# Western Colorado Conservation Corps

# Our Role in Western Colorado

WCCC crews serve on regional conservation projects for different federal, state, and local agencies across the Western Slope region of Colorado.

Our goal is to provide our AmeriCorps members with an engaging experience to help foster respect and understanding of environmental stewardship while sharing valuable skills to take with them on their career path

# Understanding Invasive Species

# Becoming Invasive

## Distribution

- **Ornamental Plant Trade:**
  - Exotic plants that are used in gardens have the potential to move and invade outside of their landscaped setting, but the few that do cause great harm to our natural world.
- **Accidental Importation:**
  - Some plants arrive accidentally in air or water cargo. Seeds can become stuck to livestock, vehicles, clothing, or domestic animals and travel with them to vulnerable ecosystems.
- **Agricultural Operations:**
  - Some plants are introduced in seed mixes, soil, or as feed for livestock
- **Conservation Plantings:**
  - Other introduced species are planted intentionally in restoration efforts of animal species, riparian areas, or in response to other invasives.
- **Aquarium Trade:**
  - Many of the worse aquatic invasives come from aquaculturalists who improperly dispose of their aquarium plants into water ways.

https://vtinvasives.org/sites/default/files/What%20Makes%20a%20Plant%20Invasive%20and%20FAQs.pdf

# Tools of a Noxious Weed *(Tamarix spp.)*

Not all non-native plants become invasive, but those that do have characteristics that allow them to proliferate in their new ecosystem.

- High seed production
  - Able to produce abundant viable seeds
- Early colonization
  - Able to quickly occupy disturbed areas
- Lack of natural enemies and diseases
  - New environments affect natural selection
- Allelopathy
  - Produce chemicals that make it difficult for other plants to grow nearby
- Generalists
  - Can survive in a larger variety of conditions
- Positive feedback loops
  - Create conditions that favor their own growth
- Multiple reproductive strategies
  - Easier to spread far and wide

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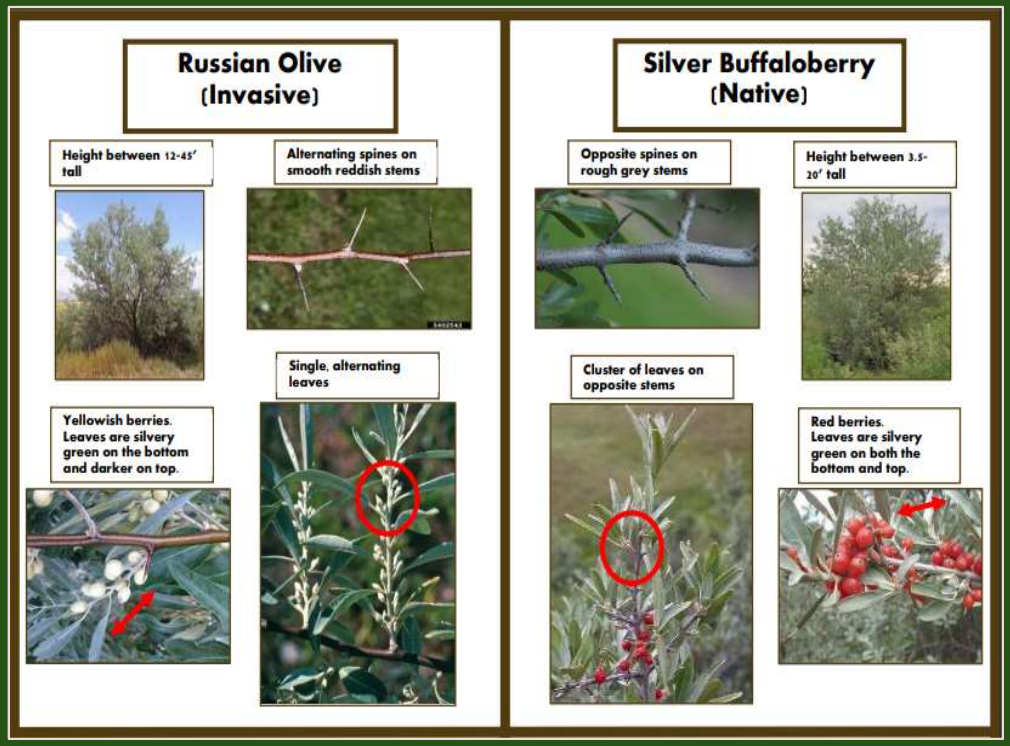
# Native Look-a-Likes

Identification is essential for safe and productive invasive management

Key characteristics to look for:

- Color
- Size & Shape
- Structure
- Species specific identification
- Seasonal changes

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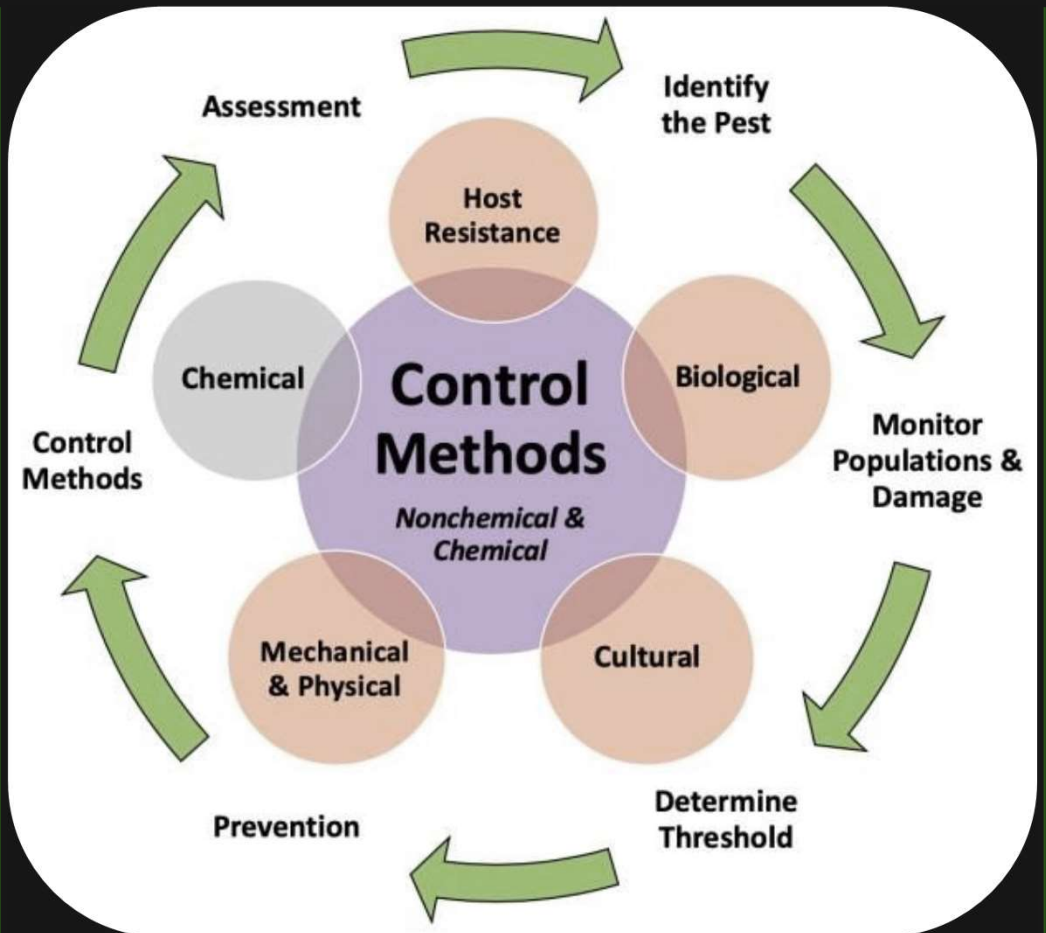
# Integrated Pest Management

# Integrated Pest Management (IPM)

Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment.

# Integrated Pest Management (IPM)




# IPM Control Methods: Biological

**Using living organisms to reduce pest populations**

**Predators:** Beneficial predators that prey upon harmful pests.
Ex. Tamarisk Beetle, Stem boring weevil

**Parasitoids:** Parasitoids are mostly wasps and flies that live and feed in or on a host insect, eventually killing it.
Ex. Gall Wasps

**Pathogens:** Pathogens are microorganisms – bacteria, fungi, nematodes, protozoa and viruses – that cause disease.
Ex. Soil borne fungal pathogens

# IPM Control Methods: Cultural

**Modifying the pest's habitat to make it less favorable for survival**

**Establishment**: Creating an environment that limits the formation of a pest population

Ex. Cultivation of healthy native populations

**Reproduction**: Limits the pest's ability to reproduce

Ex. Mowing before weeds reach seeding stage

**Dispersal**: Limits the range a pest can spread

Ex. Boat inspections

**Survival**: Limit a pest by removing conditions needed for its survival

Ex: Prescribed burns

# IPM Control Methods: Mechanical

**Creating physical barriers to block pests from an area or manually controlling them**

**Exclusion**: Limiting the pest's ability to enter an area

Ex. Mulching a garden

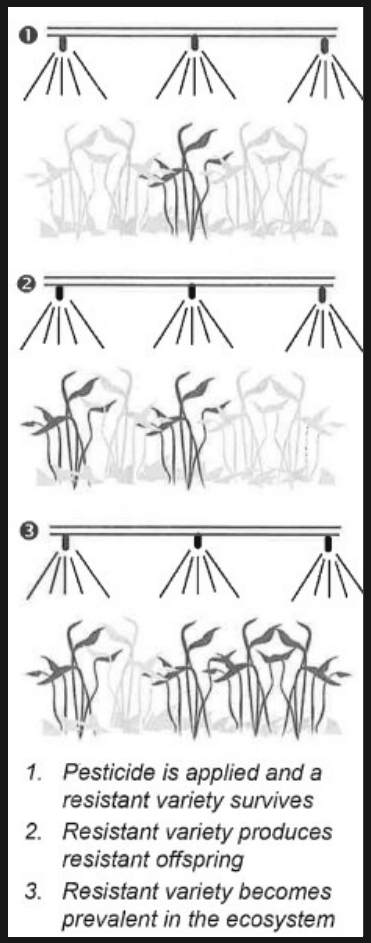
**Destruction**: Physically damaging or killing a pest species

Ex. Cutting down invasive trees

**Removal**: Collecting and taking pests away from an area

Ex. Plucking garlic mustard

# IPM Control Methods: Chemical



1. *Pesticide is applied and a resistant variety survives*
2. *Resistant variety produces resistant offspring*
3. *Resistant variety becomes prevalent in the ecosystem*

## Risks of Chemical Control

**Drift: Pesticide moves to a non-target location or species**

Ex. Herbicide mist traveling to nearby plants

**Resistance: heavy pesticide use will kill all susceptible members and leave only the resistant to reproduce**

**Contamination: Exposure or harm to person, environment, or property**

Ex. Polluting ground water sources

**Chemical control can be a very effective method if used responsibly. Each of our members goes through full herbicide training both in classroom and the field before they become applicator technicians**

# IPM Control Methods: Chemical

## Important Chemical Control Factors

**Mode of Action: The method a pesticide uses to control a plant**

Ex. Regulators, Inhibitors, Disruptors

**Formulation: The form that the pesticide comes in**

Ex. Liquid, Granular, Dry/Powder, etc.

**Uptake and movement: Systemic vs Contact**

Systemic: Absorbed by the plant and moved through the vascular system, damaging parts of the plant that cannot be reached otherwise

Contact: Applied to the plant directly and affect only the exposed plant parts

**Environmental Factors: Can quickly affect the herbicides performance**

Ex. Temperature, Wind, Soil,

# Benefits of IPM

## Resistance and Biodiversity

When a pest is treated with only chemicals, it can develop resistance to the effects over the course of a few generations. By treating with a variety of methods, the pest population is not able to adapt as quickly and will remain susceptible to control. Nonchemical methods of IPM are often less destructive to non-target species. They also allow us to maintain a healthier ecosystem by encouraging natural remedies.

# Invasive Species Management

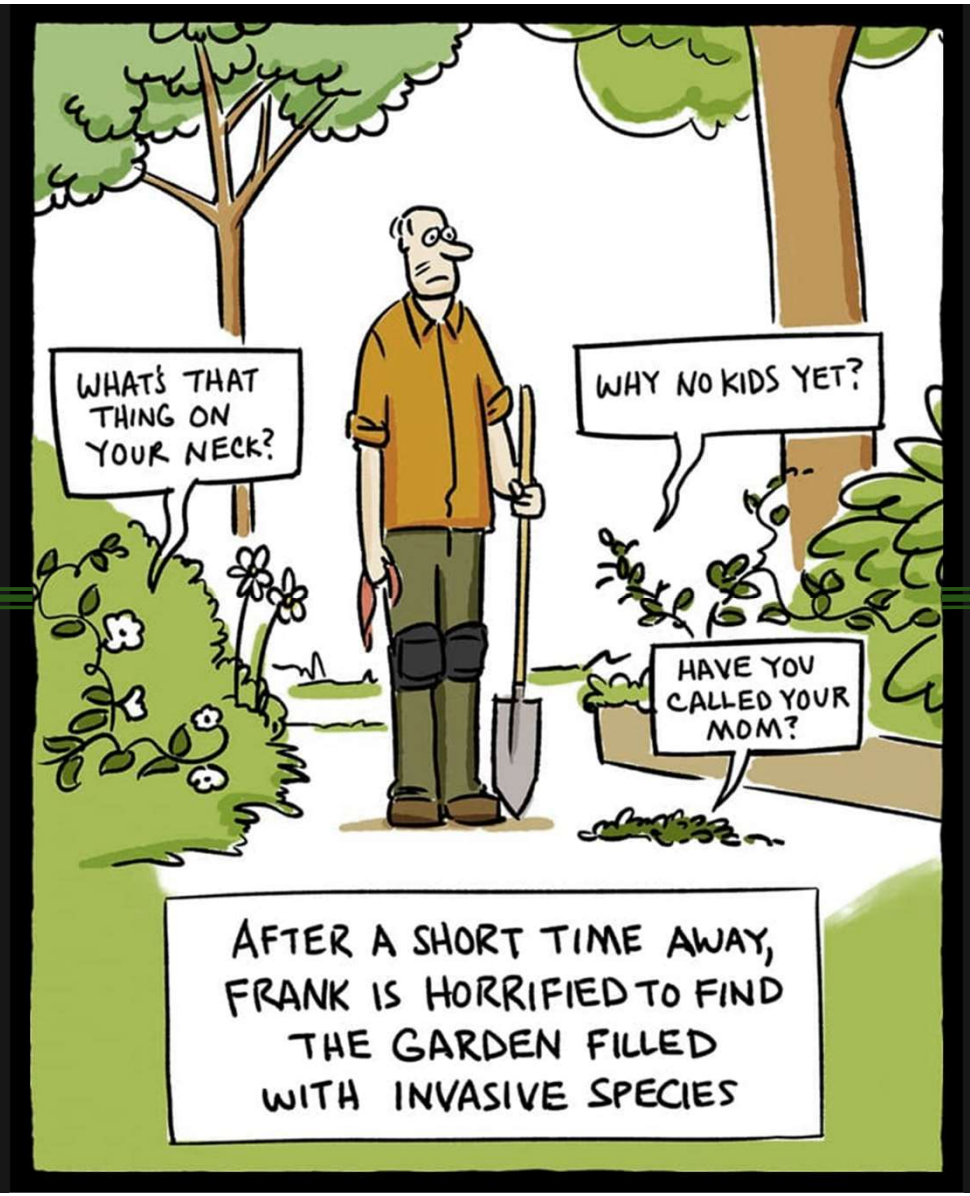
# Methods of Management Used by WCCC

- **Cut-Stump**
  - Using a chainsaw to cut the material down to a low stump, followed by herbicide application to the cambium layer.
- **Spot Spraying**
  - Targeted herbicide application to individual invasives in an area
- **Broadcast Spraying**
  - Widespread application using pack sprayers: can apply to bare soil to prevent growth or treat a large target population
- **Herbicide Lances**
  - Injects herbicide filled shells into a target tree.
- **Mechanical Removal**
  - Pulling, cutting or otherwise removing the invasives from the area
- **Revegetation**
  - Reestablishing native populations following treatment of invasives or disturbances

## Herbicides used at WCCC

- Garlon 3A (Triclopyr)
- Garlon 4 Ultra (Triclopyr)
- Habitat (Imazapyr)
- Milestone (Aminopyralid)
- Roundup Custom (Glyphosate)
- Telar XP (Chlorsulfuron)

# Thank You!


WHAT'S THAT THING ON YOUR NECK?
WHY NO KIDS YET?
HAVE YOU CALLED YOUR MOM?
AFTER A SHORT TIME AWAY, FRANK IS HORRIFIED TO FIND THE GARDEN FILLED WITH INVASIVE SPECIES