

# Mapping and Prioritization: What's the connection?

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Chaffee County Noxious Weed Department Supervisor



# Outline

- Invasion Curve & IMP
- Distribution Examples
  - A-list
  - B-list
  - C-list
- Using distribution data locally.
- Questions?

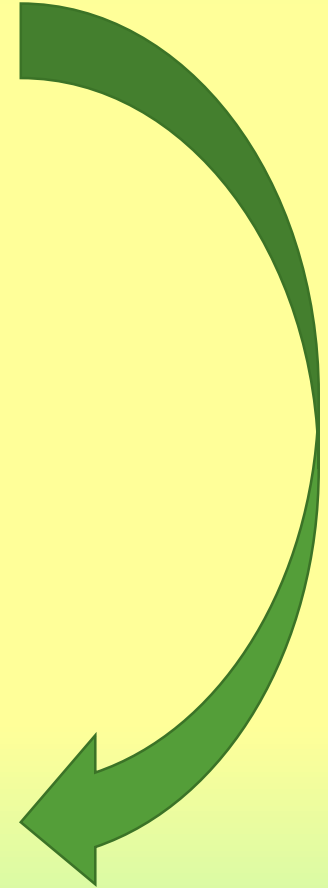
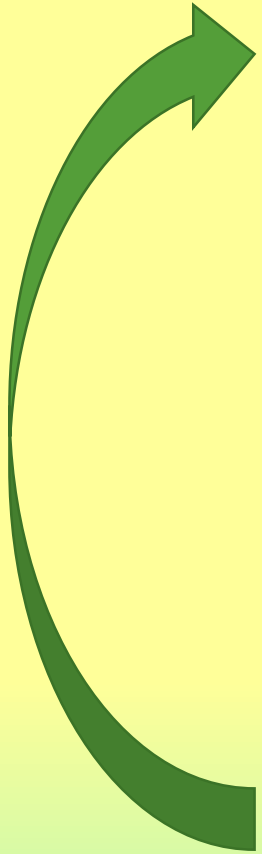
# Distribution Data is Critical!

## State-level decision-makers:

- Utilize existing distribution data to determine current and potential management objectives.
  - Analyze potential risks.
- Determine state-level prioritization system that reflects regional risks and values.
  - Assist in developing regional management plans.

## Local land managers:

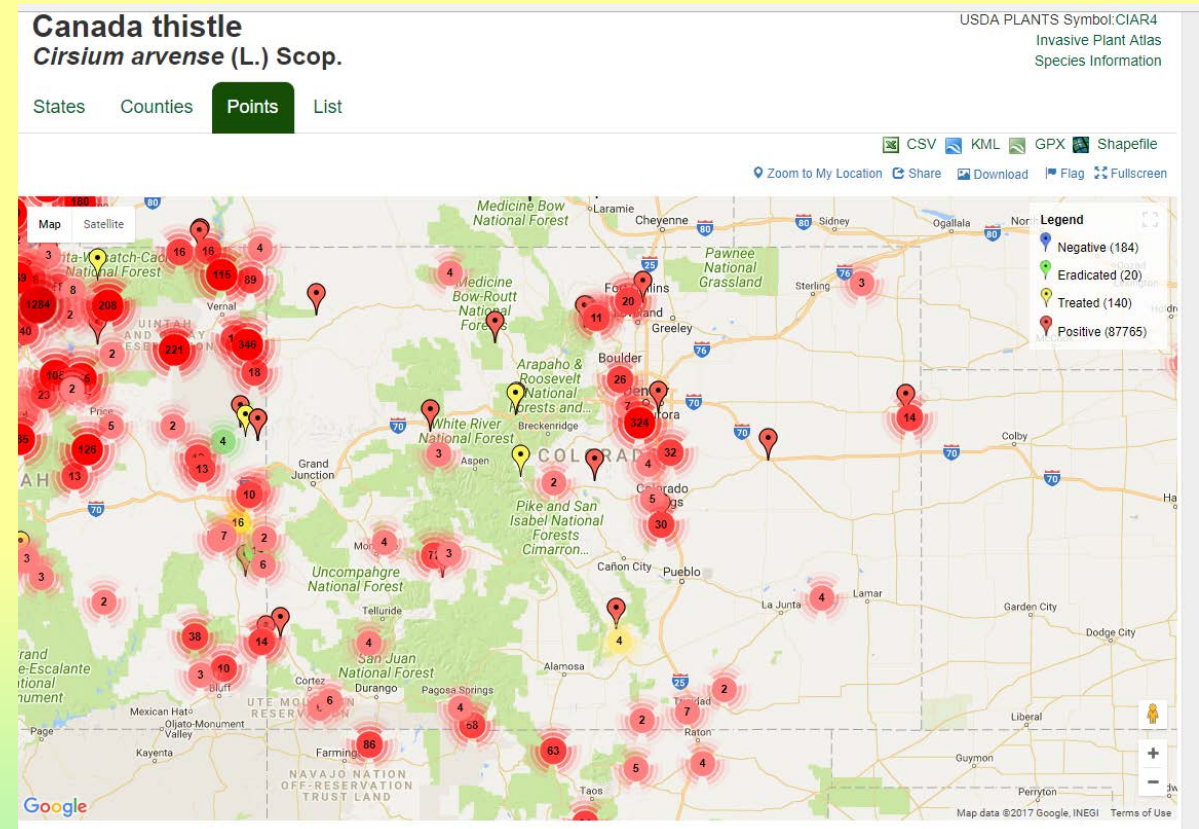
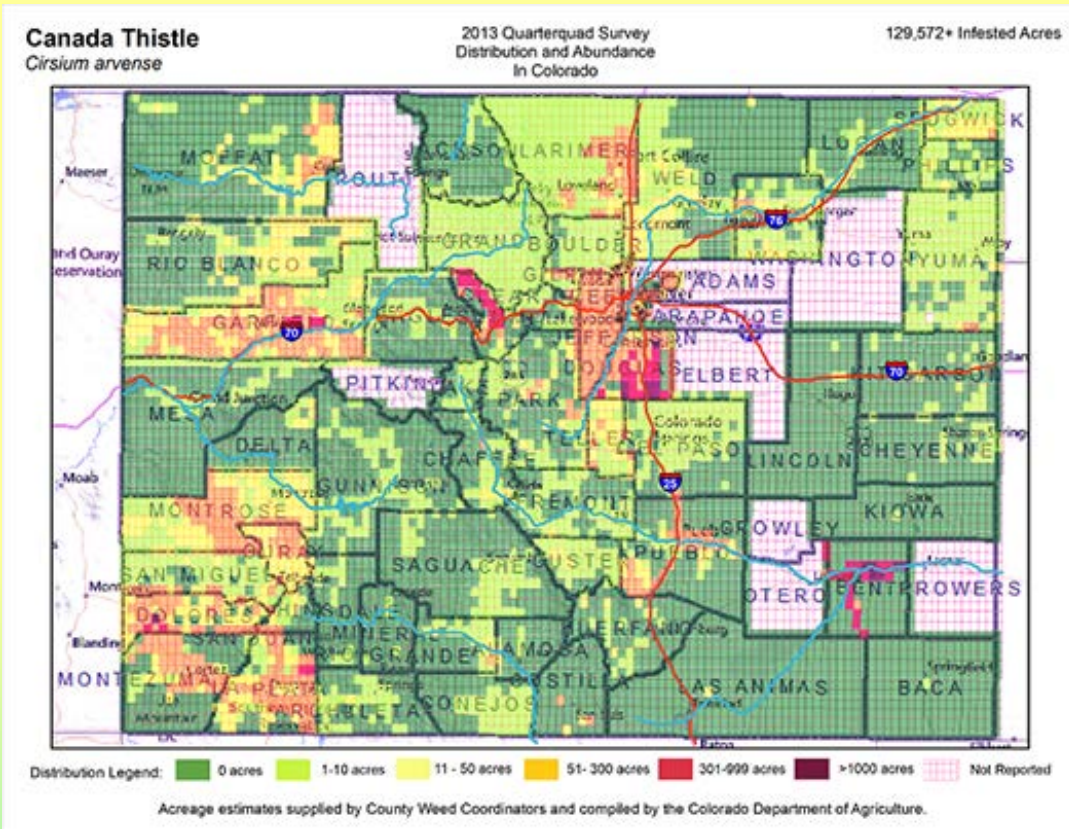
- Implement state-level management objectives.
- Utilize and contribute to local population data.
- Develop local prioritization system that reflects local risks and values.
  - Assist in developing local management plans.



# Mapping for State Compliance

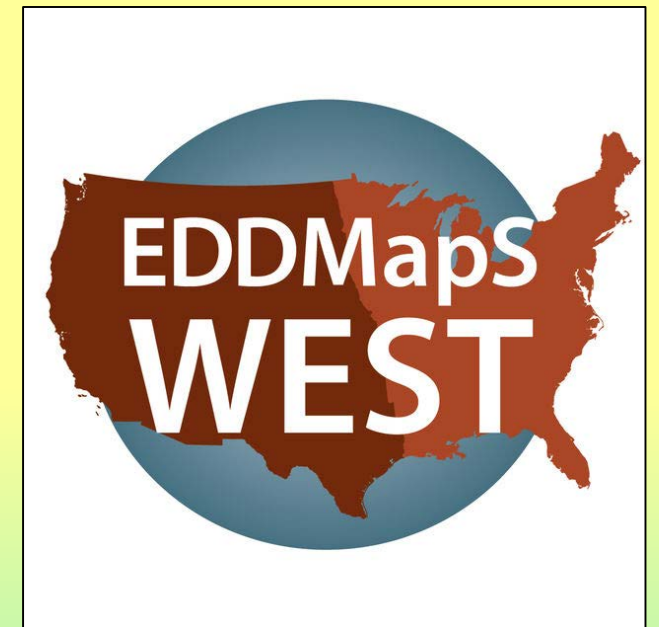
Colorado Department of Agriculture mapping system:

- Historically, Quarter Quads.
- Moving to EDDMapS.



# EDDMapS & EDDMapS West

- Free, accessible, easy to use mapping software.
- NEW – Colorado State Wide Mapping System!!!
- Identification tools, pictures, distribution maps.
- State-specific species lists!
- Control and management reporting tools.
- Training tools, guides, walk-throughs, demos.
- Mobile Data and WIFI only upload options.
- Notifications for local managers.
- Advanced search feature.





# EDDMapS Data Requirements

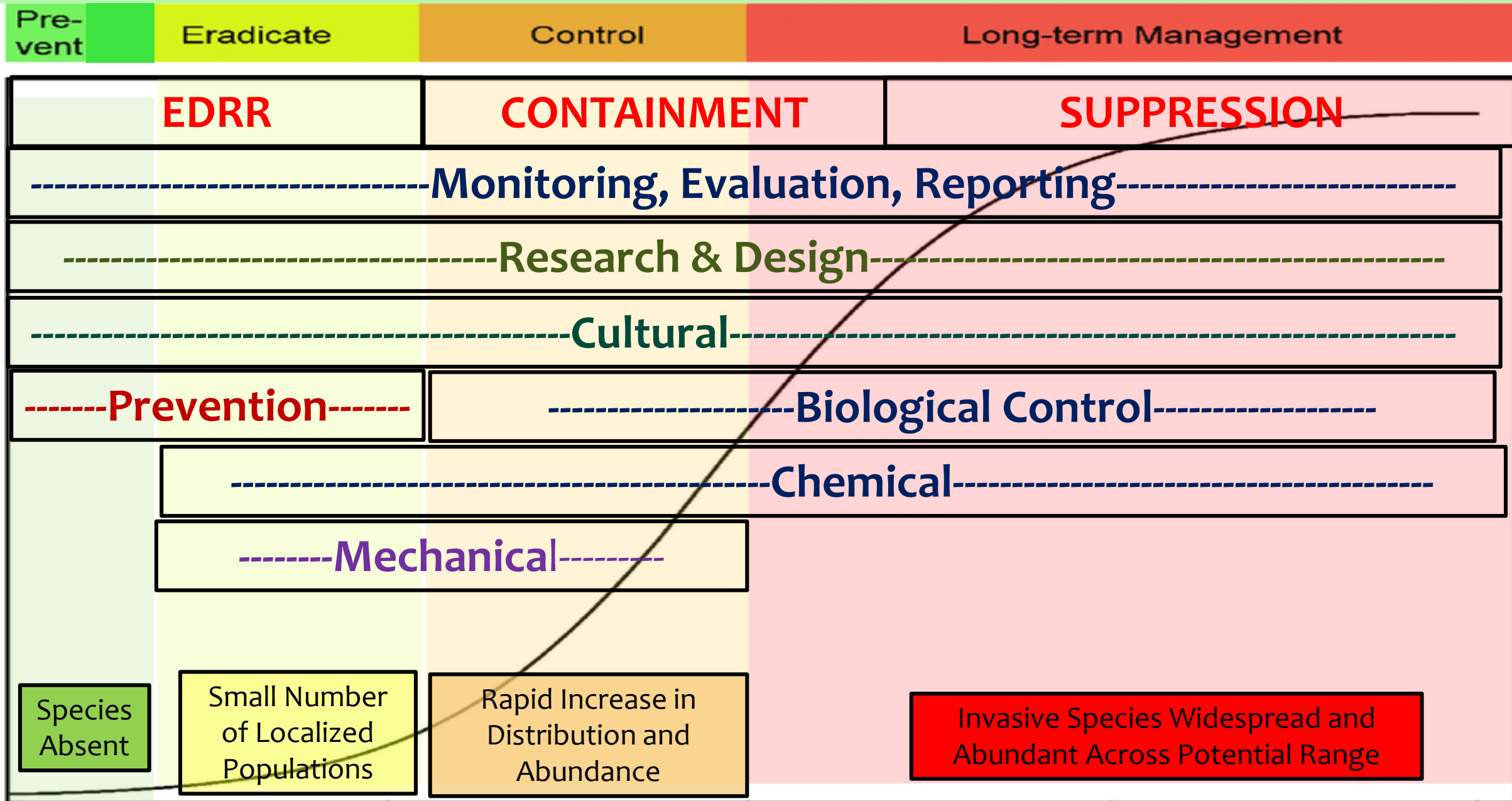
- Observation Date (Automatically recorded in the app!)
- Scientific Name
- Common Name
- State (Automatically recorded in the app!)
- County (Automatically recorded in the app!)
- Latitude and Longitude (Automatically recorded in the app!)
- Reporter (Automatically recorded in the app!)
- Gross Area and Units
- Some measurement of the frequency of occurrence (Canopy Closure, density, abundance, number of plants, stem count)



# Components of IMP

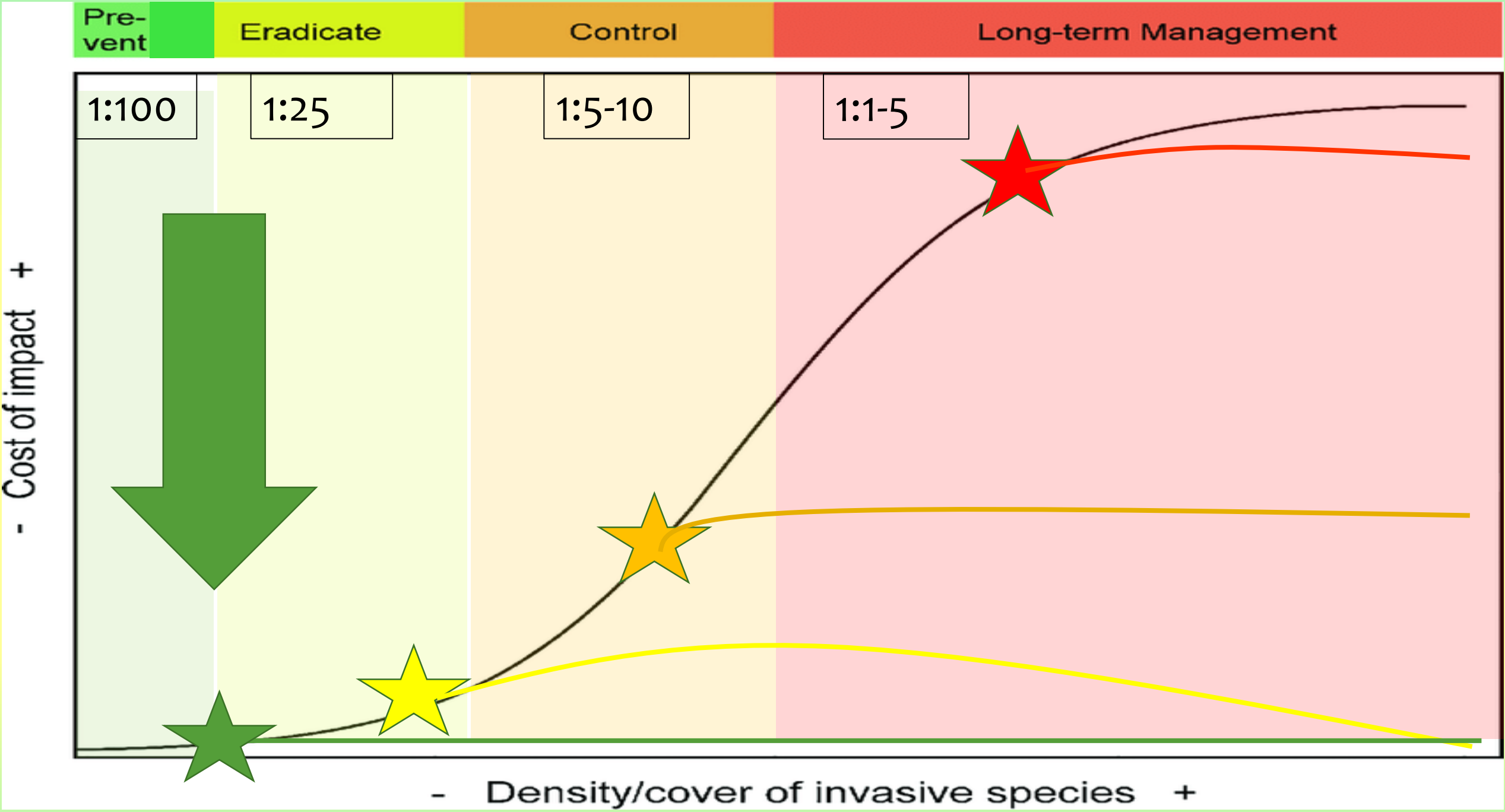
- Monitoring, Evaluation, and Reporting.
- Prevention.
  - Clean equipment, minimize disturbances, reduce potential introductions.
  - Support healthy ecosystems.
- Research and Development.
- Control and Management.
  - Mechanical
  - Chemical
  - Biological
- Restoration.

- Cost of impact +



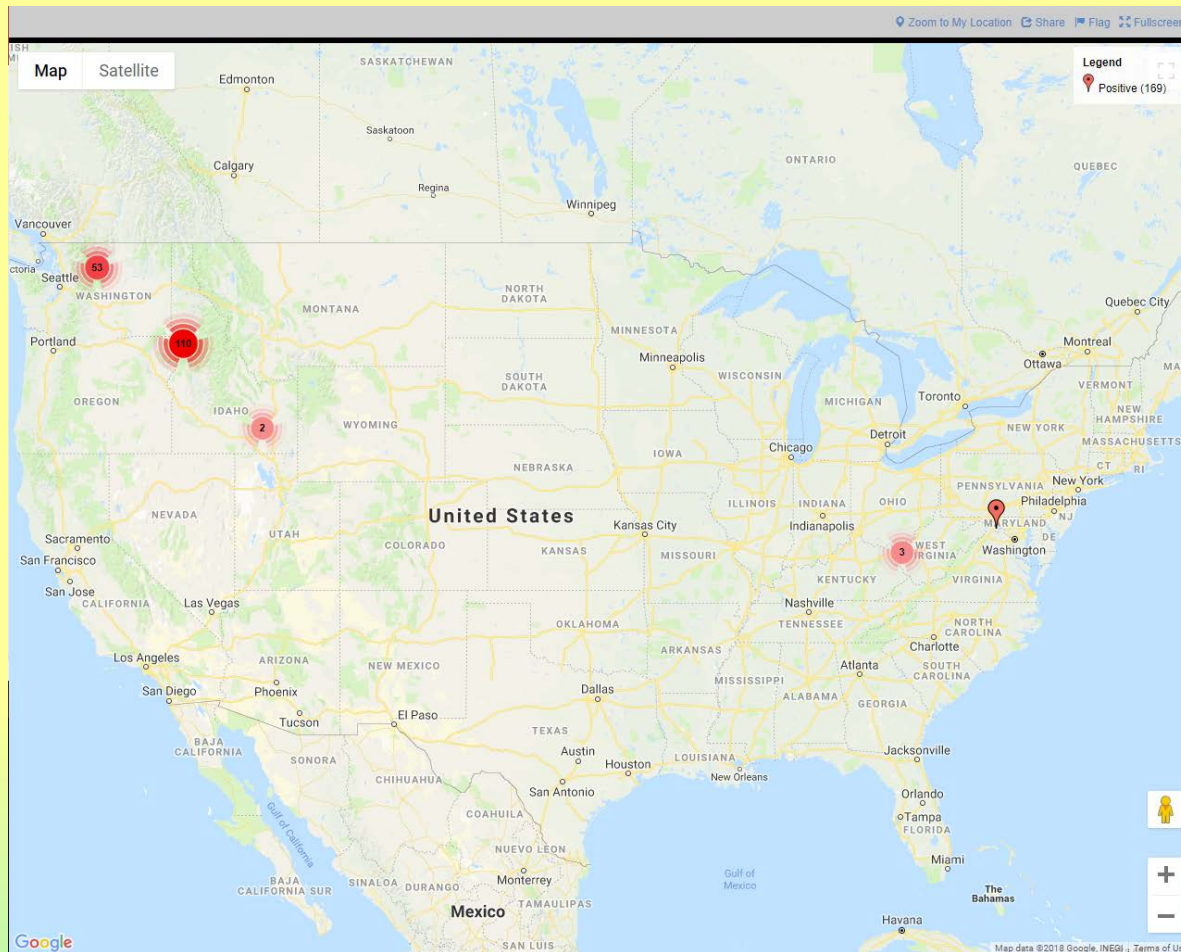
- Density/cover of invasive species +





# Distribution Examples – A List

## CO State Noxious Weed List A – Not Known to Occur in Colorado

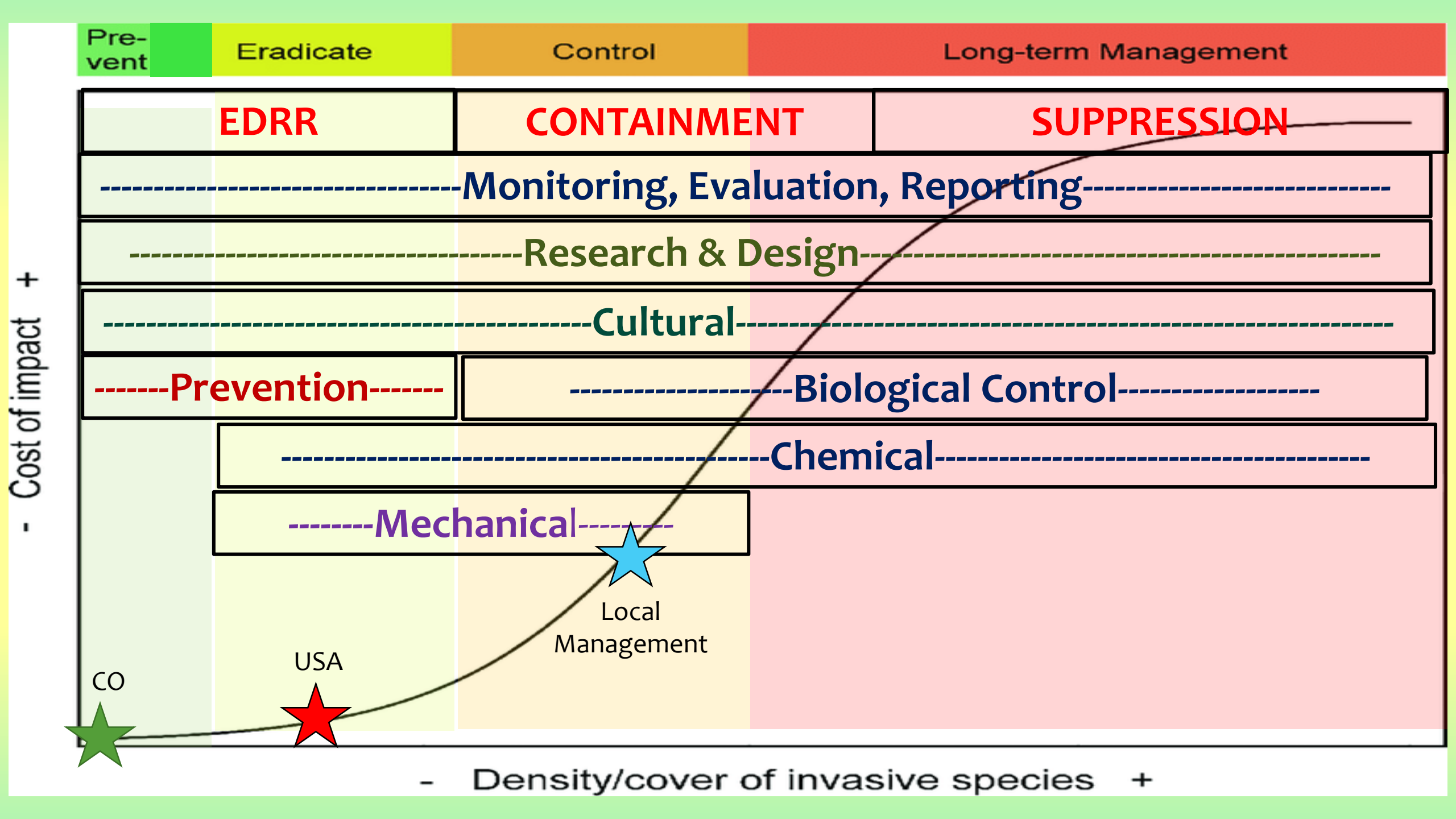


### Common Crupina - *Crupina vulgaris*

- Erect winter annual.
- Seeds with barbs.
- Distributed by livestock, wildlife, people.
- Seeds float.
- Invades grasslands, rangelands, open forests.
- Has the ability to outcompete native species.

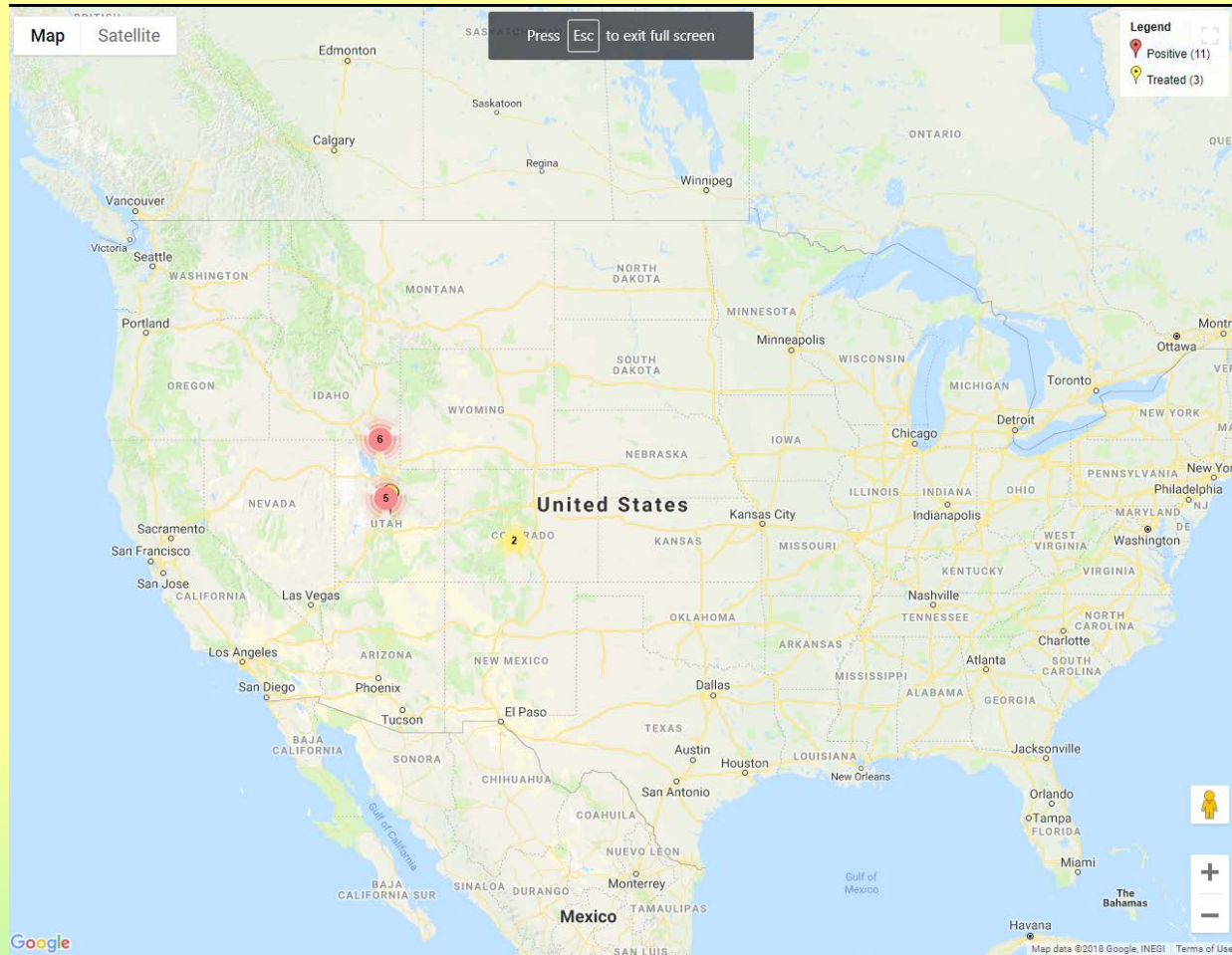
- Not currently widespread in the US.
- High potential impacts (agricultural and natural losses).
- High dispersal ability.

- Potential impacts: High
- Odds of encounter: Low
- Cost to control (Localized): Extremely Low
- Cost to control (Regional): Low



# Distribution Examples – A List

## CO State Noxious Weed List A – Less than 10 Known Populations



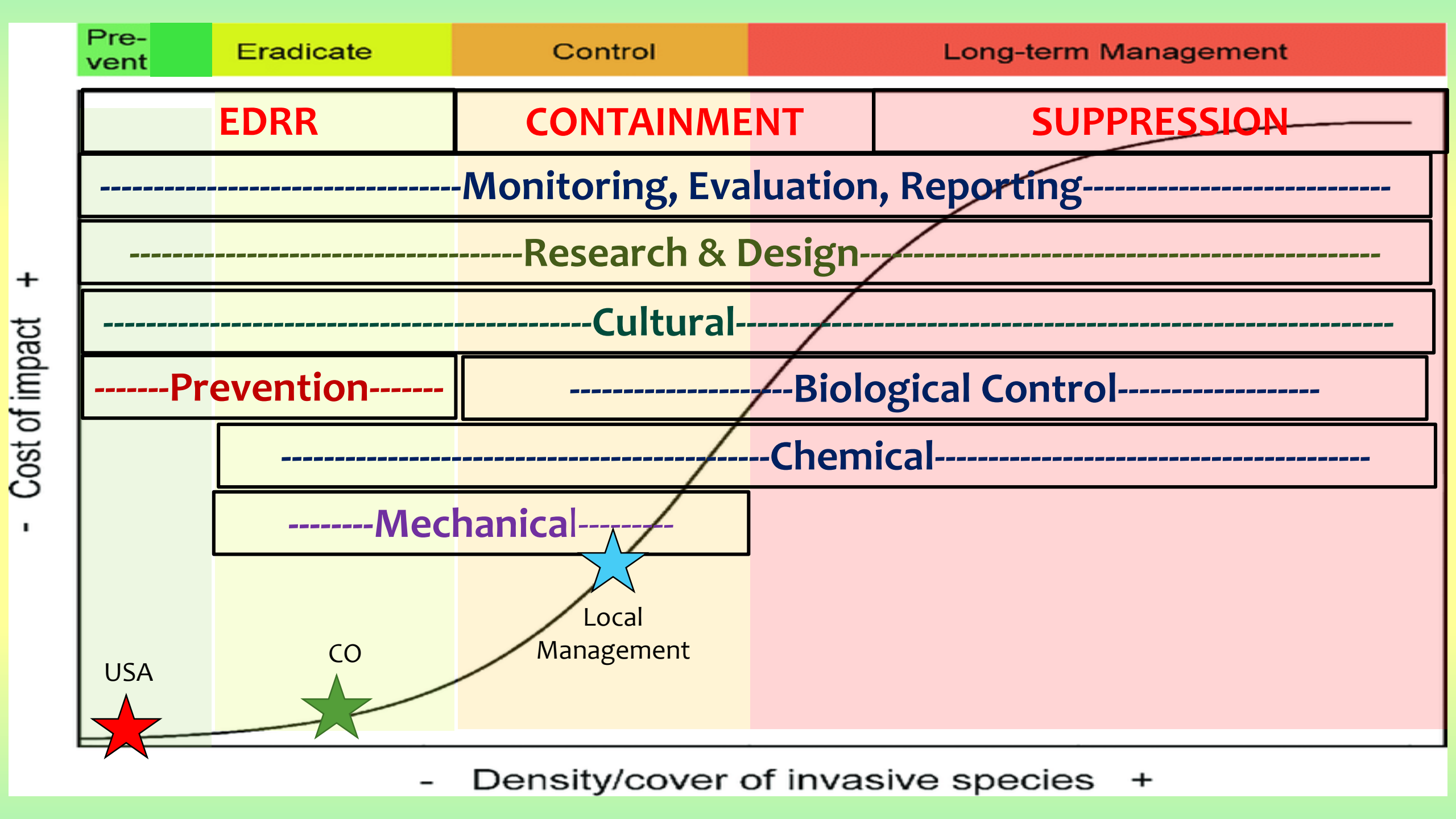
### Elongated Mustard – *Brassica elongata*

- Winter annual, biennial or short-lived perennial.
- Semi-arid.
- Woodland and desert environments.

- Not currently widespread in the US.
- Has naturalized in S. Africa, Australia, North America and Europe.
- Unknown potential impacts.
- High dispersal ability.

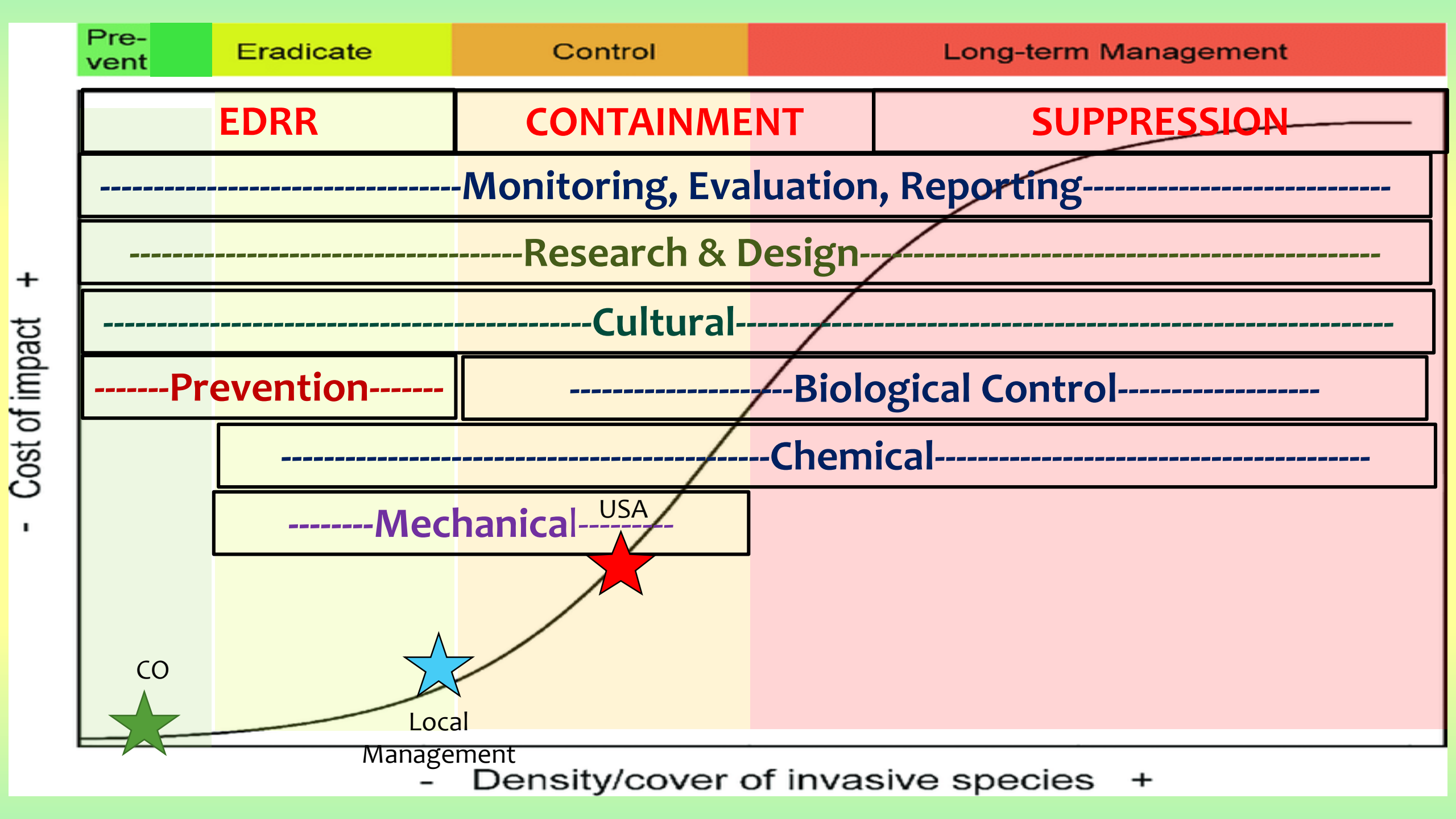
- Potential impacts: UNKNOWN
- Odds of encounter: Low - Moderate
- Cost to control (localized): Moderate
- Cost to control (national): Extremely Low



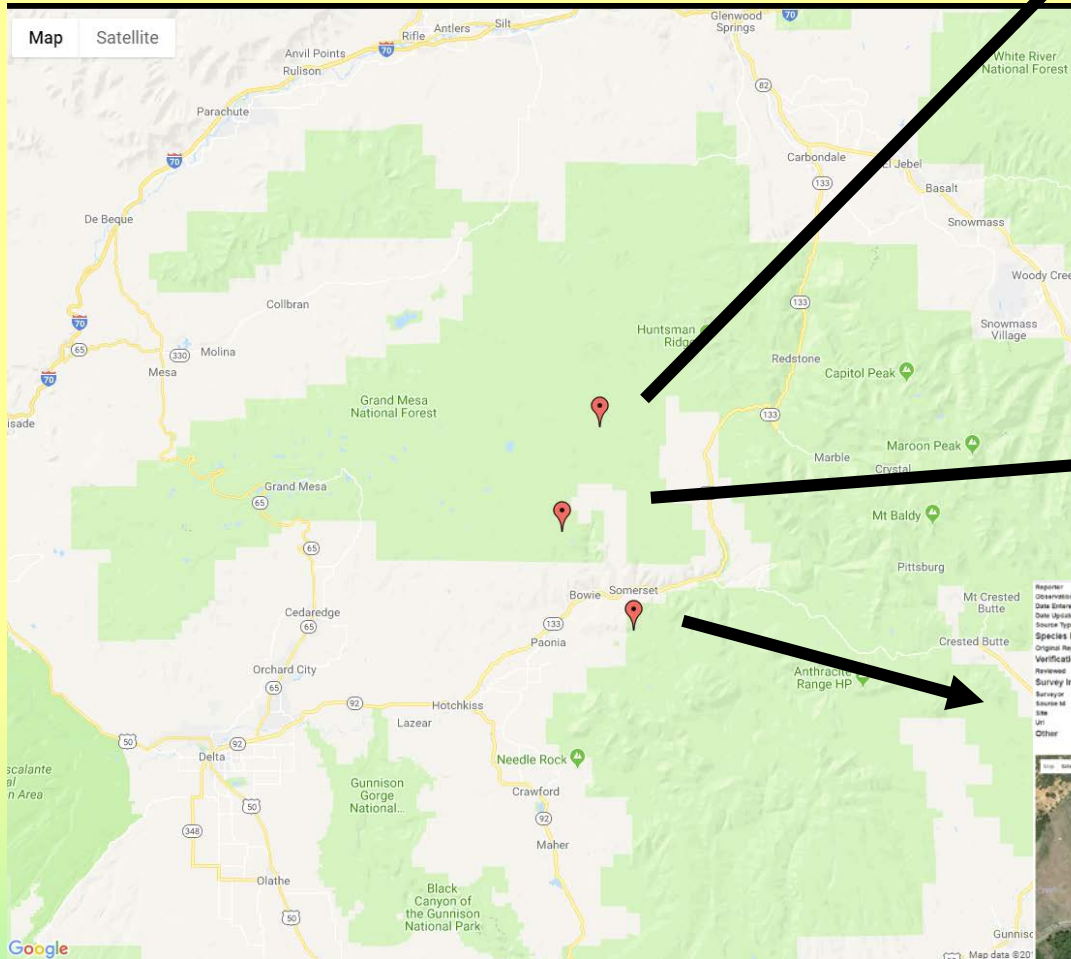








# Tansy Ragwort



Species Information  
Original Reported Subject: Senecio jacobaea  
Verification and Review: Verified  
Reviewed: Verified  
Survey Information  
Surveyor: McConkey, Justin  
Source id: 0204060169  
Site: Grand Mesa Uncomp Gunnison National Forest  
Uri: https://usfs.maps.arcgis.com/home/item.html?id=ca7600b5e81444c83ad26f798b7f2  
Other:

2002- USFS

.3138 Acres

Date Entered: June 11, 2018  
Date Updated: May 12, 2006  
Source Type: Bulk Data

Species Information  
Original Reported Subject: Senecio jacobaea  
Verification and Review: Verified  
Reviewed: Verified  
Survey Information  
Surveyor: McConkey, Justin  
Source id: 0204060167  
Site: Grand Mesa Uncomp Gunnison National Forest  
Uri: https://usfs.maps.arcgis.com/home/item.html?id=ca7600b5e81444c83ad26f798b7f2  
Other:

2002- USFS

.0346 Acres

Reporter: USFS Forest Service Natural Resource Information System (NRIIS)  
Observation Date: May 20, 2006  
Date Entered: June 11, 2018  
Date Updated: May 12, 2006  
Source Type: Bulk Data

Species Information  
Original Reported Subject: Senecio jacobaea  
Verification and Review: Verified  
Reviewed: Verified  
Survey Information  
Surveyor: McConkey, Justin  
Source id: 0204060128  
Site: Grand Mesa Uncomp Gunnison National Forest  
Uri: https://usfs.maps.arcgis.com/home/item.html?id=ca7600b5e81444c83ad26f798b7f2  
Other:

2006- USFS

.3337 Acres



# Tansy Ragwort

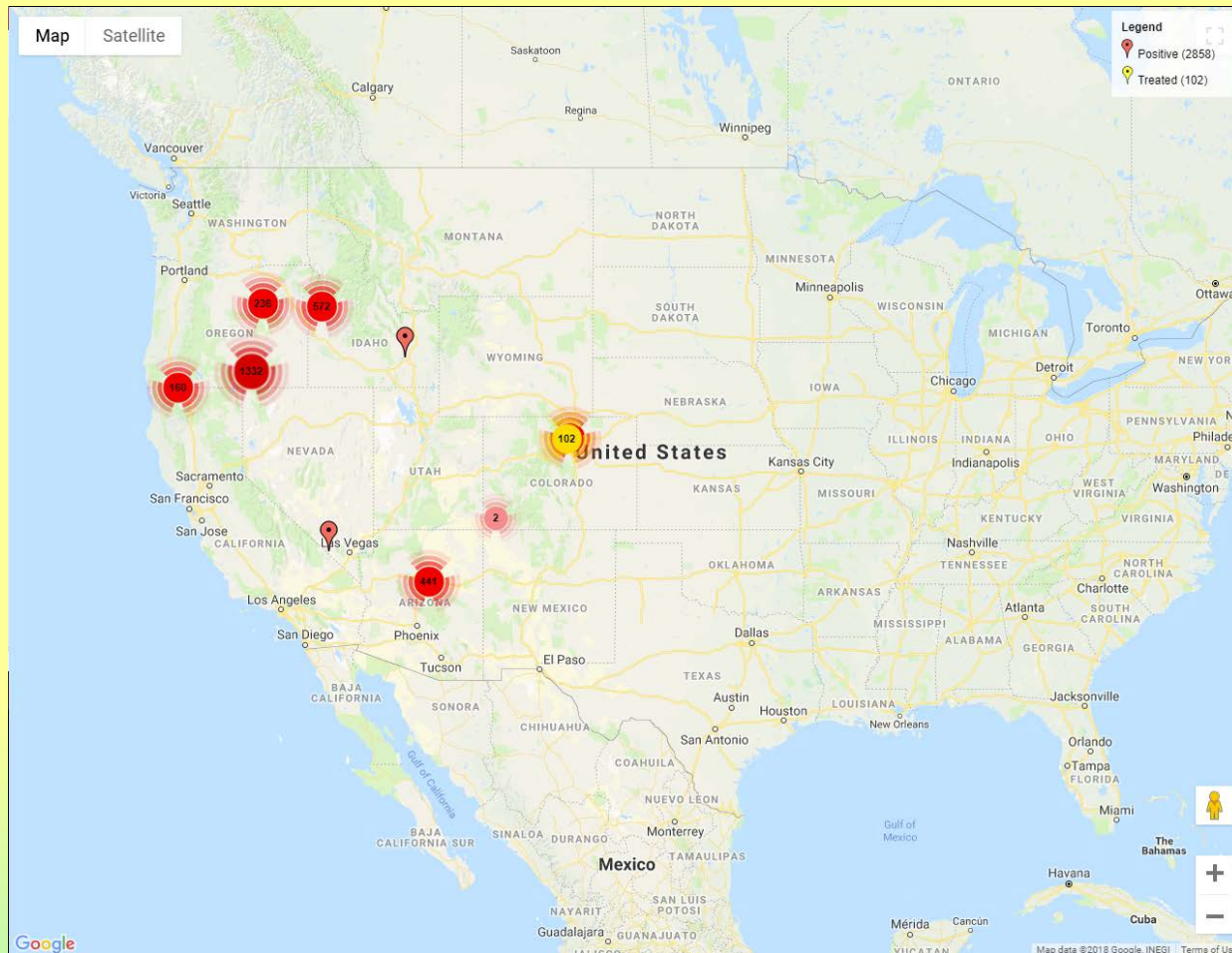
- Discovered between 2002-2006.
- Data uploaded to EDDMapS June 11, 2018.
- First known record.
- **HUGE MANAGEMENT OPPORTUNITY!**

## **What is next?**

- Local surveys to determine entire scope and scale of infestation.
- Determine current distribution.
- Identify appropriate management strategies.
- Treat infestations.
- Monitor for effectiveness, and adjust strategy if necessary.
- Education campaign for local landowners and stakeholders.

# Distribution Examples – A List

## CO State Noxious Weed List A – More than 10 Known Populations



### Mediterranean sage – *Salvia aethiopsis*.

- Biennial.
- 100,000 seeds per plant.
- Distributed by livestock, wildlife, people.
- Invades degraded sagebrush, disturbed sites, rangelands, fields, roadsides.

- Moderate distributions across the US.
- High potential impacts (agricultural and natural losses).
- High dispersal ability.

- Potential impacts: High
- Odds of encounter: Moderate
- Cost to control (Localized): High
- Cost to control (Regional): Moderate



Pre-vent

Eradicate

Control

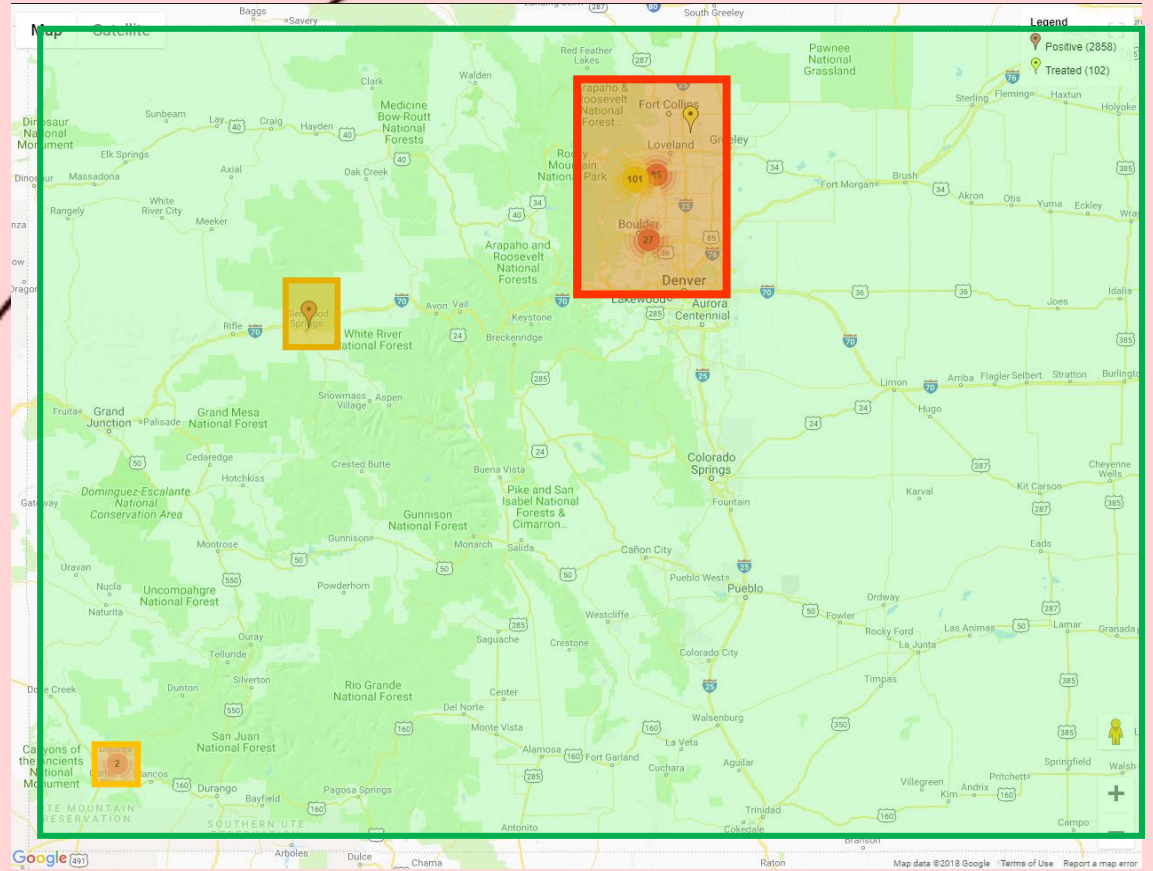
Long-term Management

EDRR

CONTAINMENT

SUPPRESSION

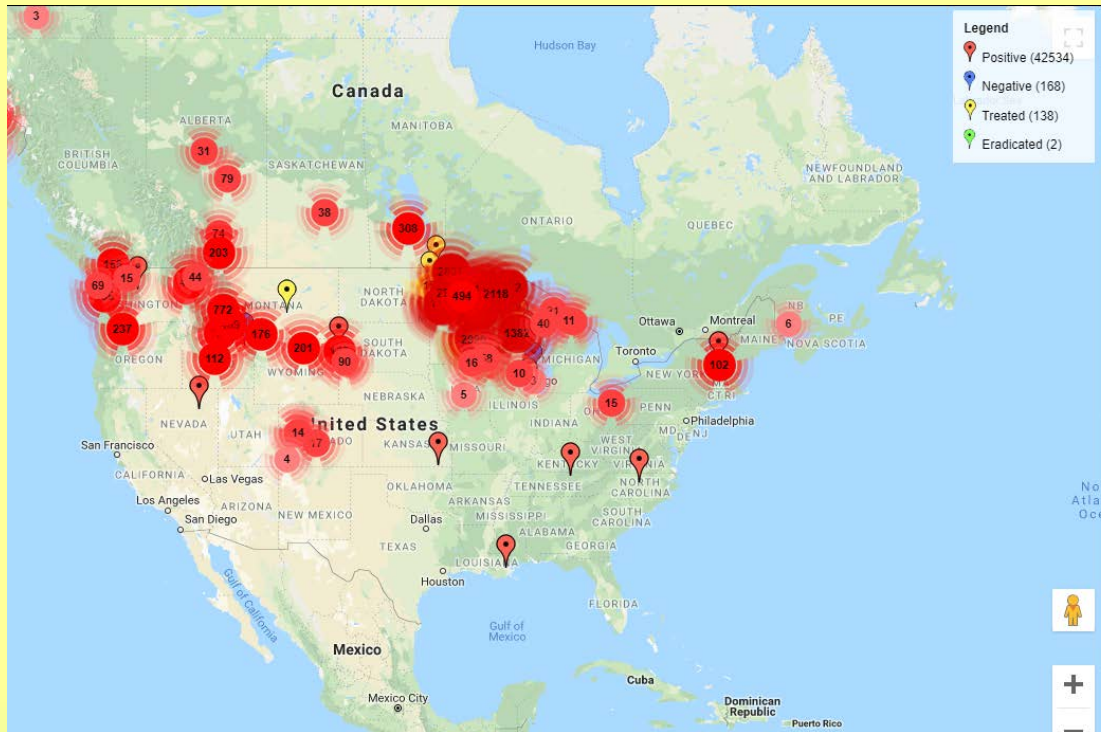
- Cost of impact +



- Density/cover of invasive species +

# Distribution Examples – B List

## CO State Noxious Weed List B



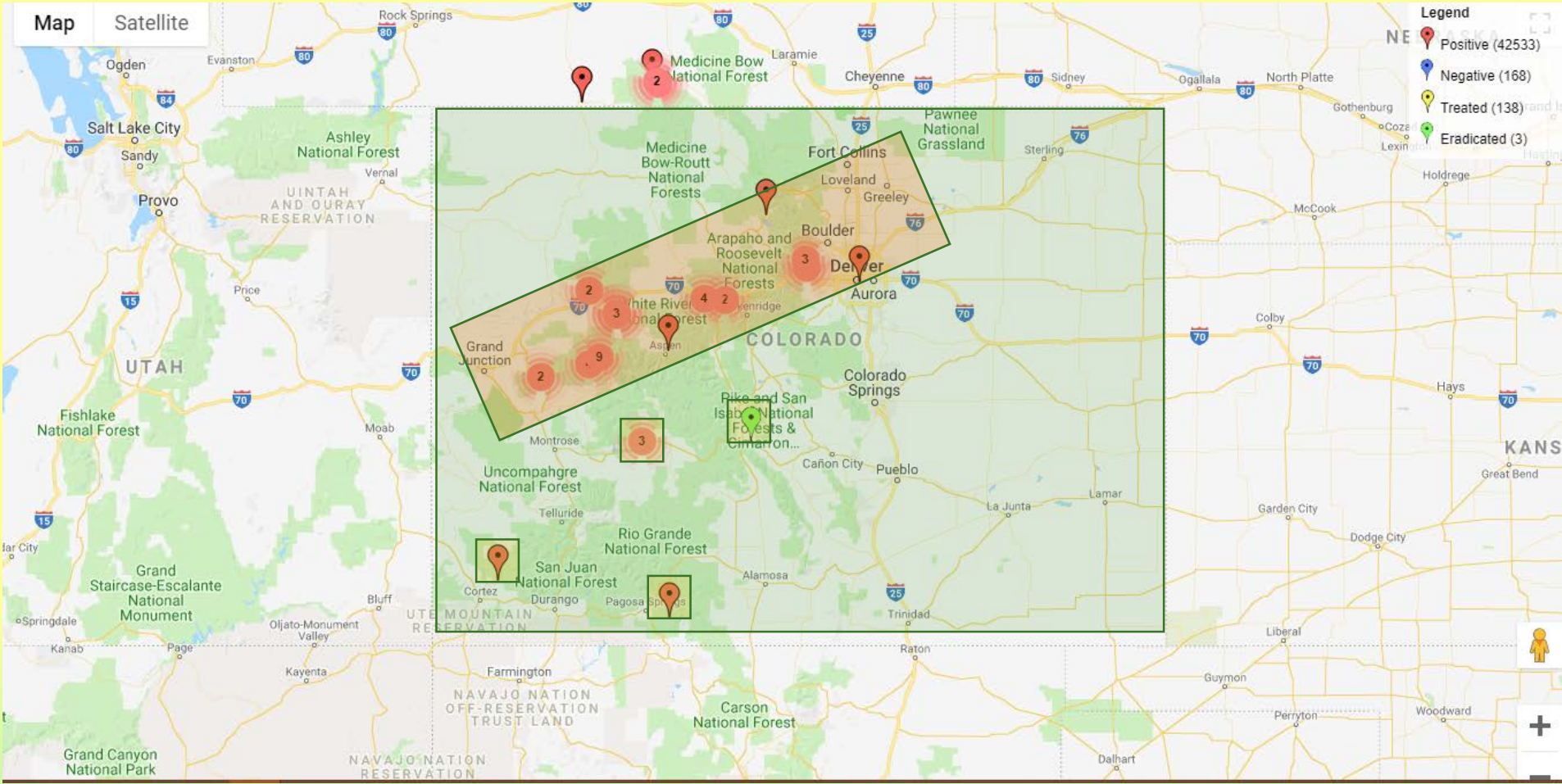
Common Tansy – *Tanacetum vulgare*.

- Perennial.
- Creeping root system.
- 50,000 seeds per plant per year.
- Toxic if ingested.
- Invades disturbed sites, ditch banks, riparian areas.

- Moderate distributions across in the US.
- High potential impacts (agricultural and natural losses).

- Potential impacts: High
- Odds of encounter: Moderate
- Cost to control (Localized): Moderate
- Cost to control (Regional): High

# Distribution Examples – B List





Pre-vent

Eradicate

Control

Long-term Management

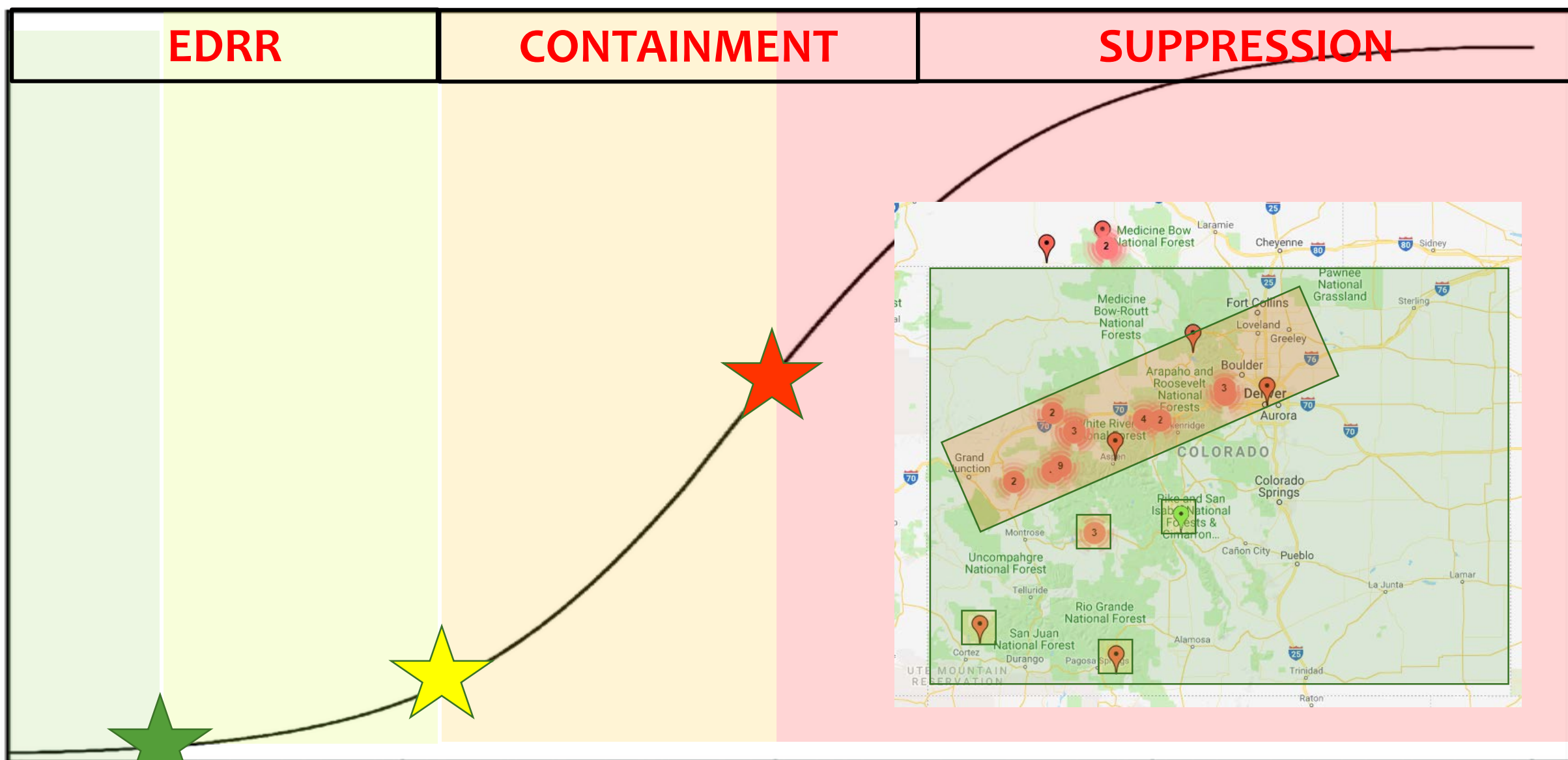
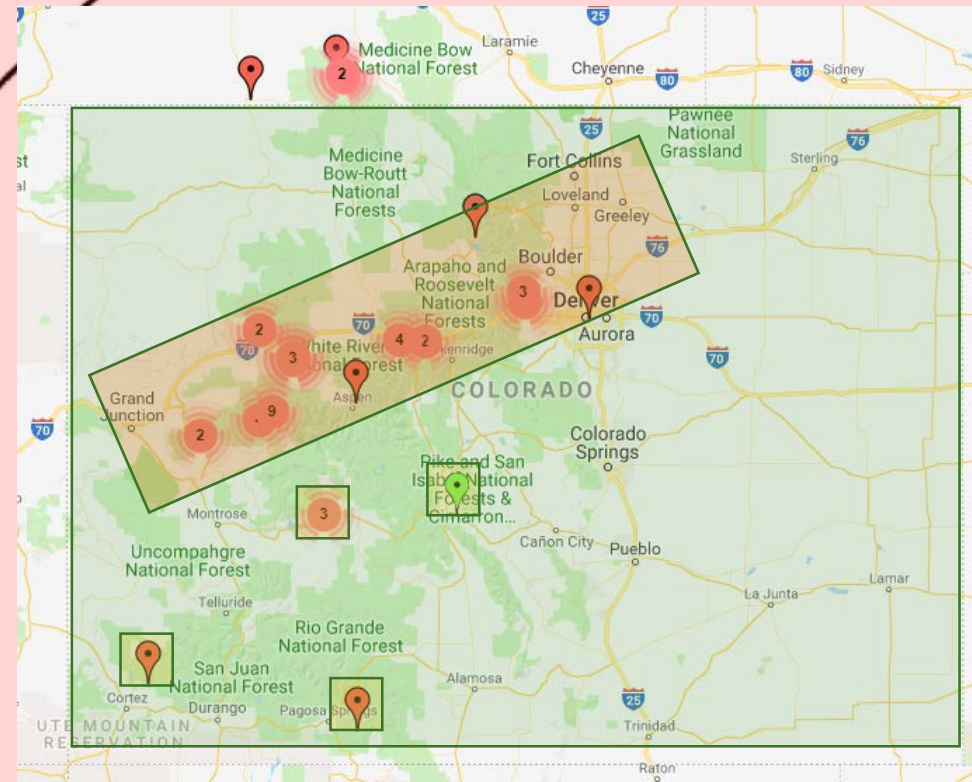
EDRR

CONTAINMENT

SUPPRESSION

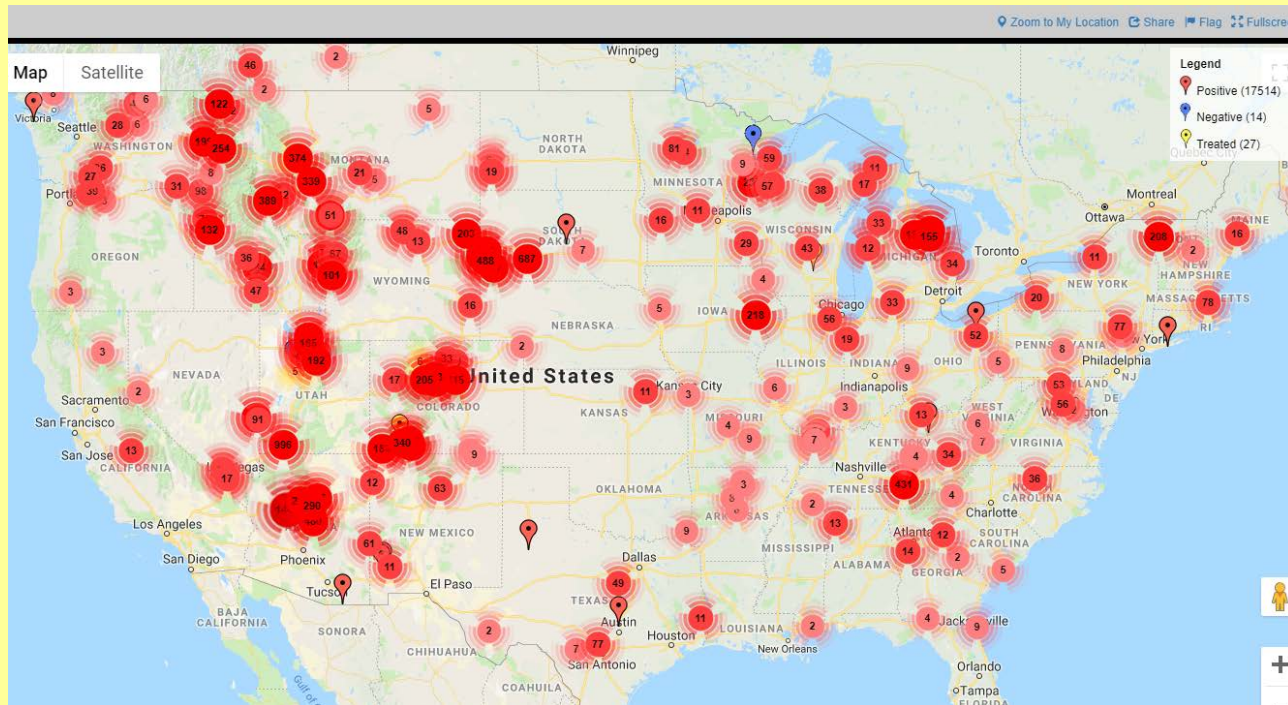
- Cost of impact +

- Density/cover of invasive species +



# Distribution Examples – C List

## CO State Noxious Weed List C



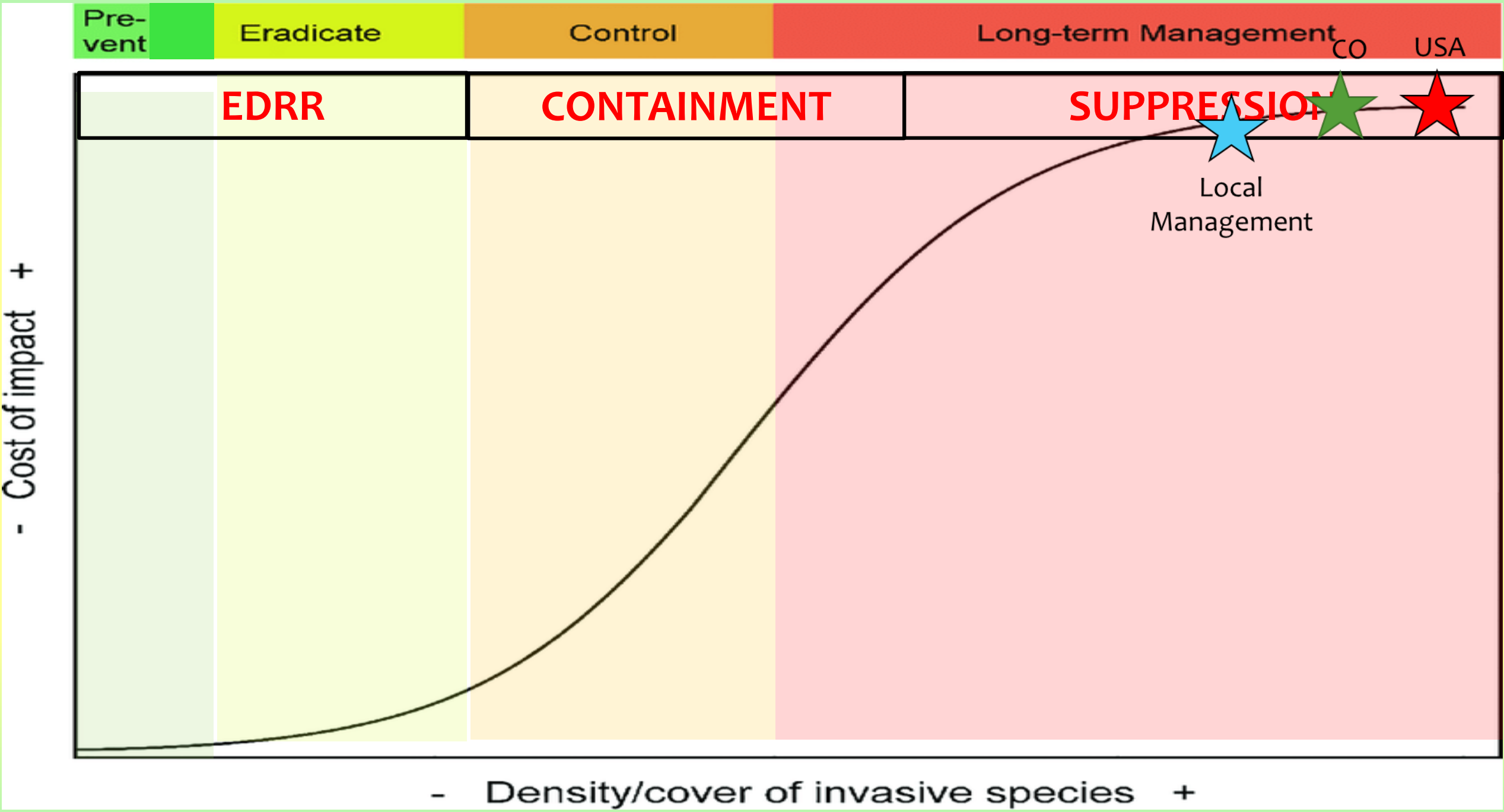
Common Mullein – *Verbascum thapsus* .

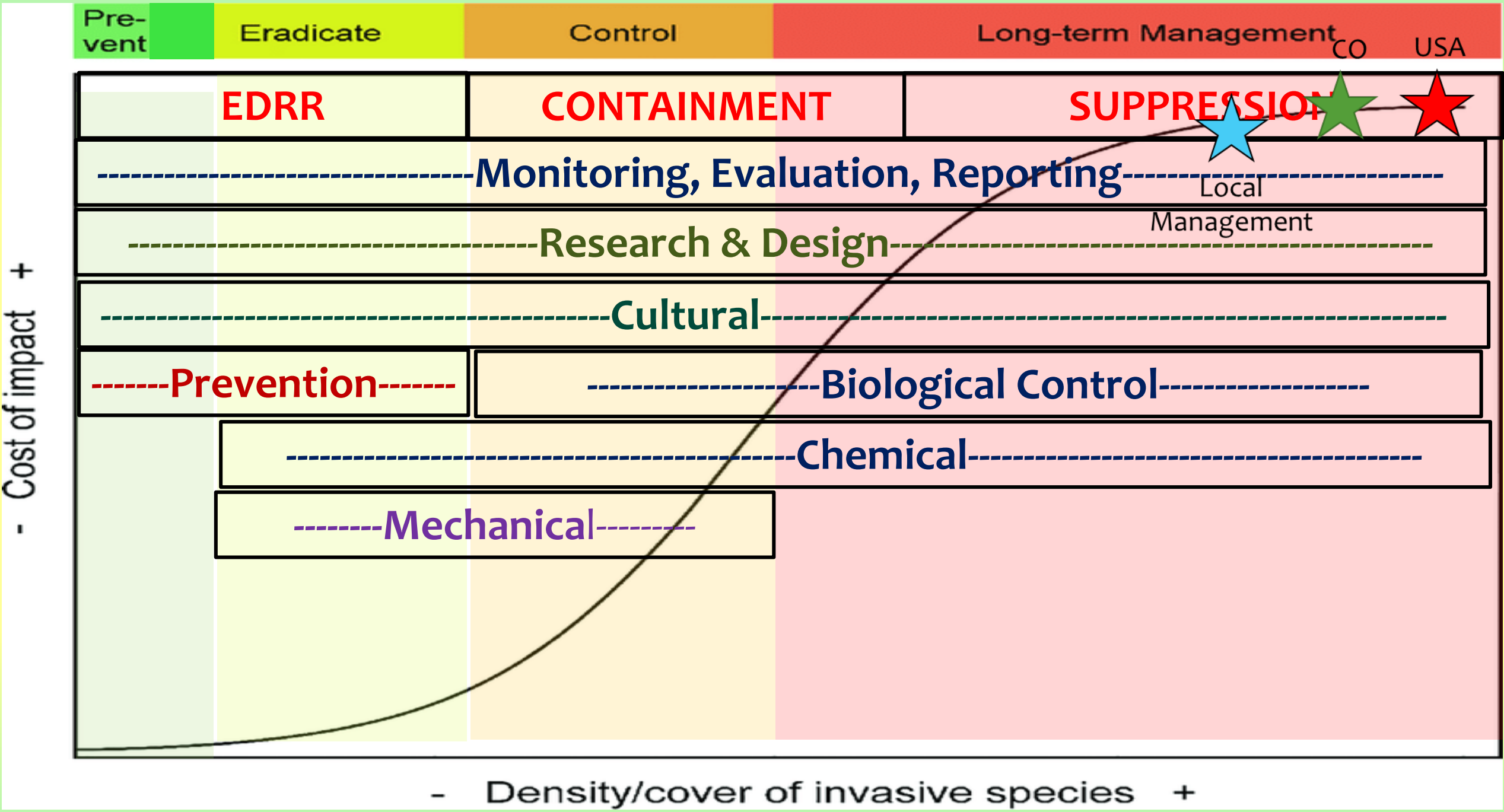
- Biennial
- Up to 180,000 seeds per plant.
- Quick growth results in dense ground cover.
- Prevents establishment of native herbs or grasses post-fire.
- Invades disturbed habitats.

- High distributions across in the US.
- High potential impacts (agricultural and natural losses).

- Potential impacts: High
- Odds of encounter: High
- Cost to control (Localized): High
- Cost to control (Regional): High







# Prioritization

“To rank in order of importance.”

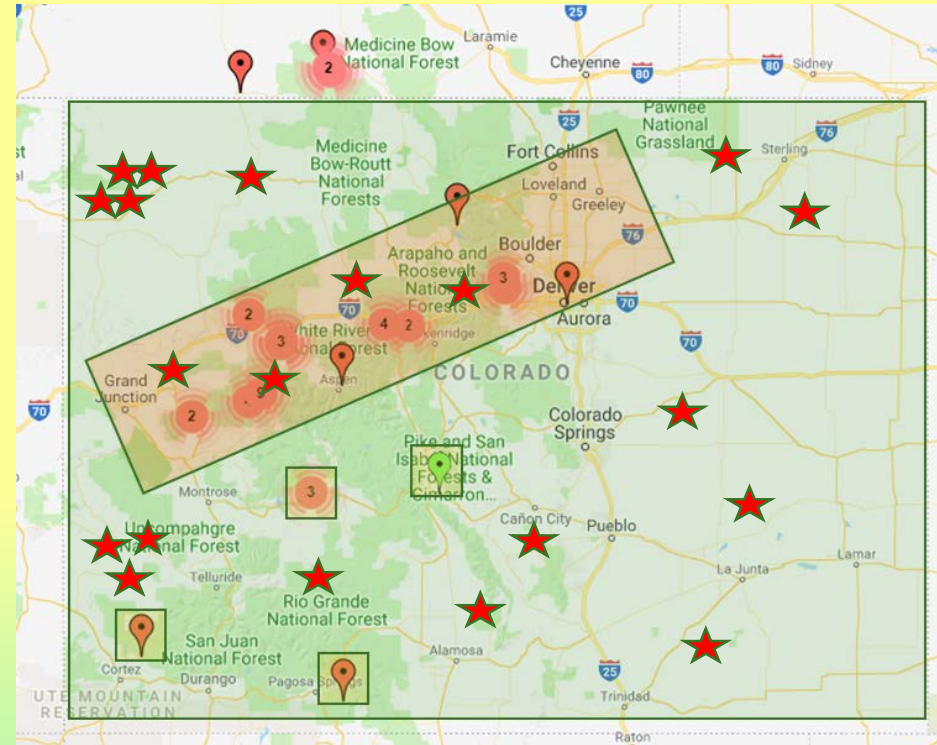
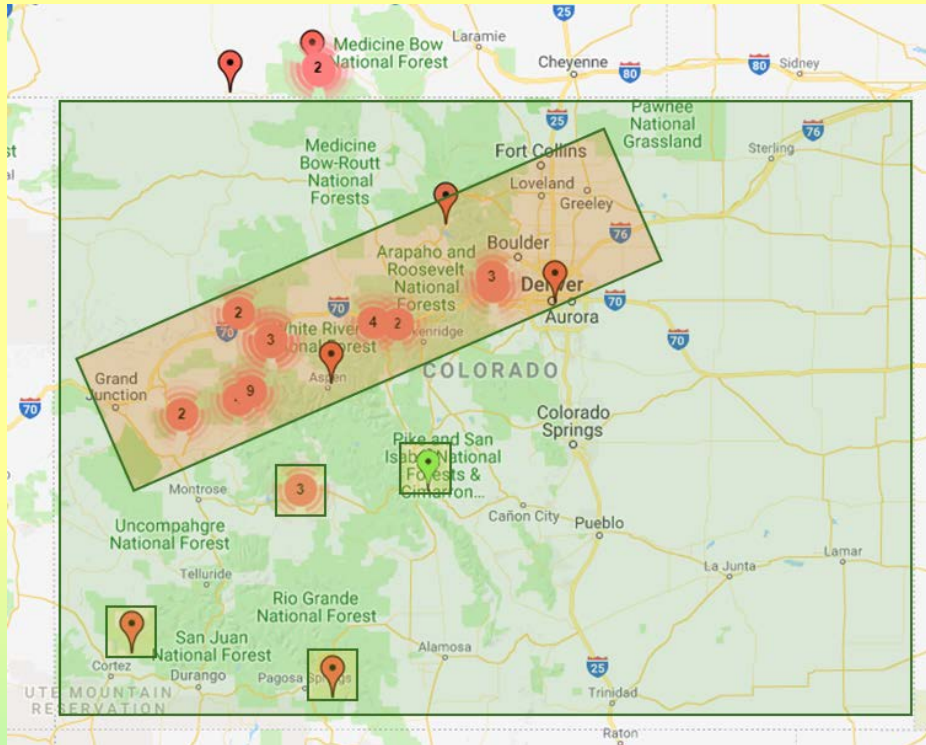
- Fundamentally a judgement call reflecting values.
- Depends on societal context and scale.

System should include:

- Current invasive species distributions.
- Local land-use.
- Economic Returns.
- Threat of current invasive species distributions.
- Ability to control existing/established populations.

# Current Invasive Species Distributions

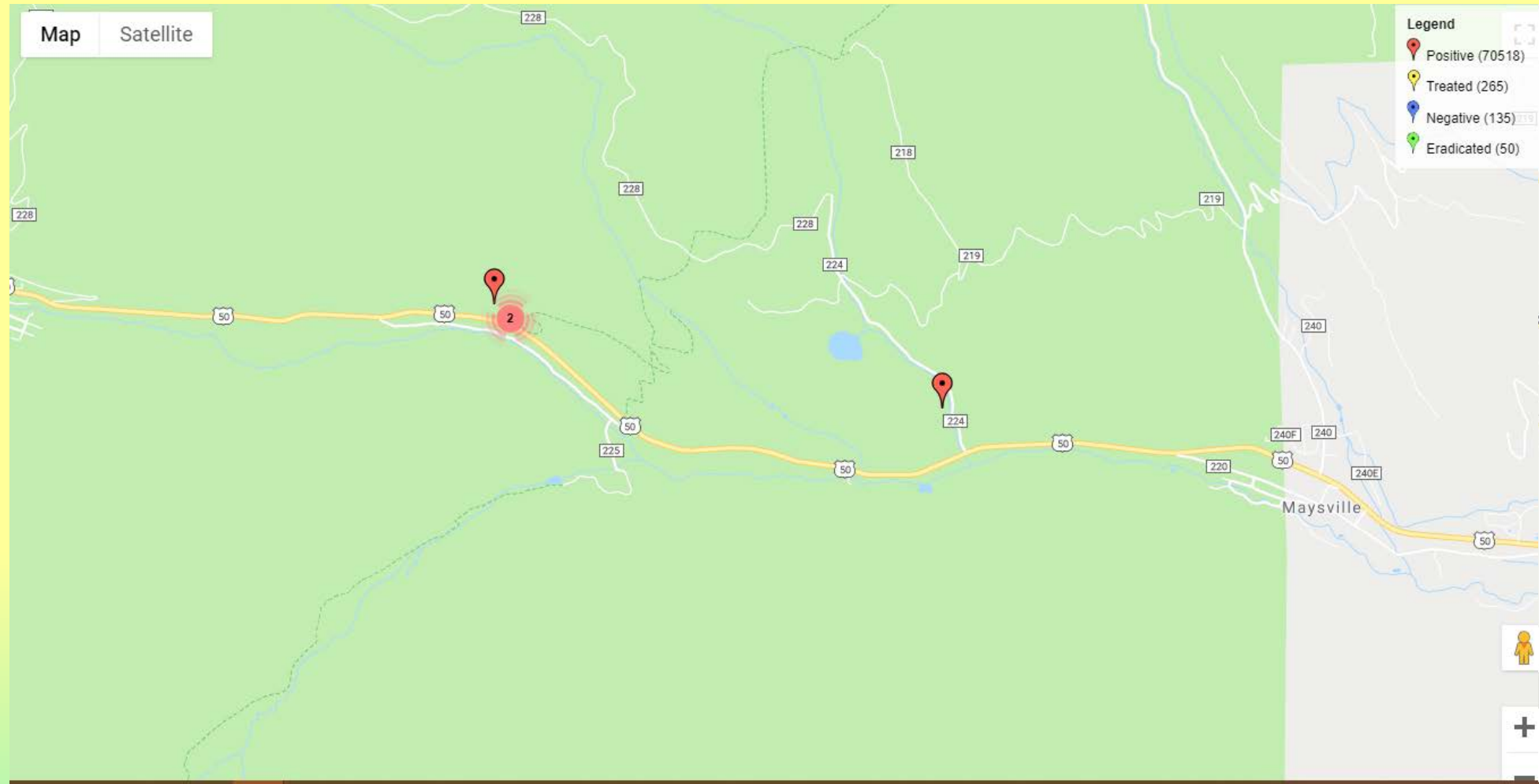
- State and Federal level decision makers depend on data provided by managers.
- Management plans can only be effective IF the current distributions are known!

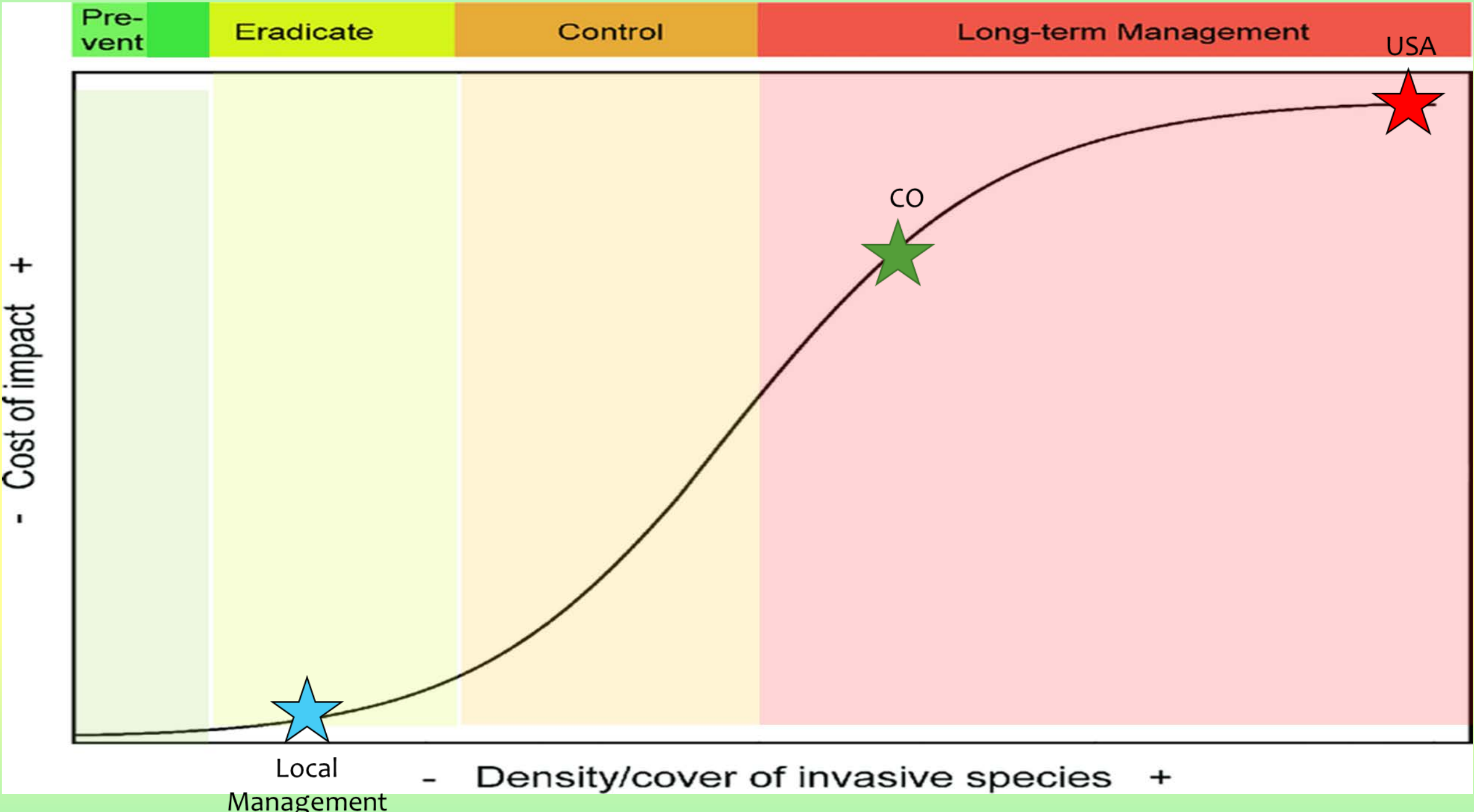




# Using Mapping Data Locally

## Musk Thistle – *Carduus nutans*





Pre-vent

Eradicate

Control

Long-term Management

USA

- Cost of impact +

Local Management

- Density/cover of invasive species +

CO

# Musk Thistle

- Approximately 2 acres on USFS property.
- First observed in 2006; EDDMapS Report in 2018.

## NEXT STEPS:

- Work with USFS staff to determine historical treatments.
- Determine entire scope and scale of local infestation with site visit.
- Develop management plans with appropriate treatment efforts.
- Conduct treatment actions.
- Monitor populations for regrowth.

# Keys to Improving Prioritization

- Submit current population information frequently.
- Understand regional patterns and trends.
- Communicate with landowners in your region.
- Work with regional, state, and federal managers to understand large-scale trends.
- Use the distribution resources available to prioritize your local management strategies.
- Understand how your local management plans fit into large management goals.



# Questions & Comments?

It is only with accurate, reliable distribution data that we can effectively prioritize management efforts across jurisdictions and regions in such a way that results in the most cost-effective and beneficial invasive species management programs.

Kayla Malone

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