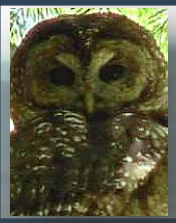
Big Picture: Changing Regulations and Impacts in Managing for Northern Spotted Owls

Outline

- Current status
  - Population trends
  - Barred owls
- 2011 Revised Recovery Plan
  - Potential impacts for forest management
- What's next?

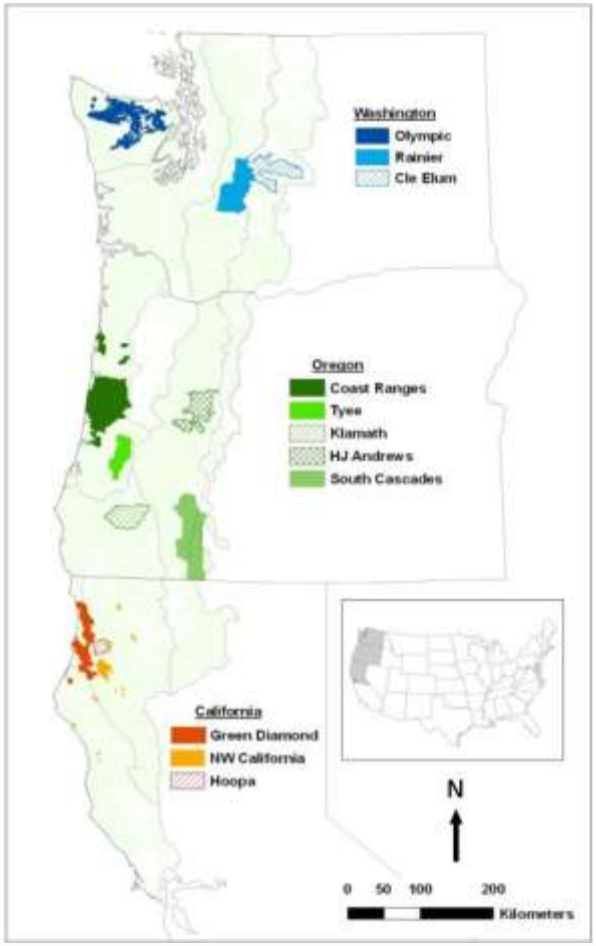


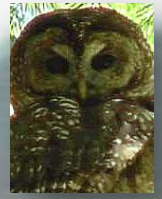
Northern Spotted Owl – Current Status

STATUS AND TRENDS IN DEMOGRAPHY OF NORTHERN SPOTTED OWLS: 1985-2008

Forsman et al. (*in press)*

- Effectiveness Monitoring for the Northern Spotted Owl
- Meta-analyses:1991,1993,1998, 2004, 2009
- 11 long-term study areas
- 15-20 years of continuous monitoring

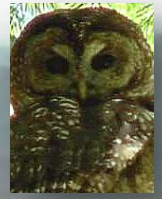




Northern Spotted Owl – Current Status: 1985-2008

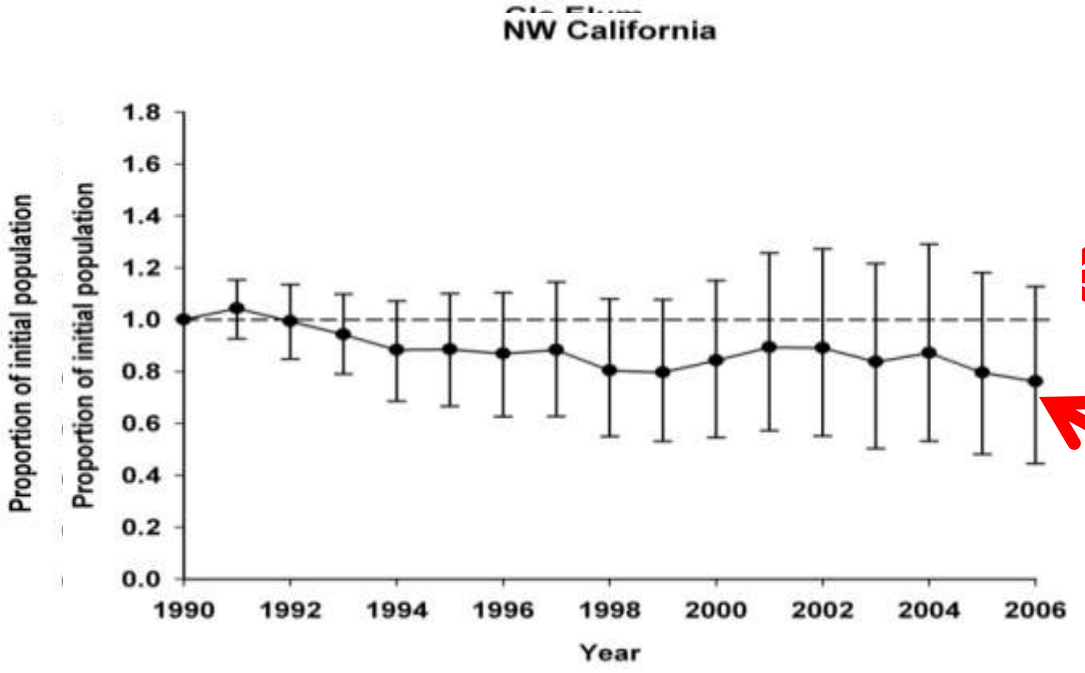
Area	Fecundity	Survival	λ_{RJS}	Population change
CLE	Stable	Declining	0.937	Declining
RAI	Increasing	Declining	0.929	Declining
OLY	Stable	Declining	0.957	Declining
COA	Increasing	Declining since 1988	0.966	Declining
HJA	Increasing	Declining	0.977	Declining
TYE	Stable	Declining since 2000	0.996	Stationary
KLA	Declining	Stable	0.990	Stationary
CAS	Declining	Declining since 2000	0.982	Stationary
NWC	Declining	Declining	0.983	Declining
HUP	Stable	Declining since 2004	0.989	Stationary
GDR	Declining	Declining	0.972	Declining

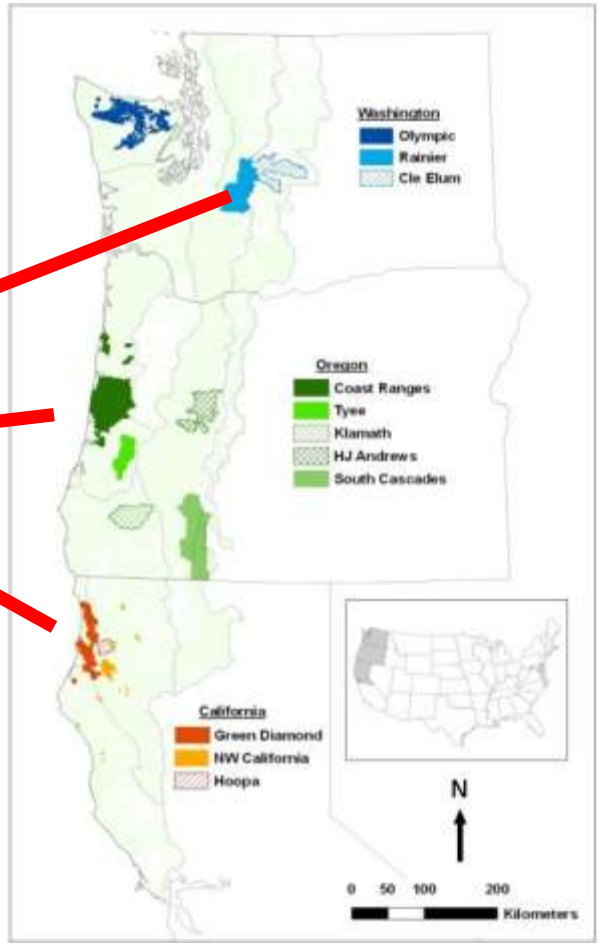
Forsman et al. (*in press).*

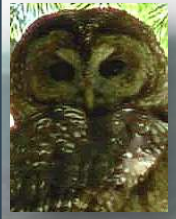


Northern Spotted Owl – Current Status: 1985-2008

Estimates of realized population change (Δλ) on study areas





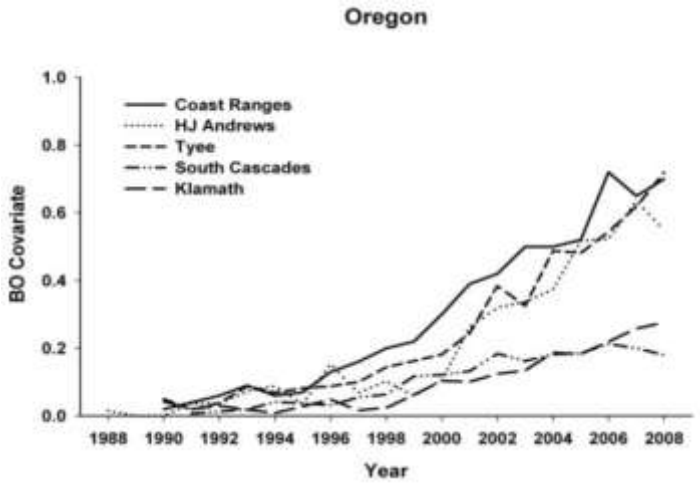


Northern Spotted Owl Current Status

Factors Affecting Demographic Rates

Amount of Habitat:

- Positive effect on fecundity (4 areas)
- Positive effect on recruitment in meta-analysis of population growth rate (λ)



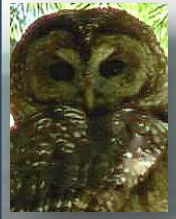
Forsman et al. (*in press).*

Presence of Barred Owls:

- Negative effect on fecundity:4 areas
- Negative effect on survival: 5 areas
- Negative effect on recruitment: meta-analysis

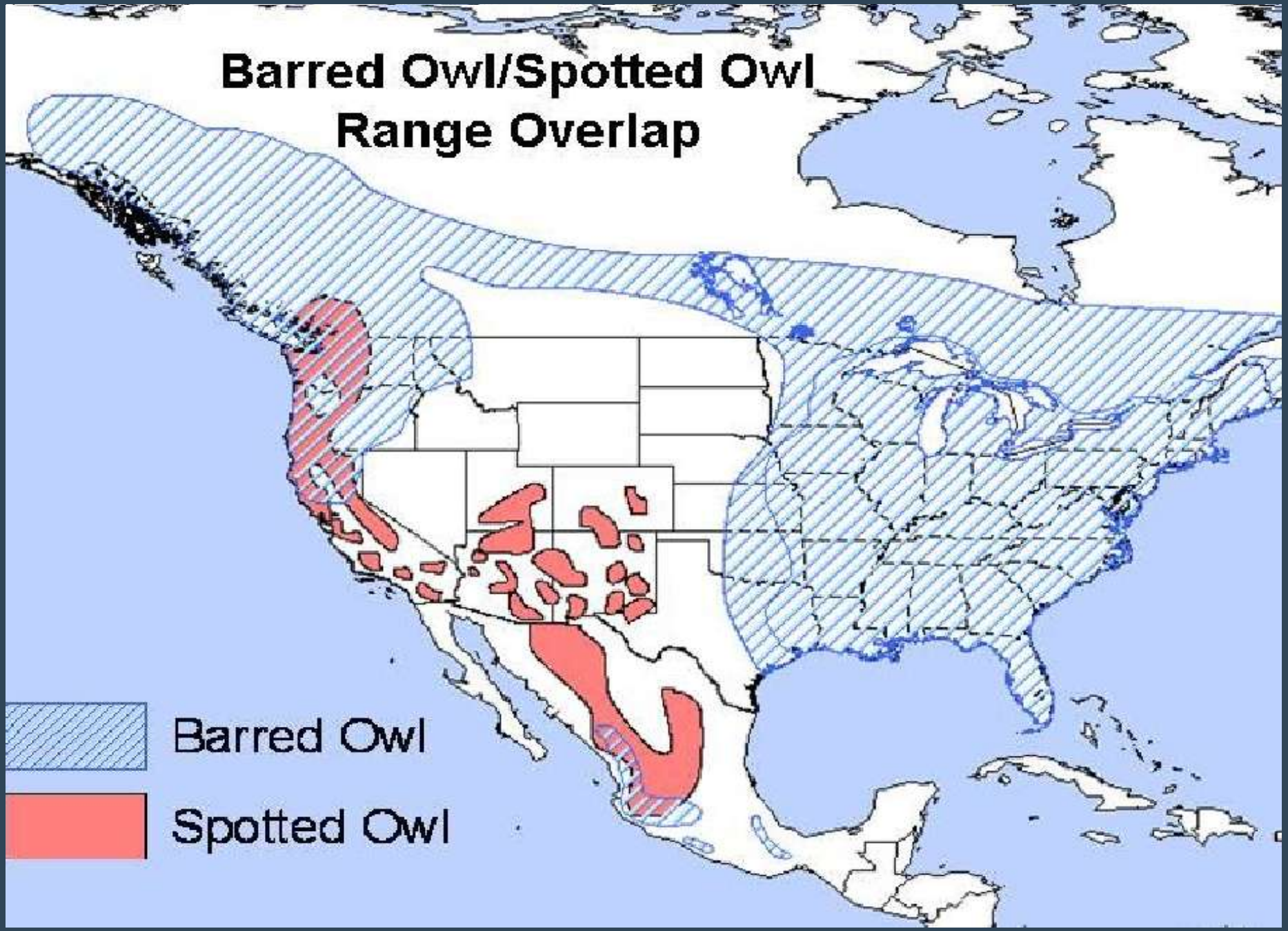
Weather & Climate:

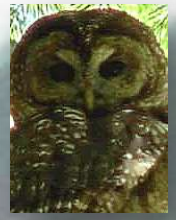
- Negative effect of cold, wet springs (nesting periods) on fecundity



Barred Owl (*Strix varia*)

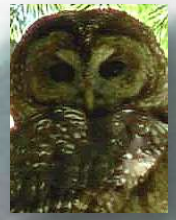
- **Until recently, native to eastern North America.**
- **Closely related to spotted owl (*Strix occidentalis*).**
- **Can interbreed, but not a common occurrence.**
- **More aggressive than spotted owls, frequently displace spotted owls from territories.**
- **More general habitat and diet preferences.**
- **Maintain much smaller home ranges than spotted owls.**


Barred Owl/Spotted Owl
Range Overlap
Barred Owl
Spotted Owl



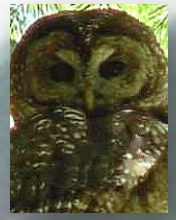
Northern Spotted Owl Recovery Plan(s)

- **1990** – NSO Listed as Threatened
- **1992** – Final Draft Recovery Plan
- **1994** – Northwest Forest Plan
- **2007** – Draft Final Recovery Plan
- **2008** – 2008 Final Recovery Plan
- **2009** – 2008 Plan Remanded by Court Order
- **2010** – Draft Revised Recovery Plan
- **2011** – Final Revised Recovery Plan



2011 Revised Recovery Plan

- **Stated purpose of the ESA: "to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved."**
- **Spotted owl recovery strategy should be embedded within -- and be consistent with -- a broader forest ecosystem conservation framework for the Pacific Northwest.**
- **Consistent with the basic tenets of the Northwest Forest Plan.**
- **Opportunities for land managers to address multiple management goals in an integrated fashion, including conservation of fish and wildlife, habitat restoration, fuels management, and timber production.**
- **Common ground where adversarial stakeholders in the forest management debate can find some agreement and move forward in a less litigious environment.**

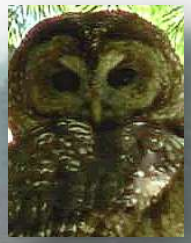


2011 Revised Recovery Plan

- **Continued declines in NSO populations**

- **Peer-reviewed criticism of 2008 plan:**
  1. **Need to conserve owl sites/habitat across broader landscape**
  2. **Develop a reserve network that is consistent with other management strategies (e.g. Northwest Forest Plan) , and**
  3. **Better address climate change and fire risk**

- **Adaptive Management**
  - **Climate change**
  - **Changing forest conditions**



Conserving Spotted Owl Sites and High Quality Habitat

1. Conserve spotted owl sites and high value spotted owl habitat to provide additional demographic support to the spotted owl population.

2. Maintain and restore well distributed, older and more structurally complex multi-layered conifer forests while allowing for other threats, such as fire and insects, to be addressed by restoration management actions.

Reserves

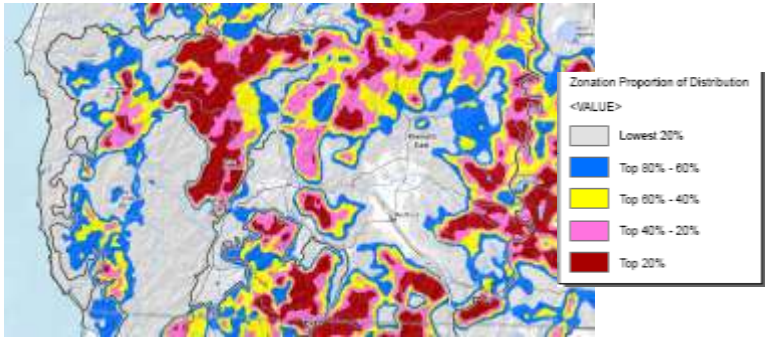
- Use **Critical Habitat** process, and defer proposing new or revised habitat conservation network until after Recovery Plan is complete.

- Rangewide habitat modeling effort:

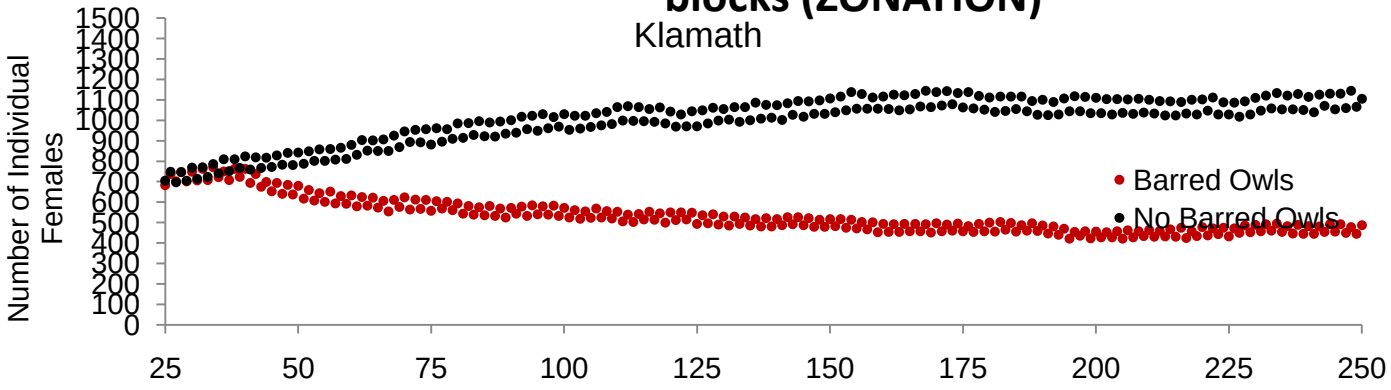
  - ***Step 1.*** Model/map habitat quality
  - ***Step 2.*** Design potential habitat conservation network scenarios.
  - ***Step 3.*** Evaluate habitat network scenarios to assess relative impact on future persistence.

Reserves - Habitat Modeling

Step 1 **– Model and map relative habitat quality (MAXENT)**



Step 2 **– Aggregate habitat value into blocks (ZONATION)**

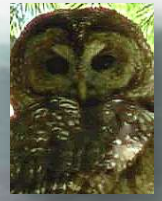


Step 3 **– Test effectiveness of various scenarios (HEXSIM)**

Reserves – Habitat Modeling

- Evaluate how alternative reserve scenarios are likely to promote NSO populations. Can compare and contrast:
  - NWFP
  - 1992 Critical Habitat
  - 2008 Critical Habitat, and
  - Contributions from various land ownerships
  - →2011 Critical Habitat

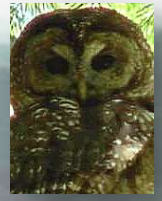
- Evaluate population trends with and without barred owls



Climate Change / Changing Forests

- **Climate change → changes in forest ecosystem processes → wildfires, insect outbreaks, and disease greater than anticipated under the NWFP**

- **Spotted owl management → broader landscape approach based on the conservation of natural ecological patterns and processes**



Fire-prone Landscapes

1. Targeted active management is needed in some areas, but controversy remains.

2. Emphasize “experimental, science-based approach.”

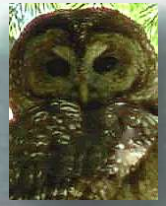
3. Protect owl sites and high quality habitat.

Management Impacts

- Greater contribution from Matrix lands
- HCPs, Safe Harbor Agreements
- New strategies, particularly in fire-prone regions
  - Maintain owl sites/high quality habitat
  - Treatments in densely-stocked stands
  - Ecological forestry

What's Next?

- April 21, 2011 – 30-day comment period on Appendix C
- Final Plan – June (?) 2011
- Per court order,
  - Propose revised Critical Habitat by November 2011
  - Final - November 2012
- Barred Owl Removal Experiment
  -Draft Environmental Impact Statement: 2011



Questions?

http://www.fws.gov/oregonfwo/Species/Data/NorthernSpottedOwl/Recovery/