

Top 5 invasive species threatening Hawai'i County

Jan Schipper, PhD

Big Island Invasive Species
Committee

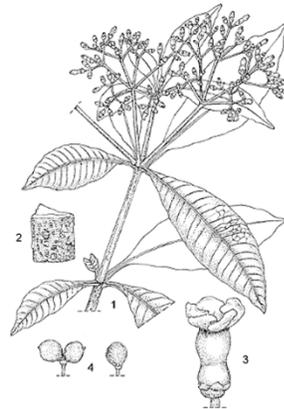
Top five based on ongoing and potential damage to environment, agriculture and human health

- Axis deer
 - Albizia (*Falcataria moluccana*)
 - Little Fire Ant
 - Poison Devils Pepper
 - Coffee Berry Borer
- ** Early detection targets

Others that are likely beyond our control but should be considered in policy making: Miconia, coqui, gorse

Outline

- Axis Deer
- Albizia
- Little Fire Ant
- Poison Devil's Pepper
- Coffee Berry Borer

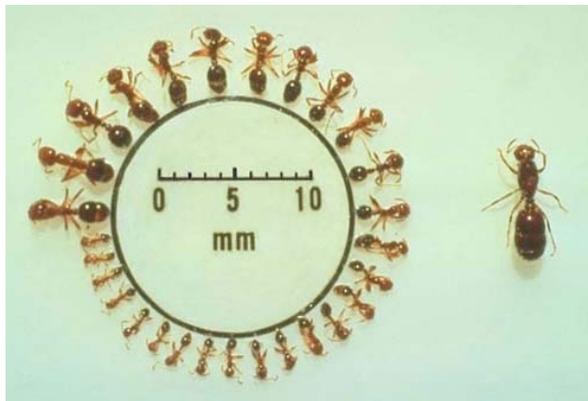
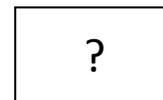


IMPACTS

ENV

AGR

Health



1. Axis Deer on Hawai'i Island

- Axis deer “issue” is a clear indication of policy gaps at multiple levels – each with unique challenges which have thus far prevented enforcement actions and any ability to regulate importation of ungulates from private lands on a neighboring island to private lands on Hawai'i Island.
- The County is taking measures to make importation illegal and enforceable, but the overarching problem remains – that deer and other ungulates can easily be moved between islands and a deeper look at responsibilities, rules and regs and policies are needed to prevent future reoccurrences.

2. Need for control and regulation of inter-island transportation of pests

- Axis deer transported from neighboring island to Hawai'i Island without detection or even enforcement/investigation as there are “laws” to enforce. This could happen again at any time with any other species on any other island.

BIGGER ISSUES:

- The Big Island is also the source for pest transfer to other islands in many instances, such as coqui frogs, little fire ants, nettle caterpillars, small hive beetle, coffee berry borer.
- Stronger capacity is needed to prevent shipments containing these pests, and to monitor interisland transport.
- Cooperation with the Department of Transportation is needed.
- Education of the nursery and agricultural and livestock industry is vital.

3. Access permissions on private lands

Obtaining access to enter and control invasive species on private lands is time-consuming and not always available. Refuges provided by private landowners negate the expenditure of thousands of dollars of public funds and ensure the failure of eradication efforts. This factor was key in the establishment of coqui on the Big Island, is currently hampering the axis deer control effort, and played an important role in the spread of miconia into natural areas on the Big Island. This fact will also weigh heavily on the success of Axis deer eradication.

This is not the first time axis deer threatened the Big Island....

Harold Lyon in November, 1950 regarding the proposed release of axis deer at Pohakuloa Training Area on the Big Island:

“They will range in the cane fields as well as in the forests...The deer can graze down the forage grasses and other plants much closer to the ground than can the cattle, so in all overstocked pasture the deer can thrive while the cattle starve”

Axis Deer: Direct impacts

- ◆ Native Vegetation
 - ◆ Crops/Nurseries/Ornamentals
 - ◆ Golf Courses
 - ◆ Erosion/Watersheds
 - ◆ Archaeological sites (stone walls, heiaus...)
 - ◆ Cattle Ranching
 - ◆ Deer-vehicle collisions
 - ◆ Diseases issues (*Leptospirosis*, *E. coli*, *Cryptosporidiosis*, cattle TB)
- Indirect impacts: -Fence damage, Firearms Safety & Poaching



Albizia

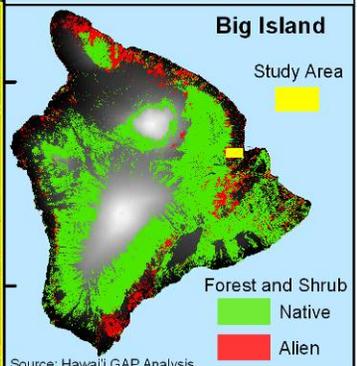
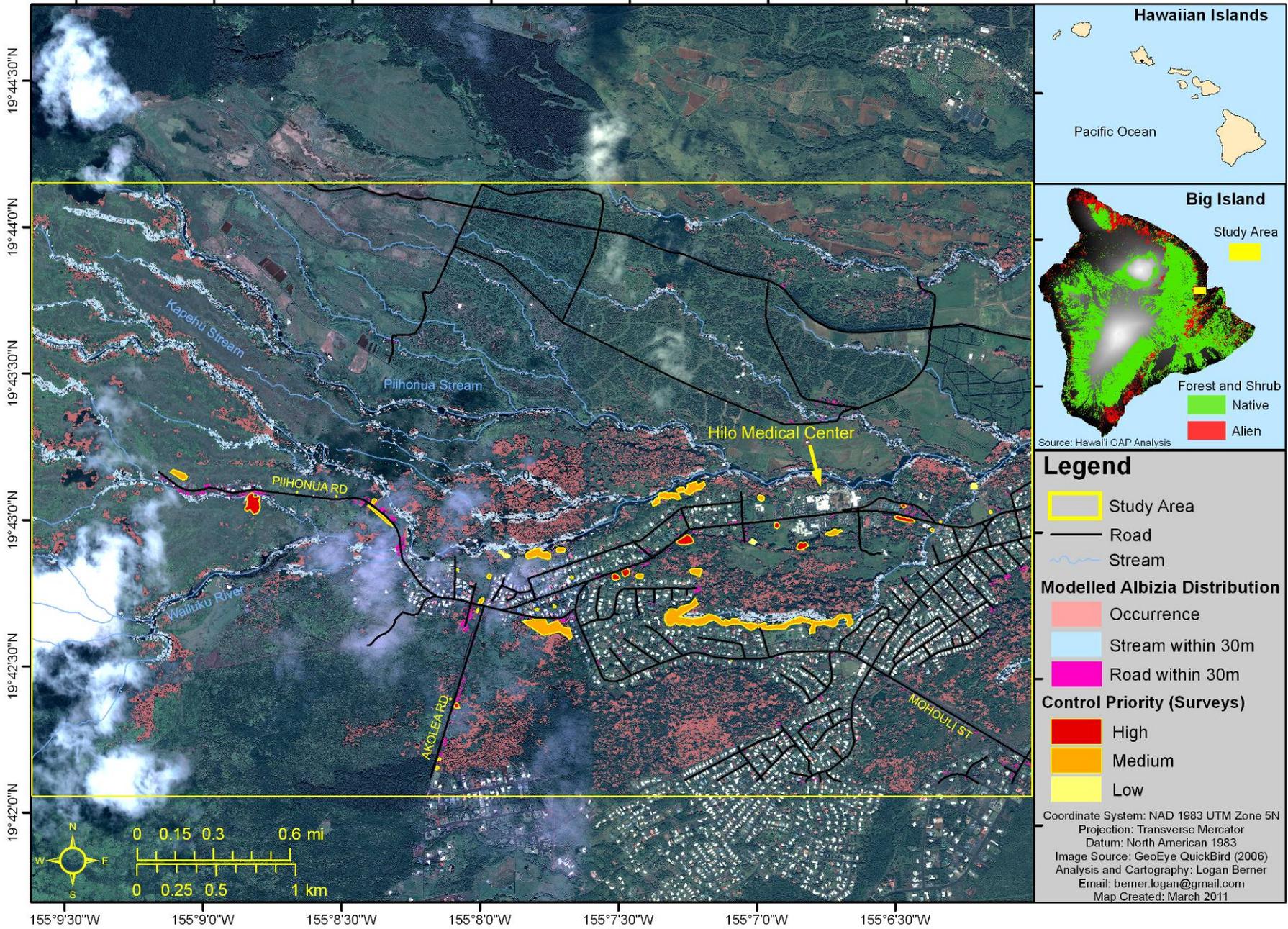
(*Falcataria moluccana*)



- Rapidly becoming the most abundant (and dangerous) tree in Hilo, Puna
- Grows up to 150 feet high
- Fast growing (100 feet in 10+ years)
- Soft wood easily breaks
- Outgrows all other species
- Menace to power lines, roads, infrastructure
- Among the most expensive and damaging trees in Hawaii (single tree can cost \$5-10k to remove)

Invasive Tree Mapping in Hilo, Hawaii:

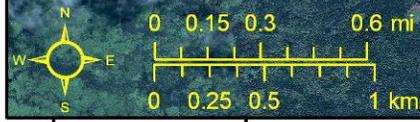
Distribution Model and Hazard Analysis of *Molucca Albizia* (*Falcataria moluccana*)



Source: Hawaii GAP Analysis

- Legend**
- Study Area
 - Road
 - Stream
- Modelled Albizia Distribution**
- Occurrence
 - Stream within 30m
 - Road within 30m
- Control Priority (Surveys)**
- High
 - Medium
 - Low

Coordinate System: NAD 1983 UTM Zone 5N
 Projection: Transverse Mercator
 Datum: North American 1983
 Image Source: GeoEye QuickBird (2006)
 Analysis and Cartography: Logan Berner
 Email: berner.logan@gmail.com
 Map Created: March 2011



155°9'30"W 155°9'0"W 155°8'30"W 155°8'0"W 155°7'30"W 155°7'0"W 155°6'30"W

19°44'30"N
19°44'0"N
19°43'30"N
19°43'0"N
19°42'30"N
19°42'0"N

Solution

- Communities need to work together to plan removal from state, private and absentee lots.
 - » Communities need support
- State/county supported wood chipper??



Little Fire Ant



- Now in almost all Hilo beach parks – affecting tourism
- Creating livelihood shifts away from agriculture – keeping farmers and residents indoors
- Causing blindness in pets
- Typically not considered a problem by residents until they have LFA

STING OPERATION: CATCH THE LITTLE FIRE ANT!

IMPACTS
If the little fire ant becomes established on Maui it will change our lives:

- Fiery stings leave itchy burning welts
- Pets and livestock could be blinded from stings
- Serious agricultural pest
- No mo' slippahs?

IDENTIFYING THE LITTLE FIRE ANT
Little fire ants are tiny, about 1/16th inch long (as long as a penny is thick), much smaller than the established tropical fire ant, and solid red or orangish-red.

REPORTING THE LITTLE FIRE ANT
If you are stung by a tiny orange-red ant please report it! Hawai'i Department of Agriculture at 273-3962. Maui Invasive Species Committee 573-6472 (MISC)

PLEASE HELP—BECOME AN UNDERCOVER ANT DETECTOR! VISIT WWW.FIREANTFREEMAUI.ORG



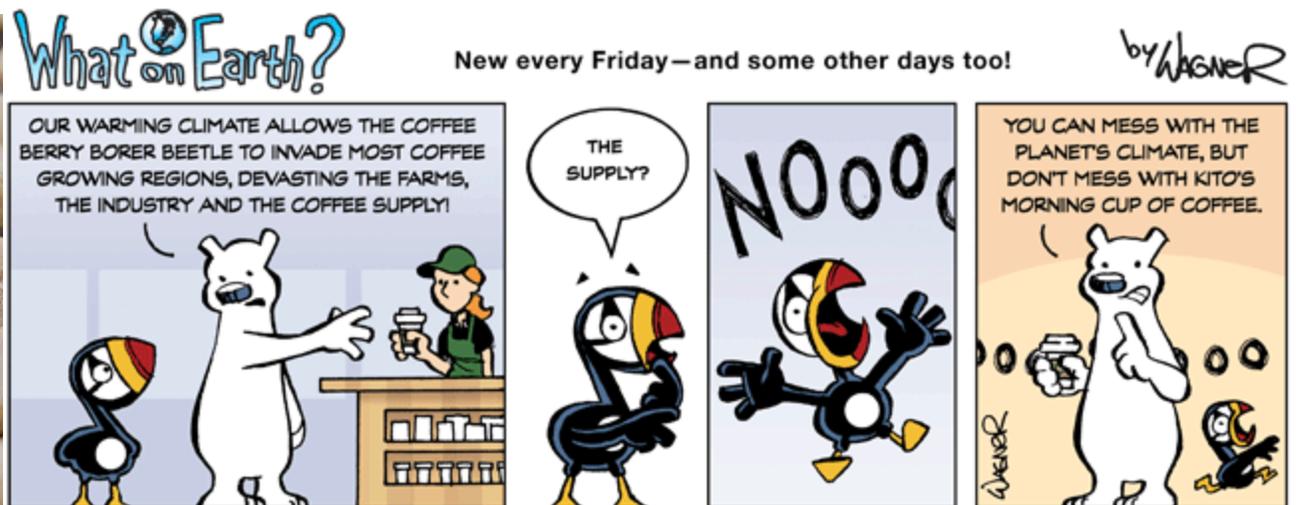
Implications



- As with other invasive species (coqui, etc.), the Big Island has become the source of contamination for neighboring islands
- How much longer before consumers start to look elsewhere for their good – somewhere that is not becoming overrun with invasive species? Its already started...how much longer before there is no export market?

Coffee Berry Borer

- Impacting coffee around the world (\$90 billion in damages)
- Resulted in Kona Quarantine
- Working group formed



CBB Solution (starting point)

- One of the recommendation from the Hawai'i CBB working group is “reservoir” control
- It seems that feral coffee (wild, unmaintained or non productive) may be retaining beetle populations when farms are treated
- SOLUTION: Campaign to get rid of feral/wild coffee (starting 2012)