

UNIVERSITY OF HAWAI‘I SYSTEM ANNUAL REPORT



REPORT TO THE 2024 LEGISLATURE

Annual Report on the Mauna Kea Lands

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REPORT TO THE THIRTY-SECOND LEGISLATURE
STATE OF HAWAII
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ANNUAL REPORT ON THE MAUNA KEA LANDS

Pursuant to Hawai'i Revised Statutes (HRS) § 304A-1905, "Mauna Kea Lands; reporting requirements," the University of Hawai'i (UH) respectfully submits its report on (1) Maunakea lands activities; (2) current and pending lease agreements and fees; (3) the status of current and pending administrative rules; (4) income and expenditures of the Mauna Kea lands management special fund established in HRS § 304A-2170; and (5) other issues that may impact the activities on the Mauna Kea lands. Consistent with past practice, this report covers the fiscal year 2023 (FY23), which started on July 1, 2022, and ended on June 30, 2023, but may also include matters and data outside FY23 where relevant.

I. Current and Pending Lease Agreements and Fees

In 1964 the Hawai'i State Legislature passed Senate Concurrent Resolution 16 (SCR 16) stating that the "State of Hawaii and its citizenry are most desirous and willing to co-operate and aid in the promotion of our nation's space program and research to the benefit of the County of Hawaii, the state and the nation." It was resolved that the governor set aside and establish an appropriate area on the summit of Maunakea for the installation and operation of telescope observatory and astronomical activities. In fulfillment of SCR 16, the Mauna Kea Science Reserve (MKSR) was established in 1968, and the Board of Land and Natural Resources (BLNR) and UH entered into an agency-to-agency lease granting UH a lease of the Science Reserve for a term expiring on December 31, 2033 (MKSR General Lease). The lease is gratis, a common practice for leases between government agencies and one that supports the goal of benefiting the County of Hawai'i, the State, and the Nation.

Also in 1964, Governor John A. Burns recognized that Hawai'i has ". . . some obvious natural advantages in this area of scientific research, [and that Hawai'i] must capitalize on these, utilizing all our available resources at the University, in the industrial community and at the levels of State and local government." He also emphasized that Hawai'i is not "constrained by these physical advantages." "We can acquire competence in any field of scientific inquiry," and "[t]he limitations are only those we impose on ourselves." (Honolulu Advertiser, August 7, 1964).

Governor Burns understood the demand for manual labor in agriculture would decrease over time, and that future jobs would require technicians and scientists. The development of a research enterprise would provide jobs of the future. The two areas Governor Burns felt the state should pursue were in the fields of oceanography and astronomy, areas in which the State of Hawai'i unquestionably excels.

In a State-supported effort to establish astronomy as a viable research endeavor and establish Hawai'i as a center for astronomical research, UH entered into subleases with 11 organizations to operate astronomical observatories. BLNR approved all subleases, which are co-terminus with the MKSR General Lease. Each sublessee is obligated to provide a guaranteed percentage of viewing time to UH. Viewing time provides invaluable advantages for advancing UH, Hawai'i's only State-funded institution of higher education, as a center for excellence in research, including astronomy.

At little cost and risk to the State, UH is recognized as one of the Nation's leading astronomical research institutions and globally as the center of excellence for astronomical research. This recognition contributes significantly to the State's efforts to expand its high-technology sector. The annual economic impact of astronomy in the State in 2019 was \$220.95 million (\$261.33 million in 2022 dollars (CPI-U)), with the largest impacts found on Hawai'i Island and Honolulu, \$101.68 million (\$120.26 million in 2022 dollars (CPI-U adjusted)) and \$86.96 million (\$102.85 million in 2022 dollars (CPI-U adjusted)), respectively. Additional benefits accrue to the State and local communities through opportunities in scientific, professional, technical, and administrative employment within the local community.

In preparation for seeking a new land authorization (e.g., a new general lease from the BLNR beyond 2033), UH updated the "Mauna Kea Science Reserve Master Plan," adopted by the UH Board of Regents (BOR) in 2000, and the "Mauna Kea Comprehensive Management Plan," adopted by the BLNR in 2009 (collectively, the Plans). The effort to update the Plans involved significant community and stakeholder input. UH's new master plan, E O Nā Leo: Listen to the Voices, was adopted by the Board of Regents in January 2022, and the updated Mauna Kea Comprehensive Management Plan, Comprehensive Management Plan 2022 Supplement, was approved by the BLNR in July 2022. Among other things, the Plans integrate management actions that strive for a renewed balance across the cultural, natural, educational, and recreational values Maunakea provides the State. The Plans also address decommissioning commitments UH has made and the replacement of the University of Hawai'i Hilo's educational telescope from the summit to the mid-level facilities at Halepōhaku.

In 2018, UH began preparing an environmental impact statement (EIS) for UH's proposed new land authorization to continue astronomy on Maunakea. Prior to the 2022 Legislative Session the House of Representatives established the Maunakea Working Group to recommend alternative governance structures for the future management of Maunakea. The purpose was to replace UH as the responsible entity for managing the Mauna Kea Science Reserve, Hale Pōhaku, and the roadway easement connecting Hale Pōhaku and the Mauna Kea Science Reserve. After considering the Working Group's recommendation, HB 2024 was introduced which eventually resulted in Act 255 which was signed into law by Governor Ige in June 2022.

Act 255 establishes the Mauna Kea Stewardship and Oversight Authority (MKSOA) comprised of eleven voting Board members. Act 255 sets a five-year transition period ending July 1, 2028. During the transition period, UH and MKSOA will "jointly manage" certain aspects of Maunakea while MKSOA is formally organized and prepares to assume all legal and operational responsibilities currently under UH management (e.g., UH's two general leases, grant of easement, and all conservation district Use Permits (CDUPs) held by UH for third party non-UH astronomy facilities and buildings, vendor contracts, liabilities, etc.). Act 255 also grants MKSOA certain land disposition responsibilities currently under the jurisdiction of the BLNR and appropriated \$14M for MKSOA start-up.

Act 255 prohibits new leases on Maunakea until after the transition period ends and leases are taken over by MKSOA. Consequently, all UH work on the EIS, new land authorizations from BLNR, and new real property sub-agreements with Maunakea observatories have stopped. As reiterated in Act 255, the two astronomy facility decommissioning projects already underway for the Caltech Submillimeter Observatory (CSO) and UH Hilo's Hōkū Ke'a teaching telescope are progressing to completion.

A. Thirty Meter Telescope (TMT) Sublease

On September 27, 2017, the BLNR issued its 271-page Findings of Fact, Conclusions of Law and Decision and Order containing 1,070 Findings of Fact and 512 Conclusions of Law, for the CDUP allowing the construction and operation of TMT. On October 30, 2018, the Hawai'i Supreme Court affirmed the CDUP after various parties appealed. The process for obtaining the CDUP approval took approximately seven years from the permit application's initial submission in 2010, including two contested cases, several judicial appeals, and two Hawai'i Supreme Court decisions. Parties continue to challenge the TMT project, for example, in cases before BLNR, the State Land Use Commission, and Hawaii's circuit and appeals courts.

Unlike the other existing observatory subleases, which provide for nominal rent in exchange for viewing time and sublessee contributions to shared operations, maintenance, and stewardship of Maunakea, the TMT International Observatory (TIO) sublease provides for substantial lease rent payments. Pursuant to TIO's sublease, annual lease rent starts at \$300,000. The lease rent schedule is phased, with increases based on construction activity. Full annual lease rent payments of \$1,080,000 a year will begin in FY 2025. In FY23 TMT paid \$846,996 in lease rent and, to date, \$4,282,254 has been paid. These payments are deposited into the Mauna Kea lands management special fund as the legislature directed in 2009 Hawai'i Session Laws Act 132 (codified at HRS § 304A-2170). In addition, as a result of UH's negotiations, TIO committed \$1 million per year in donations to community benefits, primarily by advancing STEM education on Hawai'i Island, and a similar amount to a workforce pipeline initiative as operations become imminent to maximize employment opportunities for residents. To date, TIO has contributed \$5.5 million dollars to the THINK fund and at least \$25,000 to programs that assist at risk youth, specifically focusing on the children of incarcerated parents. TIO is currently waiting on National Science Foundation (NSF) funding. NSF initiated a Section 106 consultation process as part of their review of TIO's application for funding. This process, conducted by NSF, involved months of pre-consultation meetings with the community and in 2022 three public meetings held on Hawai'i Island. NSF is still in the process of reviewing comments submitted during the public comment period. NSF has not set a date for issuing its report.

B. New Maunakea Observatory (MKO) Agreements

In FY21 discussions with MKO Directors commenced regarding new agreements post-2033 which is when their current subleases terminate. Those discussions continued into FY22 and covered various terms including rent, stewardship fees, community benefits, shared use and maintenance costs, and property or use rights. The goal of these negotiations was to have an agreed-upon set of terms by the end of 2022. The process for developing these new agreements included discussions with the community.

Consistent with Act 255, in addition to stopping UH work on a new general lease from BLNR, UH has halted all work on new MKO agreements. Act 255 states that the MKSOA "shall develop a management plan," and that the management plan shall, among other things, "[p]repare for and establish the framework, criteria, and procedures for any leases and permits."

II. Administrative Rules

Hawai'i Administrative Rules Chapter 20-26, "Public and Commercial Activities on Mauna Kea Lands," was adopted by the BOR on November 6, 2019, and approved by Governor David Ige on January 13, 2020 (MK Rules). UH has no pending administrative rules amendments related to Maunakea at this time. BOR's adoption of the administrative rules are being challenged by opponents in *Flores-Case 'Ohana v. University of Haw.*, No. SCRQ-22-0000118.

The focus in FY23 was on continuing the implementation of the Comprehensive Management Plan (CMP) and MK Rules. This work included staff training, developing administrative systems, improving signage, revamping employee and visitor orientation, improving education at the Visitor Information Station (VIS), and updating the Rangers' operating procedures. This work also included key hires and recruitment to fill recent vacancies and positions established based on the reorganization of Maunakea management approved by the BOR on August 20, 2020.

One example of new procedures implemented through the Ranger program as a result of the MK Rules was instituting brake temperature checks for all vehicles descending the mauna. This procedure was the result of a Ranger recommendation after a serious vehicle accident and fatality on January 1, 2022 due to brake failure. All vehicles found to have elevated brake temperatures upon descent are directed to the parking area at the Visitor Information Station to allow their brakes to cool. Our most recent data for the first quarter of FY24 found 13% of descending vehicles to have brake temperatures in excess of 300 degrees which is the threshold used to indicate an elevated risk for brake failure. Since implementing these temperature checks, there has been one reported vehicle accident (March 2022) due to brake failure and no vehicle-related fatalities.

Act 255 repeals the MK Rules after the transition period, and grants the MKSOA authority to develop its own administrative rules.

III. Income and Expenditures of the Mauna Kea Lands Management Special Fund (HRS § 304A-2170)

Income and expenditures during the reporting period remained affected by the effects of the operational and travel restrictions due to the COVID-19 pandemic though not as significant as the previous year. During FY 2023, \$173,690 in fees were collected from commercial tour operators, \$400 in fees collected from film permit applicants, \$846,996 in lease fee payments from TMT, \$975,938 carryover from FY 2022, and \$28,001 in interest for a total of \$2,025,025. A total of \$601,646 was used to help defray the cost to operate the Maunakea Ranger program, VIS, and road, facility, and infrastructure maintenance expenses.

Total payments of \$207,276 were made to the Office of Hawaiian Affairs (OHA) in FY 2023, as follows: \$9,658 (FY 2022 4th Quarter payment) and \$197,618 (total of 1st thru 3rd Quarter payments). A payment for \$6,599 for 4th Quarter 2023 was paid to OHA following the start of FY 2024.

HRS § 304A-1905 requires reporting in this annual report of "income and expenditures of the Mauna Kea Lands Management Special Fund established in HRS § 304A-2170". However, it is important to note that the Mauna Kea Lands Management Special Fund comprises a small fraction of the revenue required to fund the overall direct costs to UH for the management and stewardship of Mauna Kea. In FY23, the Mauna Kea Lands Management Special Fund was used to cover 31% of UH's direct management costs.. The remaining 89% was covered by a combination of UH tuition, fees, and research funds. In addition to management expenses, and as part of its stewardship responsibilities, UH has also funded planning,

permitting, and legal expenses needed to ensure compliance with conservation district rules and lease requirements. In recent years, these costs have ranged between \$500,000-\$1.2M annually. Act 255 repeals the Mauna Kea lands management special fund on July 1, 2028 with any remaining balance being transferred to the new Mauna Kea management special fund established thereunder. UH's direct costs for management, stewardship, planning, permitting, litigation, and compliance will need to be replaced by MKSOA through other funding sources.

IV. Maunakea Lands Activities and Other Activities

A. Commercial Tour Operations

Nine commercial tour operator permits were transferred from State of Hawai'i Department of Land and Natural Resources (DLNR) to UH in 2005. Two operators have gone out of business and seven operator permits remain active. With the pandemic, only six have been operating; the seventh planned to restart in 2022 but has not done so yet. That permittee continues to pay their monthly minimum payment to keep their permit active. Each commercial tour operator is charged a \$6.00/tour passenger fee, which is submitted to the Center for Maunakea Stewardship (CMS) (formerly the Office of Maunakea Management (OMKM)) every month. All fees are deposited into the Mauna Kea Lands Management Special Fund and are used to cover management and stewardship activities on Maunakea. Twenty percent of the fees collected are set aside for payment to OHA. In FY23 a total of \$173,690 was collected from commercial tour operators.

The COVID-19 pandemic significantly impacted commercial tour operators, demonstrating the risks of an overreliance on this revenue stream. With the easing of COVID and travel restrictions, commercial tour passenger numbers have increased but not to pre-pandemic levels. UH has engaged in outreach to individual commercial tour operators to seek their input on fee increases and permitting requirements. While working to bring existing permits into compliance with the new MK Rules, UH is also considering additional options for managing visitor access, including concessions, a shuttle system, and new permit requirements. UH will continue work on updating commercial tour permits as required by the MK Rules.

To support the assessment of permit fees and the evaluation of alternative managed access options, UH contracted with the UH at Mānoa School of Travel Industry Management (TIM) to conduct a visitor and operator survey to better understand the relationship between demand, fee acceptance, and capacity. Completion of this study was impacted by COVID-19 which resulted in significantly reduced commercial tour demand and overall visitor traffic to Maunakea. Partial conclusions were submitted on a new fee structure, but in light of Act 255, the scope of the remainder of this work is being re-evaluated since commercial activities and access management will fall under the purview of MKSOA after the transition period.

B. Decommissioning

Pursuant to the CDUP for the TMT project, the BLNR imposed special conditions regarding the decommissioning of telescopes on Maunakea, including the following:

Special Condition 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.

Special Condition 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.

Related to decommissioning, on November 6, 2019, the BOR adopted Resolution 19-03, “Resolution to Act on Items Relating to Maunakea Management” (later revised in part by BOR Reso. 21-02)(BOR Reso. 19-03). Accordingly, a schedule to decommission CSO and Hōkū Ke‘a by December 31, 2021, was presented to the BOR. This presentation including the schedule is available at <http://go.hawaii.edu/Fp3>. This schedule has been updated due to COVID-19 and permitting delays with the new projected timelines discussed below.

BOR Reso. 19-03 established a December 30, 2025 deadline to determine which three additional telescopes will be decommissioned in compliance with existing or future permits or governmental approvals. UH began discussions with sublessees to prepare a framework for decision-making for public comment and review as part of the Plans update process. However, these discussions between UH and sublessees has stopped per the passage of Act 255, which will transfer the CDUP for TMT to MKSOA in 2028 after the transition period. UH Plans will also no longer be applicable after the transition period, wherein UH committed to nine (9) operating astronomy facilities on Maunakea after decommissioning conditions had been met. Important to note here is that subleases are co-terminus with the MKSR General Lease, which expires in 2033. The subleases and MKSR General Lease all provide provisions for the removal or transfer of ownership of astronomy facilities on Maunakea on or before 2033.

The CSO and Hōkū Ke‘a facilities are currently undergoing the decommissioning process as both projects had commenced prior to the passage of Act 255. Both CSO and Hōkū Ke‘a issued a Notice of Intent to decommission in 2015 and have been coordinating and consulting with UH and DLNR in the preparation of their permitting requirements and environmental assessments under HRS Chapter 343 to address impacts associated with removal and restoration activities.

CSO’s environmental assessment (EA) was accepted, and their CDUP was approved, in FY 22 by the BLNR. Currently, the telescope and its support structure, and all internal structures, fixtures and furnishings have been removed. CSO has halted work for the 2023-24 winter season and plans to commence with the remaining facility deconstruction in the Spring 2024. Decommissioning and removal is estimated to be completed by September 2024.

UH Hilo submitted the Hōkū Kea CDUA to DLNR in August 2022. The BLNR approved the CDUP on April 14, 2023. County permits have been secured and contractor bids have been solicited with selection projected to occur in December 2023. Due to the impending winter season, issuance of a Notice to Proceed is anticipated for March 2024 with facility demolition to be completed by October 2024.

In addition to CSO and Hōkū Ke‘a, finding of fact 171 of the TMT CDUP issued for TMT identified the United Kingdom Infrared Telescope (UKIRT) for decommissioning by the time the TMT project becomes operational, and the BLNR identified the Very Long Baseline Array (VLBA) for decommissioning in Special Condition 11 of the same CDUP.. Act 255 contemplates the transfer all CDUPs issued to UH for astronomy facilities owned by third parties, like TMT, to MKSOA. Act 255 also directs MKSOA to develop a framework for future astronomy development on Maunakea, as codified under HRS § 195H-6:

(d) The authority shall be responsible for the establishment of a framework for astronomy-related development on Mauna Kea. The framework may include: (1) Limitations on the number of observatories and astronomy-related facilities, or an astronomy facility footprint limitation; (2) Prioritizing the reuse of footprints of observatories that are scheduled for decommissioning, or have been decommissioned, as sites for facilities or improvements over the use of undeveloped lands for such purposes; and (3) A set of principles for returning the lands used for astronomy research to their natural state whenever observatories are decommissioned or no longer have research or educational value.

Consequently, the MKSOA will need to determine the future status of these permit conditions.

C. Cesspool Removal

In FYs 22 and 23 UH completed the process of closing two cesspools that were not in service and replacing two others with zero discharge waste systems. All four served UH-owned facilities. Notifications have been provided to the appropriate regulating agencies.

D. Center for Maunakea Stewardship: Internal Restructuring Plan

At its August 20, 2020 meeting, the BOR considered and adopted agenda item VI.B, “Approval of Revised Internal Restructuring Plan for Management Operations of Maunakea Lands (continued from May 21, 2020).” The proposed plan is a requirement of BOR Reso. 19-03, paragraph 8, which provides that the “purpose of the plan is to improve operations and management and make it more efficient, effective, and transparent.” Outreach was a key element of BOR Reso. 19-03, paragraph 8.

Among other things, the restructuring included the creation of CMS, which coordinates all activities on land managed by UH on Maunakea with direct reporting to the UH Hilo chancellor. The restructuring also provides more direct input from cultural, community, and stakeholder advisory groups. Details of the “Center for Maunakea Stewardship: Internal Restructuring Plan for Management Operations of Maunakea Lands,” are posted online at <http://go.hawaii.edu/3zF>.

In December 2021, the UH BOR directed UH Internal Audit to review the status of the reorganization and establishment of CMS. The objective of this audit project was to evaluate the status of the Restructuring Plan in addition to the status of Corrective Actions to address recommendations included in historical audit reports by Internal Audit (September 2018) and the State Auditor (most recent dated July 2017). Internal Audit released its report in April 2022 stating that “Internal Audit believes that the reorganized and restructured management of Maunakea is more streamlined and provides a better reporting structure when compared to the historical convoluted structure. Based on the work performed, Internal Audit believes CMS has either completed or is in the process of meeting the Restructuring Plan’s objectives. Interviews with leaders of the various advisory groups support Internal

Audit's conclusions. In addition, Internal Audit has determined that all recommendations noted in historical State Auditor and Internal Audit reports have been properly addressed and/or implemented." The report of Internal Audit is posted online at <https://go.hawaii.edu/9Jk>.

E. Collaborative Stewardship in Maunakea Governance

At its April 16, 2020 meeting, the BOR considered agenda item V.C, "Status Update on Items Relating to Maunakea Management Pursuant to Board of Regents Resolution 19-03 (Discussion Only)." The BOR was presented with alternative governance models to fulfill the requirements of BOR Reso. 19-03, Paragraph 9, which asks "whether the management of the Maunakea Science Reserve (MKSr) would be better served if transferred to a governmental authority or other third-party entity, or through alternate management mechanisms."

A number of existing management models used by other state agencies and private organizations that manage large tracts of land with diverse and complex land management issues were reviewed. Land managers were asked about the benefits and challenges of working under various land management structures. Five models were developed: Attached State Agency Model, BLNR Management Model, Third-Party Model, Collaborative Stewardship Model, and Collaborative Stewardship within UH Model. These models are more fully discussed in the presentation to BOR available online at <http://go.hawaii.edu/3zb>.

UH's preference was for Model 4A identified in the review (Collaborative Stewardship within UH). This model could be implemented without legislation, minimizes the complications arising from HRS Chapter 171 provisions governing disposition of public lands, and leaves only the summit area and Hale Pōhaku under direct UH management in full collaboration with stakeholders. Supporting this preference was the understanding that if the world-class astronomy envisioned in the 1960s by the state, Hawai'i County, and UH leaders is still one of the key objectives for Maunakea, UH must play an active role not only in astronomy but other educational opportunities that the unique cultural and natural attributes of Maunakea provide. The BOR took no action on this matter and noted that a change to a completely new model would require action by state entities outside UH.

UH's analysis and offers to consult were made available to the Maunakea Working Group formed by the Legislature to develop a recommendation for an alternative governance model.. In addition, upon passage of Act 255 in FY23 this information was made available to the MKSOA. MKSOA board composition as established by Act 255 parallels Model 4A with the exception that instead of implementation occurring within UH, a new state agency was created attached to DLNR. Many of the start-up tasks and challenges identified in UH's analysis for Model 4A appear to be relevant for MKSOA, which has been provided to MKSOA.

F. MKSOA Transition

In FY23 UH provided temporary administrative support to MKSOA to facilitate their start-up as a new body corporate and a public instrumentality of the state, placed within DLNR for administrative purposes. These services included board and logistical coordination, and staff training for MKSOA's sole employee. Currently, UH provides office space for MKSOA's employee who is located at the 'Imiloa Astronomy Center of Hawai'i ('Imiloa Center) on the UH Hilo campus.

In addition to this administrative support, UH, through the CMS, has provided the MKSOA board with comprehensive reviews covering all UH plans, policies, leases, finances, operations, and other matters for which MKSOA assumes responsibility in July 2028. The purpose of these reviews was to educate MKSOA board members on the basic management functions they will assume responsibility for so they have a basis for developing their management plans, policies, administrative rules, and programs. In total, UH has conducted/hosted nine (9) orientation sessions and site visits for the MKSOA board since January 2023. UH will conduct as many additional sessions on topics of interest as needed.

To facilitate and ensure open and ongoing communications with the MKSOA board, the CMS Executive Director meets weekly with the MKSOA Chair on a variety of strategic and operational matters. This will continue until MKSOA hires their own Executive Director at which time it is assumed that management-to-management level coordination will commence consistent with the governance role of the MKSOA board. In addition, the CMS Executive Director provides regular operational updates to the MKSOA board at their monthly board meetings. This is intended to keep the MKSOA board apprised of current issues and general matters UH is addressing on a day-to-day basis in UH's management role and which are likely to recur when MKSOA assumes management responsibility in July 2028.

CMS is working on a comprehensive list of items that need to be transferred from UH to the MKSOA under Section 9 of Act 255. A substantial portion of these items was identified and listed in a letter from CMS to the BLNR chair and MKSOA chair on August 1, 2023. This letter was posted by the DLNR Office of Conservation and Coastal Lands on its Maunakea Management website, at <https://dlnr.hawaii.gov/occl/maunakea-management/>.

G. Stewardship

In accordance with the CMP, UH's resource management team completed several priority management actions in FY23 as required under the plan. This included annual monitoring surveys of 100 cultural sites, arthropod monitoring of 115 sites, removal of 13,200 pounds of invasive plants through our volunteer programs (engaging 130 community members) and staff efforts, outplanting of 286 native plants, and 119 vehicle inspections for invasive species. A highlight of UH's resource management team's stewardship efforts this year was development of the 'ahinahina (SILVERSWORD) propagation and outplanting program in partnership with the DLNR Division of Forestry and Wildlife (DOFAW). In part due to the success of this program, CMS successfully secured and entered into a research agreement with DOFAW to assist with their stewardship of the 'ahinahina enclosure located adjacent to UH managed lands at the VIS. This partnership greatly supports DOFAW's monitoring and stewardship responsibilities for the preserve and supports a more holistic stewardship program for that area by providing CMS access to a nearby outplanting site.

H. Education and Outreach

During FY22, work on a new training and orientation video and materials for employees, contractors, and vendors was completed that replaced the previous training that had been in place since 2009. In FY 23, work focused on refining the online system. Also in FY23, CMS redescribed and filled an Education and Outreach position that had been vacant due to the uncertainty surrounding passage of Act 255. Given the five-year transition period with MKSOA, UH decided to move forward with filling this important function. Under the leadership of CMS's new coordinator, a new and updated education and outreach program is under development. The program has three (3) areas of focus: exploration,

conservation, and community with a priority on developing collaborative partnerships with UH programs, the State of Hawai'i Department of Education (DOE), and other community organizations. A key initial step in preparing for plan implementation is staff development with a particular focus on natural and cultural resource education and training in cultural protocols.

In FY 23, CMS completed the remodeling of the VIS to prepare for new exhibits that are being developed in consultation with the 'Imiloa Center.. Temporary educational exhibits occupy the space while exhibit development continues. CMS has developed and installed new educational signage at the VIS covering Maunakea's cultural history, natural resources, astronomy, and the administrative rules. These exhibits are intended to help educate and foster visitor awareness about Maunakea's cultural heritage, natural environment, and astronomical inquiry while informing the public about safety and permitted activities.