely to out-of-State interests. Thanks to the vision of Governor Burns and Hawai'i Island residents, astronomy on Maunakea is providing not only the above mentioned intellectual benefits but also a positive economic impact on Hawai'i Island amounting to over 800 jobs and \$92 million.

We believe that the above vision for astronomy on Maunakea, and especially the essential role played by the University, has served both the people of Hawai'i and the worldwide astronomy community very well over the past 50 years. We feel strongly that these key policy aspects should be continued into the future, and we are thus greatly concerned not to see any suggestion of this in the bill. In fact, to the extent that the bill does suggest a vision, it seems to focus on commercialization of the mountain and a landlord-tenant relationship with the entities operating there -- something very different from the original Hawai'i Island / John Burns concept.

Questionable Proposed Governance and Management Structure

Without a clear vision of the intended Maunakea future, it is simply not possible to define the required governance and management structure, or to establish criteria for assessing that structure's performance. According to the bill, a key requirement for membership in the proposed Mauna Kea management authority is that the members be what we would describe as disinterested. If a clear vision were defined, then we could accept that a group of disinterested but otherwise capable individuals could provide adequate governance, although a group of stakeholders who are strongly invested in the vision, as is the case with the current Mauna Kea Management Board, would be greatly preferred. But in the context of this bill in its current and proposed form there is no overall clear vision, nor is there any indication of how such a vision would be developed. How would the management authority know what it was expected to achieve? Moreover, given their required lack of association with any of the activities on the mountain it is hard to see how the management board members could craft such a vision and promote it.

A separate substantial concern is that the proposed management organization is very large and would be extremely expensive. Based on our experience with Maunakea, the level of commercialization that would be needed to fund the proposed operation would probably be unachievable, and even if achievable, it would be at a level that would be unacceptable to the local community and could also have a substantial negative impact on natural and cultural resources, and the continuation of world-leading astronomy. Also, the proposal to charge all visitors (other than cultural practitioners) an access fee and to ban the use of all personal vehicles above Hale Pohaku is contrary to the long tradition of free public access. This would almost certainly result in huge community opposition once the ramifications of this proposed policy are fully understood.

Recommendation

Given our concerns, we recommend that a shared vision for the future of Maunakea first be developed and clearly articulated. This is something which is, for example, the goal of the EnVision Maunakea Project. The requirements and performance criteria for a governance and management structure can then be established, and the current UH

management can be assessed in the context of those criteria. At that point all stakeholders will be in a much better position to determine what changes might be desirable.

Members of the UH community are committed to working openly and collaboratively on legislative, executive and community initiatives. As noted in the Board of Regents resolution on Maunakea adopted last year, UH believes that Maunakea can and should be a global model that provides inspiration, harmony and peaceful co-existence among culture, education, the environment and scientific discovery. UH works hard every day to achieve this.

Thank you again for the opportunity to offer testimony on this measure.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
Senate Committees on
Higher Education and Water and Land
February 12, 2018 at 1:15 p.m.

by

Marcia Sakai, Chancellor
University of Hawai'i Hilo

and

Stephanie Nagata, Director
Office of Mauna Kea Management
University of Hawai'i at Hilo

LATE

SB 3090 Proposed SD1 – RELATING TO GOVERNMENT

Chairs Kahele and Rhoads, Vice Chairs Kim and Gabbard, and members of the committees:

On behalf of the Office Mauna Kea Management (OMKM), thank you for the opportunity to testify on SB 3090 Proposed SD1.

OMKM continuously seeks to enhance and advance its management of the University's managed lands on Maunakea, just as this bill seeks good stewardship of Maunakea. However good intentioned this bill is, however, OMKM finds that in its current iteration the bill does not establish the right model for stewardship of Maunakea.

Briefly, the bill does not establish better mechanisms for better stewardship of Maunakea. As proposed the bill does not: 1) provide clear reasons that support the need for the establishment of a new management authority for Maunakea; 2) describe the purpose, mandate, objectives and goals of this authority; 3) demonstrate how this new authority will be self-sustaining while protecting cultural, natural and scientific resources; and 4) show how a new management authority with no clear direction will be better than what currently exists. Finally, this bill is overly broad in that it provides sweeping authority to a management agency that has no built-in checks and balances.

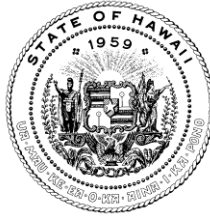
OMKM works diligently to protect the cultural, natural and scientific resources on Maunakea. It does so not by carrying out the wishes and demands of the University, but to the contrary, OMKM employs a collaborative management structure that is community-based and community driven by volunteers who live on the Big Island and who understand, are sensitive to and concerned about Maunakea. Just as astronomy on the mountain began as an initiative by the Big Island community, so is the management of the mountain. The management of Maunakea since the year 2000 is under the direction and guidance of the Maunakea Management Board (MKMB) and

native Hawaiian Kahu Ku Mauna Council, both composed of volunteers from the Big Island community. Contentions that the University continues to mismanage the mountain unfairly denigrates the community members who dedicate countless hours of their time and effort to see that Maunakea is properly managed.

OMKM has and will continue to work collaboratively with all community, executive and legislative stakeholders concerned with proper management of the mountain. Respectfully, however, we do not support SB 3090 proposed SD1, in its current form given the above concerns.

Again, thank you for the opportunity to comment on this bill.

DAVID Y. IGE
GOVERNOR OF
HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
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KAHOOLAWE ISLAND RESERVE COMMISSION
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**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES**

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**Testimony of
SUZANNE D. CASE
Chairperson**

**Before the House Committees on
HIGHER EDUCATION
and
WATER AND LAND**

**Monday, February 12, 2018
1:15 pm
State Capitol, Auditorium**

**In consideration of
SENATE BILL 3090, SENATE DRAFT 1
RELATING TO GOVERNMENT**

Senate Bill 3090, Senate Draft 1, proposes to establish the Mauna Kea Management Authority (Authority), provide for the conveyance of the University of Hawaii (UH) lease lands on Mauna Kea to the Authority, amend Chapter 171, Hawaii Revised Statutes (HRS), to remove the lands so conveyed from the definition of public lands managed by the Board of Land and Natural Resources (BLNR), and repeal Chapter 304A, HRS, regarding Mauna Kea Lands. **The Department of Land and Natural Resources (Department) appreciates the intent of the measure, but as the current steward of the mountain is compelled to oppose the bill in view of the following concerns and comments.**

The Department's mission is to "Enhance, protect, conserve and manage Hawaii's unique and limited natural, cultural and historic resources held in public trust for current and future generations of the people of Hawaii nei, and its visitors, in partnership with others from the public and private sectors." In its oversight of Mauna Kea and the astronomy center established over fifty years ago, the Department and its BLNR acts as landlord, conservation district regulator, steward of natural, cultural, historic and recreational resources, as well as enforcer of the Department's laws and regulations.

The preamble of the measure comments that the Authority will serve as a model for governance and management of Hawaii's most precious resources. In the Department's view, it should not be used as a model. The unintended consequence of applying such a model could be to create isolated autonomous agencies throughout the State to manage selected public lands, potentially

for purposes at odds with the public trust. If higher revenue generating lands are taken away from the Department and placed under independent management, the Department's mission in protecting the natural and cultural resources of other lands with less revenue generating potential would be drastically impaired.

The bill references perceived shortcomings with the current management of the mountain. The Department and UH have made great strides in improving the management of Mauna Kea since 1998, when an unfavorable audit was published. Attached for reference is a copy of the Office of Conservation and Coastal Lands' annual report to the BLNR on January 26, 2018, regarding Mauna Kea and recapping the management history of the mountain and improvements made over the years.

Even if some members of the public disagree with the way the mountain is managed, at least the current management process is transparent, allowing for open debate in public meetings of the BLNR. At the January 26, 2018 BLNR meeting, which was dedicated entirely to Mauna Kea and UH's annual report on its management, the public participated earnestly. The Department notes a marked lack of these types of transparent procedures in the decision-making process of the proposed Authority. The bill includes no requirement for the Authority to conduct public meetings or hearings.

PART I of the measure imports many provisions of Chapter 171, HRS, on Public Lands, which is the statute the BLNR operates under with respect to State lands. But in incorporating Chapter 171, a number of bill's provisions were not tailored to the requirements of the proposed new Authority. For example, Section -10 on mortgagee rights provides that the Authority may purchase mortgage debt on Mauna Kea from any moneys at its disposal "including the special land and development fund,"¹ which is one of the Department's special funds. If the Authority is to be self-funded, there should be no reason for it to tap the Department's special fund to pay mortgage debt.

Similarly, there are many provisions in the bill which reference the potential sale of Mauna Kea lands.² In light of the natural and cultural resource value of the mountain, the Department believes that all language regarding potential sales should be deleted from the bill. While Section -31 of the measure clarifies that any such sale would require the prior supermajority approval of both houses of the Legislature, Section -32 of the bill then goes on to say that,

Notwithstanding any limitations to the contrary, the authority, without public auction, may:

- (1) Sell public lands at a price and on any other terms and conditions as the authority may deem proper to governments, including the United States, a city and county, counties, other

1 See SB3090, SD1, at page 28, line 4.

2 See, e.g., Section -7, page 19, line 11; Section -8, page 21, lines 2-4; Section -11, page 31, line 11 (leases or sales for residential purposes); Section -12, page 32, lines 7 and 19; Section -29, page 61, line 15; and Section -32, page 67, line 5.

governmental agencies authorized to hold lands in fee simple, and public utilities;

Under this provision, the Authority could potentially sell Mauna Kea to governments and utilities, by direct negotiation, at any price, and without Legislative approval. Despite the broad spectrum of views on and interests in the mountain, the Department believes there are very few people who would favor vesting such power in the Authority. While the Authority may never exercise such power, the Department suggests that the preferred approach would be to not vest the power with the Authority in the first place.

Another main concern of the Department is the apparent exemption of the Authority from the Conservation District rules. Section -37 provides as follows:

Project approval authorization. The authority is authorized to approve or disapprove all projects, including but not limited to design review, on all Mauna Kea lands; provided that rules adopted pursuant to this chapter shall supersede all conservation district rules.

Even if the Mauna Kea lands were conveyed to the Authority as the bill provides, the lands would still be located within the State Land Use Conservation District. The intention to exempt the Authority from the conservation district rules is reminiscent of past legislative efforts to create special development agencies such as the Public Land Development Corporation, which was exempt various land use controls. It is somewhat perplexing to us that someone would seek an exemption from the very thing that can potentially serve to protect the mountain's very fragile and rare cultural and natural resources. In the Department's view, whoever ultimately has management authority over the mountain should continue to abide by the conservation district rules.

Regarding funding of the Authority, the Department believes that the bill is unrealistic in expecting an organization as large as the proposed Authority to be self-funded without increasing commercial operations on the mountain. Increasing operations would inevitably have an adverse impact on the mountain's natural and cultural resources.

In other concerns, the Department notes that the composition of the Authority's board does not even include a representative from the Department, which is the one agency whose mission is to protect our public trust natural and cultural resources. The Department believes that it should be represented on the Authority's board, that a representative of the Office of Hawaiian Affairs should also be made a member of the board, and that the Authority's board members should be unpaid.

The Department agrees that lessees and sublessees on the mountain should pay significant rent so that OHA receives its share and the remaining revenue can be used in support of the management of the mountain. However, that must be a policy going forward because the terms and conditions of the existing leases and subleases, which require only nominal rent payments, are binding on the parties until the expiration or renegotiation of the contractual lease terms.

If the concern underlying the bill is UH's oversight of the mountain, then one option is to make the existing Mauna Kea Management Board (MKMB) independent with direct oversight of the Office Mauna Kea Management (OMKM). MKMB would then no longer have to report to the UH Board of Regents. Rather, MKMB would operate independently in the best interests of the mountain without being beholden to UH.

Current management by the Department is providing enforcement, monitoring, and security that minimize human impact to the area, as well as the overarching obligation to protect our public trust natural and cultural resources. The new Authority would similarly need to address the natural and cultural resource needs and public use demands. Without funding appropriated for this new management authority, it is unclear how the authority would become established and conduct the necessary management needed, particularly in the near-term. This includes the need for rules to regulate the public use of the area.

Finally, the Department is concerned about the transfer of the portion of the access road located in TMK (3) 4-4-015:001. This portion of the road is essential for accessing the Mauna Kea Ice Age Natural Area Reserve and Mauna Kea Forest Reserve, which is also part of Hunting Unit A. The Department requests that public and management access via this road to these area be maintained.

In summary, the Department cautions against the extensive powers the bill gives to the Authority. The BLNR's broad mission allows it to take into consideration issues relating to protection of endangered species and natural habitat, cultural significance, archeological sites, historic features, trail access and other natural and cultural resources on the mountain. The BLNR should be allowed to continue managing the mountain to best protect the public trust and public engagement.

Thank you for the opportunity to comment on this measure.

STATE OF HAWAI`I
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
Honolulu, Hawai`i

January 26, 2018

**Board of Land and
Natural Resources
State of Hawai`i
Honolulu, Hawai`i**

REGARDING: Board Briefing on Maunakea Management

1. 2017 Annual Report on the Status of the Implementation of the Maunakea Comprehensive Management Plan (CMP)
2. Update on decommissioning plans for Maunakea observatories
3. Update on the status of proposed revisions to the Maunakea CMP
4. Update on the status of proposed administrative rules for Maunakea
5. Update on the status of the EIS for new land authorizations on Maunakea
6. Review of the July 2017 report from the State Office of the Auditor

PERMITTEE: University of Hawai`i at Hilo

LANDOWNER: State of Hawai`i

**UNIVERSITY
LEASES:** General Lease S-4191 for the Maunakea Science Reserve
General Lease S-5529 for Halepōhaku
Grant of Easement S-4697 for the Maunakea Access Road

LOCATION: Ka`ohe, Hāmākua District, Hawai`i

TMK: (3) 4-4-015:009 (Maunakea Science Reserve)
(3) 4-4-015:012 (Halepōhaku)

**AREA OF
PARCELS:** approximately 11,288 acres (Maunakea Science Reserve)
19.3 acres (Halepōhaku)

SUBZONE: Resource

I. EXECUTIVE SUMMARY

The Office of Conservation and Coastal Lands is presenting this report on Maunakea Management as a “non-action” briefing. In particular it will focus on the status of the development of the Maunakea Comprehensive Management Plan and its associated subplans. We have included a map of the University-managed lands on Maunakea as **Exhibit 1**, and a map of the observatories on the summit as **Exhibit 2**.

On April 9, 2009, the Board of Land and Natural Resources approved the Maunakea Comprehensive Management Plan (CMP) for the Maunakea Science Reserve, including Halepōhaku and the Summit Access Road, Ka`ohe, Hāmakua District, Hawai`i

On March 25, 2010, the Board approved four associated resource subplans which elaborated on the management actions contained in the CMP. The four plans were the Natural Resource Plan, Cultural Resources Management Plan, Public Access Plan, and Decommissioning Plan.

Section V of this report contains more background on these subplans. It also provides brief updates on active issues involving public access, enforcement issues, commercial tours, and the decommissioning of observatories.

A condition of the CMP is that the permittee provide the Board with an annual written update on the status of the development of the management plan and subplans. The 2017 Annual Report is attached to this submittal as **Exhibit 3**. Related to this, we have included the University’s 2006 report to the legislature on the long-term development of Maunakea as **Exhibit 4**.

OCCL is taking this opportunity to present updates on three interrelated items:

- Updates to the Maunakea Comprehensive Management Plan (Section V -F)
- Proposed new Administrative Rules for Maunakea (Section VI)
- New land authorizations on Maunakea (Section VII).

In addition, this report will review current University actions on some of the special conditions attached to the Decision and Order for the Thirty Meter Telescope (Section VIII). A summary provided by the University on Thirty Meter Telescope’s THINK Fund & Workforce Pipeline Program is attached as **Exhibit 6**.

Finally, we will review the July 2017 Follow-up Report on Maunakea Management released by the State Office of the Auditor (Section IX). The report is attached to this submittal as **Exhibit 5**.

OCCL has created an online library for public documents relating to the management of lands on Maunakea at dlnr.hawaii.gov/occl/maunakea-management. The library contains Conservation District Use Permits and Applications, the Comprehensive Management Plan, sub-plans, and annual reports, and reports from the State Office of the Auditor. The current contents of the library are shown in **Exhibit 7**.

We have invited a representative from the Office of Maunakea Management to give a brief presentation to the Board on the 2017 Annual Report. Representatives from DOFAW, DOCARE, Land Division, SHPD, and OCCL will also be present following the briefing to answer any questions the Board might have.

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5. July 2017 Report from the State Office of the Auditor
6. Thirty Meter Telescope's THINK Fund & Workforce Pipeline Program
7. Online Maunakea Documents Library

II. BACKGROUND: THE MAUNAKEA SUMMIT

For the sake of clarity, OCCL will use the following terms for the summit region in this report:

The **summit plateau** is the alpine desert ecosystem 3900 meters above mean sea level. The slope shifts abruptly here, from approximately 27% downslope to less than 10% on the plateau. Geological evidence indicates that this broad, circular region was formed by remnant lava flows in the former caldera, and subsequently sculpted by glaciers. The plateau itself varies only approximately 100 meters in elevation, but it is dotted with scattered cinder cones that rise 30 to 180 meters above the surface of the plateau. Other significant geological features are the outcrops of hawaiite, an olivine basalt formed via the interaction of glacial ice and hot lava, and prized for adze making; the alpine Lake Waiau; and remanant glacial from previous episodes of glaciation in the summit region. The highest point is 4205 meters.

Pu`u o Kūkahau`ula is the traditional name for the cluster of cones and ridgelines that are above 4080 meters. The names of the individual cones, Pu`uwēkiu, Pu`ukea, and Pu`uhau`oki, are believed to be more recent cartographic designations.

The State Historic Preservation Division identifies Kūkahau`ula, as well as Lake Waiau and Pu`u Līlinoe on the summit plateau, as *traditional cultural properties*. This area has a strong association with Hawaiian folklore and mythology.

The **north plateau** is the portion of the summit plateau to the north of Kūkahau`ula, identified as the Great Rocky Table Summit in an 1891 government survey.

The **lower summit region** is the alpine shrub and grassland ecosystem above the tree line at 2900 meters. OCCL notes that the record indicates that the tree line has shifted down-slope since the introduction of cattle.

Maunakea's **lower slopes**, from approximately 2000 meters to the tree line, is composed of a māmane-naio forest.

This report will focus on land uses and management for areas above 2700 meters.

A note on spelling: The UH School of Hawaiian Language recommends spelling Maunakea and Halepōhaku as one word. The Office of Maunakea Management adopted the one-word spelling in 2013. This report will follow this format unless the two-word spelling (Mauna Kea) is part of a proper name or direct quote.

III. BACKGROUND: MAUNAKEA ADMINISTRATIVE UNITS

A. Administrative Units

The Department of Land and Natural Resources (DLNR) managed areas in the summit region and upper slopes of Maunakea are the Mauna Kea Natural Area Reserve and the Mauna Kea Forest Reserve. The University of Hawai'i managed areas are the Maunakea Science Reserve, the Halepōhaku Midlevel Facilities, and the Maunakea Access Road between Halepōhaku and the summit.

The lower slopes of Maunakea also contain lands managed by or under the jurisdiction of the Department of Hawaiian Homelands, the U.S. Army (Pōhakuloa Training Area), and the U.S. Fish and Wildlife Service (Hakalau Forest National Wildlife Refuge). The County of Hawai'i maintains the Access Road below Halepōhaku.

Mauna Kea Forest Reserve: The Forest Reserve encompasses 52,500 acres, and is under the jurisdiction of DLNR's Division of Forestry and Wildlife (DOFAW). The māmane forest here is critical habitat for the federally listed palila.

Mauna Kea Ice Age Natural Area Reserve: The 2033-acre reserve was created in 1981. It is managed by DOFAW's Natural Area Reserve System. Among its unique geological and cultural features are the Keanakakoi adze quarry, Lake Waiau, and Pu'u Pōhaku). The Mauna Kea NAR is bounded by the Science Reserve and the Mauna Kea Forest Reserve.

The Maunakea Science Reserve is an 11.288-acre State-owned leased by the University of Hawai'i under General Lease S-4191, with day-to-day management delegated by the Board of Regents to the Office of Maunakea Management (OMKM). It contains most land within a 2.5-mile radius of the site of the UH 2.2-m telescope – in effect, all land above 3700 meters in elevation except for a pie-shaped wedge set aside as the Mauna Kea Ice Age Natural Reserve. The Science Reserve also includes a section in the lower summit region where the Very Long Baseline Array is located.

Halepōhaku is a 19.3-acre State-owned parcel below the summit region leased to the University of Hawai'i through 2041 under General Lease No. S-5529, which describes the character of use as “premises leased to be used solely for permanent mid-level facilities, a construction camp, an information station as well as existing facilities purposes.” It is the site of the Onizuka Center for International Astronomy (Halepōhaku Mid-Level Facilities).

The portions of the **Summit Access Road** that extend from Halepōhaku to the boundary of the Science Reserve is also under UH management. This includes a 400-yard corridor on either side of the road, excluding those areas within the adjacent Mauna Kea Ice Age Natural Area Reserve.

The University's 2000 Master Plan proposed the creation of an astronomy precinct encompassing approximately 525 acres of the overall Science Reserve. Although the Master Plan was never formally adopted, the term 'astronomy precinct' continues to be used informally in planning documents.

B. DLNR Management Responsibilities

The **Division of Forestry and Wildlife** (DOFAW) manages the Mauna Kea Forest Reserve, as well as outdoor recreation programs, trail and access systems, and the hunting program.

Land Division is charged with the management and enforcement of leases, permits, executive orders, and other encumbrances.

The **Office of Conservation and Coastal Lands (OCCL)** is responsible for the permitting and regulating of land uses in the Conservation District. Conservation District Use Applications are processed by OCCL, although the Board of Land and Natural Resources has the final authority to modify, grant, or deny permits. OCCL is also responsible for investigating potential land use violations and permit violations.

The **State Historic Preservation Division (SHPD)** is charged with preserving and protecting historically and culturally significant properties as outlined in the National Historic Preservation Act, the Statewide Historic Preservation Plan, and Chapter 6E of the Hawai'i Revised Statutes. SHPD-managed programs include: Statewide Inventory of Historic Properties, Burial Sites Program, Certified Local Government Program, National Main Street Program, Historic Preserves Program, Information and Education Program, Interagency Archaeological Services, and maintenance of the Hawai'i and National Register of Historic Places. SHPD also reviews proposed development projects to ensure minimal effects of change on historic and cultural assets.

The **Hawai'i Island Burial Council (HBC)** falls under the jurisdiction of SHPD, and is responsible for the management of all human remains over fifty years old. Burial protection plans and burial treatment plans on Maunakea are required to be done in consultation with the HBC.

The **Division of Conservation and Resource Enforcement (DCOARE)** is responsible for enforcing all laws and rules that apply to lands that are managed by DLNR. Pursuant to Act 226 Session Laws of Hawai'i 1981, DCOARE's enforcement officers have full police powers to execute all state laws and rules within all state lands.

C. University Management Structure

The BLNR approved a Project Development Implementation Framework on February 18, 2010 that established a new management structure for the Science Reserve. The framework was based on the 2000 Mauna Kea Science Reserve Master Plan. The management structure now consists of:

- **The Office of Maunakea Management (OMKM):** The office is charged with the day-to-day management of the Maunakea Science Reserve as prescribed in the Master Plan, and reports directly to the UHH Chancellor.
- **Maunakea Management Board:** An advisory body comprised of seven members of the community who are nominated by the UH Hilo Chancellor and approved by the UH Board of Regents.
- **Kahu Kū Mauna Council:** A nine-member Native Hawaiian council appointed by the Board, and that advises the Board and Chancellor on cultural matters and issues

In addition, OMKM coordinates several advisory committees, including an Environment Committee and a Wēkiu Bug Scientific Committee.

The University's **Institute for Astronomy (IfA)** is responsible for conducting and coordinating astronomical research in the Science Reserve.

The **Maunakea Observatories Oversight Committee** is funded by the observatories, and contains representatives from each observatory as well as IfA. The funds are used to fund road maintenance, snow removal, facilities maintenance, management at the midlevel facilities, the Visitor Information Center, weather forecasting, and other common activities affecting the observatories.

The **Maunakea Observatories Support Services (MKSS)** oversees the Visitor Information Station, provides administrative support for the weather center and communication system, and operates the food and lodging at Halepōhaku. MKSS provides administrative support to OMKM for the Maunakea Ranger program.

The **Maunakea Ranger Program** was established in 2001 to provide daily oversight on University-managed lands. The rangers help educate the public about the natural and cultural resources of Maunakea, advise visitors of the hazards of high-elevation travel, safe driving information, and participate in search and rescue operations. In addition, they report potential violations of DLNR rules in the surrounding Forest Reserve and Mauna Kea Ice Age Natural Area Reserve. Other duties include conducting trail maintenance, invasive species removal, coordinating litter removal, and assisting with research on the summit. Rangers conduct daily patrols of Kūkahauʻula, and assist DLNR with monthly patrols and trash pick-up at Lake Waiʻau, and periodic patrols to the Keanakakoi adze quarry, both part of the NARS.

There are currently eight full-time and three part-time rangers.

IV. BACKGROUND: MAUNAKEA BUILT ENVIRONMENT

There are currently thirteen observatories in the Maunakea Science Reserve: nine optical/infrared observatories¹ and three radio observatories² on Kūkahauʻula, and one radio observatory³ in the lower summit region. A permit has been issued for one optical / infrared observatory⁴ for the northern plateau in the Maunakea Science Reserve.

Two these telescopes are non-operational. The Caltech Submillimeter Observatory (CSO) was no longer scientifically competitive once the Atacama Large Millimeter/Submillimeter Array came online in Chile in 2011. Caltech has filed a Notice of Intent to Decommission, and has begun pre-assessment consultation and scoping for the decommissioning of the observatory. The UHH 0.9-m telescope, Hōkū Keʻa, is also non-operational. The University has filed a Notice of Intent to Decommission this telescope. The remaining observatories remain scientifically competitive.

A. Observatories

University of Hawaiʻi 2.2-meter Telescope (UH2.2)



The University of Hawaiʻi 2.2-meter telescope (UH2.2) was built in 1968 and became operational in 1970, making it the first large telescope built on the summit of Maunakea. It is currently owned and operated by the University of Hawaiʻi.

UH2.2 is the primary telescope used by UH professors, postdocs, and graduate students. In 1991 scientists discovered the first Kuiper Belt object, and in 1992 a team discovered forty-five of the known moons of Jupiter and additional moons on the outer planets. Current science includes an integral field spectrograph devoted to the observation of supernovae.

BLNR approved CDUP HA-954, an ‘after-the-fact’ permit, for the telescope in September 1977.

¹ UHH 0.9m Telescope (Hōkū Keʻa), UH 2.2-m Telescope, NASA Infrared Telescope Facility (IRTF), Canada-France-Hawaiʻi Telescope (CFHT), United Kingdom Infrared Telescope (UKIRT), W.M. Keck Observatory (Keck I and II), Subaru Telescope, and Gemini North Telescope.

² Caltech Submillimeter Observatory (CSO), James Clerk Maxwell Telescope (JCMT), and the Submillimeter Array (SMA)

³ Very Long Baseline Array (VLBA)

⁴ Thirty Meter Telescope (TMT)

UH Hilo Hōkū Ke`a Educational Observatory

The original 0.6-meter telescope on this site was built by Air Force Cambridge Research Laboratories in 1968. Ownership was ceded to the UH Institute for Astronomy in June 1970, and transferred to the UH Hilo Department of Physics in 2003.

The original telescope was decommissioned in 2008, and a 0.9-meter telescope named Hōkū Ke`a was installed in its place. This telescope never achieved first light. A 0.7-meter replacement for Hōkū Ke`a was purchased in 2015, but before it was installed the University of Hawai`i at Hilo decided to decommission the site to comply with Governor David Ige's Ten Point plan for the Maunakea summit. UH Hilo is currently looking for a permanent site to locate the observatory.

BLNR approved CDUP HA-954, an 'after-the-fact' permit, for the telescope in September 1977. The University filed a Notice of Intent to decommission the site in February 2016.

Canada-France-Hawai`i Telescope (CFHT)



The CFHT is 3.6-meter optical telescope developed jointly by the University of Hawai`i, the Centre National de la Recherche Scientifique (France), and the National Research Council of Canada. The University of Hawai`i provides ten percent of the operating costs and one full-time staff person for CFHT as part of the telescope's tri-partite agreement.

Current science includes studies of the winds of Venus, detection of exoplanets, observations of interstellar dust, and the tracking of the interstellar asteroid 'Oumuamua.

Approximately 15% of the observing time is dedicated to the University of Hawai`i.

BLNR approved CDUP HA-527 for the telescope in 1974, and it began operations in 1979.

NASA InfraRed Telescope Facility (IRTF)



The IRTF is a 3-meter telescope that was initially built to support the Voyager missions to Jupiter, Saturn, Uranus, and Neptune. It is currently operated by the University of Hawai`i under a contract with NASA.

Current science includes research on the aurora on Saturn, observations of ozone on Mars, spectral monitoring, and observations of the moons of the outer solar system planets. The facility continues to provide support for NASA missions.

Approximately 15% of the observing time is dedicated to the University of Hawai`i.

BLNR approved CDUP HA-653 for the facility in 1975. It became operational in 1979.

United Kingdom Infrared Telescope (UKIRT)



BLNR approved CDUP HA-653 for the facility in 1975. It became operational in 1979. The University has discussed decommissioning UKIRT in accordance with Governor Ige's Ten Point Plan for Maunakea.

The 3.8-meter UKIRT is the second largest dedicated infrared telescope in the world. UKIRT was originally owned by the United Kingdom. Ownership was transferred to the University of Hawai'i in 2014. It was then funded by NASA until June 2017, and operated under a cooperation

agreement among Lockheed Martin Advanced Technology Center, the University of Arizona, and the University of Hawai'i. In June 2017 the UH Institute for Astronomy took over the operation of UKIRT.

The majority of UKIRT's current science is dedicated to the Infrared Deep Sky Survey, though it has also been used to study orbital debris and for research by planetary scientists at the University of Hawai'i.

The actual viewing time by the University of Hawai'i on UKIRT fluctuates between 15% and 50%, depending on funding and its partnership agreements.



Very Long Baseline Array (VLBA)

The Mauna Kea Very Long Baseline Array (VLBA) is one unit in an integrated system of ten identical radio telescopes stretching from the U.S. Virgin Islands to Hawai'i, which are operated remotely from Socorro, New Mexico. Each VLBA station consists of a 25m antenna and an adjacent control building. The ten stations work together as one single instrument. It is in the lower summit region at approximately 3700 meters elevation.

The VLBA has been operated by the Long Baseline Observatory (LBO) since October 2016, when it separated from the National Radio Astronomy Observatory. The LBO is a facility of the National Science

Foundation operated under a cooperative agreement by Associated Universities, Inc.

Current science includes a long-term project to map the complete 3D structure of the Milky Way; coordinated effort with NASA Fermi Gamma-ray Space Telescope to observe gamma-ray sources; long-term study of active galactic nuclei; tracking near-earth asteroids; and monitoring movements of the earth's crust by tracking the distance between the telescopes. Such measurements are an integral part of the earth-based control segment in the development and maintenance of the U.S. government's Global Positioning System (GPS).

BLNR approved the CDUP HA-2174 for the facility in 1989. The facility has been operational since 1992.

Caltech Submillimeter Observatory (CSO)



CSO is a 10.4 meter-diameter telescope located alongside the James Clark Maxwell telescope which is owned by the California Institute of Technology.

BLNR approved CDUP HA-1492 in December 1982. The facility was operational from 1986 through September 2015, with 15% of the viewing time dedicated to UH.

Caltech filed a Notice of Intent to Decommission with OCCL in February 2016. The public scoping period on the draft Environmental Assessment was completed on January 15, 2018.

James Clark Maxwell Telescope (JCMT)



The 15-meter JCMT is the largest submillimeter telescope in the world, and contains the second largest mirror on Maunakea

JCMT was originally funded by a partnership between the United Kingdom and Canada, and the Netherlands, and operated by the Joint Astronomy Centre. In March 2015 the operation of the JCMT was taken over by the East Asian Observatory.

Current science includes the study of the solar system, interstellar and circumstellar dust and gas. JCMT is also part of the Event Horizon Telescope, an array of global telescopes that coordinate observations and research on the Milky Way's supermassive black

hole Sagittarius A.

Between 12.5% and 15% of the observing time is dedicated to the University of Hawai'i.

BLNR approved CDUP HA-1515 for the telescope in 1983, and it began operations in 1987.

Submillimeter Array (SMA)



SMA consists of eight 6-meter radio telescopes that operate as one unit. The telescopes can be arranged in varying configurations using 24 concrete pads. SMA is located at the base of Pu'u Poli'ahu in an area informally known as "Submillimeter Valley."

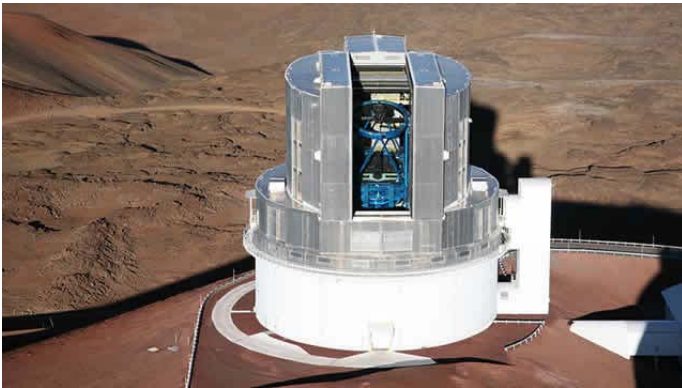
Current science includes the study of newly-formed planetary systems, asteroids, comets, both dying and new-born stars, and red-shifted radiation from the oldest objects in the universe.

The SMA is jointly operated by the Smithsonian Astrophysical Observatory and the Academia Sinica Institute of Astronomy and Astrophysics (Taiwan).

Between 12.5% and 15% of the observing time is dedicated to the University of Hawai'i.

BLNR approved CDUP HA-2728 for the array in 1994. The system became fully operational in 2003.

Subaru Telescope



Subaru Telescope is an 8.2-meter optical-infrared telescope operated by the National Astronomical Observatory of Japan (NAOJ), National Institutes of Natural Sciences.

Current science includes the recent identification of 11 dwarf galaxies and two star-containing halos, tracking the source of gravitational waves, and mapping the hydrogen gas in the early universe.

Fifty-two nights per year, approximately 15% of the observing time, are dedicated to the University of

Hawai'i.

The BLNR approved CDUP HA-3462 for Subaru in 1992. It achieved first light in 1999.

W. M. Keck Observatory (Keck I and Keck II)



The twin Keck Observatory telescopes primary mirrors are 10-meters, each composed of 36 hexagonal segments that work in concert as a single piece of reflective glass.

The W. M. Keck Foundation funded both the original Keck I telescope and Keck II. Today Keck Observatory is a 501(c)3 governed by the California Association for Research in Astronomy (CARA), whose Board of Directors includes representatives from the California Institute of Technology and the University of California, with liaisons from NASA and the Keck Foundation.

Keck currently produces over 150 papers per telescope per year, making it the most productive of any of the world's ground-based observatories. Current science includes the discovery of dozens of exoplanets, new studies on the rings and atmosphere of Uranus, high-resolution imaging of comets, and the study of protoplanetary accretion disks around fifteen young stars.

Approximately 10% of the observing time on Keck I and 15% on Keck II is dedicated to the University of Hawai'i.

BLNR approved CDUP HA-1646 for Keck I in 1984, and it saw first light in 1990. BLNR approved CDUP HA-2509 for Keck II in 1992, and it saw first light in 1993.

Gemini North Observatory



The Gemini Observatory consists of paired 8.1 meter optical/infrared telescopes, one in Chile and one in Hawai'i. It replaced the NASA-Lowell Observatory 24" telescope.

Gemini is operated by a partnership between the National Optical Astronomy Observatory (USA), National Research Council Canada, Comisión Nacional de Investigación Científica y Tecnológica de Chile, Institute for Astronomy University of Hawaii, Instituto de Astrofísica La Plata (Argentina), and the Laboratório Nacional de Astrofísica (Brazil).

The pairing of the telescope allows near complete coverage of both the northern and southern skies. Current research includes the imaging and analysis of exoplanets, star formation and evolution, quasars, and the large-scale structure of the universe.

Approximately 10% of the observing time is dedicated to the University of Hawai'i.

The BLNR approved CDUP HA-2691 for Gemini in 1994. The telescope saw first light in 2000.

Thirty Meter Telescope (TMT)



The core of the project is a 30-meter in diameter aperture telescope composed of 492 individual mirror segments, secondary and tertiary mirrors directing the gathered light, and a network of interchangeable sensors and instruments that will collect and process the light. TMT will be located on the north plateau, approximately ½ mile from the Kūkahau'ula Summit, at an approximate elevation between 4008 meters and 4015 meters.

The telescope will be operated by TMT International Observatory, LLC, an international partnership between the California Institute of Technology, the University of

California, the National Institutes of Natural Sciences of Japan, the National Astronomical Observatories of the Chinese Academy of Sciences, the Department of Science and Technology of India, and the National Research Council (Canada).

Approximately 7.5% of the observing time will be dedicated to the University of Hawai'i.

The BLNR approved CDUP HA-3568 for TMT in a Decision and Order in October 2017. Should TIO secure all the necessary authorizations, it is estimated that construction will take seven years.

Five appeals of the Decision were filed in the State Supreme Court. DLNR filed the Record on the Appeal with the Court on December 5, 2017. Appellate briefs are due on the appeal February 15th, 2018. Answering briefs, and then reply briefs, will be due after this. The Court will schedule oral arguments once all briefs have been filed.

Oral arguments before the Court have not been scheduled yet.

OCCL notes that the 2000 Master Plan foresaw the construction of the Keck Outrigger Project on Maunakea. This project did not proceed. The Comprehensive Management Plan and its associated Decommissioning Plan foresaw the replacement of the UH 2.2-meter observatory with Pan-STARRS. This project did not proceed either, although a reduced version of Pan-STARRS was built on Haleakala.

B. Midlevel Facilities at Halepōhaku (Onizuka Center for International Astronomy)

The 19.3 acre Halepōhaku parcel (TMK (3) 4-4-015:012) is situated at an elevation of about 9,200 feet on the south slope of Maunakea. The parcel is leased to the University of Hawai'i through 2041 by the State Board of Land and Natural Resources (BLNR) under General Lease No. S-5529, which describes the character of use as "premises leased to be used solely for permanent mid-level facilities, a construction camp, an information station as well as existing facilities purposes."

The first cabins were built at Halepōhaku by the Civilian Conservation Corps in the 1930s to provide shelter for hunters and hikers. Wooden dormitories were built in 1967, and were used to supply support facilities and housing for construction workers, University of Hawai'i telescope observers, and support staff throughout the 1970s.

In 1976 the Board approved [CDUP HA-781](#) for the construction of a 2600-square foot dormitory to house construction workers working on the United Kingdom Infrared Telescope (UKIRT).

In 1977 the Board approved [CDUP HA-895](#) to demolish and replace two of the existing buildings with a fourteen-bed and an eight-bed dormitory, and to retrofit two existing mess halls.

In 1982 the Board approved [CDUP HA-1430](#) for the construction of a 12,913-square foot support services and common area building, three dormitories totaling 13,938-square feet with a 59-bed capacity, a 2500-square foot maintenance building, an 800-square foot generator building, and an 1181-square foot Visitor Information Station (VIS).

In 1986 the Board approved [CDUP HA-1819](#) for the subdivision of the Halepōhaku parcel, the establishment of a construction camp site with four cabins and a parking area, and the designation of a one-acre staging area south of the camp site.

In December 2017 OCCL accepted for processing Conservation District Use Application (CDUA) [HA-3812](#) for parking and infrastructure improvements at the VIS. The application is currently out for public and agency comment. OCCL anticipates presenting the application to the Board for consideration in the second quarter of 2018.

The lower portion of Halepōhaku contains two unimproved gravel parking areas, one of which is used for overflow parking for the VIS and the other as a staging area for construction activities. The overflow parking is often used by commercial tour groups if the paved parking area adjacent to the VIS is full.

The section of the Maunakea Access Road above Halepōhaku is also under University management. In 1974 the Board approved CDUP HA-537 for the construction of a 4.6 mile one-lane road between Halepōhaku and the summit, and the filling and grading of an additional 1.9 miles of existing roadway. Fill material came from a seven-acre quarry near Pōhakuloa on the site of the 1843 lava flow.

V. MANAGEMENT OF THE MAUNAKEA SCIENCE RESERVE

A. Comprehensive Management Plan

The Board of Land and Natural Resources approved a Comprehensive Management Plan for Maunakea on April 9, 2009. The CMP included management actions of previous management documents, including the 1995 Management Plan for UH Management Areas and the 2000 Mauna Kea Master Plan.

A Comprehensive Management Plan (CMP) differs from the standard Management Plan referred to in Hawai'i Administrative Rules (HAR) §13-5 Exhibit 3, MANAGEMENT PLAN REQUIREMENTS. The Conservation District rules requires management plans discussed in Exhibit 3 which are intended for projects with a specific, limited use (e.g. astronomy projects, forestry, or aquaculture). A CMP, by contrast, is needed for larger parcels with multiple significant land uses. The CMP provides a framework and management guidelines ranging from cultural and natural resource preservation, to managing the built environment, construction activities, and access to outreach and education.

The Maunakea CMP contained 103 management actions and associated reporting requirements that would govern the future of Maunakea. A condition of BLNR approval was that the University develop a *Project Development and Management Framework* and four resource sub-plans *Natural Resources Management Plan*; *Cultural Resource Management Plan*; *Public Access Plan*; and *Decommissioning Plan*. The Resource subplans were approved by BLNR on March 25, 2010.

The University of Hawaii Board of Regents (BOR) is the entity ultimately responsible for the implementation of the Management Plan.

The Office of Maunakea Management submits annual reports to the BLNR discussing status of the implementation of each management section. The 2017 Annual Report is attached to this report as **Exhibit 3**.

OCCL has invited a representative from OMKM to give a presentation to the Board following this report.

In reviewing the plans OCCL finds that OMKM has had successes with its natural and cultural resources management programs and its ranger program. Challenges remain, including managing both permitted and unpermitted commercial tours, and managing public access in the absence of administrative rules.

B. Subplan: Natural Resource Management

Studies of the arthropods on the summit have been on-going since 2002. Studies including surveys provide baseline data for monitoring the status of resources and for habitat restoration for the wēkiu bug, a species of endemic arthropod found only on the summit region of Maunakea. In addition to establishing baseline information on arthropods, including the wēkiu bug, botanical resources, and geological conditions, a new multi-year study was recently started on the of survey sea bird, forest bird, and bat populations.

Preventing invasive species from becoming established on the summit is an on-going concern, with particular focus on controlling fireweed (*Senecio madagascarensis*) and on limiting the spread of two invasive ant species, *Cardiocondyla kagutschi* and *Ochetellus glaber*. Monthly surveys for invasive species have been conducted since 2007 and the interior of buildings including those on the summit and Halepōhaku since 2013. OMKM is currently studying the efficacy of current invasive species control measures the results of which may be used towards determining the feasibility of establishing a vehicle washing facility.

On October 24, 2008, the Board gave the Chair authority to negotiate and sign a cooperative agreement with the University of Hawai'i at Hilo's Office of Maunakea Management for cooperative management of the Mauna Kea Ice Age Natural Area Reserve. This would formalize an existing relationship between DOFAW and

OMKM, and provide for continued coordinated resource monitoring and management on the summit such as photo documentation of the Lake Waiau water level, trash pick-up and monitoring of activity in the NAR.

A cooperative agreement was signed by the president of the University in 2011; however, it was not forwarded to DLNR for signature as the contested case regarding the Thirty Meter Telescope was still active. Should DLNR and the University decide to move forward with the agreement it would need to be updated, as the signatories for both entities has changed since 2011.

Collaborative efforts between DOFAW/NAR/DOCARE and OMKM on resource protection including ranger assistance, invasive species control, research and monitoring of resources, and DLNR rules violations such as unpermitted commercial tours and harmful and destructive activities on natural resources.

C. Subplan: Cultural Resources Management

Historic properties, primarily archaeological sites in both the Science Reserve and the NAR, have been inventoried. A five-year monitoring program was developed and approved by SHPD in 2014. Pursuant to this, OMKM has assessed all the historic properties in its management areas. Sites located in the Astronomy Precinct and those close to human activity, including roads, are assessed every year. More remote sites are assessed on a three and five-year rotating basis.

The treatment of burials is described in a Burial Treatment Plan that was also approved by SHPD in 2014.

Kahu Kū Mauna is tasked with developing policies related to cultural activities, including the construction of new cultural features and the handling of offerings. They are currently consulting with cultural practitioners on potential policies that can be presented to the Maunakea Management Board for consideration.

D. Subplan: Public Access

The Public Access Plan for Maunakea identifies a number of principals and policies related to public access. The purpose of the plan was to provide guidance to UH in addressing public access and activities within the UH management areas in full cooperation with DLNR's authority over public access. public and commercial access.

There has been a significant increase in visitors to the summit in recent years, due in large part to improvements to the Saddle Road and the lifting of the prohibition by rental car agencies from driving on this road. The number of vehicles and visiting parties has increased both within the Science Reserve and in the Forest Reserve, particularly for sunset viewing. Some of the issues associated with this include an increase in light pollution during star-gazing events, an increase in off-road parking, the inadvertent introduction of potentially invasive species, and an increase in high-risk behavior such as filming stunts for social media videos.

MKSS has addressed off-road parking in the Forest Reserve by installing guard rails along the Access Road near Halepōhaku in March 2017. OMKM has submitted an application addressing traffic, pedestrian safety and parking improvements at the Visitors Information Center. OCCL is currently processing this application, and anticipates presenting it to the Board for consideration in the second quarter of 2018.

1. Commercial Tours

In 2000 BLNR transferred the authority to administer commercial tours to the University. Following an approval by DLNR's Attorney General, the University accepted the responsibility in 2005. The University currently allows a maximum of eight commercial tour permits, one less than the number permitted by BLNR. Each commercial tour operator is charged a fee of \$6.00/tour passenger which is submitted to the Office of Maunakea Management on a monthly basis. All fees are deposited into the Mauna Kea lands management

special fund and are used to cover expenses related to the management of the UH's managed lands include the ranger program, road maintenance, and expenses related to commercial tour activities on Maunakea. Twenty percent of the fees are included in UH's payment to the Office of Hawaiian Affairs.

There has been an increase in unauthorized commercial tours to the summit; these are the subject of an active investigation by DOFAW and DOCARE.

OMKM is planning to initiate a study of the carrying capacity of commercial tours to the summit.

2.. Enforcement Issues

Land uses on Maunakea are currently regulated pursuant to Hawai'i Administrative Rules (HAR) Chapter 13-5 governing the Conservation District. OCCL notes that these rules cover land uses, but do not address activities.

The Public Access Plan lays out principles and policies, but does not provide OMKM with any enforcement capabilities. DLNR's Division of Conservation and Resource Enforcement is tasked with providing enforcement in the Conservation District, while OCCL is tasked with regulating and potential land use and permit violations.

However, the increased commercial and public pressure on the mountain has led to an increase in enforcement needs. The OMKM rangers are active in reporting observed violations of conservation district rules to DLNR. However, OCCL feels that there is a need for improvement in this area, either through clear administrative rules that allow for enforcement by the University or a more formal arrangement between DLNR and the University.

E. Subplan: Decommissioning

The Maunakea Decommissioning Plan, a subplan of the Maunakea Comprehensive Management Plan, describes the process for decommissioning observatories on Maunakea. The plan defines decommissioning as a process that results in the partial or total removal of all structures associated with an observatory facility and the restoration of the site.

Provisions for financial planning for decommissioning are included to ensure that adequate funds are available to pay for the costs of deconstruction and site restoration at the end of the life of the observatory.

The Decommissioning Plan describes two options for removing the infrastructure:

- Complete infrastructure removal. This involves the removal of the entire facility, including underground utilities, pilings, and foundation to the extent practicable under normal engineering deconstruction practices;
- Infrastructure capping. Capping involves removal of above ground facilities with or without utilities and leaves all part of the underground portion of the facility in place.

The Plan describes three levels to which a site may be restored:

- Minimal restoration, meaning removing all man-made structures and grading the site;
- Moderate restoration, meaning removing all man-made structures, grading the site, and enhancing any native species habitat;
- Full restoration, meaning returning the site to its original topography and restoring any native-species habitat.

The decommissioning of an astronomy facility in the Science Reserve is a multi-step process involving

- Submitting a Notice of Intent.
- Completing an environmental due diligence review,
- Approval of the facility decommissioning plan by the University Board of Regents. Submitting a Conservation District Use Application which covers site deconstruction, observatory removal, and site restoration, and if necessary a remedial action plan;
- Securing a Conservation District Use Permit (CDUP) from the Department of Land and Natural Resources.

Governor David Ige, in his May 26, 2015 10-point action plan for the stewardship of Maunakea, called for the University of Hawai'i to *decommission—beginning this year—as many telescopes as possible with at least 25 percent of all telescopes gone by the time the Thirty Meter Telescope (TMT) is ready for operation.*

In addition, the Decision and Order for the Thirty Meter Telescope contains two conditions relating to decommissioning: 10) *The University will decommission three telescopes permanently, as soon as reasonably possible, and no new observatories will be constructed on those sites. This commitment will be legally binding on the University and shall be included in any lease renewal or extension proposed by the University for Mauna Kea;* and 11) *Notwithstanding any lease renewal or extension, consistent with the Decommissioning Plan, at least two additional facilities will be permanently decommissioned by December 31, 2033, including the Very Long Baseline Array antenna and at least one additional observatory.*

The California Institute of Technology submitted a Notice of Intent to Decommission the CSO to OMKM on November 18, 2015. The Institute has begun pre-assessment consultation and scoping for the environmental assessment. The scoping process will help determine how much of the infrastructure will be removed and the preferred level of site restoration.

The University of Hawai'i at Hilo submitted a Notice of Intent to Decommission Hōkū Ke'a to OMKM on September 16, 2015. The environmental review began in late 2017 with the public scoping process.

The University of Hawai'i has identified UKIRT as the potential third observatory to be decommissioned by the time TMT is operational. OCCL notes that, unless UKIRT voluntarily ceases operation before that time, this will be the first case of mandatory / involuntary decommissioning of a functioning astronomy facility on Maunakea.

Exhibit 4, Report on long-term development of observatory sites on the summit of Mauna Kea, contains a summary that the Director of the Institute for Astronomy prepared for the State legislature on the history of observatory development, decommissioning, and long-range plans for astronomy on Maunakea.

F. Comprehensive Management Plan Update

The University began the process of updating the CMP in 2014. OMKM is currently preparing a report on the status of the cultural and natural resources on Maunakea. Once this is completed it will be submitted to stakeholders and agencies for review. This report along with the feedback will form the basis for drafting proposed revisions to the CMP.

This process will help determine which of the resource subplans, including the public access plan, need to be updated.

The final plan will be presented to both the University Board of Regents and the BLNR for approval.

VI. OFFICE OF MAUNAKEA MANAGEMENT'S PROPOSED ADMINISTRATIVE RULES

With Act 132 of the Session Laws of Hawai'i, 2009, the State legislature authorizes the UH to adopt administrative rules to regulate public and commercial activities on University-managed lands. The stated purpose of the rules will be *to provide for the proper use, management, and protection of cultural, natural, and scientific resources of the UH management areas; to promote public safety and welfare by regulating public and commercial activity within the UH management area, and to ensure safe and appropriate access to the UH management areas for the public.*

The need for administrative rules for Maunakea has been recognized in the Comprehensive Management Plan, in Governor David Ige's 10-point action plan for the stewardship of Maunakea, and by the State Office of the Auditor.

Currently only Conservation District rules are in effect on the University-managed areas on the summit. While these regulate land uses, they don't address land use activities.

The CMP also notes that the lack of administrative control limits the University's ability to enforce rules and regulations within the University-managed areas. As such, the University is limited in its ability to manage public and commercial access and activities in its management areas.

The University has prepared a draft of proposed rules, incorporating public input and consultation with the Office of Hawaiian Affairs and DLNR. Kahu Kū Mauna and the Maunakea Management Board reviewed the draft rules, with the Maunakea Management Board approving the draft and recommending that the process move forward. The draft contains provisions for the preservation of natural and cultural resources, the management of public and commercial access and activities, measures for preventing the introduction of invasive species; addressing health and safety, and the administration and enforcement the rules.

The Board of Regents is required to approve the draft rules prior to forwarding them to the Governor's office. With the authorization from the office of the Governor the proposed rules will go out for formal public hearings.

The University estimates that the process can be completed and that new rules can be in place within 18 months.

VII. LAND AUTHORIZATIONS ON MAUNAKEA

A. General Leases

The Maunakea Science Reserve encompasses 11,288 acres of State land leased to the University of Hawai'i under General Lease S-4191. The lease commenced on January 1, 1968, and is set to expire on December 31, 2033.

The character of use for GL S-4191 reads: *For a scientific complex and as a scientific reserve being more specifically a buffer zone to prevent the intrusion of activities inimical to said scientific complex. Activities inimical to said scientific complex shall include light and dust interference to observatory operation and certain types of electric or electronic installation on the demised lands, but shall not necessarily be limited to the foregoing.*

The Halepōhaku parcel encompasses 19.261 acres of State land leased to the University under General Lease S-5529. The lease commenced on February 28, 1986, and is set to expire on February 28, 2041.

The character of use for GL S-5529 reads: *The lessee shall use or allow the premises leased to be used solely for permanent mid-level facilities, a construction camp, an information station as well as existing facilities purposes.*

Grant of Easement No. S-4697 covering the Maunakea Access Road was issued to the University as of September 8, 1981. The easement is coterminous with GL No. S-4191, ending on December 31, 2033.

B. EIS for New Land Authorizations

In 2013 the University sought the mutual cancellation of General Lease Nos. S-4191 and S-5529, and the issuance of a new 65-year direct lease. They also requested that the amendment of Grant of Easement No. S-4697 covering the Maunakea Observatory Access Road to be coterminous with the new general leases. The Board deferred action on the request until after an Environmental Impact Statement (EIS) was prepared for the proposed action.

The University is currently preparing an EIS preparation notice for new land authorization on Maunakea. UH anticipates publishing the notice in the Department of Health's *Environmental Notice* in the first quarter of 2018. The University will then compile public comments and prepare a draft EIS for review.

The Department anticipates that the University will be requesting a new land authorization. Other anticipated proposed terms will be that no telescope development will take place on a new site except for the TMT project, that named decommissioned sites will not be redeveloped, and that existing observatories will not expand beyond their existing sublease footprint.

The EIS will be exploring three alternatives: 1) new land authorization for the current areas under UH management, 2) let the leases and easement expire at the end of 2033 and the lands revert back to DLNR, or 3) issue a new land authorization for a reduced area including the astronomy precinct access road and Halepōhaku, effectively withdrawing 10,000 acres from the science reserve and returning them to DLNR management.

OCCL notes that the withdrawal of lands from the science reserve will present DLNR with several management challenges. Currently OMKM takes the lead regarding, among other issues, visitor safety; archaeological monitoring (at the approximate cost of \$60,000-\$65,000/annum, wēkiu bug monitoring, invasive species monitoring; resource research and management program development; photo documentation of the water level of Lake Waiau and trash clean-up; periodic monitoring of the adze quarry.

The withdrawal would necessitate that DLNR and the University formalize many of their working relationships with the development of collaborative management agreements and joint enforcement agreements. We would also note that the proposed Administrative Rules are for University-managed lands, and would not address DLNR managed lands on the summit.

OCCL notes that it is currently unclear whether the Maunakea Comprehensive Management Plan would continue to be in effect for and lands that are withdrawn from the Science Reserve.

C. Subleases

The University currently has subleases with seven organizations for the purposes of operating astronomical observatories. Institutions were to build and operate observatories at their own cost and risk, in exchange for providing UH with time on the telescopes. Each sublessee pays the University a nominal fee of \$1.00 per annum in addition to giving the University a percentage of observing time on their respective telescope. UH used its dedicated time on the telescopes to build its astronomy program.

The subleases are:

- 1974: National Aeronautics and Space Administration, 70,650 square feet (NASA IRTF)
- 1975: Canada-France-Hawai'i Telescope Corporation, 2 acres (Canada-France-Hawai'i Telescope)
- 1983: California Institute of Technology, 0.75 acres (Caltech Submillimeter Observatory)
- 1985: California Institute of Technology, 2 acres (Keck I and Keck II)
- 1997: National Astronomy Observatory of Japan, 5.4 acres (Subaru)
- 1997: Smithsonian Institution, 3 acres (Smithsonian Submillimeter Array)
- 1997: Associated Universities Inc., 87,500 square feet (Very Long Baseline Array)
- 1997: National Science Foundation, 2 acres (Gemini North)

All subleases are co-terminus with the University's General Lease.

In June 2014, the Board consented to a sublease between the University and TMT International Observatory. The consent is currently being challenged in the courts (ref. CAAP-17-0000059 Flores vs BLNR et al filed February 3, 2017). All briefs have been filed in the case. The Supreme Court has not yet scheduled oral arguments.

UH has notified the observatories that they will be paying rent under any new subleases.

VIII. THIRTY METER TELESCOPE (TMT) SPECIAL CONDITIONS

The operating agreements for telescopes prior to TMT focused on providing observing time for UH scientists, with the goal of developing the astronomy program in the UH system. TMT presents a new paradigm, wherein observatories pay sublease rent and a public benefits package. It is anticipated that this will be the model for the renegotiation of the subleases for other facilities on the mountain.

The Board's Decision and Order for TMT contained special conditions that need to be implemented by the University of Hawai'i at Hilo (UHH), Office of Maunakea Management (OMKM) and TMT International Observatory LLC (TIO), as applicable, as part of the permit. The full set of special conditions is copied below. OCCL notes that the permit is still under litigation, and that many of the conditions would only apply if all authorizations are approved and the telescope begins construction. As such, our discussion on the status of the conditions will be limited to those that are currently active:

1. Ensuring that employees attend mandatory cultural and natural resources training with a minimum of one days' training;

A draft orientation plan has been developed. OMKM is currently working with the 'Imiloa Astronomy Center on specific content.

2. Working with the 'Imiloa Astronomy Center, OMKM, and Kahu Kū Mauna to develop informational exhibits for visitors regarding the natural, cultural and archaeological resources of Mauna Kea that could be used at the Mauna Kea VIS, 'Imiloa, TMT facilities, and other appropriate locations;

OMKM has initiated planning meetings to develop the exhibits.

3. Funding the re-naturalization of the closed access road on Pu'u Poli'ahu, partial re-naturalization of the batch plant staging area after construction has been completed, and camouflaging of the utility pull boxes in certain locations to reduce the visual impact from the summit area;

The University received Site Plan Approval HA-10-04 to demolish the road and restore the natural grade.

4. Implementing an invasive species control program;

The invasive species control program is guided by an invasive species management plan that was approved by the Maunakea Management Board. It is a component of the Comprehensive Management Plan and is actively implemented.

5. Working with OMKM to develop and implement a wēkiu bug habitat restoration study;

A study of the first component of a wēkiu bug habitat restoration program is nearing completion; this will form the basis for habitat restoration plans.

6. Implementing the "Zero Waste Management" policy;

The TMT design includes a zero waste' management system.

7. Filling employment opportunities locally to the greatest extent possible;

TMT is committed to this condition when it begins operation.

8. Mandating that employees traveling beyond Hale Pōhaku take part in a ridesharing program using project vehicles;

TMT is committed to this condition when it begins operation.

9. Using energy savings devices such as solar hot water systems, photovoltaic power systems, energy efficient light fixtures, and Energy Star rated appliances;

The TMT project includes energy savings devices and systems.

10. The University will decommission three telescopes permanently, as soon as reasonably possible, and no new observatories will be constructed on those sites. This commitment will be legally binding on the University and shall be included in any lease renewal or extension proposed by the University for Mauna Kea;

Two telescopes have issued notices of intent to decommission and have begun the decommissioning planning process.

11. Notwithstanding any lease renewal or extension, consistent with the Decommissioning Plan, at least two additional facilities will be permanently decommissioned by December 31, 2033, including the Very Long Baseline Array antenna and at least one additional observatory.

The University will execute this condition prior to the end of 2033 in accordance with conditions set in the sublease agreements.

12. Providing \$1 million annually, adjusted for inflation, for "Community Benefits Package" which will commence with construction and continue through the term of the sublease. The package will be administered via The Hawai'i Island New Knowledge (THINK) Fund Board of Advisors. In addition to the types of programs described in the "Community Benefits Package" in the Findings of Fact, at least \$5,000 annually of the \$1 million shall support a program or programs to assist at risk youth, specifically focusing on the children of incarcerated parents;

*TIO has been contributing \$1 million to the fund each year since 2014. The next payment in mid-February will bring the total to \$4 million. TIO is currently looking into potential recipient agencies for the \$5000 earmarked for at-risk youth. A summary of Thirty Meter Telescope's THINK Fund & Workforce Pipeline Program is attached as **Exhibit 6**.*

13. The Board of advisors shall ensure that a reasonable amount of funding is directed at programs for the most vulnerable and underserved members of Hawai'i Island communities so that they can participate in our technological future;

TIO's funding of the THINK Fund includes funding for STEM related programs for Hawai'i Island public schools and after school programs, charter schools, and scholarships.

14. The funding shall be distributed with reasonable promptness and not be used to build a permanent endowment;

TIO and the Hawai'i Community Foundation have made arrangements to discontinue the endowment it set up and will begin spending the funds.

15. Partnering with other institutions to implement a Workforce Pipeline Program, headed by at least one full-time position through the Community Outreach office, to prepare local residents for jobs in science, engineering, and technical fields;

TMT is the major funder of the Akamai program, a workforce pipeline program for students who either live on-island and attend a Hawai'i Island college or university, or is an island resident who is attending a school outside Hawai'i. The program is expanding this year and will have ten additional interns funded by TIO.

16. UHH will ensure that the survey of the power line corridor easement complies with DLNR standards and is in accordance with the conditions contained in the grant of easement (including the Mauna Kea Ice Age Natural Area Reserve) that was approved by the BLNR in August 1985. The University will provide copies of the survey to DOFAW;

The survey has been completed and provided to DOFAW.

17. OMKM will consult with the U.S. Fish and Wildlife Service and experts who are advising OMKM, including representatives from the DLNR regarding surveys of the wēkiu bug and invertebrates along the utility corridor, including Pu‘u Hau Kea and the pu‘u west of the Parking Area 1;
The utility corridor work will not occur for approximately 5 years after on-site work begins. OMKM has brought this survey up for discussion at past wēkiu bug workgroup meetings, but formal consultation will occur after work has begun as there is ample time to conduct the survey and implement any mitigation or other associated action.
18. The construction contractor will be required to minimize the visual changes to land within the utility line right-of-way during utility upgrades. Any disturbance outside of the easement area of the construction corridor will be restored to the extent possible;
19. UH Hilo will present a plan for handling recreational parking during construction to the OCCL for review and approval, at least one month prior to beginning construction;
20. Following construction, TMT shall keep their area clean and free of trash or unattended tools and equipment, unless authorized in writing by OMKM and OCCL;
21. The Archaeological Monitoring Plan will be submitted to the State Historic Preservation Division for review and approval prior to the onset of construction;
The Archaeological Monitoring Plan was submitted and approved in 2014.
22. Sublease rent will be deposited into the Mauna Kea Lands Management Special Fund, and only used for management of Mauna Kea and related purposes as provided by law;
This is a requirement of Act 132, SLH 2009
23. UH Hilo/OMKM will notify OCCL of the date of the twice-annual inspections of the project site and allow Department staff to attend if available;
24. UH Hilo/OMKM will provide OCCL and BLNR a copy of TIO's annual report to OMKM, as required by Section 5.3 of the TMT Management Plan;
25. UH Hilo will allow BLNR to name a DLNR representative to participate in the CMP five-year management review process;
OMKM has requested that the BLNR name a representative at this meeting, if possible.
26. When provided or required, potable water supply and sanitation facilities shall have the approval of the Department of Health and the county Board of Water Supply;
27. UH Hilo understands and agrees that this permit does not convey any vested rights or exclusive privilege;
28. In issuing this permit, the Department and Board have relied on the information and data that UH Hilo has provided in connection with this permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;
29. Where any interference, nuisance, or harm may be caused, or hazard established by the use, UH Hilo shall be required to take the measures to minimize or eliminate the interference, nuisance, harm, or hazard;
30. Should historic remains such as artifacts, burials or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact the State Historic Preservation Division (692-8015), which will assess the significance of the find and recommend an appropriate

mitigation measure, if necessary; the Applicant will also notify the Office of Hawaiian Affairs at the same time;

31. During construction, appropriate mitigation measures shall be implemented to minimize impacts to off-site roadways, utilities, and public facilities;
32. No construction work shall be initiated until the Applicant demonstrates compliance with all preconstruction conditions and mitigation measures specifically required in this decision. Once this condition has been satisfied, the Department will issue notice to proceed with construction;
33. TIO shall set aside funds annually in a sufficient amount to allow for site observatory and access way site restoration;

The estimated cost of decommissioning the observatory and restoring the site is \$11.7 million (2013 dollars). TIO has developed an Initial Decommissioning Funding Plan (April 2014) which includes a Financial Assurance Statement of Intent.

34. Daytime activities at TMT will be minimized on up to four days per year, as identified by Kahu Kū Mauna;
35. UHH shall consult with the Kahu Kū Mauna Council and cultural practitioners to the extent feasible to plan for, and establish, an appropriate area on Mauna Kea, within the MKSR, to be used by native Hawaiians for religious and cultural purposes; provided that this condition shall not affect the timing of TMT construction or operation;

Kahu Kū Mauna will consult with native Hawaiians for feedback regarding the set aside of an area for use by native Hawaiian for religious and cultural purposes.

36. UHH shall allow reasonable access to the area established under Condition 35 for the exercise of any native Hawaiian traditional and customary practices to the extent feasible, reasonable, and safe. The allocation of this area shall be in addition to all other cultural and access rights of native Hawaiians to other areas of Mauna Kea as provided by law or by other conditions set forth herein;

Native Hawaiians, including cultural practitioners, have year-round access to University-managed lands, except when hazardous and unsafe conditions require the closing of the access road. While access does not require any permitting or registration, land use policies are still being developed.

37. In order to enhance the Hawaiian cultural presence on Mauna Kea, UHH shall include products and handicrafts with a native Hawaiian cultural theme among those sold at the Mauna Kea VIS, and explore whether an expanded area for specifically native Hawaiian crafts can be accommodated at or near the VIS;

UHH has begun discussions on how to provide culturally-themed products and handicrafts for sale at the Visitors' Center.

38. UHH shall implement a cooperative internship and mentorship program between personnel working at the astronomy facilities on Mauna Kea and Hawaiian communities;

The Canada France Hawaii Telescope, UH Institute for Astronomy (IfA) and the Hawai'i Department of Education entered into an agreement to provide opportunities for Hawai'i high school students. Students work with mentors, predominantly graduate students with IfA, in developing research proposals. The students with winning proposals are given time on one of the Maunakea telescopes to conduct their research. All students who participate in the program are also given the opportunity to visit Mauanakea and the telescopes. To date, high schools participating in this program are Waiakea, Honoka'a, and Kealakehe (Hawai'i); Kapolei, Nanakuli, Kalani, and Waipahu (O'ahu); Moloka'i High; and King Kekaulike (Maui). The program continues to expand annually.

39. UHH and TIO shall develop a plan to implement and extend early entry programs for at-risk children of Hawaiian ancestry and other at-risk youth in the community of UH Hilo. The early entry program shall provide educational opportunities in STEM-related and other curriculum such as the following:
- (a) Astronomy, math, science, engineering, environmental science and technical support careers at astronomy facilities;
 - (b) Hawaiian language and culture;
 - (c) Navigation;
 - (d) Geology;
 - (e) Biology and agriculture;
 - (f) Law Enforcement/criminal justice;
 - (g) New disciplines of learning dependent on career fields needed; and
 - (h) On-the-job training as necessary.

UHH/TIO shall report to BLNR on the progress of this condition prior to the completion of TMT construction; provided that progress on this condition or lack thereof shall not affect the construction or operation of the TMT Project and provided further that it requires no commitment for funding other than staff time for plan development;

40. UHH shall make reasonable accommodations for the use of facilities at Hale Pōhaku for the Hawaiian Language and Hawaiian Studies programs at UHH and HCC, along with their continued use by others;
Mauna Kea Support Services will be exploring ways to comply with this condition.
41. Kahu Kū Mauna shall review policies concerning the construction and retention of personal or group shrines such as ‘ahu, and recommend policies to OMKM and/or BLNR as appropriate, within 18 months;
Kahu Kū Mauna has prepared draft policies to be presented to the Maunakea Management Board.
42. UHH and OMKM are allowed to take reasonable measures consistent with law, including limitations on the use of the TMT Access Way, if necessary for the security of the TMT Observatory.

IX. REPORTS FROM THE STATE OFFICE OF THE AUDITOR

A. Background

In 1998 an audit by the State Office of the Auditor found significant deficiencies in the management of Maunakea by both DLNR and the University. Specifically, the audit found that the University appeared to place a higher value on developing observatories than on protecting Maunakea's natural and cultural resources, and that DLNR was not engaged in effective monitoring and enforcement of permitting requirements.

A 2005 follow-up audit found that the University's Master Plan and new management structure addressed many of the 1998 concerns, but found that the lack of administrative rule-making authority was limiting the University's ability to manage resources. The follow-up also noted that DLNR had tightened permit approval conditions, but that the terms of the leases and subleases remained dated. The follow-up also recommended that DLNR better monitor the University for permit compliance, and that the department's divisions better coordinate its efforts to protect Maunakea's natural resources.

A second follow-up audit, in 2014, found that the University's CMP and associated subplans addressed many of the previous concerns. The auditor also recognized that contractual terms had prevented DLNR and the University from updating existing lease and sublease terms, and that future leases would incorporate the auditor's earlier recommendations. The lack of administrative rules remained a significant concern.

B. July 2017 Follow-Up

In July of 2017 the Office of the Auditor submitted follow up report on the 2014 audit to the governor and the legislature. This is attached as **Exhibit 5**, Follow-Up on Recommendations from Report No. 14-07, *Follow-Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve*.

The Auditor found that four of their recommendations have been partially implemented, two not implemented, one not implemented with the agency disagreeing on the recommendation, and one no longer applicable.

The previous sections of this report have covered the issues raised by the Office of the Auditor; as such we will present a brief summary here.

Rec 1: UH should adopt administrative rules governing public and commercial activities as soon as possible, but no later than 2017. (partially implemented)

As discussed in Section VI of this report, the University has prepared an internal draft of proposed rules, and is awaiting Board of Regents review and approval.

Rec 2. UH should obtain the UH Board of Regents' approval for the conditions and fee schedule included in commercial tour use permits issued by UH-Hilo via a Board of Regents open public meeting pursuant to Chapter 92, HRS. (not implemented)

The University anticipates that this will be done concurrently with the approval of the final administrative rules. The rules will include a draft fee schedule. There have been discussions with DLNR about modeling the schedule after the Department's Civil Resource Violations system.

Rec. 3. UH should determine whether unauthorized fees collected since FY2007 should be returned to commercial tour operators. (not implemented/disagree)

The University maintains that the BLNR provided authorization to collect fees from commercial operators, as discussed in Section V-D of this report.

Rec. 4 UH should complete Comprehensive Management Plan (CMP) management actions, the implementation of which under the CMP implementation plan is scheduled as “immediate,” as soon as possible, but no later than the end of 2016. (partially implemented)

The auditor reported that the University had completed 20 of the 25 management actions called for in the CMP. The actions that remain open are:

1. Develop and adopt guidelines for the culturally appropriate placement and removal of offerings.
2. Kahu Kū Mauna shall take the lead in determining the appropriateness of constructing new Hawaiian cultural features.
3. Develop and adopt a management policy for the UH Management Areas on the scattering of cremated human remains.
4. A management policy for the culturally appropriate building ahu or “stacking of rocks” will need to be developed by Kahu Kū Mauna who may consider similar policies adopted by Hawai‘i Volcanoes National Park.
5. Develop and implement a signage plan to improve signage throughout the UH Management Areas.

Kahu Kū Mauna developed proposed policies on the first four items in 2012. However, the Maunakea Management Board deferred action on the policies after a lawsuit was filed in federal court against the Board members. Kahu Kū Mauna reinitiated consultation with cultural practitioners after that suit was dismissed without prejudice, and has prepared a revised proposed draft to be presented to the Board for consideration.

The University reports that the signage plan was completed in the second quarter of 2017.

Rec 5. UH should further its efforts to renew general leases for UH-managed lands on Mauna Kea by continuing to work with DLNR and proceeding with the Environmental Impact Statement (EIS) process under Chapter 343, HRS. (partially implemented)

Rec. 6. UH should renegotiate with existing sublessees to amend subleases to include provisions that address stewardship issues, as modeled by the provisions in the 2014 TMT sublease, following execution of the new general leases for UH-managed lands on Mauna Kea. (not implemented)

Rec. 7. DLNR should continue working with UH to renew the general leases for the UH-managed lands on Mauna Kea and ensure the leases are substantially in the form DLNR’s Land Division recommended for approval by the Board of Land and Natural Resources. (partially implemented)

As discussed in Section VII of this report, the University is currently preparing an EIS preparation notice for new land authorization on Maunakea. UH anticipates publishing the notice in the Department of Health’s *Environmental Notice* in the first quarter of 2018. The University will then compile public comments and prepare a draft EIS for review.

Rec. 8. DLNR should use additional stewardship-related conditions contained within the TMT observatory permit as a template in all new observatory permits issued for the summit of Mauna Kea. (not implemented / not applicable)

OCCL notes that there are no applications pending for new observatories on Maunakea.

X. POTENTIAL FUTURE BOARD ACTIONS

The following are potential items discussed in this briefing that would require approval from the Board of Land and Natural Resources:

- CDUA HA-3812 for proposed Maunakea Visitor Information Station (VIS) improvements. OCCL anticipates presenting this to the Board in the second quarter of 2018.
- Any new master lease between the University and DLNR for the Maunakea Science Reserve and Halepōhaku.
- The University's decommissioning plans for individual observatories, including CSO and Hōkū Ke'a.
- The revised Comprehensive Management Plan. BLNR to name representative to the CMP review process.
- Any potential collaborative management agreements with DOFAW and NARS, or of any Joint Enforcement Agreement between DOCARE and OMKM.

RECOMMENDATION

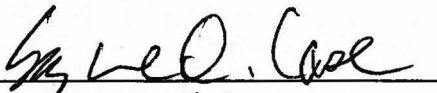
OCCL is presenting this report as a "non-action" item on the Board's Agenda.

Respectfully submitted,



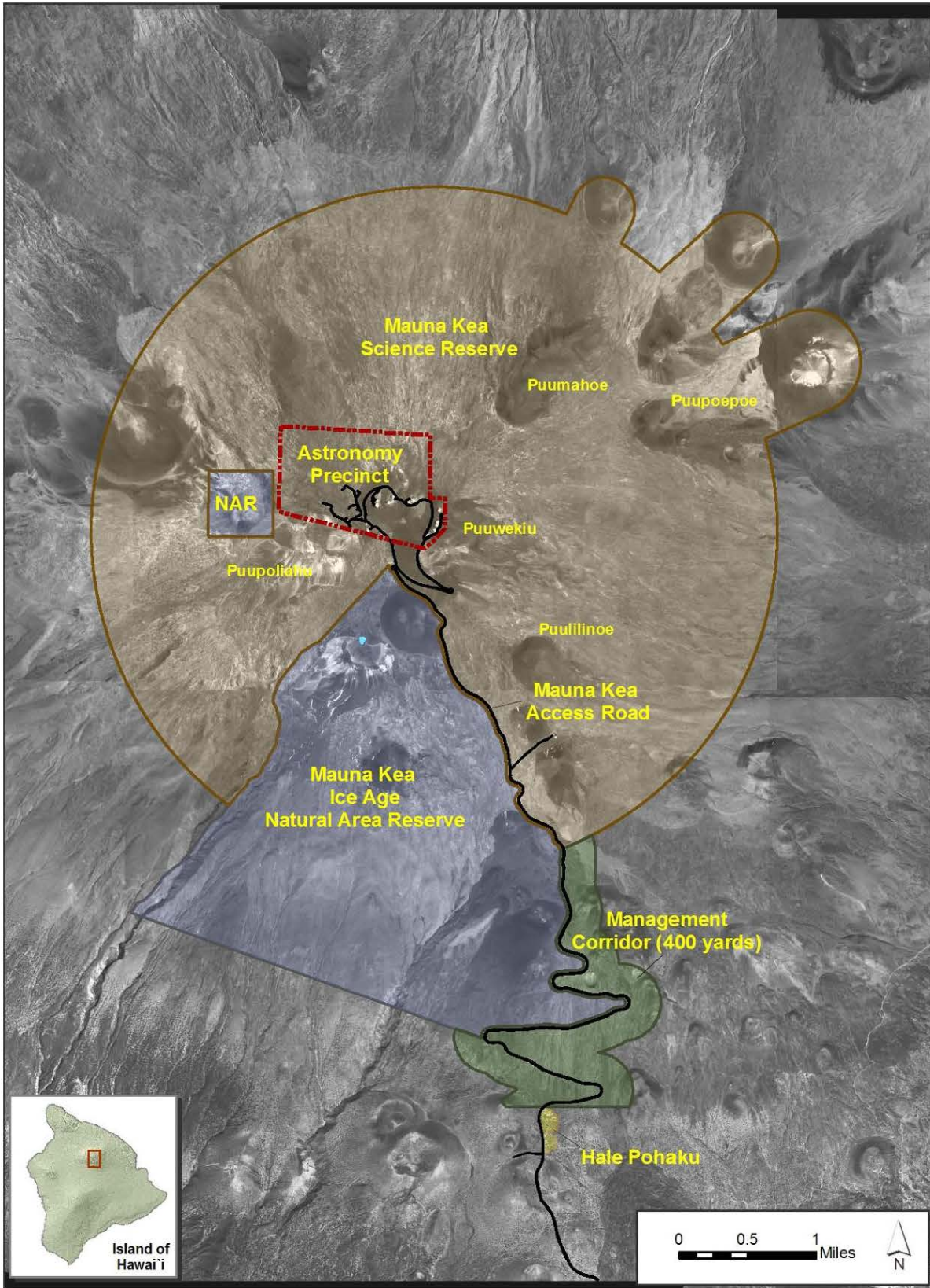
Michael Cain, Staff Planner
Office of Conservation and Coastal Lands

Approved for submittal:



Suzanne D. Case, Chairperson
Board of Land and Natural Resources

Figure 3-1. UH Management Areas





The Maunakea Observatories

Locations of Summit Facilities

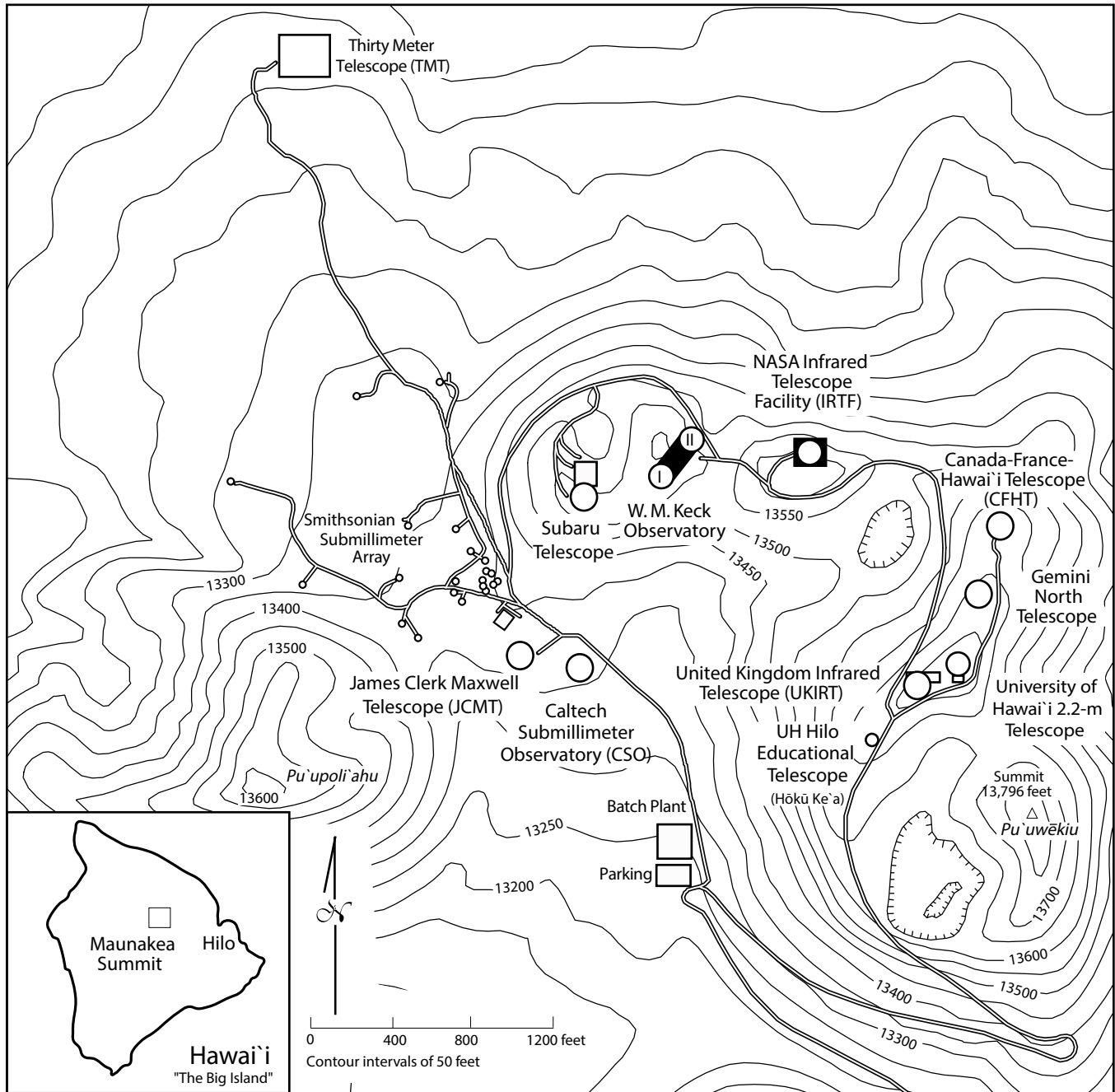


Exhibit 2
Maunakea Observatories

**2017 Annual Report
to the
Board of Land and Natural Resources**

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AND COASTAL LANDS

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**Status of the Implementation of the
Mauna Kea Comprehensive Management Plan**

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Purpose

As identified in the 2009 Mauna Kea Comprehensive Management Plan, management action MEU-1 states: OMKM shall produce an annual progress report on the management goals, objectives, and actions for the year and what progress was made towards meeting them. "This Progress Report is not intended to be a status report on the resources in the UH Management Areas; rather, it is meant to inform management and stakeholders of the progress of the program and direction it is to take in the future."

Overview of CMP Management Actions

The CMP contains 103 management actions categorized into four component plans which are further subdivided into sub-components (Table 1).

Table 1. CMP component plans.

CMP Section	Component Plan
7.1	Understanding and Protecting Mauna Kea's Resources
7.1.1	Native Hawaiian Cultural Resources
7.1.2	Natural Resources
7.1.3	Education and Outreach
7.1.4	Astronomy Resources
7.2	Managing Access and Use
7.2.1	Activities and Uses
7.2.2	Permitting and Enforcement
7.3	Managing the Built Environment
7.3.1	Infrastructure and Maintenance
7.3.2	Construction Guidelines
7.3.3	Site Recycling, Decommissioning, Demolition and Restoration
7.3.4	Considering Future Land Use
7.4	Managing Operations
7.4.1	Operations and Implementation
7.4.2	Monitoring, Evaluation, and Updates

Assigning Categories and Priorities

All of the management actions were assigned into one of four categories. These categories represent time periods during which it was estimated the actions would be implemented.

Immediate	1 - 3 years
Short term	4 - 6 years
Mid-term	7 - 9 years
Long-term	10 + years

Reporting Definitions

2010 and 2011. Each management action was initially assigned one of four progress status designations: **As Needed**, **Short to Long Term**, **Ongoing**, or **Completed**.

2012. In 2012 the **Ongoing** category was further divided into two groups, **Ongoing** and **In Progress**, to distinguish management actions that are part of OMKM's regular responsibilities (ongoing) and those that require specialized implementation (in progress).

2014. Based on feedback from the Office of the Auditor, State of Hawaii, beginning with 2014, the definitions for Ongoing and In Progress were further refined. **Ongoing** refers to activities that have established processes in place and are performed as part of OMKM's daily responsibilities. For example, processes for reporting disturbances to historic properties are established while actual reporting is **Ongoing** as necessary. **In Progress** refers to actions that require specialized implementation such as the development of policies or hiring consultants and researchers, and while efforts are **In Progress** the action or process is not yet complete.

Evolution of the Definition of the Terms Ongoing and In-Progress (years 2010 through 2014)

2010 – 2011	2012 - 2013		2014
	Ongoing was divided into two groups		Auditor's recommendation
Ongoing are actions that are being implemented	Ongoing are activities that are performed as part of OMKM's daily responsibilities	In-Progress are actions that require specialized implementation, e.g., development of policies or hiring of consultants	Ongoing was further defined as activities that have established processes in place and are performed as part of OMKM's daily responsibilities. In-Progress are actions that requires specialized implementation and while efforts are in-progress, the action or process is not yet complete.

- Short to Long Term Management action still to be implemented during its scheduled time period.
- In Progress Management action that requires specialized implementation has been initiated, process is not yet complete.
- Ongoing Management action is implemented and processes are in place to fulfill this requirement, actions will continue indefinitely because they are part of OMKM's continuing management responsibilities.
- Completed Management action is completed.

Annual Reports are Cumulative

With the exception of the first annual report to the BLNR in 2010, each successive report builds upon the previous year's report, thereby the annual reports beginning with 2011 are cumulative.

2017 Summary of Implementation Status

Most management actions have either been implemented or are in progress. Many actions are considered 'ongoing' as they are long term, continuous land management responsibilities. Appendix A details the implementation status with explanations for individual CMP management actions. Appendix B details the cumulative annual progression of implementation status from 2010 to present.

CMP Implementation Activities

As reported in earlier reports OMKM identified five priority categories. Efforts have been initiated in all of the categories and are described below.

Priority Categories:

- Research
- Monitoring
- Resources Management Programs
- Education, Training and Outreach
- Printed Materials & Public Forums

A summary of implementation activities are described below.

Research (Table 1)

Data derived from research provides the basis for the development of resource protection programs. OMKM continues its efforts to conduct research including establishing baseline data of the various resources. In the case of the wēkiu bug studies also focused on the bug's life history, habitat and genetics. OMKM utilizes resources available within the UH system including faculty, graduate and undergraduate students, in its efforts to fulfill the CMP mandates.

Biological Research

The 2011 study of the biodiversity of arthropods in the summit region in the Halepōhaku area is anticipated to be completed in 2017. A study of the characterization and mapping of wēkiu bug habitat was completed in 2016 while a study on the restoration of wēkiu bug habitat was initiated in 2015. Research initiated in 2017 included: 1) a project to investigate diets and parasitoid loads for important native and invasive arthropods; and a multi-year sea and forest bird, and bat survey.

Invasive Species

In 2015, OMKM initiated a study to evaluate measures to prevent the introduction of invasive species, in particular the inspections of vehicles and equipment. This includes analysis of the feasibility of a vehicle washing facility as a means of helping to prevent the introduction of invasive species.

Geology and Erosion

A multi-year study of surface erosion processes on cinder cones that was initiated in 2014 is still in progress. This study will help to better understand natural erosion, and is being used to help characterize arthropod habitat. OMKM funded a four-year study to assess the presence of permafrost and whether conditions for formation of permafrost still exist.

Weather and Climate

A multi-year study developing climate change models to determine impacts to the summit ecosystem 50-years in the future is finalizing a public archive of data. A study to extend the long-term temperature records for the state by integrating other types of climate data for earlier years when temperature was not recorded was completed and a journal manuscript is in preparation. These studies in conjunction with a study to site a weather station on the summit as part of a sea level to summit network of weather stations will help to track changes in weather and climate over the long term and will provide data to evaluate altitudinal changes and impacts on ecosystems from sea level to the summit.

Other Studies

OMKM intends to initiate a study of commercial tour activities to determine, if possible, the capacity for commercial tour operations on UH's managed lands.

Monitoring (Table 2)

Following surveys to determine the baseline inventory of a resource, the next step is monitoring to assess the status of the resource over time.

Historic Properties

Following the completion of an archaeological inventory survey of the Maunakea Science and access road, annual monitoring of the historic properties began in 2012. In compliance with the Long Term Historic Property Monitoring Plan, approved by SHPD in 2014, annual monitoring of the Astronomy Precinct and access road is conducted annually while the more remote sites are monitored on a three and five year rotation basis.

While not part of UH's managed lands, in a cooperative effort with the Natural Area Reserve, OMKM rangers photo document monthly the level of Lake Waiau in the Mauna Kea Ice Age Natural Area Reserve, and periodically hike to the adze quarry to assess conditions.

Wēkiu Bug and Alien Species

Monitoring surveys of the wēkiu bug, which began in 2002, and alien arthropods, in 2007, continue to be conducted annually.

Invasive Species

Monitoring of invasive species has been ongoing since 2007. Beginning in 2013 monthly surveys are made in and around the surrounding areas of the facilities at the 9,200 foot elevation. In addition, quarterly surveys are conducted at facilities at the summit.

Botanical Resources

Monitoring of botanical resources is completed in conjunction with Historic Property monitoring. A more detailed monitoring plan for botanical resources will be developed in collaboration with recommendations for arthropod monitoring.

Resource Management Programs (Table 3).

Resource management programs may be policies, plans, or long-term action programs which purpose is to preserve or protect the resources, or to help ensure the health and safety of those visiting and working on the mountain.

Cultural Resources

It was reported previously that OMKM together with Kahu Kū Mauna developed preliminary policies for the construction of new cultural features, including the stacking of rocks, the scattering of human remains, buffers around historic properties and visitation and use of ancient shrines. The Maunakea Management Board (MKMB) approved the latter two policies. Kahu Kū Mauna also drafted policies related to the placement and removal of offerings. Kahu Kū Mauna is currently re-evaluating some of their earlier policies for alignment with State Law and DLNR rules. Community consultation and outreach efforts continue.

Invasive Species

As mentioned in previous reports, data from surveys and studies provide valuable information for developing management programs to protect the resources such as the endemic wēkiu bug. Invasive flora and fauna are a concern because of their potential impact not only on the wēkiu bug, but also on other native species, and on the "health" of Maunakea's unique ecosystem. OMKM's invasive species prevention, response and control plan is actively being implemented, especially regarding observatory related activities. As an adaptive-management plan, this is periodically reviewed and updated, with annual reports prepared and made publicly available.

OMKM continues its efforts to remove fireweed (*Senecio madagascarensis*). While on patrol, rangers remove fireweed found along the road and in the summit areas. OMKM's invasive weed pull program brings volunteers to the Halepōhaku area to pull fireweed, mullein and other invasive plants. It is OMKM's goal to control invasive weeds and to revegetate the area with native vegetation.

Preventing the introduction of predatory ants remains a high priority.

Operations Monitoring, and Maintenance Plan (OMMP)

An OMMP is implemented and identify maintenance needs, protocols and strategies that minimizes impacts to the resources and ensures that permittees comply with the conditions of their CDUPs,

CMP Compliance

Twice annually OMKM rangers conduct inspections of all summit facilities for compliance with their Conservation District Use Permits.

CMP Actions and Mitigation

Applicants of projects are required to review the CMP and submit measures to comply with relevant CMP actions as part of the project's proposal. When applicable, mitigation measures are also included in the proposals.

Infrastructure

Parking, vehicle and pedestrian flow and visitor capacity concerns are being addressed in design improvements to keep parking, drop off and pickup of visitors on the same side of the road as the VIS. It is currently being addressed with the proposed construction of a vehicular ingress/egress-parking system. Road repair and improvements are also being evaluated. Capital improvement project funds were provided for this study.

Vehicle Counter

An automated vehicle counter was installed to count the number of vehicles that drive above Halepōhaku.

Road Condition Sensor

A test road condition sensor installed in 2013 has shown the device accurately senses the presence of ice on the road. Additional sensors will be installed over the next two years along a steep incline, an area prone to development of ice, in particular black ice. When ice is detected the sensors automatically send email notifications to rangers who take action such as closing the road to protect the safety of the visiting public.

Education, Training and Outreach

OMKM recognizes the need to formally educate and train management staff, stakeholders and the general public about the resources and significance of Maunakea. One of the key tenets of the Public Access Plan is that "an informed public is best prepared to make good decisions and act responsibly." OMKM also recognizes the importance of establishing community relationships and keeping them informed of OMKM's activities.

Orientation

The OMKM Maunakea User/Resource Orientation program was launched in the Summer of 2013. It is a requirement that all observatory and support staff (both office and on-mountain), vendors, construction workers, mid-level support and VIS staff, UH employees, and commercial tour drivers attend the orientation. A plan for implementing the orientation has been adopted and circulated, identifying a renewal requirement every 3 years. Since the orientation began in 2013, nearly 1,800 people have attended the orientation. Beginning in 2016 those who took the orientation in 2013 have begun their renewal process. An online version with an assessment quiz is available as a more efficient means of delivery and an alternative to in-person sessions. A video orientation for visitors will also be developed to be shown in the Visitor Information Station (VIS).

Training

Beginning in 2016, a staff/employee training program was initiated. All OMKM and Maunakea Observatory Support Services employees are required to attend.

Volunteer Program

Since its inception in the Spring of 2012, OMKM's community volunteer weed pull program filled a total of 1,795 bags of weeds by 1,118 volunteers putting in 8,164 hours. Groups participating in 2016 include various UH Hilo student groups, local primary school students and families, Observatories, and local Rotary club and chambers of commerce members. OMKM is propagating plants for future restoration efforts in the Halepōhaku area.

Outreach

OMKM seeks opportunities to go into the community to share OMKM's activities. OMKM also participates in school and community events showcasing some interesting "critters" that are found on Maunakea, fun science and keiki activities.

As part of their educational efforts with young children, researchers working on OMKM projects have been going to schools to demonstrate the use of equipment that is used in their scientific studies, such as unmanned aerial vehicles (drones) or conducts experiments with the students. Others mentor students, including those who wish to conduct and enter the results of their studies in the State science fair.

Printed Materials & Public Forums.

Education and outreach efforts include the development of educational materials, such as brochures, signage and the dissemination of materials, OMKM recently updated its resource brochure. This brochure along with the safety brochure, "*Visiting Maunakea Safely and Responsibly*," are distributed at the VIS at the 9,200 foot elevation and at the 'Imiloa Astronomy Center. OMKM also seeks opportunities to speak to groups, such as Rotary clubs, and community associations about OMKM's activities.

Daily Implementation of Ongoing Actions

The Maunakea rangers continue to monitor activities on UH's managed lands on a daily basis. They record pertinent data including the number of vehicles by type (4- vs. 2-wheel drive, observatory, commercial and motorcycles) and observations of visitor activities, including hikers, bikers, vehicle speeds, trash, etc. Through their interactions with the public they help to educate people about Maunakea. Many of the management actions relating to public and commercial activities, and trash pick-up and removal are carried out by the Rangers as part of their daily responsibilities.

The Maunakea ranger corps is composed of eight full-time and two part-time rangers. This allows OMKM to schedule three rangers for duty and ensures a minimum of two rangers on duty should one ranger be sick or on vacation.

Administrative Rules

Draft administrative rules were reviewed by Kahu Kū Mauna and the Mauna Kea Management Board and a recommendation was submitted to the Board of Regents for their review and a request to the Governor authorizing the University to conduct public hearings seeking community comments.

Table 1. Research Activities

<p>Surveys and studies on:</p> <ul style="list-style-type: none"> • Historic Properties • Arthropods • Geology and erosion • Climate and weather 		<ul style="list-style-type: none"> • 2005 – 2009. Archaeological inventory of historic properties of the Science Reserve, access road and Halepōhaku. • 2006. Climatological analysis of meteorological observations at the summit of Maunakea • 2007. Review Mauna Loa weather data dating back to 1958 to assess climate conditions on Maunakea to help with wēkiu bug research • 2012 –ongoing. Four year study to assess presence of • 2006. Climatological analysis of meteorological observations at the summit of Maunakea • 2007. Review Mauna Loa weather data dating back to 1958 to assess climate conditions on Maunakea to help with wēkiu bug research • 2012 –ongoing. Four year study to assess presence of permafrost and whether conditions for formation of permafrost still exist. • 2011- ongoing. A multiyear study on the development of a climate change modeling program to help forecast climate change on the summit to help determine impacts to the summit ecosystem. • 2012. High Altitude Climate of the Island of Hawai'i publication. • 2013 – ongoing. OMKM is working with the Department of Geography at UH Manoa on the development of a sea level to summit weather monitoring network to help track climate change. OMKM's participation is to help the location and installation on weather station on the summit. • 2014 –ongoing. Surficial study of the geology and erosion in cinder cone environments above 12,500'. High-resolution topographic maps, and imagery have been completed. • 2013 – 2016. Study to extend the long term temperature records for the State of Hawaii by integrating other climate data for earlier years when temperature was not recorded. • 2016. MS Thesis and Peer-Review Publication (Draft): Regional Temperature Trends in Hawai'i, A Century of Change. 1916-2015. • 2017 – ongoing. Study to investigate diet and parasite loads in alpine arthropods.
<ul style="list-style-type: none"> • Surveys on human activities and needs: 		<ul style="list-style-type: none"> • 2001 – ongoing. Rangers continue to submit daily reports on human activities; data are input in a database. • 2016 – ongoing. An automated vehicle counter keeps a real time count of all vehicles traversing above Halepōhaku. Rangers also conduct daily counts of vehicles identifying 2 wheel vs 4 wheel drive vehicles.
<p>Ongoing surveys and studies of the wēkiu bug and other arthropods</p>		<ul style="list-style-type: none"> • 2011. A study of how geology (pu'u and terrain), wind speeds and direction influence insect and snow pack deposits on the summit to help supplement wēkiu bug research. • 2011 – ongoing. Multi-year survey of the summit region and at the mid-level area at 9,200 ft elevation to assess the biodiversity of arthropods. Including a 2016 MS Thesis on biodiversity in the Halepōhaku area. • 2014 – 2016. A study evaluating the characterization and mapping of wēkiu bug habitat has been completed. • 2015 – ongoing. A multi-year wēkiu bug habitat restoration plan is being implemented. Originally it was part of the (now vacated) TMT CDUP requirement. OMKM is pursuing this management action. • 2016. Habitat mapping of wēkiu bugs using existing remote sensing and arthropod trap data. • 2017 – ongoing. Study to investigate diet and parasite loads in alpine arthropods.
<p>Alien and invasive species</p>		<ul style="list-style-type: none"> • 2012 – 2015. Development of an invasive species management plan. It is composed of modules addressing various aspects of the invasive species prevention, response, and control. Implementation is ongoing

	<ul style="list-style-type: none"> • 2015 – ongoing. A study to evaluate measures to prevent the introduction of invasive species, in particular the inspection of vehicles and equipment was initiated in 2015.
Other Studies	<ul style="list-style-type: none"> • 2004 - 2006. Archival study and compilation of native traditions, historical accounts, and oral history interviews for Mauna Kea. • 2005 – 2009. Archaeological inventory of historic properties of the Science Reserve, access road and Halepōhaku. • 2016. Initiate seabird, forest bird and bat inventory study

Table 2. Monitoring

Historic Properties (archaeological sites)	<ul style="list-style-type: none"> • 2012. Annual archaeological monitoring of historic properties (archaeological sites) began in 2012. The Long-Term Historic Monitoring Plan was approved by State of Hawaii Historic Preservation Division (SHPD) in 2014. • 2014. SHPD approved the Long Term Historic Properties Monitoring Plan for UH Managed lands on Maunakea. • On a monthly basis, OMKM Rangers photo document the level of Lake Waiau in DLNR's Mauankea Ice Age Natural Area Reserve (MKIANAR). Rangers also periodically hike to the adze quarry in the MKIANAR) to assess conditions. Rangers pick up and remove trash from their hikes into the MKIANAR.
Wēkiu bug and alien species.	<ul style="list-style-type: none"> • 2002 – ongoing. Annual surveys on wekiu bug have been conducted since 2002. • 2007 – ongoing. Annual surveys of alien species are conducted on UH Managed lands
Invasive species	<ul style="list-style-type: none"> • 2013 – ongoing. Monthly surveys for invasive species are conducted at the facilities at the mid-level, 9,200 ft elevation, including the VIS and the support facilities. • 2013 – ongoing. Quarterly surveys for invasive species are conducted at all the summit facilities for invasive species. • 2013 – ongoing. Natural resources personnel accompany archaeologists in their annual monitoring to assess sites and surrounding areas for native and invasive species

Table 3. Resource Management Programs

<p>Polices and plans related to cultural resources</p>	<ul style="list-style-type: none"> • 2012 – 2014. A burial treatment plan was reviewed by the Hawaii Island Burial Council and approved by the Division of Historic Preservation. It contains a schedule for monitoring. • 2012 – currently under re-evaluation. Policies relating to the placement and removal of offerings, the scattering of human remains, the construction of new cultural features including the stacking of rocks were developed by Kahu Kū Mauna. In 2016 following public consultation Kahu Kū Mauna approved the policies. The MKMB felt that more community consultation was required before finalizing the policy. Community consultation on these policies is on-going. • 2016 - The U.S. Department of Defense was contacted to begin the review process prior to any removal efforts of military aircraft.
<p>Invasive species control</p>	<ul style="list-style-type: none"> • 2012 – ongoing. An active volunteer program to remove fireweed (<i>Senecio madagascariensis</i>) and other invasive plants continues at the mid-level area. Rangers continue to remove fireweed in the upper elevations. • 2013 – ongoing. The Maunakea Invasive Species Management Plan was approved by the MKMB. It is composed of modules addressing various aspects of the invasive species prevention, response, and control. Implementation is ongoing. • 2013 – ongoing. The Hawaii Ant Lab and Big Island Invasive Species Committee continue to support implementation of the Invasive Species Management Plan by providing technical support, and assisting with inspections and monitoring work.
<p>Wēkiu bug management plan and habitat restoration plan.</p>	<ul style="list-style-type: none"> • Data from wēkiu bug, invasive/alien arthropod, biodiversity arthropod studies, topography and wēkiu bug food distribution, and climate studies will provide the basis for developing management and habitat restoration plans for the bug
<p>Public facilities</p>	<ul style="list-style-type: none"> • 2014 – ongoing. An automated vehicle counter was installed to count the number of vehicles (differentiating: public, commercial, tour, observatory, etc.) that drive above Halepōhaku. • 2014 – 2017. CIP funds are being used to study and design improvements to the ingress and egress at the VIS and to address parking and pedestrian flow. The study also included an assessment of road conditions, and recommendations for repair and estimated costs. An Environmental Assessment is currently being finalized and a CDUA will be submitted for DLNR consideration.
<p>Other Plans and activities</p>	<ul style="list-style-type: none"> • 2001. OMKM ranger program established. • 2007 – ongoing. Biannual inspection of facilities for compliance with their CDUPs • 2009. BLNR approved the Maunakea Comprehensive Management Plan (CMP) • 2010. BLNR approved the Cultural and Natural Resources Management Plans, Public Access Plan and the Decommissioning Plan, sub-plans to the CMP. • 2012 – ongoing. Beginning in 2012 applicants of projects are required to review the Comprehensive Management Plan (CMP) and submit measures to comply with relevant CMP actions as part of their project proposals. When applicable, mitigation measures are included in the project proposal. • 2016 – ongoing. An Operations, Monitoring, and Maintenance Plan has been developed. The plan recognizes the need to identify maintenance needs, protocols and strategies that minimizes impacts to the resources and ensures that permittees comply with the conditions of their CDUPs. It also serves as a reporting mechanism for CMP compliance activities calls for the coordination of maintenance activities and

	<p>schedules.</p> <ul style="list-style-type: none"> • 2016 – ongoing. A Sign Plan was approved by the MKMB. This plan helps ensure appropriate review and consistency in sign design and use.
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Table 4. Education, Training and Welfare

<p>Initiate programs to educate stakeholders, management staff, and the general public.</p>	<ul style="list-style-type: none"> • 2012 – ongoing. OMKM has been conducting orientations relating to the cultural and environmental significance to those who work on UH’s managed lands including observatory and UH personnel, contractors and vendors, and commercial tour operators. • 2016 - OMKM launched an online video version of the orientation as a more efficient means of reaching contractors, vendors, visiting staff, or other interested parties. Regular feedback is solicited from Kahu Kū Mauna and attendees. • A three-year refresher interval requirement has been adopted and original orientation attendees have begun the renewal process. • A video orientation for visitors will be developed and shown in the VIS. • A staff/employee training plan has been implemented. All OMKM and Maunakea Observatory Support Services are required to attend.
<p>Develop and maintain a GIS and database program.</p>	<ul style="list-style-type: none"> • 2013 – ongoing. A GIS-based data storage and reporting system has been developed. The system is continuously being expanded and enhanced. • 2001 – ongoing. Rangers have been and continue to submit daily reports summarizing their observations and their activities, including documenting number of vehicles, hikers, incidents, permitted and unpermitted commercial tour operators, etc. • 2015 – ongoing. An automated vehicle data collection system is operational recording individual observatory, permitted commercial tours, and OMKM vehicles using radio frequency identification tags (RFID) and general public vehicles.
<p>Develop an outreach program.</p>	<ul style="list-style-type: none"> • 2012 – ongoing. In 2016, 200 volunteers, working 1,500 hours, removed 299 bags of invasive weeds. This year’s program once again focused on removing invasive plants in the Halepōhaku parcel and along the access corridor. Since 2012, a total of 1,118 volunteers putting in 8,164 hours pulled and filled 1,795 bags of weeds. • Volunteer groups have included the Hawaii Island Chamber of Commerce, Circle K (Kiwaniis youth), Interact (Rotary Youth) Hawaii National Guard Youth Challenge Academy, UH Hilo student groups, school groups, and general community members. • Mentoring young students with science projects and participation in local science and State science fairs. Dr Jesse Eiben, wēkiu bug researcher for OMKM, continued his mentorships with local middle and high-school students. This year one of the mentored students investigating Maunakea’s lycosa spiders advanced to the State Science Fair competition on Oahu. • Dr. Norbert Schorghofer’s (principle investigator for OMKM’s sponsored permafrost study) colleague Dr. Kenji Yoshikawa continues work with Hilo Intermediate School 7th & 8th grade science classes to collect comparable data in their school yard for comparison with Maunakea and other sites across the globe. • Dr. Ryan Perroy visits a community based charter school and demonstrate the use of unmanned aerial vehicles and how they are used for scientific purposes. He also participates in OMKM outreach activities • 2015 –ongoing OMKM participated in Kealakehe Elementary School annual “Science Showcase” with interactive materials on ecosystems, arthropods, and art. • 2016. Participated in the Panaewa community Prince Kuhio Day keiki festivities with exhibits, coloring activities, trading cards and resource and safety brochures. • 2017. OMKM participated in the annual Astroday event in Hilo and Astrobash in Kona with exhibits of arthropods found on Mauankea, coloring activities, tattoos and natural science trading cards for the kids,

and resource brochures and safety for the adults.

Table 5. Printed Materials and Public Forums

Develop and print brochures.	<ul style="list-style-type: none"> • 2016. OMKM updated its resource brochure containing information about the resources and significance of Maunakea incorporating community and Kahu Kū Mauna input. • 2002- ongoing. Also available are Visiting Maunakea Safely and Responsibly and a brochure about the purpose of the Office.
Distribution of informational materials.	<ul style="list-style-type: none"> • Brochures are available for public distribution at the VIS, 'and other public venues, or distributed at public and outreach events.
Participate in public events, community gatherings and other opportunities to inform the community about Maunakea.	<ul style="list-style-type: none"> • Continue to seek opportunities to participate or speak at public forums, including community meetings, local organization membership meetings, etc.
Signs	<ul style="list-style-type: none"> • 2012 – An inventory and map of all the signs on UH's managed lands was completed. The inventory of the signs on UH managed lands is being updated. • 2016 – ongoing. A Sign Plan was approved by the MKMB. Installation of signs still requires DLNR approval, the plan helps ensure appropriate review and consistency in design and use. • With input from Rangers and Kahu Kū Mauna, signs were installed to highlight cultural awareness and safety issues.

Appendix A
Implementation Status of
Maunakea CMP Management Actions

MKMB = Maunakea Management Board; MKSS = Maunakea Observatories Support Services; OMKM = Office of Maunakea Management; VIS = Visitor Information Station

COMPONENT PLAN: UNDERSTANDING AND PROTECTING MAUNA KEA'S RESOURCES			
		Implementation Schedule	Comments
NATIVE HAWAIIAN CULTURAL RESOURCES			
Management			
CR-1	Kahu Kū Mauna shall work with families with lineal and historical connections to Maunakea, cultural practitioners, and other Native Hawaiian groups, including the Maunakea Management Board's Hawaiian Culture Committee, toward the development of appropriate procedures and protocols regarding cultural issues.	Ongoing	<p>Identification of lineal and historical connections was part of the development and State Historic Preservation division approval (2014) of the Burial Treatment Plan (see CR-13). Solicitations were made through announcements in the daily newspapers and the OHA newsletter.</p> <p>There were no responses to the solicitations but OMKM continues to seek out individuals as part of its interaction and relationship building with the community.</p> <p>Fall 2013 the Hawaii Island Burial Council officially recognized several individuals as cultural descendants of Kaohe Ahupua'a.</p>
CR-2	Support application for designation of the summit region of Mauna Kea as a Traditional Cultural Property, per the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq. in consultation with the larger community.	Ongoing	An application for the designation of the summit region of Maunakea as a Traditional Cultural Property has not yet been prepared for filing by State Historic Preservation Division with the appropriate Federal agency.
CR-3	Conduct educational efforts to generate public awareness about the importance of preserving the cultural landscape.	Ongoing	<p>Rangers through their interactions with the visiting public help to educate and raise awareness about Mauna Kea.</p> <p>An informational brochure on cultural and natural resources was developed in 2014 and revised in 2016.</p> <p>OMKM sends out eNewsletters informing the public about OMKM and its activities.</p> <p>Resource orientation of those who work on the mountain including observatory personnel, VIS and MKSS staff, rangers, commercial tour operators and staff, and construction workers commenced in 2013. An online orientation is also available. A brief public / visitor orientation is complete and provided for scheduled group visits.</p>

2017 Annual Report on the Maunakea CMP
Exhibit 3

COMPONENT PLAN: UNDERSTANDING AND PROTECTING MAUNA KEA'S RESOURCES

		Implementation Schedule	Comments
Cultural Practices			
CR-4	Establish a process for ongoing collection of information on traditional, contemporary, and customary cultural practices.	Short-Term	OMKM staff met with State Historic Preservation Division staff in 2015 to discuss practices at various sites. Discussions with Kahu Kū Mauna Council to craft a culturally appropriate process continue.
CR-5	Develop and adopt guidelines for the culturally appropriate placement and removal of offerings.	In Progress	In 2016, Kahu Kū Mauna reviewed and approved the wording of draft policy guidelines. Approval by MKMB was deferred. Kahu Kū Mauna is engaging in additional consultation. In addition, a law suit was filed in federal court and dismissed without prejudice; the plaintiff may still seek further judicial relief. The final outcome will likely be formally included in administrative rules for UH's managed lands. Note: CR-5 overlaps with CR-7 (constructing new Hawaiian cultural features) being that offerings are usually associated with the construction of new features. It is noted that the proposed policy acknowledges there are existing statutes and rules governing this type of activity.
CR-6	Develop and adopt guidelines for the visitation and use of ancient shrines.	Ongoing	In 2016 Kahu Kū Mauna drafted and the MKMB approved the policy. Visitation is a public access issue and will likely be formally included in administrative rules for UH's managed lands. State law also governs.
CR-7	Kahu Kū Mauna shall take the lead in determining the appropriateness of constructing new Hawaiian cultural features.	In progress	In 2012, Kahu Kū Mauna reviewed a draft of a process. In 2016 Kahu Kū Mauna re-evaluated the policy, consulted with OHA and held a consultation session. Approval by MKMB was deferred. Kahu Kū Mauna is engaging in additional consultation. In addition, a lawsuit was filed in federal court which was dismissed without prejudice; the plaintiff may still seek further judicial relief. It is noted that the proposed policy acknowledges there are existing statutes and rules governing this type of activity. Community consultations are ongoing.
CR-8	Develop and adopt a management policy for the UH Mgt. Areas on the scattering of cremated human remains.	In Progress	In 2012 Kahu Kū Mauna developed and approved a draft policy. In 2016 Kahu Kū Mauna re-evaluated the policy and held a consultation session. Approval by MKMB was deferred. Kahu Kū Mauna is engaging in additional consultation. In addition, a law suit was filed in federal court which was dismissed without prejudice; the plaintiff may still seek further judicial relief. The final outcome will likely be formally included in administrative rules for UH's managed lands

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<p>CR-9</p>	<p>A management policy for the culturally appropriateness of building ahu or “stacking of rocks” will need to be developed by Kahu Kū Mauna who may consider similar policies adopted by Hawai’i Volcanoes National Park.</p>	<p>In Progress</p>	<p>In 2012 Kahu Kū Mauna approved a draft policy. In 2016 Kahu Kū Mauna re-evaluated the policy and held a consultation session. Approval by MKMB was deferred. Kahu Kū Mauna is engaging in additional consultation. In addition, a law suit was filed in federal court which was dismissed without prejudice; the plaintiff may still seek further judicial relief.</p> <p>CR-7 was combined with CR-9 under the guidance of Kahu Kū Mauna who pointed out that the “stacking of rocks” is no different from the creation of new cultural features. See CR-7 above.</p>
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COMPONENT PLAN: UNDERSTANDING AND PROTECTING MAUNA KEA'S RESOURCES

		Implementation Schedule	Comments
Historic Properties			
CR-10	Develop and implement a historic property monitoring program to systematically monitor the condition of the historic district and all historic properties, including cultural sites and burials.	Completed	SHPD approved OMKM's long term historic properties monitoring plan; monitoring is ongoing according to the plan's schedule.
CR-11	Complete an archaeological survey of the portions of the Summit Access Road corridor that are under UH management.	Completed	
CR-12	Consult with Kahu Kū Mauna about establishing buffers (preservation zones) around known historic sites in the Astronomy Precinct, to protect them from potential future development.	Ongoing	In 2012 Kahu Kū Mauna determined that this should be reviewed on a case-by-case basis. They identified criteria for when to consult for routine (minimal impact) project proposals, as well as with future development. In 2016, Kahu Kū Mauna revised their policy. MKMB approved their policy.
CR-13	Develop and implement a burial treatment plan for the UH Management Areas in consultation with Kahu Kū Mauna Council, MKMB's Hawaiian Culture Committee, the Hawai'i Island Burial Council, recognized lineal or cultural descendants, and SHPD.	Completed	SHPD reviewed and approved the Burial Treatment Plan for Mauna Kea in 2014.
CR-14	Immediately report any disturbance of a shrine or burial site to the rangers, DOCARE, Kahu Kū Mauna Council, and SHPD.	Ongoing	Rangers report disturbance to OMKM and OMKM in turn notifies other parties.

COMPONENT PLAN: UNDERSTANDING AND PROTECTING MAUNA KEA'S RESOURCES

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NATURAL RESOURCES

Threat Prevention and Control

NR-1	Limit threats to natural resources through management of permitted activities and uses.	Ongoing	<p>OMKM consulted with agencies on a draft of administrative rules governing public and commercial activities.</p> <p>An Operations, Monitoring and Maintenance Plan (OMMP) relating to the coordination of maintenance plans, activities and schedules was developed and approved by the MKMB, and is being implemented.</p>
NR-2	Limit damage caused by invasive species through creation of an invasive species prevention and control program.	Ongoing	<p>The Maunakea Invasive Species Management Plan is approved and implemented. Additional topics are addressed as situations arise, and procedures are developed based on scientific, management board, and community feedback.</p> <p>A volunteer program was established to pull invasive weeds on UH's managed lands with emphasis in the Halepōhaku area. Long term goal is to re-vegetate the mid-level area with native plants.</p> <p>Beginning in 2007 OMKM conducted annual surveys of invasive arthropod species on UH's managed lands. This program was expanded to include monthly monitoring at the facilities at the 9,200 ft mid-level facilities, and quarterly monitoring of the summit facilities. Rapid response strategies were drafted as part of the Invasive Species Management Plan.</p> <p>Inspections of heavy equipment, construction material, and other items too large to be carried by an individual occur prior to coming on to UH's lands. Specific requirements are part of the Invasive Species Management Plan. A MS Student is evaluating program efficacy as part of his thesis, expected to be complete in 2017.</p>
NR-3	Maintain native plant and animal populations and biological diversity.	Ongoing	<p>Non-native plants and arthropods are monitored. The Division of Forestry and Wildlife is completing a circum-Maunakea fence and ungulate removal from Palila critical habitat. OMKM staff investigated māmane leaf curl frequency at Halepōhaku (plant disease response) in coordination with UHH scientists. Arthropod food webs and parasites are being investigated.</p>
NR-4	Minimize barriers to species migration to help maintain populations and protect ecosystem processes and development.	Ongoing	<p>OMKM coordinates with Forest Reserve, Natural Area Reserve, and Department of Land and Natural Resources technical staff to identify issues, craft appropriate responses, and investigate concerns regarding ecosystems and flora and fauna populations.</p>
NR-5	Manage ecosystems to allow for response to climate change.	Ongoing	<p>OMKM coordinates with Forest Reserve and Natural Area Reserve staff to ensure management activities do not inadvertently impede natural ecosystem response. Research into climate change forecast downscaling and climate monitoring helps inform potential future management action. OMKM participated in Pacific Islands Climate Change Cooperative workshops on climate change to help identify mitigation and adaptation strategies. A climate monitoring sea level to summit network plan is in preparation.</p>

NR-6	Reduce threats to natural resources by educating stakeholders and the public about Mauna Kea's unique natural resources.	Ongoing	<p>Rangers help to educate visitors about Maunakea as part of their daily activities.</p> <p>Resource orientation of those who work on the mountain including observatory personnel, VIS and MKSS staff, rangers, commercial tour operators and staff, and construction workers commenced in 2013. An online orientation is also available. A brief public / visitor orientation is complete and provided for scheduled group visits.</p> <p>See also CR-3 and EO-2</p>
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COMPONENT PLAN: UNDERSTANDING AND PROTECTING MAUNA KEA'S RESOURCES

		Implementation Schedule	Comments
Ecosystem Protection, Enhancement & Restoration			
NR-7	Delineate areas of high native diversity, unique communities, or unique geological features within the Astronomy Precinct and at Hale Pōhaku and consider protection from development.	Ongoing	Botanical survey of UH managed lands is completed. Biodiversity, wēkiu bug, and erosion and surficial geology surveys are ongoing. A study and mapping of wēkiu bug habitat is completed..
NR-8	Consider fencing areas of high native biodiversity or populations of endangered species to keep out feral ungulates (applies to areas below 12,800 ft elevation).	Ongoing	Assisted DLNR with fencing natural population of Silverswords. Other areas will be fenced when areas are identified and needed.
NR-9	Increase native plant density and diversity through an outplanting program.	Ongoing	Māmane seedlings germinated from seeds found in the Halepōhaku area were planted near the VIS Worked with DLNR and planted 200 Silversword seedlings in the Halepōhaku area. Collaborated with Kamehameha Schools to build plant propagation benches and start seedlings for eventual habitat restoration and enhancement at Halepōhaku. Germination of māmane seedlings continues. A small greenhouse at Halepōhaku is included in plans for improvements to visitor facilities.
NR-10	Incorporate mitigation plans into project planning and conduct mitigation following new development.	Ongoing	Mitigation and best management practices plans are required for projects as appropriate.
NR-11	Conduct habitat rehabilitation projects following unplanned disturbances.	Ongoing	Damage assessments and rehabilitation following unplanned disturbances are conducted on a case-by-case basis as needed. Generally, unplanned disturbances, such as vehicle oil leaks, occur on previously disturbed areas such as roadways, where humans frequent.
NR-12	Create restoration plans and conduct habitat restoration activities, as needed.	Ongoing	A study of wēkiu bug habitat restoration was initiated in 2015. A study and mapping of wēkiu bug habitat has been completed. Restoration plans and greenhouse for long-term program use are part of a project to improve the ingress/egress and parking at the VIS.
Program Management			
NR-13	Increase communication, networking, and collaborative opportunities to support management and protection of natural resources.	Ongoing	OMKM has established and continues to establish working relationships with the community and DLNR through working groups such as the Environment and Big Island Invasive Species committees, and OHA.
NR-14	Use the principles of adaptive management when developing programs and methodologies. Review programs annually and revise any component plan every five years, based on the results of the program review.	In Progress	Potential CMP revisions are identified in annual program documentation. Program plans, such as the Maunakea Invasive Species Management Plan, are updated and communicated at MKMB meetings as issues are identified.

COMPONENT PLAN: UNDERSTANDING AND PROTECTING MAUNA KEA'S RESOURCES

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Inventory, Monitoring and Research			
NR-15	Conduct baseline inventories of high-priority resources, as outlined in an inventory, monitoring, and research plan.	Ongoing	<p>Baseline surveys of wēkiu bugs, other arthropods, including invasive species have been completed or are continuing. A botanical survey was completed in the Summer of 2011 and published in 2013.</p> <p>OMKM is funding a 4-year study on permafrost and working on designing a climate monitoring network. OMKM is also studying erosion to better understand surficial geology, cinder cone erosion, and characterize arthropod habitat. A bird and bat inventory commenced in 2017.</p>
NR-16	Conduct regular long-term monitoring, as outlined in an inventory, monitoring, and research plan.	Ongoing	OMKM conducts annual wēkiu bug, alien and invasive species surveys. Botanical and arthropod surveys are conducted as part of the annual archaeological monitoring. Other monitoring plans to be developed following baseline surveys.
NR-17	Conduct research to fill knowledge gaps that cannot be addressed through inventory and monitoring.	Ongoing	<p>OMKM funded a study to develop a long term model relating to climate change and potential impact to the summit ecosystem; a study of native arthropod habitats and vegetation association, arthropod food webs; analysis of historical weather climate conditions on the summit and meteorological and geological influences on insect and snowfall drops on the summit terrain to help inform wēkiu bug research; study to assess the presence and persistence of permafrost; surficial geology and erosion; and several studies related to the wēkiu bug including life history, genetics, habitat restoration, and habitat mapping.</p> <p>OMKM funded an international symposium on Tropical Alpine Ecosystems. Invited speakers are experts in research and management of alpine ecosystems. OMKM hopes to develop a network with other researchers and managers to gain knowledge to better manage Maunakea.</p>
NR-18	Develop geo-spatial database of all known natural resources and their locations in the UH Management Areas that can serve as baseline documentation against change and provide information essential for decision-making.	Ongoing	Wēkiu bug and botanical data, infrastructure and signs have been mapped. A GIS database of resources surveyed utilizing ArcGIS and distributed as GoogleEarth layers has been developed; new data as available is added to this database..
EDUCATION AND OUTREACH			
Program Development			
EO-1	Develop and implement education and outreach program	Ongoing	<p>Volunteer, Orientation, Brochures (Safety, Culture, Resources, What is OMKM) are available. In-school visits (Hilo Inter, Hawaii Academy of Arts and Sciences PCS, Ke Ana La'ahana, Waiakea High, Kealakehe Elementary) occur regularly. Community organizations and members help support OMKM's volunteer program.</p> <p>Work with Kealakehe Elementary School to support their annual Science Showcase at the school.</p> <p>Outreach activities by researchers are conducted at various schools; OMKM research affiliate also helps advise young scientists with their science fair projects</p> <p>Updates on OMKM activities are given to various community organizations. OMKM also participates in community events.</p>

COMPONENT PLAN: UNDERSTANDING AND PROTECTING MAUNA KEA'S RESOURCES

Implementation Schedule			
			Comments
Education			
EO-2	Require orientation of users, with periodic updates and a certificate of completion, including but not limited to visitors, employees, observatory staff, contractors, and commercial and recreational users.	Ongoing	Resource orientation of those who work on the mountain including observatory personnel, VIS and MKSS staff, rangers, commercial tour operators and staff, and construction workers commenced in 2013. Orientation is available to all interested parties in-person or online.
EO-3	Continue to develop, update, and distribute materials explaining important aspects of Mauna Kea.	Ongoing	Materials on the cultural and natural resources, visiting safely and responsibly and Mauna Kea hazards are distributed at the VIS. .
EO-4	Develop and implement a signage plan to improve signage throughout the UH Management Areas (interpretive, safety, rules and regulations).	Ongoing	A sign plan was approved by the MKMB in 2016. An inventory of sign locations on UH's managed lands has been completed. Cultural and safety related signs have been installed.
EO-5	Develop interpretive features such as self-guided cultural walks and volunteer-maintained native plant gardens.	In Progress	Included as part of ongoing CIP funded project.
EO-6	Engage in outreach and partnerships with schools, by collaborating with local experts, teachers, and university researchers, and by working with the 'Imiloa Astronomy Center of Hawai'i.	Ongoing	See EO-1
Outreach			
EO-7	Continue and increase opportunities for community members to provide input to cultural and natural resources management activities on Mauna Kea, to ensure systematic input regarding planning, management, and operational decisions that affect natural resources, sacred materials or places, or other ethnographic resources with which they are associated.	Ongoing	OMKM through the MKMB, Kahu Kū Mauna, and Environment Committee provide opportunity for members of the community and other organizations to participate in the management activities of the mountain. Bi-monthly volunteer activities provide an opportunity for the community to participate and share knowledge. Meetings with community groups and open houses were conducted to give the public an opportunity to provide input and feedback on administrative rules being developed by OMKM.
EO-8	Provide opportunities for community members to participate in stewardship activities.	Ongoing	OMKM through the MKMB, Kahu Kū Mauna, and Environment provide opportunity for members of the community to participate in the management activities of the mountain. Bi-monthly volunteer activities provide an opportunity for the community to participate and share knowledge. Student projects and mentoring provides opportunities (science fair, legacy, etc.) for one-on-one interaction and more in-depth efforts.

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COMPONENT PLAN: UNDERSTANDING AND PROTECTING MAUNA KEA'S RESOURCES

ASTRONOMICAL RESOURCES

AR-1	Operate the UH Management Areas to prohibit activities resulting in negative impacts to astronomical resources.	In Progress	These will likely be addressed in administrative rules. MKMB approved a draft of administrative rules governing public and commercial activities. UH is waiting for the Governor's approval to hold public hearings seeking community input.
AR-2	Prevent light pollution, radio frequency interference (RFI) and dust.	Ongoing	<p>Project proposals requesting the use of radio signals are reviewed by the Institute for Astronomy for potential interference with astronomical research activities.</p> <p>At the State level, the Starlight Reserve Advisory Committee was active from 2010 to 2015. Efforts by UH and DBEDT .to make the committee permanent were unsuccessful at the 2015 and 2016 Legislature were unsuccessful. They will try again in 2107.</p> <p>UH has been working closely with Hawaii County officials on outdoor lighting issues. This has resulted in the adoption of public-health, wildlife, and astronomy-friendly LED lights to replace the previous low-pressure sodium lights. UH and the County are now requesting the State to use similar lights at Hawaii Island airports and harbors. UH continues to provide advice on amendments to the Hawaii County lighting ordinance</p>

COMPONENT PLAN: MANAGING ACCESS AND USES

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ACTIVITIES AND USES

General Management

ACT-1	Continue and update managed access policy of 1995 Management Plan.	In Progress	This will likely be addressed in administrative rules. MKMB approved a draft of administrative rules governing public and commercial activities. UH is waiting for the Governor's approval to hold public hearings seeking community input.
ACT-2	Develop parking and visitor traffic plan.	In Progress	<p>Capital improvement funds are being used to implement an Ingress/egress, and parking plan to address concerns of traffic flow and pedestrian safety. An Environmental Assessment that identifies potential impacts of this project is being finalized.</p> <p>OMKM Rangers assist staff at the VIS with the implementation of their interim parking plan to maintain order, accommodate as many vehicles as possible and to ensure the safety of visitors to the VIS.</p> <p>An automated vehicle counter counts the number of vehicles (differentiating: public, commercial, tour, observatory, etc.) that drive above Halepōhaku.</p>
ACT-3	Maintain a presence of interpretive and enforcement personnel on the mountain at all times to educate users, deter violations, and encourage adherence to restrictions.	Ongoing	Mauna Kea Rangers are present year round from 7 am to 10 pm daily; DOCARE officers and Hawaii County Police are called for assistance on an as needed basis.

ACT-4	Develop and enforce a policy that maintains current prohibitions on off-road vehicle use in the UH Management Areas and that strengthens measures to prevent or deter vehicles from leaving established roads and designated parking areas.	Ongoing	<p>OMKM prohibits the use of off-road vehicles on UH's managed lands. Vehicle access to the top of Pu'upoli'ahu has been blocked since 2001 at the request of Kahu Kū Mauna.</p> <p>Commercial operators and film crews are required to stay on the road or within the footprint of existing facilities, unless granted permission by OMKM.</p> <p>This will likely be addressed in administrative rules. MKMB approved a draft of administrative rules governing public and commercial activities. UH is waiting for the Governor's approval to hold public hearings seeking community input.</p>
Recreational			
ACT-5	Implement policies to reduce impacts of recreational hiking	In Progress	This will likely be addressed in administrative rules. MKMB approved a draft of administrative rules governing public and commercial activities. UH is waiting for the Governor's approval to hold public hearings seeking community input.
ACT-6	Define and maintain areas where snow-related activities can occur and confine activities to slopes that have a protective layer of snow.	Ongoing	Generally, this is a self-regulated activity. People usually do not venture to areas where there is no snow. Administrative rules will also address this activity. A map of areas where snow play generally occurs has been developed, but areas change depending on the weather and snow deposition.
ACT-7	Confine University or other sponsored tours and stargazing activities to previously disturbed ground surfaces and established parking areas.	Ongoing	Star gazing activities on UH's lands are limited to parking lots, or in areas in close proximity to the VIS
ACT-8	Coordinate with DLNR in the development of a policy regarding hunting in the UH Management Areas.	In Progress	Hunting policy similar to DLNR's is being addressed in the UH's administrative rules.
COMPONENT PLAN: MANAGING ACCESS AND USES			
		Implementation Schedule	Comments
Commercial			
ACT-9	Maintain commercial tour permitting process; evaluate and issue permits annually.	Ongoing	UH oversees commercial tour permits, a responsibility transferred to UH from BLNR. This will likely be addressed in administrative rules. MKMB approved a draft of administrative rules governing public and commercial activities. UH is waiting for the Governor's approval to hold public hearings seeking community input.
ACT-10	Ensure OMKM input on permits for filming activities	Ongoing	<p>All film permits require OMKM's approval.</p> <p>This will likely be addressed in administrative rules. MKMB approved a draft of administrative rules governing public and commercial activities. UH is waiting for the Governor's approval to hold public hearings seeking community input.</p>
ACT-11	Seek statutory authority for the University to regulate commercial activities in the UH Management Areas.	Completed	<p>The function of commercial tour permitting was transferred by BLNR to UH. OMKM oversees commercial tour operations and film activities.</p> <p>Statutory authority to promulgate administrative rules was granted by the Legislature in 2009.</p> <p>This will likely be addressed in administrative rules. MKMB approved a draft of administrative rules governing public and commercial activities. UH is waiting for the Governor's approval to hold public hearings seeking community input.</p>

Scientific Research			
ACT-12	Ensure input by OMKM, MKMB, and Kahu Kū Mauna on all scientific research permits and establish system of reporting results of research to OMKM.	Ongoing	All research proposals must be approved by OMKM. Proposals requiring ground disturbing activities or potential impact to the cultural and/or natural landscape are reviewed by Kahu Kū Mauna and MKMB. Permitted by DLNR as appropriate.
PERMITTING AND ENFORCEMENT			
Laws and Regulations			
P-1	Comply with all applicable federal, state, and local laws, regulations, and permit conditions related to activities in the UH Management Areas.	Ongoing	This is a condition of UH's leases with DLNR. Rangers monitor activities. Regular communication with DLNR's Division of Conservation and Resources Enforcement, County of Hawaii police, and Sheriff's department continues as demonstrated during TMT protests.
P-2	Strengthen CMP implementation by recommending to the BLNR that the CMP conditions be included in any Conservation District Use Permit or other permit.	Ongoing	Relevant CMP management actions were incorporated into the CDUA for the Thirty Meter Telescope project. The MKMB requires proposals for projects for Maunakea include a review and comments on how the proposer will comply with CMP action items relevant to the project.
P-3	Obtain statutory rule-making authority from the legislature, authorizing the University of Hawai'i to adopt administrative rules pursuant to Chapter 91 to implement and enforce the management actions.	Completed	
P-4	Educate management staff and users of the mountain about all applicable rules and permit requirements.	Ongoing	Included as part of the orientation and with new project start-up meetings.

COMPONENT PLAN: MANAGING ACCESS AND USES			
		Implementation Schedule	Comments
Enforcement			
P-5	Continue coordinating with other agencies on enforcement needs.	Ongoing	OMKM coordinates with DOCARE on enforcement activities. Ranger observations are sent to DLNR, NAR, DOFAW, and US Fish & Wildlife Service.
P-6	Obtain legal authority for establishing, and then establish, a law enforcement presence on the mountain that can enforce rules for the UH Management Areas on Mauna Kea.	Completed	
P-7	Develop and implement protocol for oversight and compliance with Conservation District Use Permits.	Ongoing	OMKM rangers conduct twice yearly inspections of all observatories for CDUP compliance.
P-8	Enforce conditions contained in commercial and Special Use permits.	Ongoing	Rangers' responsibilities includes oversight of commercial tour activities and special use permits issued by OMKM.
COMPONENT PLAN: MANAGING THE BUILT ENVIRONMENT			
		Implementation Schedule	Comments
INFRASTRUCTURE AND MAINTENANCE			
Routine Maintenance			
IM-1	Develop and implement an OMMP.	Completed/ Ongoing	An Operations Monitoring and Maintenance Plan (OMMP) was reviewed by Kahu Kū Mauna and approved by the MKMB. Implementation is ongoing.
IM-2	Reduce impacts from operations and maintenance activities by educating personnel about Mauna Kea's unique resources.	Ongoing	A cultural and natural resources orientation program has been developed and is implemented. Training sessions on resources and safety are conducted for OMKM and Maunakea Observatory Support Staff.
IM-3	Conduct historic preservation review for maintenance activities that will have an adverse effect on historic properties.	In Progress	OMKM is currently developing a Programmatic Agreement/MOU relating to maintenance activities that will be submitted to State Historic Preservation Division.
IM-4	Evaluate need for and feasibility of a vehicle wash station near Hale Pōhaku, and requiring that vehicles be cleaned.	In Progress	OMKM is funding a study to evaluate the efficacy current measures to prevent the introduction of invasive species, including vehicle and equipment wash practices
IM-5	Develop and implement a Debris Removal, Monitoring and Prevention Plan.	Ongoing	Trash from the HP facilities and VIS are removed daily. Each observatory removes trash from their respective facilities. Rangers routinely check for and pick up trash and debris while on their daily patrols. Rangers pick up and map the location of trash at the parking lot near the trail head to Lake Waiiau (NAR). The amount of trash decreased following the installation of a portable toilet. A draft plan is under review.
IM-6	Develop and implement an erosion inventory and assessment plan.	In Progress	OMKM partnered with UH Hilo geography department to study surficial geology and cinder cone erosion issues.
IM-7	Prepare a plan, in collaboration with the Department of Defense, to remove military wreckage from a remote area of the UH Management Areas, while ensuring protection of natural and cultural resources.	Ongoing	An inventory of all known aircraft and military wreckage was submitted to the Department of Defense for review and updating. OMKM anticipates working with DOD and SHPD to determine appropriate plans for removal or preservation in place.

COMPONENT PLAN: MANAGING THE BUILT ENVIRONMENT

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Infrastructure			
IM-8	Assess feasibility of paving the Summit Access Road.	Completed/ Ongoing	An engineering study related to the paving of the access road from Halepōhaku to the summit was completed in 1984. This study was the basis for paving the road from the summit to about the boundary of the Science Reserve. Another study was prepared in 2017 of the damage caused by large storms over the past 10 years. The report assessed repairs needed and potential cost.
IM-9	Evaluate need for additional parking lots and vehicle pullouts and install if necessary.	In-Progress	As part of the CIP ingress/egress project at the VIS, additional parking was assessed. Because the cost to execute the entire project scope was much more than available funding, the parking lot had to be scaled back.
IM-10	Evaluate need for additional public restroom facilities in the summit region and at Hale Pōhaku, and install close-contained zero waste systems if necessary.	Ongoing	OMKM is currently studying VIS renovation and expansion to meet safety needs and to educate the visiting public. Initial consideration of converting the presentation room building into a rest and eating stop for commercial tours as a means of reducing congestion at the VIS and providing greater access by the independent travelers, has been put on hold until completion of the ingress/egress project is completed, or if another solution presents itself. Additional portable toilets are available at the summit to address restroom facilities needs at the summit.
Sustainable Technologies			
IM-11	Encourage existing facilities and new development to incorporate sustainable technologies, energy efficient technologies, and LEED standards, whenever possible, into facility design and operations.	Ongoing	The proposed Thirty Meter Telescope is incorporating energy efficiency in its design. Maunakea Observatory Support Services installed a photovoltaic system at Halepōhaku; Gemini observatory installed, and Keck observatory is planning to install photovoltaic systems on their respective summit facilities.
IM-12	Conduct energy audits to identify energy use and system inefficiencies, and develop solutions to reduce energy usage.	Ongoing	Energy audits are part of the photovoltaic system design process, completed or in progress at Gemini, Keck, and Halepōhaku.
IM-13	Conduct feasibility assessment, in consultation with Hawaii Electric Light Company, on developing locally-based alternative energy sources.	Ongoing	MKSS installed a photovoltaic system at Halepōhaku. Additional energy conservation and sustainable generation possibilities are discussed by UHH, MKSS, and Observatories as opportunities arise.
IM-14	Encourage observatories to investigate options to reduce the use of hazardous materials in telescope operations.	Ongoing	With the development of new technology, observatories are beginning to reduce their need to use hazardous materials. An example, is the TMT observatory, which will not be using mercury.

COMPONENT PLAN: MANAGING THE BUILT ENVIRONMENT

COMPONENT PLAN: MANAGING THE BUILT ENVIRONMENT

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CONSTRUCTION GUIDELINES

General Requirements

C-1	Require an independent construction monitor who has oversight and authority to insure that all aspects of ground based work comply with protocols and permit requirements.	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.
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Best Management Practices

C-2	Require use of Best Management Practices Plan for Construction Practices.	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA. A template for adaptation and use by others is also available.
C-3	Develop, prior to construction, a rock movement plan.	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.
C-4	Require contractors to provide information from construction activities to OMKM for input into OMKM information databases.	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.
C-5	Require on-site monitors (e.g., archaeologist, cultural resources specialist, entomologist) during construction, as determined by the appropriate agency.	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.
C-6	Conduct required archaeological monitoring during construction projects per SHPD approved plan	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.
C-7	Education regarding historical and cultural significance	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.
C-8	Education regarding environment, ecology and natural resources	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.
C-9	Inspection of construction materials	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.

SITE RECYCLING, DECOMMISSIONING, DEMOLITION AND RESTORATION

SR-1	Require observatories to develop plans to recycle or demolish facilities once their useful life has ended, in accordance with their sublease requirements, identifying all proposed actions.	Ongoing	This will be part of the TMT decommissioning plan, with the TMT decommissioning funding plan approved by the MKMB in 2014.
SR-2	Require observatories to develop a restoration plan in association with decommissioning, to include an environmental cost-benefit analysis and a cultural assessment.	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.
SR-3	Require any future observatories to consider site restoration during project planning and include provisions in subleases for funding of full restoration.	Ongoing	Included as part of the proposed TMT Management Plan in its CDUA.

		Implementation Schedule	Comments
CONSIDERING FUTURE LAND USE			
Facility Planning Guidelines			
FLU-1	Follow design guidelines presented in the 2000 Master Plan.	Ongoing	The Design Review Process, which incorporated the 2000 Master Plan's design guidelines, were used in the review of the Thirty Meter Telescope project
FLU-2	Develop a map with land-use zones in the Astronomy Precinct based on updated inventories of cultural and natural resources, to delineate areas where future land use will not be allowed and areas where future land use will be allowed but will require compliance with prerequisite studies or analysis prior to approval of Conservation District Use Permit.	Ongoing	Areas previously mapped as off-limits for future land use through plans such as the Master Plan or CMP are used to limit any proposed activity. UH President Lassner confirmed that TMT was the last telescope to be built on undisturbed land. Resource data must be part of any proposal for major land use requests. HAR 13-5 allows for different types of land uses with each having its own requirements for preparing a land use application. Thus a single pre-prepared map cannot possibly address all potential scenarios.
FLU-3	Require cataloguing of initial site conditions for use when conducting site restoration.	Ongoing	TMT project was example (photo documentation received)
FLU-4	Require project specific visual rendering of both pre- and post-project settings to facilitate analysis of potential impacts to view planes.	Ongoing	TMT project was example (photo documentation received)
FLU-5	Require an airflow analysis on the design of proposed structures to assess potential impacts to aeolian ecosystems.	Ongoing	TMT project was example
FLU-6	Incorporate habitat mitigation plans into project planning process.	Ongoing	TMT project was example
FLU-7	Require use of close-contained zero-discharge waste systems for any future development in the summit region, from portable toilets to observatory restrooms, if feasible.	Ongoing	TMT project was example

COMPONENT PLAN: MANAGING OPERATIONS			
		Implementation Schedule	Comments
OPERATION AND IMPLEMENTATION			
OI-1	Maintain OMKM, MKMB, and Kahu Kū Mauna in current roles, with OMKM providing local management of the UH Management Areas, and MKSS providing operational and maintenance services.	Ongoing	The MKMB meets regularly, holding numerous public meetings; which includes consultation with Kahu Kū Mauna Council. OMKM continues to submit CMP management actions (such as the OMMP) to MKMB. MKSS continues to maintain the road and public services, financially supported by the Maunakea Observatories.
OI-2	Develop training plan for staff and volunteers.	Completed	OMKM requires all staff and volunteers to attend the Maunakea orientation. A training plan was submitted and approved by the MKMB; bi-monthly trainings of all staff is being conducted.
OI-3	Maintain and expand regular interaction and dialogue with stakeholders, community members, surrounding landowners, and overseeing agencies to provide a coordinated approach to resource management.	Ongoing	OMKM has frequent contact in particularity with its neighbor, DLNR on resource management issues. OMKM rangers report unusual or suspicious behavior observed on DLNR lands to DLNR including DOCARE.
OI-4	Establish grievance procedures for OMKM, to address issues as they arise.	In Progress	OMKM is currently designing a grievance process.
OI-5	Update and implement emergency response plan.	Ongoing	Emergency response plan is reviewed annually.
MONITORING, EVALUATION AND UPDATES			
MEU-1	Establish a reporting system to ensure that the MKMB, DLNR, and the public are informed of results of management activities in a timely manner.	Ongoing	Reports are provided at the publicly held MKMB Meetings.
MEU-2	Conduct regular updates of the CMP that reflect outcomes of the evaluation process, and that incorporate new information about the resources.	In Progress	Five-year CMP revision interval was initiated in 2014 and is now pending the "Envision Maunakea" community input process and execution and resolution of the Governor's 10-point plan, including the return of a substantial portion of land to DLNR.
MEU-3	Revise and update planning documents, including the master plan, leases, and subleases, so that they will clearly assign roles and responsibilities for managing Mauna Kea and reflect stewardship matters resolved with DLNR.	In Progress	Updates to the Master lease has been initiated, but requires the preparation of an EIS.

Appendix B

Cumulative Annual Progression of CMP Implementation Status

Management		CMP		Annual Implementation Status							
Action	Description	Implementation Timeframe	2010	2011	2012*	2013	2014	2015	2016	2017	Comment
Native Hawaiian Cultural Resources											
Management											
CR-1	Kahu Kū Mauna shall work with families with lineal and historical connections to Maunakea, cultural practitioners, and other Native Hawaiian groups, including the Maunakea Management Board's Hawaiian Culture Committee, toward the development of appropriate procedures and protocols regarding cultural issues.	Immediate		Ongoing	In Progress	In Progress	Ongoing				
CR-2	Support application for designation of the summit region of Maunakea as a Traditional Cultural Property, per the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq. in consultation with the larger community.	Short-term							Ongoing		
CR-3	Conduct educational efforts to generate public awareness about the importance of preserving the cultural landscape.	Immediate		Ongoing	In Progress	In Progress	Ongoing				
Cultural Practices											
CR-4	Establish a process for ongoing collection of information on traditional, contemporary, and customary cultural practices.	Short-term									
CR-5	Develop and adopt guidelines for the culturally appropriate placement and removal of offerings.	Immediate			In Progress*						
CR-6	Develop and adopt guidelines for the visitation and use of ancient shrines.	Immediate			In Progress				Ongoing		
CR-7	Kahu Kū Mauna shall take the lead in determining the appropriateness of constructing new Hawaiian cultural features.	Immediate			In Progress*						
CR-8	Develop and adopt a management policy for the UH Management Areas on the scattering of cremated human remains.	Immediate		Ongoing	In Progress*						
CR-9	A management policy for the culturally appropriateness of building ahu or "stacking of rocks" will need to be developed by Kahu Kū Mauna who may consider similar policies adopted by Hawai'i Volcanoes National Park.	Immediate		Ongoing	In Progress*						
Historic Properties											
CR-10	Develop and implement a historic property monitoring program to systematically monitor the condition of the historic district and all historic properties, including cultural sites and burials.	Immediate		Ongoing	In Progress	In Progress	Completed	Completed	Completed	Completed	
CR-11	Complete an archaeological survey of the portions of the Summit Access Road corridor that are under UH management	Completed									

Management		CMP Implementation		Annual Implementation Status							
Action	Description	Timeframe	2010	2011	2012*	2013	2014	2015	2016	2017	Comment
CR-12	Consult with Kahu Kū Mauna about establishing buffers (preservation zones) around known historic sites in the Astronomy Precinct, to protect them from potential future development	Immediate		As needed	As needed	As needed	Ongoing				
CR-13	Develop and implement a burial treatment plan for the UH Management Areas in consultation with Kahu Kū Mauna Council, MKMB's Hawaiian Culture Committee, the Hawai'i Island Burial Council, recognized lineal or cultural descendants, and SHPD.	Immediate		Ongoing	In Progress	In Progress	Completed				A burial treatment plan was approved by SHPD in July 2014. This was incorrectly reported as 'In Progress' in the previously submitted 2014 and 2015 narrative reports.
CR-14	Immediately report any disturbance of a shrine or burial site to the rangers, DOCARE, Kahu Kū Mauna Council, and SHPD	Ongoing									
Natural Resources											
Threat Prevention and Control											
NR-1	Limit threats to natural resources through management of permitted activities and uses	Short-term			In Progress	In Progress	In Progress	In Progress	Ongoing		
NR-2	Limit damage caused by invasive species through creation of an invasive species prevention and control program	Immediate		Ongoing	In Progress		Ongoing				
NR-3	Maintain native plant and animal populations and biological diversity	Mid and Long-term								Ongoing	
NR-4	Minimize barriers to species migration, to help maintain populations and protect ecosystem processes and development.	Mid and Long-term								Ongoing	
NR-5	Manage ecosystems to allow for response to climate change	Long-term								Ongoing	
NR-6	Reduce threats to natural resources by educating stakeholders and the public about Maunakea's unique natural resources.	Immediate		Ongoing							
Ecosystem Protection, Enhancement & Restoration											
NR-7	Delineate areas of high native diversity, unique communities, or unique geological features within the Astronomy Precinct and at Halepōhaku and consider protection from development.	Short and Mid-term					In Progress		Ongoing		
NR-8	Consider fencing areas of high native biodiversity or populations of endangered species to keep out feral ungulates (applies to areas below 12,800 ft elevation).	Mid-term					Ongoing		Ongoing	Ongoing	
NR-9	Increase native plant density and diversity through an outplanting program.	Long-term							Ongoing		

Management		CMP		Annual Implementation Status							
Action	Description	Implementation Timeframe	2010	2011	2012*	2013	2014	2015	2016	2017	Comment
NR-10	Incorporate mitigation plans into project planning and conduct mitigation following new development.	As needed					Ongoing				
NR-11	Conduct habitat rehabilitation projects following unplanned disturbances.	As needed					Ongoing				
NR-12	Create restoration plans and conduct habitat restoration activities, as needed.	As needed							In Progress	Ongoing	
Program Management											
NR-13	Increase communication, networking, and collaborative opportunities, to support management and protection of natural resources.	Immediate		Ongoing	In Progress	Ongoing					
NR-14	Use the principles of adaptive management when developing programs and methodologies. Review programs annually and revise any component plans every five years, based on the results of the program review.	Short-term / As needed					In Progress				'In Progress' designation reflects Envision Maunakea process and is dependent upon exact scope of Governor Ige's directive to return 10,000 acres.
Inventory, Monitoring and Research											
NR-15	Conduct baseline inventories of high-priority resources, as outlined in an inventory, monitoring, and research plan.	Immediate		Ongoing							
NR-16	Conduct regular long-term monitoring, as outlined in an inventory, monitoring, and research plan	Ongoing			In Progress	Ongoing					
NR-17	Conduct research to fill knowledge gaps that cannot be addressed through inventory and monitoring.	Immediate		Ongoing							
NR-18	Develop geo-spatial database of all known natural resources and their locations in the UH Management Areas that can serve as baseline documentation against change and provide information essential for decision-making.	Ongoing			In Progress		Ongoing				
Education and Outreach											
Program Development											
EO-1	Develop and implement education and outreach program	Immediate and Short-term				Ongoing					
Education											
EO-2	Require orientation of users, with periodic updates and a certificate of completion, including but not limited to visitors, employees, observatory staff, contractors, and commercial and recreational users.	Long-term			In Progress	Ongoing					

Management		CMP		Annual Implementation Status							
Action	Description	Implementation Timeframe	2010	2011	2012*	2013	2014	2015	2016	2017	Comment
EO-3	Continue to develop, update, and distribute materials explaining important aspects of Maunakea.	Ongoing			In Progress	Ongoing					
EO-4	Develop and implement a signage plan to improve signage throughout the UH Management Areas (interpretive, safety, rules and regulations).	Immediate							In Progress	Ongoing	
EO-5	Develop interpretive features such as self-guided cultural walks and volunteer-maintained native plant gardens.	Mid-term							In Progress		
EO-6	Engage in outreach and partnerships with schools, by collaborating with local experts, teachers, and university researchers, and by working with the 'Imiloa Astronomy Center of Hawai'i.	Mid-term					Ongoing				
Outreach											
EO-7	Continue and increase opportunities for community members to provide input to cultural and natural resources management activities on Maunakea, to ensure systematic input regarding planning, management, and operational decisions that affect natural resources, sacred materials or places, or other ethnographic resources with which they are associated.	Ongoing									
EO-8	Provide opportunities for community members to participate in stewardship activities.	Ongoing									
Astronomy Resources											
Protection of Astronomical Resources											
AR-1	Operate the UH Management Areas to prohibit activities resulting in negative impacts to astronomical resources.	Ongoing			In Progress						
AR-2	Prevent light pollution, radio frequency interference (RFI) and dust.	Ongoing									
Activities and Uses											
General Management											
ACT-1	Continue and update managed access policy of 1995 Management Plan.	Short-term			In Progress						
ACT-2	Develop parking and visitor traffic plan.	Immediate		Ongoing	In Progress						
ACT-3	Maintain a presence of interpretive and enforcement personnel on the mountain at all times to educate users, deter violations, and encourage adherence to restrictions.	Ongoing									
ACT-4	Develop and enforce a policy that maintains current prohibitions on off-road vehicle use in the UH Management Areas and that strengthens measures to prevent or deter vehicles from leaving established roads and designated parking areas.	Ongoing									
Recreational											

Management		CMP	Annual Implementation Status								
Action	Description	Implementation Timeframe	2010	2011	2012*	2013	2014	2015	2016	2017	Comment
ACT-5	Implement policies to reduce impacts of recreational hiking	Short-term			In Progress						
ACT-6	Define and maintain areas where snow-related activities can occur and confine activities to slopes that have a protective layer of snow	Ongoing									
ACT-7	Confine University or other sponsored tours and star-gazing activities to previously disturbed ground surfaces and established parking areas.	Ongoing									
ACT-8	Coordinate with DLNR in the development of a policy regarding hunting in the UH Management Areas.	Immediate		Ongoing	In Progress						
Commercial											
ACT-9	Maintain commercial tour permitting process; evaluate and issue permits annually.	Ongoing									
ACT-10	Ensure OMKM input on permits for filming activities	Ongoing									
ACT-11	Seek statutory authority for the University to regulate commercial activities in the UH Management Areas.	Completed									
Scientific Research											
ACT-12	Ensure input by OMKM, MKMB, and Kahu Kū Mauna on all scientific research permits and establish system of reporting results of research to OMKM.	Ongoing									
Permitting and Enforcement											
Laws and Regulations											
P-1	Comply with all applicable federal, state, and local laws, regulations, and permit conditions related to activities in the UH Management Areas.	Ongoing									
P-2	Strengthen CMP implementation by recommending to the BLNR that the CMP conditions be included in any Conservation District Use Permit or other permit.	As needed			Ongoing						
P-3	Obtain statutory rule-making authority from the legislature, authorizing the University of Hawai'i to adopt administrative rules pursuant to Chapter 91 to implement and enforce the management actions.	Completed									
P-4	Educate management staff and users of the mountain about all applicable rules and permit requirements.	Immediate		Ongoing							
Enforcement											
P-5	Continue coordinating with other agencies on enforcement needs.	Ongoing									
P-6	Obtain legal authority for establishing, and then establish, a law enforcement presence on the mountain that can enforce rules for the UH Management Areas on Maunakea.	Completed / As needed		Completed							

Management		CMP Implementation			Annual Implementation Status						
Action	Description	Timeframe	2010	2011	2012*	2013	2014	2015	2016	2017	Comment
P-7	Develop and implement protocol for oversight and compliance with Conservation District Use Permits.	Ongoing									
P-8	Enforce conditions contained in commercial and Special Use permits.	Ongoing									
Infrastructure and Maintenance											
Routine Maintenance											
IM-1	Develop and implement an OMMP.	Ongoing			In Progress				Completed/Ongoing		
IM-2	Reduce impacts from operations and maintenance activities by educating personnel about Maunakea's unique resources.	Immediate		Ongoing	In Progress	Ongoing					
IM-3	Conduct historic preservation review for maintenance activities that will have an adverse effect on historic properties.	Short-term			In Progress						
IM-4	Evaluate need for and feasibility of a vehicle wash station near Halepōhaku, and requiring that vehicles be cleaned.	Short-term					In Progress				
IM-5	Develop and implement a Debris Removal, Monitoring and Prevention Plan.	Immediate		Ongoing							
IM-6	Develop and implement an erosion inventory and assessment plan.	Long-term					In Progress				
IM-7	Prepare a plan, in collaboration with the Department of Defense, to remove military wreckage from a remote area of the UH Management Areas, while ensuring protection of natural and cultural resources.	Mid-term							Ongoing		
Infrastructure											
IM-8	Assess feasibility of paving the Summit Access Road.	Long-term			In Progress				Completed/Ongoing		
IM-9	Evaluate need for additional parking lots and vehicle pullouts and install if necessary.	Mid-term								In Progress	
IM-10	Evaluate need for additional public restroom facilities in the summit region and at Halepōhaku, and install close-contained zero waste systems if necessary.	Immediate			In Progress				Ongoing		
Sustainable Technologies											
IM-11	Encourage existing facilities and new development to incorporate sustainable technologies, energy efficient technologies, and LEED standards, whenever possible, into facility design and operations.	As needed					Ongoing				
IM-12	Conduct energy audits to identify energy use and system inefficiencies, and develop solutions to reduce energy usage.	Immediate							Ongoing		
IM-13	Conduct feasibility assessment, in consultation with Hawaii Electric Light Company, on developing locally-based alternative energy sources.	Mid-term							In Progress	Ongoing	

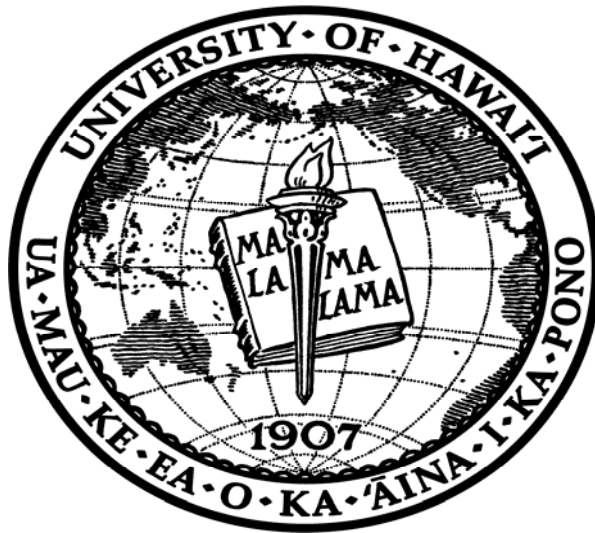
Management		CMP	Annual Implementation Status								
Action	Description	Implementation Timeframe	2010	2011	2012	2013	2014	2015	2016	2017	Comment
IM-14	Encourage observatories to investigate options to reduce the use of hazardous materials in telescope operations.	Short-term							Ongoing		
Construction Guidelines											
General Requirements											
C-1	Require an independent construction monitor who has oversight and authority to insure that all aspects of ground based work comply with protocols and permit requirements.	As needed					Ongoing				
Best Management Practices											
C-2	Require use of Best Management Practices Plan for Construction Practices.	As needed					Ongoing				
C-3	Develop, prior to construction, a rock movement plan.	As needed					Ongoing				
C-4	Require contractors to provide information from construction activities to OMKM for input into OMKM information databases.	As needed					Ongoing				
C-5	Require on-site monitors (e.g., archaeologist, cultural resources specialist, entomologist) during construction, as determined by the appropriate agency.	As needed					Ongoing				
C-6	Conduct required archaeological monitoring during construction projects per SHPD approved plan.	As needed					Ongoing				
C-7	Education regarding historical and cultural significance.	As needed					Ongoing				
C-8	Education regarding environment, ecology and natural resources.	As needed					Ongoing				
C-9	Inspection of construction materials.	As needed					Ongoing				
Site Recycling, Decommissioning, Demolition and Restoration											
SR-1	Require observatories to develop plans to recycle or demolish facilities once their useful life has ended, in accordance with their sublease requirements, identifying all proposed actions.	As needed					Ongoing				
SR-2	Require observatories to develop a restoration plan in association with decommissioning, to include an environmental cost-benefit analysis and a cultural assessment.	As needed					Ongoing				
SR-3	Require any future observatories to consider site restoration during project planning and include provisions in subleases for funding of full restoration.	As needed					Ongoing				
Considering Future Land Use											
Facility Planning Guidelines											
FLU-1	Follow design guidelines presented in the 2000 Master Plan	As needed			Ongoing						

Management		CMP	Annual Implementation Status								
Action	Description	Implementation Timeframe	2010	2011	2012*	2013	2014	2015	2016	2017	Comment
FLU-2	Develop a map with land-use zones in the Astronomy Precinct based on updated inventories of cultural and natural resources, to delineate areas where future land use will not be allowed and areas where future land use will be allowed but will require compliance with prerequisite studies or analysis prior to approval of Conservation District Use Permit	Short-term								Ongoing	
FLU-3	Require cataloguing of initial site conditions for use when conducting site restoration.	As needed					Ongoing				
FLU-4	Require project specific visual rendering of both pre- and post-project settings to facilitate analysis of potential impacts to view planes.	As needed					Ongoing				
FLU-5	Require an airflow analysis on the design of proposed structures to assess potential impacts to aeolian ecosystems.	As needed					Ongoing				
FLU-6	Incorporate habitat mitigation plans into project planning process.	As needed					Ongoing				
FLU-7	Require use of close-contained zero-discharge waste systems for any future development in the summit region, from portable toilets to observatory restrooms, if feasible	As needed					Ongoing				
Operations and Implementation Management											
OI-1	Maintain OMKM, MKMB, and Kahu Kū Mauna in current roles, with OMKM providing local management of the UH Management Areas, and MKSS providing operational and maintenance services.	Ongoing									
OI-2	Develop training plan for staff and volunteers	Ongoing			In Progress				Completed		
OI-3	Maintain and expand regular interaction and dialogue with stakeholders, community members, surrounding landowners, and overseeing agencies to provide a coordinated approach to resource management.	Ongoing									
OI-4	Establish grievance procedures for OMKM, to address issues as they arise.	Short-term							In Progress		
OI-5	Update and implement emergency response plan.	Ongoing									
Monitoring, Evaluation, and Updates Management											
MEU-1	Establish a reporting system to ensure that the MKMB, DLNR, and the public are informed of results of management activities in a timely manner.	Immediate		Ongoing							

Management		CMP	Annual Implementation Status								
Action	Description	Implementation Timeframe	2010	2011	2012*	2013	2014	2015	2016	2017	Comment
MEU-2	Conduct regular updates of the CMP that reflect outcomes of the evaluation process, and that incorporate new information about the resources.	Short-term / As needed					In Progress		In Progress		'In Progress' designation reflects Envision Maunakea process and is dependent upon exact scope of Governor Ige's directive to return 10,000 acres.
MEU-3	Revise and update planning documents, including the master plan, leases, and subleases, so that they will clearly assign roles and responsibilities for managing Maunakea and reflect stewardship matters resolved with DLNR.	As needed					In Progress				

*In 2012 the **Ongoing** category was divided into two groups, **Ongoing** and **In Progress**.

* A lawsuit was filed in federal court which was dismissed without prejudice; the plaintiff may still seek further judicial relief



UNIVERSITY OF HAWAI'I SYSTEM

ANNUAL REPORT

REPORT TO THE 2007 LEGISLATURE

Annual Report on
Long-term development of observatory sites on the summit of Mauna Kea

HCR 314 HD1, 2006

December 2006

Response to

HCR 314, Regular Session of 2006

Report on long-term development of observatory sites on the summit of Mauna Kea

by

**Rolf-Peter Kudritzki
Director, Institute for Astronomy
University of Hawaii**

December 1, 2006

Summary. A report on the long-term future development of observatory sites on the Summit of Mauna Kea is given. A conceptual plan is presented that proposes a much smaller number of future projects than foreseen in the University of Hawaii Master Plan of 2000. The long-range goal is to have eventually fewer observatories than now, but still the very best in the world in this way securing continued world leadership in astronomical research and education in Hawaii for the next decades.

1. Introduction.

This report is submitted in response to the request by the House of Representatives of the Twenty-third Legislature of the State of Hawaii, Regular Session of 2006, the Senate concurring, "that the University of Hawaii Institute for Astronomy prepares a report on the long-term development of observatory sites on the summit of Mauna Kea, including a conceptual plan that consolidates the number of observatory sites, to enhance the quality of astronomy research and limit the size of the geographical area on which to situate new observatories."

The report is structured as follows. We first describe the present situation of astronomical research and education in Hawaii and its important role for the State and the University. Then, we discuss the concept for long-term astronomical development, as it is described in the comprehensive and detailed "Mauna Kea Science Reserve Master Plan", which was approved by the Board of Regents in June 2000. Since the development of the Master Plan, the scientific priorities of astronomy for the new century have become much clearer, and a new more concise concept for future astronomical development has emerged that will guarantee Hawaii's continued world leadership in astronomical research and education, while at the same time being well balanced with the needs for cultural and environmental protection of Mauna Kea. This concept will be introduced in section three of this report.

1. The role of astronomy in Hawaii.

To appreciate the role of astronomy in our state, one first needs to understand the history of astronomy development in Hawaii; the basic philosophy behind that development; the essential role played by the Institute for Astronomy; and the educational, scientific and economic benefits that accrue from astronomy.

The Institute for Astronomy (IfA) is 38 years old and is by far the youngest among top-ranked astronomy programs in the U.S. In this short time, the Institute has grown to become one of the most visible of UH's scientific research programs and one of the most respected astronomy institutes in the world. The IfA plays in the same league as Caltech, Harvard, Princeton, Berkeley, and Cambridge. It attracts the best faculty and the best students from around the world. It has become a pillar of academic excellence and certainly an engine of economic growth in the State. Where once school kids in the world learned that the center of astronomy was Mount Palomar in California, now they learn it is in Hawaii. How has this story of scientific success been possible in such a short time?

The answer to this question is the superior quality of Mauna Kea and Haleakala as the world's best observatory sites and the concept developed by the IfA, the University and the State to build up the most capable observatory in the world. The astronomers of the IfA were the first in the world to dare to build a technologically very challenging and complex observatory with small, but very efficient, telescopes at the extreme elevation and thin air of 13,796 ft. With their exciting astronomical detections they were able to demonstrate to the world that Mauna Kea is unique as an astronomical site.

Scientifically, the logical consequence for UH would have been to use this enormous advantage to build the next generation of most powerful telescopes on its own, as the universities in California, Texas, Arizona and on the East Coast did before. However, UH was (and is) a medium size State University with a very limited budget, and Hawaii is a small state with limited resources. Thus, a different concept was developed—the concept of scientific partnerships.

Within this concept the national and international partners contribute the capital funding for the facility, carry most or all of the operational costs, and contribute to the infrastructure development. The University, through the IfA, provides the leadership and know-how to operate an observatory at extreme altitude, the management of the physical and operational infrastructure (roads, power, fiber-optics communications, food, lodging) and ongoing protection from adverse intrusions such as light pollution and radio frequency interference. The University also provides the land for the observatory site from its lease from the State, along with assistance in planning and permitting. The University and its partners collaborate in the scientific use of the telescopes including development of technologically advanced instrumentation. Most importantly, they share the scientific observing time on the facilities with no cost to the University.

In this way, the University and the State did not have to contribute the enormous capital costs to design and build the extremely powerful new telescopes, but were still able to provide researchers with access to these unique facilities and give them the opportunity to build up one of the best research and education programs in the world. The benefits, both economic and otherwise, are substantial as indicated below.

1. Astronomy facilities on Mauna Kea and Haleakala represent a capital investment of close to \$1 billion. The economic impact of astronomy to the State amounts to \$150 million per year. New projects for Haleakala and Mauna Kea have the potential to double these numbers.
2. The observatories and other astronomy-related activities on Mauna Kea and Haleakala provide 600 quality jobs in a clean high-tech industry on the neighbor islands. It is important to note that only a small fraction of these jobs are for astronomers. Most of them are for technical, administrative and logistic services. This number will increase if we continue to follow the sound policies that have been in place for nearly 30 years. Beyond the simple numbers, there is the fact that astronomy as a high-tech science diversifies the Hawaii economy and gives local young people with scientific and technical talents a wealth of opportunities to realize their potential without having to leave their family and friends in Hawaii to pursue employment elsewhere. Unlike some high-tech industries, astronomy is fundamentally rooted in Hawaii. Once established, an astronomy facility cannot be easily relocated to the mainland or overseas.
3. The IfA has developed into one of the world's preeminent centers for astronomical research. The Institute receives extramural awards totaling between \$20 to \$25 million annually for astronomical research, for development of new astronomical instrumentation, for improving its own old telescopes and for operating telescopes, such as the NASA Infrared Telescope Facility on Mauna Kea and the Mees Solar Observatory on Haleakala. Its graduate program belongs to the best in the world and about 1,000 undergraduate students per year participate in astronomy courses in Manoa. In addition, UH Hilo has recently developed a very successful astronomy undergraduate program. Astronomy is one of UH's most successful programs.
4. The Mauna Kea Observatories are the world's largest observatory complex, and will remain so for the foreseeable future. Hawaii and its State University are recognized around the world for this outstanding achievement—a source of tremendous prestige for the State. Approximately 1,500 scientists come to work at the Observatories each year; most add some vacation time to their trip. Hundreds of others come to Hawaii each year to participate in astronomy-related conferences. Several small companies make a business of providing quality tours to Mauna Kea. The observatories' base facilities in Hilo, Waimea and on Maui are a major addition to those communities and contribute in many ways.

5. Over the years, the observatories have made significant monetary contributions to the infrastructure, much of which is of benefit to the general community. This includes \$2 million for road improvements on Mauna Kea and another \$2 million to assist GTE Hawaiian Tel to install a fiber optics cable across the Saddle from Waimea to Hilo. This cable provides state-of-the-art service for both the Big Island telephone system and the observatories.
6. The observatories operate the Visitor Information Station at Hale Pohaku, which provides free public star gazing seven nights a week and welcomes about 100,000 visitors each year.
7. The observatories pay the entire cost of maintenance and snow removal for the road and they pay for emergency services. The public can use the road all the time. The costs for this service and the Visitor Station amount to \$700,000 a year.

Although the economic benefits are substantial, it is important to keep in mind that the primary mission of astronomy is not to generate revenue. Astronomy is basic science and concentrates on the scientific exploration of the universe. Astronomy is the mother of all sciences and has changed our understanding of the world and our thinking as humans like no other science. The telescopes on Mauna Kea and Haleakala have contributed fundamentally to the advancement of modern astronomy. They are world-class research facilities, and the best window our planet provides on the strange and wonderful universe we live in.

2. Long-term astronomical development in the 2000 Master Plan.

The 2000 Master Plan is a comprehensive document, which was approved by the Board of Regents in June 2000 after an arduous, two-year process with input from all sectors of the community, and supervised by a community-based advisory committee chaired by two faculty members at UH Hilo's College of Hawaiian Language, Dr. Pila Wilson and Mr. Larry Kimura. It was accompanied by a State Environmental Impact Statement signed by the Governor of the State. The Master Plan has been submitted to the Legislature on many occasions and is available on the Institute for Astronomy's website. The scope of the Master Plan is much broader than future development of astronomy. It addresses the cultural and environmental aspects of the University's use and responsibility for the Mauna Kea Science Reserve and proposes a new organizational structure, which has been implemented by establishing the Office of Mauna Kea Management, based at the University of Hawaii at Hilo, and two important community-based advisory bodies, the Mauna Kea Management Board, and Kahu Ku Mauna, the Office's and Board's cultural advisory council. Within the new organizational structure the Institute for Astronomy's responsibility on Mauna Kea is limited to astronomical operation, research and education, whereas the Office has the responsibility for the cultural and environmental protection and all other aspects of land management. In this report we will not discuss these latter aspects. It is our understanding from the 2006 hearings that the objective of HCR 314 is to obtain information on the prospects and

plans for future astronomical development on Mauna Kea, and we have restricted the report accordingly.

The scientific progress in modern astronomy is intimately related to the development of new technologies, new instrumentation, and new and more powerful telescopes. Without such development it is impossible to stay at the forefront of astronomical research. It is therefore natural that the Master Plan also contains a section about very ambitious future astronomical development. However, this development together with all but one of the existing facilities is confined to the "Astronomy Precinct", a very small fraction of less than five percent (4.65% or 525 acres) of the existing Mauna Kea Science Reserve of 11,288 acres in order to maintain a close grouping of astronomy facilities, roads and support infrastructure. This approach minimizes the potential impact to the natural and cultural resources of the summit region. The criteria to be followed for new facilities proposed in the Astronomy Precinct include:

- Emphasize recycling of existing sites when possible so as not to disturb existing habitat areas, archeology and landforms;
- Limit visual impact and scattering of facilities by clustering within the existing development areas;
- Utilize the natural forms in the summit area to shield views of built facilities;
- Implement design measures to allow facilities to blend better with the existing landscape;
- Minimize infrastructure development by locating near the existing roadway and utility network;
- Minimal impact on existing facilities;
- Minimum impact of Wekiu bug habitat;
- Avoidance of archeological sites;
- Suitability for observations.

A vigorous UH approval process for new project has been introduced, which includes reviews by the Office of Mauna Kea Management, the Kahu Ku Mauna Council, the Mauna Kea Management Board, the Chancellor of UH Hilo, the UH President and finally the Board of Regents. In addition, new projects have to carry out an environmental analysis in the form of either an Environmental Assessment or an Environmental Impact Statement and they have to go through the State process with the Department of Land and Natural Resources to obtain a Conservation District Use Permit. In the whole process each new facility will be required to present a detailed justification addressing the following questions

- (1) Why is the facility needed?
- (2) Why is Mauna Kea the best site for the facility?
- (3) What other location options are available?
- (4) What are the expected benefits with regard to research and education, employment and economy
- (5) What is the expected facility lifetime and term of sublease agreement?

There are currently 12 observatories on Mauna Kea. The Master Plan identifies five of those (the UH 0.6m, the UH 2.2m, the Canada-France-Hawaii Telescope, the United Kingdom Infrared Telescope, and the NASA Infrared Telescope Facility) as older facilities, several of which could be upgraded or replaced within the next 20 years. The expectation is that the new or upgraded telescopes would come in a range of sizes from 2 to 15 meter mirror sizes (note that the 10m-class mirrors of the existing Keck, Gemini and Subaru Telescopes represent the current state-of-the art observatory facilities), however there are clear restrictions in terms of the height and volume for these facility redevelopments. The Master Plan also assumes that the other seven existing facilities would remain as is over the next 20 years.

In addition, the Master Plan envisages the expansion of two existing facilities. For the Keck Observatory it proposes the addition of four to six 1.8m outrigger telescopes to create a very powerful infrared interferometer, which would study cosmic objects for spatially resolved fine details, for instance the motion of stars caused by the presence of Jupiter-like planets orbiting around them. For the existing Harvard-Smithsonian Submillimeter Array (SMA) – an array of 12 movable radio telescope antennas distributed over 24 fixed concrete pads – the plan foresees an extension by 12 more antennas and 24 additional pads to increase the sensitivity and efficiency.

Three new projects at three new sites are proposed in the Master Plan. The first is the UH Hilo instructional telescope, a relatively small (1m mirror) telescope planned for a site adjacent to the existing UH 0.6m telescope. This facility is planned to be used for the education and training of undergraduate students in UH Hilo's Department of Physics and Astronomy program. The second is a new optical/infrared telescope comparable in size and capability to the existing Keck or Gemini telescopes. For environmental and cultural reasons a site below the summit ridge on the north shield is proposed.

The third new facility proposed is a revolutionary new telescope with a very large mirror of 25m to 50m diameter. This would be the largest telescope in the world. The site foreseen for this telescope is on the north-west lava plateau below the summit. This location minimizes visibility of the new facility from Hilo and Honokaa and would not affect Wekiu bug habitat.

The future astronomical development on Mauna Kea as foreseen in the University's Master Plan gives very high priority to the protection of natural and cultural resources, but at the same it also proposes a considerable expansion of future astronomical activity on Mauna Kea. If all facilities discussed in the Master Plan were built, the number of observatories would increase from 12 to 15 and two of the existing ones would be expanded.

In the next section we will introduce a modified plan, which proposes significantly less future development.

3. A modified plan for long-term astronomical development on Mauna Kea.

When future development for the next 20 years was discussed in the Master Plan of the year 2000, the goal was to be as comprehensive as possible in order not to exclude potentially important scientific options for the future. However, now six years later and after detailed scientific discussion within the Institute for Astronomy it has become clear that the number of future projects envisaged for the next 20 years is much smaller than anticipated in the Master Plan. The long-range goal is to have eventually fewer observatories than now, but certainly still the very best in the world.

After six years of successful operation under the Master Plan in coordination and collaboration with the Office of Mauna Kea Management and its community-based advisory boards it is well recognized that future plans for Mauna Kea require balanced management to preserve, protect and enhance the cultural and natural resources as well as providing a world-class center for education and research in astronomy. As laid out in the Master Plan and also described in the previous section, all major future development will be subject to stringent review by the Office of Mauna Kea Management, Mauna Kea Management Board, and Kahu Ku Mauna Council, as well as the community-based Hawaiian Culture and Environment committees, which report to the Board. In addition, as also already described in the section before, all major developments require a Conservation District Use Permit from the State Board of Land and Natural Resources. As the leaseholder for the Science Reserve, UH is responsible for submitting the use application. In conjunction with this process, UH must satisfy State and Federal environmental impact requirements (Chapter 343 and NEPA). The Institute for Astronomy is committed to sponsor only projects that are considered the best in the world, and not simply to add projects for the sake of adding another telescope to the mountain.

The goal of our new plan is to keep Hawaii's world leadership in ground-based astronomy. This achievement and recognition as a world leader will benefit not only UH as an educational and research institution but the entire state. The advancing and leading edge technologies associated with astronomy research and development will aid Hawaii's efforts to boost its technology industry, including software and instrument development.

In the following, we will discuss the new modified plan in detail. We will also compare it with the development as proposed in the Master Plan. We will start with the two observatories, for which significant expansion was proposed, the Keck Observatory and the Submillimeter Array (SMA). For the Keck Observatory the addition of six Outrigger telescopes was planned. In our new plan we do not foresee adding any more telescopes to the Keck Observatory.

For the SMA, the Master Plan proposed 12 more antennas and 24 new concrete pads for the array; however in our new plan, we consider only the very moderate expansion of two

more antennas and two pads. UH is also working on the relocation of two existing antenna pads located at the base of Pu'u Poliahu, a culturally significant site.

In the Master Plan a new observatory site on the summit ridge was proposed for the UH Hilo instructional telescope. In order not to increase the number of observatory sites on the summit ridge, the Institute for Astronomy has agreed to give its UH 0.6m telescope and the site to UH Hilo so that the instructional telescope can be built there with only little if any modification of the existing site. This minimizes cultural and environmental impact for this important educational project, which was described in the previous section. An Environmental Assessment of the project by UH Hilo has been completed.

Another redevelopment of an existing site in our new plan is the use of the UH 2.2m site for the Institute for Astronomy's new Pan-STARRS observatory. Pan-STARRS uses completely new technology being developed by the Institute to detect killer asteroids which threaten to impact the Earth. It will detect the majority of the most dangerous objects about 30 years before their potential impact giving some time to develop protection for mankind in case of a serious threat. This project is federally funded. The Institute for Astronomy is preparing a federal EIS in collaboration with the federal funding agency. In addition, UH will submit a comprehensive Mauna Kea management plan to the State Board of Land and Natural Resources for review and approval, before applying for a Conservation District Use Permit for this project.

In addition to the UH Hilo instructional telescope the Master Plan proposes two new telescopes at two new sites, as described in the previous section. One of them, the optical/infrared telescope of Keck or Gemini size, is not pursued any further in our new plan. With the enormously increased efficiencies of Keck, Gemini, and Subaru we do not believe that there is a scientific need anymore for another telescope of this size. It is worth mentioning at this point that the observatories on Mauna Kea are experimenting with the use of new fiber optics technology to combine the light from the already existing telescopes, the so-called Ohana Project. This is a challenging project, which will probably take decades to be successful, but it will greatly expand the capability and utility of the existing observatories.

The only project at a new site proposed in our new plan is the Thirty Meter Telescope (TMT). With its mirror of 30m diameter it will be the largest telescope in the world, and will be ten times more powerful than the Keck telescopes. It will be able to image planets orbiting around other stars and to analyze the light coming from these planets and, thus, to ascertain whether the conditions exist for the formation of life in planetary systems around other stars. It will also be able to detect the most distant galaxies in the universe and will see them in stage when the universe was still very young after its birth in the Big Bang.

As described in the previous section a site is foreseen for this observatory on the northern plateau below the summit ridge. This new site is preferable to a replacement of one of the existing telescopes, because the facility would be less visible and the environmental

and cultural impact would be smaller. The Institute for Astronomy is currently carrying out site testing and atmospheric characterization measurements at this site.

The TMT is a \$1 billion project and the most ambitious project of modern astronomy. It is the dedicated goal of the Institute for Astronomy and UH to attract this unique project to Hawaii. It will have an enormous scientific, educational and economic impact and it will secure leadership of Hawaii in astronomical science for the next decades. This is the key project for the future of astronomy in Hawaii.

In summary, our new plan does not propose any further extension of the Keck Observatory with Outrigger telescopes and only a very small expansion of the SMA. It proposes two new projects, the UH Hilo instructional telescope and Pan-STARRS, which will use existing sites and will stay within the footprints of the existing facilities. As the most important project it proposes the TMT on a new site on the northern plateau below the summit ridge.

While the Master Plan of the year 2000 assumed that all existing facilities, which would not be replaced by new ones would continue to exist for the next 20 years, we do not make this assumption for the new plan. It is clear that newer facilities such as Keck, Gemini, Subaru, Pan-STARRS, the UH Hilo telescope and the SMA will certainly continue to operate over the next 20 years. However, some of the others will not continue with their operation, because other aspects of astronomical observations will become more important. In such cases our plan is not to refurbish all of them but only a few and only in cases where an extremely important scientific case can be made. Otherwise, our new plan is to demolish the old facility, to clean the site and to recreate the site in a stage as it was, before the facility had been built. (It is important to note that Operating and Site Development Agreements – the contracts between UH and the telescope partners on Mauna Kea – require that the costs for such reestablishment of the site in its original status have to be paid by the telescope partners.) We are confident that in this way the number of observatories on Mauna Kea in 20 years from now will be smaller than now. But with all the new facilities, in particular the TMT, Hawaii will still have the very best in the world.

Follow-Up on Recommendations from Report No. 14-07, *Follow-Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve*

A Report to the Governor
and the Legislature of
the State of Hawai'i

Report No. 17-06
July 2017



OFFICE OF THE AUDITOR
STATE OF HAWAII

Exhibit 5

July 2017 Report from the State Office of the Auditor



OFFICE OF THE AUDITOR STATE OF HAWAII

Constitutional Mandate

Pursuant to Article VII, Section 10 of the Hawai'i State Constitution, the Office of the Auditor shall conduct post-audits of the transactions, accounts, programs and performance of all departments, offices and agencies of the State and its political subdivisions.

The Auditor's position was established to help eliminate waste and inefficiency in government, provide the Legislature with a check against the powers of the executive branch, and ensure that public funds are expended according to legislative intent.

Hawai'i Revised Statutes, Chapter 23, gives the Auditor broad powers to examine all books, records, files, papers and documents, and financial affairs of every agency. The Auditor also has the authority to summon people to produce records and answer questions under oath.

Our Mission

To improve government through independent and objective analyses.

We provide independent, objective and meaningful answers to questions about government performance. Our aim is to hold agencies accountable for their policy implementation, program management and expenditure of public funds.

Our Work

We conduct performance audits (also called management or operations audits), which examine the efficiency and effectiveness of government programs or agencies, as well as financial audits, which attest to the fairness of financial statements of the State and its agencies.

Additionally, we perform procurement audits, sunrise analyses and sunset evaluations of proposed regulatory programs, analyses of proposals to mandate health insurance benefits, analyses of proposed special and revolving funds, analyses of existing special, revolving and trust funds, and special studies requested by the Legislature.

We report our findings and recommendations to the Governor and the Legislature to help them make informed decisions.

For more information on the Office of the Auditor, visit our website:
<http://auditor.hawaii.gov>



Follow-Up on Recommendations from Report No. 14-07, *Follow- Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve*

Section 23-7.5, Hawai‘i Revised Statutes, requires the Auditor to report to the Legislature annually on each audit recommendation more than one year old that has not been implemented by the audited department or agency. This report presents the results of our review of eight recommendations made to the University of Hawai‘i and the Department of Land and Natural Resources in Report No. 14-07, Follow-Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve, which was published in August 2014.

Why we did the 2014 audit

In the past, the Legislature expressed concerns about the State of Hawai‘i’s management of Mauna Kea and the Mauna Kea Science Reserve. Individuals as well as community and Hawaiian organizations

also voiced concerns regarding transparency, accountability, and equity by the University of Hawai‘i (UH) and the Department of Land and Natural Resources (DLNR). In 1998 and again in 2005, the Legislature requested that this office conduct an audit of the management of Mauna Kea and the Mauna Kea Science Reserve. In response to those requests, we issued a 1998 *Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve* (Report No. 98-6) and a 2005 *Follow-up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve* (Report No. 05-13). In 2014, this office initiated another follow-up audit to assess UH’s and DLNR’s efforts to address our previous findings and recommendations during FY2006 to FY2014. That audit was conducted pursuant to Section 23-4, Hawai‘i Revised Statutes, which requires the Auditor to conduct postaudits of the transactions, accounts, programs, and performance of all departments, offices, and agencies of the State and its political subdivisions.

The Mauna Kea Summit and Science Reserve

The Mauna Kea summit area consists of conservation district lands managed by UH and DLNR. Mauna Kea lands leased to and managed by UH encompass three areas: the Mauna Kea Science Reserve at the summit, the mid-level facilities at Hale Pōhaku, and the Summit Access Road that runs from Hale Pōhaku to the summit. In 1998, 2,033 acres of the 13,321 acres originally leased to UH were withdrawn from the Mauna Kea Science Reserve and are now part of the Mauna Kea Ice Age Natural Area Reserve. Lands adjacent to the Mauna Kea lands managed by UH, such as the Mauna Kea Ice Age Natural Area Reserve and the Mauna Kea Forest Reserve, are managed by DLNR.



PHOTO: THIRTY METER TELESCOPE (TMT)

An Eye to the Sky

PLANS TO BUILD the massive Thirty Meter Telescope (TMT) atop Mauna Kea have become a source of bitter controversy. In October 2014, Native Hawaiian protesters blocked crews from the construction site. The Hawai‘i Supreme Court later rescinded the TMT’s construction permit, and the \$1.4 billion project is

currently in the re-permitting process. If it is completed, the TMT will be the most advanced and powerful optical telescope on Earth. There is an ongoing contested case proceeding regarding the TMT’s application for a permit to build on the Mauna Kea summit.

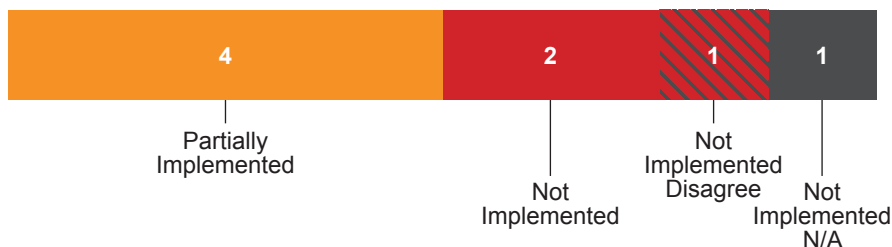
What we found in 2014

In Report No. 14-07, *Follow-Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve*, we found that UH did not expect to adopt administrative rules until 2017, due in part to delays in the rulemaking process. In the absence of rules, UH was managing and assessing fees on commercial tour activities with permits and informal agreements unauthorized by the UH Board of Regents. We also found that contractual terms and other requirements precluded UH and DLNR from updating general leases, subleases, and permits.

What we found this year

Our follow-up on the implementation of recommendations made in Report No. 14-07, conducted between October 2016 and January 2017, included interviews with selected personnel, examining relevant documents and records, and evaluating whether UH and DLNR's actions appeared to fulfill our recommendations. We found that UH and DLNR have partially implemented four of the recommendations. Three recommendations remain open, and one is inapplicable at this time.

Exhibit 1: Audit Recommendations by Status



Source: Office of the Auditor

Our follow-up efforts were limited to reviewing and reporting on the implementation of our audit recommendations. We did not explore new issues or revisit old ones that did not relate to the original recommendations. The following details the audit recommendations made and the current status of each recommendation based on our review of information and documents provided by UH and DLNR.



DEFINITION OF TERMS

WE DEEM recommendations:

- **Implemented** where the department or agency provided sufficient and appropriate evidence to support all elements of the recommendation;
- **Partially Implemented** where some evidence was provided but not all elements of the recommendation were addressed;
- **Not Implemented** where evidence did not support meaningful movement towards implementation, and/or where no evidence was provided;
- **Not Implemented – N/A** where circumstances changed to make a recommendation not applicable; and
- **Not Implemented – Disagree** where the department or agency disagreed with the recommendation, did not intend to implement, and no further action will be reported.



ADMINISTRATIVE RULES

ADMINISTRATIVE rulemaking is one of the methods by which state agencies carry out their tasks. The purpose of rules is to implement laws, such as those relating to Mauna Kea lands, and to establish operating procedures for state agencies. Generally, statutes provide a skeleton, or superstructure, for state programs; agencies are then required to “fill in the details” and implement those programs on a day-to-day basis. Agencies have considerable discretion in applying the law, particularly where a controlling statute is expressed in general terms.

Recommendation 1

UH should adopt administrative rules governing public and commercial activities as soon as possible, but no later than 2017.

Partially Implemented

Comments

UH completed the drafting of administrative rules and was prepared to begin the necessary public hearing process. However, at the request of the governor, who must authorize the initiation of public hearings for the draft rules, UH has temporarily halted the process of finalizing such rules.

Target Date

Per UH, the estimated date of completion cannot be determined at this time.

Recommendation 2

UH should obtain the UH Board of Regents’ approval for the conditions and fee schedule included in commercial tour use permits issued by UH–Hilo via a Board of Regents open public meeting pursuant to Chapter 92, HRS.

Not Implemented

Comments

UH anticipates that a proposed schedule will be prepared and approved concurrently with the approval of the final administrative rules. A draft schedule has not been prepared yet as UH wants to take into consideration feedback received during the administrative rules process.

Target Date

Per UH, the estimated date of completion cannot be determined at this time.

Recommendation 3

UH should determine whether unauthorized fees collected since FY2007 should be returned to commercial tour operators.

Not Implemented - Disagree

Comments

UH continues to assert that the issuance of commercial tour permits was authorized by the Board of Land and Natural Resources and allows enforcement of permit conditions and the ability to set and assess fines for permit violations and non-compliance.

Recommendation 4

UH should complete Comprehensive Management Plan (CMP) management actions, the implementation of which under the CMP implementation plan is scheduled as “immediate,” as soon as possible, but no later than the end of 2016.

Partially Implemented

Comments

UH has implemented 20 of the 25 total CMP management actions. *(See appendix on pages 10-11 for the list of actions.)*

Target Date

Per UH, the estimated date of completion is December 2017. Feasibility of that date could not be determined based on the scope of our review.

Recommendation 5

UH should further its efforts to renew general leases for UH-managed lands on Mauna Kea by continuing to work with DLNR and proceeding with the Environmental Impact Statement (EIS) process under Chapter 343, HRS.

Partially Implemented

Comments

UH and DLNR assert that securing a new master lease would require an EIS. Such efforts were restarted at the request of the governor following protests against the TMT project, and work is ongoing.

Target Date

Per UH, the estimated date of completion cannot be determined at this time.

Recommendation 6

UH should renegotiate with existing sublessees to amend subleases to include provisions that address stewardship issues, as modeled by the provisions in the 2014 TMT sublease, following execution of the new general leases for UH-managed lands on Mauna Kea.

Not Implemented

Comments

UH asserts that a new general lease needs to be established before sublease agreements can be renegotiated.

Target Date

Per UH, the estimated date of completion cannot be determined at this time.

Recommendation 7

DLNR should continue working with UH to renew the general leases for the UH-managed lands on Mauna Kea and ensure the leases are substantially in the form DLNR's Land Division recommended for approval by the Board of Land and Natural Resources.

Partially Implemented

Comments

UH and DLNR assert that the preparation for seeking a new master lease includes preparation of an EIS. Such efforts were restarted at the request of the governor following protests against the TMT project, and work is ongoing.

Target Date

Per DLNR, the estimated date of completion cannot be determined at this time.

Recommendation 8

DLNR should use additional stewardship-related conditions contained within the TMT observatory permit as a template in all new observatory permits issued for the summit of Mauna Kea.

Not Implemented - N/A

Comments

The TMT observatory permit has been voided. As a result, this recommendation cannot be addressed until the ongoing contested TMT case is fully resolved.

Appendix

Comprehensive Management Plan (CMP) Management Actions Still Open

1. Develop and adopt guidelines for the culturally appropriate placement and removal of offerings.
2. Kahu Kū Mauna shall take the lead in determining the appropriateness of constructing new Hawaiian cultural features.
3. Develop and adopt a management policy for the UH Management Areas on the scattering of cremated human remains.
4. A management policy for the culturally appropriate building ahu or “stacking of rocks” will need to be developed by Kahu Kū Mauna who may consider similar policies adopted by Hawai‘i Volcanoes National Park.
5. Develop and implement a signage plan to improve signage throughout the UH Management Areas (interpretive, safety, rules and regulations).

Implemented CMP Management Actions

1. Kahu Kū Mauna shall work with families with lineal and historical connections to Mauna Kea¹, cultural practitioners, and other Native Hawaiian groups, including the Mauna Kea Management Board’s (MKMB) Hawaiian Culture Committee, toward the development of appropriate procedures and protocols regarding cultural issues.
2. Conduct educational efforts to generate public awareness about the importance of preserving the cultural landscape.
3. Develop and adopt guidelines for the visitation and use of ancient shrines.
4. Develop and implement a historic property monitoring program to systematically monitor the condition of the historic district and all historic properties, including cultural sites and burials.
5. Consult with Kahu Kū Mauna about establishing buffers (preservation zones) around known historic sites in the Astronomy Precinct, to protect them from potential future development.

¹ The spelling of the mountain changed to one word in 2014. However, “Mauna Kea” is still used for legal and historical documents, *University of Hawai‘i Style Guide*.

-
6. Develop and implement a burial treatment plan for the UH Management Areas in consultation with Kahu Kū Mauna, MKMB's Hawaiian Culture Committee, the Hawai'i Island Burial Council, recognized lineal or cultural descendants, and State of Hawai'i Historic Preservation Division.
 7. Limit damage caused by invasive species through creation of an invasive species prevention and control program.
 8. Reduce threats to natural resources by educating stakeholders and the public about Mauna Kea's unique natural resources.
 9. Increase communication, networking, and collaborative opportunities to support management and protection of natural resources.
 10. Conduct baseline inventories of high-priority resources, as outlined in an inventory, monitoring, and research plan.
 11. Conduct research to fill knowledge gaps that cannot be addressed through inventory and monitoring.
 12. Develop and implement education and outreach program.
 13. Develop parking and visitor traffic plan.
 14. Coordinate with DLNR in the development of a policy regarding hunting in the UH Management Areas.
 15. Educate management staff and users of the mountain about all applicable rules and permit requirements.
 16. Reduce impacts from operations and maintenance activities by educating personnel about Mauna Kea's unique resources.
 17. Develop and implement a debris removal, monitoring and prevention plan.
 18. Evaluate need for additional public restroom facilities in the summit region and at Hale Pōhaku, and install close-contained zero waste systems if necessary.
 19. Conduct energy audits to identify energy use and system inefficiencies, and develop solutions to reduce energy usage.
 20. Establish a reporting system to ensure that the MKMB, DLNR, and the public are informed of results of management activities in a timely manner.

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THIRTY METER TELESCOPE'S THINK FUND & WORKFORCE PIPELINE PROGRAM

The Hawaii Island New Knowledge (THINK) Fund was initiated in 2014 prior to the initial start of construction with a commitment of \$1 million per year for Hawaii Island STEM endeavors. The Hawaii Community Foundation (HCF) and the Pauahi Foundation administer the Fund with scholarship, classroom, student and STEM programming initiatives with Pauahi focusing on Native Hawaiians recipients. Within the next few weeks TMT will have funded \$4 million to the THINK Fund initiative.

THINK Fund at HCF has benefitted 26,000 students and 1,000 teachers on Hawai'i Island. Grants and scholarships seek to provide high-quality, career-connected STEM education and experiences to Hawai'i Island's most underserved youth.

Scholarships

- College scholarships totaling over \$325,000 have been awarded to 54 Hawai'i Island students with financial need.
- Scholarships support students pursuing careers in STEM and future STEM educators who intend to teach in Hawai'i Island schools.

STEM Learning Grants

- THINK Fund at HCF provided more than \$685,000 in grants that leveraged an additional \$1,500,000 from other funders to support innovative STEM programs and activities.
- \$300,000 is committed to the applications currently in process.
- Programs receiving support must demonstrate success recruiting and addressing the needs of groups underrepresented in STEM fields, which includes students in rural communities, Native Hawaiians, and those disengaged in school.

Classroom Grants through DonorsChoose.org

- \$250,000 has been committed to providing immediate funding for high-quality, ready-to-go STEM projects in Hawai'i Island classrooms.
- High need schools received 78% of the funding.
- 39 out of 55 public and public charter schools on Hawai'i Island have received grants, schools with high need students received 78% of the funding.

Program for Children of Incarcerated Parents

- Hawaii Community Foundation will solicit proposals to fund programs serving this target group for at least \$5,000 per year, beginning this year.

Applications are open for all HCF scholarships, including THINK Fund at HCF. The deadline is January 31st.

www.hawaiicommunityfoundation.org/scholarships/scholarshipfaqs

Exhibit 6

Thirty Meter Telescope's THINK Fund & Workforce Pipeline Program

Applications are also open for Career Connected Learning – this is the new name for the redesigned STEM Learning Partnership. HCF is encouraging all previous STEM Learning Partnership grantees to review the request for proposals and apply if they have great programs that fit the parameters. The parameters are very similar to the previous parameters, with a stronger emphasis on how the STEM education activities help participants explore and move into local STEM careers. The deadline is February 15th. www.hawaiicommunityfoundation.org/career-connected-learning

THINK Fund at Pauahi Foundation

- The TMT THINK Fund at Pauahi has funded thirty-three scholarships to date, with all students funded for their entire academic career. Total of \$568,000. Fifteen scholarships planned for 2018.
- Twenty-three students had full scholarships to Science Camps; total of \$55,000. Fourteen more Science Camp scholarships will be awarded in 2018.
- All students were Native Hawaiian.

TMT's Workforce Pipeline Program

Through the TMT-funded and managed Workforce Pipeline Program, more than \$2,500,000 has been disbursed to Hawaii Island. Among the key programs that have been supported are:

- Akamai Workforce Initiative – TMT is the cornerstone funder of internship program that has provided internships to 356 students from Hawaii. 24% have been Native Hawaiian and 47% underrepresented minorities. To date TMT has provided over \$700,000.
- TMT has also funded a Mentor Training Program for three years.
- TMT has increased Akamai funding to \$300,000 for 2018 and support ten additional college interns from Hawaii Island.
- TMT has funded high school, middle school, and elementary school robotics for seven years, with a total funding in excess of \$250,000. The funding has made it possible for schools and communities throughout Hawaii Island, including many with underserved/underrepresented students to participate in robotics.
- TMT has also been a major sponsor of the Girls Engaged in Math and Science Program, Hawaii County and State Science Fairs, Journey through the Universe, and other similar programs, including several at the 'Imiloa Astronomy Center.
- TMT is funding a new TMT UH Hilo Physics and Astronomy computer laboratory, and will be the major funder of the UH Hilo 2018 Science Olympiad.

Documents referred to in this report can be found at dlnr.hawaii.gov/occl/maunakea-management

TABLE 1: MANAGEMENT PLANS AND ANNUAL REPORTS

Comprehensive Management Plan Annual Reports, 2010-2017
Decommissioning Plan for the Mauna Kea Observatories
Public Access Plan for the UH Management Areas on Mauna Kea
A Cultural Resources Management Plan for the University of Hawaii Management Areas on Mauna Kea
Natural Resources Management Plan for the UH Management Areas on Mauna Kea
Board of Land and Natural Resources approval of Mauna Kea Comprehensive Management Plan
Mauna Kea Comprehensive Management Plan

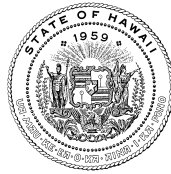
TABLE 2: REPORTS FROM THE STATE OFFICE OF THE AUDITOR

Report No. 17-06 Follow-Up on Recommendations from Report No. 14-07, *Follow-Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve* (2017)
Report No. 14-07 Follow-Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve (2014)
Report No. 05-13 Follow-Up Audit of the Management of the Mauna Kea Science Reserve (2005)
Report No. 98-6 Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve (1998)

TABLE 3: CONSERVATION DISTRICT USE PERMITS AND APPLICATIONS

CDUA 3812 Infrastructure improvements at the Maunakea Visitor Center (application) (2018)
CDUP 3568 Thirty Meter Telescope (Decision and Order) (2017)
HA-16-118 Notice of Intent to Decommission the Hoku Kea Telescope (2016)
HA-16-118 Notice of Intent to Decommission the Caltech Submillimeter Observatory (2016)
CDUP 2728 Smithsonian Submillimeter Array (1994)
CDUP 2691 Gemini North (1994)
CDUP 2509 Keck II (1992)
CDUP 2462 Subaru Telescope (1991)
CDUP 2174 Very Long Baseline Array (1989)
CDUP 1819 Hale Pohaku subdivision and construction workers camp (1986)
CDUP 1646 Keck I (1984)
CDUP 1515 James Clark Maxwell Telescope (1983)
CDUP 1492 Cal Tech Submillimeter Observatory (1982)
CDUP 1430 Hale Pohaku Midlevel Facilities and Visitor Center
CDUP 0954 Air Force Telescope, Planetary Patrol Telescope, 2.2 Meter Telescope (1977)
CDUP 0895 Hale Pohaku dormitories (1977)
CDUP 0781 UKIRT dormitory at Hale Pohaku (1976)
CDUP 0653 United Kingdom Infrared Telescope; NASA InfraRed Telescope Facility (1975)
CDUP 0537 Mauna Kea Access Road (1974)
CDUP 0527 Canada-France-Hawaii Telescope (1974)

DAVID Y. IGE
GOVERNOR



LAUREL A. JOHNSTON
ACTING DIRECTOR

EMPLOYEES' RETIREMENT SYSTEM
HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND
OFFICE OF THE PUBLIC DEFENDER

**STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE**

P.O. BOX 150
HONOLULU, HAWAII 96810-0150

ADMINISTRATIVE AND RESEARCH OFFICE
BUDGET, PROGRAM PLANNING AND
MANAGEMENT DIVISION
FINANCIAL ADMINISTRATION DIVISION
OFFICE OF FEDERAL AWARDS MANAGEMENT (OFAM)

WRITTEN ONLY

TESTIMONY BY LAUREL A. JOHNSTON
ACTING DIRECTOR, DEPARTMENT OF BUDGET AND FINANCE
TO THE SENATE COMMITTEES ON HIGHER EDUCATION AND WATER AND LAND
ON
SENATE BILL NO. 3090, PROPOSED S.D. 1

**February 12, 2018
1:15 p.m.
Auditorium**

RELATING TO GOVERNMENT

Senate Bill No. 3090, Proposed S.D. 1, establishes the Mauna Kea Management Authority to manage the Mauna Kea lands. The bill also creates the Mauna Kea Management Revolving Fund and exempts the fund from appropriation and allotment.

The Department of Budget and Finance has strong concerns with the exemption provision in this measure, which reads in part:

“§ -39 Expenditures of revolving funds under the authority exempt from appropriation and allotment. Except as to administrative expenditures, and except as otherwise provided by law, expenditures from any revolving fund administered by the authority may be made by the authority without appropriation or allotment of the legislature . . . Nothing in sections 37-31 to 37-41 shall require the proceeds of any revolving fund administered by the authority to be reappropriated annually.”

We believe that this exemption conflicts with Article VII, Section 5 of the Hawaii State Constitution, which provides that, “No public money shall be expended except pursuant to appropriations made by law.”

Thank you for your consideration of our comments.



SB3090 Proposed SD1
RELATING TO GOVERNMENT
Senate Committee on Higher Education
Senate Committee on Water and Land

February 12, 2018

1:15 p.m.

Auditorium

The Office of Hawaiian Affairs (OHA) offers the following **COMMENTS** on the Proposed SD1 of SB3090, which seeks to establish an alternative management framework for the singularly significant and long-neglected lands, resources, and sites of Maunakea. **OHA appreciates the bill's intention, to address decades-long concerns over the inability of the University of Hawai'i (UH) and the Board of Land and Natural Resources (BLNR) to properly steward Maunakea, and to balance natural and cultural resource management and protection with industrial-scale development on the mauna's summit;** OHA also understands that this bill anticipates substantial further discussion involving various stakeholders, including Native Hawaiian practitioners, educators, and other members of the Native Hawaiian community. Accordingly, OHA offers the following comments for the Committee's consideration.

As a preliminary matter, OHA re-emphasizes the litany of historical and ongoing failures of UH and BLNR in their management of Maunakea. These include, but are not limited to: the failure to budget and fund proper management of UH's Maunakea lands; the failure to prudently negotiate sublease terms, allowing for gratis or nominal rents for multi-million dollar development projects; the failure to adequately implement a decade-old Comprehensive Management Plan, including 32 of its 54 management actions specifically affecting Native Hawaiians; the failure to meaningfully consult with OHA, Kahu Kū Mauna, and other cultural stakeholders on management policies and rules; the failure to maintain an environment that appropriately respects Maunakea's cultural landscape and singular cultural significance, including through the protection of Native Hawaiian traditional and customary rights and practices; the failure to manage public access and highly inappropriate and/or unsafe activities, which have led to numerous vehicular accidents and fires, deaths and bodily injuries, and spills of highly hazardous waste; and the failure to enforce lease and sublease terms and otherwise manage observatory development and decommissioning. **Insofar as these failings, and others, have persisted for over a generation, including through four state audits and multiple lawsuits spanning two decades, OHA and much of the general public have lost all confidence in the ability of UH to and the BLNR to fulfill their full range of responsibilities as lessee, lessor, and trustees of the lands, natural and cultural resources, and cultural sites of Maunakea.**

Accordingly, OHA appreciates the intent of this measure, to address the root cause of Maunakea's mismanagement and misuse through the establishment of an alternative

management authority for the Maunakea lands currently controlled by UH. **In order to better ensure that any such management authority has the authority, capacity, resources, and structure to sufficiently address the longstanding concerns over Maunakea’s use and protection, and subject to further input that may be presented by cultural practitioners, educators, and other concerned members of the Native Hawaiian community, OHA offers the following comments for the Committees’ consideration:**

1. Ensuring the composition of the MKMA reflects the cultural, environmental, and historical character of Maunakea.

As the Committees likely realize, an area of critical importance is the composition of the MKMA, and whether this composition will adequately reflect the full range of values and beliefs associated with Maunakea. As previously noted, the current “managers” of Maunakea have grossly neglected their responsibilities to protect and uphold the ecological, cultural, and spiritual integrity of Maunakea, in favor of industrial-scale observatory development on its summit. Accordingly, to ensure that this situation is properly rectified, OHA respectfully urges the careful consideration of MKMA’s composition.

In this regard, OHA notes and appreciates that three of the nine seats on the MKMA would be reserved for individuals nominated from or who are members of groups representing Hawaiian interests, including the Native Hawaiian Bar Association, the Royal order of Kamehameha, and the Association of Hawaiian Civic Clubs. **However, given the unique character of Maunakea, including its singular cultural significance to Native Hawaiians, as well as its status as part of the “ceded” lands corpus, to which Native Hawaiians have never relinquished their claims, OHA respectfully submits that a greater proportion of Hawaiian representation may be more appropriate.** For example, additional seats may be specifically designated for Native Hawaiian cultural practitioners, historians, artists, as well as members of ‘ohana with ancestral connections to Maunakea. Furthermore, while OHA appreciates the measure’s intent to not include members with inherent conflicts of interest, OHA notes that its own statutory responsibilities – which include serving as the principle public agency responsible for assessing and advocating on agency policies impacting Native Hawaiians – may counsel its inclusion as a member of the MKMA, notwithstanding OHA’s current litigation. Notably, OHA’s substantive expertise and institutional memory regarding Maunakea may also provide a level of continuity in the transition of management authority to the MKMA. OHA additionally suggests requiring seats intended to represent Native Hawaiian interests generally, to be filled from lists of nominees submitted by OHA, similar to the requirement for certain regional representatives on the island burial councils.

Similarly, OHA notes that Maunakea is also host to highly unique ecological features, species, and resources of great cultural and scientific value; the unique geological and environmental conditions found on Maunakea may similarly be of particular interest to researchers and others in a variety fields. Insofar as the ecological, geological, and environmental values of Maunakea have also been overlooked under UH’s stewardship, OHA further suggests that additional seats representing these

relevant fields may further restore balance to the oversight and stewardship of Maunakea, and ensure that the MKMA can more fully consider the range of potential impacts and opportunities in its management decisions.

Finally, OHA acknowledges and appreciates that members with business acumen may assist the MKMA in ensuring that any leases, subleases, permits, and other revenue-generating opportunities can be maximized, to the extent appropriate. **However, OHA suggests that it may be more helpful for the MKMA to include, in lieu of otherwise unqualified members from business organizations, individuals with more particularized expertise in land appraisal, entrepreneurial innovation, and/or investment strategies.** Notably, business activities conducted upon Maunakea have thus far been generally limited to commercial tour operators, a relatively small constituency of the “business organizations” currently proposed to be represented on two seats of the nine-seat MKMA. Should the Committees wish to retain a “business organization” representative, given the unique value and character of Maunakea’s lands, OHA respectfully recommends that such a representative be nominated by or be a member of the Native Hawaiian Chamber of Commerce.

2. Maintaining OHA consultation requirements and the protection of Native Hawaiian traditional and customary practices in rulemaking.

Currently, HRS § 204A-1903 provides for Maunakea rulemaking to be conducted in consultation with the OHA, “to ensure that [] rules shall not affect any right, customarily and traditionally exercised for subsistence, cultural, and religious purposes.” However, although OHA provided the Office of Mauna Kea Management (OMKM) with preliminary comments on draft Mauna Kea rules in 2011, OHA did not receive a response – despite numerous requests – until late 2015, at which point rulemaking was halted at the request of the Governor. **OHA does believe that retaining such a consultation requirement in the MKMA’s rulemaking authority may be critical to ensuring the proper protection of its beneficiaries’ traditional and customary rights and practices.** Accordingly, OHA respectfully recommends amending the language found on page 72, lines 5-9, on the proposed SD1 of SB3090 to read as follows:

“ § -36 Rules; management, stewardship, and protection of cultural resources. The authority shall expedite the establishment of rules pursuant to chapter 91 on the management, stewardship, and protection of lands and cultural resources, and any fees and fee waivers under its jurisdiction, provided that the authority shall consult with the office of Hawaiian affairs to ensure that any rules shall not affect any right, customarily and traditionally exercised for subsistence, cultural, and religious purposes, by descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.”

3. Clarifying the applicability of conservation district rules.

HRS Chapter 183C gives the BLNR the exclusive authority to regulate all land use in the conservation district, regardless if the land is public or private, and regardless of which public agency holds title. HRS § 183C-6 requires the BLNR to regulate such uses via permits and specifically subjects all construction, reconstruction, demolition, or alteration of any structure, building or facility by the issuance of site plan approvals. To clarify that all lands, including Mauna Kea lands would continue to be subject to conservation district use statutes and related rules, OHA recommends amending the language found on page 74, lines 3-7, on the proposed SD1 of SB3090 to read as follows:

§ -37 Project approval authorization. The authority is authorized to approve or disapprove all projects, including but not limited to design review, on all Mauna Kea lands; provided that all land use complies with relevant conservation district rules.

4. Clarifying MKMA's authority regarding alienation of MKMA lands.

OHA greatly appreciates SB3090 Proposed SD1's inclusion of various procedural mechanisms and safeguards found in Chapter 171, that can assure Native Hawaiians, the general public, and the State a level of transparency and accountability in the MKMA's disposition of Maunakea's lands. OHA further appreciates the express prohibition on the sale, exchange, or alienation of Maunakea lands, which are "ceded" lands that must not be sold or otherwise alienated given Native Hawaiians' unrelinquished claims. However, OHA notes that, in applying the various relevant mechanisms in Chapter 171 to the MKMA, a handful of provisions appear to have been inadvertently included, that expressly contemplate the sale or exchange of Maunakea lands. **Accordingly, OHA urges the deletion of language authorizing the sale or exchange of land, as found on page 15, line 21 ("except as provided by law"); page 16, lines 11-12 ("sold or"); page 17, line 3 ("or patent"); page 19, line 11 ("sold or" and "sale or"); page 19, line 17 thru page 20, line 10 (all language regarding exchanges and quitclaims of interest in private land); page 20, line 15 thru page 23, line 16 (all instances of "sold" and "sale"); page 30, line 5 thru page 32, line 2 (section inapplicable with regards to creating security interests in and sales of land used for residential purposes); page 32, lines 7-8 and 19-20 (all references to sales and exchanges of lands); page 52, line 10 thru page 55, line 4 (section unnecessary insofar as MKMA would not be authorized to exchange lands); page 61, lines 14-16 ("Mauna Kea lands to be sold under this section..."); page 64, line 1 thru page 66, line 21 (section unnecessary insofar as the MKMA would not be authorized to sell or alienate lands); page 66, lines 1-2 ("Exchange Mauna Kea lands with the governments and agencies"); and page 67, lines 5-10 ("Sell public lands...").**

5. Further effectuating the "caps" on any future telescope development.

OHA is greatly appreciative of the numerical “caps” placed on the number of telescopes allowed to be present on Maunakea lands, which would immediately limit the number of telescopes anywhere on Maunakea to 13, and reduce this allowed amount to nine by January 1, 2028. **As these caps recognize, the overdevelopment of Maunakea for telescope purposes, with little regard of their environmental and cultural impacts or the larger management needs of the mauna, constitutes one of the most significant failings of UH and BLNR.**

OHA does believe that these caps may be made more meaningful with more precise limitations on what they would allow. For example, UH has a consistent history of circumventing prior “caps” on telescope and observatory development, by re-defining “telescope” to include multiple, large-scale instrument structures and accessory buildings as part of a single “telescope.” Such a practice has led to the continued proliferation of telescope structures notwithstanding past promises to limit the number of telescopes marring Maunakea’s landscape.

Accordingly, OHA respectfully urges to Committees to provide more concrete limitations for telescope development, in addition to the numerical “caps” provided for in this measure, by inserting a new section after page 72, line 4, to read as follows:

§ -__ Footprint; limitations “At no time shall the total combined footprint of all improvements, including buildings, roads, telescopes, decommissioned telescope structures, and all infrastructure, on Mauna Kea lands, exceed the total developed footprint of improvements, including buildings, roads, telescopes, and all infrastructure present on Mauna Kea as of June 1, 2018.”

6. Clarifying access policies for traditional and customary practices.

OHA is further highly appreciative of SB3090 Proposed SD1’s managed access provisions, which seek to ensure that all visitors to Maunakea are appropriately informed and educated regarding safety, environmental protection, and cultural traditions and sensitivities, an issue of longstanding concern. OHA further appreciates the waiver of fees for those wishing to access Maunakea for the exercise of Native Hawaiian traditional and customary practices. **However, OHA does note that Native Hawaiian traditional and customary practices may require access to Maunakea and its summit beyond “normal operating hours,” as described in this measure.** Accordingly, to ensure that Native Hawaiian cultural practitioners can continue to maintain their full range of traditions, OHA urges the Committees to amend the language found on page 76, lines 4-10, to read as follows:

“sensitivities. Except as provided under section -36 or this section, all visitors who travel to the summit shall be required to use a shuttle service established by the authority. The authority shall establish a policy that allows access at all times, without any

entrance fee, to visitors seeking to exercise Native Hawaiian traditional and customary practices protected under article XII, section 7, of the Hawaii State Constitution.”

7. Clarifying intent of public land trust revenue transfers to OHA

OHA appreciates the inclusion of express language intended to ensure that the MKMA complies with its constitutional and statutory obligation to provide Native Hawaiians with a pro rata share of revenues from the use of Public Land Trust lands – which includes the subject Maunakea lands – and to ensure that the beneficiary classes under the Trust fairly benefit from the use of Maunakea trust lands. In order to provide consistency with legal terms and references relating to Native Hawaiians’ pro-rata share of Public Land Trust receipts, OHA respectfully recommends technical amendments amending the language found on page 85, line 15 thru page 86, line 7, to read as follows:

“ § -48 **Revenue to be shared with the office of Hawaiian affairs.** The authority and the University of Hawaii shall transfer to the office of Hawaiian affairs twenty per cent of all receipts collected by the authority or university as a result of lease rent, fees, penalties, commercial activities, technology transfers, monetization of intellectual properties or discoveries, and other revenue sources; provided that any funds transferred to the office of Hawaiian affairs pursuant to this section shall be deemed income and proceeds from the use of public land trust lands by the authority and university to be expended by the office of Hawaiian affairs under section 10-13.5.”

8. Concluding remarks

As a final note, OHA recognizes and appreciates the bold step that this measure seeks to take, to begin to address the mismanagement concerns that have plagued Maunakea for over a generation. **OHA understands that this measure would, for the first time in the history of telescope development on Maunakea, finally and decisively remove UH’s and BLNR’s authority over the use of these much-neglected lands of immense ecological, cultural, and spiritual significance.** OHA further understands that this measure would explicitly require and empower the newly-formed MKMA to address additional outstanding issues that have been identified by Native Hawaiian practitioners, environmental interests, researchers, and even astronomy personnel over the decades of UH control over Maunakea, including: establishing policies for cultural access and traditional and customary practices; educating visitors and managing public access and its attendant impacts to the environmental, cultural, and historical integrity of Maunakea; addressing public safety and health issues; statutorily limiting telescope development; ensuring that any telescope dispositions consider and account for impacts to natural and cultural resources as well as to cultural practices and

sites, including the costs of remediating any such impacts; and providing for actual enforcement authorities necessary to meaningfully manage and protect Maunakea.

OHA also acknowledges and appreciates the retention of numerous mechanisms and procedural safeguards to ensure transparency and accountability in any disposition of Maunakea's lands, and notes that the current contested case hearing process and with simple amendments the conservation district rules and permitting procedures for any proposed uses of Maunakea lands will be unaffected by this measure.

OHA accordingly offers the above comments and recommendations to further effectuate the intent of this measure, and provide greater assurances that the MKMA can and will fulfill its critical responsibilities to properly steward and care for Maunakea. **OHA urges the Committees to also carefully consider and address any additional issues and concerns identified by Native Hawaiian cultural practitioners, 'ohana with ancestral and cultural ties to Maunakea, researchers, educators, and other members of the Native Hawaiian community, in its discussion and deliberation regarding this bill.**

Mahalo nui loa for the opportunity to comment on this measure.



MAUNAKEA OBSERVATORIES

To: Senator Kai Kahele, Chair, Committee on Higher Education
From: Maunakea Observatories
Subj: Letter Opposing SB3090 and Proposed SD1 Creating a Maunakea Management Authority
Date: 10 February 2018

Through this letter the undersigned Directors of the Maunakea Observatories express their concerns and opposition to SB3090 creating a new Maunakea Management Authority. While the intent of trying to create a management structure that is broadly inclusive is admirable, SB3090 (and proposed SD1) is, in our estimation, fundamentally flawed and for various reasons would be difficult to implement if approved in its current form.

An overarching concern we have with this legislation is that it further destabilizes an already contentious situation on Maunakea, given the protests, arrests, contested cases, lawsuits, etc. in recent years. Eliminating the Comprehensive Management Plan, all of its sub-plans, the Maunakea Management Board, Kahu Kū Mauna, the Maunakea ranger program, Office of Maunakea Management, UH and DLNR responsibilities for the Maunakea Science Reserve and replacing all of these elements of the current management structure with an expensive and uncertain Maunakea Management Authority is risky with no guarantee that the product of this major overhaul would be an improvement in any form.

The Maunakea Observatories crucially need visible stability in the future of Maunakea astronomy. Our funders, which are mostly international federal agencies, need to be reassured that Hawai'i astronomy is supported by the State and has a bright future in the 21st century. The erosion of confidence in the future of Maunakea astronomy stemming from recent conflicts needs to be reversed and the major changes proposed in SB3090 (and proposed SD1) do nothing to rebuild international confidence in the State of Hawai'i as a host for the world's foremost astronomical research complex. Declines in funding would directly impact tangible benefits astronomy brings to the State and to our communities such as economic revenue, high-quality local jobs, educational opportunities and workforce development for Hawai'i students.

Other specific concerns we have with SB3090 include –

- This legislation monetizes future Maunakea activity but contains no business plan. It fails to explain how the proposed Maunakea Management Authority would actually be funded through a “revolving fund” with no State money needed. Given the likely disconnect between Maunakea Management Authority costs and revenues collected, what entity is expected to cover the difference?
- The proposed Maunakea Management Authority Board has no representation from the Maunakea Observatories, which we cannot accept. The Maunakea Observatories have collectively invested billions of dollars into Hawai'i over their 50+ year lifetime. With such an

enormous investment at stake, the observatories must have appropriate representation in the organization responsible for managing the land upon which the observatories operate.


- The Maunakea Management Authority Board would be a costly group of executives chosen to minimize conflicts of interest. With little-to-no direct stake in its future, in practice we suspect this mostly Oahu based group will simply lack interest and the necessary commitment. This is the opposite of the model we strongly prefer – volunteer members from the Hawai'i Island community representing stakeholders in Maunakea. We favor the continuation of the existing Maunakea Management Board that oversees the Office of Maunakea Management.
- It took many years to generate, vet, and approve the Comprehensive Management Plan and all of its sub-plans, and to establish, fund, and populate the Office of Maunakea Management. Since the Maunakea Management Authority would be starting from scratch, it is reasonable to assume it will take many years for the new management authority to be operational. What happens in the interim?

The Maunakea Observatories recommend the following approach instead:

- The State should first set forth and declare a compelling vision which promotes and supports the various interests in the future of Maunakea, including culture, environment, education, and scientific research (astronomy). We believe such a vision is the critical first enabler, followed by concrete steps to enable that vision, working directly with the community that is most interested in establishing and sustaining a respectful and harmonious future on Maunakea - the Hawai'i Island community.
- Given the exceptional stewardship record of the Office of Maunakea Management, rather than starting over, implement policy changes through updates to the Comprehensive Management Plan (which is a living document) and through new terms and conditions in a new UH land authorization for the Maunakea Science Reserve. This approach preserves continuity while incorporating improvements, leading to the stability we all seek and need.
- The State is well served by a vibrant astronomy program at UH and its future should be integral to any plan under consideration. UH scientific and academic leadership in astronomy reflects positively on the Maunakea Observatories and the communities across the State that make astronomy leadership, worldwide, possible.

We respectfully acknowledge and thank the sponsors of SB3090 for trying to improve conditions for Hawai'i astronomy through this proposed legislation but we cannot support SB3090 when there are more credible and beneficial options available. We continue to be committed to a positive and hopeful future for Maunakea, and sincerely wish to collaborate with you and others in State leadership to find the best way forward. The Maunakea Observatories remain committed to a future for Maunakea that is inclusive for our community, respectful of the sacred nature of the mountain, mindful of our role in the careful stewardship of the summit, and dedicated to protecting the fragile environment on Maunakea for generations to come.

Mahalo,



Director Doug Simons, Canada-France-Hawaii Telescope



Director Laura Ferrarese, Gemini International Observatory



Director Pierre Martin, Hoku Kea Observatory



Director Paul Ho, James Clerk Maxwell Telescope (East Asian Observatory)



Director Walter Briskin, Long Baseline Observatory



Director John Rayner, NASA Infrared Telescope Facility



Director Michitoshi Yoshida, Subaru Telescope

Klaus Hodapp

Director Klaus Hodapp, UKIRT

Hilton Lewis

Director Hilton Lewis, W.M. Keck Observatory (Keck I and Keck II)

SB-3090

Submitted on: 2/9/2018 3:11:50 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
De MONT R. D. CONNER	Ho'omanapono Political Action Committee (HPAC)	Support	Yes

Comments:

We STRONGLY SUPPORT this bill, especially with its SD1. We greatly appreciate the acknowledgement that Mauna Awakea is a significant Spiritual & Cultural place & the commitment to preserving the integrity & significance of its inherent value to native Hawaiians & others who seek to protect the Mauna. We respectfully request that the division responsible for the enforcement of the Mauna by called Kia`i O Ka Mauna Awakea & the persons who are hired in this division understands the deep Spiritual & Cultural significance of Mauna Awakea to native Hawaiians, as well as the value to the scientific community, by which to strike a balance between the Kuleana of both sides. Mahalo.

SB-3090

Submitted on: 2/9/2018 3:40:22 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Rachel L. Kailianu	Ho`omana Pono, LLC	Support	Yes

Comments:

We STRONGLY SUPPORT this bill. We Thank Jesus for the drafters of this bill & it's SD1, especially to Senator Kaiali`i Kahele how took on the challenge to work towards a balance between the goal of NÄ• Kia`i & the Scientific community. Mahalo.

SB-3090

Submitted on: 2/9/2018 12:28:17 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Jim Albertini	Malu 'Aina	Oppose	No

Comments:

Our organization is opposed to SB 3090. This bill appears to be another end-run attempt to push through TMT by setting up a new entity to issue leases and sub leases. Kill this bill and issue a death certificate for TMT once and for all. Respect the Sacred!

SB-3090

Submitted on: 2/11/2018 4:13:50 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Peter Altomare	Ho'o kili farms	Oppose	No

Comments:

SB3090 says "revenue sharing with OHA" and establishes some kind of regulatory body.

Neither of these are needed or acceptable.

The SB3090 is ill-conceived and will damage our State,

SB-3090

Submitted on: 2/9/2018 7:53:08 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kauai Trainer	Momilani Farm	Oppose	No

Comments:

I adamantly oppose SB 3090. The method for determining the 9 voting members of the "authority" is already unfairly stacked by people who support overdevelopment, desecration and criminalization of kanaka 'Ā• iwi and kanaka maoli. And who will be the body or person to determine whether any member has a conflict of interest? Because there were three people on the BLNR that had conflicts of interest but were still allowed to vote in favor of the CDUP. Any management team MUST consist of all members who are connected to the lands of Mauna a WĀ• kea; not people who are from off island and interested in politicking, profiteering and selling/leasing and auctioning off the public trust. Hawai'i Island must be responsible for it's own 'Ā• ina. We of Hawai'i Island LIVE with Mauna a WĀ• kea and vice versa. I oppose SB 3090 because this bill does not recognize that Mauna a WĀ• kea is sacred. It sets up an "authority" instead of a "kuleana." Even the language of this bill is disturbing. How does man have "authority" over the gods? This bill seeks to perpetuate the colonial, imperialistic mindset that led to the destruction of our land, people and culture. Even the entire discussion regarding the "authority" holding TITLE TO ALL MAUNA KEA LANDS is completely inappropriate and unconstitutional. These lands are largely in the public trust. You CANNOT sell/auction lands that are protected for the beneficiaries of the public trust without beneficiary approval. You need a constitutional convention to transfer lands out of the public trust. Not to mention the irony that these lands belong to the Hawaiian Kingdom, currently being illegally occupied by the US. The discussion on TITLE does not address these historic wrongs. I oppose SB 3090 because much of Mauna a WĀ• kea is designated conservation lands and the fact that this bill is opening up the management of business activities for tourism and development in the conservation district is just a continuation of the those who are currently profiteering off our sacred and natural landscapes, watershed and special ecosystems, namely UH, OMKM, foreign corporations and tour companies. I am against all tourism on the mauna. It is desecration. With my own eyes I have seen tourists desecrate and denigrate our ahu. The clouds of incessant dust by vehicles going up and down ALL day and most of the night is not being mitigated currently although it is supposed to be. I am against all removal of snow on the mountain. It replenishes our watershed and is a manifestation of the goddess Poliahu. I am against all future development, industrial, astronomical and even a Peace Park! Mauna a WĀ• kea does not belong to the world. It is geneologically tied to Hawai'inuiĀ• kea and to kanaka 'Ā• iwi and kanaka maoli. It is not the world's ancestor. It is our ancestor. Even the public trust doctrine does not make it the world's. It is of Hawai'i, wale nĀ• . I oppose SB 3090 because it gives too broad powers to the

"authority" ; powers that 9 members cannot possibly manage responsibly. If UH and the BLNR haven't been able to do it with all of their resources and manpower, how can 9 members do it? This is a typical western manner of management that is backwards. Again, the people who are connected to Mauna Kea, the ancestral links, the practitioners, the current scientists...these are the people who should form a kuleana team, not the supposed leaders in high positions, but the people who are 'aiha'a on the ground. I oppose SB 3090 because I believe that the intent of some of the language serves to criminalize kanaka 'Ā• iwi and kanaka maoli and their allies when it describes "illegal activities...trespassers and unlawful occupation.." REALLY? The US is conducting illegal activities by trespassing and occupying Hawaiian Kingdom lands. The 1993 US Public Law 103-150 is very clear on who is the illegal occupier of Hawaiian Kingdom lands and who wrongfully ceded our lands without our consent. The attempt of the BLNR to enact emergency rules against Mauna Kea protectors, whom they described in similar language, was STRUCK DOWN by the Hawaii Supreme Court. Kanaka are not trespassers and not unlawful occupiers of their own ancestral lands. This is a fallacy. I oppose SB 3090 because it does not require any of the nine voting members of the "authority" to have any expertise in 'ike Hawai'i nor traditional and customary practices on Mauna a WÄ• kea. Again, this is a slap in the face of all kanaka and our ancient kĀ«puna/kupua and Ä• kua. I oppose SB 3090 because, although this bill puts a limit to the number of telescopes allowed on Mauna a WÄ• kea, it does not stop the building of the Thirty Meter Telescope, which I adamantly oppose, and may not affect the number of future industrial developments allowed and offers the appearance that all projects could be approved without a conservation district land use permit. The "authority" would have the power to approve or disapprove all projects on all lands under their jurisdiction and provided rules shall supersede all conservation district rules. Allowing the "authority" rules to "supersede" conservation land use designation rules removes much needed safeguards that help protect kanaka 'Ā• iwi, kanaka maoli (and public) rights and resources. Finally, I am opposed to SB 3090 because it undermines pending litigation regarding the future of sacred Mauna a WÄ• kea and its fragile environments and sidesteps powerful efforts of kanaka 'Ā• iwi, kanaka maoli and the public toward healing and resolution. Stop legislating and delegating authority over our identity, our ancestry, our kuleana and our access to our religious and ceremonial rights. Allow the people of Hawai'i Island to come up with our own plan to care for Mauna a WÄ• kea.

SB-3090

Submitted on: 2/11/2018 11:50:41 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Barry K. Taniguchi	KTA Super Stores	Oppose	No

Comments:

SB-3090

Submitted on: 2/9/2018 5:51:01 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Debra Koonohiokala Norenberg		Oppose	No

Comments:

SB-3090

Submitted on: 2/9/2018 7:36:33 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Nicholle S L Konanui		Oppose	No

Comments:

I strongly oppose SB3090.

- This Bill would solidify the State’s authority over our sacred and historic mountain through the creation of the Mauna Kea Management Authority (MKMA) giving over the governance and management of 11,400 acres of Mauna Kea lands to just nine individuals some of whom would be appointed by the Governor and Legislative leaders.
- The selection process and criteria for membership in the MKMA excludes Kanaka Maoli cultural practitioners and groups and does not require any of the nine voting members to have any expertise in Kanaka Maoli traditional and customary practices on Mauna Kea.
- This Bill gives the MKMA the power to exploit and limit access to the sacred and historic Mauna Kea summits through the establishment of entrance fees and management rules and regulations. Entrance fees for cultural practitioners could be waived, but it is not clear if access will be allowed for customary and traditional practices only during visitor center normal operating hours.
- Although this bill puts a limit to the number of telescopes allowed on Mauna Kea, it may not affect the number of industrial developments allowed and offers the appearance that all projects could be approved without a conservation district land use permit. The lands controlled by the MKMA would be exempt from the definition of 'public lands'. Taking Mauna Kea out of the public (and conservation) land use designations removes much needed safeguards that help protect Kanaka Maoli (and public) rights and resources.
- The creation of the MKMA undermines pending litigation regarding the future of sacred Mauna Kea and its fragile environments and sidesteps powerful efforts of Kanaka Maoli and the public toward healing and resolution.

Mahalo

SB-3090

Submitted on: 2/8/2018 7:45:24 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Lauren Kamalei Stovall		Support	No

Comments:

Aloha kākou,

Kākou koʻo nā wau i ka SB3090. I strongly support SB3090. Our Mauna has been abused and mistreated for far too long. Kākou Kiaʻi Mauna.

Mahalo,

Lauren Kamalei Stovall

SB-3090

Submitted on: 2/9/2018 10:30:19 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Sunny Savage-Luskin		Oppose	No

Comments:

SB-3090

Submitted on: 2/9/2018 11:59:40 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Carlton York		Oppose	No

Comments:

This Bill is a cheap shot attempt to take control of both Sacred land and fragile habitat .

The exclusion of kanaka maoli practitioners and groups from the management and use of these lands is Shameful A democratic society should listen to the will of the people , Not exclude them

Strongly Oppose this Bill and the Idea of a small selected group of managers to such large public lands, This Bill is no good Throw it out !

SB-3090

Submitted on: 2/9/2018 3:14:55 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Raul Nohea Goodness		Oppose	No

Comments:

The lands controlled by the MKMA would be exempt from the definition of 'public lands'. Taking Mauna Kea out of the public (and conservation) land use designations removes much needed safeguards that help protect Kanaka Maoli (and public) rights and resources.

The creation of the MKMA undermines pending litigation regarding the future of sacred Mauna Kea and its fragile environments and sidesteps powerful efforts of Kanaka Maoli and the public toward healing and resolution.

SB-3090

Submitted on: 2/9/2018 12:58:53 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
mary drayer		Oppose	No

Comments:

i strongly oppose further denial of kanaka maoli voice in all matters concerning their 'aina..in addition to opposong this entire bill on principle

sad and embarrassing the indigenous peoples are disrespected and disregarded on so many levels...you guys can change that...please do

i appreciate the opportunity to submit this testimony

SB-3090

Submitted on: 2/9/2018 10:11:34 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Shannon Rudolph		Oppose	No

Comments:

SB3090 is a grave insult to all Hawai`i residents. Shame on legislators who may support this deceptive bill.

SB-3090

Submitted on: 2/9/2018 1:34:57 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Sean P Mahoney		Oppose	No

Comments:

SB-3090

Submitted on: 2/9/2018 9:45:53 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kanoeuluwehianuhea Case		Oppose	No

Comments:

Aloha Committee Members,

This is is my testimony OPPOSING Senate Bill 3090. So much power in the hands of one entity to control our Mauna! Aole pono, Example on page 16 with the notion that this entity will have the authority to auction and sell Mauna A Wakea land, pieces of our Mauna up for bid! That is pure ignorance. I wish I could get through the 97 pages, they should have audio for us to review the bill thoroughly! The first few pages really revealed the intentions of the State in creating this entity "authority" land grabbing power hungry proposition! And to sneak in peace park which many have been opposing as well! I would like to know who they intend to sit on this entity without a conflict of interest with all the private organizations and business bureaus they have designated to be appointed by the Governor whose conflict of interest over rules it all?! Kill Senate Bill 3090! It's not about protection, it's about power! It's not about preserving our Hawaii and sacred places of our Mauna, it's about assuring business moves along to progressively fuel unneeded development of our Aina and waters...they need to go find somewhere else to make revenue! Kapu Ka Mauna!

aloha,

Kanoeuluwehianuhea Case

SB-3090

Submitted on: 2/9/2018 12:14:40 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Mary		Oppose	No

Comments:

Dear Senator Kahele, I respectfully request that you defer this measure indefinitely. I have attended thousands of hours of hearings, read many documents and was as disturbed as anyone to learn initially of the UH failure to be good stewards of Mauna Kea in the distant past. I have continued to stay actively involved and believe that great steps in the correct direction have been taken to correct those errors/oversights. I have tremendous respect for OMKM and believe that this bill is not necessary. Please move forward, please don't start over! Thank you for all you do for our community! Mary Begier

SB-3090

Submitted on: 2/9/2018 2:13:15 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Chris Stark		Oppose	No

Comments:

Dear Honorable State Senators,

I am writing you today about SB3090, relating to Mauna Kea management, and I strongly urge you to reject this bill. As written, this bill has the potential for catastrophic negative cultural, environmental, economic, and scientific impacts. I am a resident of Hawaii Island, which is also where I grew up, and I have worked in the astronomy community for nearly a decade. In this time that I have worked on Mauna Kea, I have come to learn more about the sacred cultural significance of Mauna Kea through Office of Mauna Kea Management (OMKM) training programs than in the entirety of my K-12 schooling, as well as my Bachelors degree earned at UH Manoa, all of which included required Hawaiian culture curricula.

In my years of working alongside personnel from OMKM, I have witnessed expert care of the natural resources related to the mountain, care and education related to the precious cultural sites and practices on the mountain, and an emphasis on the safety of cultural practitioners, scientists, and both local and tourist visitors to the mountain. OMKM has continuously improved despite funding challenges and the rising operating costs that affect all of us who work on this special mountain.

Hawaii Island is world renown for its beauty, and there are few places on the planet that showcase such a variety of climate zones. The sad reality is that nearly every square foot of land along our roadsides is littered with garbage, and you cannot drive more than a block or two without encountering a decaying vehicle on someone's private property. The reason I mention this is because the moment that you turn up the Mauna Kea Access Road, the rubbish on the side of the roads is suddenly gone. When walking around the summit of Mauna Kea, one of the first things you notice is the complete absence of trash. OMKM has clearly been an effective steward of this special place.

It is clear that OMKM is implementing the recommendations made by the 2014 audit report "Follow-Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve". The only remaining items not fully implemented are being held up by other state entities, and since that report was published, UH has completed draft administrative rules which have been reviewed and approved by both the Mauna Kea Management Board as well as the Native Hawaiian advisory council Kahu Ku Mauna (previously held up by the Office of the Governor). Additionally, the Kona-Kohala

Chamber of Commerce has awarded OMKM twice in the last two years for community-focused activities that are focused on environmental and cultural site protection. The Historic Hawaii Foundation has also publicly praised OMKM its protection of cultural resources.

For myself and for a majority of those living on Hawaii Island, astronomy is a crown jewel of our island home. It is nothing less than the modern extension of the ancient wa'a by which the first Hawaiians explored the Pacific. And not only is there a direct cultural lineage between traditional Hawaiian culture and astronomy, but astronomy provides an economic lifeline to our community, pumping over \$160 million annually to the state economy, with over 50% of that directly benefitting Hawaii Island. The replacement of OMKM -- an organization that has proven itself to be effective -- with an Oahu-based entity that is not a stakeholder in our Hawaii Island community jeopardizes all of the good that OMKM has accomplished.

If the Hawaii legislature feels that management of Mauna Kea could be done better, the path forward that makes the most sense is to improve the existing Office of Mauna Kea Management by providing them with the additional resources they need.

Thank you for your consideration.

Aloha,
Chris Stark

SB-3090

Submitted on: 2/9/2018 1:48:06 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Annette Reyes		Oppose	No

Comments:

SB-3090

Submitted on: 2/9/2018 1:47:24 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Diann Karin Lynn	US Navy (Retired)	Oppose	No

Comments:

As I understand it, this bill could effectively kill astronomy on the Big Island, which is arguably the best site on the planet. Astronomy has an enormous economic impact not only on the BI but on the state as a whole, including jobs, dollars and education. Specific impacts include:

- potential uncertainty for national and international boards that oversee and fund the long term operation of the observatories
- establishment of an Oahu-based management authority made up of members who have no vested interest or ties to the mountain, which translate to no stakeholder representation.
- allowing a new management authority to sell land on Mauna Kea using questionable tools like auctions and drawings.
- a new management structure that adds bureaucracy and cost.

PLEASE KILL THIS BILL.

SB-3090

Submitted on: 2/9/2018 1:42:39 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Rob Guzman		Oppose	No

Comments:

I oppose SB3090, as it threatens the future of astronomy in Hawaii.

SB-3090

Submitted on: 2/9/2018 2:49:27 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Veronica Ohara		Oppose	No

Comments:

Dear Honorable Members of Hawaii Legislature,

I submit my testimony in opposition to SB3090. The recent UH BOR Resolution on Maunakea addresses many of these issues and this is the support the OMKM has been needing. Until now their work has been largely and sadly ignored by many while they have worked with a shoe string budget. They train all the people who work on Maunakea, familiarize them with important archaeological areas, botanical growth, the Weiku Bug and the Wolf spider. They look after the visitors, they keep the area pristine, there is no trash in the areas they look after. All offerings are allowed to remain for the specified amount of time and then removed. Their jobs are difficult and often met with confrontation, lack of cooperation yet they acquit themselves admirably. Together with help from Ku Kahu Mauna, BLNR we can expect better handling of the area because now there will be funding for OMKM as stipulated in the Malama Maunakea Resolution by the UHBOR.

A new body of management will only make things more complicated, quite possibly slow the down the process required to get the work done. As it is the historic properties are looked after but with the funds from the UH we can expect an increased level of care.

Astronomy is an important part of Hawaiian culture and is our legacy to the world. We are more than a dinner show and military installation. Please allow the good work of OMKM to continue and support them by voting down SB3090.

The voices against astronomy of Maunakea have grown louder over the years and it saddens me, as a Native Hawaiian to witness this rejection of science and heritage, tradition. Please don't allow these voices to distract you from seeing and helping all the good in our astronomy community.

Respectfully submitted,

Veronica Ohara

SB-3090

Submitted on: 2/9/2018 4:16:27 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Bernard A Balsis Jr Jr		Oppose	No

Comments:

I do not support this bill.

Under SB 3090, the 9-members of the proposed Mauna Kea Management Authority would hold title to the 12,000-acre Mauna Kea Science Reserve and could effectively kill the future of astronomy on Hawaii Island. Statewide astronomy is \$167 million dollar industry with more than 1,000 good paying jobs. Through astronomy many education programs are supported in the public schools of Hawaii. This could stop and/or be drastically reduced once astronomy begins to decline on the top of Mauna Kea.

The Office of Maunakea Management does an outstanding job with the day-to-day and long-term management of the mountain by implementing, with regular community input, programs to protect Maunakea's natural and cultural resources while ensuring safe public access for everyone.

The success of the community based management structure was affirmed in the 2014 State Auditor Report that stated, *"We found that UH has developed several management plans that provide a comprehensive framework for managing and protecting Mauna Kea while balancing the competing interests of culture, conservation, scientific research, and recreation."*

Good management is already in place! See the attached OMKM Milestone Timeline.

SB-3090

Submitted on: 2/9/2018 3:34:19 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Amber Imai-Hong		Oppose	No

Comments:

Dear Honorable State Senators,

I am writing you today about SB3090, relating to Mauna Kea management, and I strongly urge you to reject this bill. As written, this bill has the potential for catastrophic negative cultural, environmental, economic, and scientific impacts. I am a resident of Hawaii Island, which is also where I grew up, and I have worked in the astronomy community through the Akamai Workforce Initiative and Women in Technology as an intern. Over the years, as an intern working on Mauna Kea and through my kupuna, I have come to learn more about the sacred cultural significance of Mauna Kea through Office of Mauna Kea Management (OMKM) training programs. Working at the observatories on Mauna Kea helped me connect to my ancestors, and I hope to return.

Hawaii Island is world renown for its beauty, and there are few places on the planet that showcase such a variety of climate zones. The sad reality is that nearly every square foot of land along our roadsides is littered with garbage, and you cannot drive more than a block or two without encountering a decaying vehicle on someone's private property. The reason I mention this is because the moment that you turn up the Mauna Kea Access Road, the rubbish on the side of the roads is suddenly gone. When walking around the summit of Mauna Kea, one of the first things you notice is the complete absence of trash. OMKM has clearly been an effective steward of this special place.

It is clear that OMKM is implementing the recommendations made by the 2014 audit report "Follow-Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve". The only remaining items not fully implemented are being held up by other state entities, and since that report was published, UH has completed draft administrative rules which have been reviewed and approved by both the Mauna Kea Management Board as well as the Native Hawaiian advisory council Kahu Ku Mauna (previously held up by the Office of the Governor). Additionally, the Kona-Kohala Chamber of Commerce has awarded OMKM twice in the last two years for community-focused activities that are focused on environmental and cultural site protection. The Historic Hawaii Foundation has also publicly praised OMKM its protection of cultural resources.

Hawaii Island needs more high paying Science, Technology, Engineering, and Math (STEM) jobs in order to sustain and restore itself, and the astronomy community

contributes to that. It is nothing less than the modern extension of the ancient wa'a by which the first Hawaiians explored the Pacific. And not only is there a direct cultural lineage between traditional Hawaiian culture and astronomy, but astronomy provides an economic lifeline to our community, pumping over [\\$160](#) million annually to the state economy, with over 50% of that directly benefitting Hawaii Island. The replacement of OMKM -- an organization that has proven itself to be effective -- with an Oahu-based entity that is not a stakeholder in our Hawaii Island community jeopardizes all of the good that OMKM has accomplished.

If the Hawaii legislature feels that management of Mauna Kea could be done better, the path forward that makes the most sense is to improve the existing Office of Mauna Kea Management by providing them with the additional resources they need.

Thank you for your consideration.

Mahalo,

Amber Imai-Hong

SB-3090

Submitted on: 2/9/2018 4:25:52 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Peggy McArdle		Oppose	No

Comments:

Aloha. Please oppose SB3090. This bill does not reflect what the Native Hawaiian Community needs to Protect Mauna Kea. This is a slap in the face to the Native Hawaiian activists who occupied the mountain in 2015. No more telescopes. No more renegotiating leases. No more lease extensions. No pseudo boads. No more development. Period. Mahalo.

SB-3090

Submitted on: 2/9/2018 6:09:51 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Karen Davis		Oppose	No

Comments:

Dear Senator Kahele,

Please accept my testimony opposing SB3090. The negative economic impact including the loss of jobs to the community are huge. Additionally, OMKM have taken the steps to ensure better management of Mauna Kea going forward and are already in place. I respectfully request that you oppose this bill due to these negative implications. Mahalo nui for all that you do for our community!

Karen Davis

SB-3090

Submitted on: 2/9/2018 7:25:58 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Stephen Ueda		Oppose	No

Comments:

The bill will create uncertainty for the entities that oversee and fund the long-term operation of the observatories.

A new management structure will not necessarily solve any perceived issues and is just as likely to create new issues.

Stephen Ueda

Concerned resident of Hilo, Hawaii.

SB-3090

Submitted on: 2/9/2018 8:14:36 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
James Long		Oppose	No

Comments:

SB-3090

Submitted on: 2/9/2018 8:06:17 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Sheadon Freitas		Oppose	No

Comments:

I Sheadon Freitas oppose this bill for my people !!!

SB-3090

Submitted on: 2/9/2018 9:23:18 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Bianca Matthews		Oppose	No

Comments:

SB-3090

Submitted on: 2/9/2018 9:51:09 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Vaughn Cook		Oppose	No

Comments:

IF IT AIN'T BROKEN, DON'T "FIX" IT!

I strongly oppose SB3090. The Office of Mauna Kea Management has done an admirable job managing access to Mauna Kea, protecting the environment and the many other duties that are involved in managing a precious resource in a fair and equitable manner, taking into consideration the different interests of the various parties. While I understand that there was concern about the stewardship by UH in the past, my experience with OMKM has been nothing but positive.

I am a fourth generation Big Island native. My great grandparents, grandparents and parents saw our community and home as it changed through the years from the Kingdom of Hawaii, to the Republic of Hawaii, to the Territory of Hawaii, and, finally, to the State of Hawaii. Born and raised in Hilo, a graduate of our fine public high schools (Waiakea High School) and a parent of a current Waiakea student (with 2 others close behind), I understand the importance of education in STEM. Astronomy on Mauna Kea has added so much to our community and children with educational opportunities and a culture of curiosity and discovery. From the direct scientific discoveries that inspire our youth to the many educational opportunities afforded by various programs to which the astronomy community regularly contributes, the development of astronomy on Mauna Kea has been a net positive for OUR community. Since my involvement with and support for astronomy on Mauna Kea in the mid-2000's to the present, OMKM has been an excellent steward of the mountain.

Now is NOT the time to scrap OMKM and start from scratch. Why get rid of an organization that is working because there were problems in the distant past. I strongly recommend MOVING FORWARD with OMKM and supporting a clean industry that will prepare our children with the skills they DESPERATELY NEED to succeed in the modern world.

Please defer this bill indefinitely. It is not needed. OMKM is "not broke" and does not need to be "fixed."

Thank you.

Vaughn Cook

SB-3090

Submitted on: 2/9/2018 11:00:32 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Lela Kalama		Oppose	No

Comments:

I strongly OPPOSE this bill! This is conservation land and nothing new should be built! Must allow hawaiian cultural persons to be on the committee and mandate a minimum of 2 with that qualification. This mauna is sacred and must be protected!!!! Not used as a commercial park! Do not pass this bill!!

SB-3090

Submitted on: 2/10/2018 6:15:50 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kat Culina		Oppose	No

Comments:

Respect Kanakas. Respect the Mauna.

SB-3090

Submitted on: 2/10/2018 7:02:44 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Geoffrey Hajim		Oppose	No

Comments:

Aloha

Astronomy is a very important part of economic and academic sovereignty for the island of Hawaii. This bill is poorly constructed and will discourage current and future investment. Boards of various non-profits will go elsewhere destroying our economy, the educational opportunities provided to our youth, and Hawaii as a leader in the visionary fields of Astronomy and space exploration.

Please kill this bill.

SB-3090

Submitted on: 2/10/2018 5:00:32 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Gregory Gushiken	University of Hawai'i at Manoa	Oppose	No

Comments:

Aloha kākou,

My name is Gregory Gushiken, and I am a Kanaka Maoli senior at the University of Hawai'i at Mānoa.

I am writing you today to express my vehement opposition to SB 3090 for the following reasons:

- **SB3090 would solidify the State's authority over our sacred and historic mountain through the creation of the Mauna Kea Management Authority (MKMA) giving over the governance and management of 11,400 acres of Mauna Kea lands to just (9) individuals some of whom would be appointed by the Governor and Legislative leaders, thereby depriving nā kānaka Maoli of the right to fully self-determine the ethical treatment of our sacred lands.**
- **The selection process and criteria for membership in the MKMA excludes kānaka Maoli cultural practitioners and groups and does not require any of the (9) voting members to have any expertise in Kanaka Maoli traditional and customary practices on Mauna Kea.**
- **This Bill gives the MKMA the power to exploit and limit access to the sacred and historic Mauna Kea summits through the establishment of entrance fees and management rules and regulations. Entrance fees for cultural practitioners could be waived, but it is not clear if access will be allowed for customary and traditional practices only during visitor center normal operating hours.**
- **Although this bill puts a limit to the number of telescopes allowed on Mauna Kea, it does not stop the building of the Thirty Meter Telescope (TMT) and may not affect the number of industrial developments allowed. The MKMA would have the power to approve or disapprove all projects on**

all lands under their jurisdiction and provided rules shall supersede all conservation district rules.

- Allowing the MKMA rules to "supersede" conservation land use designation rules removes much needed safeguards that help protect Kā• naka Maoli (and public) rights and resources.
- The creation of the MKMA undermines pending litigation regarding the future of sacred Mauna Kea and its fragile environments and sidesteps powerful efforts of Kā• naka Maoli and the public toward healing and resolution. This also deprives us to a Federal and state constitutional right to due process and the right to engage with our democracy through the apparatuses afforded to us by both state and Federal governments.

SB 3090, thus, deprives nā• Kā• naka Maoli of a natural right as the displaced, dispossessed, and disincluded Indigenous people of the Hawaiian Archipelago to be involved in the process of reconciliation and stewardship of our lands. By setting such stringent and highly bureaucratic, and thereby undemocratic, parameters for the selection of the MKMA board, this bill supersedes the right of Kā• naka Maoli and, more broadly, our Hawai'i community to elect, to inform, and to be ethically and democratically represented by people who have a vested interest in our 'Ā• ina, which, to Kā• naka Maoli, is an ancestral and evolving relationship. Regardless of your own stances on the Thirty Meter Telescope and the resurgent power of our Lā• hui, I urge you to consider, first and foremost, democratic principles and letting those closest to these lands, and with the most kuleana, to care for these places. Mauna Kea is sacred, and, for Kā• naka Maoli, this bill further desecrates wao akua, a place for our gods and our ancestors. Mahalo for your time, and I urge you, again, to listen to the voices of our people that you so ardently desire to represent.

To: Senator Kaiali'i Kahele, Chair, Committee on Higher Education

From: Christoph Baranec of Hilo, Hawai'i

Monday, 12 February 2018

I oppose measure SB3090.

I am a faculty engineer/astronomer at the Hilo branch of UH Manoa's Institute for Astronomy. I live and work in Hilo. I develop new technologies for astronomical telescopes, teach classes in engineering and research skills at both UH Hilo and UH Manoa, engage in outreach, mentor local students in high-tech skills and volunteer in my community.

I oppose measure SB3090. Other testifiers will point out the many flaws in the bill, so I will not do so here. Instead, I support the tireless and thankless efforts of the Office of Maunakea Management (OMKM) and strongly encourage you to do the same. OMKM was established in 2000, as directed in the Master Plan, to responsibly steward the land use and activities on the UH managed public lands of Maunakea. Since its beginning, OMKM initiated the information gathering and research necessary to monitor the precious natural and cultural resources that exist on Maunakea. They executed a comprehensive permitting processes for group visits/special requests, film permits, scientific fieldwork, any proposed external changes to grounds, signs, facilities, etc. They run the ranger program that helps to keep all visitors to Maunakea safe. And many other programs, to which I refer you to the 2009 Maunakea Comprehensive Management Plan.

OMKM's major remaining piece of work to fulfil their obligations to the people of the State of Hawai'i is to pass new Administrative Rules. These have been held up by our executive and legislative branches of government. I appeal to you Senators and Governor Ige, to equip OMKM with the authority and resources necessary to fulfill its mission instead of pushing forward this bill. In summary, I oppose measure SB3090.

Mahalo no kou manawa,

Christoph Baranec

SB-3090

Submitted on: 2/10/2018 8:43:59 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Lauren Ampolos		Oppose	No

Comments:

SB-3090

Submitted on: 2/10/2018 8:45:24 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Lana Ululani Robbins		Oppose	No

Comments:

Mahalo to Senator Rhodes and Senator Gabbard of the Committee on Water and Land for the opportunity to testify in opposition of SB 3090.

While I support the TMT, SB 3090 is the wrong way to approach these issues. I oppose SB 3090 for three reasons and they are as follows:

1. In Section 3 the Mauna Kea Management Authority would have nine members one of them the director of business, economic development, and tourism plus six members invited and chosen by the governor, and one member chosen by Hawaii's House and one member chosen by Hawaii's Senate. This goes against the spirit of the State of Hawaii's Sunshine law Chapter 92 in an open government and is O'ahu-centric. I strongly believe that members of the public should serve as majority of the members. Five of them should be members who reside on Moku o Keawe (the Big Island) with remaining members voted on by voters not be the Governor or by Hawaii's Legislature.

2. In Section 4 the Mauna Kea Management should not hold title as Mauna Kea sit on crown lands and belongs to the crown. At such time when these issues are resolved then and only then should the Judicial branch decide who is the rightful owner.

3. Last but not least Section 46 details the search and seizure process.

An excerpt "Any law enforcement officer or agent of the authority upon whom the authority has conferred powers of law enforcement officers, shall have the authority to conduct searches on probable cause as provided by law and to seize any equipment, article, instrument, aircraft, vehicle, vessel, business records, or natural resource used or taken in violation of the laws of the State, or any rules adopted thereunder. For purposes of this section, "natural resource" includes any archaeological artifacts, minerals, any aquatic life or wildlife or parts thereof, including their eggs, and any land plants or parts thereof, including seeds."

The law enforcement officer should have probable cause in order to conduct searches. The way that it is worded it is a violation of the Fourth Amendment right of TMT protestors the right to be secure against unreasonable searches and seizures.

Like I mentioned while I support the TMT, SB 3090 is not the way to go about having it built as it deprives TMT protestors of their Fourth Amendment right to be secure against unreasonable searches and seizures.

Please strike SB 3090 down. Mahalo.

SB-3090

Submitted on: 2/10/2018 9:06:42 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
fane tonga		Oppose	No

Comments:

Mauna access and land management shall be determined by the people and by votes by all. Not by one group...we all Malama and AlohaAina!

SB-3090

Submitted on: 2/10/2018 11:06:23 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Jonathan Williams		Oppose	No

Comments:

Stop playing with Maunakea. UH has been a responsible manager of the mountain and has maintained an appropriate balance between science, the environment, culture and history. This bill promotes actions that are not well thought through and will permanently damage the State's reputation as a place to carry out science and technology.. The Big Island needs a diverse economy and broad opportunities for future generations. The science preserve on Maunakea is a key part of that.

SB-3090

Submitted on: 2/10/2018 4:35:43 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Thayne Currie		Oppose	No

Comments:

I STRONGLY oppose this bill. While I appreciate the intent of this bill to protect the cultural and natural resources of Maunakea, its specific motivation to create an entirely new management authority is misplaced and the bill, if implemented, would bring about disastrous consequences.

First, I simply and strongly disagree that OMKM should be replaced another, entirely new agency. While the bill rightly notes that the 1998 state audit of Maunakea's management was highly critical, the Office of Mauna Kea Management was formed and the 2000 Master Plan was formulated in direct response to management criticisms, constituting "a new organizational structure, management system, and procedures." The 2014 audit was not nearly as negative as this bill's language seems to imply, instead noting that "UH and BLNR have made progress in implementing many of [the office's] recommendations", finding that "UH and DLNR's updated plans, leases, and observatory permits provide an improved framework for protecting Mauna Kea lands."

Any fair-minded assessment would also conclude that OMKM is diligently implementing recommendations made by the 2014 auditor's report, as described last summer in "Follow-Up Audit of the Management of Mauna Kea and the Mauna Kea Science Reserve"). The report concludes that as of last year 4 of the 7 currently-applicable recommendations have been implemented at least in large part. Many of the non-implemented recommendations are held up by other agencies/offices, not OMKM. For instance, the completion of Recommendation 2 hinges on feedback received during the administrative rules process which must be initiated by the governor's office. Even then, there is new progress. For example, the University has now completed draft administrative rules (previously stalled by the governor's office) which have been approved and reviewed by Kahu Ku Mauna and MKMB.

As described by numerous testimonies at the recent BLNR meeting (Jan. 26), the difference in management of Maunakea pre-OMKM and under OMKM is night and day: the mountain is highly regulated, the ranger program does well with ensuring safe access, and the observatories are clean and free of trash/debris surrounding them. The community at large acknowledges OMKM's stewardship of Maunakea in tangible ways. The Kona-Kohala Chamber of Commerce has now twice honored OMKM with its PÅ«alu Award, in 2016 for its innovative, community-focused activities focused

on environmental protection and last year for the agency's Long-Term Historic Property Monitoring Plan. The Historic Hawaii Foundation likewise lauded OMKM its protection of cultural resources through this plan.

These positive assessments are in line with my own experience, as an astronomer by vocation and a frequent visitor to the summit of Maunakea since 2006. The past 11 ½ years have provided me ample opportunities to witness OMKM's ability to care for and manage Maunakea. I firmly believe that OMKM excels at the exceptionally difficult task of managing and protecting the natural and cultural resources of Maunakea, while providing an unrivaled center for scientific discovery through astronomical research and safe access to the summit for a wide range of visitors. I have found OMKM personnel to be highly professional and knowledgeable about the many facets of Maunakea that Hawai'i residents value.

Second, the bill if implemented would, at best, create unnecessary and significant chaos, severely impeding the stewardship of a mountain so many Hawai'ians hold dear. This bill, which would take effect upon its approval, would remove numerous experienced, seasoned managers and effective infrastructure of management essentially overnight. In its place, it would put an entirely new infrastructure, new people, filled with stakeholders who do not necessarily have any experience at all in managing a conservation district, and expect them (on day one) to manage this very complex and challenging place. This is a recipe for disaster.

Coupled with this extremely short timeline for implementation is extremely loose language about the status/possible renegotiation of current subleases and future development on the mountain that could either be weaponized against the astronomy community or alternatively allow the university to skirt rules. For instance, the cap of 13 telescopes on the mountain is vague. Would the entirety of CSO need to be removed for TMT to even put up fencing on its site for construction? Alternatively, would removing the mirror for Hoku'kea count as "removing a telescope"? This imprecision only invites more legal challenges. Another example. Almost the entire community (the majority in favor of TMT and minority opposed) believes there should be limits on new development, with Governor Ige suggesting that TMT should be the last new site developed. While the bill caps the number of telescopes, there is no language in the bill that would, say, prevent development (after TMT) on currently undisturbed sites.

While the legislature should be commended for their interest in the management of Maunakea, I strongly feel that this bill, taken in its entirety, just makes things much worse. Certainly, there are aspects of Maunakea's management that could be improved. For example, through the adoption of the administrative rules or other means, the rangers should be given greater enforcement powers. I personally would also like to see substantial revisions to the way in which the Visitor's Center is run. Other specific items in the bill are good ideas: e.g. requiring that, as a condition of their sublease renewals, the telescopes follow TMT's lead and describe in a formal way how they will give back to the community through more local jobs and greater educational opportunities. The community would benefit from improving the existing,

working system through these focused additions considered in a future legislative session rather than this bill.

Maunakea is revered by so many in Hawai'i. It is special to me as well, both professionally and personally. It must be protected and its cultural and natural resources preserved. I am thankful for the dedication and expertise of OMKM personnel who excel at protecting this special place.

SB-3090

Submitted on: 2/10/2018 4:51:28 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Barbara Barry		Oppose	No

Comments:

SB-3090

Submitted on: 2/10/2018 5:07:41 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Theodora Akau Gaspar		Oppose	No

Comments:

SB-3090

Submitted on: 2/10/2018 5:37:54 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kimo Cashman		Oppose	No

Comments:

SB-3090

Submitted on: 2/10/2018 5:47:59 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
TJ Magno		Oppose	No

Comments:

I do not agree with this bill supporting the change in management of Mauna Kea.

SB-3090

Submitted on: 2/10/2018 7:40:09 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
keomailani von gogh		Oppose	No

Comments:

Aloha,

There is so much bad action on the part of Senator Kahele by adding amendments to SB 3090 which changed the bill number to SB3090SD1 and then not allowing testimony that was filed in opposition in a timely manner. I want to make it clear that I am writing in **OPPOSITION** to **SB3090-SD1 AND SB 3090 AND** any bill that is being snuck through without the public knowing regarding this horrendous type of management authority for Mauna Kea. This is written by and for only those who will financially benefit off of Mauna Kea. How Shame!

mahalo for your time,

Keomailani Von Gogh

SB-3090

Submitted on: 2/10/2018 10:32:49 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Herring K Kalua Sr		Oppose	No

Comments:

February 10, 2018

Aloha Senate Committee on Higher Education,

Re: SB3090 Proposed SD1 Hearing

My name is Herring K Kalua Sr, and I am submitting my testimony today in opposition to SB3090 Proposed SD1.

I am opposed to SB 3090 Proposed SD1 because I would like to keep DLNR/BLNR as the authority required to manage the Mauna Kea lands, therefore keeping HRS-171 in the legislation.

Second, I would like to see that the Ali'i Trust member of the MKMA board remain instead of a member of the Royal Order of Kamehameha.

Thank you for your attention in this matter.

SB-3090

Submitted on: 2/10/2018 10:49:20 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Ahia Dye		Oppose	No

Comments:

SB-3090

Submitted on: 2/10/2018 11:10:12 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kealoha Pisciotta		Oppose	No

Comments:

SB-3090

Submitted on: 2/11/2018 3:03:40 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Kyla Manzano		Oppose	No

Comments:

Aloha pumehana kākou,

He leo kākou koʻo ʻOLE kāia i ka pila SB3090. I pāʻkole a māʻakā ka kāia wehewehena, kākou koʻo ʻole wau i ke kākulu ʻia ʻo TMT i loko nā o ka wā wahi ʻia o nā hale kilo hāʻkā ʻā aʻe. Kākou koʻo ʻole wau i ka pono e hoʻokele ʻia ka poʻe ʻiwi ke hana i ka hana a ko kākou mau kāpuna. A, kākou koʻo ʻole wau i ka "management plan" no ko kākou mau mauna makamae ʻo Mauna Kea. ʻAʻole nā ʻo Mauna Kea he wahi wale nā, he wahi e noho ai nā manu/holoholona/mā ʻiwi. ʻAʻole ia he mauna wale nā, he mauna e kākilakila no ka honua. ʻAʻole ia he ʻā pana ʻā ina wale nā, he wahi me ka pilina i ka poʻe Hawaiʻi. He ʻuhane nā hoʻi ʻo ia e ola nei i loko o kāia me kāia kanaka Hawaiʻi. Ua ola ko kākou mau kāpuna ma muli o kāia mauna. ʻAʻole pili ke kākou koʻo ʻole i ka ʻenehana, no ka mea ua loaʻa ke akamai o nā kāpuna. Mau nā ka hiki ke mālama i ia ʻike o nā kāpuna me ka loaʻa ʻole o ka hale kilo hāʻkā, me ka hoʻokele ʻole ʻia o kā mākou hana kuʻuna. No laila, eia koʻu manaʻo hope, ʻaʻole anei lawa nā hāʻkele loloa o Honolulu?! ʻAʻole anei lawa nā wahi kapu i wā wahi ʻia, i hiki ke noho ʻoluʻolu ka poʻe malihini?! ʻAʻole anei lawa ka make o nā holoholona ʻiwi i kāia ʻano hana kāpono ʻole e like hoʻi me ke kākulu ʻia o nā hale hāʻkā ma nā mauna waiwai o Hawaiʻi nei?! ʻAʻole anei lawa ka hoʻoluhi ʻia o nā kāpuna ma ke ʻeli i ko ia kou iwi no ke kākulu ʻia o ka hale kāʻai hou?! Ua lawa mākou! Ua lawa nā! I loaʻa ka mauna no kaʻu mau moʻopuna, kākou koʻo ʻole wau. I ola ka ʻike kuʻuna ma nā ʻano a pau, kākou koʻo ʻole wau i kāia pila. I loaʻa ʻo Hawaiʻi no kaʻu mau moʻopuna, kākou koʻo ʻole wau i kāia pila.

Ke aloha ʻāina, Kyla Keakealani Manzano

SB-3090

Submitted on: 2/11/2018 8:21:44 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Robert Freitas Jr.		Oppose	No

Comments:

I strongly oppose this bill!!!

SB-3090

Submitted on: 2/11/2018 8:45:51 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Patricia Blair		Oppose	No

Comments:

SB-3090

Submitted on: 2/11/2018 9:07:13 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Amber Kahealani Alapa'i		Oppose	No

Comments:

Aloha, my name is Amber KÄ• healani Alapa'i and I wholeheartedly OPPOSE SB3090.

Mauna Kea is my Piko. It's a wahi pana that we hold sacred. We go there for our spiritual practices and to receive Ike and replenish our mind and spiritual being. It is not "Pono" to mislead the people of Hawaii by disguising a bill to further develop on top of Mauna Kea. It is not "Pono" to decommission older telescopes and then build the TMT there. Enough is enough. We stand firm with our Mauna a wakea, it must stay undisturbed so it's purity and sacredness can be maintain for our future generation and the future of Hawaii nei

mahalo,

Amber KÄ• healani Alapa'i

February 11, 2018

SB-3090

Submitted on: 2/11/2018 9:35:53 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
James A. Cuddihy Jr.		Oppose	No

Comments:

I oppose Senate Bill SB3090.

Mauna Kea is a symbol of International Cooperation, pursuit of knowledge and the Hawaiian people. Management has in the past been derailed by politics with OMKM given the responsibility but not the tools, resources or enforcement capability. Erase the political infighting and substitute cooperation and the mountain's use will be an example for the world. From diversity will come unity of purpose.

(I am using the acknowledged Hawaiian grammar protocol recognized by Hawaiian Language Colleges that proper names of places and individuals be distinguished by spelling *Maunakea* as a single word.)

Aloha Honorable State Senators,

My name is Kālepa Baybayan and I am an employee of the 'Imiloa Astronomy Center of Hawaii, a division under the Chancellor of the University of Hawai'i at Hilo. I am also a member of the Kahu Kū Mauna council, a Hawaiian volunteer advisory committee to the Maunakea Management Board. I am a member of Hawai'i's voyaging community and hold the rank of Pwo, a distinguished order of oceanic navigators in the Satawalese tradition. Nonetheless, I submit opinions on SB-3090-SD-1 as a private citizen and my comments should not be misconstrued as representing those of my employer or the organizations I am privileged to be a part of.

I do not support SB-3090-SD-1 and advocate for the continued stewardship of Maunakea to remain under the authority of the DLNR/BLNR and their statutory requirement under HRS-171 mandating the DLNR/BLNR serve as arbiter over Maunakea lands. I do not support the idea that replacing the current bureaucracy with a completely new one would be of benefit to the management of Maunakea lands. The bill recognizes that since 1998 four audits have been critical of the management, stewardship, and protection of Maunakea, however, significant changes have occurred since.

I have first hand experience of the difficulty of creating public service organizations in the absence of effective models to follow, the infancy of such organizations are fraught with problems as they establish the systems that will produce good management practices. With Maunakea, the problems were even more acute as there was an absolute absence of the necessary baseline data as it relates to archeological, cultural, environmental, and natural resource studies, from which effective policies could be designed and implemented. Since 2009, the Maunakea Comprehensive Management Plan, and four sub-plans in the areas of Cultural

Resources, Natural Resources, Public Access, and Decommissioning, has been established.

I take issue with the proposed paid 9-member board that will be made up of a mix of resident and non-resident Big Islanders that will be established if SB-3090-SD-1 is passed. The existing board of the current managing authority is volunteer members and Big Island residents. I question whether parties with a record of opposition to telescopes of the proposed 9-member board can serve impartially and judiciously. The current system of the University of Hawai'i as lessee with responsibility for management and sub-leases of Maunakea lands is the most appropriate model for the stewardship of Maunakea. The University of Hawai'i, with its mission of promoting scientific research, scholarship, and stellar academics, has a vested interest in ensuring that the mountain is stewarded to the highest standards, if it is to continue the promotion of science on the summit of the best place in the world for the study of astronomy.

I believe that there exist false narratives promoted by those who believe that telescopes have enormous resources and that the astronomical discoveries can be monetized. The product of astronomical discoveries is information, information that benefits all of mankind, it tells us where we came from, when we began our journey as a human species, and what options we will have in the future. You cannot monetize the information produced by astronomy; the distances you would need to travel to capitalize on any investment are light years away.

Lastly, I think that the larger question that the Bill does not address is, with passing of Hawaiian astrophysicist Paul Coleman, why is there is only one native Hawaiian astronomer left, Heather Kaluna. If you really want to do something that justifies the privilege and honor for allowing deep space exploration to take place from the summit of the best place in the world, Maunakea, then legislate a bill that mandates the IFA produce more astronomers from Hawai'i. That would do more for honoring Maunakea than the creation of a new management authority as proposed through SB-3090-SD-1.

SB-3090

Submitted on: 2/11/2018 10:32:51 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Yvonne H Verburgt	1955	Oppose	No

Comments:

Dear Senators,

I strongly oppose SB3090 and urge you to reject it. It would create an additional unneeded layer of bureaucracy and cost. The office of Mauna Kea management has done an excellent job of protecting the Mauna and preserving our cultural heritage despite funding issues. The road to the summit is safe and clear and there are ongoing efforts to protect native plant species. Instead of adding additional Oahu based management please provide additional resources to OMKM.

SB3090 could also have a severe negative impact on Astronomy in Hawaii, where we currently enjoy a global leadership position. Astronomy brings \$160MM into our economy with Hawaii Island directly receiving half of the revenue.

Please reject SB3090.

Aloha,

Yvonne Verburgt

Hilo, Hawaii

SB-3090

Submitted on: 2/11/2018 12:13:16 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Clarence Ching		Oppose	Yes

Comments:

I am Kukauakahi, also known as Clarence ku Ching, a Hawaiian by ethnicity, culture and nationality, and cultural practitioner on Mauna Kea.

I am in total opposition to this veiled attempt to correct the past and present situation on Mauna Kea of "fox in the henhouse" mismanagement by this attempt to pass SB 3090 that will more or less throw Mauna Kea into "mismanagement by wolves." The past experiment to carry out Mauna Kea's resource management and administration by an agency that will have NO qualities, NO standards and NO values to wisely manage land, manage and administer human rights and the Hawai'i Constitution, and conserve cultural and natural resources would unfortunately be the result of this proposition. There is absolutely no nexus between the majority of agencies from which to select members for the proposed Mauna Kea Management Authority (MCMA) to the need to properly, intentionally and competently manage and administer the Mountain

Furthermore, this Bill will enable those who are authorized by this Bill, to willy-nilly exercise their powers of appointment, to exercise possibly inordinate and/or Constitutionally indiscriminate performing members to have poisoned authority over the sacred and historic Mountain that is adored, not only in Hawai'i, but throughout the entire Pacific.

The suggestion that the East-West Center, that is a federal propaganda and spy agency mostly funded by the u.s. state department, or of myriad commercial-- or legal-related organizations or of non-descript business organizations appointed by political individuals such as the governor of the so-called "State of Hawai'i" or the president of the Senate, or the Speaker of the House will fulfill the necessary integrity and expertise to correctly manage the "cultural and natural resources of the Mountain" is ludicrous. And how well-represented would the multiple thousands of Hawaiians who reside in Hawai'i be by the president of the Association of Hawaiian Civic Clubs whose total membership barely exceeds 3,000, which organization has been fraught with conflict and power politics? The one sole choice of the Royal Order of Kamehameha to supposedly represent the Hawaiian people and culture cannot possibly redeem the inadequacies of the other entities!

Despite the State's mandate to protect Constitutionally-protected cultural and environmental rights, this Bill will make it able for those in political dominance in the so-

called "State of Hawaii" to potentially desecrate Mauna Kea by appointing commercially-oriented members to the MCMA to the edicts of that Constitution and to those cultural and environmental practitioners who wish to practice the Constitutional rights to which they are imbued.

This Bill will enable those who are authorized by this Bill, to willy-nilly exercise their powers of appointment, to appoint possibly inordinate and/or Constitutionally indiscriminate members to have authority over the sacred and historic Mountain.

The selection process and criteria for membership in the MKMA fails to include any Kanaka Maoli cultural practitioners or groups, beneficiaries of the protections of the Hawai'i State Constitution, and does not require any of the voting members to have any expertise in Kanaka Maoli traditional and customary practices, natural resources utilization and protection, or that of the environment of Mauna Kea is not only grossly unfair and unreasonable, it is an insult.

This Bill gives the MKMA the power to exploit and limit access to the sacred and historic Mauna Kea summits through the establishment of entrance fees and management rules and regulations. While entrance fees for cultural practitioners could be waived, access for customary and traditional practices will be allowed only during visitor center normal operating hours. This is entirely discriminatory and un-Constitutional- as Hawaiian cultural practices on Mauna Kea normally take place at all hours of the day AND night!

Although this bill puts a limit to the number of telescopes allowed on Mauna Kea, there is no limit to the number of industrial developments that will be allowed. To potentially turn the Mountain into an intensely developed industrial zone is NOT what the doctor ordered.

While it is the present characterization of the Mauna Kea lands as "public lands" affords protections to cultural and natural resources of lands designated "Conservation" - to now designate the lands as being "NOT PUBLIC" may undermine the present protections that the Mountain enjoys for being "PUBLIC LANDS."

Furthermore, the use of the term "title" in the proposed SB 3090 is unsubstantiated.

Even the u.s. federal government, in Public Law 103-150 (the so-called Apology Bill), from whence these lands supposedly descend, admits that the so-called "State of Hawaii" DOES NOT hold good title to the Mauna Kea Lands. Among other things, the following is included in its pronouncements: "Whereas the indigenous Hawaiian people never directly relinquished their claims to their inherent sovereignty as a people or over their national lands to the United States, either through their monarchy or through a plebiscite or referendum; . . . Whereas the Native Hawaiian people are determined to preserve, develop and transmit to future generations their ancestral territory, and their cultural identity in accordance with their own spiritual and traditional beliefs, customs, practices, language, and social institutions;"

Section 5(f) of the Hawai'i Statehood Admission Act states: "The lands granted to the State of Hawaii . . . shall be held by said State as a public trust . . . for the betterment of the conditions of native Hawaiians, as defined in the Hawaiian Homes Commission Act, 1920, as amended . . ." The so-called "State of Hawaii" is a Trustee and does not hold 'title" to the Mauna Kea lands.

The so-called "State of Hawaii" possesses the lands of Mauna Kea only in its role as Trustee of the Public Trust - and not as an owner in fee simple. Therefor, using such terms as "title" in SB 3090 is inappropriate. Additionally, the Mauna Kea lands have the added condition attached to them of being "subject to the rights of native tenants."

Jocelyn B. Garovoy, in "UA KOE KE KULEANA O NA KANAKA" (RESERVING THE RIGHTS OF NATIVE TENANTS): INTEGRATING KULEANA RIGHTS AND LAND TRUST PRIORITIES IN HAWAII" states: "Deeds executed during the Mahele conveying land contained the phrase "ua koe ke kuleana o na kÄ• naka," or "reserving the rights of all native tenants," in continuation of the reserved tenancies which characterized the traditional Hawaiian land tenure system."

The MKMA's power to approve or disapprove all projects on all lands under its proposed apparent jurisdiction and to supersede all present conservation district rules is ill-advised. Allowing the MKMA rules to "supersede" conservation land use designation rules removes much needed safeguards that protects, among other things, Kanaka Maoli cultural (and public) rights and that of all natural resources is grossly problematic.

The creation of the MKMA will undermine pending legal remedies in regards to the future of sacred Mauna Kea and its fragile environments and sidesteps genuine efforts of Kanaka Maoli and the public toward healing and resolution.

For these and many other reasons, I am solidly in opposition to the passage of SB 3090.

SB-3090

Submitted on: 2/11/2018 12:17:12 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Shelley Muneoka		Oppose	Yes

Comments:

****In person, I will be reading, in-person, testimony submitted by KAHEA: the Hawaiian-Environmental Alliance, submitted via email--the opposition below is my own personal testimony for your consideration, mahalo.****

Aloha Chairs Kahele and Rhoads, Vice-chairs Mercado-Kim and Gabbard and members of the Higher Education and Water and Land committees,

My name is Shelley Muneoka and I'd like to submit my strong opposition to SB3090 SD1 which proposes to create a new Mauna Kea Management Authority. First and foremost, the process by which this bill has come to fruition is highly problematic as it didn't involve meaningful and ongoing engagement--not mere consultation with community. Any representation otherwise, is false. A pono management authority will not likely follow a tight legislative timeline, and will be CREATED by community--not something created by the state that merely asks for comments from Native Hawaiians and the public. This is the crux of the pilikia on Mauna Kea--the people are demanding a shift in power and the state is reluctant to relent, SB3090 SD1 serves only to further entrench the authority over our sacred mountain with the state, who heretofore has not taken good care.

So, while I think this bill should be killed, not amended, I would like to offer some comments on some particularly problematic sections of the bill.

First, this current proposal, would authorize MKMA "to approve or disapprove all projects" on Mauna Kea and further provides that MKMA rules "shall supersede all conservation district rules." This language alone is reason to scrap the bill. The trust and relationship with community is badly damaged and in a fragile state--this kind of language serves to alert constituents that the intention of this bill is to erode protections currently in place for wao akua (which are largely called conservation districts by the state). An argument may be made that the MKMA may have even more stringent criteria than the existing 8 required for a CDUP, but that ambiguity is too great a risk and until concrete language is offered, it needs to be taken out altogether. Plus, we are well aware that favorable language could be added in, making the bill palatable and then taken out right before final reading. This is why legislation is not likely to get broad community support--the power is too unequal, the process too opaque.

Next, let's look at the make-up of the seats of this proposed management authority. Firstly, there are no cultural practitioner seats, but there is one save for the director of business, economic development and tourism--this is unbalanced. 6 seats would be by the invitation of the Governor, 4 at his discretion (meaning he gets to pick, as opposed to the other 2 seats who are given to whoever happens to be the head of the East West Center and the Association of Hawaiian Civic Clubs). The 4 seats that the governor gets to pick is:

- one from the Native Hawaiian Bar Association (after a nomination process)
- one for someone from a 'statewide' business organization
- one from a Hawai'i Island business organization
- and someone from the Royal Order of Kamehameha on Hawai'i Island-- Wally Ishibashi could meet these requirements and is a well-known supporter of the TMT, from his days with the ILWU to his current position within the Office of Mauna Kea Management).

Furthermore, the senate president and house speaker would also each get to pick someone from a private organization rounding out the 9 person board--this proposal is entirely too susceptible to politics--which is moving exactly in the opposite direction of care and concern for the mauna. Any pono authority needs to put the interests of the mauna at the center of its decisionmaking and the current proposal doesn't provide for that. To ensure that that happens, any board must be filled with people with relationships with the mauna, who loves and respects her sacredness and is driven by a kuleana to protect her.

Lastly, I was disheartened to see in the newspaper a manipulative and misleading headline, ""Public response needed in limiting telescopes on Mauna Kea". On face value, limiting the number of telescopes on Mauna Kea to thirteen (the current amount) and eventually bringing it down to nine. However, this proposal would allow for the TMT to be built if a small defunct telescope is decommissioned and removed. The impacts of a much smaller (they are all much smaller than the TMT) and the proposal for one of the largest telescopes in the world are not comparable--particularly because it is sited to be built in a previously undeveloped area, thus expanding the astronomy footprint on the mauna. Furthermore, looking into the future, the ability to take telescopes down and put new ones up in their place, cements (literally) Mauna Kea as an area for industrial telescopes--the status quo is not okay, as evidenced by the vocal outcry in recent years. This bill proposes to extend the status quo well into the future and so we must reject it.

Thank you for your time and consideration. Please oppose SB3090 SD1.

Aloha,
Shelley Muneoka

SB-3090

Submitted on: 2/11/2018 12:21:32 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
De Austin		Support	No

Comments:

Honorable Chairs, Vice Chairs, and Committee Members

**Ke KÅ• mike Kula Nui
COMMITTEE ON HIGHER EDUCATION
Kenekoa/Senator Kaiali'i Kahele, Luna Ho'omalua/Chair
Kenekoa/Senator Donna Mercado Kim, Hope Luna Ho'omalua/Vice Chair**

**Ke KÅ• mike no ka Wai a me ka 'Ä€ina
COMMITTEE ON WATER AND LAND
Kenekoa/Senator Karl Rhoads, Luna Ho'omalua/Chair
Kenekoa/Senator Mike Gabbard, Hope Luna Ho'omalua/Vice Chair**

I am in support of this bill to establish a management authority for Mauna Kea.

I believe the proposal strikes a balance between honoring our cultural needs and history and continuing to move into the 21st century. I think it will eliminate the need for costly legal proceedings for decisions regarding Mauna Kea property.

I am strongly supportive of the limitations of telescopes on Mauna Kea. I have no problem with revenues generated from the management of Mauna Kea being transferred directly to the Office of Hawaiian Affairs.

I am requesting that any older, dysfunctional or telescopes which are decommissioned are also removed from Mauna Kea and discarded properly.

Sincerely,

Dezireen Austin

SB-3090

Submitted on: 2/11/2018 12:32:19 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Mary Lacques		Oppose	No

Comments:

SB-3090

Submitted on: 2/11/2018 12:58:55 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Daniel Morimoto		Oppose	No

Comments:

Dear Sirs:

opposing this measure. Authority to remain with DLNR

for care and protection of Mauna Kea.

Thank you.

Daniel Morimoto

SB-3090

Submitted on: 2/11/2018 1:10:47 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Diane Marshall		Oppose	Yes

Comments:

TESTIMONY OPPOSING SB3090 SD1 (proposed)

I write to oppose vehemently the shibai that is SB3090 SD1 (proposed).

This abomination of a bill is fraught with unresolved conflicts, not the least of which include:

Jurisdiction over Ceded Lands;

The state's long-standing land use law;

Jurisdiction over public hunting areas, including authorizing private sale of hunted game;

Federal and state authority over designated historic properties and burials;

Usurping procedures, priorities and authority of our established law enforcement agencies;

And many others.

The only intents that I can surmise from this bill are to pervert established authorities in state law, to subvert the public's right to access and protest policy on these public lands, and to provide an illusion to the TMT development entities that the state's current official policy is still an "open door", despite the public challenges and legal conflicts that have yet to finish playing out. This bill has little chance of becoming law, so please kill it now and end the shibai. To pass it on out of committee in any form would be an embarrassment to this august body.

Rick Warshauer

Volcano, Hawaii

OPPOSE SB 3090 SD1.

Aloha, Chair Kahele and members of the Senate committees,

My name is Deborah J Ward, and I have been devoted to the protection of the natural resources of Mauna Kea since the 1970's. Sadly, over the course of the last fifty years, the DLNR and the University have failed our people in managing the public trust, resulting in failures, the cumulative impact to the natural and cultural resources of Mauna Kea has been significant, adverse and substantial. Instead of defending the constitutional rights of the people and maintaining the protection of the resources, the inconsistent management has allowed the gradual unmitigated diminishment of the very resources the trustees are charged to protect. I agree with much of the language in the preamble of the bill.

I believe that there are sincere efforts to improve the management and this effort is reflected in the work of employees in all of these departments and in the legislature. I was heartened to be called to an aha, for the first time, by Senator Kai Kahele, at which there were nearly 50 people of Hawaii from all sides of the controversy, many of whom have been at odds on the issues, who spent the better part of three days attempting to identify our common ground and concerns. We all agreed to an Ae Like process, in which we would only move forward on the conclusions and actions agreed to by consensus. In spite of strongly held differences in some positions, we found enough common ground to make clear recommendations going forward. In spite of our common agreement that management of Mauna Kea for resource protection has been less than adequate, we found that before going ahead with recommendations for a new management authority, that the first priority is to conduct a legislative audit of financial transactions within the University, the associated telescopes, and RCUH. A large fraction of the financial picture is, and never has been transparent, and any management authority must have access to the full spectrum to be effective in providing appropriate management. The financial and forensic audit has been introduced as SB 2325.

We regret that SB 3090 has been promulgated without the significant input of these knowledgeable people, most of whom have been involved with Mauna Kea for all of their lives. This bill does *NOT* reflect the mana'o that was shared, and for that reason I must join in OPPOSING SB 3090 SD1. I oppose this bill because a large number of the proposals would not in fact lead to the protection of the natural and cultural resources that are protected in the Constitution.

- 1) I oppose SB 3090 SD1 because it authorizes the sale of "ceded" lands by way of taking

the lands out of the public trust and making them available at public auction. These lands are not and should not be for sale!

- 2) I oppose SB 3090 because members of the proposed authority members appointed entirely by the governor and legislative branches, and DBEDT in particular, do not reflect skill set and background necessary to protect the resources that must be protected, nor does the legislation propose to improve the lives of the beneficiaries of the public trust. The authority should be largely the rightholders (not the stakeholders) of the trust, and must include native Hawaiian practitioners, environmental organization representatives, and educators.
- 3) I oppose SB 3090 because this bill appears to largely monetize the lands held sacred and the vulnerable and unique ecosystems found nowhere else.
- 4) I oppose SB 3090 because the proposed authority overlaps with the areas set aside for hunting and is in conflict with the game rules.
- 5) I oppose SB 3090 because it is in conflict with Federal laws for historic preservation and protection.
- 6) I oppose SB 3090 because it is on conflict with Federal laws protecting vulnerable and unique ecological areas, and rare, threatened and endangered species.

This bill is terminally flawed and must not go forward.

Thank you for your consideration of my testimony.

Deborah J Ward

P.O. Box 918 Kurtistown HI 96760

ordylinecolor@gmail.com

Dated February 12, 2018

SB-3090

Submitted on: 2/11/2018 12:38:20 PM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Bianca Isaki	KAHEA: The Hawaiian-Environmental Alliance	Oppose	Yes

Comments:

Aloha Senators,

I am strongly opposed to SB 3090 (SD 1). If we have heard nothing else from the Kia`i Mauna and other Hawaiian leaders in the past four years, we at least learned that Mauna Kea cannot be “managed” as a lot filled with squabbling tenants. Mauna Kea is a sacred place and must be managed accordingly and through processes designed and governed by the decisions of those from the community who have shown their commitment to protecting this place.

A new model of governance and management is needed, but SB 3090 (SD1) does not provide that. It repeats the wrong-headed approach directed at "resolving conflict" as opposed to protecting Mauna Kea. The conflict isn't the problem. Industrial astronomy development on the mauna is the problem.

This is a developer’s bill. The Management Authority is set up by and for economic development of Mauna Kea. SB 3090 (SD1) provides one-stop shopping for project design review, leasing, conservation district use permitting (if that still applies under the new rules), environmental impact disclosure approvals (if that still applies under the new rules), and any historic preservation or burial treatment impacts review. Facilitating development on Mauna Kea is the *opposite* lesson that we should have learned from litigation and contested case hearings on the Thirty Meter Telescope.

There is no fixing this bill. You cannot present a pre-formed template and then ask the community to trust you to fill in the blanks. Management and governance of Mauna Kea must proceed from a truly community-based process that builds trust amongst people

who have shown their commitment and ability to protect the mauna. Please vote against SB 3090.

Respectfully yours,

Bianca Isaki

SB-3090

Submitted on: 2/11/2018 8:14:09 AM

Testimony for HRE on 2/12/2018 1:15:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Jonathan Osorio	University of Hawai'i	Oppose	Yes

Comments:

Aloha Senators Dela Cruz, English, Espero, Galuteria, Harimoto, Inouye, Kahele, Keith-Agaran, Kidani, Kim, Nishihara, Shimabukuro, Wakai, Chang, Rhodes, Riviere and Taniguchi.

My name is Jonathan K. Kamakawiwo'ole Osorio. I am a Professor of Hawaiian Studies and currently the Interim Dean of the Hawai'iñuiÄ• kea School of Hawaiian Knowledge. I am here to offer my personal testimony against Senate Bill 3090 which proposes to change the current management of the summit of Mauna Kea and replace it with a managing agency comprised of a carefully selected set of business people, executive and legislative appointees and Ali'i Trust organizations who have little, if any actual connection to Mauna Kea. My problem is not with the replacement of the current Office of Mauna Kea Management under the authority of the University of Hawai'i. It is quite clear to me and many of us here that the existing management needs to be corrected. Sadly this bill does not provide that correction.

The administration of the Mauna Kea summit has become a major public issue as the University of Hawai'i and the Board of Land and Natural Resources has orchestrated the proliferation of telescopes in a place that is venerated by Native Hawaiians and is itself a sensitive ecosystem, theoretically protected by its conservation status. Opposition to the latest project, the Thirty Meter Telescope, has come from Hawaiian religious and cultural practitioners, environmentalists and citizens expecting scrupulous and fair administration of a public trust. In November 2017 the Office of Hawaiian Affairs brought suit charging the University and the BLNR for failing to fulfill their trust duties and breaching their fiduciary duties with regard to Mauna Kea.

Caring for our environment, protecting and sustaining our cultural practices and bringing better policy decisions to the administration of lands held in public trust is an obligation with ever more crucial consequences as our island home is inundated by overseas and foreign investors who have already made some of our islands unaffordable to our own people. Yet as we learn more and more about how our ancestors governed these lands, waters and oceans we know that there is a better way to make critical land use decisions than to place those decisions in the same hands as usual—business people

and individuals closely linked to the politically powerful. And that is unfortunately, what SB 3090 would actually do.

Last December and this past January when Senator Kahele met with community leaders with ties to the Mauna, the wish that was overwhelmingly expressed was that there should be a community based governance that consisted of people who had an intimate relationship with the mountain. This bill decidedly does not provide that, and instead extends the bias that only those who are politically connected or who have a financial stake here can be entrusted with this governance.

In speaking out against this bill, I am speaking for a real and lasting change in the way we administer our public trust lands, the Crown and the Government lands of the Kingdom. The simple truth is that Kā• naka Maoli have spent the last 40 years researching and relearning older practices, developing practical experience in land management, and advocating for policies and laws that protect our 'Ā• ina from overdevelopment and continual alienation. We are quite prepared to assume the kuleana of governing the lands that we claim as a national right. We are also passionately opposed to the further exploitation of Mauna Kea. I argue that it is better to have a management board consisting of such people who can guide an enlightened path forward than to continue to keep our people on the outside with our only access to decisionmaking through lawsuit and civil disobedience.

This bill needs to be discarded and a very different one crafted, one that doesn't only acknowledge the preciousness of Mauna Kea but designs real and effective protections. That initiative has to start with those who are assigned to be protectors. I ask for a moratorium on construction and new licenses while the legislature takes some time to really get to understand the mountain and the people who have, for the past two decades, been speaking on the mountain's behalf. Take some time and make this right. That would be a tremendous act of leadership for this chamber.

From: [123ContactForm](#)
To: [HRE Testimony](#)
Subject: Testimony in OPPOSITION to SB3090 SD1 Proposed
Date: Sunday, February 11, 2018 12:57:40 PM
Attachments: ["A"ole Mauna Kea Management Authority.pdf](#)

**Dear Senate Committees on
Higher Education and
Water & Land -Chair
Kahele** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Vice Chair
Kim** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Chang** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Keith-Agaran** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Kidani** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Chair
Rhoads** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Vice Chair
Gabbard** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Inouye** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Riviere** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator** yes

Thielen	
My name is	Terence Gomez
My email is	tego42@gmail.com
I reside at	waianae HI
I am-Kanaka Maoli aka Native Hawaiian	yes
I OPPOSE Senate Bill 3090 SD1 Proposed:-This Bill would solidify the State's authority over our sacred and historic mountain through the creation of the Mauna Kea Management Authority (MKMA) giving over the governance and management of 11,400 acres of Mauna Kea lands to just nine individuals some of whom would be appointed by the Governor and Legislative leaders.	yes
I OPPOSE Senate Bill 3090 SD1 Proposed:-The selection process and criteria for membership in the MKMA excludes Kanaka Maoli cultural practitioners and groups and does not require any of the nine voting members to have any expertise in Kanaka Maoli traditional and customary practices on Mauna Kea.	yes
I OPPOSE Senate Bill 3090 SD1 Proposed:-This Bill gives the MKMA the power to exploit and limit access to the sacred and historic Mauna Kea summits through the establishment of entrance fees and management rules and regulations. Entrance fees for cultural practitioners could be waived, but it is not	yes

clear if access will be allowed for customary and traditional practices only during visitor center normal operating hours.

I OPPOSE Senate Bill 3090 SD1 Proposed:-Although this bill puts a limit to the number of telescopes allowed on Mauna Kea, it does not stop the building of the Thirty Meter Telescope (TMT) and may not affect the number of industrial developments allowed. yes

I OPPOSE Senate Bill 3090 SD1 Proposed:-The MKMA would have the power to approve or disapprove all projects on all lands under their jurisdiction and provided rules shall supersede all conservation district rules. Allowing the MKMA rules to "supersede" conservation land use designation rules removes much needed safeguards that help protect Kanaka Maoli (and public) rights and resources. yes

I OPPOSE Senate Bill 3090 SD1 Proposed:-The creation of the MKMA undermines pending litigation regarding the future of sacred Mauna Kea and its fragile environments and sidesteps powerful efforts of Kanaka Maoli and the public toward healing and resolution. yes

I am-Registered to vote in Hawaii. yes

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	MKMA Rules Supersede	Pending Litigation	Comments
Anna Hail'a Rizzo	hawaiiana@sbcglobal.net	San Anselmo, California	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Those of us who are at this time residing in the mainland continue to pay close attention to what is being done in at home in Hawaii". These precious and sacred resources are something we need to preserve for our future generations.
Cameron Hines		Na alehu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
chris kahunahana		honolulu, hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Christian Omerod		Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Claud Sutcliffe		Kamuela, Hawai'i	Oppose	Oppose		Oppose	Oppose	Oppose	
Cyndi Defenbaugh	joncynaka@juno.com	Sonoma CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Time is now to do what is right and pono.
Dawn Kennedy	dawnie@sonic.net	Sebastopol, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Deborah Mader	orchid6128@aol.com	Kihei, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Donovan Morgan	dgs767@yahoo.com	Kathleen, GA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Edward Kaleiohi Goias		Linue, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Faith Burkhardt	cheffaihb@yahoo.com	Mt. View, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I vote!
Francois Arhac		Waikoloa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Harry Betancourt		Kamuela ,Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	No End Run\$.
Isaac Harp	paka@sandwichisles.net	Waimea (Kamuela)	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Hold SB 3090
Jason Kaio		Laie, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	You are trying to use this bill to circumvent the current protections put in place to safeguard Hawaiian rights at sacred places. This committee better vote against this bill or we will definitely know what your real agenda is.
Jennifer Noelani Ahia		Wailuku	Oppose	Oppose	Oppose	Oppose			
Jonah Keohokapu	jk96786@gmail.com	Wahiawa, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose		
Joy Mills	keahipua@gmail.com	Kailua Kona Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Aloha 'Aina
Joycelyn Kaapuni		Waipahu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Julia Hall		Berkeley, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kalani Pruet	kalanipruet@yahoo.com	Kaunakakai, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kamalei Stovall	kamaleistovall@gmail.com	Waimea, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I oppose this bill. Please disregard my previous testimony given via the capitol website. That was a mistake. Mahalo nui, Lauren Kamalei Stovall
Kyle Kajihiro	kkajihir@hawaii.edu	Honolulu, hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Laura Dvorak		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Lehua Kaulukukui		Waikoloa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	MKMA Rules Supersede	Pending Litigation	Comments
Linda Rosas-Bill	lrosas@hplultribe-nsn.gov	Clearlake Oaks, CA		Oppose					For far to long the indiginous people of these lands are tossed to the wayside. Bills like this make it easier for Government to do what they want without Consultation. As indiginous people we are treated like third class citizens in a Country that was built on the blood of our ancestors. We must get past the western way of thinking to ensure that future generations learn who they are and where they come from. Industrialization of the lands takes that opportunity away. They will be unable to visit the scared lands and see what the ancestor saw. This is what is killing our culture. The earth is who we are, this is our religion, this is our church. Wehli Bo (Thank You in Putwin language)
Lynn A Regidor		Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Meilanie Lee	meilanie.lee@gmail.com	Kapaau, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please hear us
Michael Gomes	mikegomes@mail.com	Hoolehua, Molokai	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nancy Hall		Kamuela Hawaii'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nanea Lo	naneaalo@gmail.com	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ned Goodness	nick.iliahi@gmail.com	Kula, Maui, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	If you are going to provide more than lip-service to the requirement that all use and transfer of land in Hawai'i is subject to an a priori reservation referred to as "the rights of the Native Tenants," in all Land Court Documents, and because of history as a people after contact has demonstrated we cannot trust you: We expect that the ruling body of the MKMA be comprised 50% (fifty percent) of descendants of Kanakamaoli, (ko ko), who are practitioners of the major divisions of Kahuna knowledge: Agriculturalists, and farmers; Artists & performers; Traditional Crafts-persons, Hawaiian Spiritual practitioners, Lapa'au (healers) practitioners, and others including the Ka'ai or descendants of gatherers of resources from all places of the Aina.
NYLA ORTIZ		KEA'AU, HAWAII	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Peggy Haissig		Petaluma, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Preston Kuilipule		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ronette Obrey	kahoolokane@yahoo.com	Hoolualoa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Rosemary McCune		Forestville CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please protect Mauna Kea.
Sabrina Kamakaulani	sfonoti@hawaii.edu	Kapolei	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sheila Valdez	makamae540@yahoo.com	Waipahu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Susan Aguilera	sainlutz@sonic.net	Cloverdale, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Susan Barnes		Hawi, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Tevin Figueroa		Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Tevita Kaili	tkaili@gmail.com	Kahuku, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
TIANA DOLE	tanad79@gmail.com	Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	AOLEI! As many times as the State keeps trying to do this to our Mauna we will continue to take a STAND against these monstrosities. I OPPOSE SENATE BILL 390

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	MKMA Rules Supersede	Pending Litigation	Comments
Todd Espinda		CA		Oppose	Oppose	Oppose	Oppose	Oppose	The state itself condemned time and time again the mismanagement of entrusted lands. An audit by the State of Hawaii in 1998 scolded the university for failing to protect the mountain and its natural and cultural resources. An environmental impact study performed by NASA in 2007 similarly concluded that 30 years of astronomy had caused "significant, substantial and adverse" harm to Mauna Kea.
Waipiolani Aipia		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Yuri Kurematsu	molokai.yuri@gmail.com	Kaunakakai	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Emily Lucas		Woods Hole, MA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Consetta Collins		Newbury Park	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Peggy McArdle		Kailua Kona, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This bill does not advance the Native Hawaiian community goals in Protecting Mauna Kea
Rene Kūlialani Simpson	imua78@gmail.com	Waiohuli hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I OPPOSE Senate Bill 3090 SD1 Proposed
Leilani Portillo	lp7@hawaii.edu	Pearl City, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
June Shibuya		Santa Clarita, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Deborah Kahanu		Kailua Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I support the recognition of the need to change how the Mauna is managed but I do not support how they intend to do so
Deborah Kahanu		Kailua Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I support the recognition of the need to change how the Mauna is managed!
Ellen Ushioka		Napa, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Mena Moreno		San Pedro	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Valdeane Odachi	LEHJAMAMO@yahoo.com	Volcano, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please help protect sacred, environmental, and geographically special places!!
Avtalya Glickman	avtalya.glickman@gmail.com	Wailuku, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Yuriko Wellington		Kaneohe, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nadine Aquino	precious_sky@yahoo.com	Mountain view Hawaii							
Victoria Ochoa	chumar1@yahoo.com	Marion NC	Oppose		Oppose				
Teila Escritor		Hilo, HI	Oppose		Oppose	Oppose	Oppose	Oppose	
Christina Wimer		La mesa ca	Oppose		Oppose	Oppose	Oppose	Oppose	
Lela Kalama		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I STRONGLY OPPOSE THIS BILL!! This is conservation land and NOTHING new should be built!
Pamela Kahanu		Kailua Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I support the recognition of the need to change how the Mauna is managed but I do not support the recognition to change how the Mauna is managed but I do not support how they intend to do so
Earle Medeiros, Sr.		Hana, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Jack Eidt		Los Angeles, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	MKMA formation is the absolute wrong answer here. These sacred sites must be protected by the traditional cultural practitioners.
Philibert Kwiatkowski		Kamuela, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Another attempt to leave Hawaiians out of the process. You guys no more shame?
Jasmine Silverstein		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Michelle Manos	manosmichelle@gmail.com	Los Angeles, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Amy O'Brien		Olney, IL	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
reiatua jerry vatea	reiatuajerryvatea@gmail.com	tahiti.arue/french polynesia	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ethel Hanohano	nanihanox2@yahoo.com	Hilo, Hawaii'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sharon Willeford		Kailua-Kona, Hi.	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Michael Little Cloud	littlecloudm@gmail.com	315 North Taft Street Walthill, Nebraska	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Cheryna Hi'iiani Wright	cherynaw@gmail.com	Antioch, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	We will no longer allow our sacred places to be desecrated and disregarded. Neither, will we allow you to disregard us.
Pua tena Ahn		Hilo, Hawaii'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Molecula Hopkins-Sheets		Honaunau, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Carol Kamekona		Kahului, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Shirley Lum	ka_nax2@yahoo.com	Hawaii' Kai, O'ahu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Thank you
Amanda Mercado		Rosemead, California	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Tiana-Malia Kawaihoa-Marquez	kawaihoa@hawaii.edu	Maunaloa, O'ahu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mahalo.
Malia Marquez	maliamarquez71@gmail.com	Maunaloa, O'ahu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mahalo!
Jon Defenbaugh	joncynaka@juno.com	sonoma, ca.	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	First Nation peoples carry the knowledge, the wisdom to light our path as we struggle to protect, preserve and provide for the next 7 Generations to follow. This is our Kuleana...
Ursula Vari		Los Angeles, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Alan Edwards		Nanakuli Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I'm against this. They have already failed to take of what they have already built on Mauna Kea. No more desecration. Take down the existing telescopes, dismantle them. No to TMT, enough is enough already.
Deldrene Herron	deldreneherron777@gmail.com	Kahuku, Hawaii'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	AOLE TMT.
Kimberly Lepold		Kapa'au, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please Do The Right Thing, Thank you for the current, past and future inhabitants & lovers of Hawaii nei
Clarilyn Edwards		Waianae Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I hope you will listen to my concerns and that I oppose Bill 3090 SD1. A'ole TMT. No desecration to Mauna Kea.
Chesarey Silva	chesarey@hawaii.edu	Milliani, hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Dessa Drake		Paso Robles, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Lani Proctor		Chula Vista, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please do what is pono.
Katharine Guerrero		Monrovia, Ca	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Barbara Davis	onalukapu@yahoo.com	Na alehu, Moku o keawe	Oppose	Oppose	Oppose	Oppose	Oppose		TMT has already when they thought no one was looking trashed the area around the telescopes just like the homeless wandering around Our Hawaiian Islands are those who are employed on our Mauna having entitlement issues are they above the everyday homeless who trash most places they go . Your government places over night laws to make their moving around illegal and yet your willing to let a few astronomers get away with the disrespect of our sacred Mauna under the heading of "education " as the conditions of our planet get worse your focus should be more earth bound starting with our precious "wai" water , the rubbish floating upon our seas and making land fall right here on our shores of moku o keawe
Mohini Mundy		Los Angeles, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Although I live in L.A. I was born and raised in Hawaii, I stand with my Native Hawaiian family! I oppose Senate Bill 3090!!
Helene Sisk		Redding, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Roberta Kupo-Lonoae'a	rionoaea@gmail.com	Wahiawa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Jennifer Urs	eatsleepsavives@gmail.com	Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Alma Mainz		Makaha, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Lisa Manuel		California	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Susan Rosier		Waikahaheiki, Puna, H. I.	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	While I understand the desire to have a different management of Mauna Kea, this bill is not it. There's a lot of wishing in this bil. And a lot of plans not well thought out. Re-negotiating leases is a nice dream but legally cannot be forced. Foreign nations that own these telescopes are not going to buy into that! And really people? You think it is good to confine cultural practices to "business hours"? Umm no, for;that would be against both constitutions state and federal. This one is a bad bill .. I could go on and pick it apart but I'll just say please this is a bad bill. Mahalo !
Emma Oto-Pale		San Diego, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Britany Edwards		Wataanae, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Colleen Choi		Topanga, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Desiree Session		Murrieta, Ca	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I strongly oppose Senate Bill 3090 as stated above!
Hāwane Rios	hawanemusic@gmail.com	Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Lydia Pontin	Purplehula84@yahoo.com	Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please take into consideration how much love and respect our kanaka maoli have for our Mauna Kea. Mahalo
Lisa Ann Pauahi Hookano	pauahi.hookano@gmail.com	Haiku , HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Katherine Peterson		Sedona, Arizona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I was made and born on this land and support native stewardship, and protection and conservation of the Mauna Kea, waters and lands. Thank you, mahalo.
Jennifer Kee	dreamweaverkee@gmail.com	Long Beach, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Save Our Sacred Mother
Deborah Hauanio		Kailua Kona, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Michael Kalaemano Kyser	mykaykden@gmail.com	Kalapana, Kingdom of Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	A'ole!!! This undermines the rights of Kanaka Maoli and tue generations past who fought for kanakas to reconized in our homeland. We are still here practicing our culture to the best as we can under this fictitious government. No treaty, No 50th stAte.
Lydia Dorosh		Lynn Haven, FL	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Erin Spencer Santos		Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Emiliano Martinez	djmenoman@gmail.com	Montebello, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Leave Mauna Kea as it is. No more telescopes!
Raylene Choy		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Erma Scranton		Ca							
Kamuela Park	lucaspar@hawaii.edu	Wailuku, Maui	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Joanna Howard		Kamanaiki Valley, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ka'ikena Scanlan		Hilo, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sandee Pa Moniz		Waimanalo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Rebecca Robles		Hilo hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Strongly oppose
Sierra Keolanui		Hawaii kai	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	OPPOSE!
Dante McGee		Aiea Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Zainab Sannyasi	zaisannyasi@gmail.com	Melbourne Australia	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I think for a country who has such a big Tourism sector, where tourists mainly come to see and experience the Hawai'i culture its a shane the government doesnt do more to protect Hawai'i in belief, kulture, and sacred places. What are we teaching our future generations if our culture is gone? This is a major part of Hawai'i history why are we allowing people to destroy it?
Charles Jaeger		Pearl city Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Joseph Keolanui		Pearl city HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sherry Keolanui		Pearl city Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Bearett Ingram		Papaikou Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	OPPOSE!
Sherrisa Keolanui		Papaikou Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I OPPOSE this bill and I hope you do too.
Van Warren		Kekaha	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Keoni Willis	k_wills70@yahoo.com	Aiea HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I will vote against any politician that votes for this bill
Kaimikila Moraes	kaimikila@hotmail.com	Volcano, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nohea Santimer	sonnylim@mac.com	Honolulu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Elmer K. S. Lim, Jr		Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Zahz HewLen		Draper Utah	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kapulani Antonio	kapulani66@gmail.com	Makawao, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Do the right thing and oppose this bill. Mahalo.
Sloanne HewLen		Kailua-Kona, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Isaac Jaffurs	ikejaffurs@gmail.com	Haleiwa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Michelle Tomas	pelehihiaka@hawaii.rr.com	Kailua Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	There appears to bo an ongoing effort to undermine Kanaka Maoli's involvement in a meaningful way to manage Maina Kea. Stop this madness!
Alex Miller	ajmiller93@gmail.com	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kristopher Haspe	kphaspe@gmail.com	Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Nicole Collins		Kamuela, HI	Oppose	Oppose		Oppose	Oppose		
Jonah Yardley		Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
John Kuamo'o	johnkuamoo@yahoo.com	Honolulu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I thank you for your kind attention to this most important matter.
Tony Van Kraingen	holanipohaku@yahoo.com	Volcano, HI	Oppose	Oppose		Oppose	Oppose	Oppose	I strongly oppose ALL these bills that are disrespectful to the Kanaka Maoli and their Kuleana to Mauna Kea
Moearii Phillips		Kailua-Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Wailani Robins		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ronald Fujiyoshi	ronsan2224@aol.com	Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ramona Barcenilla	lahelab@gmail.com	Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Renee Louis		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Wai'ala Ahn	waiala.ahn@gmail.com	Pahoa, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kristopher Lindsey		Waimea, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ciara Lindsey		Waimea, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Gordon Lacy		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I oppose Senate Bill 3090
Darryl Vierra		Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Maureen Vierra		Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kele Fergstrom		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Dana Lacy	ohaikea@gmail.com	Hilo, Hawaii'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Caroline Kim		Los Angeles, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	What SB3090 proposes is unconscionable and grossly undermines the preservation of native Hawaiian culture and traditions, particularly with regard to sacred, conservation lands. I sincerely hope each of you considers the impact such a bill would have on future generations and land use itself. Development cannot and should not favor only corporate, commercial and scientific interests alone. I strongly urge you to support preservation of the land and Hawaiian culture. Indigenous Hawaiians and cultural practitioners must be an integral and indispensable part of any land management decisions, particularly with regard to conservation lands.
Rain Wright		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Cristina Bacchilega		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	say NO to Senate Bill 3090!
Dani Love		Pahoa, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Uilani Staszko		Kaialua, Oahu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Denise Ferreira		Hilo Hawaii	Oppose	Oppose				Oppose	take the TMT to SPAIN, A'OLE on Mauna
Rebecca Lamoreaux		Kingston, N. Y.	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Bernadine Case		Kamuela Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Candace Fujikane	fujikane@hawaii.edu	Kāne'ohe, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I strongly oppose SB3090 because it will still allow the construction of the TMT, which does not fulfill the 8 Conservation District Use criteria. The composition of the so-called "Mauna Kea Management Authority" cannot assure us that the mauna will be properly stewarded. The general public can name several Native Hawaiians whose motives are oriented toward development. Moreover, the selection of members who represent business interests raises the question of why they are on a decision-making body that is supposed to protect the Conservation District. I want to remind you that in 1998, the State Office of the auditor stated in their audit of management of Mauna Kea that DLNR and UH appeared to place a higher value on developing observatories than on protecting Mauna Kea's natural and cultural resources, and that DLNR was not engaged in effective monitoring and enforcement of permitting requirements. This proposed board is even worse, and does not even attempt to disguise its pro-development interests. As Hawaii's Supreme Court Justice has stated, justice must have the appearance of justice, and this bill does not appear just. I urge you to kill this bill.
Tanya Hill		Pobox14 Hanalei	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This is not a good way forward. The people of Hawaii, revere this mountain. It is cruel and greedy to destroy what is left of a place of worship so important. To suggest a panel of decision makers that cannot be native practitioners is unjust in any management.
Kathy Kaukani	kseapoo@yahoo.com	Victor, NY	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Christina Caputo		Pahoa	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Molecula Hopkins-Sheets	Mollyhs17@gmail.com	Honaunau, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nicole Anakalea		Kamuela, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	No SB 3090 SD1
Kamala Galletes		Holualoa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	OUR LOVE OF THIS EARTH, THIS LAND, THIS WATER, THIS AIR WILL ALWAYS PREVAIL OVER THE LOVE OF YOUR POWER AND MONEY!!
Kaylie Naihe-Cho		Kealahou, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Julie Sprague	juliesprague@hotmail.com	Kilauea HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ernest Caravalho	ecaravalho@hotmail.com	Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Make Mauna Kea a person so her rights may be protected as such.
Michelle Kalaiau	michkbradn@aol.com	Waimanalo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Thank u!
	maheamoon40@gmail.com		Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	My right and ability to access the mauna for cultural practices will be impeded. The state should not be allowed to regulate when I can go to my church. Additionally, conservation lands must be protected; how can anyone justify "superceding" these rules? Finally, please stop allowing processes to sidestep or ignore Kanaka voices; you are breaking the trust that you are charged to uphold.
Cameron Ahia		Honolulu HI							
Chandra Law	locolaw@hotmail.com	Kāne'ohe, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mahalo!
Halona Fukutomi	halona42@yahoo.com	Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Cheryl Burghardt	burgharc@gmail.com	Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This bill and all of its components is filled with misleading and dangerous provisions that will NOT protect the Mauna but leave it open to even greater possibilities of desecration and ruin. It is hard for me, a non-kanaka to understand how the Hawaiians writing this bill are championing this bill. I have been taught about Na Kinolau and the relationship of all things to each other. Knowing this, how could anyone write this bill? One of the biggest concerns that I have is the legislators writing this bill KNOW that they are trying to undermine pending litigation and sidestep the efforts of so many who have given up so much to stand for the Mauna. It seems that you are like small children who don't get your way about the new toy that you want and will find every way that you can to manipulate until you do. Lastly, the idea to have a Governor appointed group to manage the mountain is the wrong path. While UH has done a patently terrible job to date, we have seen what happens with Governor appointed boards. The BOE, the BLNR (where there is direct conflict of interest on this issue but no one cares) are prime examples of how this does not work. In addition, the areas from which people would be chosen are not ones that will truly respect and understand the Mauna from any point of view other than business. Please give all of our testimony serious consideration. This is NOT Science vs. Culture. This is an attempt to totally erase a culture and people and I WILL STAND with them to the end as will my 'ohana.
Waialeale Sarsona	miah2413@gmail.com	Waimanalo	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	E nā luna, mai 'oukou kāko'o i kēia 'ano hewa iā Papahānaumoku. I nā nō 'oe he Hawaii'i, kūpa'a ana 'oe no ka pono o ka 'āina, no ka pono o ka lāhui.
Venus Gonsalves Henriques	kukuihaele_ohana@msn.com	Honokaa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Leave the sacred mauna to natives
Jennifer Burner	msburner@sbcglobal.net	Lagunitas, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Comissions should have elected commissioners, not the Governor, nor Legislators ... Let it be by the People, and for the people!
Steven Chock	kekaichock@hawaiiantel.net	Līhū'e, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Laulé'a Baquiring	laulea.baquiring@yahoo.com	Kamuela HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	A'ole TMT !! leave our sacred grounds alone.
Ma'ele Humel		Kāne'ohē, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nora Vidal	noravidal11@gmail.com	Ewa Beach, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
cindy freitas		kailua kona hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Matile Lavea-Malloe		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Crown lands deserve to be treated with the utmost respect. No more development on our sacred mountain. Everything cannot always be looked at as financial gains and losses. Take care of the land that takes care of its people. He ali'i ka 'āina he kaua ke kanaka.
Chloe Amos		Mililani, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Jon Hikari Omuro		Eugene, Oregon	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Karito Paora	jkpaora87@gmail.com	Tuhoē	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Leia Kahaleauki		Makawao, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	MKMA Rules Supersede	Pending Litigation	Comments
Genie Ruddie	genie.ruddle8@gmail.com	Waikoloa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	So not pono for my Kanaka Maoli daughter and mo'opuna.... what will they have if you all this desecration to happen? 'A ole!!
Julie Stowell		Laupahoehoe, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Only a sick mind would draft a bill like this.
Josephine Kelliopio		Kailua Kona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This is a flimsy attempt to hide yet another power play by the government. If an authority is created, it needs to be from the ground up.
Joan Lander	namaka@interpac.net	Naalehu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I oppose the use of Mauna Kea for any non-Hawaiian interests such as the state, government or research work. This is sacred Hawaiian land. Please respect Hawaiians and their culture and STOP the abuse of land use.
Rosa Felice		San Diego, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	You need to include more native Hawaiian who practices on Mauna Kea
Craig Neff		Hilo hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Enough is enough already. Stop the genocide of our land and people.
Sean George		Honolulu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Money is not everything, it's survival, How we treat our lands our Mountains, that feeds our people. U take care the Maunakea she take care u, And that's the Beauty about why I oppose this, Something Big as TMT should not be welcome on Maunakea
Cheryl Galiza	chandeliermo1@gmail.com	Honokaa, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Hawaii for Hawaiian'z...the Queen believed there was a time when the proper gov. Would eventually give it back.....maybe this ain't the one....still gotta e
HoHakipu'u Kani		Gaeorgia	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Claire Mcguire		Pahoa hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Listen to the voice of the people
Joyce Cate		Hilo, hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kelley Farquhar	kekaipua@gmail.com	Waianae, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
	deegreen15@gmail.com		Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This bill is extremely misleading. It is an effort to undermine due process for Native Hawaiians fighting for land rights and access to their sacred sites. With pending litigation still in the court system over the management of Mauna Kea and the building of the TMT telescope, this bill is an outright and blatant attack on those safeguards put in place to protect Kanaka Maoli rights and the future of Mauna Kea's fragile ecosystem. Giving money to OHA is an effort to appease and draw attention away from the real facts of the matter. While this bill looks as if it will limit the number of telescopes allowed on Mauna Kea, it doesn't limit where or how big telescopes can be, and would still allow for the building of the Thirty Meter Telescope and potentially other industrial developments that will harm the area and have an impact on the fragile ecosystem including the aquifers. Please oppose this bill and any future reincarnation of it. Respecting the people and the process should be your highest priority. This bill is a wolf in sheeps clothing that needs to be opposed.
Wendy Green		Honolulu, Hawaii'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Tylette Hun		Waianae	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Robert Farquhar		Waianae, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Francis Hun		Waianae, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Al Gonzales	al.gonzales@hotmail.com eomikp@gmail.com	Chino, California	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This bill is deceptive and still grants authority to create a management to the same corrupt political governing bodies that have abused and neglected MaunaKea in the first place! The limiting of Telescopes on the Mauna is also a weak attempt to resolve. We have already seen the weak number restriction inflate over the years. Nothing stops that number from increasing that number while in the hands of the state. We have seen the lie before. Also the goal of many including one of the governor's 10 point plan is to Reduce the number of Telescopes on MaunaKea. This doesn't even support that. I am in agreement that the Mauna has been severely mismanaged over the years and that a new management body is required, however this layout and attempt is pono 'ole, and seems to simply be painting the corruption a different color. There are many other manners in this bill that i feel need to be discussed further in community forum before being granted any legislation. Please Oppose SB 3090 SD1
Lanakila Mangaui		Honoka'a HI							
Mehana Kihoi	uhiwai@live.com	Honauau, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kahuioapuakalani Mahi		Kamuela, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Leimomi Wheeler		Kea'au, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ryan Songnini	ryanadventure2@yahoo.com	Miilani, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Aileen Barrera		Jacksonville, Florida	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Gene Tamashiro		Hawaiian Kingdom	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	From the Beginning...as ke Akua is my witness, I Gene of the Family Tamashiro, a true and living man, accept all gifts given by God, repent all transgressions against God, and waive all claims without KeAkua/YHWH/The Truth and Source. Be Truthful. Do No Harm. Honor Your Word. For over 24 years, our Lahui have served public notice about Hawai'i's true political status.....Illegally occupied for 125 years by the US Inc. Aole.....No Jurisdiction.....We are obligated to not recognize and comply with false claims of the State of Hawai'i.
Jared Peters	kenakela808@gmail.com	Captain Cook Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Joy L. Enomoto		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Maria Gaspar		Honokaa,HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kalai Davidson		Kaneohe,hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Leila Morrison	leilam683@gmail.com	Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Romie Parker	ntpwee@hotmail.com	Kaneohe, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Patricia McCarver	dd.hawaii@icloud.com	Kealahakua, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Attempts to create more bureaucracy is not a reasonable solution to very serious situation
Randee Golden		Kapa'au Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	The land can never be fully restored to what it was... we need to consider long term impacts, thinking from the gut as well as the head. Please know it is not just Hawaiians opposed to development on Mauna a Wakea....

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Benjamin Eppard		Kealahoukua, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Your job is to represent the people. It's clear that the people don't want this. Please do your job!
Veronica Perkins		Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Benjamin Cohn	livingfoodshawaii@gmail.com	Kealahoukua, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
John Cosmar		east end, molokai, hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	oppose for religious, cultural, ethical reasons
Calley O'Neill		Kamuela, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	The future of astronomy is not land based, and certainly inappropriate for such sacred ground.
Karen Nakasone		Kaneohe HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kaylene Sheldon	kauwilamahina@gmail.com	Kaaawa, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Jamal McCollough-Washington	Alohaaina13@yahoo.com	Captain Cook, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Baylen Paiva	bayl_p@hotmail.com	Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ashley Robello		Santa Cruz, California	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	It is time to protect our planet. It is time to listen to the people who love the land. It is time to give Mauna Kea back to the indigenous peoples and their millennia long record of loving care. Thank you.
Gavin Silva		Kaneohe, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Why is it so inconceivable to the state that Native Hawaiians want to protect the few sacred places we have left? Respect the indigenous culture and customs. Mahalo
Dexter Keakaoha	dexter76@gmail.com	Lomita, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Jenah Lattin		Berkeley, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I strongly oppose this bill. Indigenous people have a duty to protect their ancestral lands, and I believe this bill encroaches on their rights to preserve their sacred lands.
David Chang	dchang@umn.edu	Minneapolis, MN	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kathryn Morse	kathy.moraea@gmail.com	Gallup, NM	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I stand with the protectors of Mauna Kea.
Tatiana Young	youngt4@uw.edu	Waianae, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Purdyka Wahilani	wahilaniip@gmail.com	Honolulu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Philip Wikel		Lahaina, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Iris Nevarez		Orlando, florida	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Stop the destruction of our natural resources.
Presley Ah Mook Sang	presleyahmooksang@hotmail.com	Milliani, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	As stated above, I highly OPPOSE Senate Bill 3090.
Vennise Miller		Atascadero CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ilima Ho-Lastimosa		Waimanalo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	MAHALOI
Norman Gaspar		Honokaa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kamlin Dacquel		Honoka'a, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please protect our aina for our keiki & our future keiki. Aloha Aina.
Theodora Akau Gaspar		Honokaa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Respect the sacred.
Patricia Blair	patriciaclair@msn.com	Kailua, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Pi'imauna Aiwohi		Honokohau Maui	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Anelalani Mauai		Waianae Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Moses Gomez	mkg77@hotmail.com	Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Keanu Lopes		Waianae	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I am 17 years old and I oppose sb 3090 sb1
Nanea Lopes		Waianae, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Jo Amsterdam		Kalaheo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mauna Kea is sacred
Kawika Lopes		Waianae, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Noe Lopes	noelopes4625@gmail.com	Waianae, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kathleen Lacerdo	dalusional@hawaiiantel.net	Kailua Kona, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Hawaiian rights should always come first as it states in previous law
Alex Kanuha		Kailua Kona hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Hau'oli Kamano		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Teila Escritor		Hilo, HI.	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Alison Yahna		Naalehu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Arrie Robinson		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Bradford Lumw		Honolulu Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Michael Chun	M_P_Flooring@hotmail.com	Waianae Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Roseani Baricuatro-Kanināu	j.roselanikanināu@gmail.com	Lāna'i, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
William Morinaga		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Orrin Kupau		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kalae Kaleiohi		Hanalei, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Chevas Lamoya		Waianae, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Cassandra Pai	noheapai@yahoo.com	Kailua, Kona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Bryston Tanigawa		Aiea, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I will remember those who vote for or against us!
Tira Kamaka		Kamuela, HI			Oppose	Oppose	Oppose		
Alana Robinson		Wailu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Do not do this
P. Puanani Ikeda	peheakeanila@gmail.com	Captain Cook, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I can already tell you the names of who should be on the 9-member management group. There's so much collusion going on...between Ige, UH, TMT, developers, military and business people. What part of MAUNA KEA IS SACRED do they not understand??? What part don't they understand when we tell them that Mauna Kea (Ka'ohē) is the water that feeds us??
Angelina Tafoya		Haleiwa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Diedra laea		Waikiki, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Diana Martinez	Lamedialogroup@yahoo.com	Los Angeles, Ca	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	The price is too high to continue to disrupt and disturb our sacred grounds and natural environment. It will in the end hurt the island and it's resources and destroy as a little more and a little more is taken day by day. Eventually even tourists who support Hawaii's economy will no longer come. Chip by chip the sacred beauty erodes. This must stop before there is nothing left and Hawaii becomes a sold out, used up, worn out island that has killed it's Oceanside, carved out it's land and given no respect to its ancestors. Basta!
Alan Robinson		Haleiwa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kaukaohu Wahilani		Wa'anae HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sheadon Freitas		Kailua-Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kealii Bertelmann		Kamuela, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	A'ole!!!!

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Ailea Robinson		Wailuku, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I oppose Senate Bill 3090 SD1.
richard lincoln	tarobrand@yahoo.com	kaimalino south kona hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	no matter how hard people try you cant hide the truth.
Judith Carroll		Kihei, hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Stop desecrating protected land!
Ka'imi Hernandez		Kapolei, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Anthony Kuhn		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
herman canonio		watanae,HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
James Long	daegnut@gmail.com	Naalehu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Winona Lee		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
BETH MCGRATH	bethmcgrath21@gmail.com	Beaverton, Oregon	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Pi'ikea Keawekane-Stafford		Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	My ohana is dedicated to the protection of Mauna Kea and all of Hawaii mauka to makai
Catherine Yanagi	cat_oki@yahoo.com	Pearl City, Hawaii'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I agree that more needs to be done to mālama Mauna Kea; however, I am not convinced that the MKMA is the way to achieve this. Judging from who will comprise the MKMA, it seems as though my voice, the voice of the everyday kanaka, will once again not be represented. Auē!
Reni Bello	hinanohomauna@gmail.com	Wahiawa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Stop building and start protecting for our future generations
Kahakea Siquig	solidlava@hotmail.com	Wahiawa, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	STOP THE DESECRATION, EDUCATION IS NOT DESECRATION... This is just another ATTEMPT to placate and accommodate further desecration of Mauna Kea in a Conservation District. The current governor is not capable of appointing without bias, that is a fact. He has publicly given his consent and support, including government resources to support the building of the TMT and desecration to Mauna Kea. In his own words, he admitted that UH and the State has FAILED to protect and manage Mauna Kea properly. Therefore, it is in the best interest of MAUNA KEA, the mauna itself, that NO authority be appointed that is not ELECTED by the people, in the community that will be directly impacted by the managing of Mauna Kea. There is already mechanisms in place on the County, State and Federal levels, this is just another attempt to thwart the process and the rights of the citizens to present their positions in contested case hearing. STOP THE MANIACAL MACHINATIONS OF MANIPULATING THE LAW TO FAVOR DESECRATION KE AKUA IS WAT
GERALD TABER		KE'EAU HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mauna Kea is Sacred Protect the Sacred
Kira DeGaetano		Honokaa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	The problem with trying to create management authorities and other such decision making committees is that it seeks to restrict authority to a select few. Truly open and transparent processes by definition must be open to all. While this does make the decision making process longer, land management should always be an in depth and thorough conversation.
Serafina Gajate		Kailua-Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Jesse Sanders		Kaneohe	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kela Cosgrave		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Saul Perez		Saul Perez	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I support the rights of the Kanaka Maoli to make their own decisions on their own lands.
Kristina Ammon		Laupahoehoe, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I am very interested in protecting the fragile ecosystem of the Mountain and I don't trust that this authority has that best interest in mind.
Erick Elijah		Honokaa, hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Aloha aina, malama pono
Russell Dial		Tacoma, WA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Marybeth Lauderdale		Temple City	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Waipiolani Aipia		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Chad Martin		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Leona Leialoha		Keaukaha Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This is kuleana that belongs to the kanaka maoli and NOT the government or UH
Lori Weeks	lotweeks@yahoo.com	Keauhou Mauka, Kona, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Registered voter, North Kona, Moku o Keawe
Lita Elbertson		Kailua-Kona, Hawaii'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Jennifer Mitchell		Kailua Kona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Alyssa Vea	alysseavea@gmail.com	Kekaha, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Tetuanui Graham		Kahuku	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Mary Gomez		Mesa, Arizona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Linda Kroll		Keaau Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	The management of Hawaiian lands belongs in Kanaka Mail I hand not the illegal occupation
Diane Harmony	alohadi2u@gmail.com	Kailua Kona HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Whintey Parker		Kamuela Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Lisa Schattenburg-Raymond		Kula, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kulani Nelson-Riley		Kailua Kona, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Here we go again.. another bill that gives authority to a selective few while excluding the collective voices of our kanaka maoli practioners- I strongly oppose this bill.
Rebekah Luke		Kaaawa, HI 96730	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Bottom line and in summary: I oppose SB 3090 in any form and strongly want you to prevent it from passing.
Savannah Bowman	loke.rose@gmail.com	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Cathy J Sterling	csterling11@gmail.com	Honoka'a, HI 96727	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Karen Deguilmo	alohakeakua.deguilmo.shaw@gmail.com	Kahului, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sheila Okin	sheila.okin902@gmail.com	Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Amandine Murphy	bigislandstyle808@gmail.com	Mountain View, hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	What it comes down to is respect, respect for Hawaii and it's people
Samuel Peneku	kamukakolu@hotmail.com	Kailua-Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Stop this before the harm is irreversible, please.
Jo Amsterdam		Kalaheo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mauna Kea is sacred for all.
Cheryl Lee Parrott		Georgia	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Tonantzin Warmoth	nanti444@gmail.com	Los Angeles, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I stand firmly with the Kanaka Maoli people

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Barbara Altemus	baltemus@aol.com	Haleiwa, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Paul Robinson		Wailuku	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Moses Kealamakia		Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This land is zoned conservation. It begins and ends with that. I shudder to think if Oloku, on Molokai, which is considered the most pristine place on the earth, was considered to have industrial projects or human activity done there. So is Maunakea.
Luhui Isha	luhuiisha@wishtoyo.org	Ventura, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Laurie Akana	lalioni02@yahoo.com	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
buck romero		Gardena, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Respect Kanaka, Mauna & A'ina
Opal Trembath		Lihue, Kauai, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Shanna Larrison		Northfield, MN	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sharon Fox	foxy@spacey.net	Valkaria, Florida	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Kanaka Maoli should be the ones managing their own land, not the haole.
Aulii Mitchell	kaleleh8@gmail.com	Pahoa, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	A'ole pono!
Willette Akima-Akau	kalaokahaku61@yahoo.com	Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Patricia Allen	pdartistyuma@hotmail.com	Alpine, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
n. marciel		Hana, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Leigh Case	chiefsrmmc@gmail.com	Hawi, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Susan Duffy	susank44@gmail.com	Naaalehu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sharon Torbert	bigislandhonuchick@yahoo.com	Waikoloa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ānelamaikalani Bell		Santa Barbara, CA/Kihei, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please stop desecrating Hawaiian Lands
Yaoti Mazahua		Sylmar, Ca	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Delphina Nova		Tucson Az	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Leinani Loa		Honaunau Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nicole Nadro		Colchester, VT	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Hallie Larsson		Pahoa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Saundra Robles		Honolulu, Hawaii							
Wally Andrade		Kaillua-Kona, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	The management of Mauna Kea by BLNR, DLNR, OMKM and UH definitely needs improvement and there is a need to replace some the OMKM management team... I am not a big fan of the current management practices; however, I suggest fixing what's broken rather than throw it all away. If you want to write legislation that forces them to do their jobs by amending the current laws I could support that. The MKMA design will create more tension in the community rather than bringing people together in the community.
Tina Grandinetti	tinagranti1@gmail.com	Miiliani, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Hana Yoshinata	hana.yoshinata@gmail.com	Kaillua-Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Christel Denzler		Kaillua Kona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Dustin Kaleiupu		Lahaina, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	MKMA Rules Supersede	Pending Litigation	Comments
Monica Pihl		Volcano, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This Kanaka Maoli stands in OPPOSITION to this action. Protect our 'AINA from PREDATION! Our MAUNA is SACRED and a source of fresh drinking water. Stop spoiling what is beautiful in our islands. Greedy politicians. I regret voting for a few of you!
Lucy Lee		Aiea, HI	Oppose	Oppose	Oppose	Oppose			I am a young native hawaiian, this has everything to do with my future.
Nissi-Jochell Jaentsch		Kailua-Kona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Carley Atkins		Hilo, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Terence Gomez	tego42@gmail.com	waianae HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Wally Andrade		Kailua-Kona, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose		Thank you
Kerry Long		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
T. Kazume Martin	kazumezume@yahoo.com	Pahoa, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mauna Kea is sacred. It needs protection not further violation
Xyrene Faavi		Ewa Beach, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

Feb. 9th, 2018

Dear Members of the Hawai'i State Legislature:

I am writing to oppose SB3090. SB3090 is a deliberate attack on astronomy research on Maunakea, written under the guise of consolidating management. We do not need a new management authority on Maunakea. Already, the Office of Maunakea Management (OMKM) is balancing astronomy, cultural heritage, and the ecosystem.

I received my PhD in Astronomy from the University of California, Berkeley (2016), and I am currently the Trottier Postdoctoral Fellow at the Institute for Research on Exoplanets at the University of Montreal. As a professional astronomer, I frequently use the W. M. Keck Observatory on Maunakea. My research focuses on measurements of extra-solar planet properties to address questions about how planets form. My experience of conducting research on Maunakea and at other sites has shown me that Maunakea is the best site for astronomical research in the world. The clear weather; dry, tranquil air; and dark skies of Maunakea make it better than any other site. The outstanding conditions at Maunakea, in combination with the superior design and maintenance of the Keck telescope, have helped me and my team characterize the properties of 2,025 extra-solar planets and their host stars. From this collection of data, we determined that small planets come in two sizes—a discovery that made the [New York Times front page](#).

In the words of master navigator Kalepa Baybayan, “The next journey for humanity and mankind is the continued exploration of the universe.” Maunakea is our most powerful ship for crossing the ocean of the heavens. Its role as the home of astronomical observatories is essential for fulfilling our shared human dream of exploring the universe.

Careful stewardship is essential to allow the astronomy programs to flourish while protecting the cultural heritage and unique environment of Maunakea. The Kona-Kohala Chamber of Commerce honored OMKM with the 2017 Pūalu Award for Culture and Heritage for its achievements in cultural heritage protection. OMKM has developed a Long Term Historic Property Monitoring Plan to systematically monitor 260 historic properties on Mauna Kea containing over 1,000 artifacts. The Kona-Kohala Chamber of Commerce also awarded OMKM the 2016 Pūalu Award for Environmental Awareness. OMKM conducts annual surveys to monitor the population of the potentially vulnerable wekiu bug that inhabits Maunakea. OMKM also removes invasive weeds to protect the natural flora.

Maunakea is one of the great treasures of the Earth. It is a treasure for astronomy, for Hawai'ian culture, and for the Hawai'ian ecosystem. We are fortunate that OMKM has already accomplished so much in maintaining and elevating the greatness of Maunakea.

Sincerely,

Lauren M. Weiss

Lauren M. Weiss



BEFORE THE SENATE COMMITTEES ON HIGHER EDUCATION AND WATER & LAND

Hawaii State Legislature
February 9, 2018

Senate Bill 3090
Relating to Government

Aloha Chair Kahele, Vice Chair Kim, Chair Rhoads, Vice Chair Gabbard and Members of the Committees,

The Ka Lāhui Hawaii Political Action Committee (KPAC) opposes SB 3090 which establishes the Kea Management Authority (MKMA) governed by nine select individuals and transfers title to 11,400 acres of Mauna Kea Summits to the MKMA.

This SB 3090 would solidify the State's authority over our most sacred and historic mountain through the creation of the Mauna Kea Management Authority (MKMA) giving over the governance and management of 11,400 acres of Mauna Kea lands to just nine individuals some of whom would be appointed by the Governor and Legislative leaders. The selection process and criteria for membership in the MKMA excludes Kanaka Maoli cultural practitioners and groups and does not require any of the nine voting members to have any expertise in Kanaka Maoli traditional and customary practices on Mauna Kea.

This Bill gives the MKMA the power to *exploit* and limit access to the Mauna Kea summits (which have spiritual and cultural significance to the native people of this land) through the establishment of entrance fees and management rules and regulations. Entrance fees for cultural practitioners could be waived, but it is not clear if access will be allowed for customary and traditional practices only during visitor center normal operating hours.

Although this bill puts a limit to the number of telescopes allowed on Mauna Kea, it may not affect the number of industrial developments allowed and offers the appearance that all projects could be approved without a conservation district land use permit. Furthermore, the lands controlled by the MKMA would be exempt from the definition of 'public lands'. Taking Mauna Kea out of the public (and conservation) land use designations removes much needed safeguards that help protect Kanaka Maoli (and public) rights and resources.

Finally, the creation of the MKMA undermines pending litigation regarding the future of sacred Mauna Kea and its fragile environments and sidesteps powerful efforts of Kanaka Maoli and the public toward healing and resolution.

Respectfully submitted,

M. Healani Sonoda-Pale
Chair, KPAC

HRE Testimony

From: 123ContactForm <noreply@123formbuilder.io>
Sent: Friday, February 9, 2018 1:19 AM
To: HRE Testimony
Subject: Testimony in OPPOSITION to SB3090
Attachments: 'A'ole Mauna Kea Management Authority.pdf

**Dear Senate Committees on
Higher Education and
Water & Land -Chair
Kahele** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Vice Chair
Kim** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Chang** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Keith-Agaran** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Kidani** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Chair
Rhoads** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Chair
Gabbard** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Inouye** yes

**Dear Senate Committees on
Higher Education and
Water & Land -Senator
Riviere** yes

Dear Senate Committees on Higher Education and Water & Land -Senator Thielen	yes
My name is	Laulani Teale
My email is	laulani@gmail.com
I reside at	Kaneohe HI
I am-Kanaka Maoli aka Native Hawaiian	yes
I am-Registered to vote in Hawaii.	yes
I OPPOSE Senate Bill 3090:-This Bill would solidify the State’s authority over our sacred and historic mountain through the creation of the Mauna Kea Management Authority (MKMA) giving over the governance and management of 11,400 acres of Mauna Kea lands to just nine individuals some of whom would be appointed by the Governor and Legislative leaders.	yes
I OPPOSE Senate Bill 3090:-The selection process and criteria for membership in the MKMA excludes Kanaka Maoli cultural practitioners and groups and does not require any of the nine voting members to have any expertise in Kanaka Maoli traditional and customary practices on Mauna Kea.	yes
I OPPOSE Senate Bill 3090:-This Bill gives the MKMA the power to exploit and limit access to the sacred and historic Mauna Kea summits through the establishment	yes

of entrance fees and management rules and regulations. Entrance fees for cultural practitioners could be waived, but it is not clear if access will be allowed for customary and traditional practices only during visitor center normal operating hours.

I OPPOSE Senate Bill 3090:-Although this bill puts a limit to the number of telescopes allowed on Mauna Kea, it may not affect the number of industrial developments allowed and offers the appearance that all projects could be approved without a conservation district land use permit.

yes

I OPPOSE Senate Bill 3090:-The lands controlled by the MKMA would be exempt from the definition of 'public lands'. Taking Mauna Kea out of the public (and conservation) land use designations removes much needed safeguards that help protect Kanaka Maoli (and public) rights and resources.

yes

I OPPOSE Senate Bill 3090:-The creation of the MKMA undermines pending litigation regarding the future of sacred Mauna Kea and its fragile environments and sidesteps powerful efforts of Kanaka Maoli and the public toward healing and resolution.

yes

Additional Comments:

It is important to respect the kuleana of those who have been standing for Mauna Kea for decades. This bill is NOT what they asked for.

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	Public Lands Exemption	Pending Litigation	Comments
Abriana Kekawa		Wairanae HI	Oppose	Oppose		Oppose	Oppose	Oppose	
Adam Miyashiro		Philadelphia, PA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	Public Lands Exemption	Pending Litigation	Comments
Ah Lui		Kau, Hawaii Island	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	<p>Annexation 101: Why the Joint Resolution Fails Professor Williamson Chang Note to the Reader [Most of you already know the material presented below. There are Kanaka Maoli who have not systematically studied why the Joint Resolution of 1898 had no power to acquire the Hawaiian Islands. To those brother and sisters I offer the following extracted from a brief recently filed in the intermediate court or Appeals of the State of Hawaii that explains some of the basic reasons why the joint resolution fails. This is part of the education of the Ka Lahui—Professor Williamson Chang, November 25, 20016] [Direct Quotations are in italics and numbered] A. No Joint Resolution can acquire the territory of another sovereign nation A joint resolution can acquire the bill of Congress has no power to acquire the territory of another foreign, independent and sovereign nation. As of 1898, Hawaii was a sovereign, independent and sovereign nation and not territory of the United States. Under the international law of that time, a nation could acquire territory of another sovereign nation by means of conquest, treaty of cession or acquisitive prescription. The United States did not conquer Hawaii; nor has ever made any claim that it acquired Hawaii by conquest. The doctrine acquisitive prescription, akin to the doctrine of adverse possession in real property law does not apply. The United States has never claimed acquisitive prescription. The requirements of prescription are (1) the possession of the prescribing state must be d'titre de souverain, (2) the possession must be peaceful and uninterrupted, (3) the possession must be public; (4) the possession must be for a length of time. "With respect to the claim of territorial acquisition by prescription it may be especially be recalled that it rests upon the acquiescence on the part of the adversary state." Surya P. Sharma, Territorial Acquisition, Disputes and International Law 107, 110-11 (1997) There was substantial opposition by Native Hawaiian Kanaka Maoli and the Queen in 1897) Noenoe K. Silva, Aloha Betrayed: Native Hawaiian Resistance to American Colonialism, 123-203 (2004); Supporters of annexation argued that Hawaii was vital to the U.S. economy, that it would serve as a strategic base that could help protect U.S. interests in Asia, and that other nations were intent on taking over the islands if the United States did not. At McKinley's request, a joint resolution or Congress made Hawaii a U.S. territory on August 12, 1898. Indeed, the incapacity of the Joint Resolution to act as a Treaty and acquire the Hawaiian Islands was well known, and extensively argued by Senators opposing the Joint Resolution during the Senate. 2. Mr. Allen. I assert, the Constitution, having placed in the President the power to initiate all treaties and in the Senate the power to concur or reject the proposed treaties, that annexation by treaty excludes all other methods and that the acquisition of territory in any other form, except as a mere tentative war measure and as an incident to the conduct of war, would be in violation of the letter and spirit of the Constitution. Statements of Senator Allen at 31 Cong. Rec. 6634, 6635, 6636, 6336, 6339 (1898 3. Mr. President, the Constitution must begin and end with the territorial jurisdiction of the United States; it cannot reach beyond the boundaries of our Government. It would be as lifeless and impotent as a piece of blank paper in Canada or in the Hawaiian Islands; and so with a statute or joint resolution. Mr. President, is there any pretense in this case that we are about to acquire dominion over Hawaii by conquest? Arguments were made in this Chamber by many Senators some time ago having for their object the maintenance of the proposition that we had really subdued or were responsible for the subjugation of Hawaii; Statements of Senator Allen at 31 Cong. Rec. 6634, 6635, 6636, 6336, 6339 (1898) 4. Mr. White. Mr. President, if it be true as stated in this decision that the authority to acquire territory is derived from the treaty-making power and the power to declare and carry on war, where do we find the right to annex these peaceful islands of the sea? Where is the grant, where is the authority for which Senators contend? Statement of Senator White, 31 Cong. Rec. 565 Appendix (1898) For more than a century, the people of Hawaii, both Native Hawaiians, Nationals of the Kingdom of Hawaii and others have been intentionally deceived by the United States, the Territory of Hawaii and the State of Hawaii into accepting the claim that the Joint Resolution of 1898 acquired the Hawaiian Islands as territory of the United States. No joint resolution, as a mere act or bill of the Congress or legislature of one nation can unilaterally perform the function of a treaty and acquire from another sovereign and independent nation, such as the Nation of Hawaii, in 1898, either the sovereignty of that nation or its public lands. Examine some of the most basic statements made by Senators in opposition in 1898. The claim on behalf of Native Hawaiian Kanaka Maoli is straightforward and rather simple. The United States, by its very laws, defines the State of Hawaii as only those islands acquired by the Joint Resolution providing for the annexing of the Hawaiian Islands to the United States. The joint resolution was not a treaty. It was a unilateral act of the United States Congress. It was a mere bill or act. If an act of the United States, without the consent of the</p>

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	Public Lands Exemption	Pending Litigation	Comments
Alma Kuahiwini-Mainz		Santa Barbara CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Amanda Alvarado	Amandamandajaynealvarado@gmail.com	Volcano, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Amy Perruso	amyperruso@gmail.com	Wahiawa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	The fact that this committee is even hearing this bill is actually unbelievable.
Angela Evans	angelakevans@hotmail.com	Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ashley Fordan		Jacksonville, Florida	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Barbara Underwood	barbualoha@yahoo.com	Lady Lake, FL	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Belle Kaiwi	bellenapuaaia96703@gmail.com	Anahola	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	State of Hawaii does not own land titles to Crown/Government Lands. No Annexation. Suggest reading Presidential Executive Order by McKinley to Republic of Hawaii Sanford Ballard Dole 09/11/1898.
bianca isaki	BIANCA@KAHEA.ORG	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	SB 3090 purports to be "a new model for governance and management of Hawaii's most precious resources." However, the framework for MKMA's operation is primarily one of a property manager for various tenants. The very effort to accommodate, dissipate, and "manage" conflict amongst the tenants' different "land uses" forecloses recognition and implementation of Mauna Kea as a sacred, historic landscape. The state cannot manage away conflict. That calls for a kind of healing that will not come from a commission comprised of appointed institutional representatives.
Blake Lanoza	lanoza.blake@gmail.com	North Hollywood	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Aloha, I'm a Hawaiian living in the mainland, but returning home to Hawaii island soon. Please don't legalize ways to keep this Aina out of the hands of my people. Enough telescopes. Let us practice our culture and reclaim these lands for all the people of Hawaii. Our culture should be respected and if anything, even if the state controlled the land, Hawaiian practitioners should be the authorities. We don't need to profit off of Mauna Kea. Let's keep Hawaii Hawaii.
Blue eagle Vigil		CA						Oppose	
Bonnie Reaume	breame62@yahoo.com	Newport, MI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Brennan Takayama	btakayama@gmail.com	Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Bruce Pascua		Wahiawa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Leave MAUNA KEA alone.
C. Keo'ahunui Uale Warrington	cualesmile@aol.com	Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Exempting those lands that would be controlled by the MKMA is yet another example of the stealing of the Aina from the Kanaka Maoli... modern day stealing!! I am in strong opposition of this!!
Carlton York		Weaverville, NC	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This Bill is shameful attempt to Undermine the will of the people and take away from the true principles of Democracy . . .
César Arguedas	Leipzig,Germany	yes, Haoli	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	no go
Chad Martin		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Chantell Jay	btakayama@gmail.com	Kaneohe	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Christine Donaldson		Eugene Oregon	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
cindy freitas		kailua kona hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I dont know if it went though my phone but E Kala Mai for a double
Cindy Freitas		Kailua kona hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Cynthia Massa	womanofthesea2003@yahoo.com	Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please Oppose Senate Bill 3090
Dani Raye Cortez		Santa Barbara California	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Daniel Forman		Mililani, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Deborah Hatanio		Kailua Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Dominic Regidor	dkregidor@gmail.com	Honokaa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Donna Sterling	dhelekunih@yahoo.com	Kahikunui, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Dr. Noe Noe Wong-Wilson	noenoe@hilo.net	Hilo, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	There needs to be a new management oversight but this bill does not provide the most effective option. Take the time to work with the community to come up with a solution abd don't exempt the mauna from the laws created to protect it.
Dr. Sue Haglund	suehaglund@gmail.com	Ewa Beach, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	Public Lands Exemption	Pending Litigation	Comments
Ekini Lindsey	ekimlindsey@gmail.com	HONOLULU, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose BILL 3090 in all aspects on the spectrum! Mauna Kea provides us the sustainability of water, and protects the climate capacity in endangering our islands. It is SACRED in all aspects of cultural protocol, and personally, my grandparents umbilical cord rests in Lake Waiiau. I encourage you all to educate yourselves on why it is sacred, and how the mountain provides a sense of reverence and peace. I also encourage you to visit the mountain, and allow it's elements to heal, and captivate your spirit. I ask humbly, to please KILL this bill for the betterment of everyone living here, and for the future of our youth. Thank you for your cooperation and attentiveness
elaine yadao	leeydao@gmail.com	lthue, hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	First, by proposing a bill in the legislature does not entitle jurisdiction jumping and law. This is another land-grabbiatant theft. It will usurp the Constitution and established state DLNR jurisdiction/control of Mauna Kea. You would GIVE AWAY a treasure like Mauna Kea to nine unscrupulous persons? You would have to be out of your minds.
Emalani Case	emalani@hawaii.edu	Kamuela, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ernette Fowler		Makawao, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Gayle Kaio		Keolu, Holualoa, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	A ole maopopo why the state continues to suprees are cultural, gathering, language rights, suppresses testimony from kanaka...these bullying tactics continues to benefit non kanaka developers...state legislature mirrors that clown in washington. This is Hawaii...why do we constantly need to fight for our rights in our homeland....
Georgina Mano	gigimano@ymail.com	Lahaina, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Glen Kila	makakila@gmail.com	Waianae, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Hank Fergstrom	hankhawaii@yahoo.com	Kurtistown, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Hannah Ashley		Waikoloa Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Keep native land in native hands.
Hauptu Aea	hauptu@gmail.com	Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Healani Sonoda-Pale	healani.pale@gmail.com	Kuliouou, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Henrymichael Kidder		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I'm confused. It looks like the answer my elected officials have for me is that they want to put other people in charge of things that we should all care for together. A mauna isn't a foster child or orphan you just create or fabricate parents and caretakers for. If you're in an elected office in Hawaii, it means Hawaii is a place you live in. And if you live here and call this place home then you need to behave as someone who wouldn't give their kitchen or family room away because you cannot manage it. This MKMA thing doesn't sound like a good idea. We have so many agencies over aspects of Public Land Trust or Hawaiians or whatever way you want to chop up and categorize things. It doesn't sound affordable. It doesn't sound sustainable. This sounds like we'll leave it to the Governor to figure out. And where I am, I just don't know that we, as residents, know enough about our home and this place to make the best decisions. I'm not just talking about cultural sensitivity. I'm talking about knowing whether we all know the best use and proper care for our places. We know that you can mix iced tea in a toilet, but you probably shouldn't drink it. A mauna isn't a toilet, but there's a lot of crap up there. Excuse my crudeness for a second and re-read that. A place is more than just something on a map and is deserving of respect. Please rethink this plan and make plans that are as open and transparent and earnestly respectful to our places. Please. Be careful.
Hoku Cabebe		Haena, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I urge you to OPPOSE SB3090. Mahalo
Hokulani Keikaina		Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Jamaica Osorio	osorio2@hawaii.edu	Kailua, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
James Manuwai	waterbird808@juno.com	Pahoeh, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Hawaii is Aloha and it needs respect. Please start respecting aloha, our land, culture and water. I OPPOSE Senate Bill 3090. Mahalo for your time.
James Rodrigues	sparkyrodrigues@gmail.com	Waianae Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	NO university, military, corporate or special interest involvement for all sacred lands. plan removal of all constructed sites on sacred lands. Native practitioners need to be in full control of all sacred land.
Jamie Kawauchi	jami.kawa@gmail.com	Naalehu, Hawaii 96772	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	supporting our brothers from Hawaii
jean-marie marere	hivarere@yahoo.fr	tahiti	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Jessica Kaehuokekai Hanie	kaehu68@gmail.com	Wailua	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Jessica Kim-Campuspos		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Joanna Howard		Kamamaiki Valley, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	Public Lands Exemption	Pending Litigation	Comments
Joanna Pokipala	ygetemail@yahoo.com	Honolulu, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mauna Kea Management Authority has done a poor job up to this point in managing Mauna Kea. Please listen to the people you serve and make Management a Kākou thing (all together) rather than an exclusive thing, Mahalo
John Omerod	omerod@me.com	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I STRONGLY OPPOSE SB3090 and the • ESTABLISHMENT of MAUNA KEA Management Authority (9 members) appointed by the Governor and Legislative leaders; attached to the office of the governor for administrative purposes. • TRANSFERING OF TITLE to all lands held in trust by the State and identified as government lands of Kaohae, Hamakua District, Hawaii to new entity MAUNA KEA Management Authority • AUTHORIZING the MAUNA KEA Management Authority to do any and all things necessary to carry out its purposes and exercise the powers given and granted pertaining to MAUNA KEA.
Jon-Erik Jardine		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose this bill and kill this bill 3090 now.
Jonathan Kuahwi Moniz	j.kuahwi.m@gmail.com	Waianae, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Joseph Han		Honolulu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Josephine Keilipio	j.jilinoe@gmail.com	Kailua Kona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Just amazing what people will do to destroy our Mauna
Judy Moa	judy@ludymoa.com	Honaunau	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Why is it that the left hand never connects with the right in Hawaii? I am opposed to any further legislation that is not Pono to the Hawaiian culture and people.
Kaai Spence		Waimea, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I strongly oppose.
Kahaka Patolo	kahakapatolo95@gmail.com	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Stop desecrating our SACRED TEMPLE MAUNA AWAKEA, HEWAI THE MAKAAINANA WILL MALAMA OUT OWN TEMPLE! KAPU!
Kailana Moa-eli		Waianae	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kaina Quenga		Brooklyn	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kaulani Lambert	kaulambert@yahoo.com	Kaneohe, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kalamaoka'aina Niheu	niheuk@gmail.com	Ka'a'awa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	We will remain forever vigilant.
Kailoa Lee Loy		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Ua mau ke ea o ka 'āina i ka pono!
Katherine Achacoso		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Katy Benjamin		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	It is so clear that the governing bodies will do anything they can to reduce the access and protections of Mauna Kea from Kanaka Maoli. Day after day, there is a constant stream of legislation attempting to seize more and more control of these sacred sites. With the way government has abused sacred sites around the US, and here in illegally occupied Hawaii, we cannot trust any "well-intentioned" efforts, especially when they will be set up and overseen by such a small, and non-Kanaka board. Stop insulting Kanaka Maoli. Leave Mauna Kea alone.
Kau Pratt-Aquino	pratt.kau@gmail.com	Kaneohe	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	The State has an affirmative duty to protect public trust lands on behalf of Native Hawaiian beneficiaries. Customary and traditional rights are the priority under the Constitution not telescopes. UH has mismanaged these lands for too long. It's time to stop the generational harm and assault on kanaka. Protect these lands. Enough is enough.
Kau Trainer	Kau.Trainer@gmail.com	Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I oppose SB 3090. UH and MKMA should not be in charge of the mauna. They have had over 40 years of mismanagement. The mauna has given enough. Go up there at any time and you will see how the science reserve has become a free for all for tourists and profiteering. How much of that actual goes to improve and protect the ecosystem? Local people who live on Hawai'i island and have a history of really protecting it should be the ones who form a hui mālama mauna: not self serving business interests and corporations who only see dollars and competition. Legislating cultural practice and belief is a form of cultural genocide. How is it that government is frequently trying to quantify and legitimize what is 'ike Hawai'i and in the process of this, creating categories and licenses of Hawaiianness that are sadly stripping kanaka 'oniwi of their rights?
Kaukaohu Wahilani		Wa'ianae HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kauluwehiokalani Eli		Honolulu Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kaylene Sheldon	kauwilamahine@gmail.com	Kaaawa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Keawe Fo		Jacksonville, Florida	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kehau Fergstrom		kāne'ōhe, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	stop exploring our lands for money and greed!
Kehaulani La'a	laamaikahiki_1959@yahoo.com	Volcano, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	Public Lands Exemption	Pending Litigation	Comments
Keke Manera	stephmanera@gmail.com	Pearl City, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kelly Kraemer	kkraemer@csbsju.edu	St. Cloud, MN	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Access to and use of Mauna Kea should be controlled by knowledgeable cultural practitioners who have the best interests of the Mauna in their hearts and minds
Kelvin Gonsalves		Kuliouou, O'ahu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kir Engelhardt		Kapa'au, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	There is much historical pain and injury built up in regards to the treatment of Kanaka Maoli that needs to be addressed and owned up to in order to heal, which prioritizing their needs and voices over corporate practices would be a significant step toward.
Koko Kawauchi Johnson		Pahoehoe, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Kristin Michler-Belleza	nichler@bellsouth.net	Fleming Island, FL	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I am married to and have a family with a Hawaiian. My children have Hawaiian Aloha in their hearts. One day we will go back. Please take care of the land.
Kristina Falgout	ffreef@gmail.com	Pahoehoe, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please help save the Hawaiians from being erased
Kupono Ana		Kaawaia HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I STRONGLY OPPOSE THIS BILL
Lahela Spencer	lahelaspencer@gmail.com	Kamuela, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	It is important to respect the kuleana of those who have been standing for Mauna Kea for decades. This bill is NOT what they asked for.
Laulani Teale	laulani@gmail.com	Kaneohe HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Leah Lilia Lindsey - Martinho	leahlindsey70@yahoo.com	Wilderville, Oregon	Oppose						
Lei Niheu		Honolulu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Leighton R. Tseu	lrtsu@gmail.com	Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Please respect our IWI KUPUNA! From the time of creation Mauna Kea is sacred for Mauna Kea is the highest connection to the uhane of the ancestors. Hawaii have been desecrated and disrespected, enough! Everything in life when disrespect it creates piliika. Mauna Kea is alive, she provides the water of life when the snow melts and the dew condense s into water, the water enters into the aina underground natural aquifer that gives us life. TMT will not give us life it. TMT will only benefit the investors from foreign nations and the US States Military Star Wars. What do we the kanaka ma'oli gain? Disrespect and negative environment impact will affect the quality of our life. I oppose SB3090 to protect what we have left of the natural creations of Hawaii that Akua created and Na Akua - Ku, Kane, Lono a me Kanaloa lives within.
Leilani Lindsey-Kaapuni	lkaapuni@gmail.com	Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Lillian Renfro-Robeau		Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Linda Namaou	lin_usmc@yahoo.com	Pahoehoe, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Lisa Chow	lisaleinaala7@gmail.com	Kailua, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Lori Bishop		Kameia, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Lori Juifis		Kailua Kona, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Stop this madness!!!
Luanna Peterson		Honolulu HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Luke Satsuma		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Maelani Lee	maelanilee@yahoo.com	Waianae, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Malia Belleza		Orlando, Florida	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Malia Umi	umi@hawaii.edu	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Mandy Eftan	mg96746@gmail.com	Kapaae kaula	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Maria Gaspar		Honokaa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Maria Silva	coteibarlucea@gmail.com	Santiago, Chile	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I spend sometime in Big Island and I met hawaiian friends, and then I could appreciate how much sacred is Mauna Kea for them. In Chile are many observatories but non of them in Sacred indigenous places, no government will allow that.
Marie Alohalani Brown	mariealohalani@gmail.com	Volcano, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Marie Bourcier		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Marion McHenry	bob-marion@hawaiiintel.net	Princeville, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Mary Baker		Waimanalo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mauna Kea should be managed by Kanaka Maoli cultural practitioners, overdevelopment and commercialization of hawaii must be put in check - also disregard for the indigenous original people of this aina has gone on far too long...it is embarrassing
Mary Drayer	mdrayerhome@msn.com	wailuku hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Mary Lacques		Haleiwa Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mahalo in advance for voting "NO" on Bill 3090

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	Public Lands Exemption	Pending Litigation	Comments
MaryAnn Omerod	naniomerod1@gmail.com	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I STRONGLY OPPOSE SB3090 - and the ESTABLISHMENT of MAUNA KEA Management Authority (9 members) appointed by the Governor and Legislative leaders; attached to the office of the governor for administrative purposes. • TRANSFERING OF TITLE to all lands held in trust by the State and identified as government lands of Kaohae, Hamakua District, Hawaii to new entity MAUNA KEA Management Authority • AUTHORIZING the MAUNA KEA Management Authority to do any and all things necessary to carry out its purposes and exercise the powers given and granted pertaining to MAUNA KEA.
Mel Wildman	wildman1101@gmail.com	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	On this issue of bill 3090, I oppose any and all release of any permit upon Mauna Kea. In the past history, MKMA has failed their fiduciary duties to the Publics best interest in Auditor reports consistently. Litigation process has been a perpetuated fact that losses financially by MKMA endured along with UH has amounted to disparity showing virtually careless, discord and impractical waste and fraud of State and Federal Funds. There has been highly conspicuous reason to believe that granting such rights to MKMA is adamant to handing a weapon of mass destruction to an incompetent person. In lieu what is meant is clearly marked, destruction of any land by incompetence, and carelessness of ones thoughts. Deference by Public demand equality of their rights to their culture, their history, their future is at stake under the false pretense to deter clean and concise truth. We do not build to destroy, when we do we destroy history, your history, your past, your life that you were born to protect. In opposition, this bill cannot elate to a better finding of fact. Wildman.
Michelle Tomas	pelehiaka@hawaii.rr.com	Kailua Kona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Passing this bill in unconscionable! Who thinks of these bills?
Mikilani Young		Kane'ohē, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I oppose bill 3090!!!
Moana Ching	uluching@gmail.com	Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nadine Mahiai		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nanci Munroe		Pahoa, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Natalie Santiago		96792	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Aloha Ainal Malama Pono! Time to stop the degradation and desecration of our Oceans, Mother Earth and the Plant and Animal Kingdoms. Time to be more spiritual. Pule! And it is done.☐
Nathan Yuen		Ewa Beach, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nedi McKnight	nedmcknight@gmail.com	Pa'auiilo HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nicholle Konanui		Pahoa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Nicole Gonzales	nicolehgonzales@gmail.com	Kailua Kona	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
noelani josselin		moku manokalanipo	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
NORA KUALI	nkuali@yahoo.com	HILO, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Norman Gaspar		Honokaa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Paul Cullen	paulcullen808@yahoo.com	Kaunakakai, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Pene Olina Dutton	perdk@msn.com	Melbourne, Florida	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Purdyka Wahiani	wahianip@gmail.com	Honolulu hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Raul Goodness		Waikuku, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
RAYMOND GALDEIRA		HAWAII KO PAE 'AINA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Leave our sacred sites alone for our future
Rebecca Vincent		Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Rocky Ishibashi		Keaau, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Return stolen lands back to Hawaiian is the right thing to do. Anything wise is a war crime.
Ronelle Andrade		Kea'au, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ronni Pratt	pratt.ronni@yahoo.com	Kaneohe HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I strongly oppose this bill. Again, I am truly disappointed in our elected officials using their positions to basically shut out Native Hawaiians from having a voice in what is best for our lands. I ask you to please vote against this bill. Mahalo.
Rory Kim		Kealahou, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Ryan Campuspos	campuspos@gmail.com	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
S L		Los Angeles, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sam Ikehara	sikehara@usc.edu	Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Samson Kama		Nanakuli, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sandee Pa Moniz		Waimanalo, HI.	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

Name	Email	Reside	State's Authority	Selection Process	MKMA Authority	Industrial Development	Public Lands Exemption	Pending Litigation	Comments
Sarah Williams	sarahcalico@gmail.com	Pāhoā, HI		Oppose		Oppose	Oppose		
Shannon Crivello	skalliloo@yahoo.com	Kalaupapa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I oppose Bill 3039
Shannon Rudolph	shannonkona@gmail.com	Hōlualoa, Hawai'i	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	SB3090 is an insult to all Hawai'i residents.
Sharade Carba	Thecarbasmn.com	Waiānae Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sharon Willeford		Kauiua-Kona, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Sharron Cushman	reikitaichichih@hawaiiantel.net	Keaau, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I strongly oppose SB3090
Shawna Alapa'i	kumu@hulaon.org	San Rafael, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Preservation of our lands MUST be first and foremost, a priority in order to assure a thriving and productive livelihood for all
Sherry Tanna	k.kamealohamook@yahoo.com	Honolulu	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	A'OLE TMT...KU KIAI MAUNAI!!
Simbraynn Kanakaole Esperon		16-1740 38th St Orchidland Keaau Hawaii 96749	Oppose						
Star Nani Pai	enoka123050@gmail.com	Pāhoā, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I don't want nine people who sit this nine-member newly-created group to represent all Kanaka regarding the use of Mauna Kea. All of you, representatives of your constituents, would be wise to think long and hard about the ramifications of this bill. I see this bill as an affront to the people of Hawai'i, especially Kanaka Maoli. Please be pono and do not vote for this
Stella Caban	stellai.caban@gmail.com	Hilo, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	Mahalo for your consideration.
Sunny Savage		Wailuku, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Susan Aguilera	salnuitz@sonic.net	Cloverdale, CA	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Susan Sitrom		Kapaa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Terrykay Sandobal		Waipahu HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Theodora Akau Gaspar		Honokaa, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Theresa Taber	solidlava@hotmail.com	Kea'au HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	STOP THE DESECRATION, EDUCATION IS NOT DESECRATION... This is just another ATTEMPT to placate and accommodate further desecration of Mauna Kea in a Conservation District. The current governor is not capable of appointing without bias, that is a fact. He has publicly given his consent and support, including government resources to support the building of the TMT and desecration to Mauna Kea. In his own words, he admitted that UH and the State has FAILED to protect and manage Mauna Kea properly. Therefore, it is in the best interest of MAUNA KEA, the mauna itself, that NO authority be appointed that is not ELECTED by the people, in the community that will be directly impacted by the managing of Mauna Kea. There is already mechanisms in place on the County, State and Federal levels, this is just another attempt to thwart the process and the rights of the citizens to present their positions in contested case hearing. STOP THE MANIACAL MACHINATIONS OF MANIPULATING THE LAW TO FAVOR DESECRATION KE AKUA IS WATCHING, THE TRUE MANAGER OF MAUNA KEA...
Tim Kaapuni	tkaapuni@gmail.com	Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Tisha Kalama-Kidder		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I'm a Hawaiian Homesteader in the Kalaehaha Streamside Homestead. DHHL is just one example of a well intended agency with poor to questionable execution and upkeep. How can we afford this and how will this be better than the already disjointed agencies serving pockets of people and places ineffectively? I'm opposed to this plan. Whoever suggested it might do better to take that energy and make the existing agencies better instead.
Toni Yardley		Honolulu, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	These are CROWN LANDS - WHICH CANNOT BE LEASED FOR OVER THIRTY YEARS - NO TIME EXTENSIONS ARE ALLOWED
Toni Tuulatamalelegi	tonileef@hawaii.edu	Kahalaau Oahu Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Tracy Kamaka		Hilo, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Trinette Furtado		Haiku, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Tyler Greenhill		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I strongly oppose this bill.
Uahikea Maille		Kauiua, HI	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
Veronica Eugenio		Kapaaau, HI 96755	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	I believe Mauna Kea was given to UH illegally.
Wallis Spell	islandhome50@gmail.com	Orange Park, Florida	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	

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Wendy Green		Honolulu, Hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	This bill undermines the efforts of Native Hawaiians who are respectfully going through the arduous task of fighting for land rights and access to their sacred cultural sites. With pending litigation still in the court system over the management of Mauna Kea and the building of the TMT telescope, this bill is an outright and blatant attack on those safeguards put in place to protect Kanaka Maoli rights and the future of Mauna Kea's fragile eco-systems. Please oppose this bill and any future reincarnation of it. Respecting the people and the process should be your highest priority.
Wilfred Lopes	wilfred.lopes@yahoo.com	84-965 Farrington hwy apt 307 waianae hi 96792	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	My opposition to this bill 3090 will be detrimental to my traditional customary practices on mauna kea. I have already been violated by the OMKM management and DLNR. I am currently involved in a legal battle with the DLNR, UHH&TMT in the Hawaii supreme court. We will create a new management for Mauna Kea after we win this case, until then, this bill will relinquish my traditional customary practices as a Kanaka maoli ko pae aina in alignment with my kupuna that exist on mauna kea, which I will stand to protect to my very last breath. Mahalo Nui Loa
William Freitas	pohaku7@yahoo.com	kailua, kona hawaii	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	
William Freitas		Kailua kona hi	Oppose	Oppose	Oppose	Oppose	Oppose	Oppose	