Unfortunate forestry introductions to Hawai‘i

Valuable trees which have become ecological and economic pests

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Falcataria moluccana,
aka *Paraserianthes falcataria*,
Albizia falcataria

albizia

- Huge trees
- One of the fastest-growing the in the world
- Used for lumber, pulp, agroforestry
- Nitrogen-fixer (organic farmers, permaculturists)

But… also one of the worst pests
Currently invading and destroying
wet native ‘ōhi‘a forest in Puna, O‘ahu, and Kaua‘i
Causing financial problems for Puna homeowners

ALBIZIA

THE TREE THAT ATE PUNA

August 2003

(Falcataria moluccana; synonyms Albizia falcataria, Paraserianthes falcataria)
Twig with fruits (above), flowers (upper right)

Grevillea robusta, silk oak, silver oak

- Prime timber
- Fast growing
- Drought tolerant

But… pest of rangelands and invader of endangered dryland forests

Puʻu Waʻa Waʻa

Casuarina equisetifolia, short leaf ironwood

- Windbreak
- Salt tolerant
- N-fixer

But… significant cost to rehabilitate lands dominated by Casuarina

- $365/acre cost of mechanical and chemical control

- Plantation establishment costs increased by 28%

- Loss of productive land in windrows

DEFINITIONS:

NATIVE / INDIGENOUS:
Arrived by natural means (without assistance from man)

ENDEMIC:
Found only in a certain location

WEEDY NATIVE SPECIES:
If you say it's a weed, it's a weed to you.

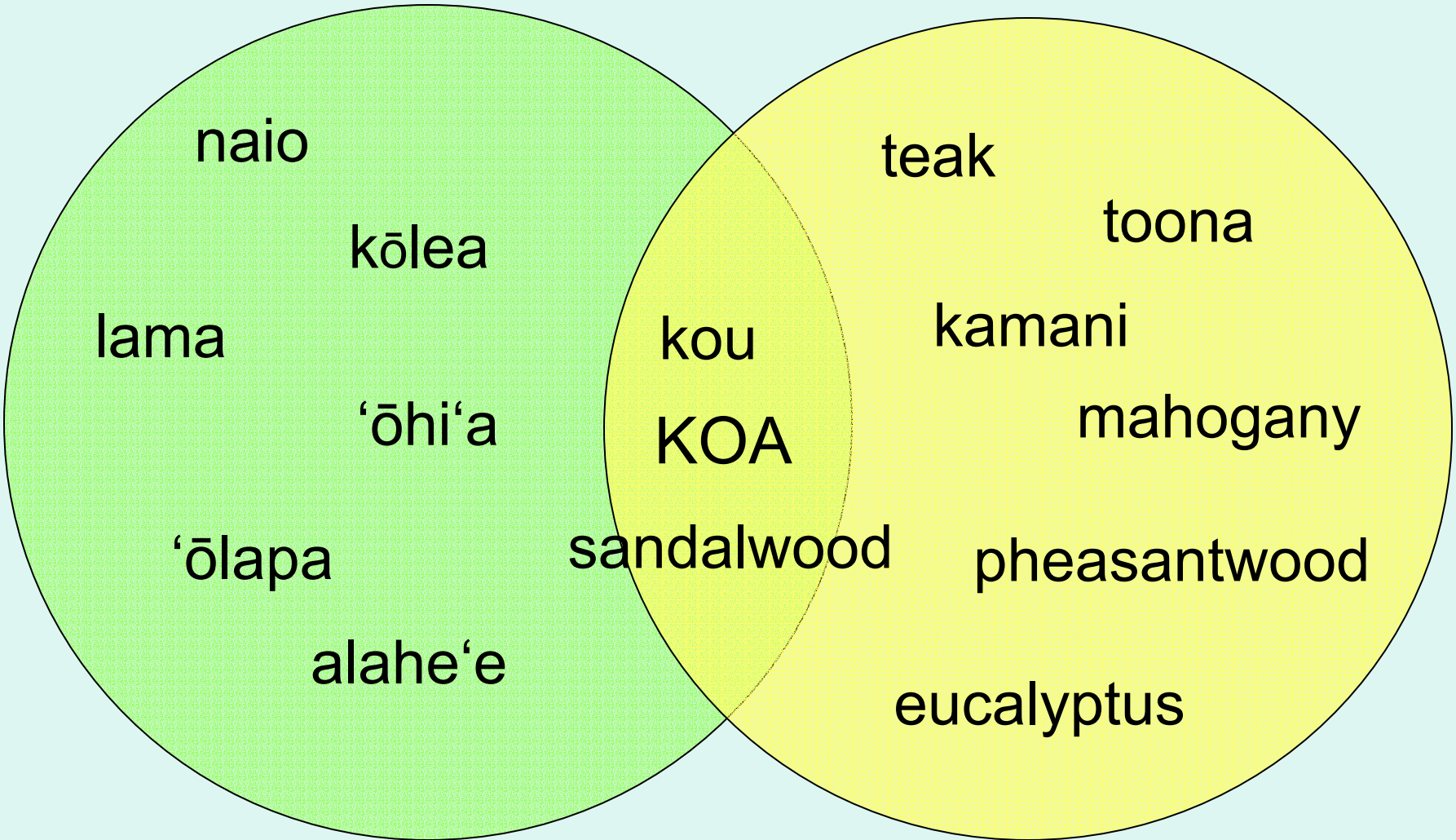
NON-NATIVE / EXOTIC / ALIEN:
Arrived as an intentional or unintentional introduction by man

POLYNESIAN INTRODUCTION:
Introduced before European contact

INVASIVE

Causing harm to economy, environment, or human health

Why plant exotic species?



Actions to take… demonstrations

Dalbergia sissoo (Indian rosewood) scored high on invasiveness (WRA=16, High risk, HPWRA)

At the forestry demonstration plots, we cut it and replaced it with *Calophyllum inophyllum* (kamani)

Actions to take…
Recommend alternatives

Acacia mangium

- N-fixer
- Adaptable, fast growing
- Merchantable wood
- No HWRA rating but…

Acacia auriculiformis	Darwin Black Wattle	13	**H (HPWRA)**
Acacia confusa	Formosan koa	10	**H (Hawai‘i)**
Acacia crassicarpa	northern wattle	7	**H (HPWRA)**
Acacia farnesiana	sweet acacia	14	**H (HPWRA)**
Acacia longifolia	Sidney goldern wattle	10	**H (HPWRA)**
Acacia mearnsii	Australian acacia	15	**H (Hawai‘i)**
Acacia melanoxylon	Australian blackwood	12	**H (HPWRA)**
Acacia nilotica	gum arabic tree	14	**H (HPWRA)**
Acacia parramattensis	Parrmatta green wattle	9	**H (HPWRA)**

Functional alternatives

- N-fixing
- Fast-growing
- Agroforestry uses
- Valuable timber

Samanea saman, monkeypod
HWRA = 4, low

Pterocarpus indicus, narra
HWRA = 4, low

Actions to take… biocontrol

- *Psidium cattlianum*, strawberry guava
- Edible fruit, ornamental
- Still sold in garden shops
- Biocontrol: *Tectococcus* gall wasp

Proposed CTAHR guideline

Don’t plant an invasive species when another plant will do.