



Little Fire Ant control and lessons learned at Kualoa Ranch

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Site history

- Kualoa Ranch: 4000 acres
- 2012 Kualoa entered into partnership with local non-profit to conduct a stream restoration project
- Restoration efforts utilized volunteer support
- Site maintenance shift from hosted organization to Stewardship staff
- When staff reported that were getting stung, sampled for LFA, got positive identification from the Hawaii Ant Lab the following day (April 2019)



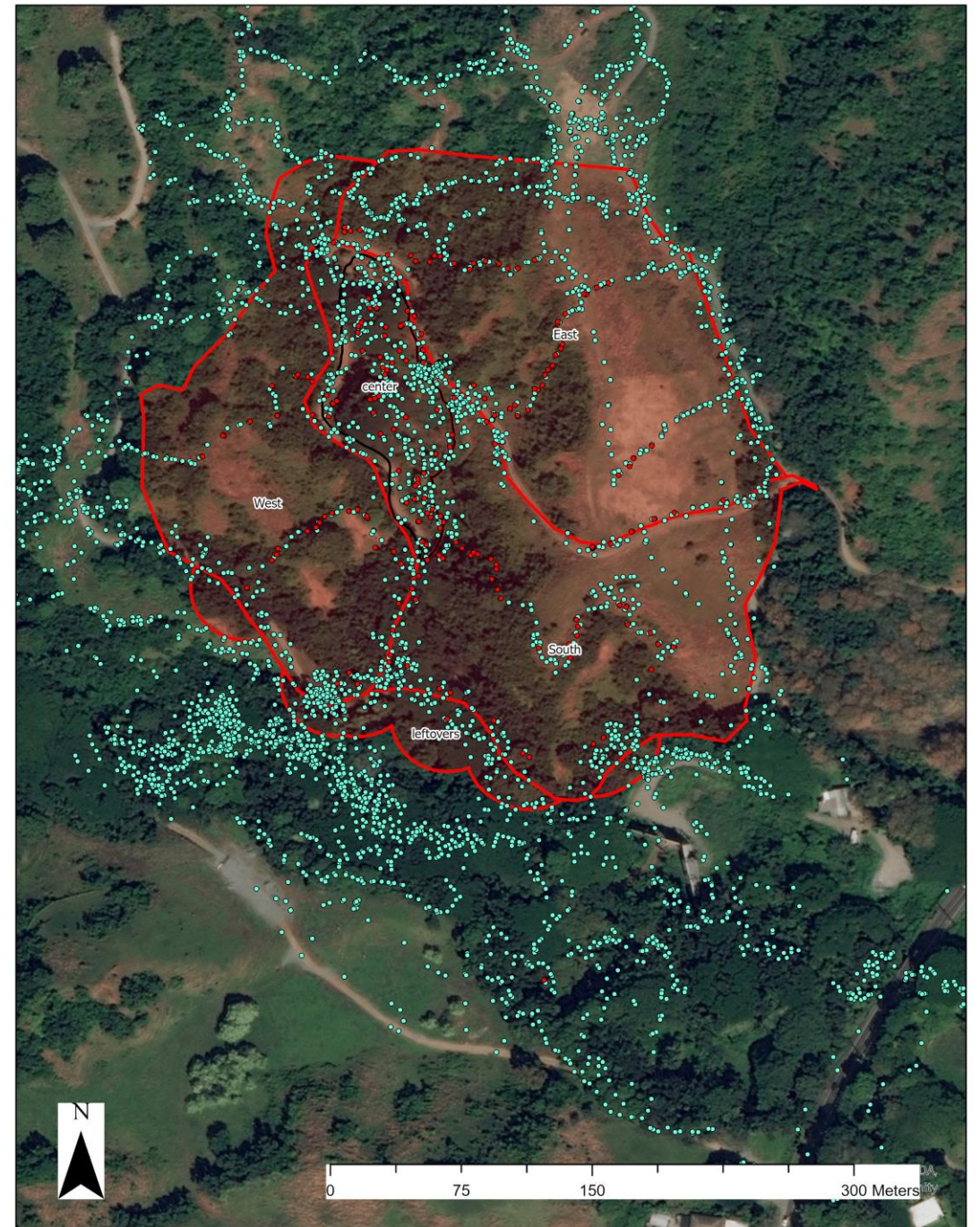
Presumed source of introduction

- Reintroduced plants were locally sourced, except for Hapu'u that were brought in from Hawai'i Island
- Hapu'u were quarantined offsite for 24 hours, but for coqui
- OISC was already conducting surveys at Kualoa Ranch greenhouses



Delimiting surveys

- Discovered/confirmed identification April, 2019
- Conducted delimiting surveys for five months
- Buffered to determine infestation area: 23 acres



Challenges

- Dense population of ants
- Large trees
- Thick vegetation
- Livestock



Assets

- Supportive land owner
- Hawaii Ant Lab eradication plan, staff, and oversight
- Kualoa Ranch Stewardship crew to develop and conduct necessary support work
- Access to heavy machinery and support staff with specialties (heavy machine operators, landscapers with a bucket truck, etc.)

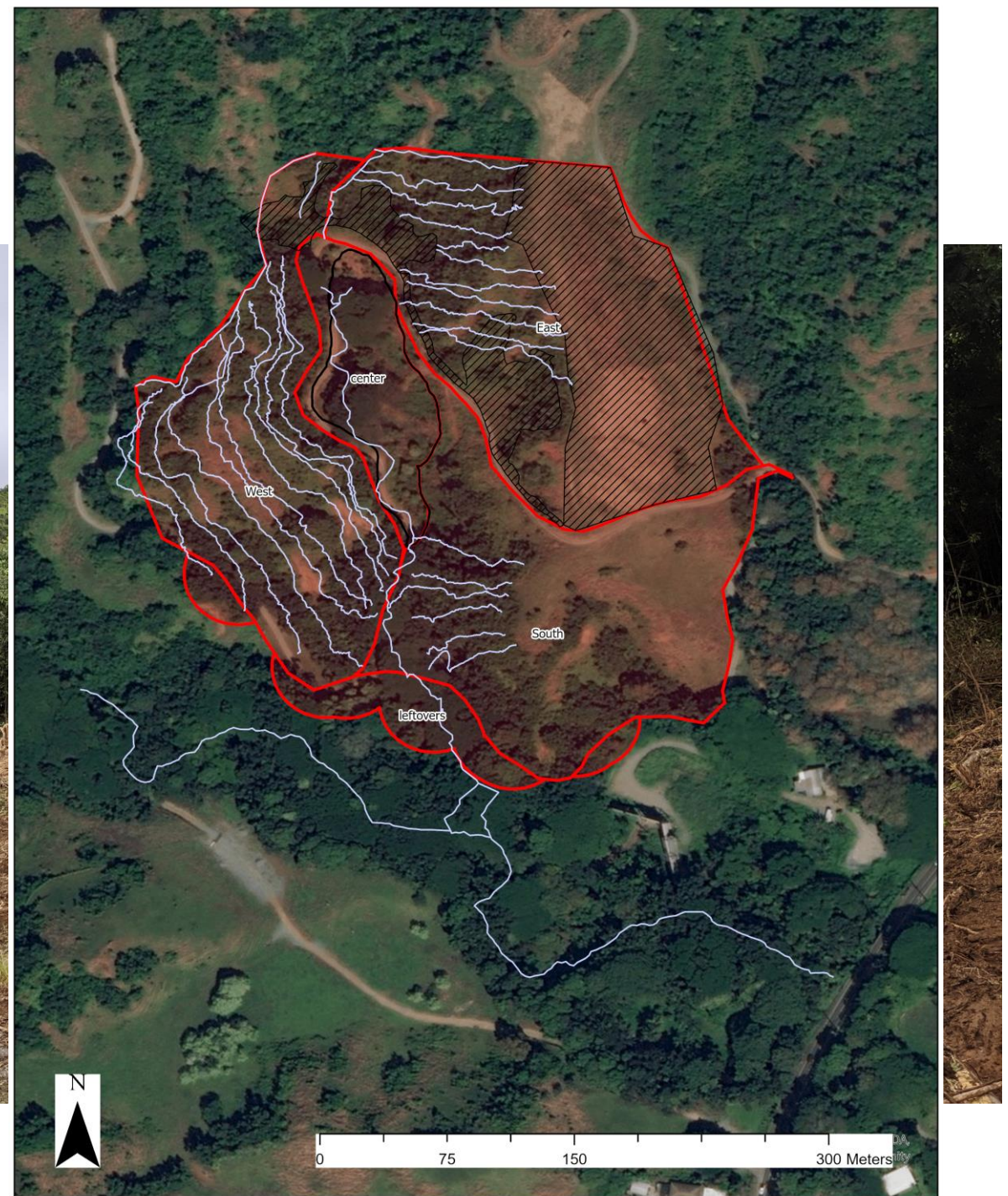
Treatment

- Began treatment September, 2019
- Bait: Tango
- Growth regulator, gel bait
- Five treatments to date, will add toxicant to following treatments
- Midpoint surveys indicate that population density is declining and queens are foraging



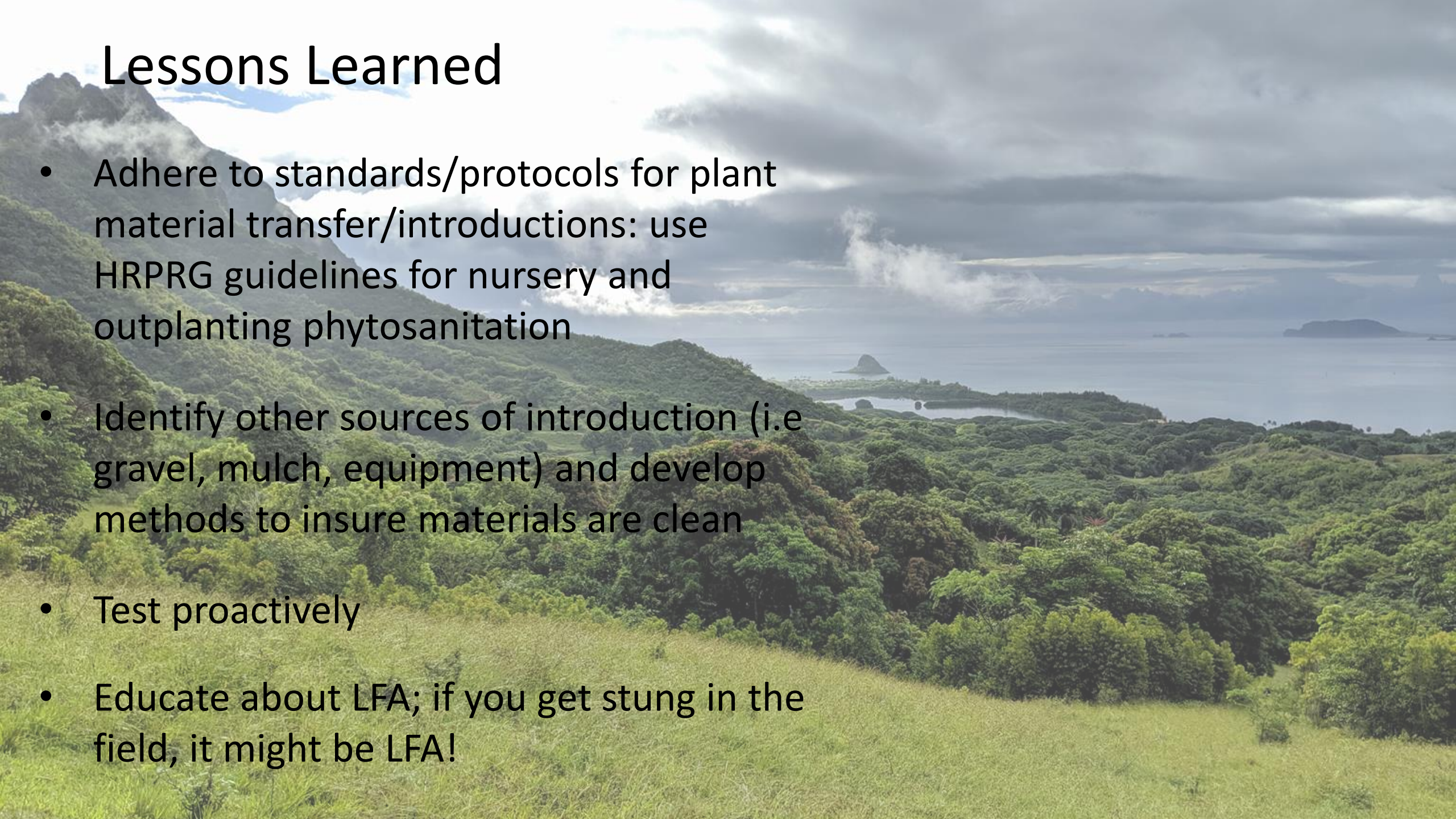
Non-treatment strategies

- Average 1 day/week doing non-treatment work dedicated to eradication
- Vegetation removal/reduction: grinder, herbicide sprays, treating large unwanted tree species (equipment decontamination)
- Transects across the site to ensure complete coverage



Lessons Learned

- Adhere to standards/protocols for plant material transfer/introductions: use HRPRG guidelines for nursery and outplanting phytosanitation
- Identify other sources of introduction (i.e gravel, mulch, equipment) and develop methods to insure materials are clean
- Test proactively
- Educate about LFA; if you get stung in the field, it might be LFA!



HRPRG Phytosanitation Checklist

Nursery Facility

- ☒ Follow sanitation requirements listed above
- ☒ Walkways covered with coarse gravel or paved with good drainage
- ☒ No plants over or under growing area
- ☒ Benches at least 18" above ground ? Water hoses stored off ground
- ☒ Adequate storage for media (enclosed on all sides)
- ☒ Approved DOA preparation and storage areas for pesticides
- ☒ Adequate facility for washing and disinfecting pots
- ☒ At minimum, weekly inspections by greenhouse staff

Chemical

- ☒ Compliance with State DOA regulation regarding use of all pesticides
- ☒ Completion of State Restricted Use Pesticide Applicator Certification if restricted chemicals are the only means of pest control
- ☒ Apply broad and narrow spectrum fungicides, herbicides, and insecticides for prevention and control as necessary.
- ☒ Conduct routine disinfection treatment (contact DOA for a list of approved chemicals) of all greenhouses, and to the adjacent areas as needed.
- ☒ Maintain an accurate pesticide and fertilizer spray history log.

Equipment

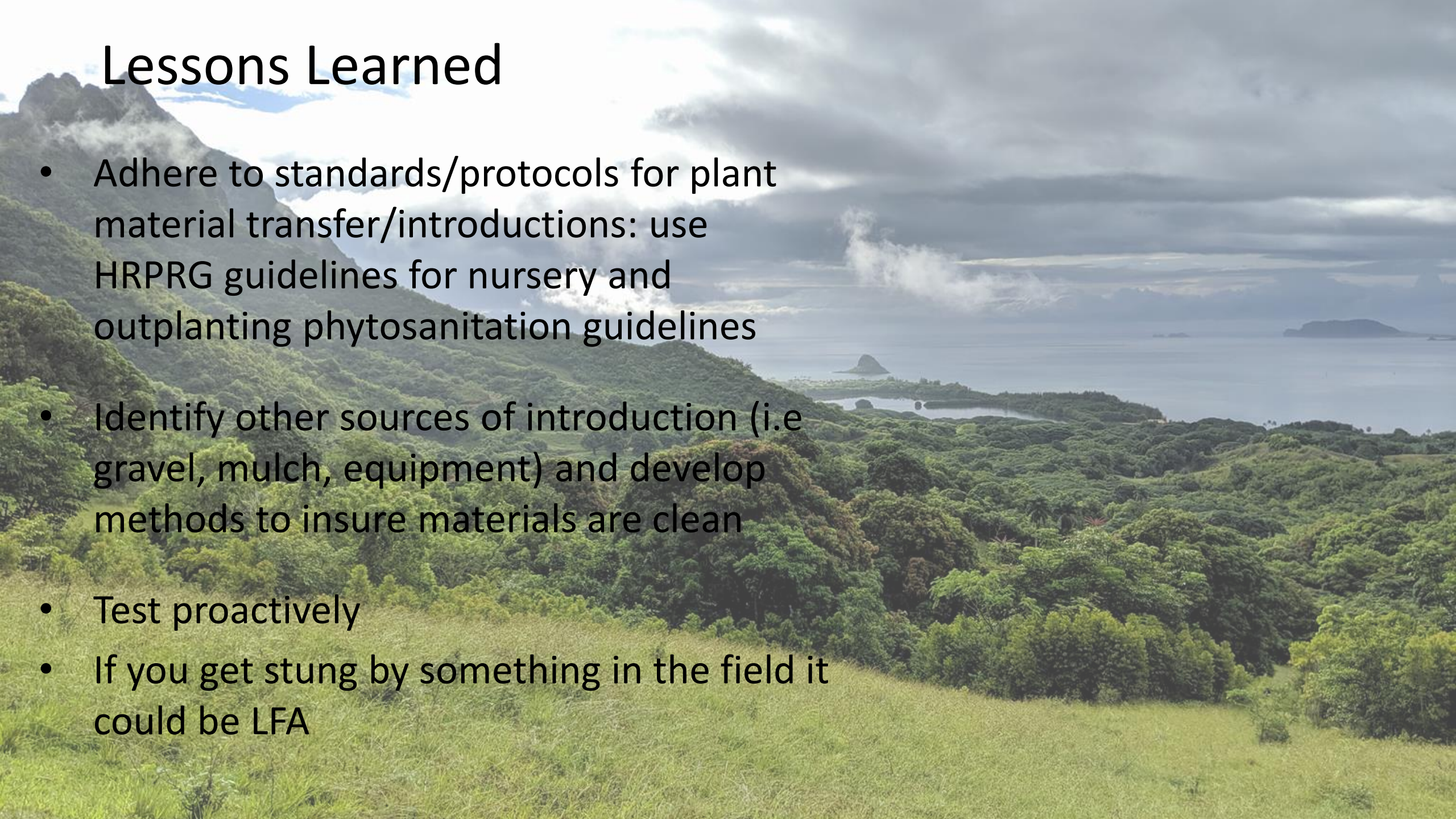
- ☒ Use recommended growing media listed below
- ☒ Use sterilized tools and benches, new or disinfected pots and trays (if reused)
- ☒ Clean transportation vehicles to pick up and drop plants at other sites
- ☒ Conduct daily inspections to identify pest problems and initiate early pest control; provide proper equipment and training for staff. (i.e., magnification loop)
- ☒ Adequate chemical application equipment and Personal Protective Equipment
- ☒ Maintain all equipment and protective gear in good working order

Phytosanitation

- ☒ Clean benches when rotating crops at least every other month
- ☒ Optimize watering schedule (i.e., not too wet or too dry) to minimize pest and disease problems.
- ☒ Water/irrigate in a manner to minimize splash-over into adjacent pots
- ☒ Remove dying/dead plants and any decomposing leaf or plant matter from benches
- ☒ Space plants on benches to allow for adequate air movement
- ☒ Inspect and clean propagules before planting

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- Test proactively
- If you get stung by something in the field it could be LFA



Mahalo



KUALOA
PRIVATE NATURE RESERVE



OISC
O'AHU INVASIVE SPECIES COMMITTEE

cgaps
STOP THE SILENT INVASION



O'ahu
Army
Natural
Resources
Program

Hawai'i Ant Lab

