Developing a More Accurate Weed Risk Assessment Model

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PLANT RIGHT

KEEP INVASIVE PLANTS IN CHECK

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KEEP INVASIVE PLANTS IN CHECK

Horticulture industry

Environmental groups
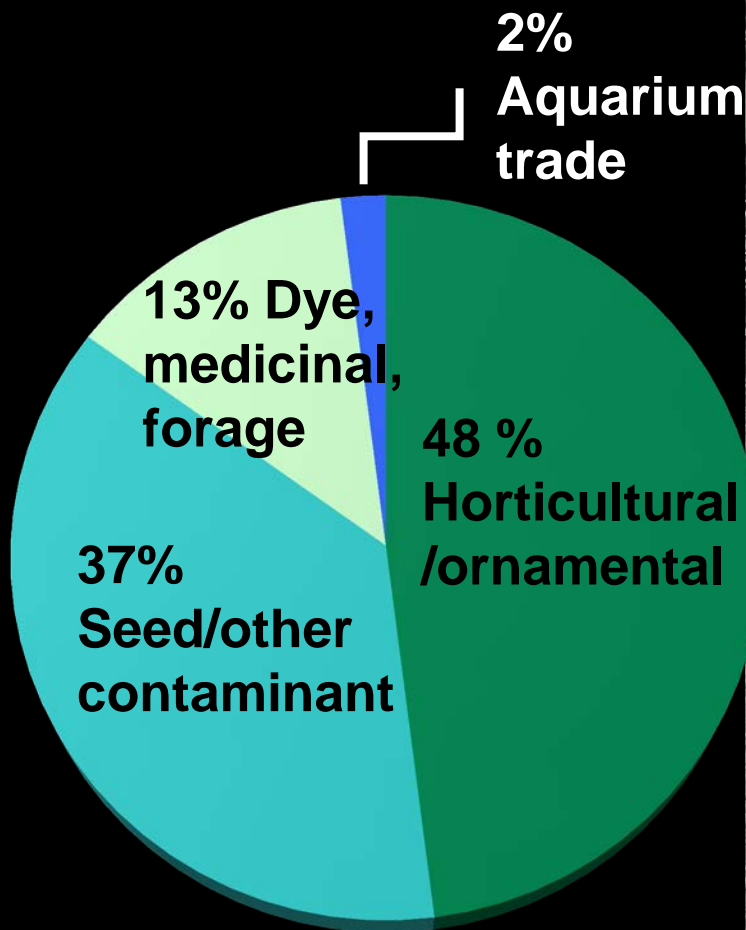
Public gardens and arboreta

Scientists

Government agencies

What are invasive ornamental plants?

Percentage of invasive plants accidentally or intentionally introduced to California (Bell et al., 2007)

2%
Aquarium trade

13% Dye, medicinal, forage

48 % Horticultural /ornamental

37% Seed/other contaminant

Weedy characters

- Broad germination
- Establish rapidly
- Mature early
- Prolific seeder
- Environmentally fit
- Successful dispersal
- Strong veg growth

Ornamental characters

- Easy to propagate
- Establish rapidly
- Grow fast
- Mature early
- Abundant flowers
- Environmentally fit and free from major pests

Developing Weed Risk Assessment (WRA) models to predict plant invasiveness

- Prevention is most cost effective tool

- Australian Pheloung WRA developed for border screening

- PlantRight is developing a WRA tool specifically for ornamental plants

Australian Government

**Australian Quarantine and Inspection Service**

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INVASIVE VS. NONINVASIVE PLANTS

| INVASIVE PLANT: Scotch Broom (*Cytisus scoparius*)	ASSESSING INVASIVE RISK		ALTERNATIVE: Forsythia (*Forsythia x intermedia*)
YES	CONSIDERED INVASIVE ELSEWHERE	NO	
YES	ADAPTED TO CALIFORNIA CLIMATE	YES	
YES	DIFFICULT TO REMOVE OR CONTROL	NO	
YES	NEGATIVELY IMPACTS NATIVE PLANTS, ANIMALS	NO	
YES	REPRODUCES ABUNDANTLY	NO	
YES	POTENTIAL FOR WIDESPREAD DISPERSAL	NO	
YES	GROWS RAPIDLY	NO	
YES	IS THIS PLANT INVASIVE?	NO	

Comparing the Accuracy of the PlantRight and Pheloung WRA models – *Methods*

Types of plants included in study
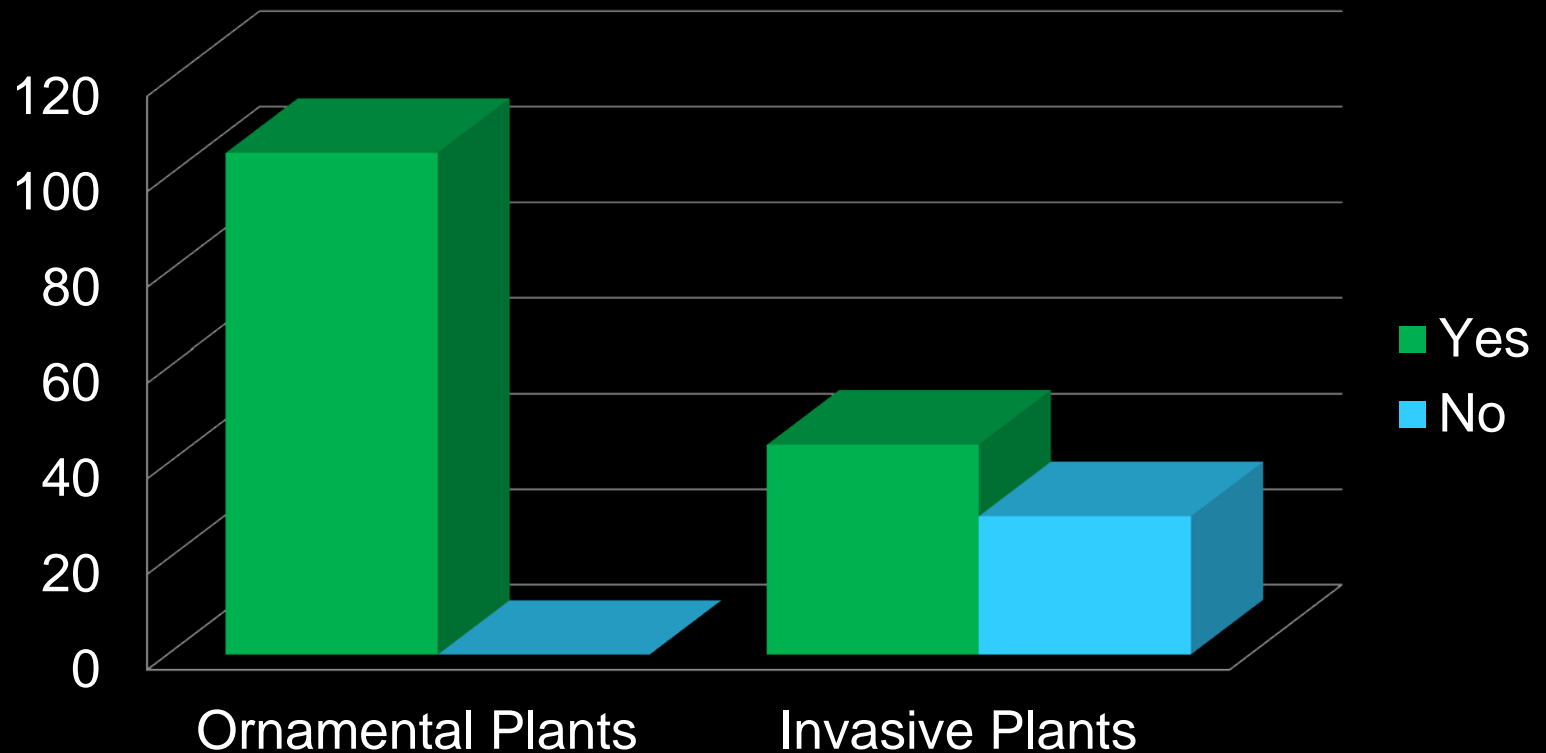

41%
Invasive

59%
Ornamental
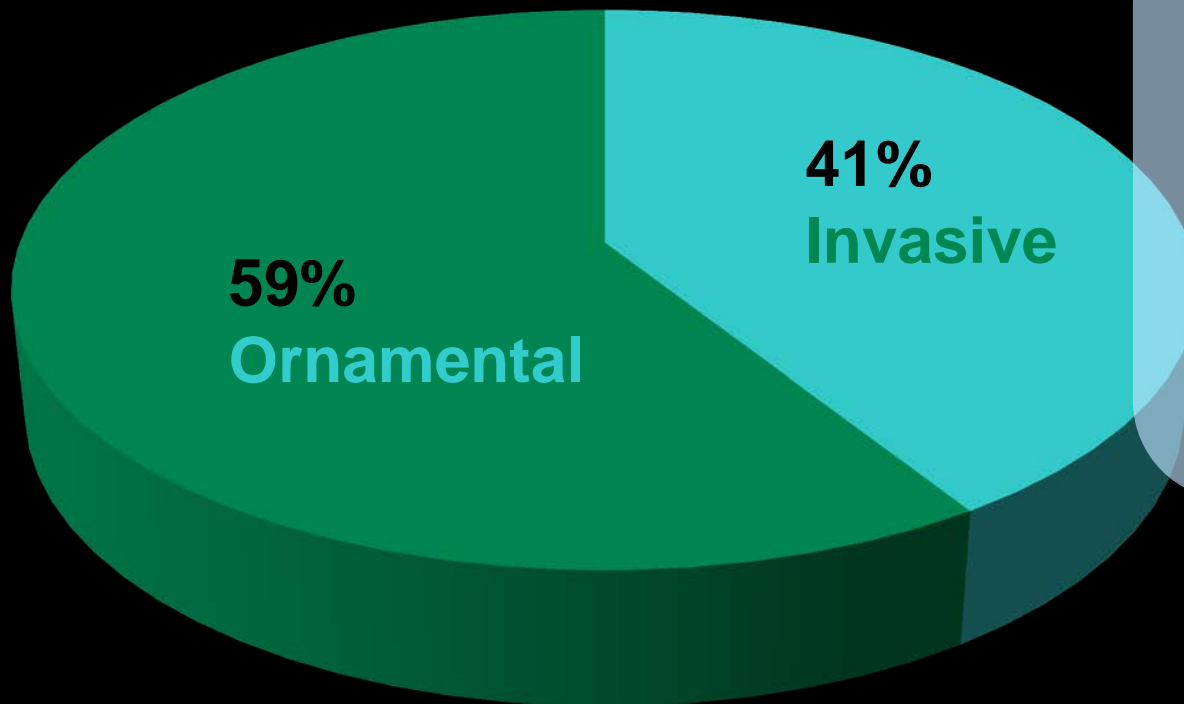
- Compared accuracy and time of both models
- 3 Independent Evaluators
- Screened 189 plants
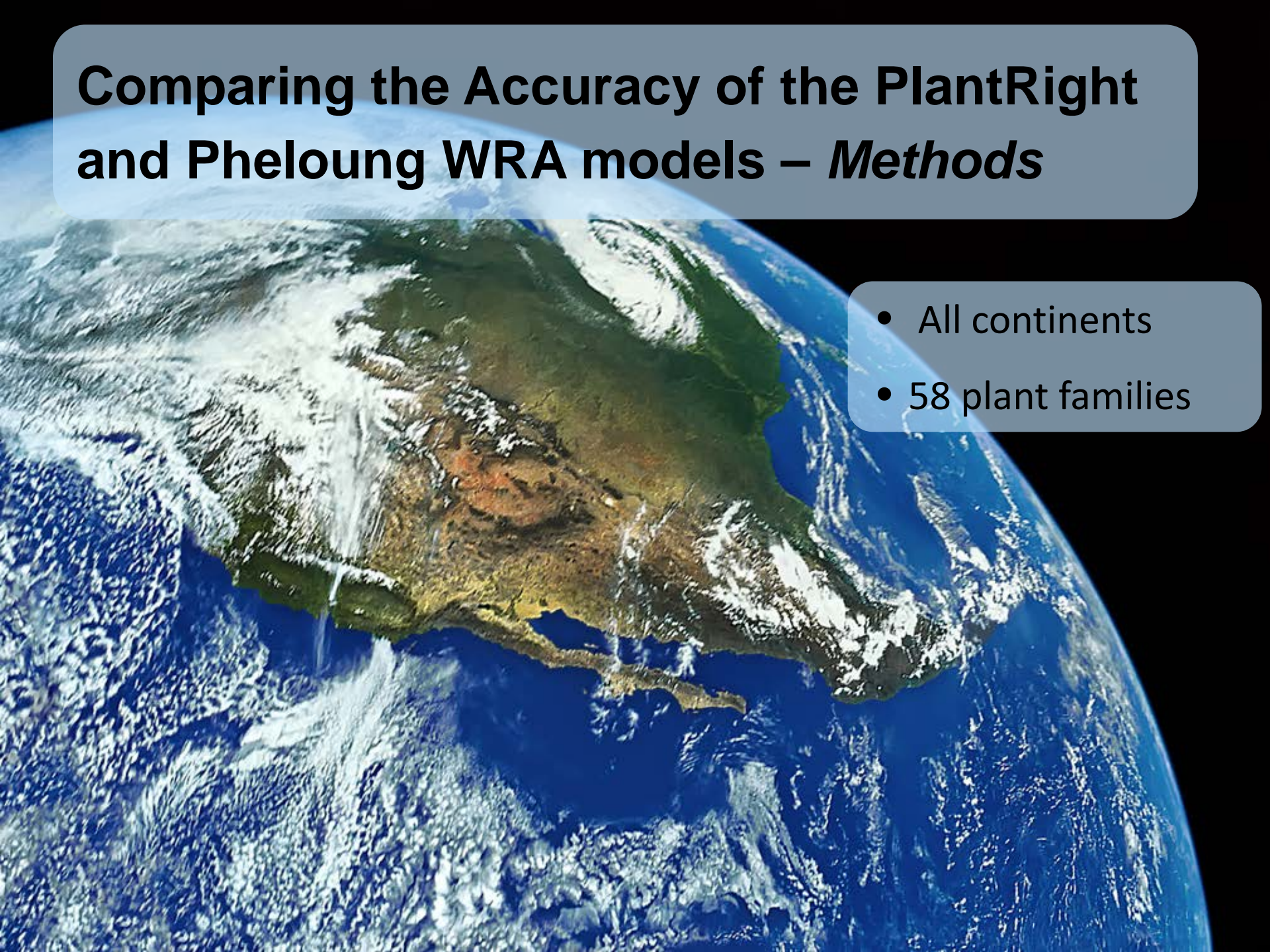 - 105 Ornamentals
  - 73 Invasive Plants
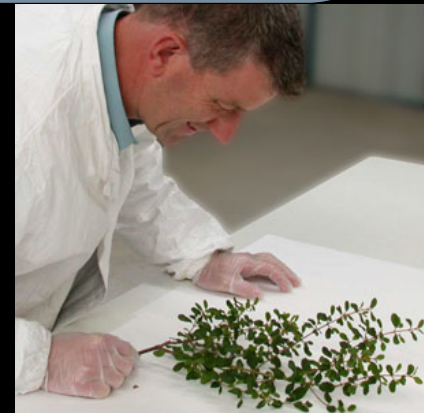
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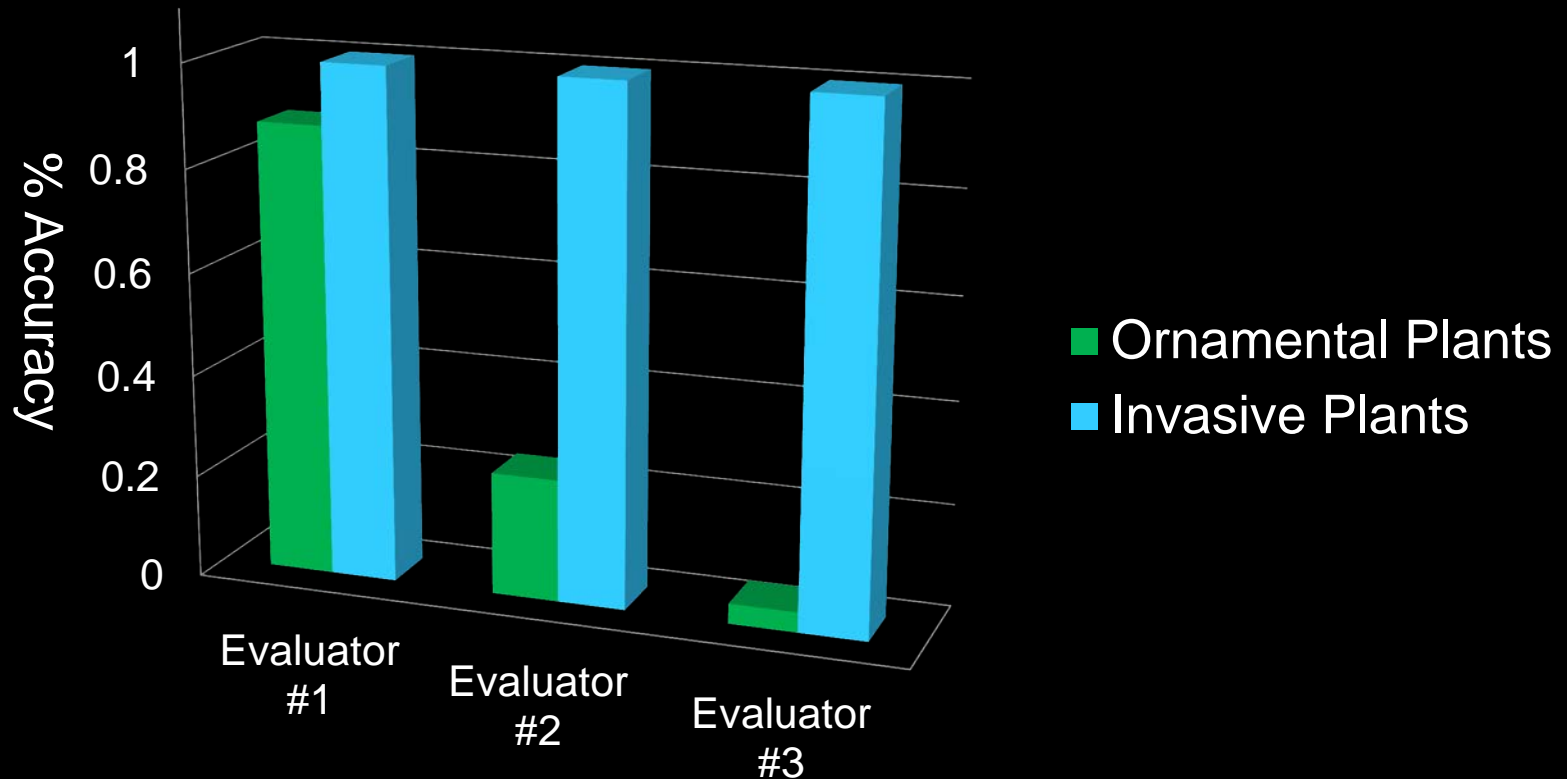

Plant introduced via horticulture

Comparing the Accuracy of the PlantRight and Pheloung WRA models – *Methods*
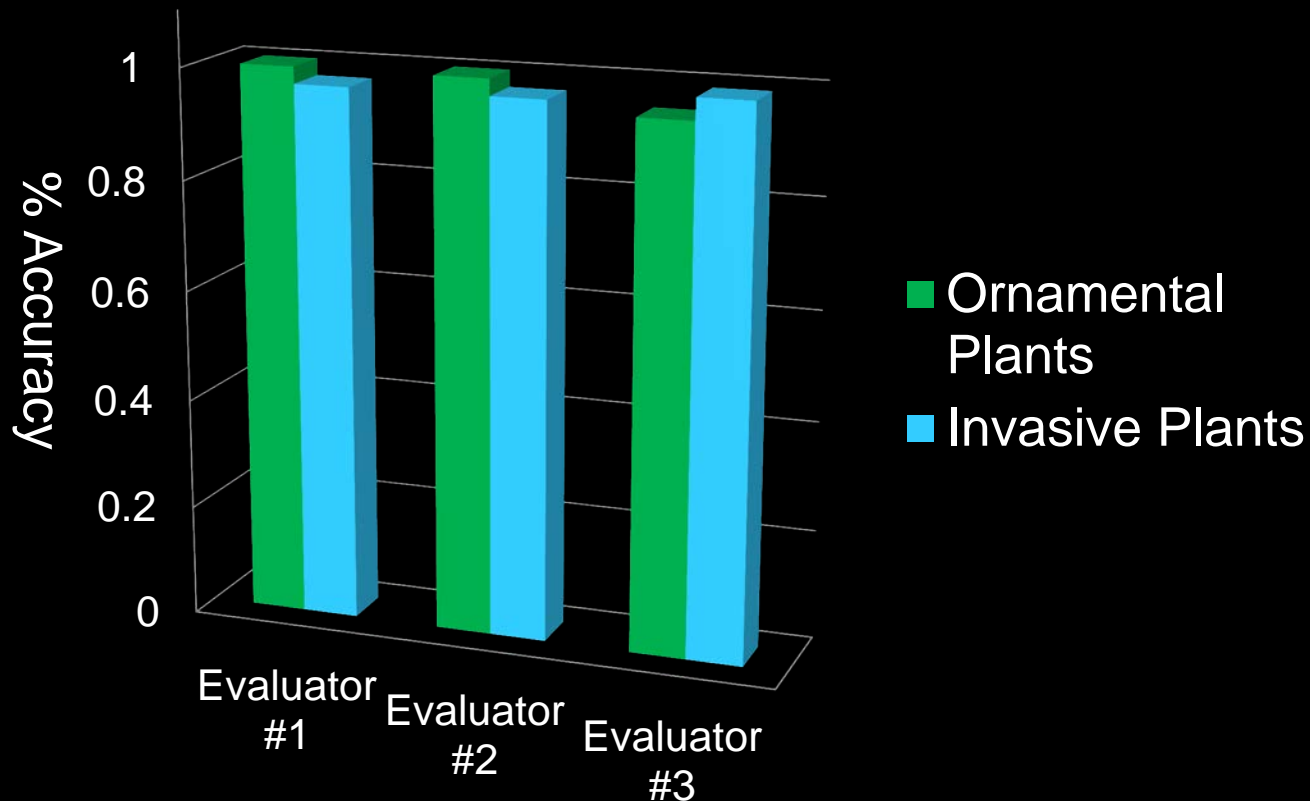
- All continents

- 58 plant families

Comparing the Accuracy of the PlantRight and Pheloung WRA models – *Results*

Pheloung WRA model

Comparing the Accuracy of the PlantRight and Pheloung WRA models – *Results*

PlantRight WRA model

Comparing the Accuracy of the PlantRight and Pheloung WRA models –*Conclusions*

- PlantRight model more accurate for screening ornamentals

- Develop program to certify plants as Invasive-Free

- Value proposition for nursery growers and retailers

Nicholas Staddon of Monrovia, founding member of PlantRight

Thank you
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- Joseph DiTomaso, UC Davis
- Dave Fujino, CA Center for Urban Horticu;ture
- Lizbeth Seebacher, UW

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- Sustainable Conservation
- UC Davis

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