


## Models Needed to Estimate Important Aspects of Invasions

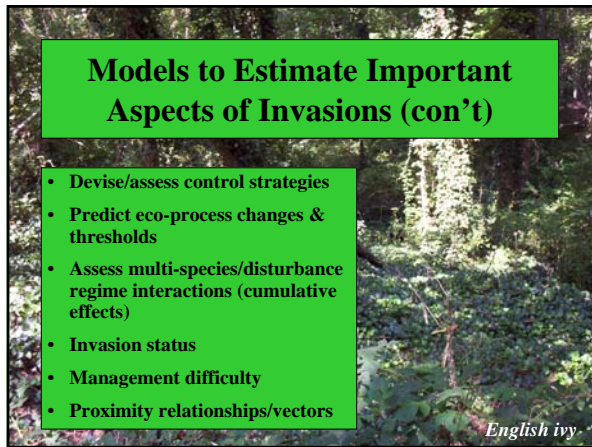
- Baseline ecological impacts
- Frame economic impacts
- Rates of invasion
- Identify important variables to manage
- Predict at-risk sites & T&E mgt.



*Oriental bittersweet*

## Models to Estimate Important Aspects of Invasions (con't)

- Devise/assess control strategies
- Predict eco-process changes & thresholds
- Assess multi-species/disturbance regime interactions (cumulative effects)
- Invasion status
- Management difficulty
- Proximity relationships/vectors



*English ivy*

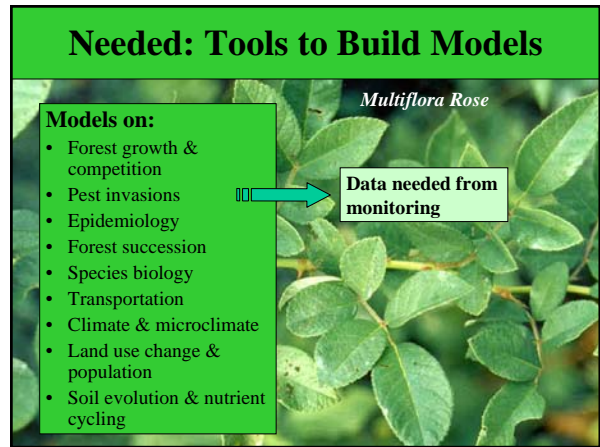
## Needed: Tools to Build Models

*Multiflora Rose*

**Models on:**

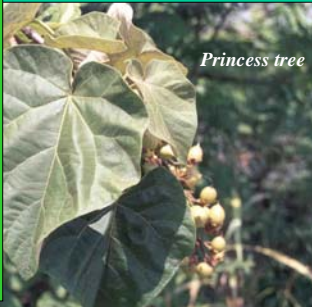
- Forest growth & competition
- Pest invasions
- Epidemiology
- Forest succession
- Species biology
- Transportation
- Climate & microclimate
- Land use change & population
- Soil evolution & nutrient cycling

Data needed from monitoring

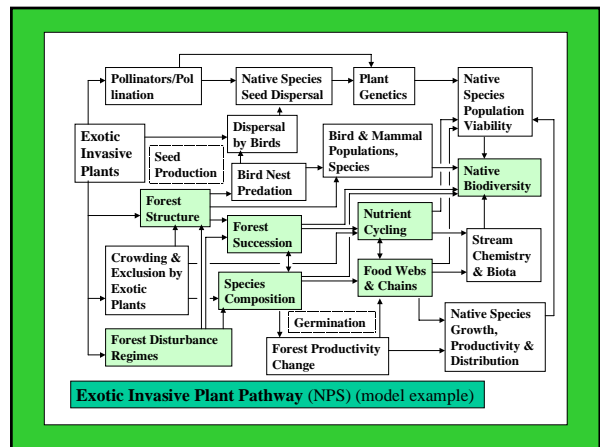


## Principle Types of Monitoring Data for Models

- Site moisture, soil type & productivity
- Forest structure, light, shade
- Change in cover, edges & patterns
- Dispersal dynamics & patterns
- Geographic position & patterns
- Plant associations & diversity
- T&E species populations
- Proximal associations
- Treatment/control history



*Princess tree*



A photograph of a Tree of heaven (Ailanthus altissima) plant, showing its characteristic bipinnately compound leaves and clusters of small yellow flowers. The plant is the background for the text boxes.

**Think Hard About Your  
Purpose for Monitoring**

*Tree of heaven*

- Visualize model of what's being attempted
- Decide what monitoring variables serve your purpose
- Utilize standard formats/protocols
- Make sure basic variables monitored