



Kaho'olawe Island Reserve Commission

1. RESTORATION SUMMARY

DOH Restoration Project Status Update

(July 1 to Sept 30, 2019)

In July 2019 the Kamehameha School teachers came out to island to outplant the last 1609 plants for a total of 10,000 in the project site. They constructed the last wattles and installed irrigation.

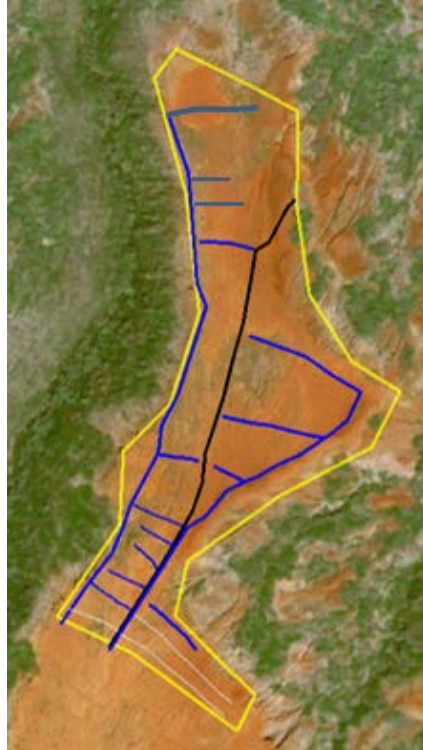


Kamehameha School Teachers installing a wattle with native plants and irrigation.



The finished wattle product with native plants on irrigation in the project site

Jamie also installed a pressure reducing valve on the 1" Sub Main to reduce the pressure buildup in the line from gravity. The map illustrates the end result of wattles, native plants and irrigation installed in the DOH Project Site.

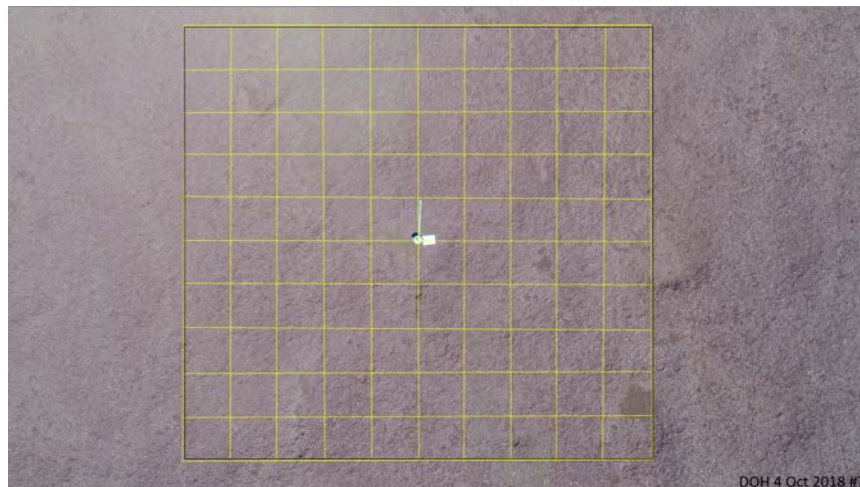


Wattles, native plants and irrigation installed in the DOH project site

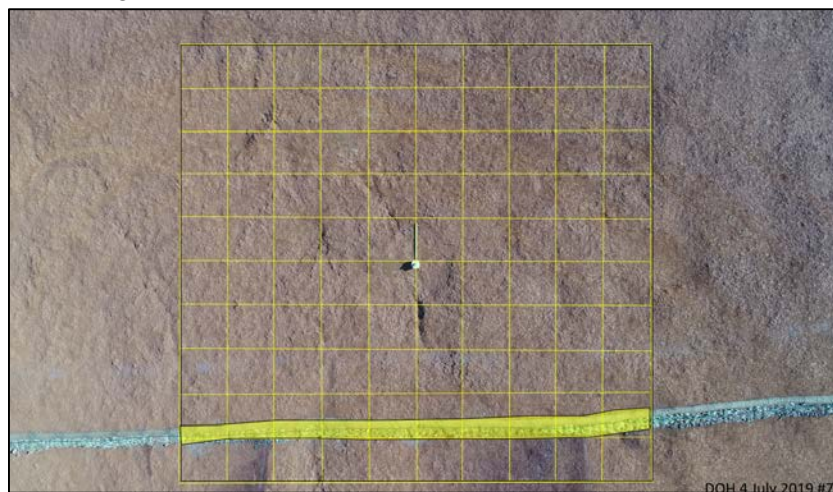


A pressure reducing valve on the 1" sub main to alleviate high pressure blow outs in the irrigation line.

Jamie also captured the secondary drone images an altitude of 50' to compare to the original images taken in 2018. Some of the comparisons showed the installation of wattles with vegetation.



Drone Image #7 2018



Drone Image #7 2019

Drone Image #7 2019 shows the installation of a wattle on the hard pan.

The 1 year DOH Project was completed on August 9, 2019 and 200 volunteers put in 10,000 native plants. Although the success rate was low due to a relatively dry year, the infrastructure has been installed for future potential maintenance.



Jamie operating the DJI Phantom Drone in the DOH Project Site

Below are examples of before and after photopoints (#7 East West and South) in the DOH Project Site showing the additions of the wattles made from burlap and native vegetation on irrigation.

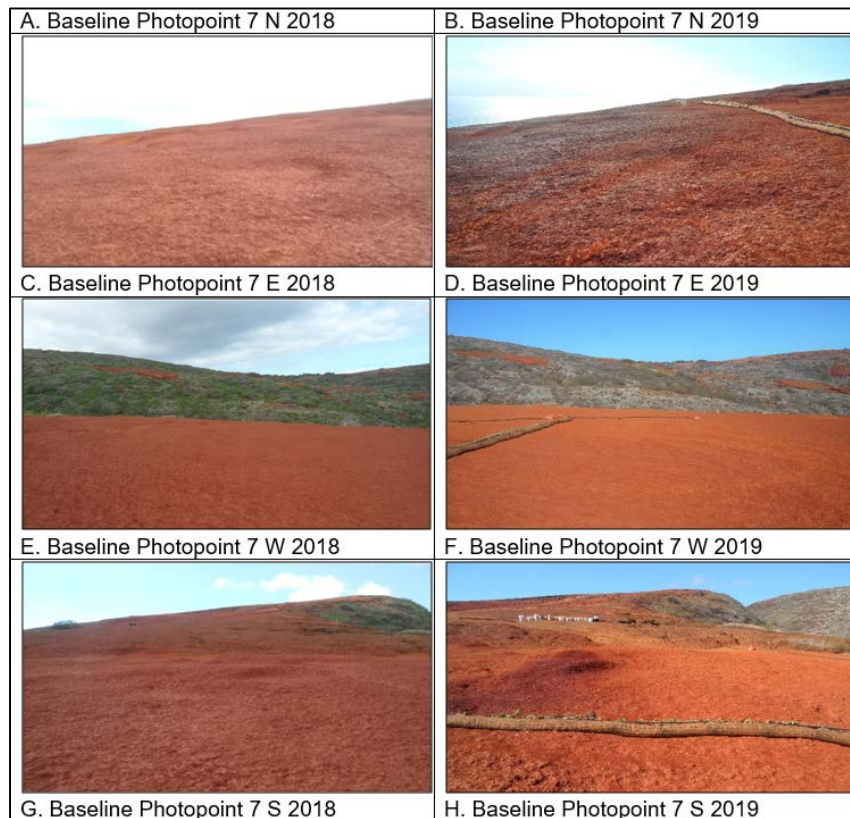




Photo (taken in September 2019) of pili grass growing in a wattle at the DOH Project Site.

Over twenty check dams (gabions) were built in the project site and captured soil runoff during rain events.



A gabion (black plastic cages and rocks) with captured silt allowing a Hawaiian cotton (ma`o) plant to grow.

The 16 plant species that were used in the DOH Project are listed in the table below.

Number	Common Name	Taxon	Number	Percent
1	Ewa hinahina	<i>Achyranthes splendens</i>	100	1.0%
2	'Ahinahina	<i>Artemesia mauiensis</i>	50	0.5%
3	Kamanomano	<i>Cenchrus agrimonioides</i>	140	1.4%
4	'Aweoweo	<i>Chenopodium oahuense</i>	50	0.5%
5	Halapepe	<i>Chrysodracon auwahiensis</i>	100	1.0%
6	'A'ali'i	<i>Dodonaea viscosa</i>	541	5.4%
7	Kawelu	<i>Eragrostis variabilis</i>	290	2.9%
8	Ma'o	<i>Gossypium tomentosum</i>	580	5.8%
9	Pili	<i>Heteropogon contortus</i>	6675	66.8%
10	'Ulei	<i>Osteomeles anthyllidifolia</i>	10	0.1%
11	Alahe'e	<i>Psydrax odorata</i>	250	2.5%
12	'Ohai	<i>Sesbania tomentosa</i>	308	3.1%
13	'Ilima	<i>Sida fallax</i>	80	0.8%
14	Akiaki	<i>Sporobolus virginicus</i>	182	1.8%
15	Pohinahina	<i>Vitex rotundifolia</i>	50	0.5%
16	'Akia	<i>Wikstroemia uva ursi</i>	594	5.9%
		Sum	10,000	

In August, Native Nursery came out to gather native seeds for propagation including `a`ali`i, pa`u o Hi`iaka, naio and `ohai. In September, the Na Koa group cleared the DOH Project Site of buckets and broken carsonite markers laying on the ground.

Capital Improvement Project (CIP) Dry Forest

To date, 14000 native plants were planted in the CIP Dry Forest work area with the last 2000 planted in July 2019. The area consist of 25 acres and a total of 18 irrigation lines were set out. In addition to planting along the irrigation line plants were also planted in or around vegetated hummocks. A total of 230,000 gallons of water has been used to establish the plants.



The CIP work crew has assisted in restoration efforts by planting in the CIP work area. In addition the crew has cut back koa haole and the wild crown flower along the Kuamo‘o road and in the Pōkāneloa area.

Volunteers groups are the main workforce in the CIP plantings. They have also been instrumental in the alien plant control efforts by thoroughly weeding the CIP work area.



CIP Project Area at Kamohio Watershed