

Classical Bio-control of Invasive Pests in Hawaii, Recent & Current Projects

Biological Control Section
Plant Pest Control Branch
Plant Industry Division



Department of Agriculture

STATE OF HAWAII

Bio-control Section – what we do when a new pest arrives

1. Survey & Diagnostics
2. Research
3. Exploratory trip to pest origin
4. Rearing, biology, and host testing
5. Submit application for release
6. Release and field evaluation

Stinging Nettle Catterpillar (*Darna pallivitta*) project

1st found in 2001 – Big Island



Bio-control Agent

Aroplectrus dimerus –Taiwan 2004
Released in 2010



Erythrina Gall Wasp Project

EGW – Invaded Hawaii in 2005



Before



After



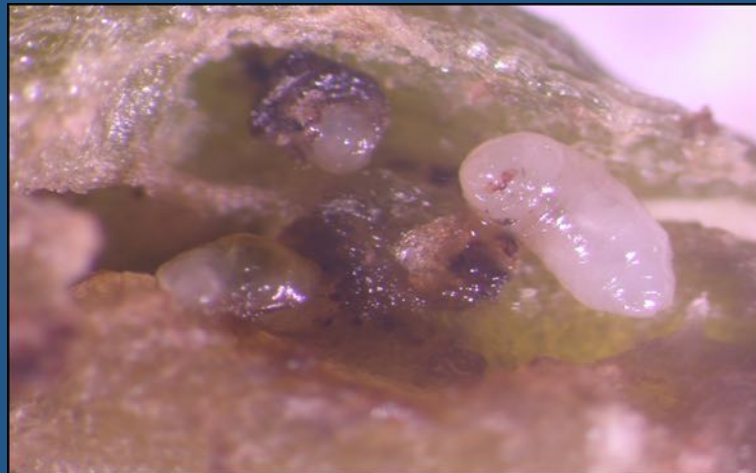
Bio-control Agents



Eurytoma erythrinae -2005

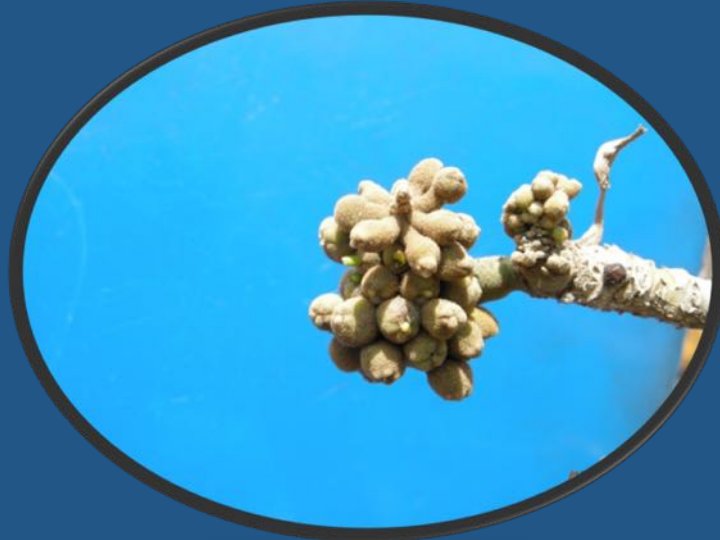
Released in 2008

Erythrina sandwicensis
recovering by 2009



Why do we need to release 2nd Parasitoid?

EGW damages still occurring



Second Bio-control Agent



Aprostocetus nitens

Host testing completed

EA ready to be submitted to Permitting agencies

Macadamia Felted Coccid(*Eriococcus ironsidei*)Project



Bio-control agent

Metaphycus sp. (Hymenoptera: Encyrtidae)



Fireweed (*Senecio madagascariensis*) project

- Toxic to cattle and horses
- Infests over 800,000 acres on Maui, Big Island and Lanai



Bio-control Agent Released

Secusio extensa - released in 2013



Bio-control agents

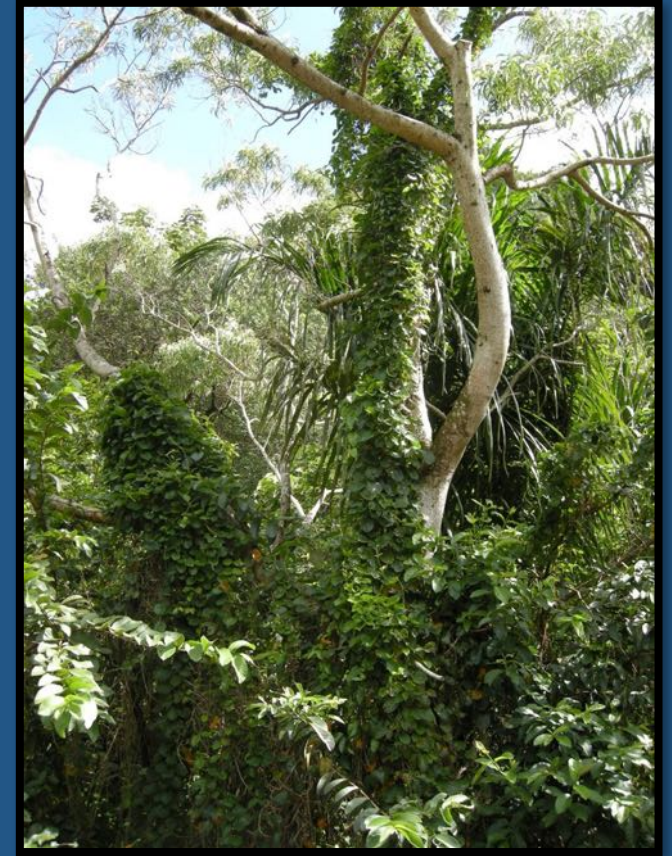
Flower head feeder - *Sphenella austrina* (Diptera: Tephritidae)



Stem boring weevil - *Gasteroclisus tricostalis* (Coleoptera: Curculionidae)



Maile Pilau (*Paederia foetida*) Project



Bio-control agents

Leaf feeding beetle – *Sphenoraia* sp.

(Coleoptera: Chrysomelidae)



Leaf tier moth – *Goniorhyncus* sp.

(Lepidoptera: Crambidae)

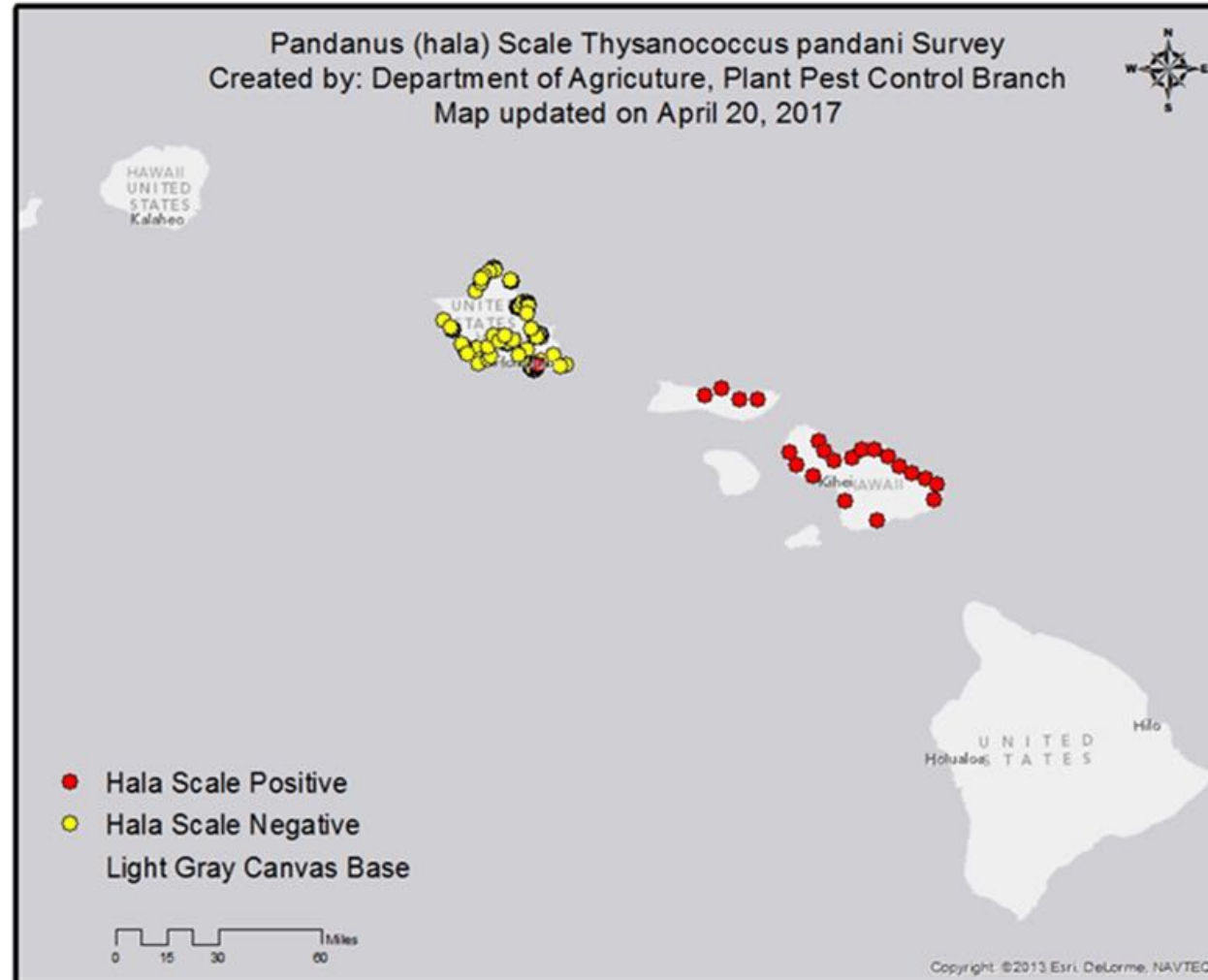


Hala Scale (*Thysanococcus pandani*) Project



- Known to occur only in Indonesia
- Infests foliage and fruits
- Causes yellowing, stunting and death of tree

State wide survey



Thank You!!