Invasive Plant Management 101

California Invasive Plant Council Training Symposium 2016
Principles of Invasive Plant Management

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“What is a weed?...

...A plant whose virtues have not yet been discovered.”

- Ralph Waldo Emerson
  (1803-1882)
What is an Invasive Plant?

- Non-native (can be regional)
- Impairs the ability of native California ecosystems to function
  - Threatens native plants and wildlife, including endangered species
  - May cause economic losses
- “Unfair advantage” makes it spread easily and difficult to control
  - Natural predators are absent
How Many Invasive Plants are in California?

Source: Joe DiTomaso, UC Davis
- Approximately 200 plants
- Categorized as
  - High
  - Moderate
  - Limited
  - Alert
How Did They Get Here?

Source: DiTomasso, UC Davis
THE INVASION CURVE

AREA INFESTED

CONTROL COSTS

ERADICATION
Species absent; small number of localized populations; eradication possible

CONTAINMENT
Public awareness typically begins; rapid increase in distribution and abundance; eradication unlikely

RESOURCE PROTECTION & LONG-TERM MANAGEMENT
Invasive species widespread and abundant; long-term management aimed at population suppression and resource protection

INTRODUCTION
Species absent; eradication possible

TIME →
How Fast Do They Spread?

Millions of acres infested

1958
1965
1985

Yellow starthistle

Partial info from Maddox and Mayfield 1985
Know Your Enemy

- Annuals
- Biennials
- Perennials
- Woody plants

By learning more about weed biology you will be better equipped to plan and implement effective weed control projects.
Know the Distribution of Your Species

- Inventory and map the infestation
- Early detection only happens if you survey
  - the sooner you control them the more time and money you save!
- Consult Weed Mapper
  - calweedmapper.cal-ipc.org
What can we do about it?

Conceptual Model of Strategic and Adaptive Invasive Plant Management

- Review conservation targets and goals
- Compile list of non-native plants (established and potential)
- Review species characteristics: ecology, feasibility of control, socio-political concerns
- Identify priority species: which non-native plants should be a focus of our limited resources?
- Identify priority areas: where should invasive plant management efforts be focused?
- Assess the distribution and abundance of priority invasive plants in priority areas OR model future potential distribution
- Identify and document optimal strategies for priority species and areas. Identify thresholds for management action
- Develop SMART objectives: what are the expected results of our strategies? (Specific, Measurable, Achievable, Results-oriented, Time-bound)
- Implement strategies
- Track strategy implementation: what actions were taken, where, and when
- Monitor: are we achieving our objectives?
What tools are available?

- **Mechanical**
  - Hand pulling, hoeing
  - Tillage, mowing

- **Cultural**
  - Grazing, prescribed burning

- **Biological**
  - St. Johnswort beetle

- **Chemical**
  - Herbicide

- **Integrated approaches**
  - Combined methods
  - Revegetation

Stockton Deep Water Ship Channel
Do you really need a permit?
How do you get funding???

Where?
  Funding Sources

How?
  Grant Applications

The Pitch?
  Funder Values

No money?
  Use Volunteers
Share & Steal With Pride

• Consider your audience: visitors, policy makers, funders
• Craft your message: analogies, accessibility, language
• Controversy
• Share your learning moments
• Share all the expert knowledge you have gained!
Policy and Agency Context

- **Federal**
  - United States Department of Agriculture, Natural Resources Conservation Service
    - Federal Noxious Weed List
      - 112 species

- **State**
  - California Department of Food and Agriculture
    - Section 4500, California Noxious Weed List
    - CDFA Pest Plant Rating List, AKA Encycloweedia
      - Approximately 250 species

- **Local**
  - Weed Management Areas
Look for Advice

• Take More Field Courses
• Consult the Web
  ▪ http://www.cal-ipc.org
  ▪ http://tncinvasives.ucdavis.edu
  ▪ http://www.invasive.org/
  ▪ More resources listed on Cal-IPC Website
• Ask an expert
  ▪ Weed Management Areas
  ▪ UC Cooperative Extension
  ▪ Field course instructors
• Experiment!
California Invasive Plant Council
Protects California’s environment and economy from invasive plants
www.cal-ipc.org
Thank you!

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