Kealakekua Mountain Reserve

Photos from Fieldwork

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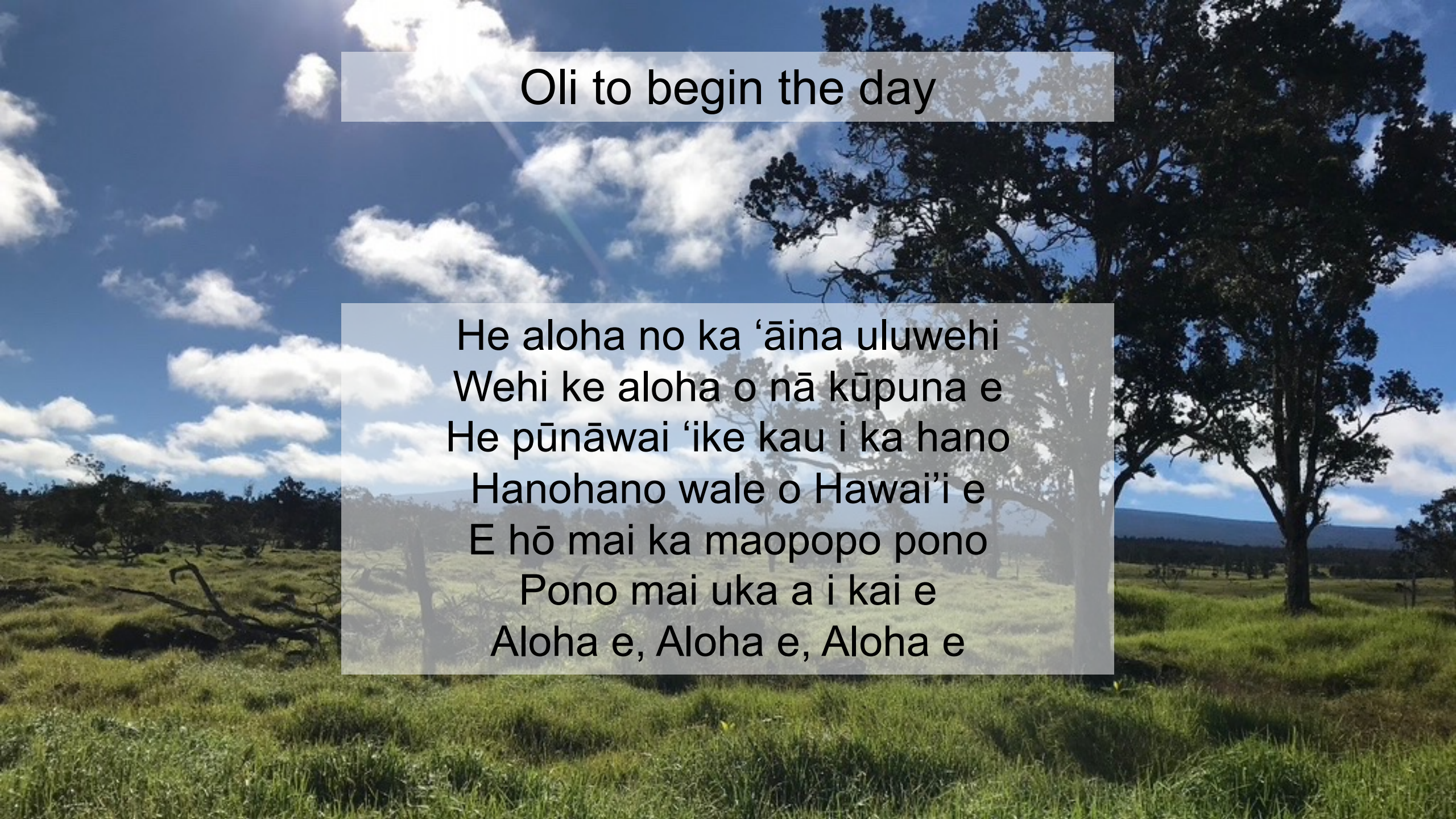
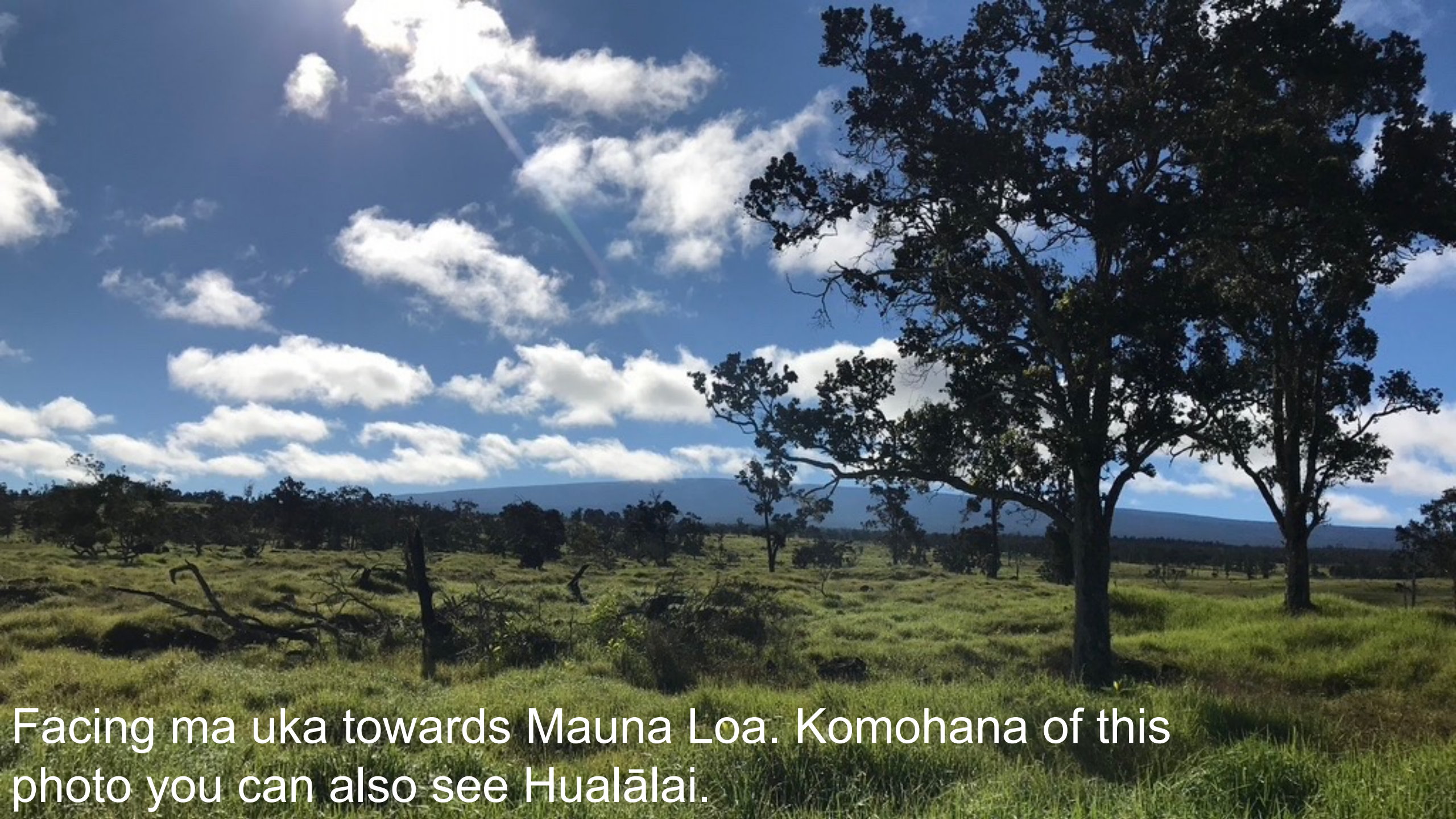


Oli to begin the day

He aloha no ka ʻāina uluwehi
Wehi ke aloha o nā kūpuna e
He pūnāwai ʻike kau i ka hano
Hanohano wale o Hawai’i e
E hō mai ka maopopo pono
Pono mai uka a i kai e
Aloha e, Aloha e, Aloha e



Facing ma uka towards Mauna Loa. Komohana of this photo you can also see Hualālai.


2020 planting
2019 planting
2018 planting

How do mea kanu grow?

Step 1. Germinate

Seeds need
water & sunlight
to break through their
seed coat

How do mea kanu grow?

Step 2. Kāʻamaʻai

Seedlings need to grow their roots and shoots to photosynthesize

Mea kanu parts

Shoots

Roots

Mea kanu need

Sun

CO^2
Carbon dioxide

H_2O
Water

Mea kanu produce

O^2
Oxygen!

$C_6H_{12}O_6$
Sugar

How do mea kanu grow?

Step 3. Kāʻamaʻai

To continue to photosynthesize and grow plants need nutrients too

Macronutrients
Need a lot of

- N Nitrogen
- P Phosphorus
- K Potassium
- S Sulfur
- Ca Calcium
- Mg Magnesium

Micronutrients
Need a little bit of

- Fe Iron
- Ni Nickel
- Zn Zinc
- Cu Copper
- B Boron
- Cl Chlorine
- Mn Manganese

How do mea kanu grow?

Step 4. ‘Iliahi ONLY

‘Iliahi are hemiparasitic so they also need a host to gain nutrients from

ʻIliahi – *Santalum paniculatum*

Metal guard to protect fruits
and seeds from rat predation

Flower buds

Kupukupu – *Nephrolepis cordifolia*

Why do you think the base of the ʻōhiʻa lehua looks this way?

ʻŌhiʻa lehua – *Metrosideros polymorpha*

An identifying feature of hāpuʻu is it's pulu (wool-like hairs abundant at the base of fronds)

Hāpuʻu – *Cibotium* spp.

10-year-old koa

Koa – *Acacia koa*

Taking diameter of 10-year-old koa at 4.5 feet or 1.37 meter

Koa bugs – *Coleotichus blackburiae*

Juvenile koa bugs

http://hawaiianforest.com/wp/koa-bugs-in-the-hawaiian-islands/

Photographer: JB Friday

Lichens are composite organisms made up of both algae and fungi

Koa lichen – *Usnea* spp.

ʻIliahi – *Santalum paniculatum*

Step 1.

Clearing non-native kikuyu grass

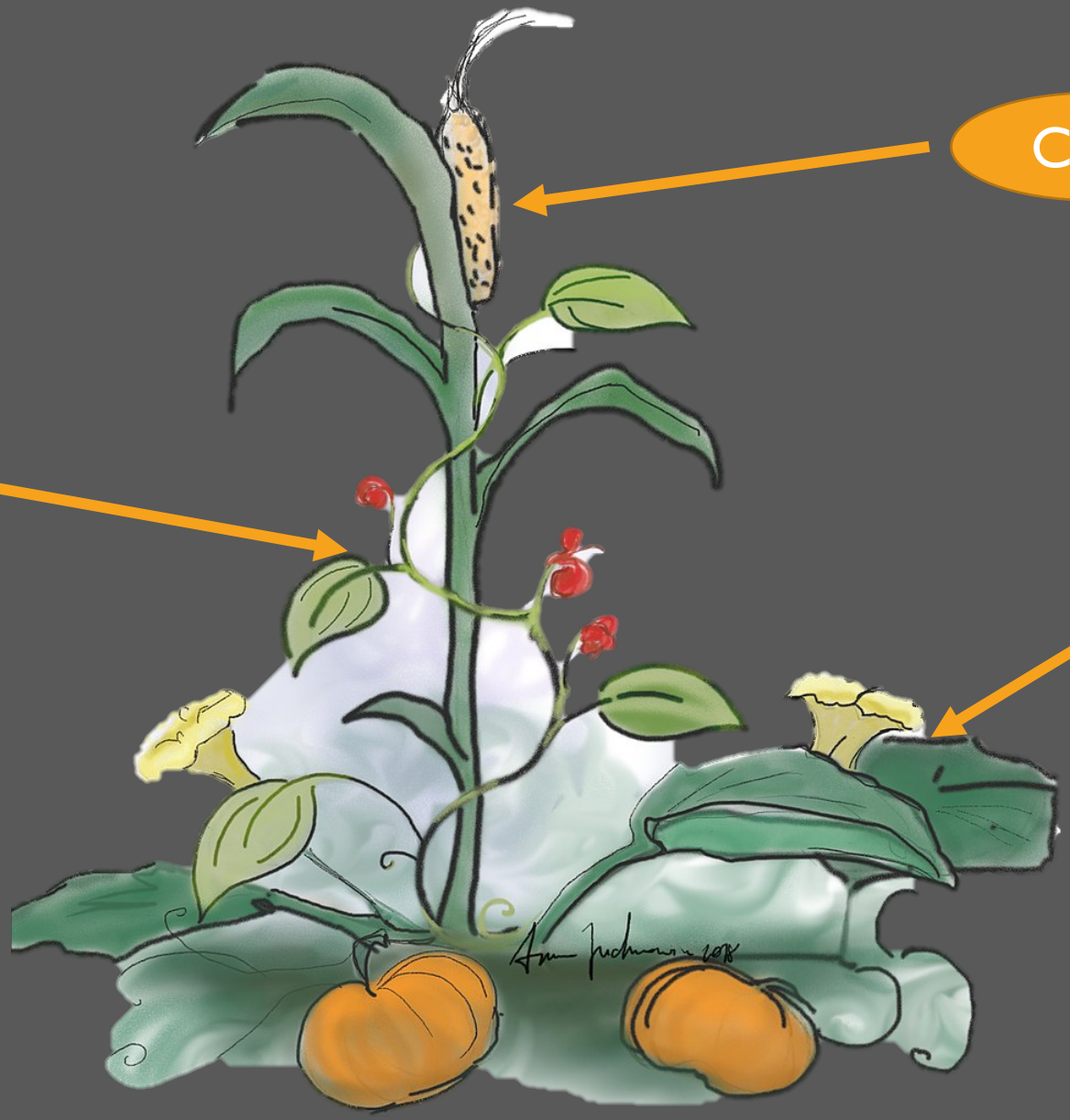
Step 2.

Creating planting hole with metal oʻo bar

Step 3.

Placing ʻiliahi in planting hole

The Three Sisters



Corn

Bean

Squash

Koa and māmane biologically fix nitrogen too!

Pueo – *Asio flammeus sandwichensis*

https://www.pueoproject.com/short-eared-owl

Photographer: Tom Kuali‘i

Pahoehoe “blister”


Mea kanu nursery

Māmane – *Sophora chrysophylla*

Kōlea – *Myrsine lessertiana*

ʻAʻaliʻi – *Dodonaea viscosa*


Mahalo nui loa!
He mau nīnau?

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