

# Weed Management in Reclamation

*Reclamation 101*

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# Today's Assumption:

In today's discussion we are working in lands that have been “drastically disturbed”

*Working with newly seeded desirable species*

*Prevention is crucial*

*Do not assume weeds are gone – continue to monitor*

*Decisions should shift competitive advantage toward desirable species*

# Why worry about weeds?

- Reduce forage quality and availability
- Livestock poisoning
- Change ecosystem function
  - Hydrology, fire frequency
- Impede recreation
- Outcompete and exclude many native species

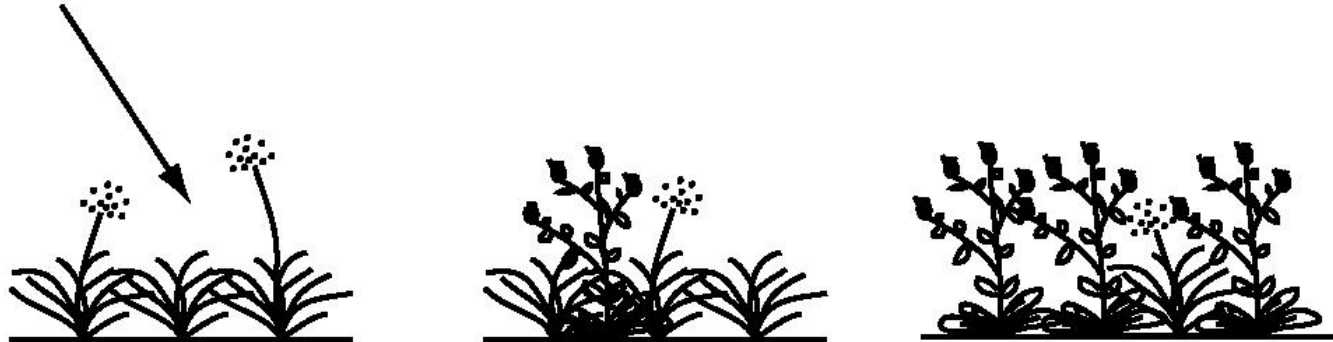
# Common Traits of Weeds

- Prolific seed production
- Adaptations for dispersal
- Rapid establishment
- Long-term seed or propagule survival
- Ability to recruit quickly on disturbed sites

# By the numbers...

- Russian thistle (*Salsola iberica*) can **germinate** quickly over temperature range of \_\_\_\_\_° F
- **After 100 years** of burial, \_\_\_\_\_% of common mullein (*Verbascum thapsus*) seeds were still viable
- Rush skeletonweed (*Chondrilla juncea*) was **first recorded in Idaho in 1954**, by **1964** it had invaded **40 acres**, currently— \_\_\_\_\_ acres invaded.

Exotic Seed



Introduction



Establishment



Impact



# Resource Availability







# Take a landscape perspective



# Take a landscape perspective

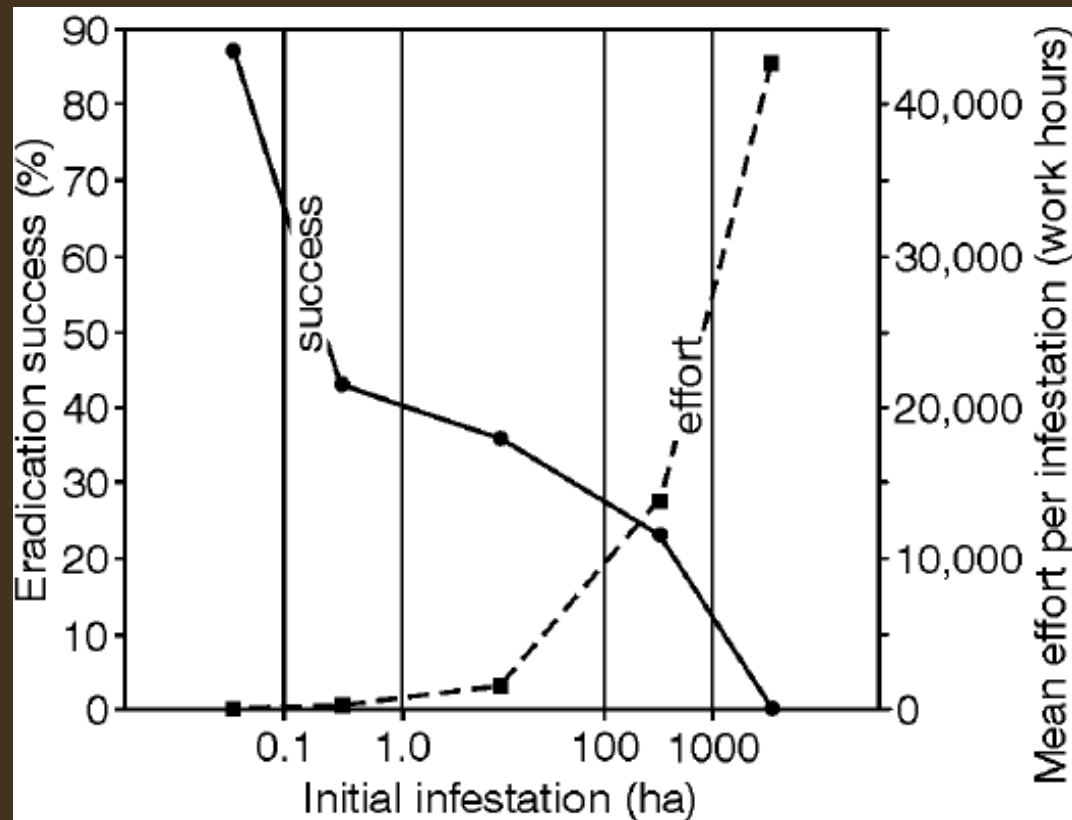


# Weed Management Principles

1. Prevention should be a priority
2. Correctly identify the target weed species
3. Map & prioritize your weeds by “threat level”
4. Select a method of control suited for your situation
5. Implement
6. Evaluate your results
7. Continue to monitor and follow up

# Prevention

- Eliminate transport of seeds on equipment, vehicles, etc.
- If using a mulch, use only certified weed-free materials
- Cultural control (establishing healthy desirable species) is crucial



**Fig. 1** The dependence of the eradication success (%) and the mean eradication effort per infestation (work hours) on the initial size of infestations. Based on the data for eradication projects of 18 noxious weed species and 53 independent infestations in California (see Table 1).

# Initial evaluation

- Are you starting with a weed patch, or with a fresh slate?
- If weeds are already present, make sure your weed management strategy and seeding are complementary.
- Is pre-planting weed control necessary?

# Precautions - herbicides

- Consider re-plant interval if using herbicide prior to seeding (start re-plant clock in spring if sprayed in fall)
  - Or use a bio-assay
- If newly emerged seedlings are present, consider waiting until they mature
- Especially important for forb and shrub seedlings when spraying broadleaf weeds
  - Consider a step-wise approach to reclamation (grasses then interseed with forbs, shrubs)

**DuPont™ TELAR® XP Replant Interval**

| <u>Species</u>                | <u>Rate oz/acre</u> | <u>(Months)</u> |
|-------------------------------|---------------------|-----------------|
| Alkali sacaton                | 1/2                 | 1               |
| <i>Sporobolus airoides</i>    | 1                   | 3               |
|                               | 2                   | >3              |
| Bluestern, Big                | 1/2                 | 3               |
| <i>Andropogon gerardii</i>    |                     |                 |
| Brome, Mountain               | 1/2                 | 1               |
| <i>Bromus marginatus</i>      | 1                   | 2               |
|                               | 2                   | >3              |
| Gramma, Blue                  | 1/2                 | 1               |
| <i>Bouteloua gracilis</i>     | 1                   | 2               |
|                               | 2                   | >3              |
| Gramma, Sideoats              | 1-2                 | >3              |
| <i>Bouteloua curtipendula</i> |                     |                 |
| Switchgrass                   | 1-2                 | >3              |
| <i>Panicum virgatum</i>       |                     |                 |
| Wheatgrass, Bluebunch         | 1 1/3               | 1               |
| <i>Agropyron spicatum</i>     |                     |                 |
| Wheatgrass, Crested           | 2/3                 | 1               |
| <i>Agropyron cristatum</i>    | 1 1/3               | 1               |
| Wheatgrass, Intermediate      | 1 1/3               | 1               |
| <i>Agropyron intermedium</i>  |                     |                 |
| Wheatgrass, Slender           | 1 1/3               | 1               |
| <i>Elymus trachycaulum</i>    |                     |                 |
| Wheatgrass, Siberian          | 1 1/3               | 1               |
| <i>Agropyron fragile</i>      |                     |                 |
| Wheatgrass, Streambank        | 1 1/3               | 1               |
| <i>Agropyron riparium</i>     |                     |                 |
| Wheatgrass, Thickspike        | 1/2-2               | 1               |
| <i>Agropyron dasystachyum</i> |                     |                 |
| Wheatgrass, Western           | 1/2                 | 1               |
| <i>Agropyron smithii</i>      | 1                   | 2               |
|                               | 2                   | 4               |

The recommended minimum intervals are for applications made in the spring to early summer. Because TELAR® XP

# Telar® XP Replant Interval

Directly from Label



# Russian thistle (*Salsola iberica*)

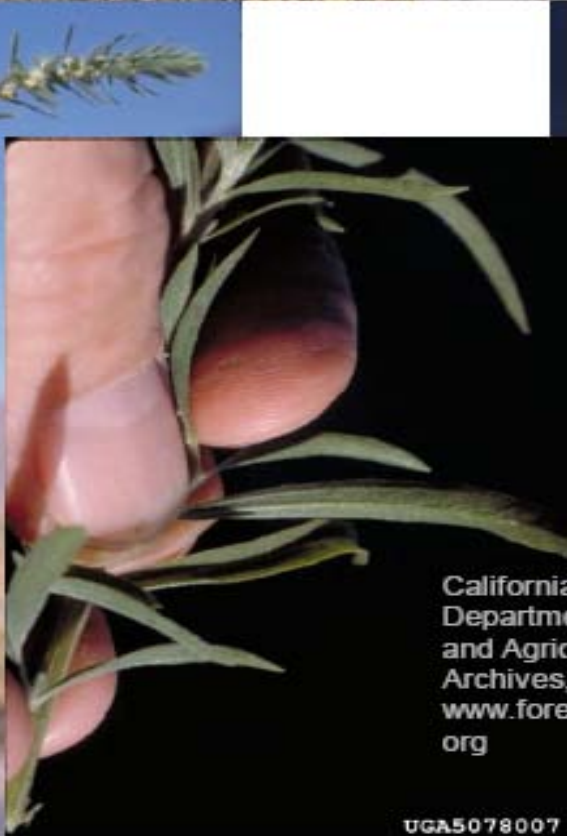


# Kochia (*Kochia scoparia*)



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UGA

# Kochia and Russian thistle

- Chemical control
  - Many different herbicides (dicamba; 2,4-D; glyphosate) are effective; resistance can be a problem
  - May not be necessary if weed density is low

# Halogeton

(*Halogeton glomeratus*)



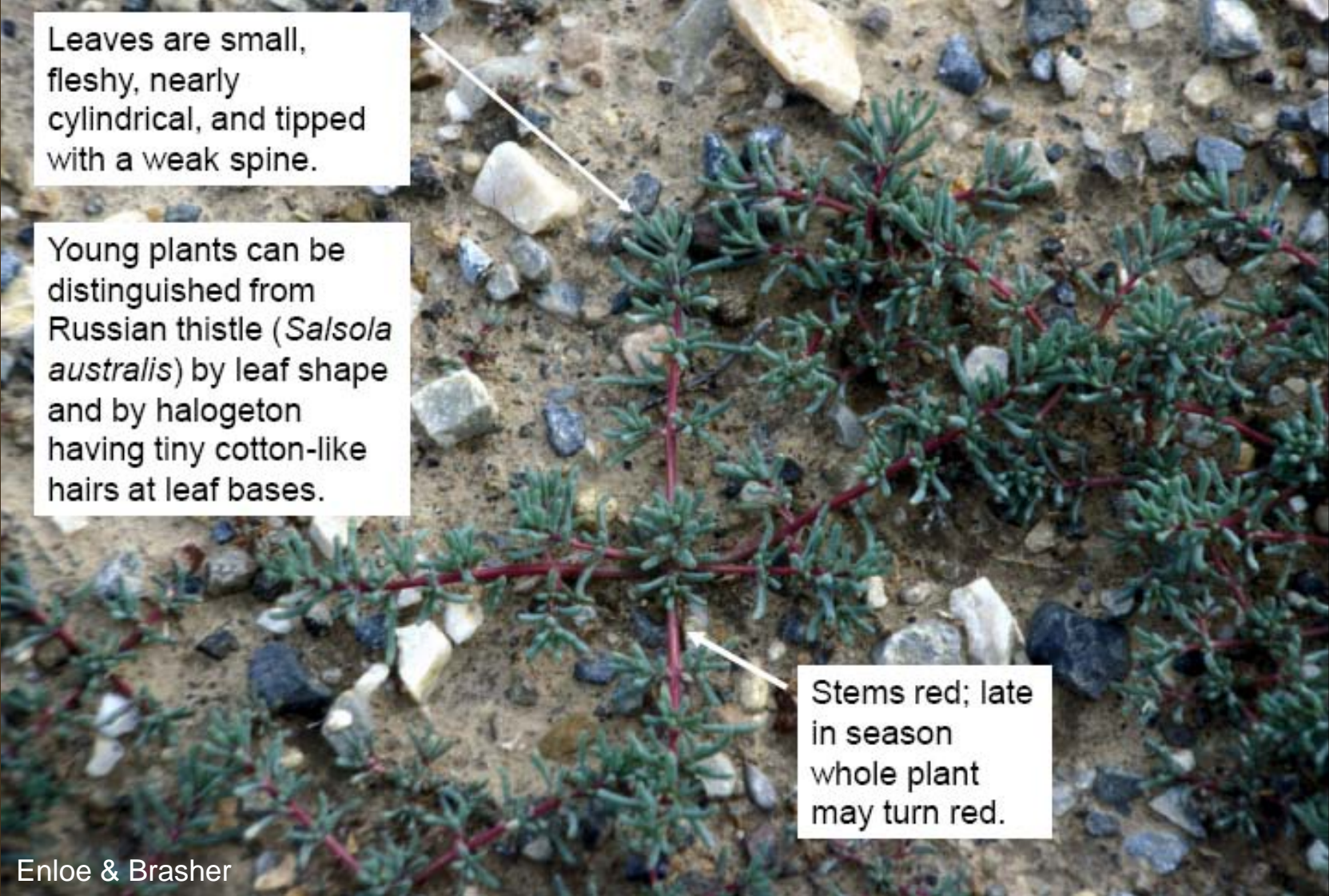
- Annual
- Prolific seed producer
- Highly toxic



Matt Lavin photo



# Halogeton



Leaves are small, fleshy, nearly cylindrical, and tipped with a weak spine.

Young plants can be distinguished from Russian thistle (*Salsola australis*) by leaf shape and by halogeton having tiny cotton-like hairs at leaf bases.

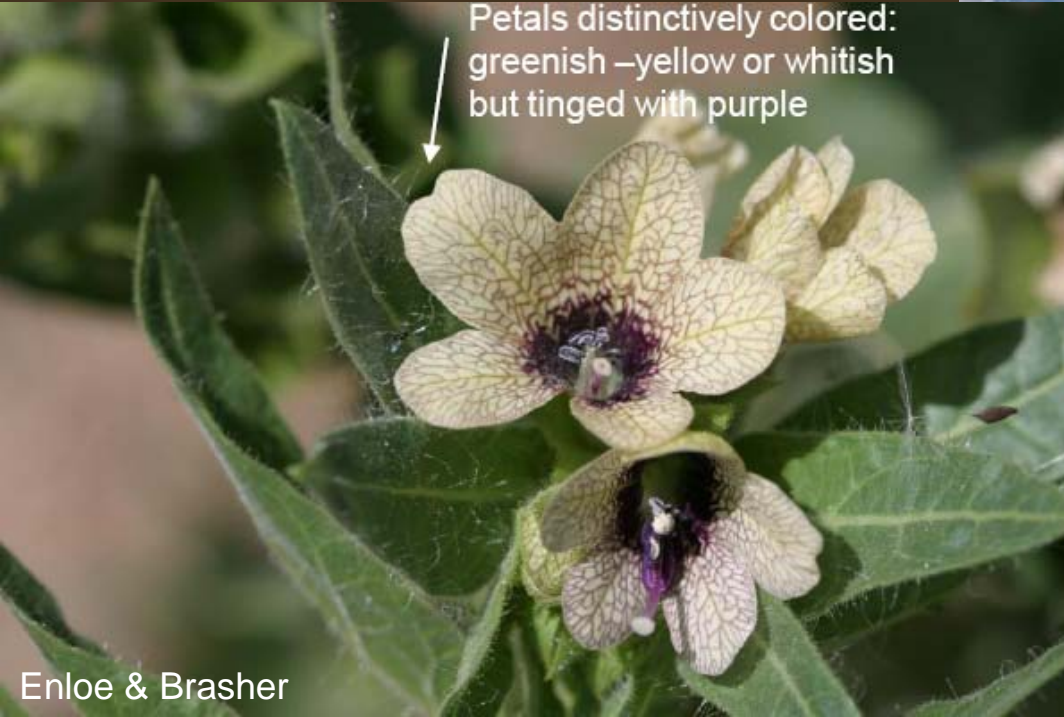
Stems red; late in season whole plant may turn red.

# Halogeton

- Chemical control
  - Escort: 0.5-1.0 oz product / A
    - Early post-emergence for best control
  - Telar XP: 0.5-1.0 oz product/A
    - Early post-emergence for best control
  - 2,4-D Ester: 2 qt product / A
    - Apply to actively growing plants up to early bud stage, use COC for consistent control
  - Plateau: 4-12 oz product / A
    - Use pre-emergence at lower rates, increase to 6 or more ounces postemergence (+ surfactant)

# Black henbane (*Hyoscyamus niger*)

Petals distinctively colored:  
greenish –yellow or whitish  
but tinged with purple



Enloe & Brasher



# Black henbane



- Large rosettes have serrated leaves covered with fine hair.
- Pungent odor
- Has 2 rows of pineapple-shaped fruit with hundreds of tiny black seed



# Black henbane

- Chemical Control
  - Escort + 2,4-D: 0.5-1.0 oz + 1-2 qt product / A
    - Actively growing plants from rosette to bloom, larger plants may require the higher rate
  - Tordon: 1-2 pt product / A
    - Apply to plants from rosette to bolting stage, may tank mix with 2,4-D (1 qt / A)

# Houndstongue (*Cynoglossum officinale*)



- Biennial
- Sometimes found with black henbane

# Houndstongue

- Chemical control:
  - 2,4-D: 2 qt product / A
    - Apply when actively growing; early treatments prevent seed production
  - Escort: 1 oz product / A
    - Apply to actively growing plants from rosette to bolting stages

# Swainsonpea (*Sphaerophysa salsula*)



# Swainsonpea

- Chemical control
  - 2,4-D LVE
    - 2 qt product / A (4EC)
    - 2.7 qt product / A (6EC)



Enloe & Brasher

# Cheatgrass (*Bromus tectorum*)



# Cheatgrass

- Plateau, BASF (imazapic)
- Glyphosate
- Matrix, DuPont (rimsulfuron)
- Journey, BASF (glyphosate + imazapic)

# Wrapup

- Make a fair and realistic evaluation of current situation
- Develop a weed management strategy that will move you toward your reclamation goals
- Catch new infestations EARLY before they gain a foothold
- Continue monitoring and follow-up treatments



# Questions?

