

Cheatgrass & Wildand Fire Management





- Historically, sagebrush and native bunch-grasses have been the dominant vegetation within the sagebrush steppe of Wyoming.



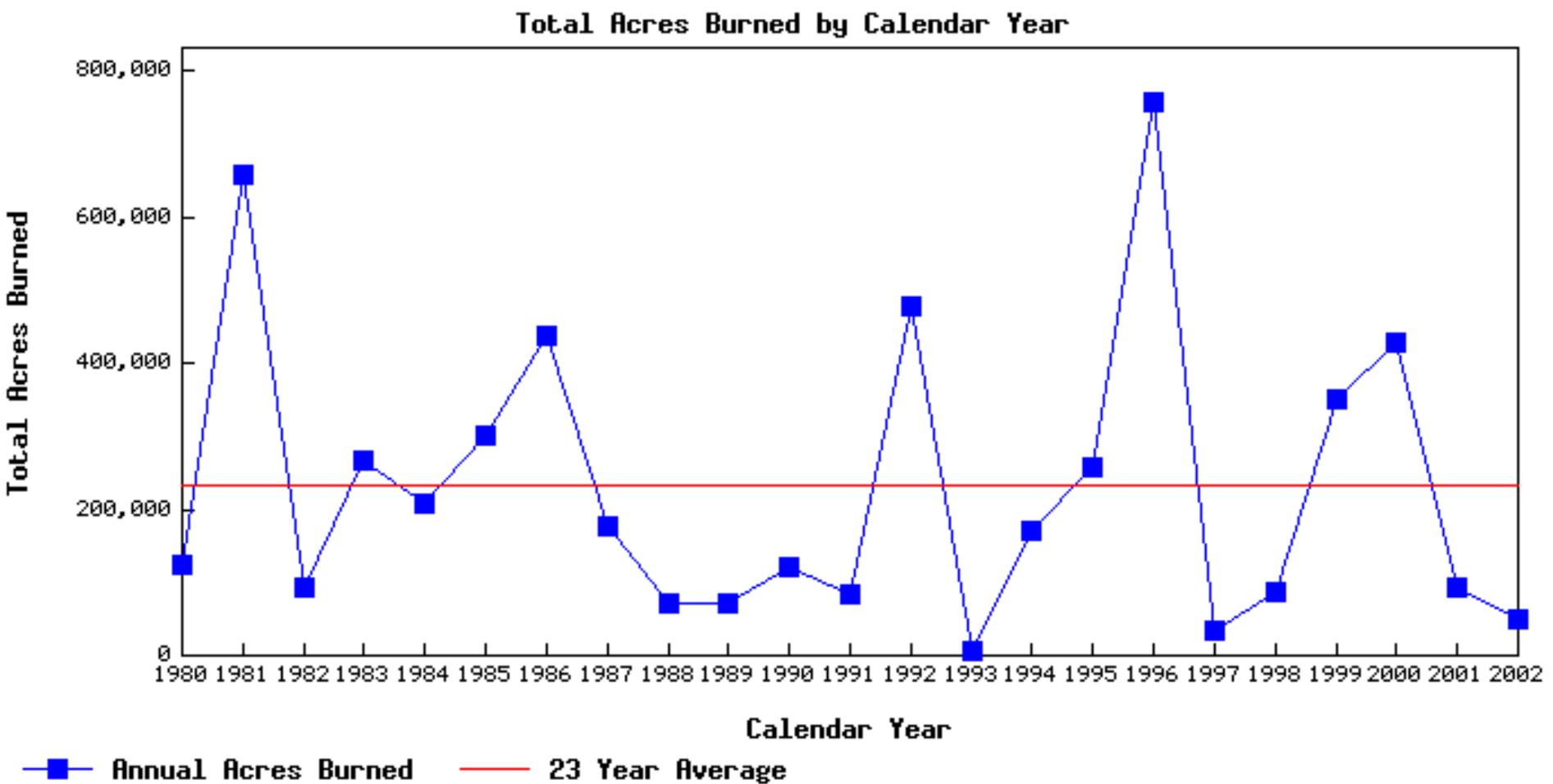


- Since sage and bunch grasses grow in clumps that fire will not easily cross, (for the most part) wildfires do not spread as easily. Note how cheatgrass has filled in the open areas.

Fire Management Implications:

Because of its flammability, cheatgrass greatly increases the fire hazard on a site. The rate of spread, size, and frequency of fires all increase.

Idaho BLM 231,940 Average



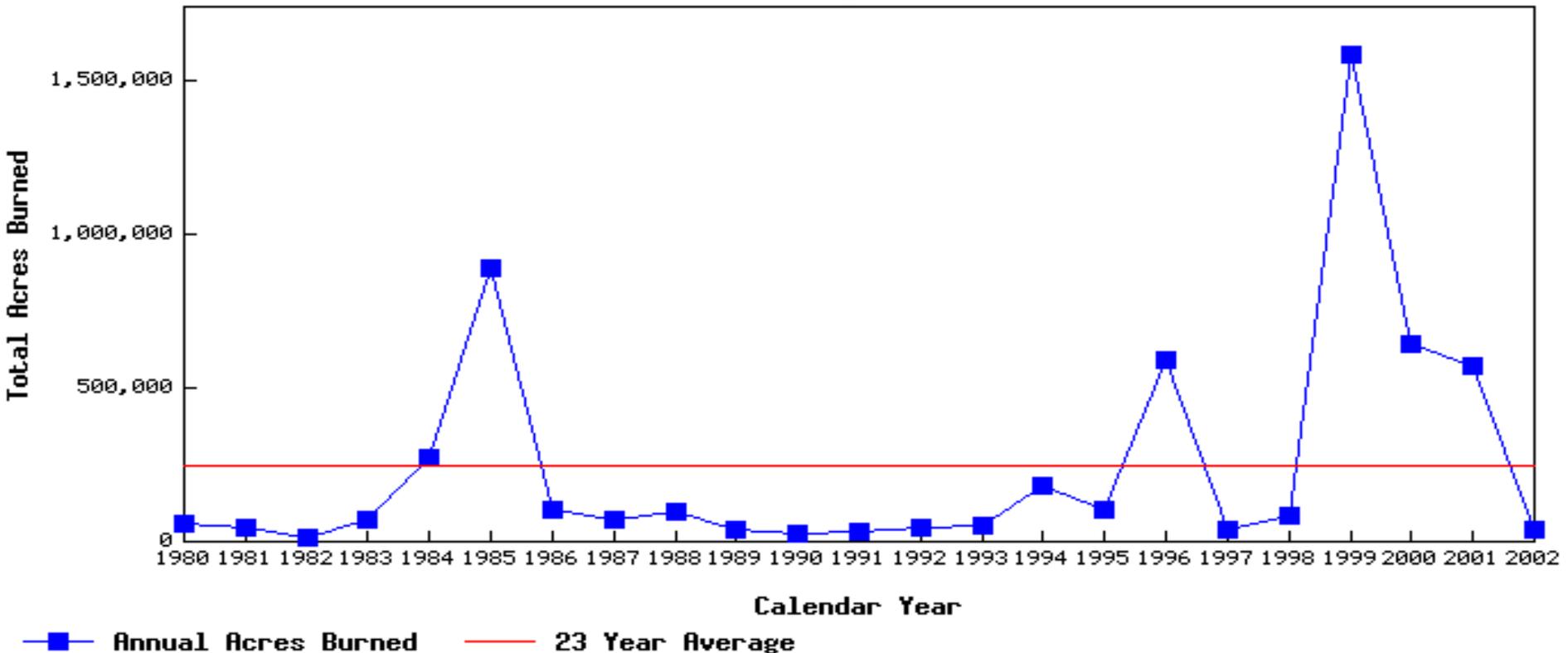
In the Great Basin, Fire and cheatgrass have conspired to build each other up and ultimately destroy the native ecosystem. With every new fire, cheatgrass takes over more and more acreage, as the fire-loving annual survives while the natives die out. And with each new crop of cheatgrass comes the certainty that successive fires will burn hotter and more often, converting still more native sagebrush grasslands into uniform carpets of the short yellow grass.



Besides increasing fire frequency, the length of time cheatgrass remains a hazard is longer than that for perennial grasses. Cheatgrass dries 4 to 6 weeks earlier than perennials and is susceptible to fire 1 to 2 months longer in the fall.

Nevada BLM 245,125 Average

Total Acres Burned by Calendar Year

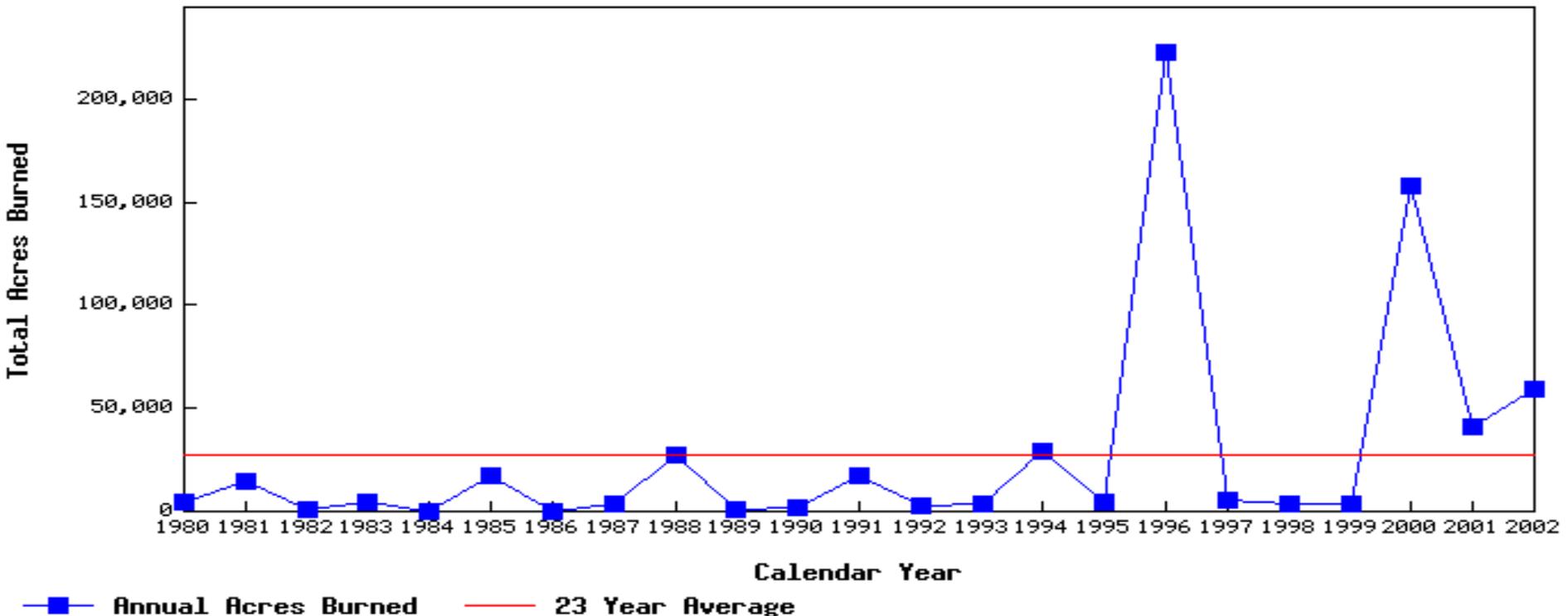


Several growth and habitat characteristics of cheatgrass make it a fire hazard:

- It grows in the 6 to 22 inch precipitation zone, an area with severe fire weather
- Its finely divided stems and flowering stem ignite readily when dry
- It responds easily to any change in moisture conditions because of its structure
- It provides a receptive surface for ignition sources
- 10-100 year mean-return fire interval can be reduced to 2-5

Wyoming BLM 27,320 Average

Total Acres Burned by Calendar Year



The BEHAVE system of fire behavior programs is designed for site-specific predictions of fire behavior based on fine scale data inputs describing the fire environment. (Rothermel 1972)

The basic inputs of Behave:

13-Fuel Models (grass, brush, tree, slash/logging residue)

Fuel Moisture Dead fuel moistures are classed by time lag. A fuel's time lag is proportional to its diameter and is loosely defined as the time it takes a fuel particle to reach 2/3's of its way to equilibrium with its local environment. Dead fuels in NFDRS fall into four classes:

1-h, less than 1/4" diameter. Fine flashy fuels that respond quickly to weather changes.

10-h, 1/4 to 1" diameter.

100-h, 1 to 3" diameter.

1000-h, 3 to 8 " diameter.

BEHAVE Inputs continued:

- Midflame Windspeed
- Slope
- Direction of Wind
Vector, Deg. Clockwise
From Uphill or Wind
Vector if Slope is Zero



BEHAVE Outputs:

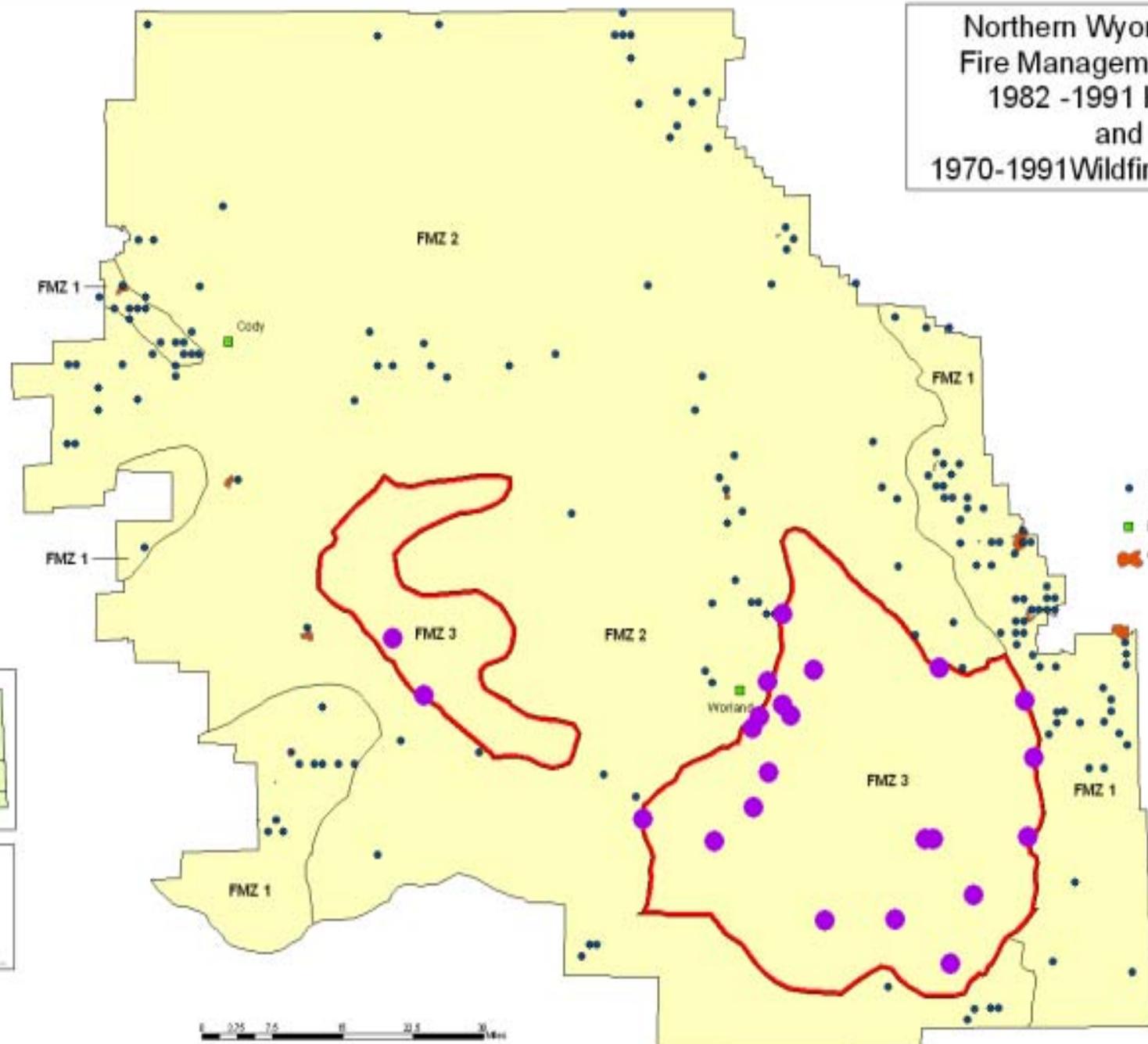
Rate of Spread
Heat/Unit Area
Flame Length
Acres



RemSoft Behave Runs



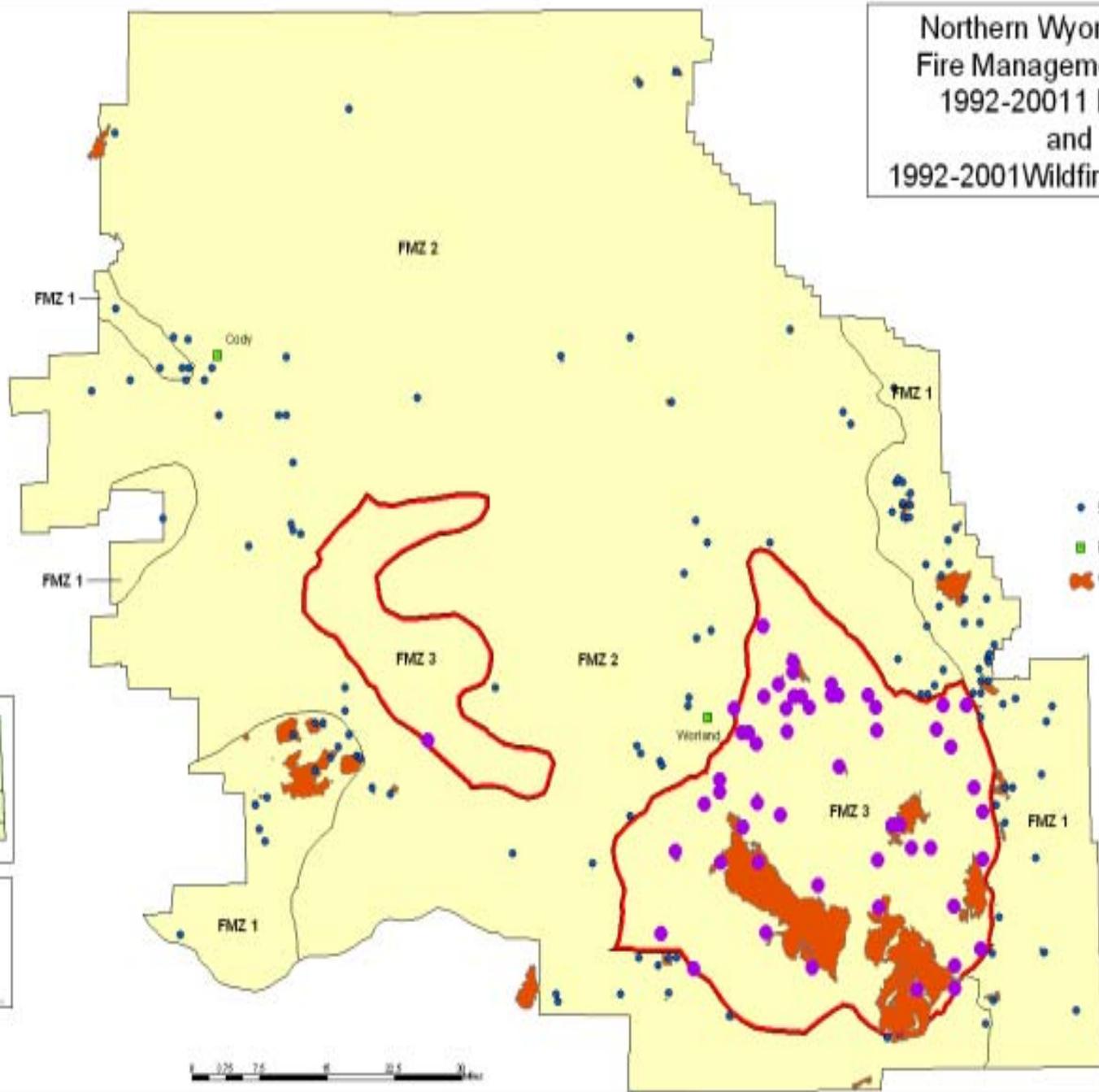
Northern Wyoming Zone Fire Management Zones 1982 -1991 Ignitions and 1970-1991 Wildfire Perimeter



- 1982-1991 Ignitions
- BLM Field Office
- Wildfire Perimeters 1970-1991



Northern Wyoming Zone Fire Management Zones 1992-2001 Ignitions and 1992-2001 Wildfire Perimeters



- 92-2001 Ignitions
- BLM Field Office
- Wildfire Perimeters 1992-2001



Fire Management & Cheatgrass Why do we care?

- Exposure/Frequency
- Firefighter and Public Safety
- Flare-ups generally occur in deceptively light fuels, such as grass and light brush. (5 common denominators of fire tragedies)
- Wildland Urban Interface
- Recognition that past and current BLM Great Basin fire management is not working and that it's actually leading to ecosystem collapse
- Recognition that Wyoming currently has one of the last almost intact sagebrush steppes in the western USA



Cheat grass management & implementation of the National Fire Plan: A mandate and funding!

1. Improve Prevention and Suppression

2. Reduce Hazardous Fuels

3. Restore Fire Adapted Ecosystems

4. Promote Community Assistance



How can Fire/Fuels Management Help?

- Awareness/education within Wyoming...
Cheatgrass workshop
 - Solid land management plans which tier to Fire Management Plans
1. I.D. cheatgrass risk areas
 2. Suppression objectives
 3. Fuels Management
 4. Rehabilitation
 5. Restoration



Some lessons learned from the Great Basin

- While it is an important tool; total reliance on Fire Control/Initial attack to limit wildland size/frequency and has not worked...



Proactive Fuels Management and Hazard Reduction is a key component

- I.D. possible infestation areas
- Creating a patch-dynamic of uneven aged Sage/Bunch grass vegetation types through (Rx Fire, Chemical, Mechanical)
- Fuel breaks in critical areas ie (Greenstripping)

