

# **Invasive Species: Impacts on Public Lands**



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- Of the 258 million acres managed by the Bureau of Land Management, over 35 million acres of public lands (an area the size of the State of Wisconsin) are infested with invasive and noxious weeds.
- Weed invasion is considered the second most serious threat to natural habitats, after habitat fragmentation and loss (Randall, 1996)

# What are the impacts of Invasive Species?

- Invasive Species cost the United States approximately \$137 billion – All Taxonomy (Pimental et al. 2000)



- Invasive Plants cost the United States over \$13 billion per year (Westbrooks 1998)

# Other initiatives

- **National Fire Plan** – includes measures to reduce fine fuels such as cheatgrass
- **Standards and Guidelines for Rangeland Health** – reduce invasive and noxious weed impacts and increase restoration efforts to improve forest and rangeland health standards
- **Healthy Lands Initiative** – restoring lands on a landscape scale i.e., Great Basin

# Invasive plants: Impacts to wildlife habitat and water resources



- Invasive species reduce habitat crucial to nesting birds.
- It is estimated that 500,000 to one million acres of BLM lands are infested with Salt Cedar/Tamarisk.
- Salt Cedar consumes as much as 2.5 million acre-feet of water annually in the Southwest (USBR).
- Impacts the Southwest Willow Flycatcher

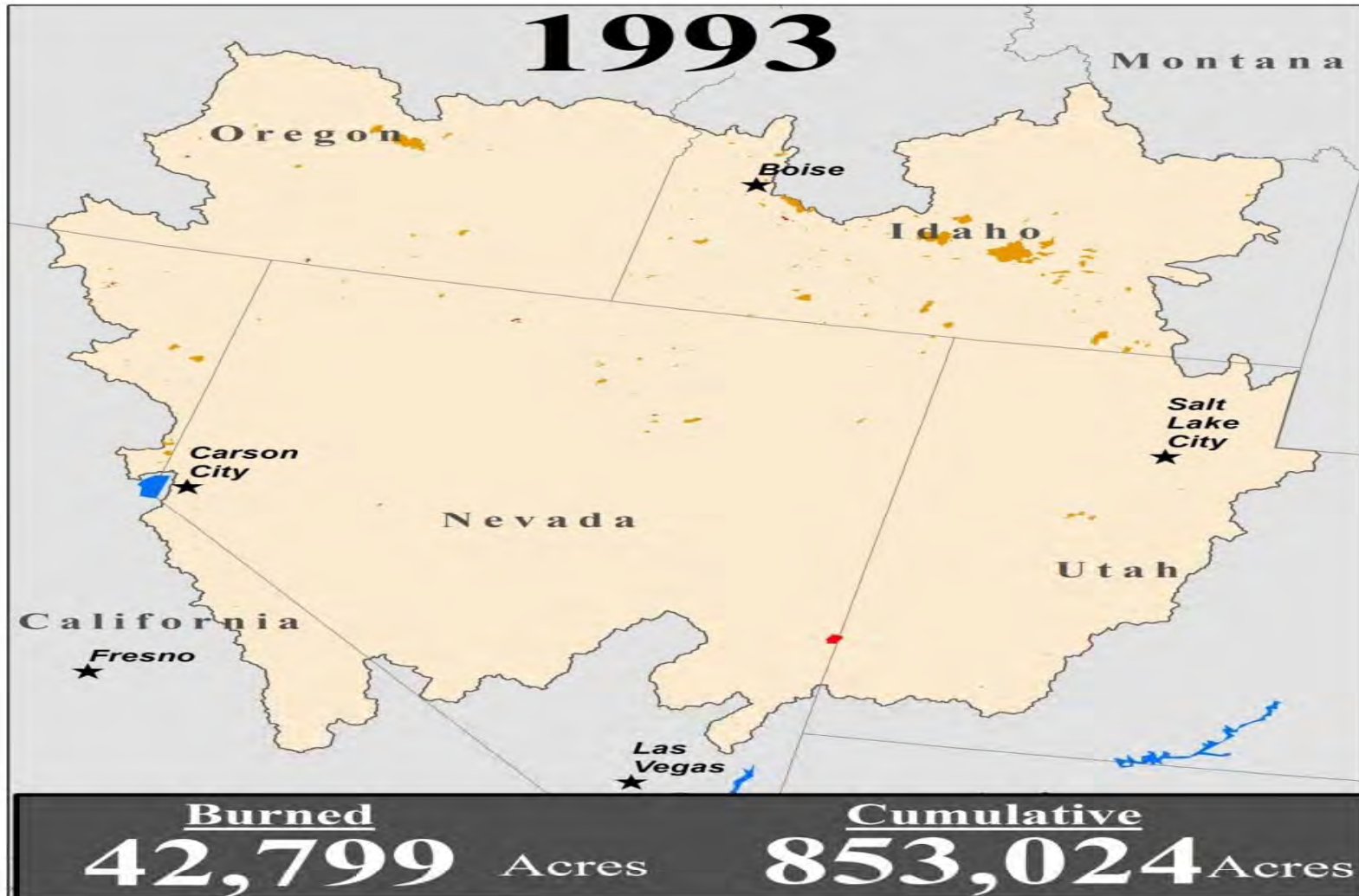
# Fire Impacts



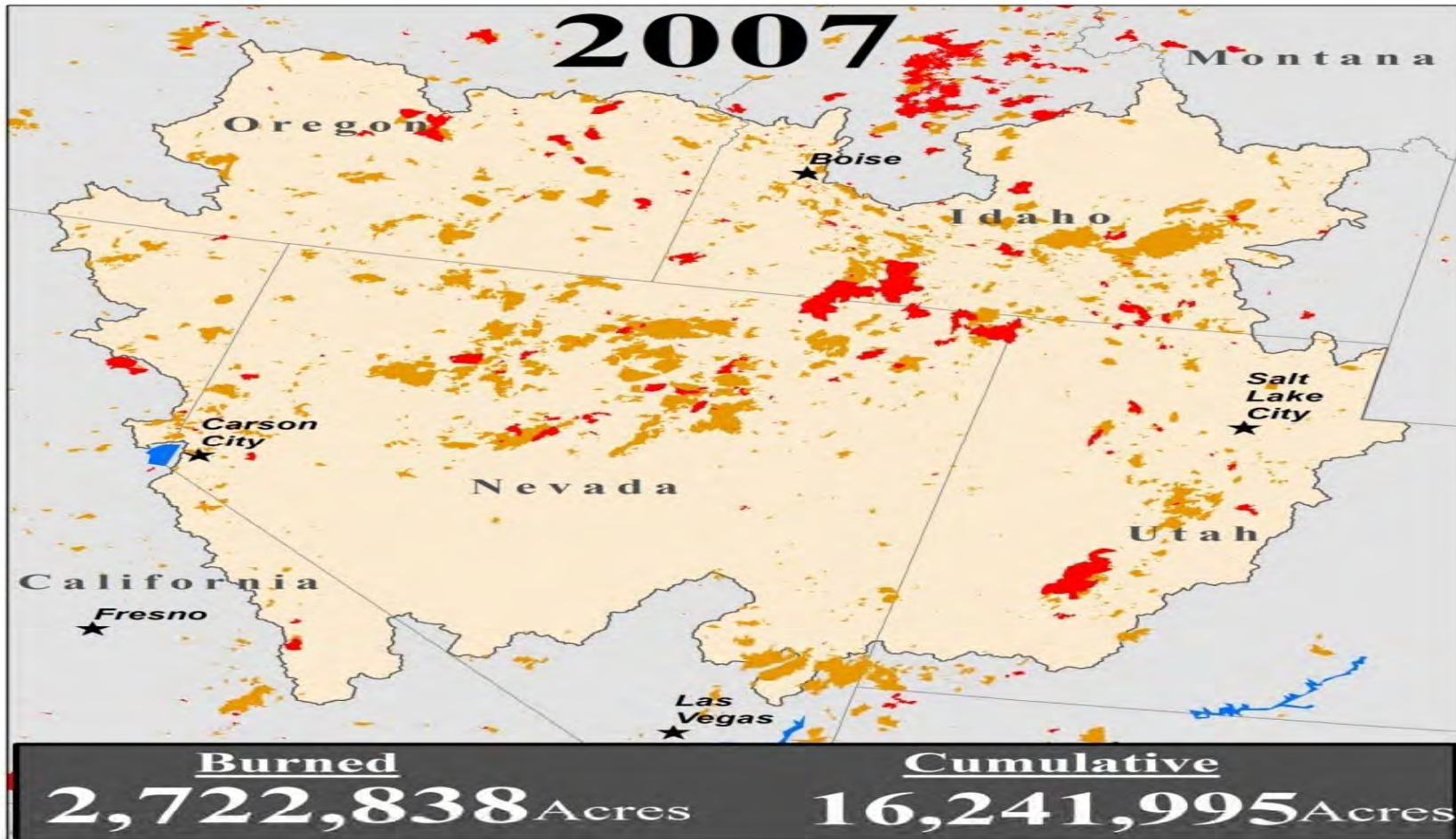
- Increased fires in the Great Basin Region of Nevada, Oregon, Idaho and Utah have introduced Cheatgrass and other nonnative annual grasses
- Reducing sagebrush that is crucial habitat for the Sage grouse.



# Normal Fire Regime- fire intervals



# Fire altered ecosystems – increasing fire intervals



# Weeds likely to invade burned areas



- **Spotted Knapweed**
- *Centaurea maculosa*
- Increases soil erosion and produces up to 1000 seeds per plant



- **Downy brome or Cheatgrass**
- Greatly increases rangeland fire hazard
- Site disturbance caused by fire enhances its establishment and spread

## Climate Change- Increased CO<sub>2</sub>

Increased CO<sub>2</sub> (Smith et. al 1987) is predicted to increase the production (e.g., fuel) and lignin content (become less palatable) in cheatgrass (Ziska et al. 2005)....**more fires?**



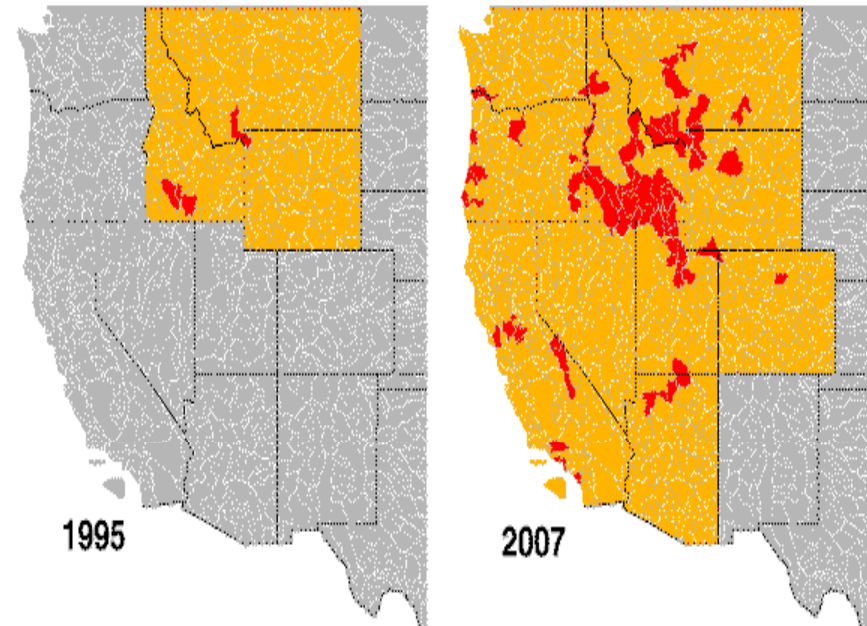
# Aquatic vegetation impacts to Fish and Recreation

## Giant Salvinia -

- First reported in Palo Verde Irrigation District in California
- Giant Salvinia has moved into the Lower Colorado River below Lake Havasu, Arizona. Potential to spread to interior lakes and streams.
- Potential to impact critical habitat for Razorback Sucker.



# Aquatic Nuisance Species: New Zealand Mud snail



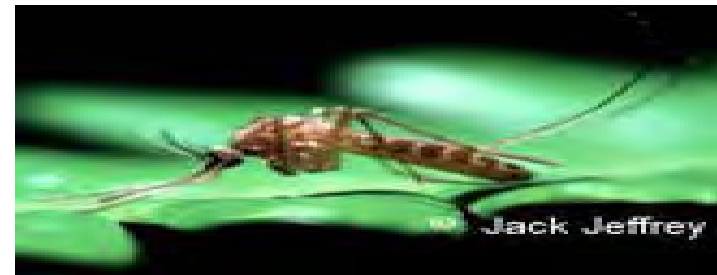
**Now reported in all western  
states except New Mexico**

# Quagga Mussels



- Typically the same size as a fingernail up to 2 inches long
- Attaches to aquatic plants, boats, motors, trailers, and recreation equipment.
- Common color patterns vary wildly with black, cream, or white bands
- Now found in Lake Mead, NV, interior waters of Arizona, California and spreading fast!

# Other impacts from Invasive Species on Public lands: West Nile Virus (WNV)



**Number of sage grouse known to have died from West Nile Virus in 2003:** 19 in Wyoming, 3 in Montana

- WNV also affects humans and domestic livestock i.e., horses
- BLM has had to increase mosquito abatement.

# Cactus Moth



- The invasive *Cactoblastis* cactus moth threatens *Opuntia* cactus species (common names Prickly Pear and Cholla) in the United States and Mexico.
- Unless prevented, the slow spread of this moth will have a devastating impact on sensitive cactus species in the Southwest.

# Sudden Oak Death



- A plant pathogen *Phytophthora ramorum*, which can have devastating effects in the wildlands it inhabits and has had substantial impacts on the nursery industry
- Found California and Oregon,
- Has killed hundreds of thousands of native oak trees.
- Also infects the leaves and twigs of common ornamental nursery plants, such as rhododendrons and camellias, which serve as vectors for pathogen dispersal.

# What is the BLM doing about Invasive Species?

The BLM emphasizes: **Prevention**



**STOP THE INVASION!**

Protect your public lands and waters by preventing the introduction and spread of invasive species!  
Clean your vehicles, machinery, and boats.

[www.blm.gov/woods](http://www.blm.gov/woods)

**STOP ASHRADE INVASION!**  
Prevention is the best defense

# What is the BLM doing about Invasive Species cont.

## Early Detection and Rapid Response (EDRR)

- **BLM has been able to use EDDR effectively** through our through inventory and monitoring efforts, followed by immediate control of infestations without regard to jurisdictional boundaries, so that whole weed infestations are treated. *Current efforts are reducing the “net” rate of spread.*

# When WEEDS move in WILDLIFE moves OUT!



Don't let weeds  
chase your trophy  
away from your  
hunting ground!

Protect your favorite  
hunting areas from  
alien invader plants!

Noxious invasive weeds replace native and desirable plants and destroy wildlife habitat. Most noxious weeds are not suitable for animal forage; game animals leave weed-infested areas in search of better habitat.

- The estimated damage from invasives worldwide totals more than \$1.4 trillion - five percent of the global economy.
- Noxious weeds can be transported by wind, water, vehicles, wildlife, livestock, and YOU!

#### HOW CAN YOU HELP?

- Learn to identify noxious weeds in your area.
- Carry only certified weed free feed.
- Clean vehicles, livestock, and equipment before leaving home and hunting location.

Report Weed Infestations  
To Local Weed Managers.



SOUTH WEST VEGETATION  
MANAGEMENT ASSOCIATION



## Control and Management –

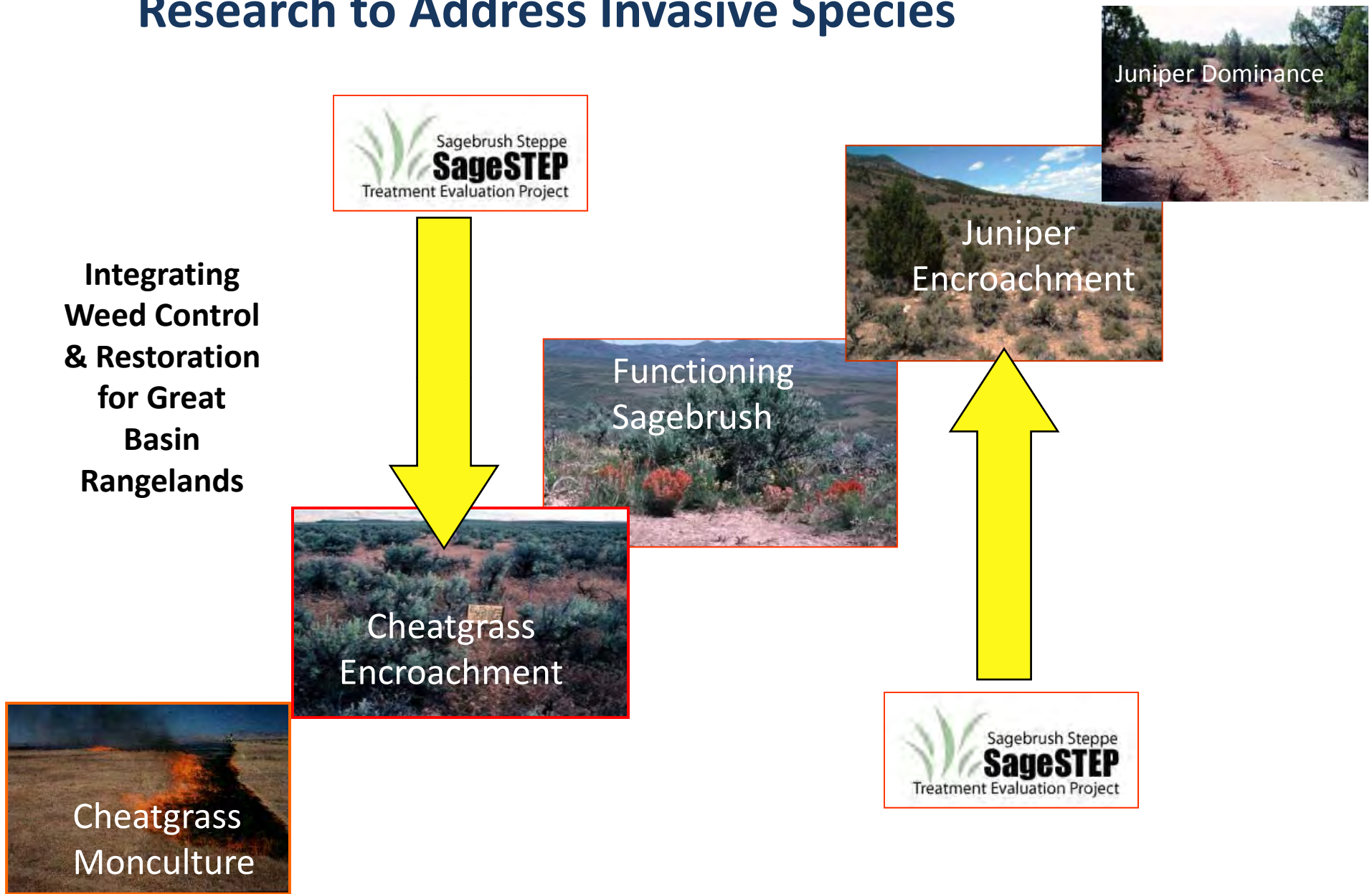
The BLM takes an Integrated Pest Management approach using all the tools available to control and manage invasive species: Prevention, Mechanical, Chemical, Biological, Prescribed fire, and Manual methods for control

- Inventory - 10 million acres annually
- Weed Treatments - 350,000 acres annually
- Monitoring - 475,000 acres annually
- Restoration - 25,000 acres annually

# Stewardship Contracting - TAMARISK REMOVAL- Yuma, AZ



# Research to Address Invasive Species





# Bureau of Land Management Vegetation Treatments Programmatic EIS and ER for the Western U.S. and Alaska

