

# Rogue Basin Cohesive Forest Restoration Strategy and Implementing Climate Adaptation

15 November 2016

Kerry Metlen, Ph.D.; Forest Ecologist; The Nature Conservancy

Darren Borgias; Southwest Oregon Program Director; The Nature Conservancy

Bryce Kellogg; Oregon Spatial Analyst; The Nature Conservancy

George McKinley; Executive Director; Southern Oregon Forest Restoration Collaborative



Contact: [kmetlen@tnc.org](mailto:kmetlen@tnc.org)



# Westwide Mechanical Treatment and Managed Fire are Needed for Forest Resilience

## Nine Principles

1. **Landscape-level approaches** to restore **pyro-diversity**
2. Protect and restore **large and old, early successional trees**
3. Use **prescribed** and **wildfires** to restructure forests
4. Landscape **topography tailors restorative treatments**
5. **Rehabilitate plantations**
6. Create and maintain **successional heterogeneity**
7. Integrate **restoration with late-successional forest** needs
8. Mitigate **climate change, forest insects, and pathogens**
9. Create and maintain **early-successional forests**



Hessburg, P. F., T. A. Spies, D. A. Perry, C. N. Skinner, A. H. Taylor, P. M. Brown, S. L. Stephens, A. J. Larson, D. J. Churchill, and N. A. Povak. 2016. Tamm Review: Management of mixed-severity fire regime forests in Oregon, Washington, and Northern California. Forest Ecology and Management.

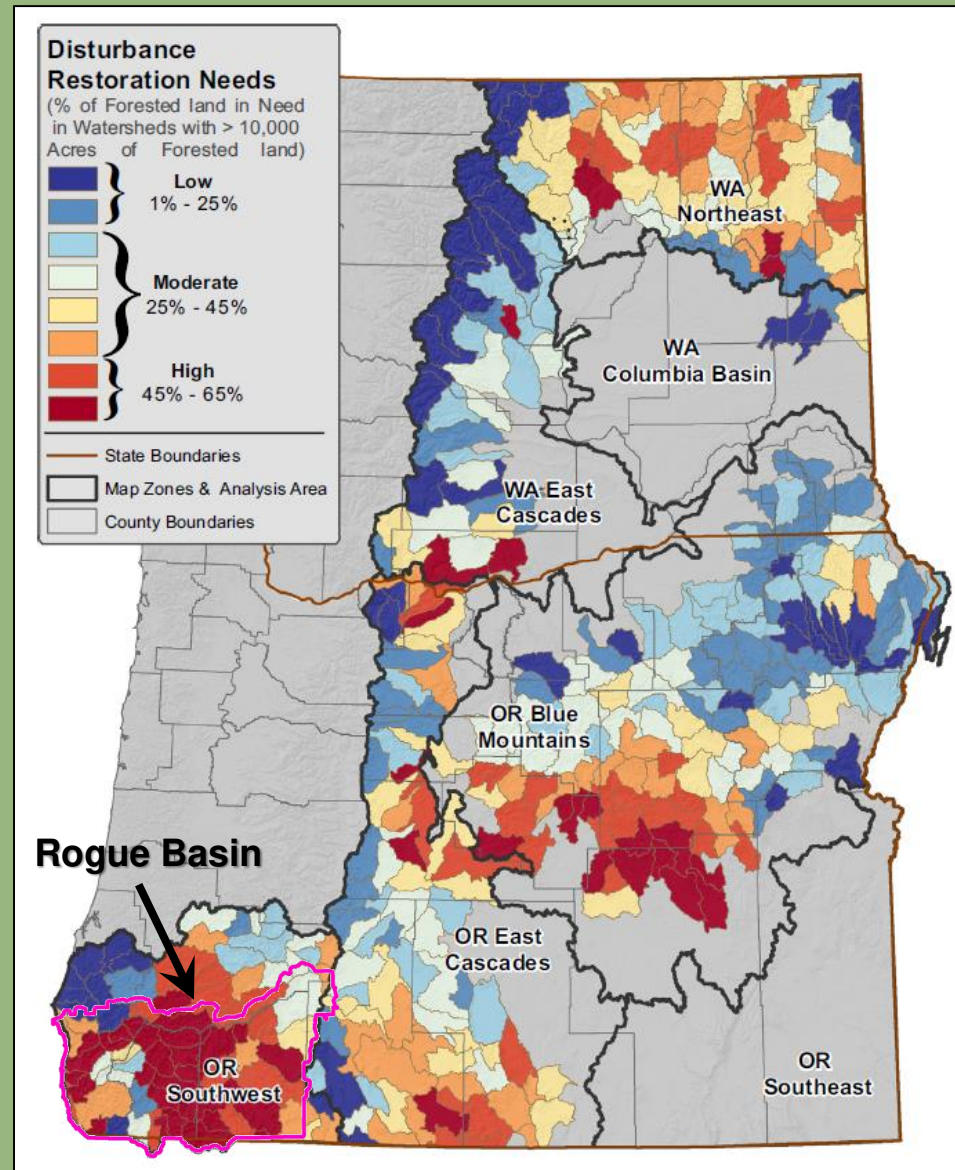


## Rogue Basin Forests and Woodlands

- 4.2 million acres
- 2.1 million acres are overly dense (50%)
- Annual Disturbance need over 20 years:

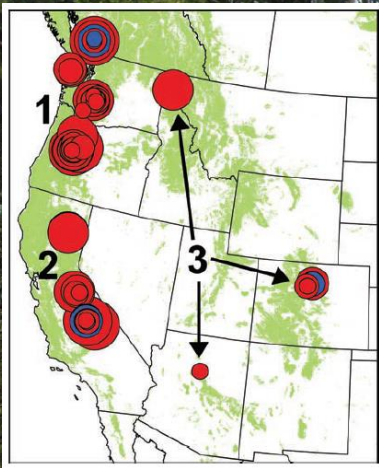
*~ 105,000 ac/yr*

Haugo, R., C. Zanger, T. DeMeo, C. Ringo, K. Blankenship, M. Simpson, K. Mellen-McLean, A. Shlisky, and J. Kertis, Mark Stern. 2015. A new approach to evaluate forest structure restoration needs across Oregon and Washington, USA. **Forest Ecology and Management** 335:37-50.

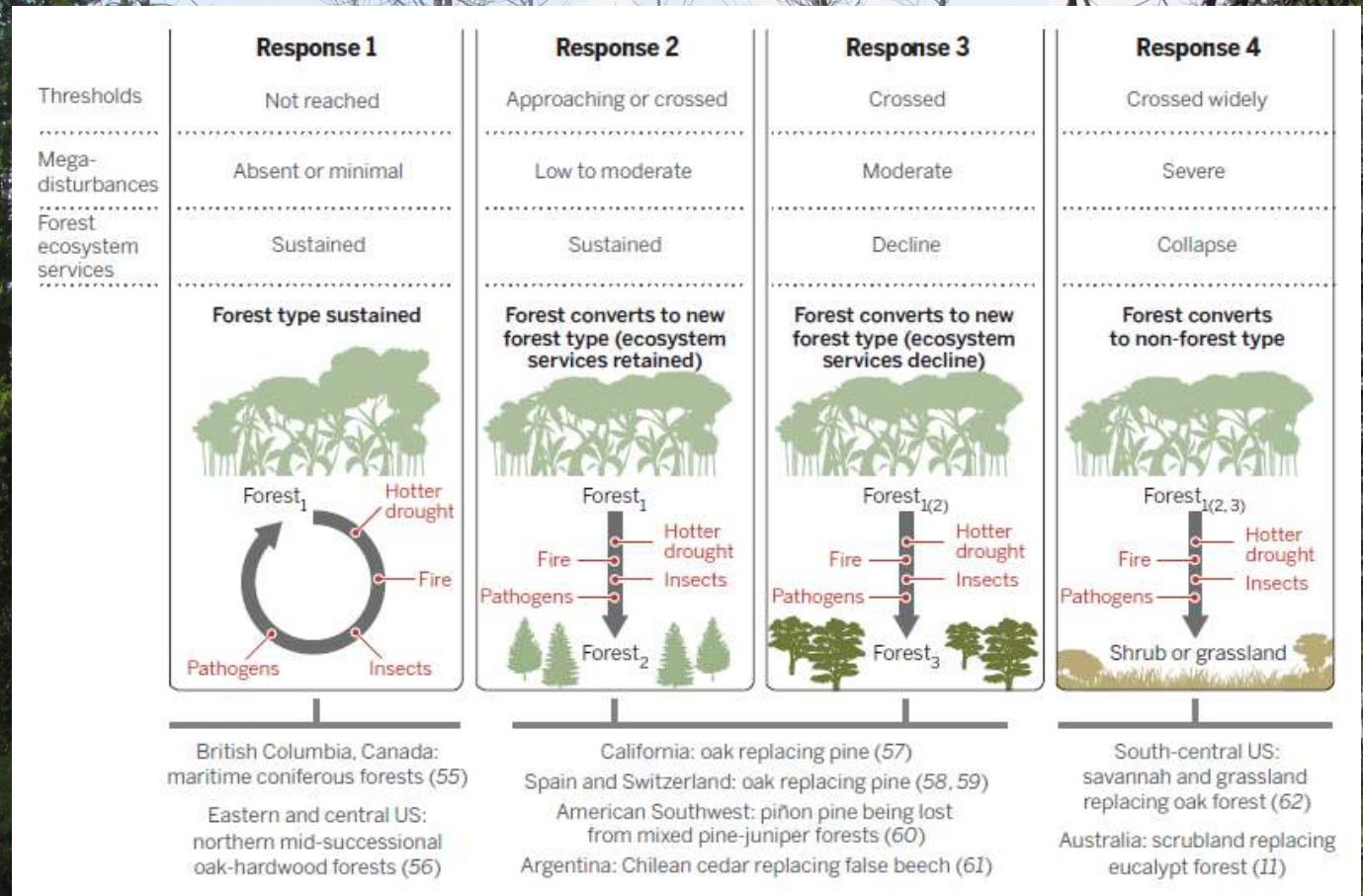




# Global Loss of Large Trees and Forests

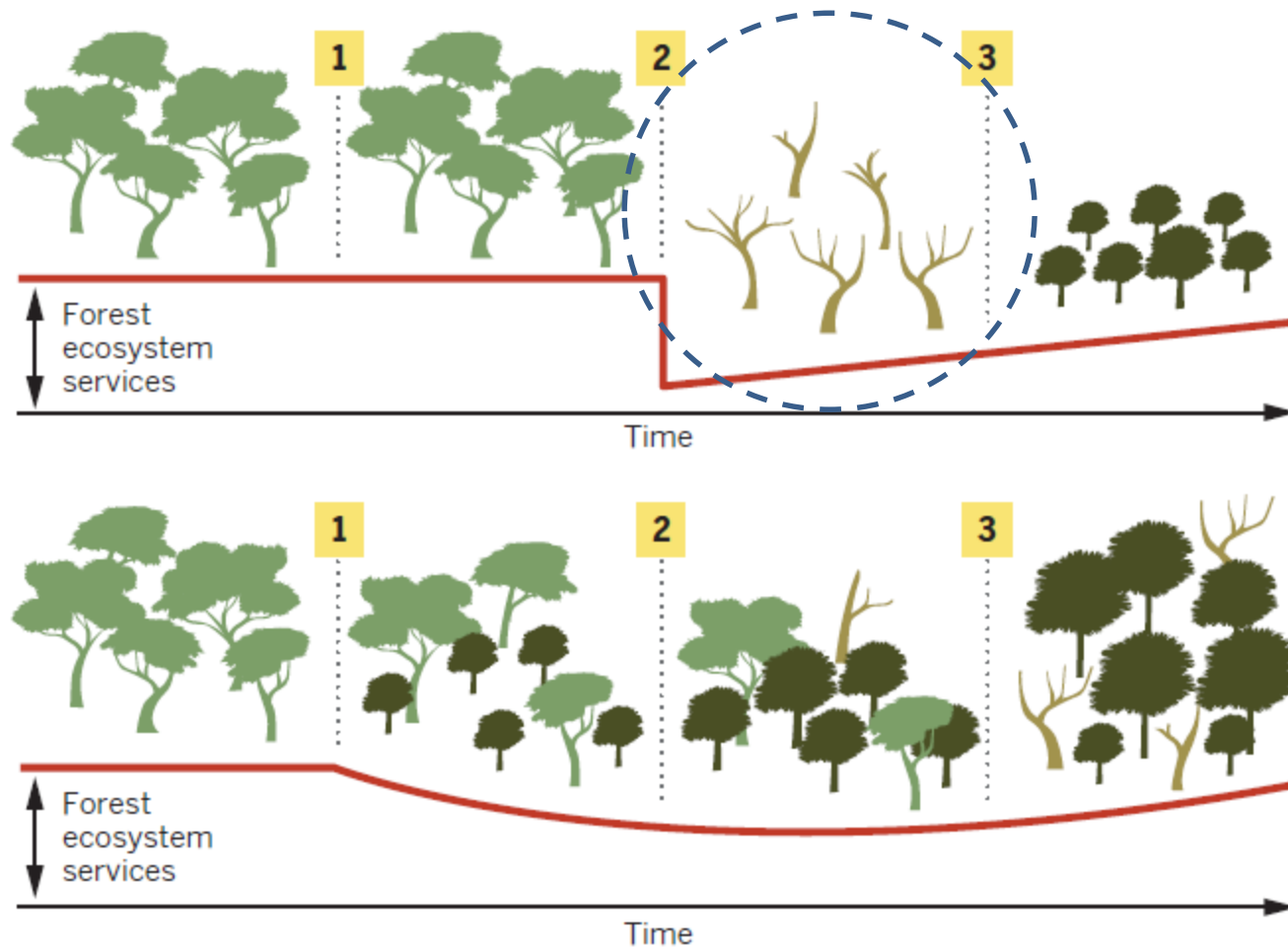


Van Mantgem, P., and N. Stephenson. 2007. Apparent climatically induced increase of tree mortality rates in a temperate forest. *Ecology Letters* **10**:909-916.



Millar, C. I., and N. L. Stephenson. 2015. Temperate forest health in an era of emerging megadisturbance. *Science* **349**:823-826.

# Adapting Forests Under Climate Change





# The Problems



## Climate Change

- Increasing temperatures
- Increasing drought
- Increasing fire probability and severity

## Altered Landscapes

- Elevated wildfire risk
- Diminished old growth
- Overly dense forests and altered species composition
- Species in decline

## Ecosystem Services

- Water
- Jobs
- Biodiversity

# Management Options



## Managed Fire

- Protect Communities
- Proactively manage for beneficial fire effects
- Pair with mechanical treatments to maximize beneficial effects

## Protect and Promote Complex Forests

- Protected areas
- Thinning to accelerate old growth development
- Proximal proactive management

## Proactive Mechanical Treatments

- Increase fire management options
- Rebalance proportions of seral states
- Provide revenue and support local economies





# Southern Oregon Forest Restoration Collaborative

## **Executive Director**

George McKinley

## **Board of Directors**

Darren Borgias

Max Bennett

Jim Wolf

Blair Moody

Marko Bey

**“To increase public and agency support for forest restoration in Southwest Oregon”**

## **Collaborative Agency Advisors:**

Cindy Donegan – Wildlife Biologist, USFWS

Shannon Downey -- Environmental Coordinator, USFS RRSNF

Terry Fairbanks -- District Silviculturist, Medford BLM

Patricia Hochhalter – Ecologist, USFS RRSNF

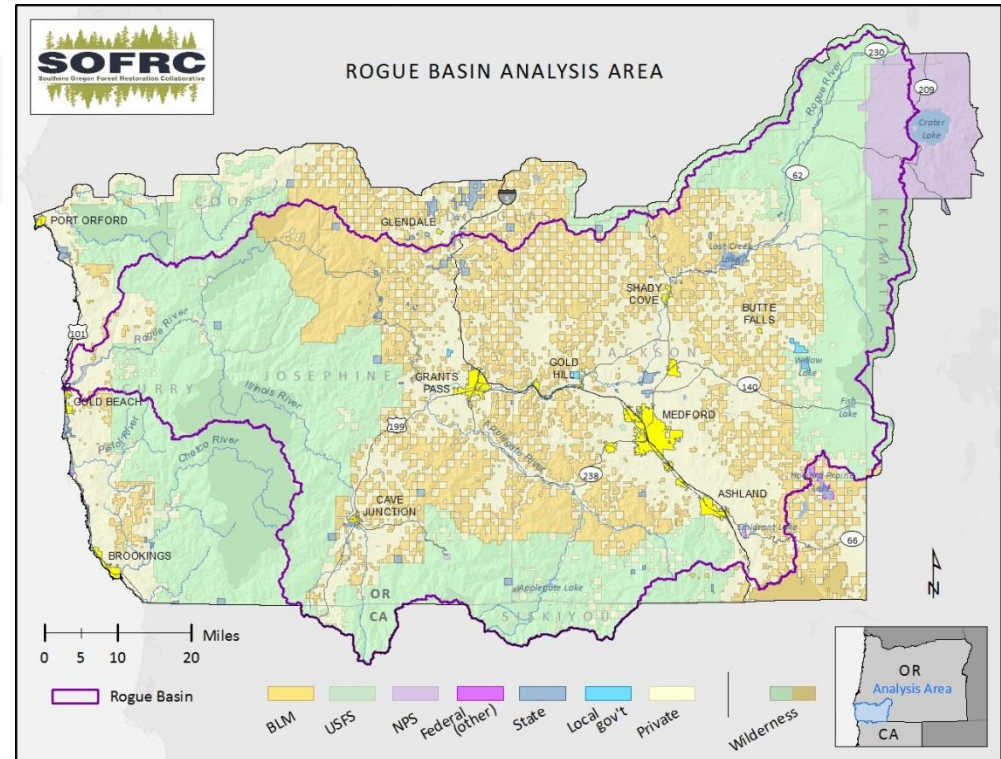
Jon Lamb -- Fire and Fuels Management, USFS, RRSNF

Jena Volpe -- Fire Ecologist, Medford BLM



# Rogue Basin Cohesive Forest Restoration Strategy: A Collaborative Vision for Resilient Landscapes and Fire Adapted Communities

## ***Mechanical Treatments* preparing for Managed Fire**





# Principled, Collaborative Forest Stewardship

- a) Use local ecological references
- b) Plan and monitor at multiple scales
- c) Integrate protection *and* restoration
- d) Restore and maintain with mechanical thinning and fire
- e) Ensure enduring viability of critical habitats and species
- f) Support fire adapted communities
- g) Promote regional economic and workforce viability



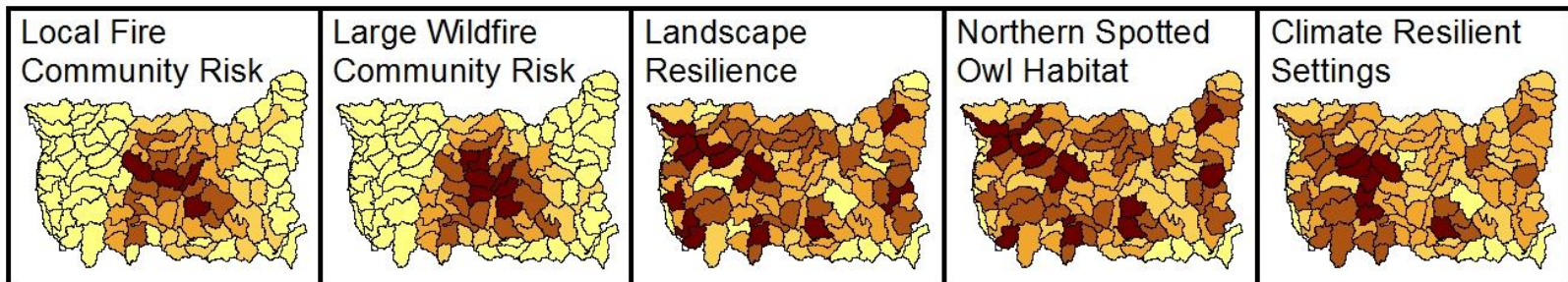
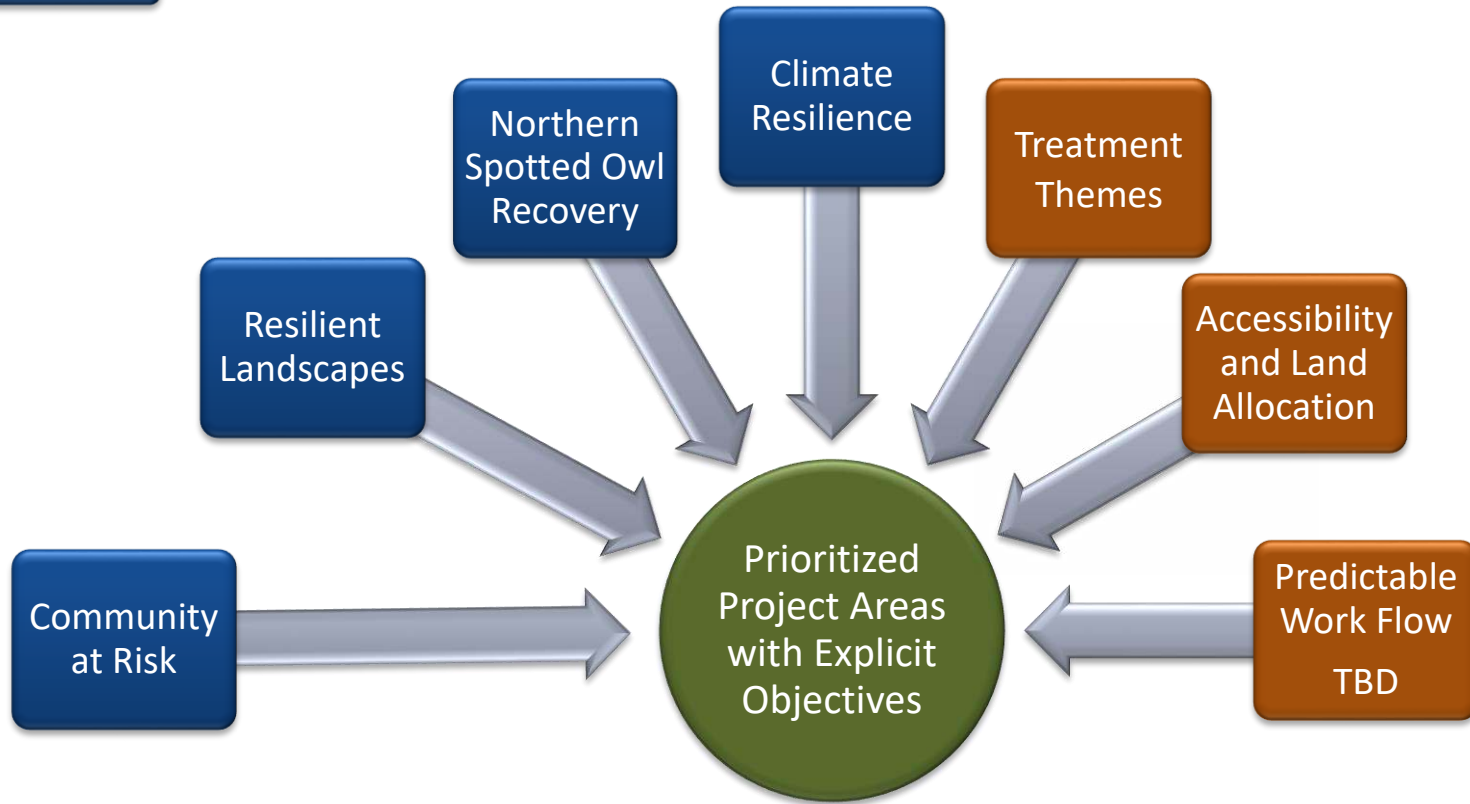


# Cohesive Forest Restoration Strategy

## Addresses Why and How

Why

How



# Evaluating Scenarios

## Rogue Basin Cohesive Forest Restoration Strategy Three 20-year Mechanical Treatment Scenarios

Planning Area Priority    Potential Treatment Units    Ashland Forest All Lands

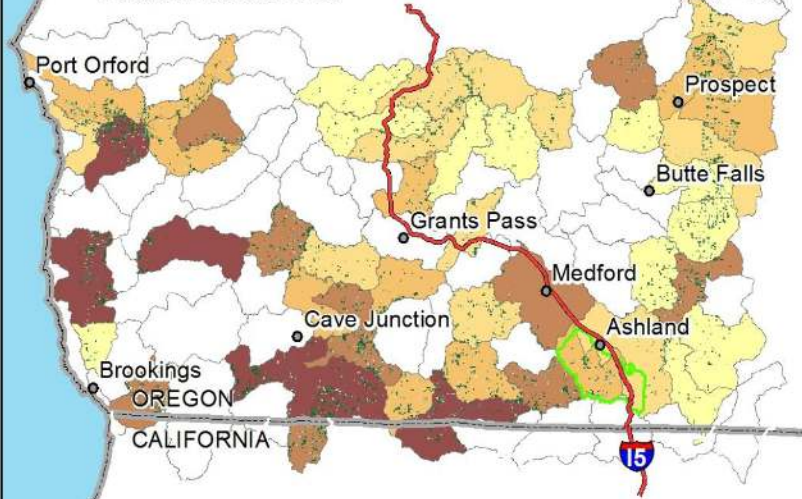
Lowest                      Highest    Lowest                      Highest

- A) Business as Usual** on the Rogue River-Siskiyou National Forest and Medford District BLM is prioritized by restoration and risk objectives as well as access and timber economics.
- B) Full extent** of treatable and accessible lands on Rogue River-Siskiyou National Forest and Medford District BLM land prioritized only by restoration and wildfire risk objectives.
- C) All Lands** scenario prioritized by restoration and wildfire risk. Acres of treatment include those from (B) working will all ownerships to treat fuels on 40% of the community at risk.



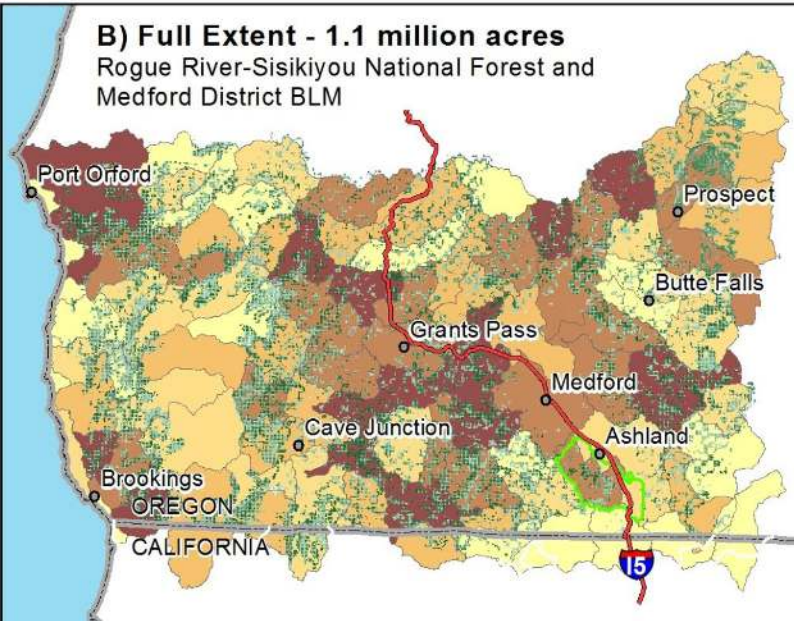
### A) Business As Usual - 180,000 acres

Rogue River-Siskiyou National Forest and Medford District BLM



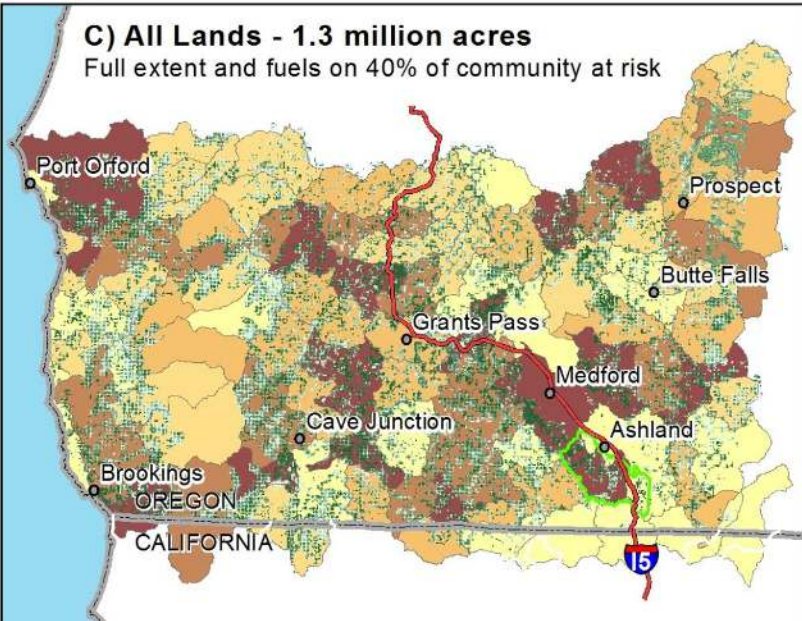
### B) Full Extent - 1.1 million acres

Rogue River-Siskiyou National Forest and Medford District BLM



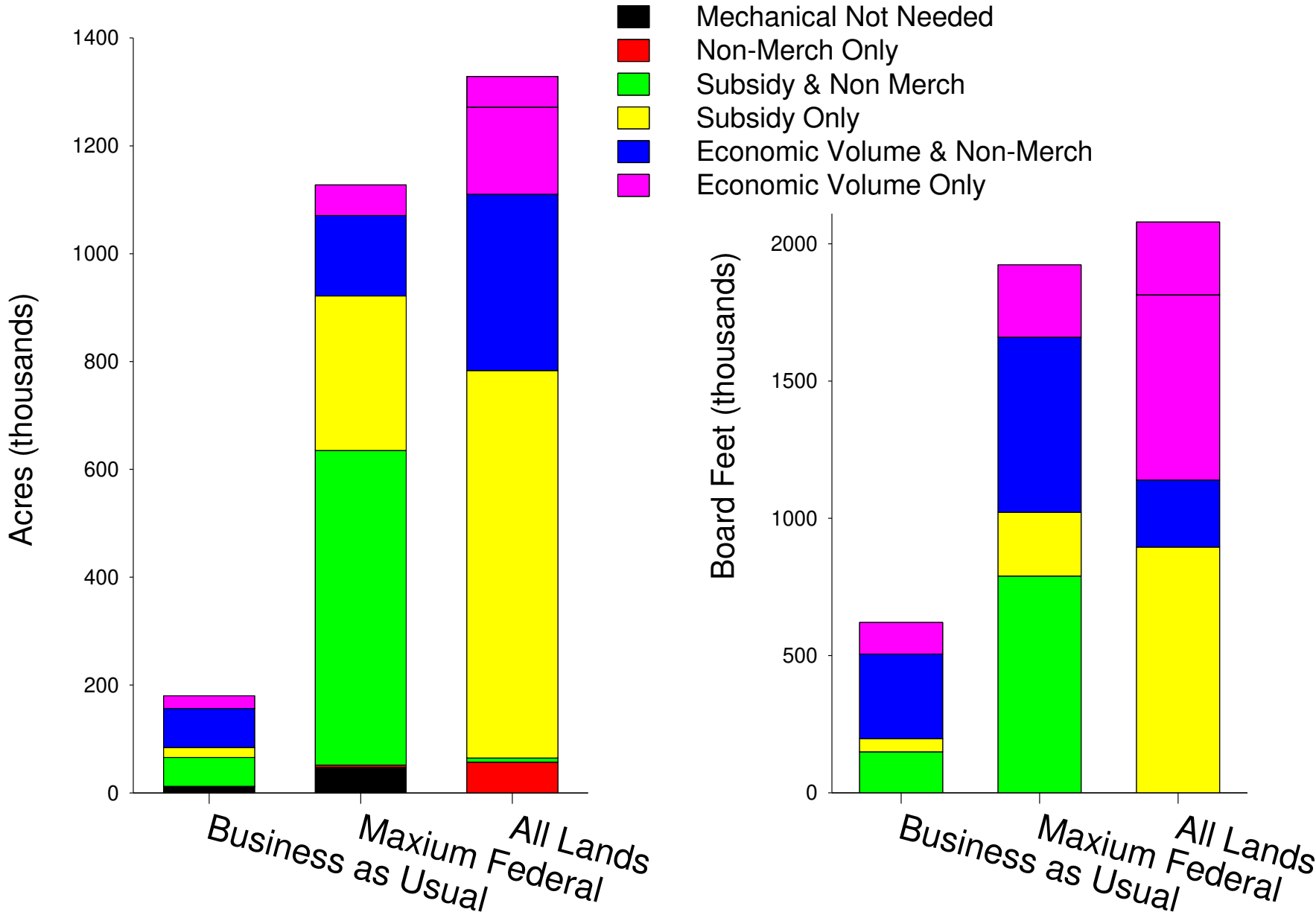
### C) All Lands - 1.3 million acres

Full extent and fuels on 40% of community at risk





# Acres of Treatment and Merchantable Volume



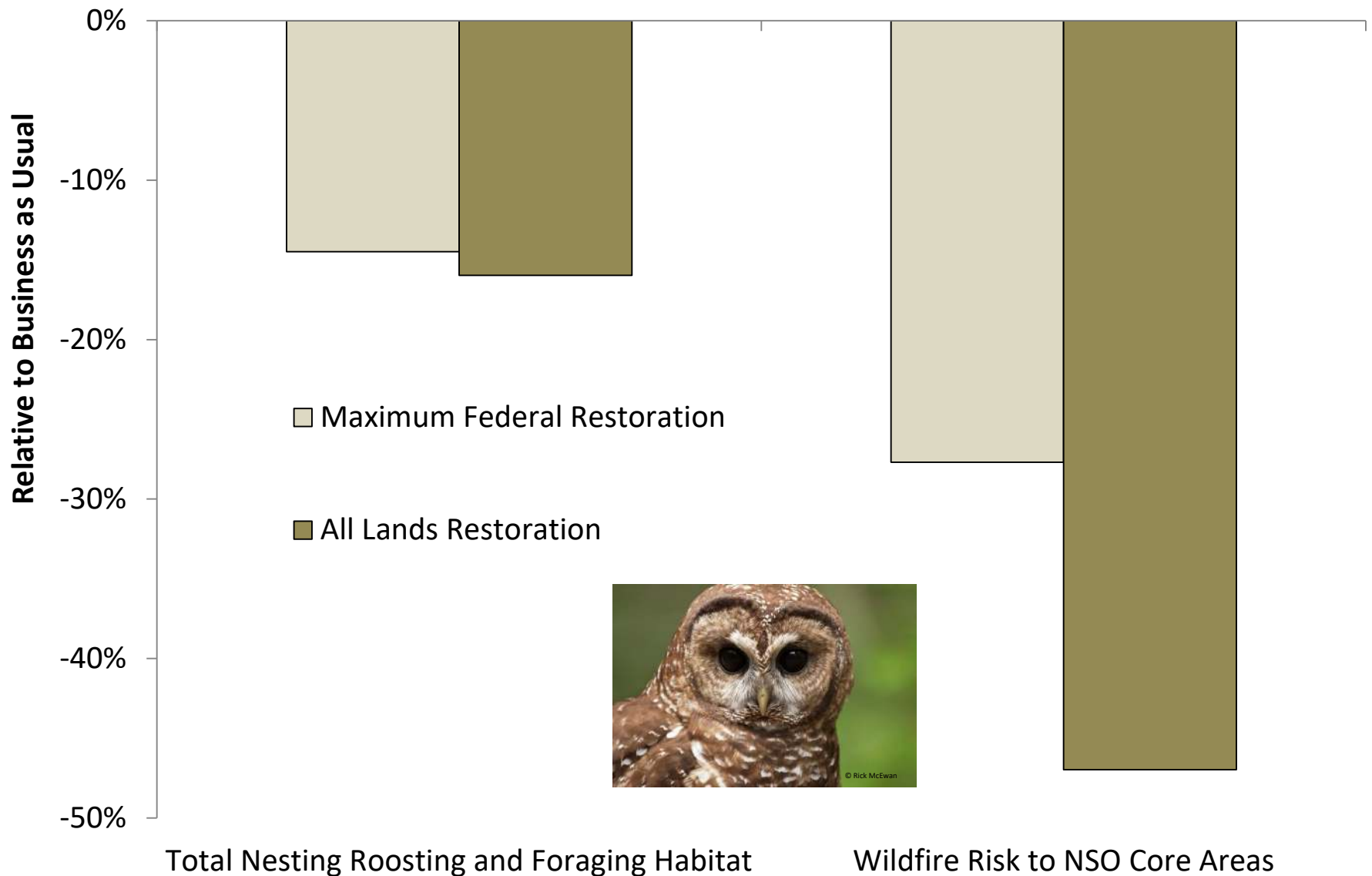
# Treating the maximum accessible federal lands improves the proportions of seral states, but much remains to be done – including GROWTH



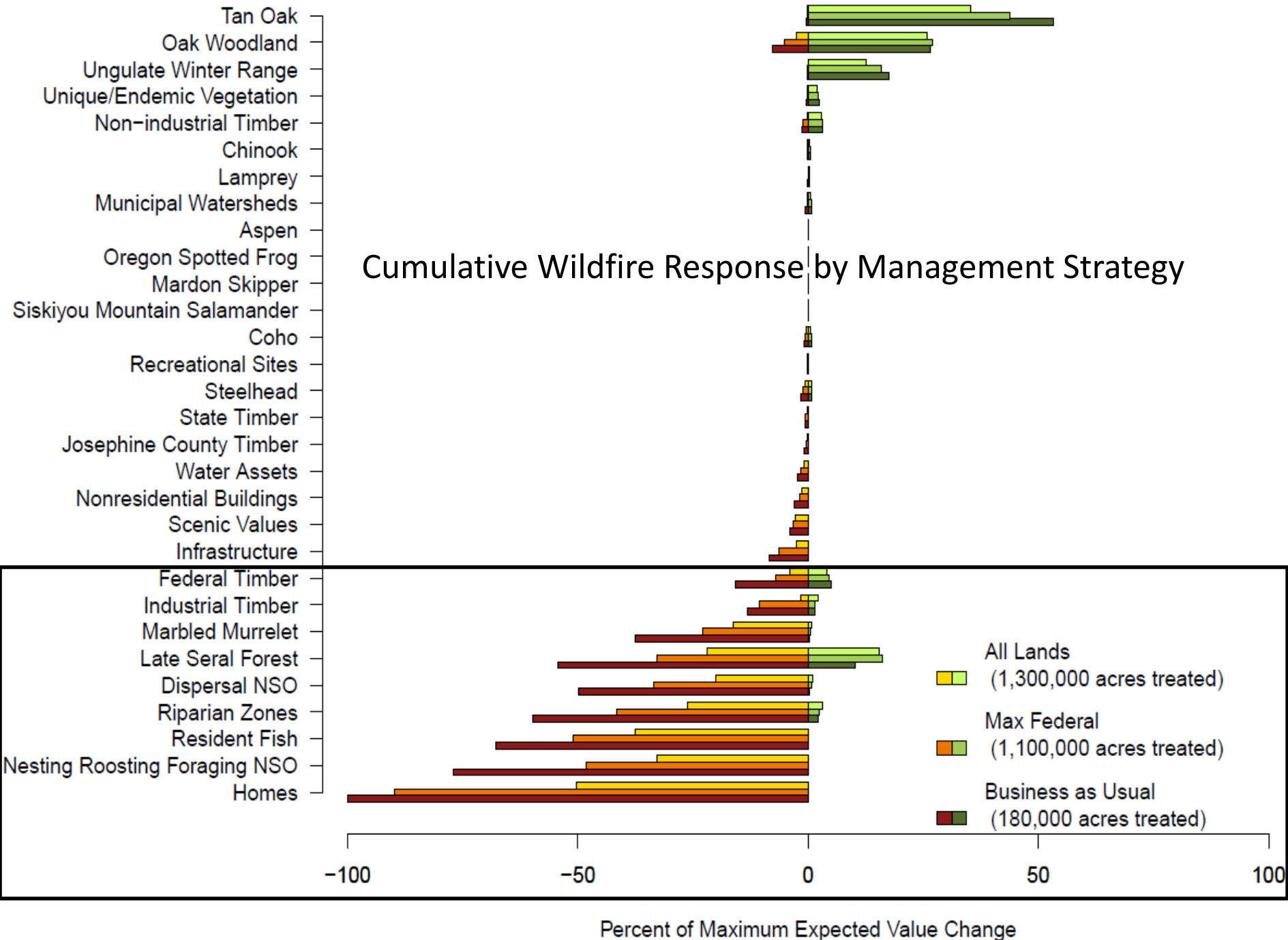


# Reduced wildfire risk to core Northern Spotted Owl habitat

## Near- and long- range habitat is promoted with 10 % of treatments

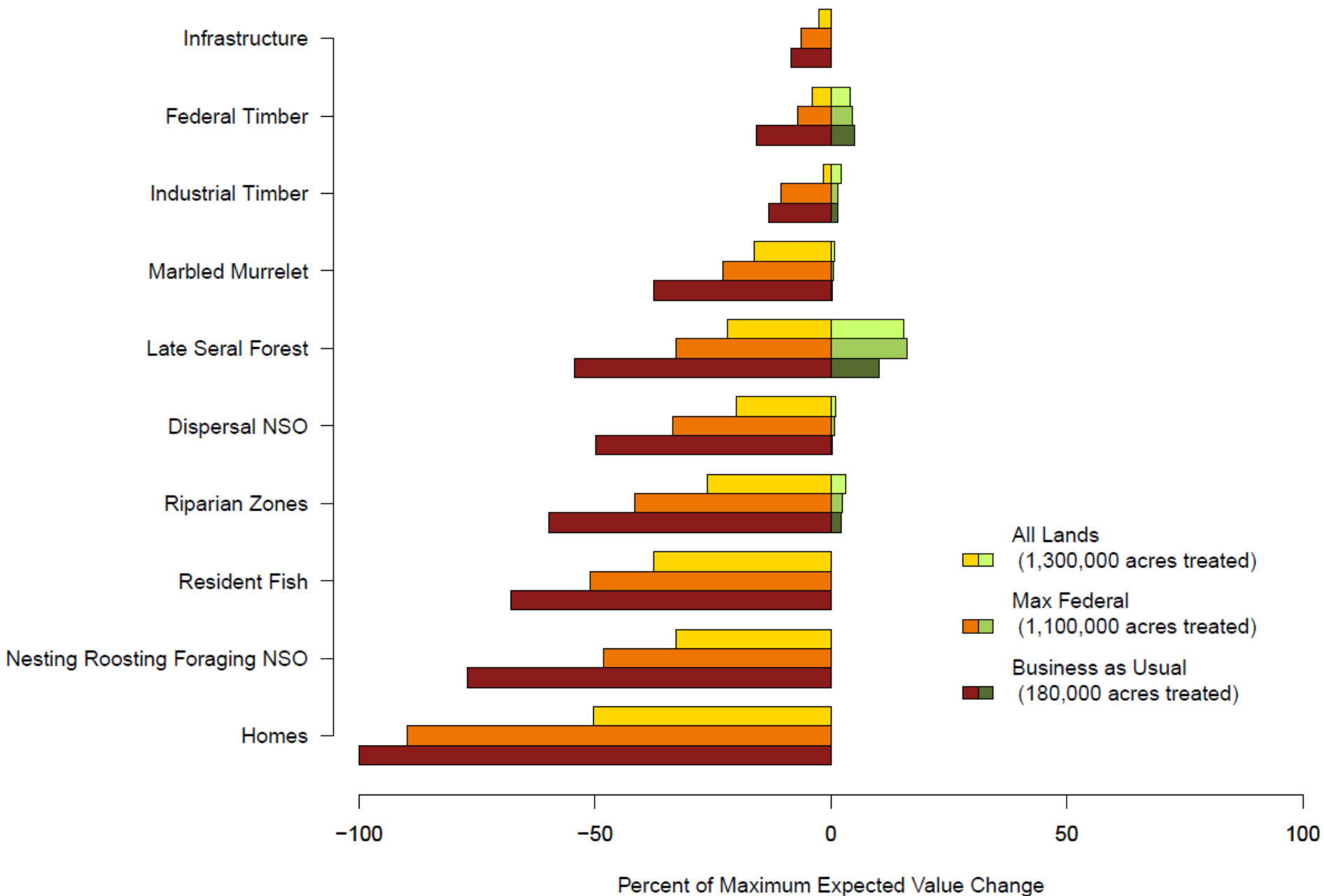


## Cumulative Wildfire Response by Management Strategy

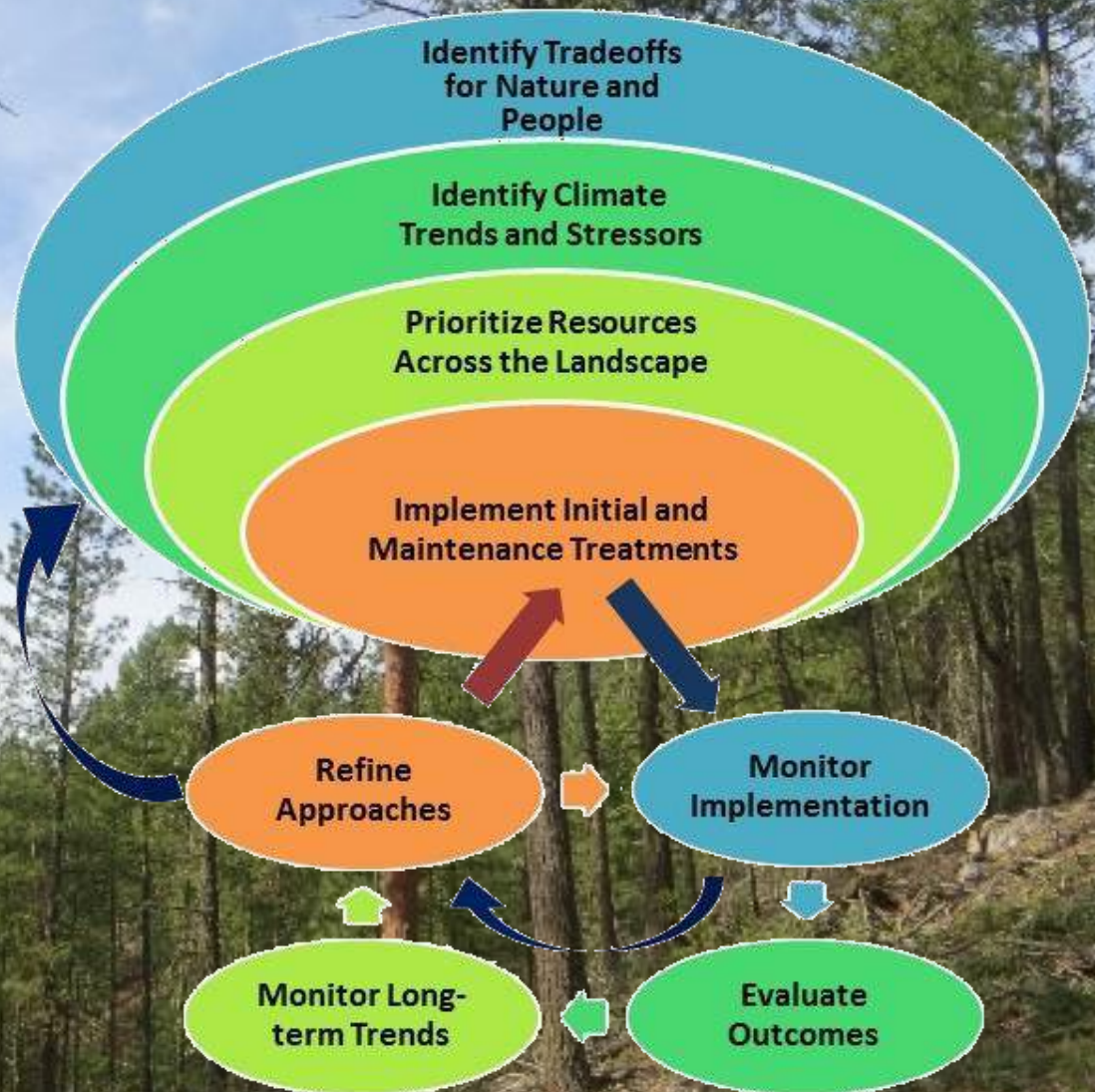




# Cumulative Wildfire Response – Most Detrimental



# Developing and Implementing Climate Change Adaptation Options in Forest Ecosystems



Halofsky, J. E., D. L. Peterson, K. L. Metlen, M. G. Myer, and V. A. Sample. 2016. Developing and implementing climate change adaptation options in forest ecosystems: A case study in southwestern Oregon, USA. *Forests* 7:1-18. Available online at <https://tnc.box.com/s/qy4cssywmvay6kn1vbxqad46ys2thjsb>



# What's Next

- Inform existing near-term Forest Service projects with the Strategy
  - Collaborative objectives, design, and monitoring
- Build partnerships
  - Community engagement and social support
  - Multi-party monitoring
  - Stewardship agreements and partner funding
- Five-year scope of work
- 20-year business plan





# Thank You and Questions

Southern Oregon Forest Restoration Collaborative – <http://sofrc.org>

## Funding Support

Northwest Conservation Fund, Oregon Department of Forestry, Oregon Watershed Enhancement Board, Jackson County, Josephine County, USDA USFS Rogue River-Siskiyou National Forest, USDI Bureau of Land Management

