

Strategic Approaches to Wildland Weed Management

California Invasive Plant Council

San Diego – October 28st, 2015



Why Have a Strategy? and Why Have A Plan?



Why Have a Strategy? and Why Have A Plan?

- Things fail without a plan.
- Gaining approval.
- Getting funding.
- Getting partners.
- Getting feedback
- Guiding staff.
- Bridging staff turnover.



Strategery is cool....



Today

- Overview of a Management Plan
- Objectives & Writing SMART Goals
- Assessing Priority and Risk
- Planning a Prevention Strategy
- Regulations and Permitting
- Implementation Plans in More detail
- Adaptive Management and Monitoring

Make A Comprehensive Management Plan

- Early detection
- Prevention
- Control
- Monitoring
- Prioritization
- Research
- Outreach and education



Goals & Objectives

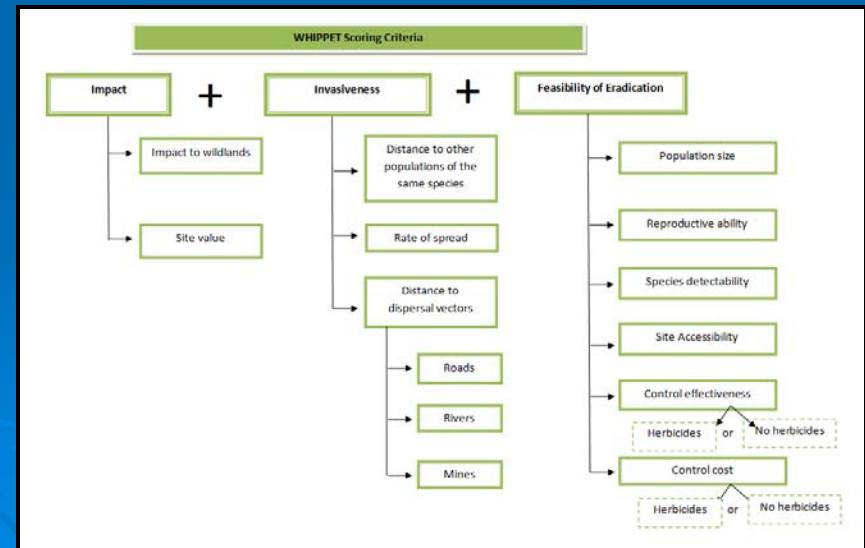
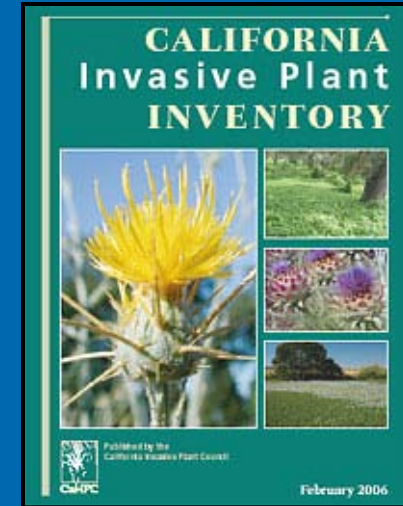
- Terminology
- Why write objectives?
- Factors & considerations
- Writing objectives
- Types of objectives
- SMART objectives

REALLY SMART



Prioritize Your Weeds

1. Assess risks associated with weeds
2. Prioritize weed populations
3. Determine which weeds to treat first



Planning Prevention Strategies

1. Stop seeds at the source
2. Stop movement of weeds
3. Avoid disturbing soil & canopy cover
4. Survey for early detection
5. Increase awareness of weed prevention practices

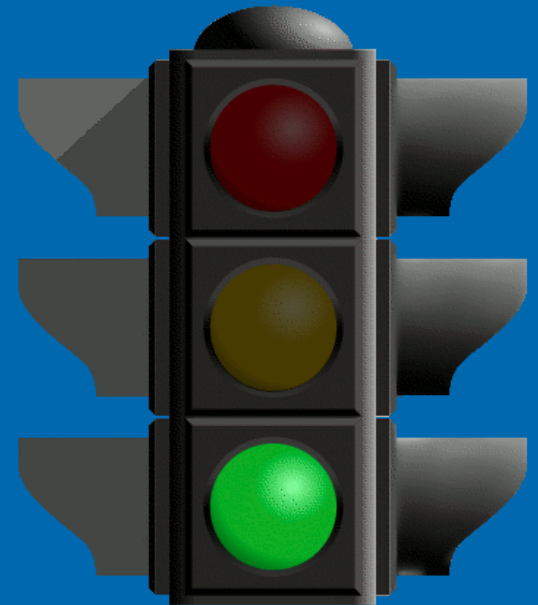


Permitting

CEQA

1600

CESA



HELP!

NPDES

NEPA

ESA

401



Implementation Plans

Management Plan Long term (10+ yrs)

- Criteria based
- Broad alternatives – general
- All aspects of a program Control, prevention, early detection

Implementation Plan

- Specific – task oriented
- Short-term
- Alternatives/ back-up plan



Adaptive Management and Monitoring

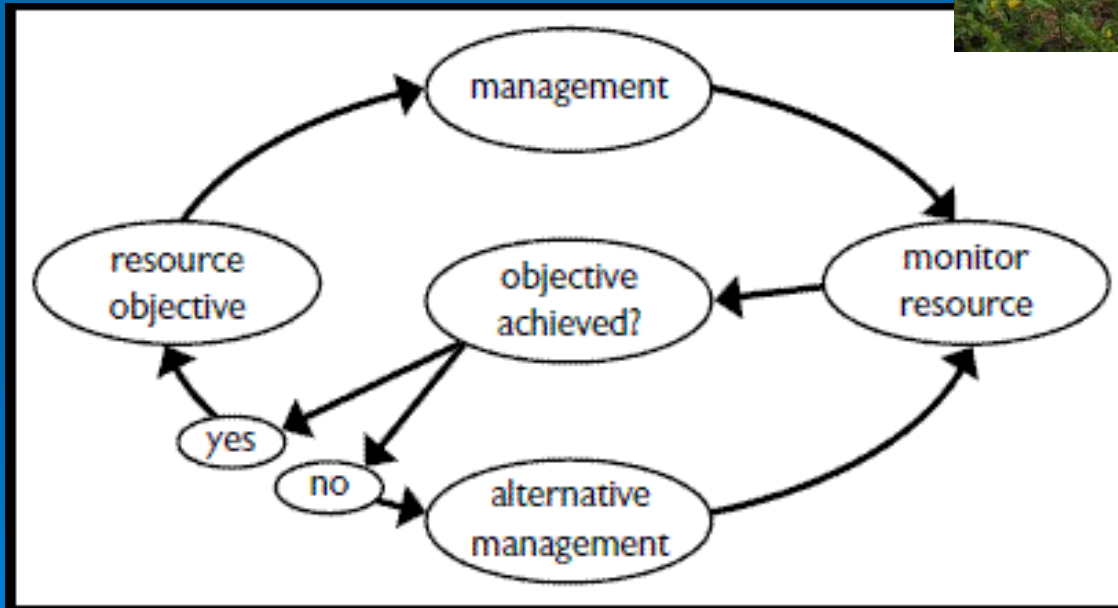


FIGURE 1.1. Diagram of a successful adaptive management cycle. Note that monitoring provides the critical link between objectives and adaptive (alternative) management.



That's all Folks!

BONUS MATERIAL!



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

Annuals: think seeds....

- Can usually be controlled as seedlings.
- May often be successfully hand pulled before they flower.
- May be 'controlled' before they produce seed
- Seed bank will still need to be addressed

- May still produce seed after treatment
 - Missed plants
 - Some seeds germinate after control
- Treatment can be effective before or at the start of the bolting period.
- Is 'knocking back' good enough? Can you skip in dry years?
- What is your goal? Don't spin your wheels & waste resources.



Biennials

- Same basic principles as with managing annuals
 - Prevent new seed production
 - Deplete existing seed bank
- More difficult than managing annuals
 - Plants not all at the same stage of development, thus control is not always as effective
 - Many tools, i.e. herbicides, burning, mowing are only effective on a particular stage of development
 - Difficult to prevent new seed recruitment

Teasel with
seed heads



Teasel at
Basal stage

Perennials

- Must consider more than one form of reproduction with perennials
 - Seed production treated much like annuals
 - Prevent new seed production
 - Deplete existing seed bank
 - Vegetative reproductive structures
 - Preventing spread of creeping roots or rhizomes, by water or animals
 - Use proper timing for control

Perennials

Seasonal progression of stored carbohydrates in roots of perennial plants

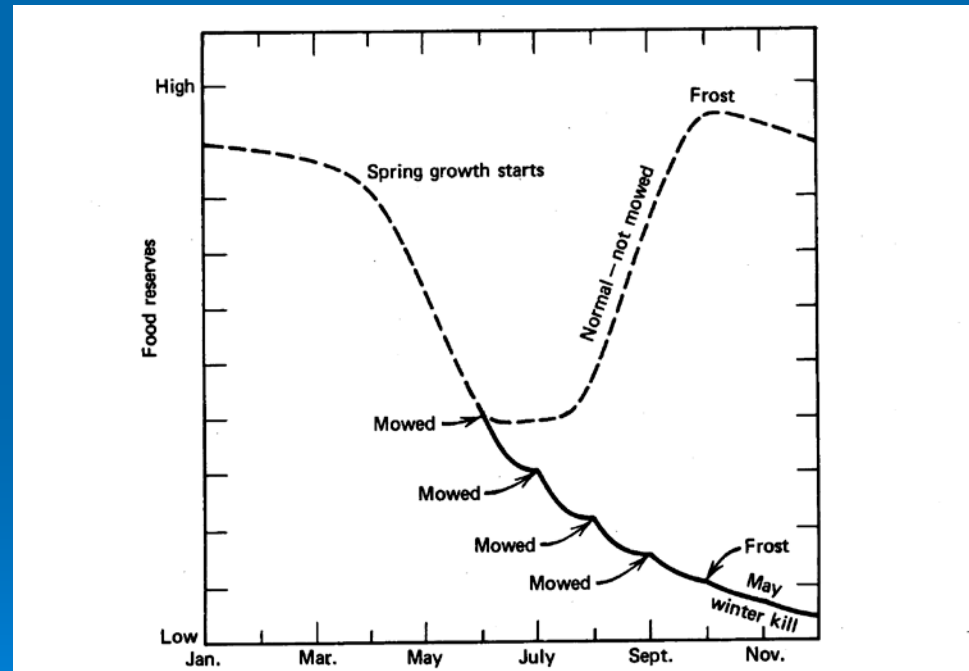
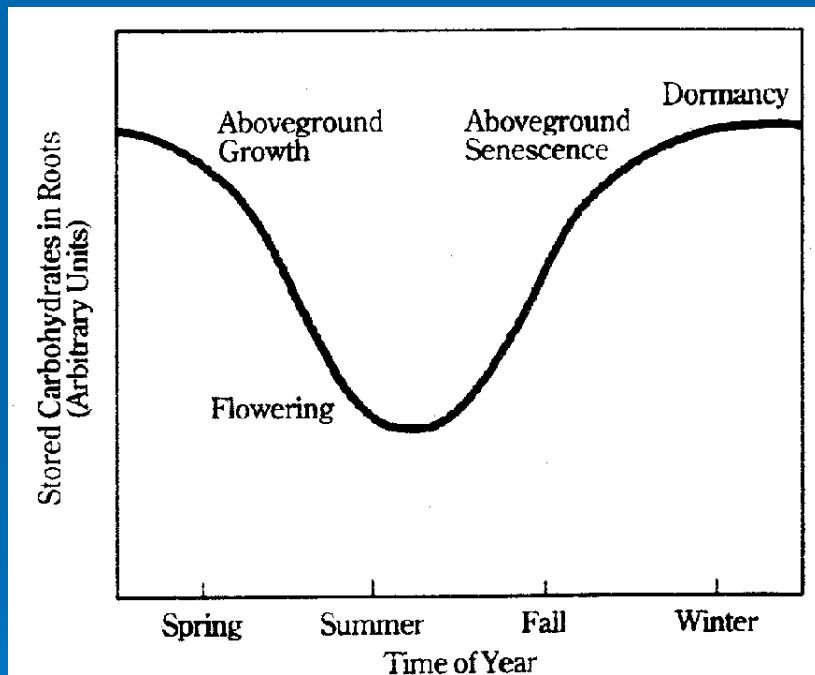


Figure 3-3. Food reserves of a perennial unmowed plant compared with reserves of a repeatedly mowed plant.

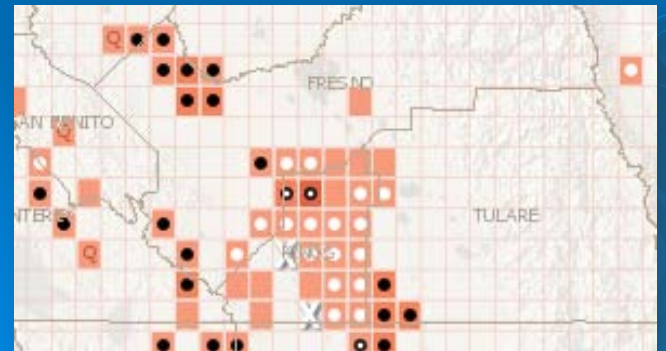
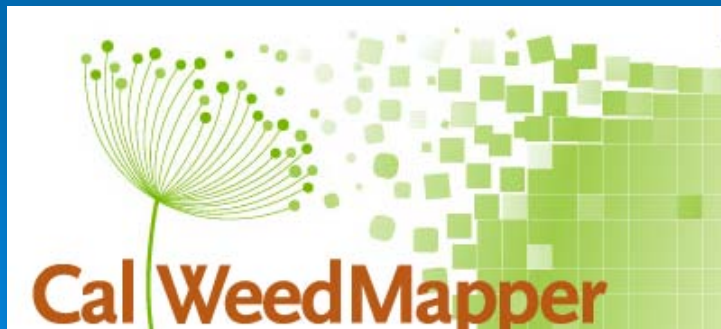
Timing for mechanical techniques

Woody plants

- **Most invasive woody species re-sprout from base making mechanical control difficult without removing root system**
 - Depleting energy reserves (“starving the root,” not usually practical, except over long time period)
- **Chemical control dependent on timing**
 - Same principle on translocation of sugars as in perennials
 - Can utilize stem treatments such as basal bark, cut stump and stem injection

Knowing 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



Consider All Your Control Options

➤ Treatments

- Mechanical
- Chemical
- Cultural
- Bio-control
- A combination of all of the above
- No treatment



Prescribed fire is considered a cultural control

Look for Advice

- Consult the web
 - <http://www.cal-ipc.org>
 - <http://tncinvasives.ucdavis.edu>
 - <http://www.invasive.org/>
 - More resources listed on course CD
- Ask an expert
 - Weed Management Areas
 - UC extension
 - Field course instructors
- Experiment!



Share & Steal With Pride

- Share your successes
- Share your learning moments
- Share all the expert knowledge you have gained!
- Share what you know about where weeds are and how they behave

