



United States Department of Agriculture

*Forest Plan Revision –*

# Forest Listening Sessions



for the greatest good

**pacific northwest  
REGION**

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# CHAPTER 3 – SCIENCE ROUNDTABLES

## INTRODUCTION

The Forest Service held 19 listening sessions across the Northwest March – June to gather feedback from the public about forest plan revision. Plan revision has not yet begun on forests within the Northwest Forest Plan geographic area, with the exception of the Okanogan-Wenatchee National Forest. The listening sessions were designed to gather public feedback early in the process to enable the Forest Service to incorporate feedback in its initial plan revision strategy. The listening sessions gathered feedback on the use of science, public engagement during plan revision, and the plan revision process or people's specific interests in plan revision.

The first three listening sessions were held in March and coordinated by Triangle consulting. The feedback from those listening sessions has been

summarized in a companion report available at: <http://www.fs.usda.gov/detail/r6/landmanagement/?cid=stelprd3831710>.

This compendium of reports summarizes the additional 16 listening sessions that were held between April 23rd and June 11th, 2015. Table 1 displays listening session dates and locations summarized in this report. At each listening session, participants were invited to give feedback at roundtables focused on three separate topic areas. The topic areas included: 1) what participants would like public engagement to look like during forest plan revision, 2) the use of science in plan revision, and 3) what participants would like the Forest Service to consider during plan revision. We developed an executive summary of feedback from the listening sessions as well as summary reports

TABLE 1. FOREST PLAN REVISION LISTENING SESSIONS DATES AND LOCATIONS

| Listening Session Date | Location(s)                           |
|------------------------|---------------------------------------|
| April 23rd             | Mt. Vernon                            |
| April 27th             | Corvallis and Prineville              |
| April 28th             | Issaquah, Olympia, Bend, and Roseburg |
| May 4th                | Pleasant Hill, Lakeview, and Medford  |
| May 5th                | Klamath Falls and Wenatchee           |
| May 6th                | Stayton and Gold Beach                |
| May 11th               | Hood River                            |
| June 11th              | Okanogan                              |

for each of the three topic areas that synthesize feedback from all 16 listening sessions. Wherever possible, we worked to retain the flavor and tone of public comments.

### SCIENCE SUMMARY

Listening session participants expressed strong interest in how science will be used and shared with the public during the plan revision process. Participants would like to see more external involvement of both the public and non-federal scientists in the process. Comments suggested a broad range of science for consideration in plan revision. A strong desire for the use of unbiased science came up at the listening sessions, and questions about how the Forest Service will deal with conflicting science were common. Many comments focused on the need to put science in lay terms and help increase collective understanding of the scientific process and terminology. In addition, participants shared a host of helpful ideas about how to best share science, including field tours, public meetings, suggestions for the website, and more. The science theme with the most extensive public feedback related to how the Forest Service applies science to management. Many comments also suggested science should be informed by practical, hands-on experience. Across the region, discussions about science inevitably resulted in discussions about values. There was a sense from many participants that science is outweighed by politics and that the Forest Service should commit to using science to guide forest management instead of being driven by other things such as recreation demand or political opposition to salvage logging. Concern about politics overriding science was shared by those with both extractive- and conservation-leaning comments. Finally, many comments focused on the irreducible uncertainties faced by managers and suggested flexibility in management plans paired with adaptive management.

### EXTERNAL INVOLVEMENT IN SCIENCE

Many participants would like the Forest Service to open up its science process and more readily embrace external partners and interest groups in incorporating science in plan revision. In general, participants expressed an interest in having more opportunities to engage directly with the science and scientists. For example, participants suggested inviting the public to participate in wildlife surveys, allowing the public to access video footage of surveys, or making survey protocols publically available. Participants would like more dialogue about the science with time to ask questions, interact in the woods, and share knowledge. People want local on-the-ground knowledge and expertise acknowledged and incorporated, from both Forest Service and community sources. Participants asked about the role of citizen science and suggested it be considered. Likewise, participants want more monitoring and recommended user groups be engaged to increase monitoring capacity.

Participants shared many ideas for better engaging the public on science topics including field trips, fun programs with Forest Service scientists, and information available for walk-in tourists. Participants also generally wanted more access to the science used by the Forest Service. Comments requested an opportunity to find out more about what research is occurring and to interact with the scientists doing the work. People want to better understand the disagreements between scientists and how the Forest Service will evaluate conflicting results in the literature.

Participants want the Forest Service to better collaborate and communicate with local academic experts and make better use of other science resources, including Oregon Department of Fish and Wildlife, other federal agencies (US Fish and Wildlife Service, National Oceanic and Atmospheric



Administration, Bureau of Land Management), and non-governmental organizations. Comments recommended better inter-agency collaboration and data coordination. Community members want the Forest Service to partner with colleges to develop new studies and give local students (undergraduates and graduates) on-the-ground experience. In addition, participants want science from non-Forest Service sources incorporated and would like an opportunity to submit this kind of science for consideration.

Interest in getting academics and field people together was shared. In addition, many participants noted the importance of a public process that allows people to weigh in on and review the

science and data that will lay the foundation for plan revision. Participants requested a more respectful and inclusive approach for the public to share their information and opinions and highlighted the need to rebuild local trust. Finally, a clear line of communication between research stations, management, and congressionals was recommended.

## SCIENCE AND MANAGEMENT

Many comments related to science were about how to apply science information to management

situations. In fact, this subject area had the most extensive feedback from the science roundtables. Participants suggested more trust in managers' application of science to local situations and also would like to see science applied in the proper context. Many participants stressed the importance of using good judgement and common sense in addition to science. Similarly, some comments suggested science should be informed by practical, hands-on experience and that we should ensure science can be applied on the ground.

Across the region, discussions about science inevitably resulted in discussions about values. There was a sense from many participants that science is outweighed by politics and that the Forest Service should commit to using science to guide forest management instead of being driven by other things such as recreation demands or political opposition to salvage logging. Concerns about politics overriding science came from both those with both extractive- and conservation-leaning comments. Other comments recognized that decision making is about science and values and suggested that decisions need to balance science with other values, i.e. science is just one part of the plan. Related comments focused on how emotions can cloud the science and that while science is adequately captured in the forest plan, dispute resolution is the real problem.

Some comments focused on the general approach the Forest Service should use to incorporate science in plan revision. Comments supported an interdisciplinary (ID team) approach and suggested a team broad enough to capture relevant knowledge but small enough to be effective. Participants requested a catalogue or database of current science which could be accessed by the ID team. A clearly defined framework that incorporates past learning and includes clear, uncomplicated objectives was recommended, as was the use of actual on-the-ground data to inform management decisions. Another set of related comments focused on the need for specific benchmarks to measure

success, and monitoring to see how effective management strategies are at reaching these benchmarks. Participants suggested using indicators of clean water, healthy species of wildlife and wildlife corridors, and indicator or focal species, including consideration of Partners-in-Flight focal species. (For more monitoring comments, see the Uncertainty and Adaptive Management section). Finally, participants requested a more efficient process for incorporating scientific research into management.

Some participants want the Forest Service to keep management local and avoid broad policy decisions for the whole region while others want the Forest Service to manage for the big picture and focus on how Forest Service management at the regional scale will interact with BLM management of O&C lands, for example. Participants suggested the Forest Service consider multiple scales and the relevance of science at particular scales, including distinguishing between the east side and west side of the Cascades. Comments recommended consideration of how the science fits the local landscape (climate, social, etc.), local applicability in resolving discrepancies in the science, and finer-scale consideration of unique habitats. "One size does not fit all." Other comments suggested the Forest Service consider all lands, not just Forest Service lands and that the agency incorporate landscape and watershed analysis across ownership boundaries.

Many participants expressed interest in how the Forest Service will apply climate change science to management. Participants were interested in how to deal with more fires from climate change, how to manage forests to better adapt to climate change, and other questions such as whether or not climate change has been overemphasized. Others shared specific recommendations such as the need to anticipate climate effects despite uncertainty. Recommendations included improving resilience (including resilience of the road system), using climate change data to inform restoration work, reducing fuels, and keeping fisheries as cool as

possible with no-cut buffer areas. An emphasis on how larger and more intact forest ecosystems can sequester carbon was also suggested.

A subset of comments focused on how the Forest Service will apply science related to disturbances. The vast majority of these comments focused on fire. Participants encouraged consideration of the latest fire ecology science, particularly science related to the use of natural and prescribed fire, and requested better incorporation of fire disturbance into the landscape. Comments recommended the use of fire science to inform suppression decisions, including fire suppression tactics, and suggested the Forest Service stop suppressing so many fires based on fire science findings. Comments also recommended the Forest Service consider the benefits of burned areas to wildlife, the impact of insects and disease post-fire, and the impact of fire on soils (particularly re-burns). Participants suggested use of new science to drive burned area rehabilitation, including use of tree genetics to reforest burned areas. The use of science to inform decisions to salvage or leave an area alone was recommended. The integration of historic conditions, climate change, and disturbance regime into planning at larger scales was recommended, as was forest-wide anticipation of and planning for large-scale disturbance. Applying fire science to reduce the risk of wildfire, forest density and insect outbreaks was suggested.

A handful of comments focused on applying social science. Participants requested equal emphasis of social science along with ecology. Comments expressed a desire for utilization of up-to-date social and economic science to inform and balance ecosystem management with resource extraction. Multiple recommendations suggested incorporating social science and economic science in order to revisit the economic obligations of the NW Forest Plan. Comments suggested making social values and trade-offs explicit in terms of what is being valued.

Many comments focused on applying science to the timber program. Some comments suggested evaluation of harvest techniques and developing new guidance for timber operations. Others suggested using science to determine sustainable harvest levels (rather than having a timber target). A recommendation to use science, including FIA plots, to improve forest growth was shared. Participants requested consideration of thinning techniques to minimize windfall and improve wildlife habitat. Consideration of the tradeoffs between imports and domestic production as well as the dynamics of supply and demand was recommended. Participants also proposed using science to evaluate the pros and cons and costs and benefits of logging projects. Finally, participants suggested consideration of what will happen in 20 years when most plantation stands have been thinned.

A small subset of comments contained specific recommendations for applying wildlife science. These comments included recommendations to consider wildlife corridors when deciding landscape management needs, to use adequate science to ensure minimum viable populations of all species, and to reconsider the science behind girdling. More road closures than in current forest plans were called for based on current science.



A flurry of additional general comments and recommendations were shared. They include using science to answer specific questions (i.e. don't just gather all science), not using modeling that can be manipulated, erring on the side of the most conservative (cautious) science, considering the long-term (1-2 generations), not hiding new policies by calling it new science (e.g. riparian reserve widths), and doing whatever provides the most benefit for the longest period of time for all living things.

## SCIENCE NEEDS

Many participants shared their ideas on new research they would like the science community pursue. Some comments expressed a desire for more integrated science. Others suggested a look back at the last 100 years to learn what we did right and what we did wrong to avoid mistakes and fix what we can (e.g. fire suppression). Some comments suggested we look to future needs and modify our science to meet these needs. Similarly, others suggested science should forecast what we can expect in the next 25 years. Resource limitations to pursue new research were recognized, and in addition to a desire for additional research funding, citizen science was recommended to add capacity.

A subset of comments focused on the need for additional wildlife research. Participants requested more research on the continued decline of northern spotted owl (NSO), NSO response to large scale restoration and to thinning, barred owls, and how increasing species diversity affects spotted owls. Participants also asked for more focus on marbled murrelet and other under-the-radar and lesser-known species (e.g. lamprey). Some participants would like to see the role of indicator species reassessed, and others would like up-to-date climate change impacts on sensitive species. Comments also expressed a need for forest-wide evaluations of all big game and non-game

species and recommended assessment of wildlife overpasses, underpasses and wildlife corridors. Finally, participants wanted to know if survey and manage worked as a management tool and would like scientists to pinpoint where survey and manage species are located (in order to loosen up current protocols).

Many participants focused on the need for additional social and economic science. People want to know what prohibited the degree of harvest outlined in the NW Forest Plan from happening and the full economic and social impact of the NW Forest Plan on rural communities. Municipal level economic analysis was requested in order to capture the true impacts of Forest Service decision-making on rural communities. Participants also requested economics research on gains from different forest management activities, stewardship contracts, job creation from restoration, thinning versus fire suppression, which corporations benefit from outcomes, and how the health of the land affects the overall economy. Investigation into the economic worth of carbon storage on Forest Service lands was recommended as was how counties could be compensated for carbon credits and other ecological benefits of conservation. Interest in recreation and its relationship to local communities was also expressed. In addition, an interest was expressed in grazing monitoring in order to demonstrate improvements and a benefit to the ecosystem.

Participants suggested an array of research needs related to the NW Forest Plan. Foremost, participants want an evaluation of if we have achieved the original goals of the NW Forest Plan, and what did and did not work. Participants want to know how the NW Forest Plan impacted management, fire suppression, spotted owls, deer, elk and salmon. Interest in the social and economic impacts of the NW Forest Plan is high. Finally, specific recommendations for the science synthesis include establishing several scientific committees or forums

(on fire, aquatics, timber, etc.) and having committee members share what they know, discuss what has been learned, and identify gaps. Such a group could also provide recommendations on how to use science.

Many participants expressed a desire for new research on timber harvest or vegetation science. Research interests range from the effects of various thinning levels and silvicultural prescriptions on other activities and resources (including water yields and water quality) to our ability to be self-sufficient in wood products in the future. Some comments wanted research specifically focused on evaluating the effectiveness of ecological forestry. More science around small clear-cuts with long rotations (e.g. 10-20 acres, 80-120 years) was requested, as was additional science around salvage logging. Participants also want science to evaluate the outcome of “do nothing” alternatives. Analysis of the benefits of wood products production, including carbon sequestration and climate change mitigation, was requested. How beetles and insects are affecting timber and how industrial forestry is impacting forests at a landscape scale are both of interest.

More research on fire was commonly requested. Participants would like to see research on the effectiveness and application of fuel reduction, particularly prescribed fire, under various conditions. The success and failure of salvage logging after recent fires and the good and bad aspects of salvage logging are of interest. An evaluation of risks that truly exist from exposure to fire was requested.

A range of additional science interests were discussed, including:

- Localized/ tailored science to address local conditions;
- Valuation of ecosystem services and a comparison of ecosystem service benefits with timber production;

- Analysis of management and recreation impacts on soils;
- Recreation impacts, user conflicts, and trail usage;
- An analysis of why there are no fish in “good fish habitat”;
- The effects of non-native fish on native fish populations;
- Whether logging or ocean conditions have more influence on fish populations;
- The effects of the road network and road densities;
- Effectiveness of collaboratives;
- An assessment of how successful travel management has been at reducing road densities;
- Analyses of carbon sequestration that include a comparison of leaving trees to logging;
- A review of the eastside screens in light of new science and information;
- An evaluation of ways to increase efficiency and not take years to find a solution;
- An evaluation of noise and electromagnetic radiation from electronic warfare; and
- More science directed towards reservoir capacity.

## SCIENCE AND INFORMATION TO INCORPORATE

Participants suggested incorporating a broad range of science and information in the science synthesis and during plan revision. Participants supported using peer-reviewed science in plan revision while also incorporating local knowledge and data sources, as reflected in Table 2.

**TABLE 2. SCIENCE, DATA, AND INFORMATION SUGGESTED FOR USE IN PLAN REVISION**

| <b>Monitoring and Field Data</b>  |   |
|---|---|
| NW Forest Plan 20-year monitoring reports to learn what works and also to identify gaps                         | Local monitoring and studies, including species-specific monitoring (esp. barred owl)   |
| Data on what worked and didn't work from original forest plans/ lessons learned                                 | Forest surveys  |
| Field data, e.g. water quality, survey and manage   | Lakeview Stewardship Group monitoring data  |
| Research on NW Forest Plan streamside buffer effectiveness  | Data-coordinate information on plants and animals from researchers  |
| <b>Local Knowledge and Experience</b>   |   |
| Practical knowledge and research  | Professional experience   |
| Non-peer reviewed science based on observation and experience   | Data collected by Backcounty Horsemen of America and Native Plant Societies   |
| Local knowledge; observations over time may better reflect the resource than some peer reviewed science         | Data and input from people living in or near forests. Consider this input valuable regardless of degree status or word choice |
| Citizen science   |   |
| <b>Social and Economic Science</b>  |   |
| Social and economic impacts on communities, including small rural communities                                   | Economic studies on ecosystem services, including clean water   |
| Economic analysis, including environmental economics  | Recreation, access (roads), impacts and costs of decommissioning roads  |
| Social science and social values and tradeoffs  | Socioeconomic values of wood products   |
| Social impacts of decrease in logging: crime, domestic abuse, poverty   | Local economics, including local recreation, hunting and fishing  |
| Economic science on nonconsumptive (quiet) recreation   |   |
| <b>Scope and Scale of Science</b>   |   |
| Findings from all lands/ beyond FS boundary and across scales – local to landscape, regional                    | Science from credentialed profit and non-profit organizations (credible and reputable)  |
| Non-federal science (universities, NCASI, OFRI, ODFW, WDFW, Kinross, etc.)                                      | Wide array of science topics, avoid heavy emphasis on just one area   |
| Science with long-term implications   | Site-specific research/ local science   |
| Science from other geographical areas   |   |
| <b>Water and Aquatic Science</b>  |   |
| Science on buffers, water temperature interaction with productivity and fish                                    | Best science for watershed condition and managing aquatic ecosystems  |
| Stream - food webs disruption   | Best science for fish habitat   |
| Importance of beaver reintroduction to aquatic ecosystems   | Water quality science   |
| Hydrologic impact of forest management, including combined effects of thinning and natural disturbance          | Science on peak and base flows and sediment production  |
| Watershed science, including multiple ownerships and how they affect the watershed, including nutrient delivery | Role of riparian reserves in mitigating erosion and hydrologic impacts and mediating nutrient delivery                        |
| Impacts on municipal watersheds   | Science of groundwater dependent ecosystems   |
| Science on woody debris   |   |

| <b>Climate and Carbon Science</b>   |   |
|---|---|
| New science on climate change and carbon sequestration, including expected local effects                                  | Effect of erosion and losing glaciers on fisheries                                    |
| Climate change effect on water (including temperature) and recharge   | Climate change influence on fire on the landscape                                     |
| Tree stress from climate change, including management options   | Effects of reduced snowpack on animals, aquatics, and forests currently and in future |
| Impact of no post-fire harvest on CO2   | Climate change effect on habitat and species  |
| <b>Wildlife</b>   |   |
| Impact of motorized recreation on wildlife in summer and winter   | Benefits of insects and deceased trees to wildlife                                    |
| Benefits to wildlife when roads are closed to motorized use   | Research on wildlife and other species besides threatened species (for all species)   |
| Mule deer science done by ODFW on Fremont-Winema & Deschutes  | Connectivity and wolves   |
| <b>Fire and Disturbance</b>   |   |
| Fire ecology and fire science, including recent Sierra Pacific study and science on historical grazing and fire frequency | Research comparing fire suppression versus letting fires burn                         |
| Research on rapid changes occurring on forest (fires/disease) that transform ecosystems                                   | Wind pattern and geographic influence on fire behavior – severity and size            |
| Science on fuels management and species   | ALL science around salvage logging  |
| <b>Recreation</b>   |   |
| Recreation impacts on wildlife and other resources  | Statistics on recreational uses versus timber harvest (and other)                     |
| Trends in recreation and value of quiet recreation; best available user demand data                                       |   |
|   | How recreation affects forest management  |
| <b>Miscellaneous</b>  |   |
| Fungal ecology and importance of mycorrhizal relationships  | Role of diversity and abundance of insects in overall forest ecology                  |
| Impacts to soil biota from road construction, logging, etc.   | Data management science (right hand knows what left is doing)                         |
| Hinkle Creek Study  | Science of clean air and water (e.g. lichens)   |
| Historical imagery  | “ESA Working Group Study” from 2014   |
| History, including historical uses of forest  | Science down to single cell organisms   |
| Serpentine Darlingtonia Wetlands Management Strategy with groundwater dependent update                                    | BLM – Prineville and UC Davis – science on juniper                                    |
| Best silviculture science for long term sustainability  | Science on importance of balance of forest age classes                                |
| Information on updated timber equipment and harvest methods (less impact)   | Roadless area importance for biodiversity and connectivity                            |
| Logging and management effects on watersheds  | Native American management  |
| Science informing LSR management on eastside  | Science from original NW Forest Plan  |
| Effects of military environmental stressors on forest ecosystems, e.g. electronically radiated weaponry and war maneuvers |   |

### UNBIASED SCIENCE

Interest in the use of unbiased science was strong at all listening sessions and across interest groups. Desire for the objective use of a broad array of science sources (but not “gray science”) was common. Some participants shared a belief that the Forest Service is using science to promote an agenda, justify management actions (e.g. logging on hydrophobic soils), and close areas to public use. Participants requested the Forest Service use the full realm of best available science and minimize politics and emotion. An issue of trust in the Forest Service was raised, and some participants shared their perception that the Forest Service is misusing science. Participants shared their concern that high Forest Service turnover exacerbates this distrust. Participants requested honesty, correct information, and transparency. Concerns about the reliability of climate science, spotted owl science and localized marbled murrelet data were raised. Some comments raised the idea that the public uses science in a biased way and should also take responsibility for looking at all available science. More transparency and information sharing about how studies were conducted and the conclusions reached was suggested.

Multiple perspectives on peer-reviewed science were shared with most participants in favor of the use of peer-reviewed science (even though it may not give anticipated outcomes) while others shared the idea that peer-reviewed science is not always equal to best available science (e.g. sometimes best science is still emerging and sometimes peer-review is biased). Participants suggested diverse reviews and interdisciplinary reviews to get beyond bias. Participants also want to hear more about contrasting views represented in the peer-reviewed science. Comments suggested that when science conflicts, the Forest Service should disclose the conflict and describe why one source was chosen over another. Another suggestion was to use adaptive management when there is conflicting science and change management over time based on robust monitoring.

### UNCERTAINTY AND ADAPTATION

Participants talked about their desire to have a more flexible plan that allows managers to adapt as knowledge increases and the landscape changes. Comments suggested plans should incorporate the ability to be responsive to new science and reduce the need to create plan amendments for projects. Other comments suggested using management to test assumptions built into the plan – social, economic and ecological – and address current knowledge gaps. Likewise, monitoring to address questions and knowledge gaps was seen as essential though other comments noted the Forest Service is currently spread too thin to do effective monitoring and needs sufficient resources. Participants recommended establishing benchmarks to monitor success towards management goals.

Other comments focused on uncertainty and called for active management and trying different things while some preferred conservative action. Some suggested landscape-scale experiments combined with adaptive management. Others suggested planning for a broad range of outcomes because of the uncertainty. Several comments suggested we have humility about what we control and admit to what we don't know. Finally, comments suggested that risk-averse regulatory agencies (and other agencies) are an obstacle to creative or new approaches to problems and thus to implementing adaptive management.

### SHARING SCIENCE

Participants offered a wide range of ideas for sharing science more broadly. In general, participants requested the Forest Service work to make the science understandable to the general public. The Forest Service needs a better way of communicating the science in terms and formats a layperson can understand. One suggestion was to use a

“science character” like Smokey Bear or Woodsy Owl. In addition, many comments requested more transparency – in what is being studied and how, science findings, and what science the Forest Service is relying on for its analyses. Similarly, comments suggested transparency in capturing the uncertainties in the science and clarity on what is scientific fact and what is the opinion of a scientist. A focus on continuous communication with the public throughout the process (how data is coming together, who is involved, etc.) was recommended, as was more public access to the science the Forest Service is using. Additional suggestions include: more interaction with scientists, liaisons for science communications, breaking science into digestible sections, and clearly defining terms to avoid confusion (e.g. sustainable).

While the vast majority of comments were geared toward the Forest Service sharing science with the public, some comments also suggested a need to more efficiently move science from researchers to managers in a useful form. Participants wanted to ensure that the people responsible for doing plan revision have access to and understanding of the science. Likewise, new technology transfer mechanisms were requested. Additional communication between forests so people can learn from one another was also recommended.

Participants suggested a range of events for sharing science. Comments recommended field trips around contentious issues and important topics, including for children and high school students. Webinars on particular aspects of the science synthesis were suggested. Comments advised using local presentations, open houses, and interactive public meetings (or forums) with scientists where the scientific basis for plan revision or key issues can be described. Participants would like to see the Forest Service offer opportunities to learn more about the science at community events, farmers markets, and at other groups’ events (watershed councils, fishing derby, Portland City Club, Chemeketans, Audubon, Robert Straub Center, etc.). Finally, participants

suggested having public meetings to discuss science issues.

Comments suggested improvements to the Forest Service website as one way to better share science. Participants said it’s hard to find things on the Forest Service website and hard to navigate. Comments suggested more frequent updates to the website, help finding the PNW Research Station website, and the addition of an “Ask a Scientist” feature so people can post questions.

Many additional avenues of distribution for science were recommended:

- Ted-like talks,
- Science blogs,
- Local networks and volunteer groups,
- Youtube and webinars,
- Email/ listserv and hard copy/ mailing list,
- Online database and libraries for science underpinning synthesis/ plan,
- Dropbox or sharepoint,
- Local papers,
- Copies of science synthesis in coffee shops, library, etc., and
- Schools.

Participants highlighted the importance of reaching out to young students, rural forest communities, the media, industry groups, agriculture interests, the timber community, cultural representatives, and tourism and recreation groups. Participants encouraged continuous dialogue with public leaders.

Comments suggested visual presentation of the science and highlighted the importance of better using the media in communicating what science is demonstrating about our how our forests work. Moreover, participants recommended having a known, credible spokesperson to share science data and information with the public. Comments suggested sharing high quality information on a range of science topics, including:

- What worked and what hasn't from old forest plan;
- How forest, wildlife, etc. is doing;
- How the forest has changed over time;
- Critical factors impacting ESA species;
- Economic synthesis or analysis;
- Socio-economic information;
- Successes, e.g. wildlife underpasses;
- Spotted and barred owl interactions, including barred owl control experiment;
- A layering of depiction data understandable to public and scientists;
- Benefits and costs of different actions; and
- How new science is different than older science.

## COLLECTIVE UNDERSTANDING/ GENERAL SCIENCE FOUNDATION

A process with integrity, accountability and full transparency is desired. Listening session participants had a lot of questions about how the Forest Service will incorporate science in its forest plan revision decisions, including how the Agency defines science and best available science, what the Agency will do when the science conflicts or information is lacking or just emerging, and who is responsible for incorporating scientific information. Participants would also like to know how the Forest Service decides which science is relevant or reputable, and who makes this decision. Similarly, some participants want to know which science the Forest Service will “weight more heavily”. Participants requested transparency around the relative value of science versus other considerations. A general concern was shared about acceptance of the science (or conversely, ignoring science) and how we get there collectively. Participants want to

understand how science is currently used in the existing forest plans and whether or not our current process is effective.

Another suite of comments focused on the need to put science in lay terms and help increase collective understanding of the scientific process and terminology, including things like what makes a good model, what model limitations are, the peer review process, and how long science (including peer-review) takes. Moreover, some participants raised the idea that science can't provide all the answers we want and asked what should be done when science doesn't have the answer. Likewise, participants pointed out that science can't “fix everything” – science can't solve value issues. Science can inform policy and highlight pros and cons of particular management choices. Some participants would like the Forest Service to share the scientific basis behind current laws and policy to increase understanding of current policies.

Participants voiced support for the science synthesis process and wanted more information such as who the peer-reviewers will be, what the budget is, how the synthesis timeline fits in with the plan revision timeline, and how the Forest Service is going to engage communities to form new partnerships during the synthesis process. Participants asked if there would be opportunities for public and agency engagement in the development of the questions the synthesis will address, the peer review process, and recommending who should be included on the review panel. Participants would like a chance to submit science publications for consideration and would also like a website that creates transparency in the science synthesis process and a way for the public to view the science findings.

# SCIENCE MISCELLANEOUS

The issues below were raised at the science roundtables but did not fit neatly into the categories discussed above. The comments are interesting and valuable, and we didn't want to lose them so include them here.

- How do we incorporate science in inventoried roadless area/ protected areas management?
- Do not use the Norm and Jerry plan.
- Use best available science to better manage special use areas (rec areas in NW Forest plan management area).
- Barred owl removal experiment will create issues.
- Science can unify communities.
- Practices have not been improved due to lack of management.
- Sometimes science has counter-intuitive results (e.g. black snags (from fire) result in more snowmelt than areas without snags like clear-cuts, and clear-cuts have higher snow retention).
- FS holds itself to the higher standard it expects from others.
- Planning overload – planning for the sake of planning.
- Access to old fire road maps.
- Factor revenue into new technology, research and tourism toward creation of new jobs.







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