Whitebark Pine Restoration:

You have to crack some eggs to make an omelette

- Whitebark Pine in Region 1
- Endangered Species Act Status – USA
- USFS Sensitive Species Status
- NEPA Framework for Restoration and Management
- Fire Management in Region 1
- Forest Plans

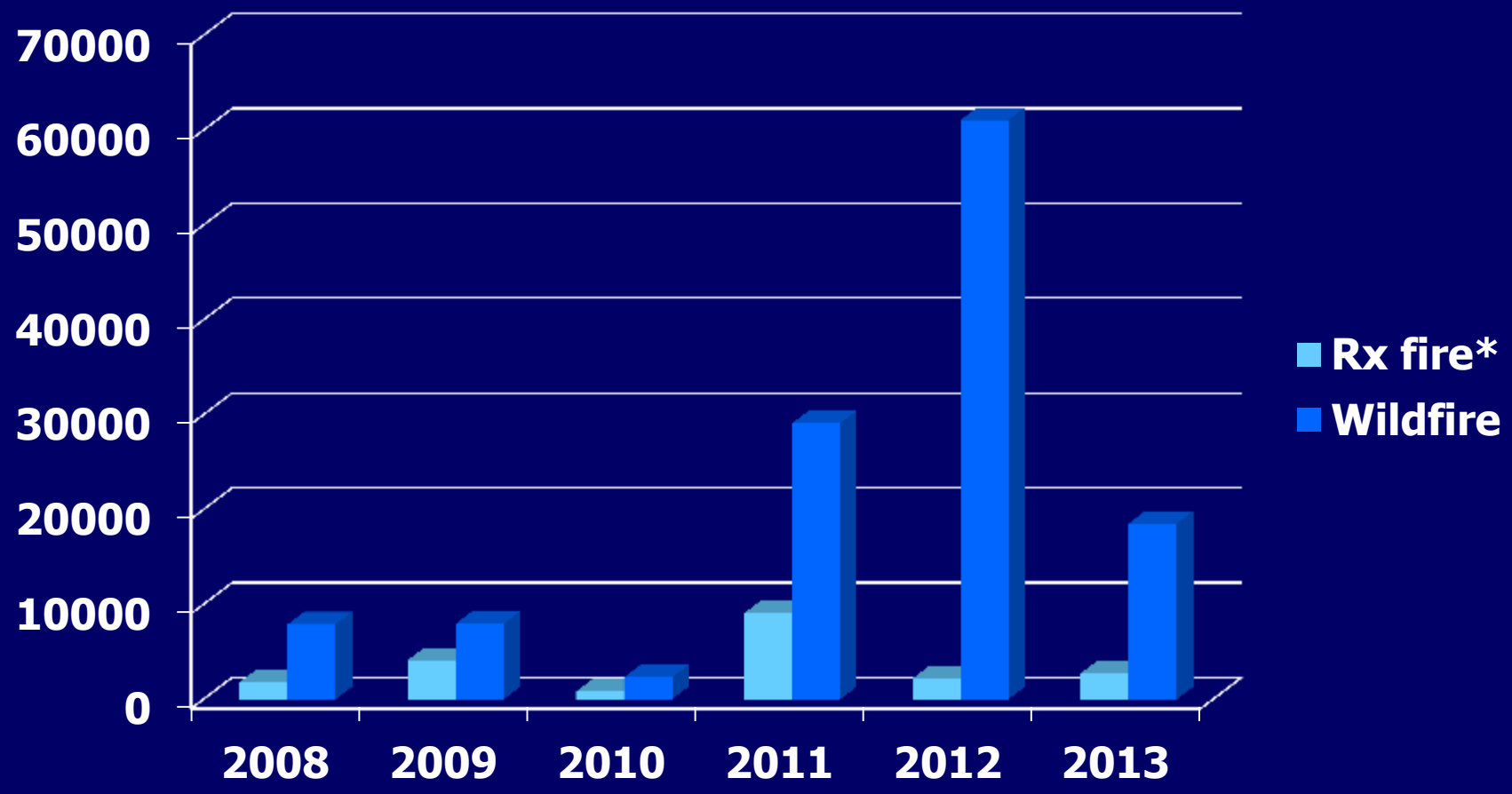
Steve Shelly & R1 WBP IDT
U.S. Forest Service
Region 1

Pacific Coast WBP Working Group
11 March 2014

Fire exclusion in whitebark pine – Beartooth Plateau, Montana

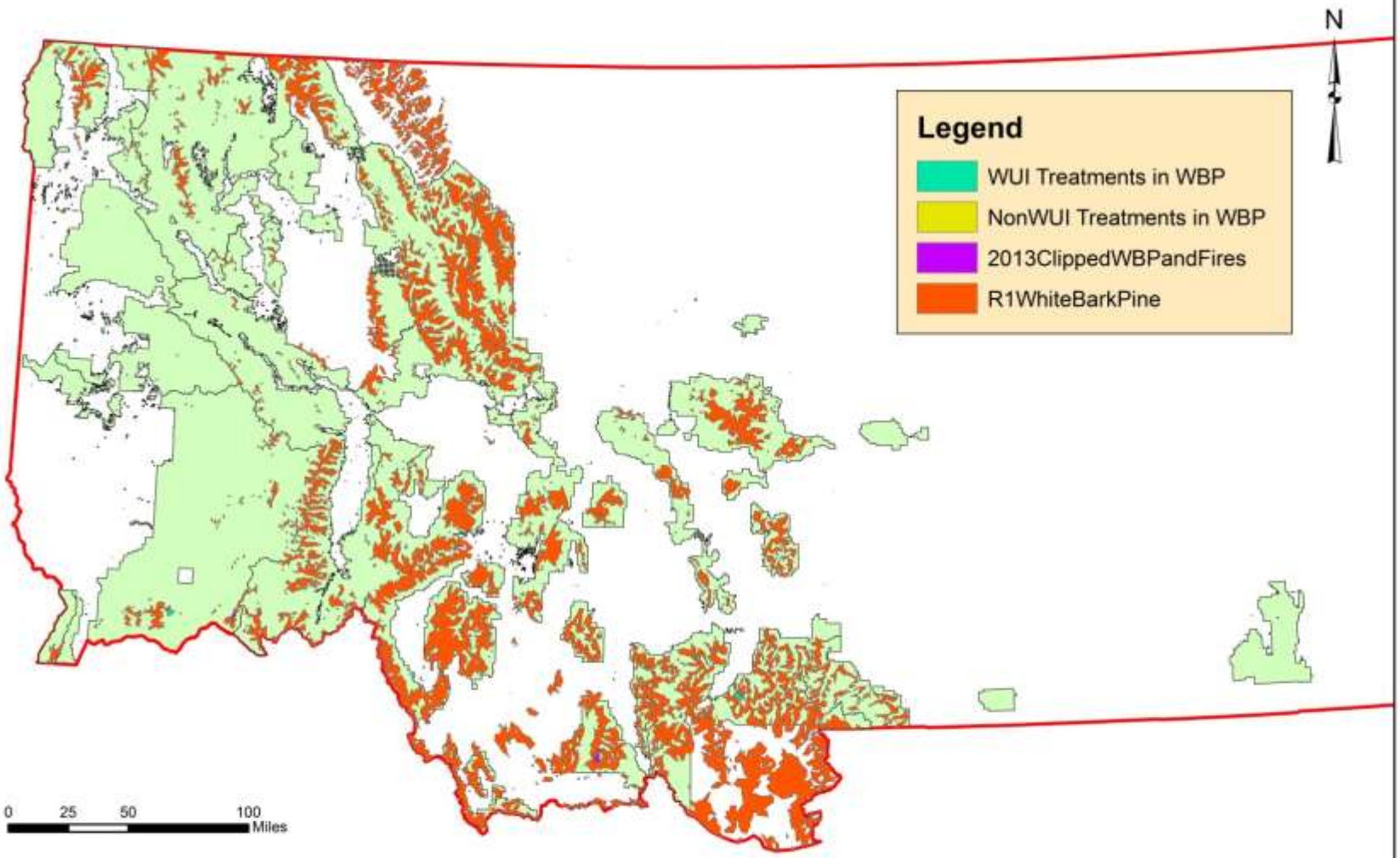
Fire Management in Whitebark Pine Habitat

USFS Region 1 – Acres per year

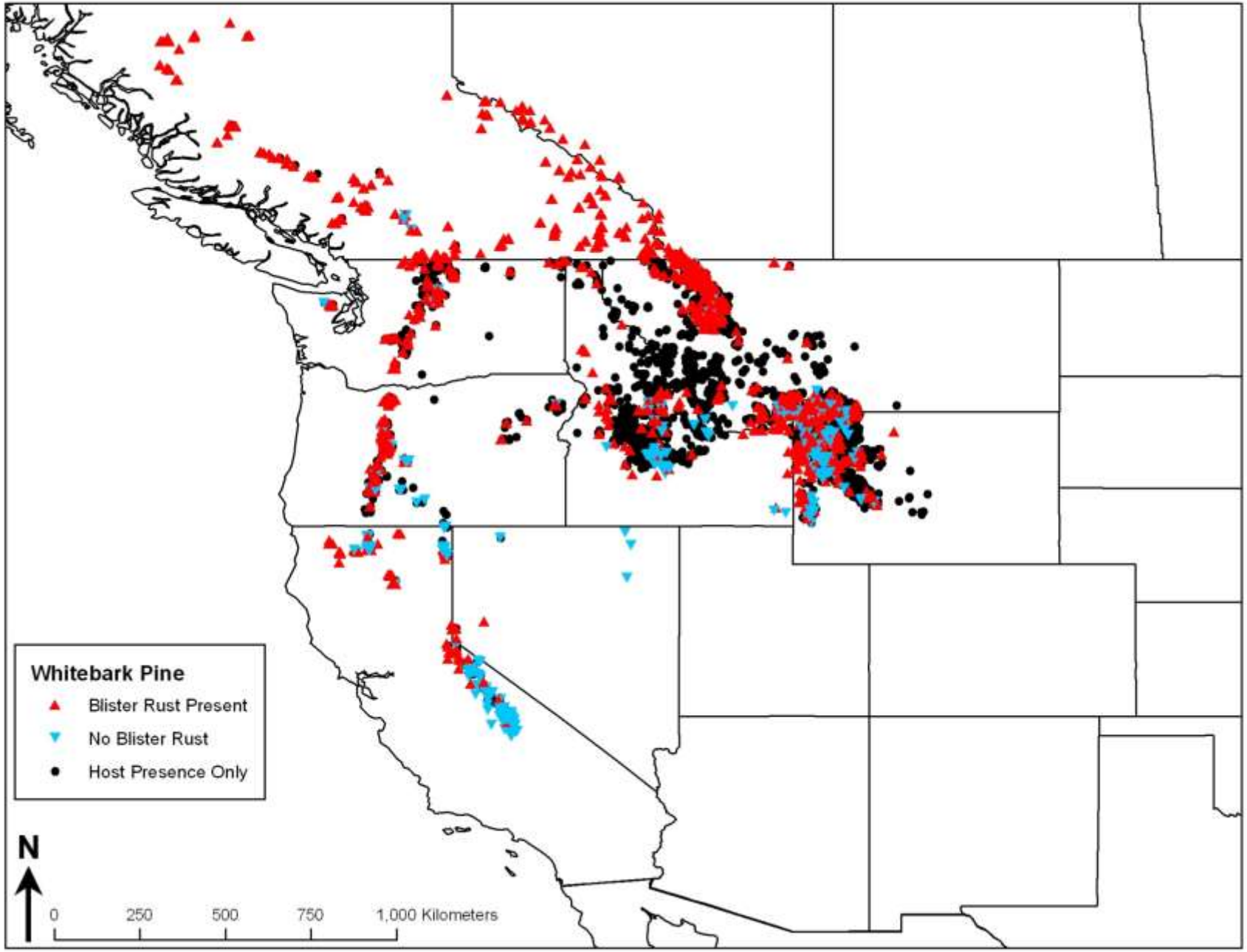


*[*Rx fire includes WUI and non-WUI treatments]*

2013 Wildfires and Fuels Treatments in White Bark Pine Habitat



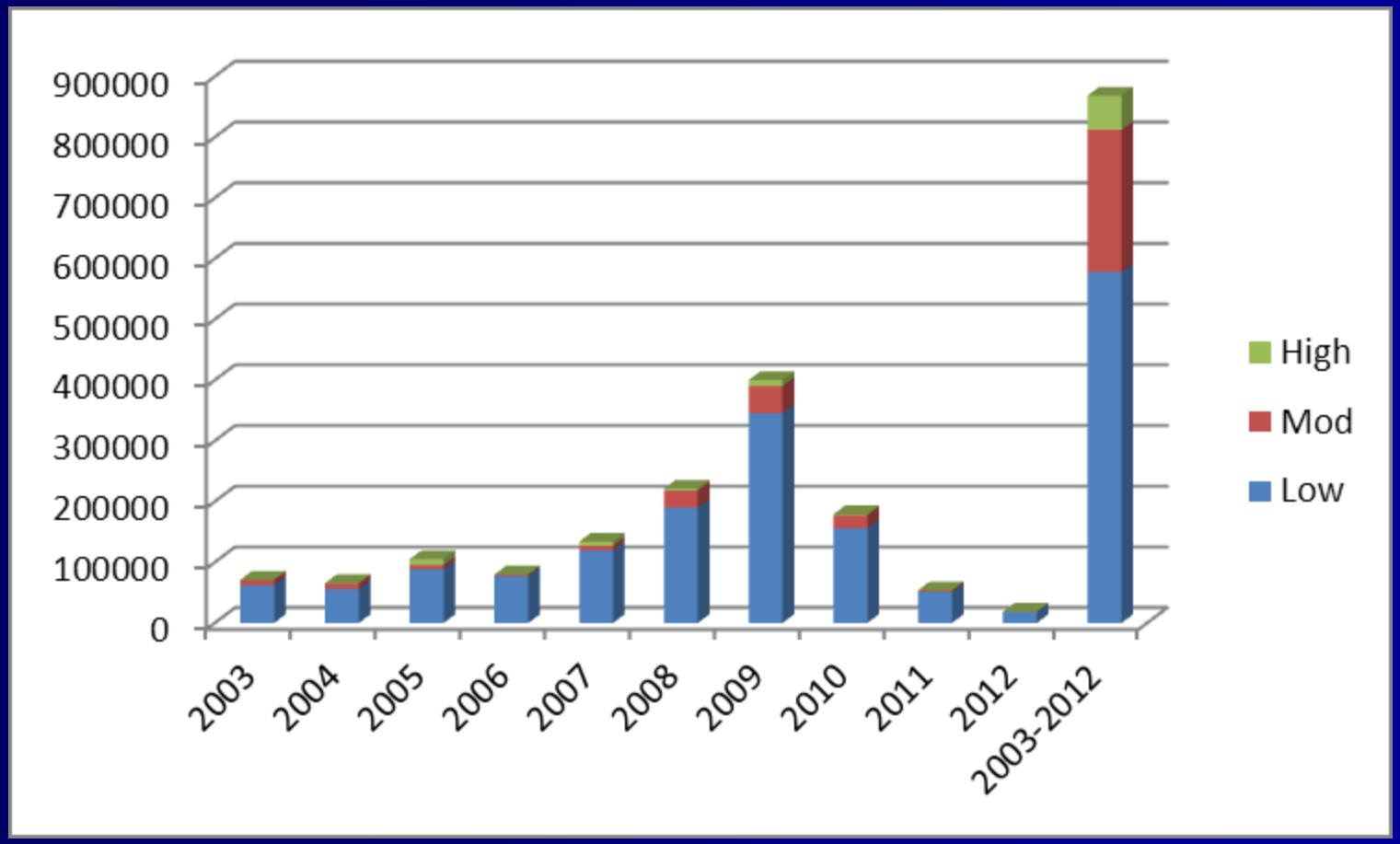
Blister rust on whitebark pine – Gold Pass, Lolo National Forest

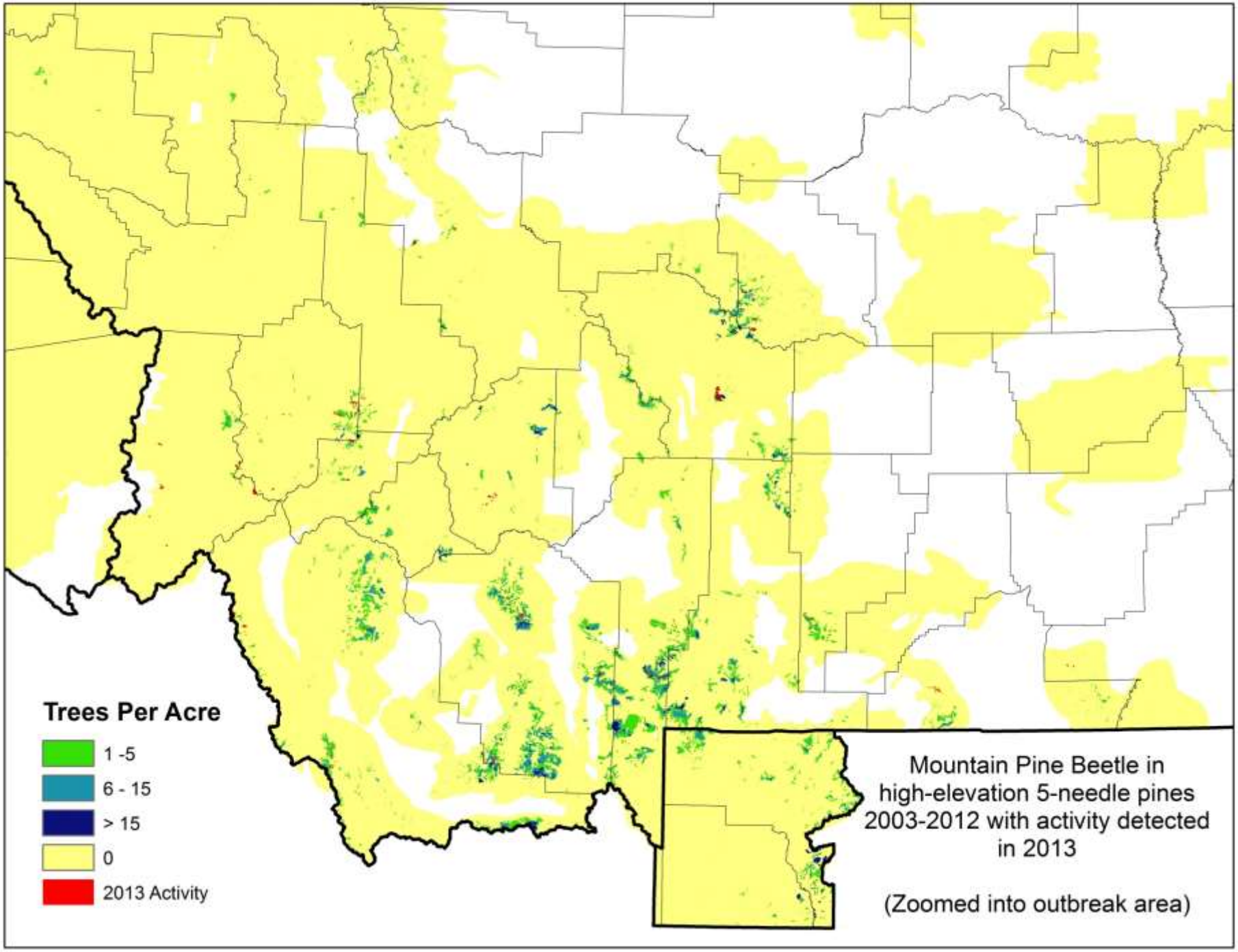

Whitebark Pine
Blister Rust Present
No Blister Rust
Host Presence Only
N
0
250
500
750
1,000 Kilometers

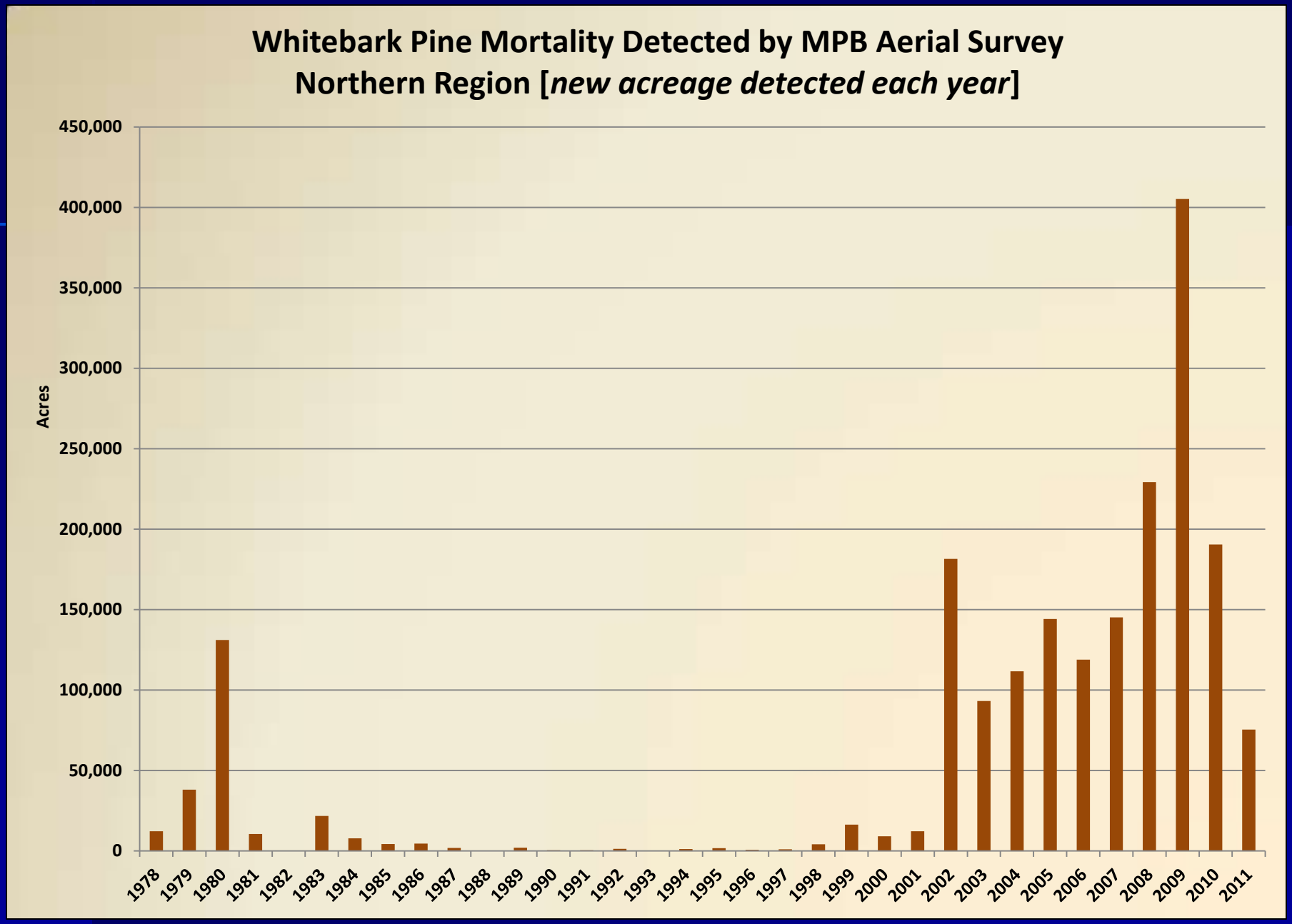
Whitebark pine mortality from MPB – Birch Creek, Beaverhead-Deerlodge NF

USFS Region 1 - Acres of Mountain Pine Beetle in high-elevation 5-needle pines.

Trees per acre: low (1-5), mod (6-15), high (>15).




Trees Per Acre
1 -5
6 - 15
> 15
0
2013 Activity
Mountain Pine Beetle in high-elevation 5-needle pines 2003-2012 with activity detected in 2013
(Zoomed into outbreak area)


Whitebark Pine Mortality Detected by MPB Aerial Survey
Northern Region [new acreage detected each year]
Acres
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

WBP Restoration – Region 1 *2012-2013*

- Genetic restoration program: rust screening, cone collections, seed orchards, genetically diverse areas, planting
- Collected cones and seeds from 95/64 plus trees
- Verbenone – 305 acres (2012)
- 434/364 acres on seven National Forests were planted with rust-resistant trees
- 53,685 acres affected by 39 wildfires (2012)
- 18,552 acres in 19 fires (2013)

WBP petitioned for federal listing in 2008

- *Natural Resources Defense Council*:
  - 2008 - Fire suppression, white pine blister rust, mountain pine beetle, climate change
  - July, 2011 - USFWS: "listing *P. albicaulis* as threatened or endangered is **warranted**. However, currently listing *P. albicaulis* is **precluded** by higher priority actions…" (an additional threat = inadequate regulatory mechanisms)

Candidate Species

- The "warranted but precluded" finding means the species is a ***Candidate*** for listing (there is sufficient information to propose it as E or T)
- Listing Priority = 2 (on scale of 1 -12):
  - Threats are of high magnitude and imminent
- Candidates have no statutory protection under ESA, and consultation is not required
- Timber management was NOT identified as a threat by USFWS

Forest Service status

- Sensitive species designation was necessitated by the "warranted" finding
- Sensitive species: Regions 1, 2, 4, 5, 6
- Region 1: sensitive species designation went into effect on December 24, 2011
- Whitebark pine should be included in Biological Evaluations (BEs) for projects that involve effects to habitat

The Good Old Days

Project proposal

↓

NEPA analysis for effects on resources, including a Biological Evaluation for sensitive species

↓

Whitebark pine not included in the BE

↓

Impacts to WBP OK from a policy standpoint

Sensitive Species Policy (FSM 2672)

- Avoid or minimize impacts to species whose viability has been identified as a concern
- If impacts cannot be avoided, analyze the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole

The New Reality

Project proposal

↓

NEPA analysis

↓

Effects on WBP must be analyzed in the BE

→ **"Beneficial Impact":** Projects… that are designed to benefit, or that measurably benefit, a sensitive species

→ **"May impact** individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species"

→ **"Will impact** individuals or habitat with a consequence that the action may contribute to a trend towards federal listing or cause a loss of viability to the population or species"

- ~50% of the habitat is in designated Wilderness and NPs, and most of the rest is fairly inaccessible
- This *de facto* "hands off" scenario has not "protected" the species; otherwise the USFWS might have made a different determination

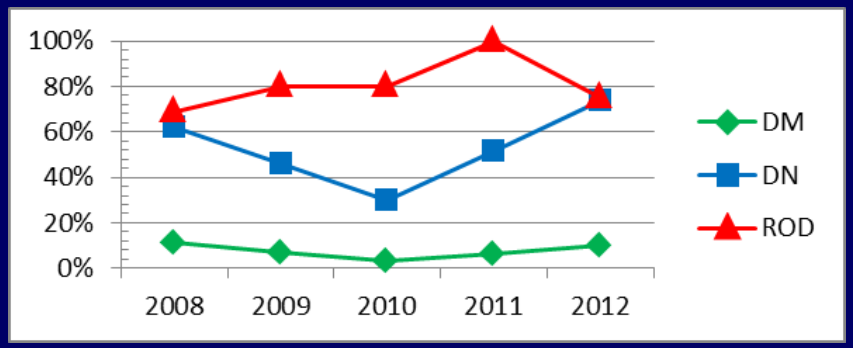
We are now managing WBP in the context of two designations (USFS sensitive [protective], USFWS candidate)

These designations have seriously raised the bar on how we analyze effects for projects involving the species

The designations have also changed how interested NGOs and the public look at projects in WBP habitat (protection vs. management)

What is an acceptable level of short-term impact to living trees, for the benefit of long-term restoration?

Flathead NF



- (NOA, p. 53) "The *ROD and FEIS do not show that surveys have been conducted to determine presence and abundance of whitebark pine regeneration*, or if whitebark pine seedlings and saplings are present, *what measures will be taken to protect them*. The project should have included an *alternative that excludes burning in the presence of whitebark pine regeneration* (consider 'Daylighting' seedlings and saplings as an alternative restoration method). There has been *no analysis on the effect on grizzly bears of the loss of whitebark pine* trees in violation of NEPA, NFMA, the APA and the ESA. Whitebark pine are an important food source for grizzly bears."

Helena NF

- Litigation:
  - "The Forest Service states that one of the purposes of commercial logging and clearcutting in the Project area is to restore whitebark pine.
  - "Although the EIS states that whitebark pine is one of several tree species "favored" to be left in the area after logging, there is no express prohibition against logging individual whitebark pine trees and saplings."
  - "The best available science on whitebark pine restoration is Keane and Parsons (2010), "Restoring Whitebark Pine Forests of the Northern Rocky Mountains, USA."
  - "Keane and Parsons (2010) does not recommend commercial logging and clearcutting as a means to restore whitebark pine."

The "Framework" to address these issues: a NEPA template

- Project design and effects analysis
  - Based on restoration strategies and literature:
    - Rangewide Restoration Strategy
    - GYE Restoration Strategy
    - High Five Symposium (2010)
    - Tomback, Arno and Keane (2001)
    - Numerous other articles and references

GOOD

- Thinning shade-tolerant species
- Openings for seed caching
- Retention of apparent rust-resistant trees
- Diversity of age classes (recruitment)

NEUTRAL

- Loss of small trees that are unlikely to be released
- Loss of trees with substantial blister rust

BAD

- Loss of cone-bearing trees
- Loss of potentially rust-resistant trees
- Loss of “Plus” trees
- Impacts to genetically diverse areas
- Insufficient populations for ensuring natural regeneration via caching

Protection situations

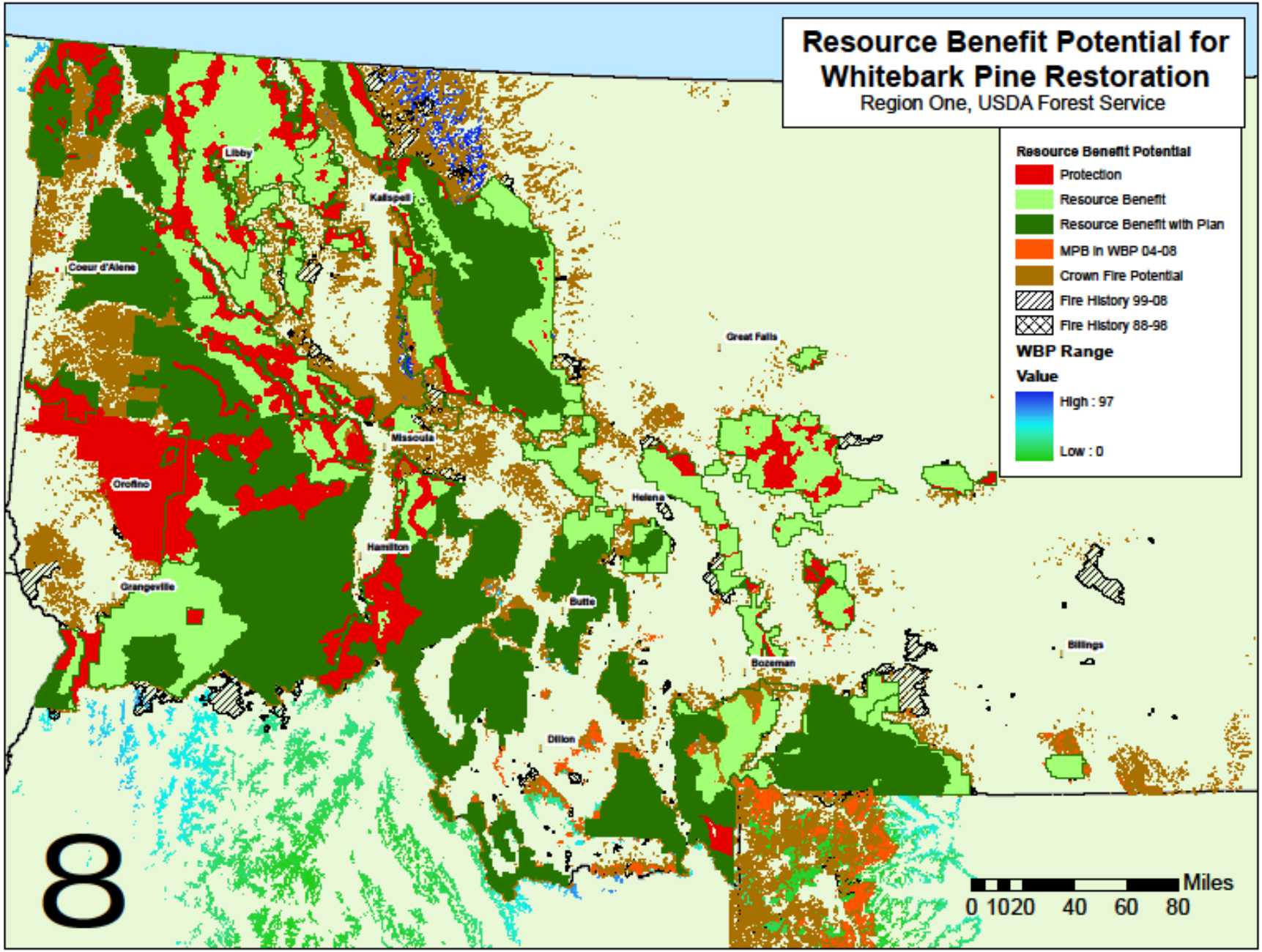
- Regeneration (an appeal point)
- Cone-bearing trees (especially in grizzly bear areas, and elsewhere as appropriate for wildlife species; an appeal point)
- Plus and Elite ("proven") trees
- Other trees showing rust resistance and perhaps MPB resistance
- High genetic diversity areas
- Isolated populations >30 miles
- Seed orchards
- Long-term performance tests and clone banks
- Populations on the margins (FHP)

Trail construction in occupied WPB habitat

- Do not remove plus trees or cone-bearing trees with apparent rust resistance
- Do not remove whitebark pine trees over 8” in diameter
- Small WBP trees that are suppressed can be removed, especially if they have rust, because they probably would not release
- Remove competing shade-tolerant trees where possible

Use of fire for restoration
Region 1

- Regional letter issued October 27, 2011 – resource benefit in moderate fire years
- *Desired Conditions, Management Considerations and Approaches:*
  - Species composition
  - Stocking or crown closure
  - Distance from seed source
  - Blister rust
  - Mountain pine beetle
  - Fire history
  - Burn conditions (moderate years)
  - Prescribed fire


Resource Benefit Potential for Whitebark Pine Restoration
Region One, USDA Forest Service
Resource Benefit Potential
Protection
Resource Benefit
Resource Benefit with Plan
MPB in WBP 04-08
Crown Fire Potential
Fire History 99-08
Fire History 88-98
WBP Range
Value
High : 97
Low : 0
Libby
Kalispell
Coeur d'Alene
Great Falls
Missoula
Orofino
Helena
Hamilton
Grangeville
Butte
Billings
Bozeman
Dillon
Miles
0 10 20 40 60 80
8

WBP in Forest Plans – R1

BEAVERHEAD-DEERLODGE NATIONAL FOREST:

- **GOAL:** Stable or upward trends are achieved for declining or unique habitats
- **GOAL:** Sensitive plant populations and their habitat are maintained or restored
- **OBJECTIVE:** Promote regeneration of whitebark pine on approximately 45,000 acres, largely through the use of fire

WBP in Forest Plans – R1

IDAHO PANHANDLE NATIONAL FORESTS:

- **FW-DC-VEG-01.** … More of the forest is dominated by western white pine, ponderosa pine, western larch, and **whitebark pine** …
- **FW-DC-VEG-03.** The amount of old growth increases at the forestwide scale … Relative to other tree species, there is a greater increase in old growth stands that contain substantial amounts of one or more of the following tree species: ponderosa pine, western larch, western white pine, and **whitebark pine**.
- **FW-DC-VEG-06.** … Impacts from the non-native fungus that causes the white pine blister rust disease are reduced as the abundance of rust-resistant western white pine and **whitebark pine** increases.

Summary

- "Beneficial impact" is the goal for proactive projects!
  - Project is tiered to a restoration strategy
  - Project directly addresses the 4 ecological threats in design and analysis
  - Base project design and effects analysis on literature (especially for Rx fire and mechanical treatments)

Summary

- Address consequences of no action (= further trend towards federal listing!)
- Document abundance and condition of regeneration, plus trees, and rust resistance
- Protect trees where necessary
- Cracking some eggs may be OK – but analyze and document it!
- Don’t do it alone! [interdisciplinary approach is critical]

Information

- **O:\NFS\R01\Collaboration\WhitebarkPine**
- **R1 Whitebark Pine website:**

  http://www.fs.usda.gov/main/r1/plants-animals
  and click on "Whitebark Pine"