Chapter 1: Introduction

Speaker: Peter Stine, PSW (retired)
Development of the NWFP Science Synthesis

Technical Coordinators

Thomas Spies - PNW (retired)
Peter Stine - PSW (retired)
Rebecca Gravenmier – Region 6/PNW
Jonathan Long – PNW
Matthew Reilly – Humboldt State University
Development of the NWFP Science Synthesis

Introduction (Peter Stine and Thomas Spies co-authors)

- Background & purpose
- History
- Scope and Approach
  - Source of questions and focus
  - Source material
  - Use of the Reference Literature Database
- Role of science in the planning process
- “Highly influential science”
- Peer review process
- Changing Context of NWFP
- Emerging Issues
Why prepare a Science Synthesis?

We live in an era of massive amounts of information.

“We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people able to put together the right information at the right time, think critically about it, and make important choices wisely” ---E.O. Wilson, 1998 Consilience

• 24 years of new science
• 24 million acres over three states
• A multitude of ecological and socio-economic topic areas
• Forthcoming revisions to all 17 Forest Plans

Region 6 and Region 5 requested help from PNW and PSW to summarize the relevant science to inform future forest plan revisions.
PNW and PSW convened a team of scientists to:

- Assemble the key questions raised by land managers
- Focus on key issues for the NWFP
- Build on NWFP monitoring reports
- Review the new relevant published science
- Execute a full, independent peer review
- Publish the results
Drivers of Change to Forest Management
1970 - 1990

• Old-growth forest decline
  • Northern Spotted Owl
  • Other species at risk
• Anadromous fish concerns
• NFMA; increasing focus on ecological goals
• Diversifying public values and expectations beyond timber production
• Sustainable forest management and products
• Local community vitality
The Northwest Forest Plan Area

NWFP ~ 24 million acres of Federally Managed Lands

- **US Forest Service:**
  - 19.2 million acres
- **BLM:**
  - 2.5 million acres
- **National Park Service:**
  - 2.3 million acres
Seven Major Land Allocations:

- Congressionally reserved areas
  7.32 million acres
- Late-successional reserves (LSRs)
  7.43 million acres
- Adaptive management areas (AMAs)
  1.52 million acres
- Administratively withdrawn areas
  1.48 million acres
- Riparian reserves
  2.63 million acres
- Matrix
  3.96 million acres
- Managed late-successional areas
  102,200 acres
Source of questions and focus

1. Fall 2014 Regional Ecosystem Office (REO) process
   - Developed a form for staff to submit questions
   - Most questions centered around requirements in the FS 2012 Planning Rule
   - Questions compiled sorted by topics (over 160+)
   - Initial priority ranking

2. Virtual workshop to rank and prioritize by topical area by R5/R6 regional offices

3. REO staff shared results with managers and Executives
   - Executives added a few more questions

4. Shared priority list and long list (160+) of questions with Science Team

5. Science Team reviewed both lists of questions and refined the Priority List (72) to those answerable by science
Revisions to Priority Question List

Questions evaluated and sorted into:

• Questions that **could be addressed** (question is of a scientific nature, sufficient information is available)

• Questions that were **not addressed** (more of a management question, or insufficient information exists)
Chapters and Lead Authors

1. Introduction, Peter Stine
2. Climate and Vegetation Change, Matthew Reilly
3. Old Growth and Forest Dynamics, Thomas Spies
4. Northern Spotted Owl, Damon Lesmeister
5. Marbled Murrelet, Martin Raphael
6. Other Species and Biodiversity, Bruce Marcot
7. Aquatic and Riparian Species and Ecosystems, Gordie Reeves
8. Socioeconomic Well-Being, Susan Charnley
9. Collaboration and Public Values, Lee Cerveny
10. Environmental Justice Populations, Susan Charnley
11. Tribal Ecocultural Resources and Engagement, Jonathan Long
12. Integration, Thomas Spies

~ 35 additional co-authors
Source Material for Synthesis

- Extensive body of scientific literature (authors familiarity with subject)
- Reference Literature Database (3176 publications submitted for consideration)
- 10 and 20 year Monitoring reports
- Primarily published, peer-reviewed material was used; ~ 4,000 citations in entire synthesis
- Other material was used when peer-reviewed science was lacking
- Some minor analyses of existing data
Role of Science in the Planning Process

This Science Synthesis will provide a solid scientific foundation for future efforts by Region 5 and 6 to manage lands in the NWFP area

• New 2012 Planning Rule
  • requires scientific information that is accurate, reliable, and relevant to the issues being considered (best available science)
  • document/explain how information was applied to issues considered
  • emphasis on maintaining/restoring ecological integrity
  • use of an ecosystem services framework
  • emphasis on collaboration
  • an assessment (existing information relevant to the plan area) must be completed
Pre-Assessment Phase of Forest Plan Revision

Forest Plan Revision Process:
- Invite Participation on Assessment
- Invite Participation on Proposal
- Provide NEPA Public Participation
- Meet with Objectors (if any)
- Coordinate Monitoring Activities

1 yr

Assessment Phase
- Assess Current and Possible Conditions

2.5 yr

Plan Revision Phase
- Propose Plan Changes (Proposed Action)
- Complete NEPA Process: Alternatives, DEIS, Comments, FEIS
- Address Objections (if any) and Make Decision

6 mo.

Monitoring Phase
- Biennial Monitoring Evaluation

Northwest Forest Plan Science Synthesis
- Research Stations

Manager Questions, Monitoring Questions, Emerging Science

Policy, TEK, & Other Existing Information/data
- Assessment
- DEIS
- FEIS
- Record of Decision
Highly Influential Scientific Assessment

OMB Information Quality Bulletin for Peer Review (2004):

• “A scientific assessment is an evaluation of a body of scientific or technical knowledge that typically synthesizes multiple factual inputs, data, models, assumptions”

• **Highly Influential;** “dissemination is novel, controversial, or precedent-setting, or has significant interagency interest”

• **Highly Influential designation requires a rigorous form of peer review**
  • Commission an independent entity to manage process
  • Reviewers are independent of agency
  • Selection of reviewers emphasizes expertise and balance
  • Opportunity for public participation in peer review
Organization that can independently manage the peer review process:

- Experience with conducting large, peer review efforts
- Access to expertise
- Independence, objectivity, credibility
- Consider diversity of scientific perspectives
- Strive for expertise, balance, independence, no conflict of interest
- Names of reviewers will be made public

- Ecological Society of America (ESA) exceeded all necessary criteria
Review Process Timeline

• Draft synthesis distributed to ESA for peer review & posted to web for the public: Oct 2016 – Feb 2017

• Public Forum to solicit input for consideration by peer review team – Dec. 6th 2016

• Public input to peer-review team: January 20, 2017

• Authors revised draft based on peer-review input (including reconciliation documents for each chapter): March - June 2017

• Revised draft after internal policy review: Spring/Summer 2017

• Final Science Synthesis posted to website: June 8, 2018

• Response to peer review comments by authors: posted June 2018

• Share key findings with public & agencies: June 2018

• Hardcopies of GTR: August 2018
Changing Context of NWFP

Not just an ecological challenge -
Key and Emerging Issues

- Climate change
- Single-species and multispecies conservation strategies
- Successional and disturbance dynamics
- Historical range of variability
- Invasion of the barred owl
- Landscape ecology and management
- Changes in agency capacity and workforce
- Changes in wood processing infrastructure
- Evolving and divergent public values and policies around natural resources
- Ecosystem services
- Perceived distrust of land management agencies
All forest management choices involve social and ecological tradeoffs, e.g. -

- Thinning forests
- Restoring fire
- Maintaining road systems
- Individual species vs. ecological resilience
- Investments of limited resources

The decision-making process, can collaboration work?

Role of Research and Monitoring?