



**Service Learning Project
GEO 101: Allison Chun**

**Restoration at 'Īao Valley
Kahala Chrupalyk**



Date	Description of Activities
September 5	<p>Attendance:</p> <ul style="list-style-type: none"> - 6 members of my household - 5 members from community <p>Activities:</p> <ul style="list-style-type: none"> - Working the mud in the lo'i to induce water movement - Harvest kalo if families show up to do so - Pruning bananas toward front stream area - Clear fallen guavas from the waterway - Remove litter from premises <p>While the teens did the lo'i and went to the river area to collect litter, the adults stayed by the banana area to work as a distraction to the oddness of socially distancing while talking. Some kūpuna dropped by to share stories.</p> <p>Observations:</p> <ul style="list-style-type: none"> - Many bananas are rotted, and over bunching caused limited growth - One banana tree must be mutated because it appears that two baby bananas are growing from the top of the stalk, without proper plant parts present. We will watch this formation closely to observe - Land appears rather dry. Mitigation was had through young children and a water fight to disperse the moisture shared with the ground
September 12	<p>Attendance:</p> <ul style="list-style-type: none"> - 4 household members - 0 community members <p>Activities:</p> <ul style="list-style-type: none"> - Teens gather native implements for a small event - Kahala: start on banana project <p>While teens went gathering, I focused all my energy in the quantitative work of dead leaf removal from the banana patch area by the road in Kepaniwai Gardens. It was the best emotional therapy a person could ask for.</p> <p>Observation:</p> <ul style="list-style-type: none"> - Many people come to the park to benefit from ecological services but few pay attention to the needs of the park in terms of reciprocity <p>Reflections:</p> <ul style="list-style-type: none"> - At inception, this was only a meeting place to practice 'oli in fall semester 2019. He Mele No Kāne is an 'oli that asks where the waters of Kāne can be found. On one round, we began to point to water sources, and found that the lo'i had cane grass that was taller than any of us. - We were looking for the waters of Kāne, not cane grass. - Following weeks brought tools, tools brought new crowds - One year later, we can now find the waters of Kāne in most areas

September 19	<p>Attendance: Unusually active</p> <p>Activities:</p> <ul style="list-style-type: none"> - Continue pruning banana - Rake detritus into secluded area - Harvest kalo if families show up to harvest, none came - Clear water flow in lo'i area, for fresh water <p>A fight needing police involvement created a lot of attention, which brought unusual amounts of activity into our area. People came from all over to swim and party at the park. Volunteers at the Filipino section came down to meet with us. We are going to unite to strengthen productivity and common+unity. Most of our time on this day was spent simply tidying the work from the week before and in social healing with others. Plenty of people came through needing someone to simply listen. We are a family of listeners, because that is often the only thing people truly need, is a listening ear and some validation. That's an easy task, compared to the echoed consequences of allowing someone's stress build until it explodes. Paul Tonneson was one of our visitors and he stayed all day to listen to people as well. Paul is the executive director at Maui Friends of the Children's Justice Center.</p> <p>Observations:</p> <ul style="list-style-type: none"> - The impromptu counseling session helped about 20 families easily on that day, including a family who was mourning the loss of their oldest son to suicide. - Most people that walk through our work area are very environmentally aware when they approach and walk through the garden areas now. This is an improved behavior in those areas. - The soil is extremely dry - The midmorning mist has not been around for a long time now, much longer than other years - There was a bit of dust-blowing at one point. This is a new behavior there.
September 26	<p>Attendance:</p> <ul style="list-style-type: none"> - 3 household members - 4 community members <p>Activities:</p> <ul style="list-style-type: none"> - Collect detritus piles - Litter collection - Harvest kalo if families come, none came - Maintain lo'i area for clean water flow - Clear auwai [waterway] of debris and cane grass <p>A morning visit from the volunteers at Bahay Kubo illustrate the need for a partnership to empower and grow the efforts that each of us are doing in our own respective areas.</p>

	<p>Observations:</p> <ul style="list-style-type: none"> - At least 3 African tulip trees must be taken down <ul style="list-style-type: none"> - They are breaking the water pipes - Kapu sign needs to be replaced - The dryness is causing much concern - Water pipes are shut off - We need new/more tools - We need more volunteers - The water has a high bacterial count - Several parts of the solar filtration system were destroyed in the flood of 2016 and 3 have not been repaired yet, per Alan Arakawa - The water is being bleached from the reservoir <p>Reflection: We need to assemble a fundraiser for tools</p>
October 3	<p>Attendance: 5 household members, 5 community members, 0 students from BIO 124 SLP</p> <p>Activities:</p> <ul style="list-style-type: none"> - Clear the auwai - Circulate and lightly weed the lo'i - Cut down dying banana stalks - Collect litter - Prune ti - Check soil for moisture <p>Observations:</p> <ul style="list-style-type: none"> - Most of our volunteers are between the ages of 15-24 - The ti are constantly getting broken by human behaviors - Witnessed 3 young mothers let their toddlers pee outside of the bathroom, in the lo'i area, separately <p>Reflections:</p> <ul style="list-style-type: none"> - Some people truly come for the therapy and interaction with others, indicating a social depression in our community - Elders with no immediate family available are suffering greatly from a lack of interaction <p>Our relationship with volunteers of Bahay Kubo are developing stronger connections and now Maui's Friends of the Children's Justice Center is also assembling a group to do one workday. The MCJC brought Jersey Mike's today for volunteers to enjoy for lunch. About 18 feet of the auwai was cleared and many of the existing banana stalks are already presenting evidence of gratitude for the removal of dead weight in the soil. Discussions have started regarding the collection of lumber for the new Hawaiian Hale, and I can't help but to be excited!</p>

October 10	<p>Attendance: 5 household members 5 from Maui Friends of the Children's Justice Center 0 from Bahay Kubo 0 from BIO 124 SL 0 from community</p> <p>Activities:</p> <ul style="list-style-type: none"> - Help Ka Lima o Maui & County Dept with bathroom disaster - Health check-up on botany: <ul style="list-style-type: none"> - Ma'o Hau Hele <i>Hibiscus brackenridgei</i> <ul style="list-style-type: none"> - Needed pruning - Will need water and soil amendment/replenishment - Mai'a <i>varietal bananas</i> <ul style="list-style-type: none"> - Rotted stalk removal - Prune area near bathrooms - Streamline detritus piles - Cut rotted stalks - Ti <ul style="list-style-type: none"> - Check for snapped crowns - Plant any broken branches - Prune, if needed <p>Observations:</p> <ul style="list-style-type: none"> - There has been vandalism and plant theft up in the Bahay Kubo area. All the koi are hiding there at Bahay Kubo because it is not safe for them in the Japanese area anymore. - The guys at Ka Lima o Maui truly see us as work partners and were relaxed enough to ask us to govern the broken bathroom area for safety. - The County must have discovered the water leak by the hale area because the water that was overflowing from the box for three weeks was dry. <p>To do:</p> <ul style="list-style-type: none"> - Thou shalt identify that invasive vine with the white flower. It is crawling everywhere. - Another round of kuava melemele [yellow guava] have blossomed. - Noni and 'ulu are just about ready to harvest. - Kalo is ready for harvest. <p>Reflection:</p> <p>Plenty people come with a load of stories or emotional battles to share. Oftentimes, people just need someone to listen to them. Around 1pm we begin to wrap up the heavy workload to listen to the concerns of people around us. We cannot harvest because it is morally incorrect however, we can definitely be there to let the community harvest a handful for their families.</p>
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October 17	<p>Attendance:</p> <ul style="list-style-type: none"> 5 from household 2 from Children's Justice Center 1 from High Hopes 4 from Bahay Kubo 0 from community 0 from BIO 124 SL <p>Activities:</p> <ul style="list-style-type: none"> - Prepare to start practicing 'oli - Meeting involving partnership with Bahay Kubo - Interview with Bahay Kubo - Removal of detritus piles - Addition of fish to specified pile of detritus for soil building - Observations recorded about health of <ul style="list-style-type: none"> - Mai'a - bananas - Noni - Ti - Kalo - taro - Cut down cane grass - Cut rotted banana stalks by the water's edge - Prune wauke for kapa styled growth - Help the uncles with cutting wood at Bahay Kubo [Filipino House] - Clean banana stalks over Bahay Kubo area <p>Observations:</p> <ul style="list-style-type: none"> - Before we even finished taking tools out of the car, several unmasked tourists approached us at separate intervals, asking about how to get around and complaining that everything was closed - Wauke is doing well - Bananas have been harvested - 'Ulu had been harvested - Kalamungay had been harvested - Kuava [guava] had been harvested - Someone cut the crowns from several ti plants - Litter is more prevalent at the upper areas of the park now, not so much at the bottom area where we work - Unsupervised kids were trying their wings at spearfishing the endangered koi in the ponds areas - No Japanese organizations have responded yet to repairing that area of the park - No Korean areas have been contacted to care for that section of the park - African and Puerto Rican areas are waiting to be upgraded - The 5-petal white flower vine is definitely invasive and is actively choking other plants and trees. <ul style="list-style-type: none"> - We still do not know if it is an endemic species
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	<p>Reflections:</p> <p>Many people are discouraged to work in Kepaniwai Gardens, if other members of the community are benefiting from the harvest. However, our morality tells us that much like employee obligations, as caretakers, it is not our kuleana to take that harvest, unless there is a specific need for it in the community. Otherwise, if another family needs that food to feed their family members, then it is our pleasure to see good food nourishing other people.</p>
October 24	<p>Attendance:</p> <p>5 from household 2 from Children's Justice Center 1 from High Hopes 6 from community 5 from Bahay Kubo 0 from BIO 124L</p> <p>Activities:</p> <ul style="list-style-type: none"> - General rake in work areas - Mulching areas in the most need - Cutting back cane grass - Stirring waterflow in lo'i - Cutting down more rotted stalks - General environmental observations - Human services [the work goes hand in hand] <p>Observations:</p> <ul style="list-style-type: none"> - Someone has begun to take care of the missionary house area - A bunch of dead frogs showed up in the missionary corner of the lo'i - Both moringa trees are dying from environmental conditions up there - The 'ulu are only growing on the water side of the tree and are small - One of the invasive vines by the bridge is a Filipino favorite, is comparable to hawaiian sweet potato leaves and the stems can be pickled; must bring a cooler to harvest them - Recorded observations are reported on my campaign fb page <p>Reflections:</p> <ul style="list-style-type: none"> - Our whole house woke up to a phone call, about 8:55am and rushed out the door with our tools, calling people in a mobile phone campaign on the way. - One of our volunteer units brought us Starbucks, and another volunteer made lunch to bring up to us. - Uncle Zaldy from Bahay Kubo brought ice cream fruit to us and told us how to grow it and where to sell it. He said that Japanese restaurants will buy it up. It was a tasty treat. - My boys are harmonizing more than they ever have before - People who weren't formally involved before, are coming to work now - Some other Filipino friends came, and we shared a botanical culture exchange: the sweet potato vine w/recipe for the noni fruit w/medicinal evaluations

	- Our usual volunteers are growing a bond as a real family
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Invasive Species

copied from DLNR website



Impacts

Wind spread spores can travel over 12 km (7 miles) from parent plant, as seen when plants from Hana nurseries spread to Kipahulu Valley. Fast growing and aggressively outcompetes native plants in the forest understory. Displaces native ferns, including the slower growing hapuu

AUSTRALIAN TREE FERN

Cyathes cooperi

Hawaii Pacific Weed Risk Assessment:
16, High Risk

Regulatory Status: None

Prevention and Control Category:
MoMISC Target Species

Report this species if seen on Molokai

<https://dlnr.hawaii.gov/hisc/info/invasive-species-pro-files/australian-tree-fern/>



Description

Large tree up to 150ft tall
Extremely fast growing, up to 15 ft per year
Prone to “sudden limb shear” or “sudden branch drop.” This phenomenon is defined as the sudden failure and collapse of live branches with no sign of physical weakness, and without apparent cause. Produces large quantities of wind dispersed seeds.

Impacts

ALBIZIA

Falcataria moluccana

Hawaii Pacific Weed Risk Assessment:
8, High Risk

Regulatory Status: None

Prevention and Control Category: BIISC Target Species, MoMISC Target Species

Report this species if seen on Molokai

<https://dlnr.hawaii.gov/hisc/info/invasive-species-pro-files/albizia/>

Albizia Strategic Plan:

On January 18, 2018, the Hawaii Invasive Species Council (HISC) voted to approve a strategic plan to address albizia statewide. The purpose of this strategic plan is to provide large-scale objectives and a framework to minimize the impacts of albizia on the environment, human health, and infrastructure by:

Describing statewide impacts of albizia

Capable of altering an entire ecosystem by increasing soil nitrogen levels
Quickly outcompetes and shades out native Hawaiian forest plants
Reduces habitat quality for native bird species
Fallen trees and limbs can block roads, and waterways
Fallen trees and limbs can cause damage infrastructure and property
Large trees are costly to remove



Summarizing available control methods
Recommending directions for future research on detection and control methodologies
Supporting and encouraging the development of site-specific management plans
Identifying priorities for HISC funding to support research, detection, and control efforts.

Removal of these trees can be contracted by a lumber company.

Google search says that these trees are used for timber in other areas of the Pacific.

Therefore, rather than searching for funding to pay for waste removal, these woods can be used to boost our economy.

<https://dlnr.hawaii.gov/hisc/info/invasive-species-profiles/albizia/>



Impacts

Fireweed invades pastures, disturbed areas, and roadsides. It is very toxic to cattle, horses and other livestock. When ingested it causes illness, slow overall growth, liver-malfunction and even death in severe cases. In Australia, fireweed costs over \$2 million per year in losses and control.

FIREWEED

Senecio Madagascariensis

Hawai'i-Pacific Weed Risk Assessment Score: 23, High Risk.

Visit <http://www.hpwra.org> for more info

Regulatory Status:

Hawaii Noxious Weed List (HAR 68)

Prevention and Control Category:

MoMISC Target Species.

Report this species if seen on Molokai

<https://dlnr.hawaii.gov/hisc/info/invasive-species-profiles/fireweed/>



Impacts

Vines grow over and smother vegetation, cover fences and power lines. It threatens natural and managed areas. It is extremely difficult to control because plants regrow from deep roots, even after treating with herbicide. Although ivy gourd requires cross-pollination between male and female plants, it is able to spread quickly and can grow up to four inches per day.

IVY GOURD

Coccinia grandis

Hawai'i-Pacific Weed Risk Assessment Score: 21 High Risk.

Visit <http://www.hpwra.org> for more info

Regulatory Status:

State Noxious Weed (HAR 68)

This aggressive perennial vine of the cucumber family has star shaped flowers with 5 petals and smooth bright red fruit that are 1-3" long. The leaves are alternate and variably shaped (sometimes deeply lobed.) Stem and leaves of the vine are mostly smooth (without hair).

Maui: Localized infestations occur in Kapalua, Kihei, and Lahaina. Isolated plants have been seen in Kahului, Makawao, and Waiehu.

Moloka'i: Not yet known to be present

<https://dlnr.hawaii.gov/hisc/info/invasive-species-pro/files/ivy-gourd/>



Introduced to Maui in the early 1970s at a private nursery and botanical gardens near Hana. Infestations now occur in the forests near Hana, Nāhiku, Ke'ānae & Huelo. Today, approximately 37,000 acres throughout East Maui, could potentially contain miconia.



MICONIA

Miconia calvencens

Hawai'i-Pacific Weed Risk Assessment Score: 14, High Risk.

Regulatory Status:

Hawaii Noxious Weed List (HAR 68)

Prevention and Control Category:

MISC Target Species.

Report this species if seen on Molokai or West Maui

<https://dlnr.hawaii.gov/hisc/info/invasive-species-pro/files/miconia/>

