PROJECT NARRATIVE

TECHNICAL PROPOSAL

TITLE PAGE

Project Title: Mauna Kea Watershed Alliance Strategic Landscape-Scale Planning

Name and Address of Applicant:

Big Island Resource Conservation and Development Council (fiscal agent)

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Hilo, HI 96720

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EXECUTIVE SUMMARY

Date: December 2, 2023

Applicant: Mauna Kea Watershed Alliance (Alliance), project of fiscal agent Big Island Resource Conservation and Development Council (BIRCDC)

City: Hilo

County: Hawai‘i County

State: Hawai‘i

Project Summary:

The Mauna Kea Watershed Alliance (Alliance), with the Big Island Resource Conservation and Development Council as its fiscal agent, will (1) update the Mauna Kea Watershed Management Plan 2010, (2) create a five-year Action Plan with the full input of the watershed partners, and (3) create a Wildfire Protection and Post-Fire Response Plan for all Alliance lands, over 416,000 acres. The Alliance is a collaborative of State of Hawai‘i, Federal, and Private watershed partners, including land trusts, nonprofits, and ranches, whose interests span the upper elevations of Mauna Kea. These watersheds provide valuable ecosystem services for Hawai‘i County ranging from cultural benefits to water capture, aquifer recharge, and maintenance of water quality. Invasive species, Rapid ‘Ōhi‘a Death, habitat fragmentation, and wildfire are major threats to these resources. This project will advance the larger vision of the Alliance to strategically plan at landscape scales for on-the-ground actions for the next decade and beyond to combat threats and address changing conditions to protect and enhance the watersheds of Mauna Kea.

Length of Time and Estimated Completion Date (month/year): 3 years; 12/2027 (dependent on date of award)

Federal Involvement: The project will potentially involve the Hakalau Forest National Wildlife Refuge as a partner of the Alliance, as well as the Pohakuloa Training Area (PTA) should the Alliance’s efforts result in PTA signing the Memorandum of Understanding. The U.S. Forest Service-Institute of Pacific Islands Forestry, Alliance partner, has a research and education overlay at Laupāhoehoe Forest as part of the Hawai‘i Experimental Tropical Forest (HETF); they do not own the land there.

Project Location

The project location for the Mauna Kea Watershed Alliance (Alliance), within the State of Hawai‘i, County of Hawai‘i, is bounded by the towns of Hilo, Waimea, and Waiki’i Ranch and begins approximately five miles west of the town of Hilo, USGS HUC 20010000. There are 22 distinct watersheds in the project area: 0401, 0402, 0403, 0404, 0405, 0301, 0302, 0303, 0304, 0305, 0201, 0202, 0203, 0204, 0205, 0206, 1401, 1402, 1403, 1404, 1407, 1303.

Mauna Kea or Mauna a Wākea (Mountain of Wākea), the tallest mountain in the State of Hawai‘i, is rich in cultural, biological, economic, and watershed resources, and acknowledged as the birthplace of humans in The Kumulipo, the Hawaiian Creation Chant. Mauna Kea holds deep cultural significance to Hawai‘i’s people, standing as a focal point of Native Hawaiian culture and spirituality (Kumu Pono Associates LLC 2006). Its forests are birthplaces of legends, yet due to land modifications and alien introductions that are representative of Hawai‘i’s history and evolving economy, they are now home to rare and increasingly threatened native species and ecosystems (Mauna Kea Watershed Management Plan 2010, MKW MP). Today, Mauna Kea is the primary water source for the Big Island, and the mountain slopes are the food and fiber basket of Hawai‘i Island, making it essential to the island’s water, food, and fiber security.

The perpetuation of this area’s richness depends on its users, owners, and managers serving as stewards to protect its unique resources for current and future generations, hence the establishment of the Alliance. As one of Hawai‘i’s ten watershed partnerships, the Alliance is part of the Hawai‘i Association of Watershed Partnerships, represented in Figure 1 below. The Alliance boundary encompasses over 500,000 acres on Mauna Kea and abuts the Three Mountain Alliance to the south and the Kohala Mountain Watershed Partnership to the north. The location for this particular project is on the Island of Hawai‘i, this map shows current partnership lands (Figure 2).

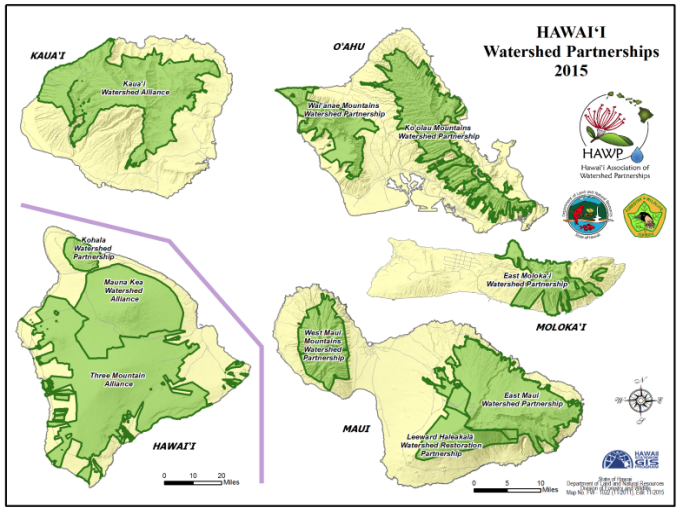

Figure 1: The ten watershed partnerships make up the Hawai‘i Association of Watershed Partnerships and represent ~2.2 million acres of partner lands.

Applicant Category

The Alliance is applying as an Existing Watershed Group given extensive history as a partnership of diverse stakeholders sharing a vision to protect and enhance Mauna Kea’s watershed ecosystems, biodiversity and resources through responsible management while promoting economic sustainability and providing recreational, subsistence, educational and research opportunities.

The Hawai‘i watershed partnership model launched on Maui. In 1991, public and private landowners organized the East Maui Watershed Partnership, Hawai‘i’s first watershed

partnership, to address shared management concerns about East Maui forests that supply most of the island's fresh water. The West Maui Mountains Watershed Partnership was next established in 1998, and in 2000, the State Legislature boosted the growing movement through year-to-year state funds for "projects undertaken in accordance with watershed management plans negotiated with private landowners". Nine watershed partnerships/ alliances formed on six islands, covering more than 1.6 million acres of land in the State and involving more than 45 private landowners and 24 public agencies.

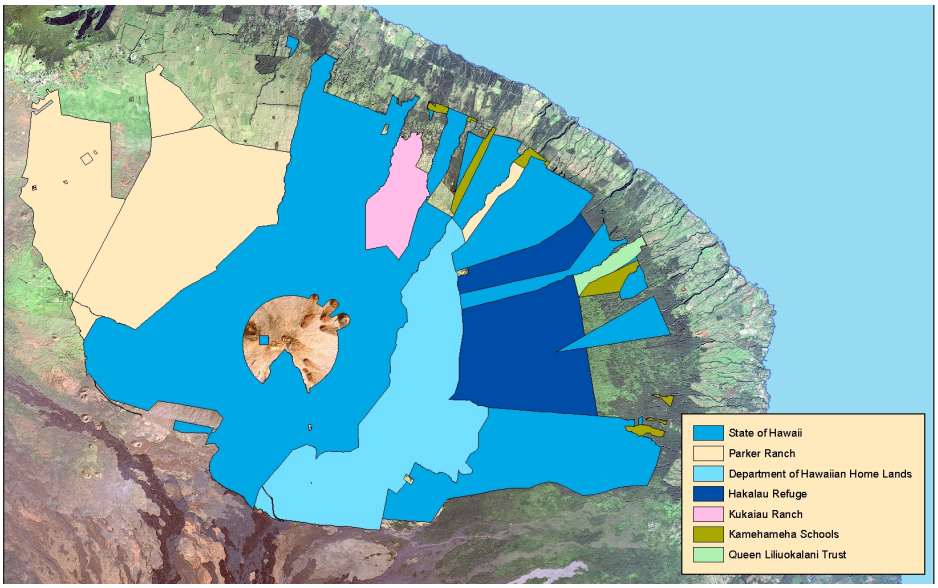

Figure 2: Alliance partnership lands represent over ~416,000 acres.

In 2008, the State Department of Land and Natural Resources (DLNR), a partner in most other watershed partnerships, began contemplating a watershed alliance for Mauna Kea on Hawai'i Island. A Mauna Kea Watershed Partnership Scoping Study assessed the feasibility of forming a Mauna Kea Watershed Alliance (Alliance). The study identified key threats to these important resources, including invasive species, feral ungulates, wildfire, aquatic pollutants, and human activities, and recommended establishing a watershed alliance for Mauna Kea, focusing on large landowners (> 1,000 acres) above 2,000-ft. elevation. A Memorandum of Understanding (MOU) was drafted for the Alliance and signed in 2010 by seven founding watershed partners, including five landowning partners—DLNR and the Department of Hawaiian Home Lands aka DHHL (state agencies), the Hakalau Forest National Wildlife Refuge (a federal entity), and Kūka'iau Ranch and Kamehameha Schools (private landowners)—and two non-landowning, affiliate partners, The Nature Conservancy and the U.S. Department of the Interior Pacific Islands Fish and Wildlife Office. Since the watershed coordinator was hired in 2011, three new partners have joined the Alliance: landowning partners Queen Lili'uokalani Trust and Parker Ranch and affiliate partner U.S. Forest Service-Institute of Pacific Islands Forestry. With the establishment of the Alliance, there are now ten watershed partnerships composed of 74 private and public partners representing over 2.2 million acres in Hawai'i (MKW MP 2010).

Alliance current planning documents - The Alliance is operating under the Mauna Kea Watershed Management Plan 2010 and Mauna Kea Watershed Alliance Five-Year Action Plan

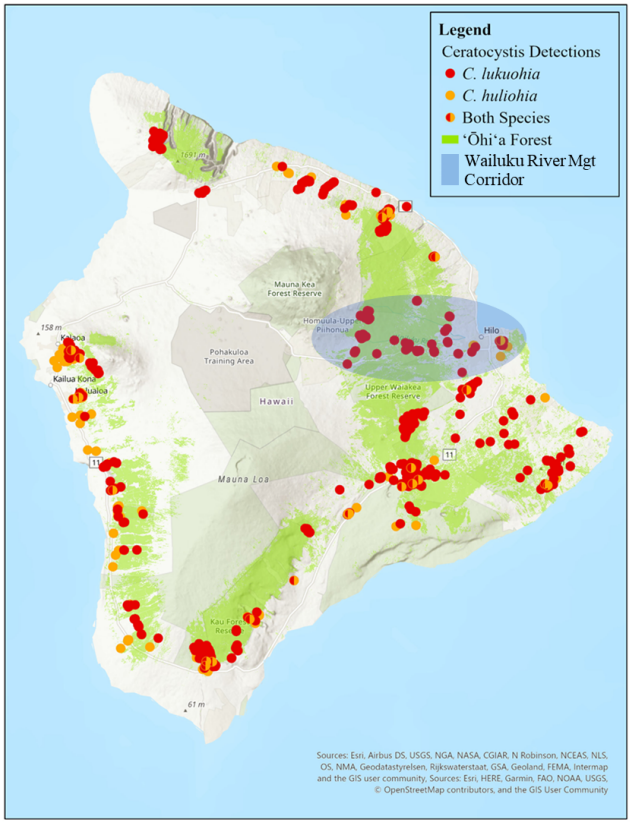

Figure 3: Rapid 'Ōhi'a Death infections on Hawai'i Island; those on the eastern slope of Mauna Kea stretch down Wailuku River to Hilo.

Figure 4: July 2021 Mana Road wildfire, Mauna Kea northwestern slope; consumed homes and was stopped by a fuelbreak but nearly burned Palila Critical Habitat in Mauna Kea Forest Reserve (https://tinyurl.com/285hb2nn).

2012-2017. It has no cohesive Wildfire Protection and Post-Fire Response Plan. Many changes have occurred since the Watershed Management Plan was finalized over 12 years ago:

1. Three new partners signed the MOU, bringing more lands under Alliance management and adding additional representatives to the governing body.
2. Kūka'iau Ranch, a founding partner, was purchased by Frank Vandersloot in 2021.
3. A new tree disease, Rapid 'Ōhi'a Death (ROD), identified in 2014, has killed more than 180,000 acres of native 'ōhi'a forest – the most important native watershed tree, composing 80% of native forests and regarded as the mother tree of native Hawaiian forests (Figure 3, https://tinyurl.com/e9csavde).
4. Wildfires have become more prevalent and have caused major ecological and economic impacts to our partnership. The largest wildfire on record, the Mana Road Fire (Figure 4), burned over 40,000 acres on Parker Ranch in July 2021, consuming two homes on Hawaiian Home Lands and forcing evacuation of thousands of residents (*West Hawaii Today*, August 6, 2021). The wildfire was contained just outside of the Palila Critical Habitat Area (Figure 5). Palila (*Loxioides bailleui*) is a critically endangered and culturally significant bird with only ~ 1,000 individuals left (Figure 6).

For these reasons, in this critical moment, the Alliance seeks to conduct strategic landscape-scale planning across partner lands that include updating the outdated Watershed Management Plan, engaging the Alliance partners in the strategic landscape-scale

Figure 5: Picture of Mana Road wildfire impacts a couple weeks after containment; the road acted as defensible space; note recent bulldozed fuelbreak to the right of the electric poles (photo courtesy C. Perry).

Figure 6: Palila eating the green fruit of its primary food source and habitat, the mamane (Sophora chrysophylla) tree, which provide over 90% of its diet (photo courtesy J. Jeffrey).

planning process to create a Five-Year Action Plan, and creating a partnership-wide Wildfire Protection and Post-Fire Response Plan.

The Alliance currently has three primary watershed management projects: the (1) Kanakaleonui Bird Corridor and (2) Waipāhoehoe Management Unit both on Hawaiian Home Lands, and (3) Watershed Partners Management Assistance (Figure 7). Each project involves management on hundreds to thousands of acres of land and was selected by the Alliance for its strategic value and positive watershed health impacts to multiple partners.

The 525-acre Kanakaleonui Bird Corridor (KBC) is a forested corridor that increases native forest connectivity to enable native birds to travel from lower to higher native forests. Native bird movement is otherwise capped at 6,000 feet by former pastured lands that lack forest cover and prevent movement to upper elevation forests. The KBC acts as a bridge to those upper elevation forests at 8,000 feet and above, which are essential to the vigor of native forest bird populations, especially with the mosquito line moving upwards due to climate warming. Mosquitoes proliferate in warmer, lower elevation forests and carry avian diseases, the primary reason for declining native Hawaiian bird populations. Being the highest mountain in Hawai‘i, Mauna Kea provides the best opportunity for saving threatened and endangered forest birds (American Forests 2021). Reforestation in the KBC provides a continuous link of native forest between the subalpine woodlands of the Mauna Kea State Forest Reserve and the mid-elevation mesic forests of the Hakalau Forest National Wildlife Refuge and the Piha Forest Reserve.

The 1,100- acre Waipāhoehoe Management Unit (WMU) is located on the eastern flank of Mauna Kea, 5,200 - 5,800 foot elevation, composed of mesic old growth ‘ōhi‘a-koa forest. The management unit was identified for its conservation value, and plans outline protection measures for the area. The WMU is the first of several management units planned for the

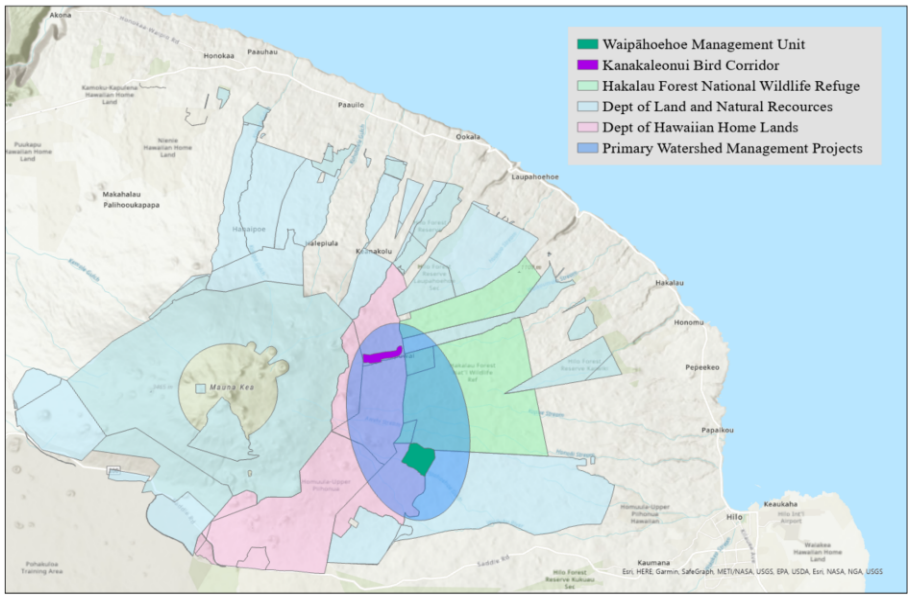

Figure 7: The current Mauna Kea Watershed Alliance Project Areas.

upper Pi'ihonua *ahupua'a* (land division) that will provide a forested corridor between the lower mesic forests and the upper-forested regions of Mauna Kea. These priority management units will eventually provide protection for native flora and fauna across a total of 5,907 acres on Hawaiian Home Lands.

Watershed Partnership Management Assistance currently includes fence installation and maintenance and ecological restoration with DHHL, DLNR Division of Forestry and Wildlife (DOFAW) and Hakalau Forest National Wildlife Refuge. In the spirit of cooperation, project partners provide materials, supplies, and other resources while the Alliance field team provides the manpower and operational support. There is a famous Hawaiian proverb: ***"'A'OHE HANA NUI KE ALU 'IA" – No task is too big when done together by all.***

Eligibility of Applicant

As noted above, the Alliance is a project of the Hawai'i-based Big Island Resource Conservation and Development Council (BIRCDC) - a registered and incorporated 501(c)(3) nonprofit entity, operating within Hawai'i since 1975. The BIRCDC will act as fiscal agent on this grant given its extensive experience with federal grants. The BIRCDC is made up of an executive committee, directors from soil and water conservation districts throughout the Island of Hawai'i, a mayor's representative, a program manager, and at-large community representatives. BIRCDC's mission is to assist the people of the Big Island in achieving sustainable development while caring for and appreciating their natural environment and to ensure broadened economic opportunities, enriched communities, and better lives. BIRCDC's vision is to conserve, enhance, and promote the economic, cultural, and natural environment of Hawai'i.

As an organization, BIRCDC strives to identify a concern, organize a group, event, or program that will address the concern, develop a plan of action, all while simultaneously seeking a funding source. This framework produces better program infrastructure, along with partnerships with community members and other organizations that might not have the

resources to address a project on their own. The Alliance is one of more than 20 programs that BIRCDC has partnered with over the past several years, providing fiscal agency since 2013. Additional partnership terms can be found in the attached BIRCDC/Alliance agreement.

Project Description

The Alliance amplifies partner resources to maintain and expand healthy watershed areas to sustain the future quality and quantity of Mauna Kea's water supply and, in turn, benefit Hawai'i's other valuable natural resources. In its pursuit of its first WaterSMART grant that will provide the foundation for future work, the Alliance seeks to implement watershed restoration planning activities under Task B, including the following:

1. Updating an existing restoration plan and creating a watershed restoration plan -The Watershed Management Plan 2010 is in dire need of an update to reflect current conditions and set a foundation for strategic planning by the partners. Similarly, the Five-Year Action Plan, 2012-2017, which remains in draft form, requires an update to lay out the actual work needed to implement the management plan and needs of the partnership. A new plan to address wildfire protection and response is needed to address omnipresent and increasing wildfire threats. Thus, deliverables include an **updated Management Plan (expected to hold for 10-15 years), an updated five-year Action Plan, and a Wildfire Protection and Post-Fire Response Plan for the entire Alliance**. The latter plan would be built on the U.S. Forest Service Burned Area Emergency Response (BAER) elements and address mitigation of risks to (i) Human Life and Safety, (ii) Property, (iii) Natural Resources, and (iv) Cultural and Heritage Resources. (https://tinyurl.com/54z9yawd).
2. Performing an analysis of the watershed to identify and prioritize watershed management projects - This analysis is central to the planning process and involve the identification of new project areas, prioritized in order of importance, to focus limited resources. It will integrate new research, such as the Hakalau Region Climate-Informed Technical Resource Document 2021, recent research conducted on partnership lands, and other new technologies such as the Watershed Decision Support Tool created by the U.S. Forest Service. Projects implemented in the last ten years were guided by priorities identified in the Five-Year Action Plan 2012-2017, and these project areas were prioritized by the Alliance through an internal planning process and consultation with the Mauna Kea Watershed Management Plan 2010. This analysis includes a five-year action planning process will bring our partners together today in an organized fashion to identify and prioritize watershed management on Mauna Kea for at least the next decade.
3. Conducting monitoring activities (in-kind matching contribution) - The Alliance field team currently conducts annual weed, ungulate, and bird surveys - taking a total of four weeks out of the year under current workloads - to monitor for presence and absence of species and map populations across the management area. Surveys are conducted using partnership protocols to enable evaluation and comparison of data sets over time and allow data sharing across the Alliance. The findings inform planning processes and future

management decisions. These monitoring activities provided by the State of Hawai‘i can be used as match when conducted in new partnership areas like Parker Ranch.

4. Conducting mapping and other technical analyses (leveraged funds) - The U.S. Forest Service ROD team conducts work at WMU that can be used as leverage, and the information shared can augment the proposed planning process. The ROD team has already conducted mapping at WMU and has launched a StoryMap of the impacts of ROD in fenced areas across the Island of Hawai‘i, which include the WMU, versus unfenced areas (https://storymaps.arcgis.com/stories/7f7a2bfd3ed142218998a7326f6006be). Findings indicate a higher prevalence of ROD in unfenced areas, with the hypothesis being that feral ungulate damage on ‘ōhia trees increases susceptibility to ROD infection. The research conclusions will assist the DHHL and other partners in understanding and responding to the ROD outbreak on their lands, including potential future plans for fence construction and feral ungulate control.
5. Obtaining project management services or software technology required to formulate the watershed restoration plan - Grant funding will allow the Alliance to contract third party entities to assist in updating the Mauna Kea Watershed Management Plan 2010; work with Alliance partners and invite stakeholders, potential partners and experts to create a Five-Year Action Plan; and create a Wildfire Protection and Post-Fire Response Plan. Project management services or software technology will be included in the procurement process.
6. Reaching out to and interviewing watershed partners and stakeholders to understand which projects would improve the watershed - These activities will be core to the planning process, particularly for areas in which the Alliance has not fully engaged, such as those in the northern and western areas of partnership lands (i.e. Parker Ranch, U.S Forest Service, Kamehameha Schools, etc.). The Alliance would utilize internal and contracted staff to update plans, manage the strategic landscape-scale planning process via a watershed partnership retreat to identify and prioritize watershed management projects with the assistance of an experienced facilitator. Staff will work with contractors and all watershed partners to create a partnership-wide Wildfire Protection and Post-Fire Response Plan.
7. Working with Alliance members including landowners and government entities to understand how to improve the watershed - This work is core to the planning process, including advancing outreach to the Hawai‘i County Department of Water Supply as well as PTA and Umikoa Ranch that has had success growing *Acacia koa* trees while grazing domestic cattle. There will also be outreach to our signed partner under new ownership, the Kūka‘iau Ranch. These organizations have experience in water wells in addition to distribution, local weather and climate trends (ranches have extensive weather records), and wildfire history.
8. Reviewing best management practices established by government agencies at all levels - It is essential to the overall planning process to review and integrate best management practices implemented by the state, federal, and private watershed partners. Partners have diverse expertise in wildfire, bird surveys and conservation, and ecological restoration that

will lend to robust and comprehensive planning documents. For instance, the DLNR-DOFAW are experts at wildfire fighting and U.S. Forest Service is the leader for research on ROD.

Watershed Group Diversity and Geographic Scope - The Alliance, an Existing Watershed Group, represents a diversity of interests including (a) government agencies from the state and federal levels; (b) private landowners that also represent various sectors: education (Kamehameha Schools), agriculture (Parker and Kūkaʻiau Ranches), caring for Native Hawaiian children (Queen Liliʻuokalani Trust), and the environment and natural resources (State of Hawaiʻi, Hakalau Refuge, The Nature Conservancy, U.S. Forest Service Research and Education, U.S. Fish and Wildlife Service); and (c) disadvantaged and indigenous communities including those under the DHHL. The project location for the Alliance is a medium sub-basin sized watershed encompassing the USGS HUC 20010000.

Watershed Group Diversity Points - The Alliance benefits from having a wide diversity of partners representing the range of stakeholders in its geographic coverage area, including those within the agricultural, municipal, environmental, and indigenous stakeholder groups. Several have provided letters of support for this application (see attached).

Prior to the existence of the Alliance, partners would not have a regular opportunity to interact with each other to intensively think about source waters in the area or the impacts of water issues (e.g., over sedimentation of Hilo Bay) on area residents. One of the primary roles of the Alliance is coordination and facilitation - providing spaces and processes for the different organizations and entities to come together at a minimum of four times a year. Meetings are structured in a roundtable format that allows partners to share projects and resources, bringing out synergies between entities and allowing better management of the entire watershed area. Support is reciprocal. For example, the DOFAW staff has assisted the Alliance field team with annual bird surveys while we have provided seed to increase genetic diversity for rare plants for the DOFAW. Cooperation is prevalent in our partnership, lending to a diversified watershed partnership currently covering over 80% of potential partnership lands.

Additional potential stakeholders - The Alliance intends to reconnect with the U.S. Army Pohakuloa Training Area (PTA), Kūkaʻiau Ranch and Hawaiʻi County Department of Water Supply (DWS), and connect with Umikoa Ranch. The PTA is currently not a signed partner, but they regularly attend our quarterly watershed partnership meetings. The Alliance staff will work directly with the PTA to determine if they are interested in signing as a partner. We will include the DWS for their water expertise and current partner Kūkaʻiau Ranch for their cattle expertise, interest in wildfire protection planning, in our strategic planning process. Umikoa Ranch has also attended recent meetings and is currently engaging with other watershed partners like DHHL. Should there be interest in joining the Alliance from non-partners, they will be invited to future meetings and if appropriate and agreed upon, asked to join the Alliance.

The Alliance will also reach out to the wider local community through our environmental education programs. Currently the Alliance engages the wider local communities through

environmental education programs such as teacher workshops and participation in community outreach days, hosting service learning trips including roughly eight native tree plantings a year with 10-15 participants, and conducting about another eight *huakaʻi* (journey, field trip) to Mauna Kea to educate about the places/native forests/water, and other similar efforts. Overall, the Alliance contributes to environmental literacy providing services for about 200 diverse community members from hula halau to the rotary club per year, through deeper experiences with Mauna Kea that foster understanding about the watershed's challenges, including place-based and cultural connections to the landscape.

The Alliance membership structure - The Alliance (autonomous from BIRCDC) has established operating guidelines, and decisions are made by the Executive Committee (EC) and the ten partners that have signed the Memorandum of Understanding (MOU). Partners make decisions based on consensus (MKWA Operating Guidelines 2013). EC members are chosen through a rotating two year service cycle and are invited dependent on current and future projects by the standing EC and voted into the Alliance via consensus of the partnership. The EC also includes the Coordinator Supervisor that acts as the contact with fiscal agents and provides oversight for Alliance operations, projects, and programs. The Coordinator Supervisor term is a flexible position and more long-term 4-6 years to provide consistent leadership to the Coordinator and an organized and sustainable approach to conducting field operations. Daily decisions about watershed management are made by the Alliance field team consisting of the Coordinator and Team Leaders. Watershed Partnerships in Hawaiʻi have a reputation for putting most of the resources received directly into the on-the-ground work, conducting watershed management operations as needed, and the Alliance is no exception.

Geographic Scope - The Alliance represents an 8–digit USGS HUC 20010000. Total Alliance acreage is more than 416,000 acres (Figure 2) and encompasses nearly the full geographic extent of Mauna Kea, with the current exception of the PTA.

The PTA is the last large landowner on Mauna Kea that has not signed the Alliance MOU, although involved in the original drafting of the MOU. PTA lands lie to the south of current partner lands and in recent years, we have discussed increased partnership with PTA to leverage federal funding for watershed management work that benefits the Alliance partner's community. For example, the Readiness Environmental Protection Integration program has funded the DHHL to install a fenced unit to protect māmane forests from herds of feral sheep, and such activities can be complemented by this grant.

The Alliance will also reach out to Umikoa Ranch as they are the leader in understanding silvopasture on the island. They have managed stands of *Acacia koa* that are more than 20 years old while grazing cattle in the same space. This information would aid in the strategic reforestation of partner lands using native trees while reducing grass fuel loads on the DHHL, Parker Ranch, and Kūkaʻiau Ranch. When done together, the result will be a buffering effect at landscape scales that are much needed in this warming and unpredictable climate, reducing wildfire risk in some areas while catching mist and retaining moisture on the landscape, and

providing habitat for native flora and fauna. *Acacia koa* is also the most economically valuable native hardwood tree, a long term investment with economic benefits realized after decades but with nearly immediate ecological benefits - an attractive incentive for private partners.

The Alliance will reconnect with Kūkaʻiau Ranch in our planning meetings as they are a signed partner. The planning process provides the perfect venue for them to participate in the planning and decision making process for Mauna Kea management, building stronger relationships with other partners in the region.

These relationships on Mauna Kea between partners – established, new, and potential – are critical for future planning and management actions. The planning process will consolidate current conditions and information, providing the foundation for watershed management across hundreds of thousands of acres and a unified approach to quickly changing conditions and environments, supporting thoughtful strategic management actions.

Projects demonstrating the extent of geographic coverage - Over years of collaboration, the partnership has worked together to secure water capture and storage and overall watershed health across the extent of its geographic coverage area and land ownership boundaries, as depicted in the map above (Figure 2). The Alliance conducts watershed management projects in strategic locations primarily on the eastern slope of Mauna Kea (Figure 7).

The Alliance is the youngest watershed partnership in Hawaiʻi and on-the-ground watershed management includes (1) remote areas fence installation/inspection/maintenance, (2) feral ungulate/weed control, (3) ecological restoration, (4) surveys/monitoring/data management, (5) workforce development, and (6) outreach/environmental education. Activities are conducted in areas such as the fenced 525-acre KBC, where main threats are wildfire and avian disease that we address by planting native trees. In the fenced 1,100-acre WMU, main threats include feral ungulates that damage ʻōhiʻa forests and make them susceptible to ROD. The Alliance addresses these issues by installing fenced management units, removing feral ungulates and controlling weeds, and conducting surveys to monitor effects of management actions. This area is also the headwaters of the Wailuku River, the largest river in the State of Hawaiʻi. With the ʻōhiʻa forests dying, Hilo Bay and the coastal town of Hilo are vulnerable to increased sedimentation and coastal impacts.

Watershed Partnership Management Assistance projects include natural areas fence installation and ecological restoration with multiple partners on the eastern slope of Mauna Kea. The MKWA team is skilled in watershed management and able to fill management gaps as needed for partners. In addition, we make efforts to employ local residents investing in our local community through different avenues including internships, Americorps, and temporary positions, and we have a strong environmental education program working with up to four different schools per year to facilitate place-based outdoor experiences for K-12.

We work directly with ~30% of our partnership members on this project. Our goal is to expand Alliance management and assistance to other partnership lands to the north and west

(primarily ranchlands, two private partners, and the U.S. Forest Service), at least doubling our watershed management interaction with partners in the next five years.

Efforts to target a wider stakeholder group - The proposed work includes updating the Mauna Kea Watershed Management Plan 2010, conducting a strategic landscape-scale planning process with the watershed partnership to create a five-year action plan, and the creation of a wildfire protection and post-fire response plan.

The Alliance will update the Management Plan 2010 by conducting interviews with current and potential partners as part of the revision and update process. This includes furthering discussions with potential partners including the PTA, DWS, and Umikoa Ranch, and reconnecting with Kūkaʻiau Ranch. The revised Management Plan will reflect current environmental and social conditions, very different from a decade ago, and provide the foundation of information that will guide the strategic landscape-scale planning process.

For the Five-Year Action Plan, the Alliance will organize and manage the strategic landscape-scale planning process. The Five-Year Action Plan process will be conducted through a watershed partner retreat where current partners and other selected organizations will be invited to attend and provide ideas on where the partnership will be focusing its resources for the next five years. The goal is to identify project areas and prioritize their importance across the broader partnership landscape. The Alliance will provide a finalized Five-Year Action Plan as the primary deliverable. During this process, we will engage wildfire protection professionals with the intention of creating a cohesive wildfire protection plan.

The Alliance Wildfire Protection and Post-Fire Response Plan will consolidate all of the current Partner Wildfire Protection Plans. Currently, three of the five wildfire at-risk partners have plans. The Alliance will engage the other two partners (both ranches) to create wildfire protection plans for their lands and evaluate their capacity, and where resources can be placed to reduce wildfire risk. Finally, the Alliance will merge all the plans into a cohesive Landscape-scale Wildfire Protection and Post-fire Response Plan. The results of the strategic landscape-scale planning process and wildfire protection and post-fire response plan will be shared with other watershed partnerships in Hawaiʻi, thus broadening our successful strategic landscape-scale planning process to other watershed partnerships across Hawaiʻi for dissemination and potentially reproduction.

Selection of watershed area - The watershed area being selected was determined via the Mauna Kea Watershed Partnership Scoping Study. Through resource analysis, interviews with owners and managers, and discussions with community stakeholders, the study concluded that sufficient confluence of interest, need, and opportunity existed to merit establishment of an alliance for Mauna Kea. Mauna Kea provides the primary water source for Big Island residents and its forests are home to rare and increasingly threatened native species and ecosystems. The area encompasses numerous aquifer systems defined by the Hawaiʻi Commission on Water Resource Management. The watershed area includes 22 distinct watersheds.

Critical Watershed Needs or Issues - The MOU calls on members to focus on critical issues and needs of the entire geographic coverage area through a number of steps, including (1) identify important watershed areas that would benefit from coordinated management; (2) develop plans to document resources, identify priority management objectives/strategies; (3) meet to determine programs and projects; 4) obtain funds for projects to the extent that each member agrees; (5) develop specific agreements and plans for projects involving all or some members; (6) enter into agreements to hire personnel, use equipment, and purchase supplies; (7) employ a consensus-based approach to decision-making; and (8) allow additional members to join by amendment, by consensus of current members (MKWA MOU 2010).

By bringing public and private landowners together around shared interests, such as watershed protection, the Alliance enables landowners to work together to manage threats occurring across common land ownership boundaries, pool limited resources to achieve conservation goals, and promote collaboration to protect vital resources across large landscapes.

The current management plan describes Mauna Kea's watershed resources and associated values, identifies the threats to those resources, and directs the activities of the Alliance toward their protection. This document establishes management goals and objectives and recommends specific actions to implement these goals and objectives, to the benefit of Mauna Kea's unique watershed resources.

Watershed natural assets - On the windward side of Mauna Kea, the coastal areas can experience 100-150 inches of rain per year, while the forested band in the 2,000-5,000 ft. elevation range receives up to 300 inches annually. Rainfall on the leeward side, which is in the "rain shadow," ranges from 9 inches at the coast to nearly 50 inches, while annual rainfall in the saddle between Mauna Kea and Mauna Loa is approximately 45 inches, but can be as little as 10 inches. The Aquifer Sector Areas on Mauna Kea range from capturing 24 million gallons per day on the drier leeward (western) portion of the mountain to 388 million gallons per day on the wetter koʻolau (eastern) side (MKW MP 2010).

The abundant natural resources on Mauna Kea highlight both its uniqueness and vulnerability. Fourteen native birds still reside on Mauna Kea but 50% are threatened and endangered, thus raising the need for native bird habitat corridors. There is only one native terrestrial mammal, the Hawaiian hoary bat, that is also endangered. Fifteen native invertebrates of special concern can be found, including *Hylaeus* spp. (native yellow face bee), and two species of native snails. The area is also home to five species of native stream fish, in the Hawaiian language called *oʻopu* that is Hawaiʻi's only native

Figure 8: Oʻopu climb the slippery vertical surface of a waterfall migrating to their ponds of birth (https://tinyurl.com/4ax5njcc).

freshwater fish. Native stream shellfish consist of two crustaceans and several mollusks, all of which are endemic. These species are adapted to life in fast flowing streams, and the distribution of the fish species along the streams is believed to be affected by their climbing ability, with some native gobies climbing sheer waterfalls up to a 100 meters in height (Figure 8). Mauna Kea provides habitat for nine native insect species including native damselflies and dragonflies, and twenty-two threatened and endangered plants including the Mauna Kea Silversword, saved from just ~50 wildlings found in the uplands of the Wailuku River to now hundreds of outplanted Mauna Kea Silverswords, the product of timely planning and implementation.

Watershed ranching history - Ranches are also an important part of our Alliance, contributing to 25% of partner lands and supporting important agricultural practices in Hawai'i. Parker Ranch was founded in 1847 and is one of the oldest ranches in the United States, pre-dating many mainland ranches in Texas and other southwestern states by more than 30 years. Spread across a total of approximately 130,000 acres of the island, Parker Ranch is among the nation's largest cattle ranches (https://tinyurl.com/244pp2p4). In fact, annual beef production of Parker Ranch's cow-calf operation totals more than 10 million pounds (https://tinyurl.com/2xafmheu). Ranch lifestyles (cowboys are called *paniolo* in Hawaiian from Spanish español) are deeply ingrained in Hawai'i. In 1887, Charles Notley established Kūka'iau Ranch on the lands above the "sugar belt" which was then sold to John Horner. The Horner family was the first to bring Hereford and Holstein cattle to Hawai'i. Kūka'iau remains one of the islands' oldest working ranches and is still an important part of the community that it serves (Multi-Resource Management Plan - Kuka'iau Ranch 2010).

Watershed Threats - The needs of the watershed areas are numerous with general threats listed below; however, the critical issues that require immediate attention are invasive species most notably feral ungulates, ROD, habitat fragmentation/native birds, and wildfire.

Figure 9: The impacts of feral pigs in native forests and native forest recovery to the left following removal (Anderson et al. 2007).

Invasive Species/Feral Ungulates - Given the abundance of assets, the threats to our resources are nearly as numerous, including dozens of invasive plant species like the wildfire cycle perpetuating fountain grass, introduced to Hawai'i as an ornamental before 1914 (https://tinyurl.com/bdhnx8us). Another invasive plant species, strawberry guava, is found at lower elevations on the eastern slope of Mauna Kea and shade tolerant, growing in monotypic stands, slowly replacing native forests and moved throughout the forests by feral pigs through their digestive tract. The natural resources of

Mauna Kea have been negatively affected by more than 200 years of feral ungulate impacts from cattle, sheep, goats, and pigs. Ungulates contribute to forest cover loss and changing forest composition that adversely affects stream quality, native species' habitat, groundwater retention, and native plant and invertebrate species (Figure 9, MKW MP 2010).

Other threats include non-native predators that eat native birds and eggs, seeds of native trees and shrubs. Non-native invertebrates like yellowjackets and ants, invasive amphibians, and pathogens also compete for resources and displace native species.

More than 50 species of alien aquatic species are established in Hawai'i's streams. Exotic fish, mollusks, crustaceans, invertebrates, and amphibians compete with the native stream fauna for food and habitat, introduce parasites, and feed on native species. Invasive aquatic species can also cause economic impacts to agricultural users of water, resulting in crop damage, infrastructure damage, or contamination.

Figure 10: ROD trees on Hawai'i island. Browning leaves are the first visible indication; confirmation is done via lab analysis of a wood sample (R. Perroy/UH Hilo SDAV Lab).

ROD - Rapid 'Ōhi'a Death (ROD) is a newly identified fungal disease currently attacking and killing 'ōhi'a mostly on Hawai'i Island. This fungus clogs the tree's vascular system, depriving the canopy of water, and may kill 'ōhi'a very quickly (https://tinyurl.com/msv4pubh). With an estimated 350 million ōhi'a trees (*Metrosideros polymorpha*) growing across more than 800,000 acres statewide, the native Hawaiian forest is essentially and fundamentally an 'ōhi'a forest. 'Ōhi'a can be found in a wide variety of ecosystems, from sea-level lava field deserts to high-elevation bogs. On Hawai'i Island approximately 180,000 acres of 'ōhi'a forest have some level of ROD (ROD Strategic Response Plan 2020-2024, also see aerial image in Figure 10). New findings reveal the spread of the fungal disease killing off hundreds of thousands of mature 'ōhi'a trees on Hawai'i Island could be exacerbated by the presence of feral ungulates. A published collaborative study closely examined the link between the disease known as ROD and ungulates such as feral pigs. The researchers discovered the number of suspected ROD trees in unfenced areas were significantly higher (more than 50 times greater for one location) than those found in fenced areas that prevent hoofed animal access (https://tinyurl.com/378d24rv).

Habitat Fragmentation/Native Birds - Habitat Fragmentation happens when parts of a habitat are destroyed, leaving behind smaller unconnected areas. This can occur naturally, as a result of fire or volcanic eruptions, but is normally due to human activity (https://tinyurl.com/59y86xv4). On Mauna Kea, the entire forested section on the east slope between 6-8,000 feet elevation and lands to the north were largely converted from native Hawaiian forests to pasturelands.

Hawai'i's native forest birds evolved in isolation over millions of years, leading to one of the most spectacular examples of adaptive radiation the ornithological world has ever seen. Hawai'i's native birds evolved in the absence of many of the threats that are now present on the islands. The evolutionary processes that shaped Hawai'i's avifauna left it extremely vulnerable to disease. With no evolutionarily acquired defenses, two diseases, Avian Malaria and Avian Pox, have spread and are implicated in the extinctions, range contractions and declines of many native Hawaiian forest birds. Most thriving native forest bird populations have existed where mosquitoes do not, at high elevations. This is because mosquitoes cannot survive the cool climate at these high elevations and the parasite (Avian Malaria) cannot develop in its vector. Although a large amount of suitable habitat still exists below the "mosquito line" it has been rendered almost completely uninhabitable to native birds. With the looming threat of climate change and projected temperature increases, the mosquito line is moving to higher elevations, further constricting the already limited range of native forest birds (https://tinyurl.com/ms5wy7tm).

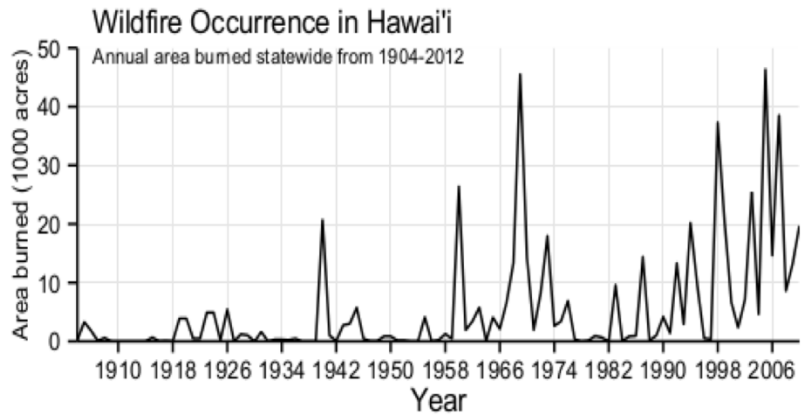

Figure 11: Area burned annually in Hawai'i is increasing.

Wildfire - The average area burned per year in Hawai'i has increased 400% over the past century (Figure 11). Over the past decade, an average of >1,000 wildfires burned >17,000 acres each year in Hawai'i, with the percentage of total land area burned comparable to and often exceeding figures for the fire-prone western U.S. Humans have caused much of the increase in wildfire threat by increasing the abundance of ignitions and introducing non-native, fire-prone grasses and shrubs. Non-native grasslands and shrublands now cover nearly a quarter of Hawai'i's total land area and, with a warming, drying climate and year round fire season, greatly increase the incidence of larger fires, especially in leeward areas. Planning would identify areas for vegetation/fuels management as well as other wildfire mitigation actions like identifying areas for water tanks and fuel breaks on partner lands, reducing wildfire risk.

Fires cause the removal of vegetation cover and exposure of bare soil. This combination makes burned areas susceptible to high erosion levels, which impacts stream and nearshore water quality. Fire also destroys native plants and habitats and allows habitat-modifying weed species to take hold. Prevention activities to reduce ignitions, mitigation activities to reduce fire spread and extreme fire behavior, and fire suppression capacity have not been supported to keep up (https://tinyurl.com/mrt68cze).

The below critical issues are considered severe and require immediate attention and focused action. These issues also have a compounding effect, each amplified by the other unless the cycle is broken. Issues include feral ungulates and their relation to ROD, wildfire and invasive species fuel loading, and effects of a fragmented landscape where non-native grasses abound and native forests are decreasing, increased wildfire events that impact coastal resources.

Critical Issue 1 - Invasive Species/Feral Ungulates - Ungulates impede the progress of conservation and restoration of native Hawaiian ecosystems, and removal, in conjunction with other management actions (i.e. fencing, etc.), is necessary to ensure the success of ecosystem restoration and preservation of native Hawaiian ecosystems. Fenced management units like KBC and WMU combined with feral ungulate removal provide the best opportunities to protect and restore native forests on Mauna Kea. The strategic landscape-scale planning process will identify and prioritize these areas across the broader partnership lands. Feral ungulate presence on the landscape further compounds critical issue 2, the spread of ROD.

Critical Issue 2 - Rapid ʻŌhiʻa Death (ROD) - ROD has been positively identified on Hawaiian Home Lands, near and in WMU affecting more than 70% of the ʻōhiʻa forests there. A sense of urgency prevails as destructive pathogens like ROD have not been observed in Hawaiʻi until recently but have caused extensive forest dieback on the Island of Hawaiʻi with detrimental consequences for watershed health. With ʻōhiʻa being a keystone species, the destruction of ʻōhiʻa forests by ROD results in a drastic loss of critical ecosystem services provided by Mauna Kea watersheds. ROD infections are being observed across these headwaters of the Wailuku River where the WMU is located, so increased research and management are essential to develop management tools for controlling and reducing ROD impacts to Hawaiian watersheds (ROD Strategic Response Plan 2020).

Critical Issue 3 - Habitat Fragmentation/Native Birds - A habitat corridor is an area of habitat connecting wildlife populations separated by human activities or structures, in our case conversion to pasturelands over the past 200 years. The KBC allows an exchange of individuals between populations and helps facilitate the re-establishment of native bird populations that have been reduced due to historical events and moderate some of the worst effects of habitat fragmentation. Habitat fragmentation is an ever-increasing threat to biodiversity, and habitat corridors serve to manage its effects. Currently two habitat corridors are planned on partnership lands, KBC and the Wailuku River Bird Corridor, both on Hawaiian Home Lands.

Critical Issue 4 - Wildfire - Wildfire is a significant threat in the watershed. In the last decade, some part of the watershed has burned every couple of years on average, due to the recurring fire cycle and unmanaged non-native fuels especially with the fire prone gorse, *Ulex europaeus,* and invasive pasture grasses. There are ~5,000-acres of monotypic gorse on Hawaiian Home Lands that are another significant wildfire risk to the Wailuku River watershed. Wildfires strip the land of vegetation and render the thin soil susceptible to erosion through runoff, leading to sedimentation of streams and nearshore waters.

Hawai'i's plants evolved without frequent, naturally-occurring episodes of fire, and most native species are not as well-adapted to fire as introduced species. Healthy native forest cover reduces the risk of wildfire by reducing surface temperature fluctuations, increasing relative humidity, and reducing wind speeds. The changing composition of vegetation on Mauna Kea has contributed to an increased fire hazard. Introduced plant species are often more fire-adapted than native species, carry fire and quickly exploit suitable habitats after a fire. Fountain grass (*Pennisetum setaceum*), a highly fire-adapted species, is now found throughout much of the dry, southwestern side of Mauna Kea. These grasses provide a heavy load of fine fuel when unmanaged (Figure 12).

Figure 12: Mana Road fire - largest recorded fire in HI history. The DOFAW firefighter seeks to arrest its spread via backburning (https://tinyurl.com/y4bzjakf).

Each of these four critical issues is inexorably tied to the other. It is through the planning and implementation of a well-thought-out land management process that we break this destructive cycle.

Project Benefits - Proposed Alliance activities enabled by this grant will have direct benefit related to the critical issues identified above. The seeds of these efforts have been planted through the many changes in our partnership area over the past few years. We are also focused on working within an accelerating trend of climate warming (the forests and all that they support). A modernized and well-thought-out plan will provide direction and project priorities at this pivotal moment, shifting forest health trajectories for critical areas. A comprehensive planning process allows the Alliance to modernize its understanding and the overall integration of issues, as noted in Table 1. Such benefits will proffer to all stakeholders as the critical issues are present on all of their lands.

Table 1: **Critical Issue**	**Project Benefit**
1. Invasive Species/Feral Ungulates	Reduced sedimentation, reduced avian malaria (less breeding grounds for mosquitoes), reduced ROD, increased native plants and healthy forests, increase in native birds and habitat for native species on up to 2,000 acres
2. Rapid ʻŌhiʻa Death	Reduced ROD spread, reduced impacts to areas where ROD exists with feral ungulate removal and increased water capture and storage, improved prescriptions via research for managers to control the spread and impacts of ROD on up to 2,000 acres
3. Habitat	Increased projects connectivity for native bird habitat, opportunity

Fragmentation /Native Birds	to manage areas in the broader landscape (i.e. as fuel breaks), increased water capture and storage on up to 1,000 acres
4. Wildfire	Reduced wildfire, increased native forests, reduced sedimentation and damage to coastal resources, reduced partner and first responder costs, preparedness and postfire response to address issues post fire for at least one management unit

Readiness to Proceed - The Alliance requests funding to produce (1) an updated Management Plan (expected to hold for 10-15 years), (2) an updated five-year Action Plan, and (3) a Wildfire Protection and Post-Fire Response Plan for the entire Alliance. Table 2 notes the detailed project schedule, including tasks, subtasks, and milestones, for the three-year project.

Table 2 - Timeline	**Task**	**Subtask**	**Milestone**
YEAR 1			
Q1-Q2	Undergo and complete project design, select contractors to update the (1) MKW MP and (2) 5-year action plan.	Meet with Alliance EC to develop SOW for contractors for (1) updated Management Plan (MP) and (2) 5-year Action Plan and strategic landscape-scale planning process (AP).	Project design completed. Planning contractor secured for MP.
Q3-Q4	Work with contractor to update the MP and plan partners retreat with contracted AP facilitator.	Conduct outreach to Alliance members, other potential Alliance members, stakeholders. Develop SOW for contractors on (3) Wildfire Protection and Fire Response Plan (FRP).	Alliance outreach and education conducted. Completed MP.
Year 2			
Q1-Q2	Conduct partners retreat to complete AP with facilitator guidance, select FRP contractor, assess current partner wildfire plans.	Conduct outreach to Alliance members, other potential members, stakeholders. Conduct a retreat to complete AP with facilitator. Hire contractor for FRP.	Completed AP. Assessment current partner wildfire plans completed.
Q3-Q4	Work with contractor	Conduct outreach to Alliance	Draft FRP due.

	to create the FRP.	members, other potential members, stakeholders through regular meetings and individually as needed.	
Year 3			
Q1-Q2	Work with contractors to finalize FRP.	Conduct outreach to Alliance members, other potential members, stakeholders for final review of all plans. Seek funds for identified projects.	Complete the MP, AP, and FRP. Review by the Executive Committee.
Q3-Q4	Close out the grant.	Reconcile all remaining expenses, prepare and submit final reports.	Grant closed out, final reports filed.

Presidential and Department of the Interior Priorities - The proposed project complies with E.O. 13985: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, and the President's memorandum, Tribal Consultation and Strengthening Nation-to Nation Relationships, by including a focus on the indigenous peoples of Hawai'i, Native Hawaiians. See details below on DHHL and trust collaborations.

The project also aligns with E.O. 14008: Tackling the Climate Crisis at Home and Abroad. Alliance efforts to establish and maintain bird corridors (planting trees), combat ROD (reduce feral ungulate impacts and ROD infections), forests connectivity (facilitate landscape scale planting projects across partner boundaries), provide buffers from wildfire (managed fuel breaks), aid in hybrid models with native trees and domestic cattle on ranches (facilitate more planting and diversified portfolios including hardwoods and trees), and encouragement of partnership landowner collaboration (partnership and community provide resources needed for resilience to protect humans and natural resources) are part of a holistic approach to mitigating climate change impacts. The Alliance is planting thousands of native trees annually at KBC and facilitates planting on partner lands by contracting native plant procurement, resulting in thousands more trees per year. Partners have discussed silvopasture; in this model, native *koa* trees (nitrogen fixing native trees) are present on ranches and provide food for pasture grasses. Healthy pasture grasses aid in the health of domestic cattle, and with effective grazing management, this hybrid landscape supports native trees and domestic cattle. The partnership has expressed excitement at this possibility with potentially tens of thousands of partner lands that could benefit. The proposed planning processes for this grant will also increase resilience across Mauna Kea. The project strengthens water supply sustainability in that the planning process will increase resilience at this critical time to protect and restore forests and source waters. Plans to address ROD and feral ungulates in a cohesive manner, wildfire and post-fire

responses across multi-partnership lands, and native forests connectivity as habitat (as well as other ecosystem benefits) are all included throughout the strategic landscape-scale planning process.

Benefits to Disadvantaged, Underserved, and Tribal Communities - The State of Hawai'i DHHL, an Alliance partner, is governed by the Hawaiian Homes Commission Act of 1920, enacted by the U.S. Congress to protect and improve the lives of native Hawaiians. The act created a Hawaiian Homes Commission to administer certain public lands, called Hawaiian Home Lands, for homesteads. Native Hawaiians are defined as individuals having at least 50 percent Hawaiian blood. The State of Hawai'i incorporated the Act as a provision in the State Constitution in 1959 at statehood. Responsibility for the Commission and the Hawaiian Home Lands was transferred to the State at that time. Excepting provisions that increase benefits to lessees or relate to the Act's administration, the law can be amended only by Congress. Unfortunately, Native Hawaiians continue to struggle compared to other ethnic groups. For a holistic assessment of education and well-being for Native Hawaiians in 2021 identified areas of concern. About half of Native Hawaiian families with young *keiki* (children) do not earn a livable wage, and compared with the major ethnicities in Hawai'i, Native Hawaiians continue to have the highest rates of poverty and unemployment[1]. The primary responsibilities of DHHL are to serve its beneficiaries, which can help to reverse some of these disparities and to manage its extensive land trust. The land trust consists of more than 200,000 acres on all major islands of Hawai'i. This includes 56,000 acres covered by the Alliance and representing over 25% of trust lands. The proposed activities would help to benefit Native Hawaiians, considered on the whole a disadvantaged community. Specifically, as noted in the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool, this project would assist the disadvantaged community in Tract 15001022102 (Figure 13) including DHHL lands.

Figure 13: The area identified as disadvantaged includes Hawaiian Home Lands (MKW MP 2010).

Alliance partner Kamehameha Schools' mission is to fulfill its founder's desire to create educational opportunities in perpetuity to improve the capability and well-being of people of Hawaiian ancestry. Kamehameha Schools would benefit from the planning process, and we have conducted bird and forest surveys on their lands, mostly at around 2,000 to 4,000 feet

[1] https://www.ksbe.edu/ka_huakai/

elevation on the eastern slope of Mauna Kea. The Action Planning process would help to clarify their future management actions.

Alliance partner Lili'uokalani Trust, named after the last ruling monarch in Hawai'i, provides opportunities for Hawaiian children to realize their greatest potential: living healthy, joyful, and prosperous lives, while contributing positively to their families, communities, and the world. Their lands are similar to Kamehameha Schools and we have also conducted bird and forest surveys there; thus, it would benefit from the planning process.

Benefits to specific disadvantaged communities - The project will benefit DHHL communities near Waimea and Hilo through wildfire protection. It would reduce potential sediment impacts to coastal fisheries, which are used by Native Hawaiian and other fishermen. The Alliance provides environmental education opportunities to schools on Hawai'i Island, many of which are Hawaiian Immersion Charter Schools. Through the planning process, we can formalize those relationships to ensure long-term support of programs that include community involvement.

Federal Trust Responsibility to Native Hawaiians - Hawai'i does not have Tribes, but sections below note the Federal trust responsibility to Native Hawaiians, Hawai'i's indigenous peoples. The impacts of the project on 56,000 acres of Hawaiian Home Lands and communities near Waimea and Hilo will benefit Native Hawaiians. The project will hold significant benefits for DHHL residents by reducing sedimentation in Wailuku River and potentially Waimea area, reducing wildfire risk, and protecting/restoring native forests for cultural connection.

Hawai'i is not home to federally recognized Tribes; however, the federal government has demonstrated a similar trust responsibility to the indigenous peoples of Hawai'i, Native Hawaiians, utilizing the Constitution's definition of Indian Tribes. According to the Constitution, an Indian Tribe is a group or groups of people who organized governments that pre-date our own and exercised sovereignty over lands that are now a part of the US. Congress has enacted programs and policies to promote education, health, housing, and a variety of other federal programs that support Native Hawaiian self-determination. Thus, the project will help fulfill the federal trust responsibility to Hawai'i's native peoples, a disadvantaged community.

Project Budget

Budget Table 1. – Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. State of Hawai'i - Watershed Partnerships Program	$100,000
Non-Federal Subtotal	**$100,000**
REQUESTED RECLAMATION FUNDING	**$300,000**

Environmental and Cultural Resources Considerations - The proposed project will have no negative impact on the surrounding environment. Threatened or endangered species will be positively affected by the planning process through habitat protection and restoration and potential wildfire impacts. No surface waters fall under jurisdiction as "Waters of the United States." No water delivery system will be constructed, there will be no modifications to irrigation systems, and no buildings/structures or archaeological sites will be impacted. The Alliance expects positive effects to low income and minority populations, will not limit access, and will control noxious weeds and non-native invasive species through the planning process.

Required Permits or Approvals - Most partners have environmental assessments and approved plans, so the Alliance does not anticipate the need for specific permits or approvals for the proposed work. Should those requirements arise, the Alliance will follow required Federal, state, or county guidance and procedures to obtain such permits or approvals.

Overlap or Duplication of Effort Statement - No other such planning processes are underway or proposed through other federal or non-federal grant applications for the Alliance.

Conflict of Interest Disclosure Statement - The team sees no actual or potential conflict of interest arising as a result of the activities proposed under this grant related to Federal financial assistance agreements or procurement. Funds will not be used for Federal lobbying.

Uniform Audit Reporting Statement - The Alliance and BIRCDC were not required to submit a Single Audit report for the most recently closed fiscal year.

Big Island Resource
Conservation & Development Council

Resolution No. 23-001
December 1, 2023

RESOLUTION DETERMINING FISCAL SPONSORSHIP ELIGIBILITY AND NEW APPLICATION APPROVAL FOR MAUNA KEA WATERSHED ALLIANCE

WHEREAS Big Island Resource Conservation and Development Council is a registered and incorporated 501(c)(3) nonprofit organization in the State of Hawaii whose mission is to assist the people of the Big Island in achieving sustainable development while caring for, and appreciating their natural environment; to ensure broadened economic opportunities, enriched communities, and better lives; therefore,

BE IT RESOLVED, the Board of Directors of Big Island Resource Conservation and Development Council approve the fiscal sponsorship of Mauna Kea Watershed Alliance for the purpose of obtaining funding through the *WaterSMART Cooperative Watershed Management Program Phase I for Fiscal Year 2023* program, and hereby approve the proposal application for submission.

BE IT FURTHER RESOLVED that the persons holding the positions of President (Aileen Yeh), Vice-President (Christina Corley), or Treasurer (Leslie Takayama), are hereby authorized to execute on behalf of the Corporation any bid, proposal or contract for the sale or rental of the products of the Corporation or for services performed by the Corporation, and to execute any bond required by any such bid, proposal or contract with the United States Government, or any City or County of the State of Hawaii, or any department or subdivision within them. The above-named Board members are authorized to commit the applicant to the financial and legal obligations associated with receipt of a financial assistance award under the *WaterSMART Cooperative Watershed Management Program Phase I for Fiscal Year 2023* program and will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

BE IT FURTHER RESOLVED that this Resolution shall take effect upon the adoption thereof, in the presence of a quorum, and that the Secretary be directed to provide copies of this Resolution to all Directors and Officers of Big Island Resource Conservation and Development Council.

Aileen Yeh, President

John C. Cross, Secretary

12/01/2023
Date

JOSH GREEN, M.D.
GOVERNOR
STATE OF HAWAII
Ke Kia'āina o ka Moku'āina 'o Hawai'i

SYLVIA J. LUKE
LT GOVERNOR
STATE OF HAWAII
Ka Hope Kia'āina o ka Moku'āina 'o Hawai'i

KALI WATSON
CHAIRMAN, HHC
Ka Luna Ho'okele

KATIE L. DUCATT
DEPUTY DESIGNATE TO THE CHAIRMAN
Ka Hope Luna Ho'okele

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Ka 'Oihana 'Āina Ho'opulapula Hawai'i
P O BOX 1879
HONOLULU, HAWAII 96805

November 27, 2023

Aloha Kaua,

I am writing to express our support for the "Mauna Kea Watershed Alliance Strategic Landscape-Scale Planning" proposal being submitted by Mr. Cheyenne Perry. The proposal for landscape-scale planning comes at an appropriate time and addresses critical issues partnership wide such as the impacts of Rapid 'Ōhi'a Death to increased wildfire severity and frequency across Hawai'i. The planning process includes updating current plans, deciding courses of action over the next five years as determined by the partnership, and a partnership wide wildfire protection and post-fire response plan.

The Mauna Kea Watershed Alliance (MKWA) partnership boundaries spans over 416,000 acres across the upper elevation Mauna Kea landscape. The Alliance is composed of several landholders including Federal and State of Hawai'i Agencies, Land Trusts, Non-Profits, and Ranchlands. Our shared vision is to protect and enhance watershed ecosystems, biodiversity and resources through responsible management, while promoting economic sustainability and providing recreational, subsistence, educational and research opportunities. The Mauna Kea Watershed Alliance is a Project of the Big Island Resource Conservation and Development Council who is classified as a 501(c(3) Non Profit Organization (Tax ID Number 99-0279188).

The Department of Hawaiian Home Lands (DHHL) is the third largest land owner in the State, and much of its lands fall within the area managed by the partners of the MKWA. Over 25% of our Trust lands, over 56,000 acres are in DHHL's "Aina Mauna" lands alone which are included in MKWA partnership lands. These high elevation lands represent the headwaters of many of Hawaii's most productive watersheds, from Wailuku to Kaula.

Since its inception, MKWA has fostered a strong partnership with DHHL and contributed significantly to helping to manage its lands in a cooperative manner with neighboring land owners and fellow MKWA partners. MWKA continues to plays a vital role in watershed protection and management and in the implementation of the DHHL Aina Mauna Legacy Program. DHHL will benefit from this proposal through its proactive planning that addresses current issues on DHHL lands and across the Mauna Kea landscape.

Me ke aloha aina,

Joseph Kualii Camara, Aina Mauna Property Development Agent
Land Management Division, Dept. of Hawaiian Home Lands

USDA The Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo Hawaii 96720
808-933-8121

Forest Service

Pacific Southwest Research Station

IPIF Institute of Pacific Islands Forestry

November 16, 2023

Aloha,

I am writing to express our support for the "Mauna Kea Watershed Alliance Strategic Landscape-scale Planning" proposal being submitted by Mr. Cheyenne Perry. The Mauna Kea Watershed Alliance (MKWA) partnership boundaries spans over 416,000 acres across the upper elevation Mauna Kea landscape. The Alliance is composed of several landholders including Federal and State of Hawai'i Agencies, Land Trusts, Non-Profits, and Ranchlands. Our shared vision is to protect and enhance watershed ecosystems, biodiversity and resources through responsible management, while promoting economic sustainability and providing recreational, subsistence, educational and research opportunities. The Mauna Kea Watershed Alliance is a Project of the Big Island Resource Conservation and Development Council who is classified as a 501c(3) Non Profit Organization (Tax ID Number 99-0279188).

The needs for protection and restoration of native ecosystems to support ecological function continue to be tremendous and require partnership and innovation. The Hawaiian Islands have extraordinary biological and cultural diversity that encompass the full range of Pacific forest values including rare native forest birds, ecosystem services, and cultural practices. We must collaboratively develop our capacity and infrastructure to stabilize and improve habitat for native species resulting in healthier and sustainable Hawaiian ecosystems. We support this proposal that if funded will set the way to greatly improve the overall health of forests as well as resiliency throughout the area for decades to come.

Please consider the US Forest Service Institute of Pacific Islands Forestry as a strong advocate and partner for the proposed work.

SUSAN CORDELL Digitally signed by SUSAN CORDELL
Date: 2023.11.16 16:16:19 -10'00'

Susan Cordell, PhD
Director and Research Ecologist

USDA Forest Service
Institute of Pacific Islands Forestry, Pacific Southwest Research Station

p: 808-854-2601
susan.cordell@usda.gov

60 Nowelo Street
Hilo, HI 96720
www.fs.usda.gov/psw

Parker Ranch®
est. 1847

November 30, 2023

Aloha,

My name is Zachary Judd and I am currently the Forestry Manager at Parker Ranch. I am writing to express Parker Ranch's support for the "Mauna Kea Watershed Alliance Strategic Landscape-Scale Planning" proposal being submitted by Mr. Cheyenne Perry. The proposal for landscape-scale planning comes at an appropriate time and addresses critical issues partnership wide such as the impacts of Rapid 'Ōhi'a Death to increased wildfire severity and frequency across Hawai'i. The planning process includes updating current plans, deciding courses of action over the next five years as determined by the partnership, and a partnership wide wildfire protection and post-fire response plan.

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Best,

Zachary Judd
Parker Ranch Forestry Manager

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Big Island National Wildlife Refuge Complex
60 Nowelo Street, Suite 100
Hilo, Hawaii 96720

November 26, 2023

Aloha,

I am writing to express our support for the "Mauna Kea Watershed Alliance Strategic Landscape-Scale Planning" proposal being submitted by Mr. Cheyenne Perry. The proposal for Landscape-scale planning comes at an appropriate time and addresses critical issues partnership wide such as the impacts of Rapid ʻŌhiʻa Death to increased wildfire severity and frequency across Hawaiʻi. The planning process includes updating current plans, deciding courses of action over the next five years as determined by the partnership, and a partnership wide wildfire protection and post-fire response plan.

The Mauna Kea Watershed Alliance (MKWA) partnership boundaries spans over 416,000 acres across the upper elevation Mauna Kea landscape. The Alliance is composed of several landholders including Federal and State of Hawaiʻi Agencies, Land Trusts, Non-Profits, and private ranchlands. The shared vision of the partnership is to protect and enhance watershed ecosystems, biodiversity and resources through responsible management, while promoting economic sustainability and providing recreational, subsistence, educational and research opportunities. The Mauna Kea Watershed Alliance is a Project of the Big Island Resource Conservation and Development Council who is classified as a 501(c(3) Non Profit Organization (Tax ID Number 99-0279188).

Hakalau Forest National Wildlife Refuge (NWR) is currently collaborating with the Mauna Kea Watershed Alliance on projects that include conservation fencing and native plant propagation for habitat restoration. These projects contribute to the protection of endangered plants and forest birds found on the NWR. The proposed planning process provides an opportunity for members of the watershed partnership to strategically plan future watershed priorities and to leverage limited staffing and funding for shared watershed partnership goals on Mauna Kea.

Sincerely,

Donna Ball, Deputy Manager
Hakalau Forest NWR

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