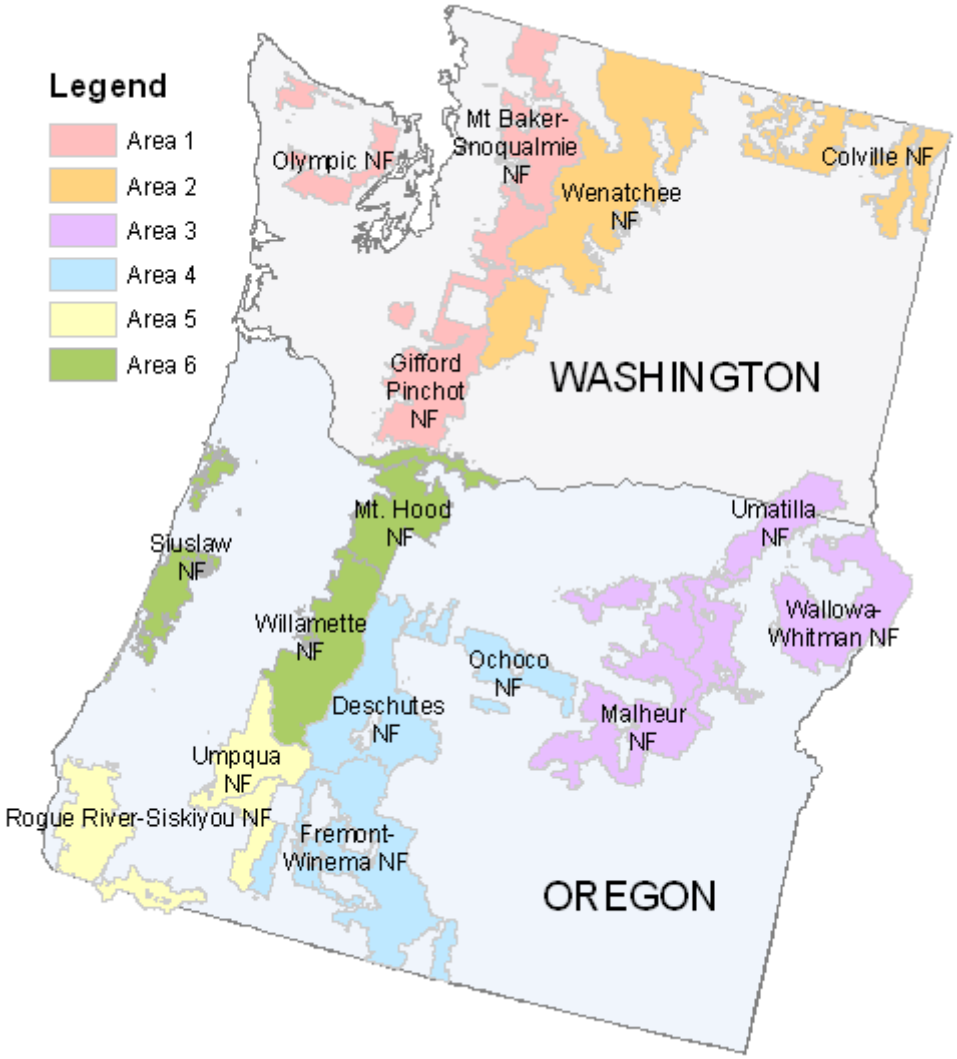
2018 Ecology Program Yearbook: Focus on Planning

USDA Forest Service, Pacific Northwest Region

Cover photo: Ecologists at the 2018 annual meeting, Oregon Coast near Florence, October

Contents

Pacific Northwest Region Ecology Areas



The Ecology Program in the Pacific Northwest Region is organized into six areas comprised of two to three National Forests each. Ecologists' annual program of work is drawn up jointly with the Forest natural resource staff officers for that area.

Ecology Program Mission Statement

The Ecology Program is a network of ecologists applying science to serve the National Forests in the Region through core services of landscape assessment, technology transfer, monitoring, mentoring, products (maps, publications, and databases), ecosystem services, support to planning, and science-management partnerships. The ecologists work as equal partners with other disciplines on an area basis to serve multi-forest needs and provide a landscape perspective. Ecologists are based on National Forests and are hence accountable to Forest leadership.

Ecology Program in the Pacific Northwest Region

The Regional Ecology Program today has a terrestrial emphasis and is organized by areas. Six areas cover the Region, as shown on page 2. Ecologists in these areas carry out a program of work crafted according to the National Forests' needs. Those ecologists covered by the program's Pacific Northwest regional commitment are indicated in the table below. The Ecology Program is well-integrated with other disciplines. One of our ecologist positions is also a half-time botanist and two others are half-time with the Forest Health Protection program. Other ecologists receive funding from fire, wildlife, and other disciplines.

Ecologists serving the six ecology areas:

Area	Area Name	Ecologists
1	**Western Washington**	Jessica Hudec, Kevin James (with Botany), Kimberly Crider (contact)
2	**Eastern Washington**	James Dickinson, Monique Wynecoop (with Fire)
3	**Northeast Oregon**	Area Ecologist Upekala Wijayratne, Michael Jennings (with Forest Health), Nathan Poage, Vacant (vice Gunnar Carnwath)
4	**Central Oregon**	Gregg Riegel, Vacant (vice Beth Johnson), Vacant (vice Claire Addis), Mike Simpson (with Forest Health), Vacant (range ecologist)
5	**Southwest Oregon**	Bill Kuhn, Pat Hochhalter, Vacant (vice Amy Nathanson)
6	**Northwest Oregon**	Jane Kertis, Steve Acker, Doug Glavich

The program is built on a social contract between National Forest leadership, ecologists on the ground, and the Regional Office. The program of work is crafted annually with Forest Leadership Team and Staff Officer guidance. A high degree of accountability of performance is characteristic of the program.

Funding is anchored by a Regional Office Program Delivery commitment covering about 60 percent of the cost of each Area's ecology program. The remainder is made up of partnerships (with Forest Health, Botany, Fire, BLM) and Forest contributions. **The Regional commitment has been a decision of Forest Supervisors collectively as an investment in the multi-Forest landscape perspective, continuity, and the many other services the ecologists provide.**

At the Regional Office, Tom DeMeo serves as the Regional Ecologist. Two student interns from De La Salle North High School, Ricardo Isais-Perez and Justin Thomas, work on data management on a part time basis.

View from the trail to the Devil's Peak fire lookout, Mt. Hood National Forest, January 2019

Core Services (the "Eight Pillars")

Landscape assessment

2018 saw significant accomplishments in potential vegetation mapping. **Potential vegetation zones** and subzones were complete A team led by Jane Kertis and Mike Simpson, assisted by Pat Hochhalter and Steve Acker, completed this thorough and rigorous mapping process. Using both the Gradient Nearest Neighbor (GNN) layer and abundant ground data, potential vegetation indicators were carefully classified to generate the maps.

As reported for 2017, the **restoration needs map** was updated and extended to include all forested areas in the Region. This was published in Northwest Science in the spring (DeMeo et al. 2018).

The Region is using these products in a major landscape planning overview, the **BioRegional Assessment**. This assessment constitutes the 24 million ac of the Northwest Plan area, as well as the Ochoco National Forest in Oregon, and the Modoc and Lassen National Forests in California. We are supporting an interregional R6/R5 team of planners led by Mark Brown, and closely following their direction on the products needed. The potential vegetation layer will be used as a framework layer in defining fire regimes, land potential, and other applications.

Further, in cooperation with the Region 5 Ecology Program, we are expanding the Haugo et al. 2015/DeMeo et al. 2018 method to include the BioRegional Assessment area. This has required crosswalking forested potential vegetation subzones to LANDFIRE biophysical settings in northern California, and in developed transition pathways for California's non-forested types, which play a large ecological role on National Forests there. At this writing a draft departure map is available, and we are working on identifying the specific restoration needs for each watershed.

Additionally, **landscape assessment work** to support Forest-level planning is going on within the Ecology Program Areas.. In Western Washington, ecologists completed landscape restoration and climate change analysis as part of the Snoquera Landscape Restoration Environmental Assessment (>100,000 acres) on the Mt. Baker-Snoqualmie South Zone Planning Team. This work provided spatial and temporal context for integrated restoration in support of ecological restoration and climate change. Also in Western Washington, a forest landscape analysis and design process was completed for the Wind River Watershed with the Gifford Pinchot south zone planning team and the South Gifford Pinchot Collaborative group. Results were used to define desired conditions, treatment objectives, and design criteria based on land management documents and other values identified.

Michael Jennings and others developed a **Landscape Pattern Monitoring Too**l which has been well-received by Forest leadership, as well as with local collaboratives and international users. It has been posted online and made available.

In the Southwest Oregon Area, ecologists supported the **Stella Restoration Project** with vegetation and wildfire departure analysis. In Northwest Oregon an **historic range of variation assessment** was completed for the West Cascades. Jane Kertis of the Northwest Oregon Ecology Area also contributed to the old-growth and forest succession chapter of the **Northwest Plan Science Synthesis**.

Technology Transfer

Plant association trainings by the ecologist cadre continue to be well received by silviculturists, botanists, wildlife biologists, and other practitioners. They provide an ideal field opportunity to connect ecology with everyday issues on the ground, and to help specialists understand the environment better and apply this to problem-solving.

Plant association trainings held by the program in 2018 included the Cascades, Coast Range (NW Oregon Ecology area), and Umatilla and Malheur National Forests (Northeast Oregon Ecology Area). The Malheur training included an additional fuels monitoring component.

The program continues to host a variety of activities to **promote science-management partnerships and science sharing**, including **webinars**, facilitated by Cheryl Friesen. Cheryl provides invaluable facilitation services to the Ecology Program and is our key liaison with the Pacific Northwest Research Station. She set up and ran the webinar on the Terrestrial Condition Assessment, in cooperation with the Washington Office. Cheryl also helped facilitate our annual meeting and the Lessons Learned meeting on **CFLRP's** (Collaborative Forest Landscape Restoration Program) . Other efforts include the Westside fire field trip, a social science review of the Eastside Resilience Project "lessons learned," and facilitating our agreement with the University of Washington on ecosystem services.

In October we held our annual meeting of ecologists in the Region, hosted by the Northwest Oregon Ecology Area and held in Florence, Oregon. The meeting included a number of our **partners**, including Washington **DNR**, **NRCS**, and the **Pacific Northwest Research Station**. Aly Warren, the Regional Office assistant director of Natural Resources for vegetation management, participated, as did Paul Anderson, acting director of the Pacific Northwest Research Station.

In November we **hosted the national meeting** of Regional ecologists and soil scientists. This included sessions on program relevance, the Terrestrial Condition Assessment, ecological applications, and a fire ecology field trip in the Columbia River Gorge.

Monitoring

Monitoring continues as a significant part of ecologists' workload in the Region. Ecology program ecologists are uniquely positioned to support the Forests in meeting their monitoring needs because of their strong scientific background, applied mission and outlook, and direction by Forest leadership to develop practical, effective monitoring efforts.

One contribution is in **range monitoring**. In FY18 the Region received a new range program manager, Robert Garcia. We have been working closely with Robert to develop a more efficient, integrated range monitoring effort, albeit with some fits and starts because of the fire season and other delays. We remain dedicated to making this work through a range monitoring cadre that could serve multiple Ecology Areas.

Specific range monitoring efforts include soil disturbance monitoring in Hells Canyon, baseline riparian vegetation monitoring on the Wallowa-Whitman National Forest, Multiple Indicator Monitoring (MIM) on the Ochoco and Fremont-Winema National Forests, and effectiveness monitoring in the Warner Mountains.

Another monitoring contribution from ecologists is to pull together **legacy data**. This is facilitated by our generally long tenure in our positions and collaboration with other disciplines and organizations. The Western Washington Ecology Area developed an annual monitoring report across resource programs and Forest. Our fire ecologist in eastern Washington, Monique Wynecoop, is producing an annual report on fuels monitoring.

Steve Acker of the Northwest Oregon Ecology Area is managing the monitoring component of a Joint Fire Science study on **post-fire landscape management and fire severity** influences in Western Oregon forests. In 2018 vegetation and fuels monitoring sampling was completed in the Mt. Washington Wilderness.

We continue to show leadership in monitoring to support the **Collaborative Forest Landscape Restoration Projects (CFLRPs)** in the Region and are considered a national leader in this regard. Area ecology programs in eastern Washington, Northeast Oregon, and Central Oregon support Collaborative Landscape Project monitoring. Tom DeMeo serves as the **Region facilitator on CLFRP** monitoring. In April we held a lessons learned workshop on CLFRP monitoring in Bend. Findings will be used to shape future work.

Mentoring

Since 2011 we have been hosting **student interns** from De La Salle North High School in Portland. Students work one day per week, plus an additional Monday per month, for a total of five days per month. This is designed to teach them basic job skills and also technical skills useful for career development. In the ecology unit, students work on basic data management skills, such as scanning slides and photos, and developing associated Excel spreadsheets for metadata.

This school year our students are Ricardo Isais-Perez, a junior, and Justin Thomas, a sophomore. Recent work has focused on scanning and making available legacy photos of Fred Hall showing forest change in the southern part of the Malheur National Forest, at the request of Tony Svejcar with the Agricultural Research Service.

Ecologists are good mentors because of our long tenure in place. We can help introduce new silviculturists, wildlife biologists, and other specialists to an area through plant association and other trainings. We are a resource to get questions answered and to help solve problems, functioning much like agricultural extension agents.

We also encourage a wide variety of mechanism to insure cross-training and mentoring opportunities, such as **detail assignments**. In FY18 the Central Oregon Ecology Area hosted Christina Mckernan from the Okanogan-Wenatchee National Forest, and Denine Schmitz of Vale District BLM on developmental detail assignments.

Products (Maps, Presentations, Publications, Databases)

Completion of the **potential vegetation map**, at both vegetation zone and subzone scales, was the big ecology program product accomplishment during the past year. Work also proceeded in landscape departure and restoration needs assessments. See the preceding Landscape Assessment section for more details.

Our work in landscape assessment also continued to support planning at multiple levels and scales. We are contributing to the **BioRegional Assessment** with both an ecological departure layer and a restoration needs map. The latter identifies the acres in need of treatment by potential vegetation type, seral stage, and watershed, as well as the succession need ("letting things grow") for these categories as well. We are expanding these to include the Northwest Forest Plan area in California, as well as the Modoc and Lassen National Forests. The process has led to a new initiative of cooperation with our colleagues in California, as well as some valuable learning, notably in how to determine seral stage transitions in non-forest types—a substantial portion of the northern California landscape.

Presentations and Publications by Ecology Area

Western Washington

Presentations

Piper, S. 2018. Mountain goat management in the Olympic Mountains and North Cascades. Presentations to Huxley College of Environmental Studies and Black Hills Audubon.

Publications

Hudec, J.L.; Halofsky, J.E.; Peterson, D.L.; Ho, J.J., eds. 201X. Climate change vulnerability and adaptation in Southwest Washington. Gen. Tech. Rep. PNW-GTR-xxx. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. Xxx p. In press.

Hudec, J. 2018. A collaborative approach to landscape analysis and design. White paper. On file at Gifford Pinchot National Forest: Trout Lake, WA.

Hudec, J., ed. 2018. Gifford Pinchot National Forest Huckleberry Management Strategy. White paper. On file at Gifford Pinchot National Forest: Trout Lake, WA.

James, K.M. 2018. Identifying Restoration Opportunities on the Mt. Baker-Snoqualmie National Forest. White Paper on file at Mt. Baker-Snoqualmie National Forest: Everett, WA.

Eastern Washington

Publication

Wynecoop, M.D., P. Morgan, E. Strand, F. Sánchez Trigueros. 2018. Getting back to fire sumêŝ: incorporating traditional knowledge into fuels reduction treatments. Fire Ecology (In Press)

Northeast Oregon

Presentations

Jennings, M. 2018. A tool for measuring and monitoring landscape patterns. Presentation, National Forest Health Monitoring 2018 Meeting: February 14, 2018, Phoenix, Arizona.

Jennings, M. 2018. Climate change and ecosystem composition across large landscapes. Presentation, International Association for Vegetation Science 2018 Symposium: July 27, 2014, Bozeman, Montana.

Jennings, M. 2018. Landscape scale forest health assessment and prioritization. Presentation, Forest Health Protection 2018 Technical Meeting. November 28, 2018, Portland, Oregon.

Publication

Daniels, J.M., M. Nielsen-Pincus, M. Paruszkiewicz, and N. Poage. 2018. The economic contribution of stewardship contracting: two case studies from the Mount Hood National Forest. Journal of Forestry 116(3):245-256.

Central Oregon

Presentations

M. Pellant, P. Shaver, D. Pyke, J. Herrick, F. Busby, G. Riegel, N. Lepak, D. Toledo, B Newingham, E. and Kachergis. 2018. Introducing Version 5 of Interpreting Indicators of Rangeland Health. Soc. For Range Manage, 71th Annual Meeting, Jan. 28-Feb. 2, Sparks, NV.

Simpson, M. and Wing, B. Using Lidar In Forest Health Project Planning: A Case Study from the Ochoco National Forest on Identifying the Abundance of Large Trees, Managing Stand Densities to Reduce the Risk of Bark Beetle Caused Mortality, and Detecting Root Disease. Presentation at the National Silviculture Workshop Flagstaff AZ. 07/18/2017.

Simpson, M. Potential Vegetation Mapping based on GNN 1984-2012 Time Series Imputation of FIA/CVS Plots. Presentation at R6 Regional Ecology Meeting Wenatchee, WA 10/17/2018.

Publications

Case, M.J., B.K. Kerns, J.B. Kim, M. Day, A. Eglitis, M. L. Simpson, J. Beck, K. Griener, G. Riegel Halofsky, J.E. and D.L. Peterson. In Press. In Climate Change Vulnerability in Central and South Central Oregon. Gen. Tech. Rep. PNW-GTR-XXX.

DeMeo, T., R. D. Haugo., C. Ringo, J. Kertis, S. Acker, M. Simpson, and M. Stern. 2018. Expanding Our Understanding of Forest Structural Restoration Needs in the Pacific Northwest, USA. Northwest Science. 92(1): 18-35.

Riegel, G. C. Addis, and E. Johnson. 2018. Riparian Ecological Status Monitoring Reports for the Fremont-Winema and Ochoco NF's.

Riegel, G.M., R.F. Miller, C.N. Skinner, S.E. Smith. C.A. Farris, and K.E. Merriam. *Northeastern Plateau Bioregion*. 2018. In: *Fire in California Ecosystems*, 2nd Edition. van Wagtendonk, J., N.G. Sugihara, S.L. Stephens, A.E. Thode, K.E. Shaffer, and J. Fites-Kaufman (Editors). University of California Press, Berkeley, CA. Pgs. 211-250.

Pellant, M, D.A. Pyke, J. E. Herrick, P.L. Shaver, Lepak, N., G. Riegel, E. Kachergis, B.A. Newingham, D. Toledo, and F.N. Busby. *Interpreting Indicators of Rangeland Health-Version 5*. USDI Bureau of Land Management, Denver, CO. TR 1734-6. *In Press.*

Southwest Oregon

Presentations

Post-fire restoration workshop. "Post-Fire Restoration and Reforestation: Ecology." Grants Pass. May, 2018. (B. Kuhn)

Chetco Bar Fire Restoration Meeting. "Chetco Bar Fire Restoration Framework and Assessment." Gold Beach. October, 2018. (B. Kuhn)

Northwest Oregon

Presentations

Northwest Scientific Association 2018 Annual Meeting: "Classification of Riparian Ecosystems in Northwest Oregon for Restoration Planning."

Fire ecology and fire effects presentations for Central Cascade Adaptive Management Partnership (and webinar), Clackamas Stewardship Partners, McKenzie River Watershed Council, Portland State Univ. ecology class, and Interagency Frontliners conference

Publications

Spies, T, P. Hessburg, C. Skinner, K. Puettmann, M. Reilly, R.J. Davis, J. Kertis, J. Long. 2018. Old growth, disturbance, forest succession and management in the area of the Northwest Forest Plan. In: Synthesis of Science to Inform Land Management within the Northwest Forest Plan Area: PNW-GTR-966.

DeMeo, T., R. Haugo, C. Ringo, J. Kertis, S. Acker, M. Simpson, and M. Stern. 2018. Expanding our understanding of forest structural restoration needs in the Pacific Northwest. Northwest Science 92:18-35.

Regional Office

Publications

DeMeo, T., R. Haugo, C. Ringo, J. Kertis, S. Acker, M. Simpson, and M. Stern. 2018. Expanding our understanding of forest structural restoration needs in the Pacific Northwest. Northwest Science 92:18-35.

Presentations

DeMeo, T. Regional guidance on CFLRP monitoring. CFLRP monitoring workshop, Bend, April 25.

DeMeo, T. PRIME range monitoring summary and transition to future work: Awash [Ethiopia] workshop. May

DeMeo, T. Program management and emphasis. National meeting of Forest Service Regional ecologists, Portland, November 6.

Mwangi, K., T. DeMeo, and N.M. Smith. Climate change vulnerability assessment of three large landscapes in Kenya, with implications for ecosystem services. A Community on Ecosystem Services (ACES) Conference, Washington, DC, December.

Ecosystem Services

In FY18 the Pacific Northwest Region Ecosystem Services program was based in Ecology and jointly funded and designed with State and Private Forestry, the Region 6 Climate Change Program, and the PNW Research Station. Examples of work related to each deputy area are provided below.

Applying Ecosystem Services to Project-Level Planning: Supported interdisciplinary teams to integrate ecosystem services into NEPA processes including "pre-NEPA" assessments, development of Purpose and Need statements and design of management actions needed to support interdisciplinary goals. Provided workshops, presentations, NEPA document content and review to highlight connections between landscape conditions, goods and services provided by planning areas, and management needed to sustain functions that meet ecological, economic and social goals. Projects include:

1) cross-jurisdictional restoration in the **Applegate Adaptive Management** Area, in partnership with the Medford District BLM and private landowners; completed draft Environmental Assessment
2) support for public engagement for the Spirit Lake Tunnel project, including values mapping
3) assistance to the Mt. Adams Ranger District of the **Gifford Pinchot** National Forest to engage in collaborative planning in Wind River
4) development of communication tools highlighting ecosystem services provided by floodplain restoration on the McKenzie River Ranger District of the **Willamette** National Forest
5) designed and co-facilitated public engagement workshops for the Ellis Integrated Vegetation Management Project on the **Umatilla National Forest**

Support for Resource Planning and Monitoring*:* Served as the liaison between State and Private Forestry and RPM to track and engage with Northwest Forest Plan Modernization.

Climate Change Vulnerability Assessments*:* Led the ecosystem services team. Completed draft for the Southwest Oregon assessment and presented findings and an adaptation workshop. Began chapter for the Columbia River Gorge NSA, Willamette and Mt. Hood NFs.

Watershed Investment Partnerships and Conservation Finance*:* Supporting engagement of utilities in stewardship of forest lands in source watersheds. Projects include:

1) Pure Water Partners program designed by the McKenzie Collaborative. This partnership is convened by Eugene Water and Electric Board and the Willamette National Forest to address management of the McKenzie watershed, which provides Eugene's drinking water. The collaborative is taking an All Lands approach to sustain function on public and private lands in the McKenzie. Worked to develop a voluntary incentive program for private landowners to promote protection and restoration of high quality riparian areas. The collaborative is also supporting stewardship contracting on the Willamette National Forest to sustain the resilience of the McKenzie headwaters and generate retained receipts for the Pure Water Partners fund. Completed pilot phase and applying lessons learned to implementation.
2) Engagement in the Willamette Future Project to expand application to nearby utilities.

3) Participation in the Green-Duwamish Urban Waters Federal Partnership and outreach to Tacoma and Seattle Public Utilities to explore partnership opportunities on the Mt. Baker-Snoqualmie National Forest.

National Ecosystem Services Strategy Team: Member of a core team established by the Associate Deputy Chiefs to develop cohesive national strategy, policy and implementation plans for ecosystem services programs across Forest Service deputy areas. Organized and facilitated monthly webinars on focused topics. Participated in strategic planning with leadership in the Washington Office. Designated as team lead to provide support to the national Conservation Finance program. Organized an agency Ecosystem Services Champions Forum for December, 2018.

Support to Planning

In Southwest Oregon, ecologists have assisted the **Umpqua Forestry Coalition** as the Calf-Copeland restoration project has evolved, and helped the planning effort for the Stella project. Western Washington ecologists helped set up and lead an open house on the **Dungeness Watershed action plan**. Eastern Washington is implementing lessons learned from planning work on broad-scale projects in the USFS Northern Region.

Northwest Oregon Area has played a significant leadership role regionally in riparian management, by defining what the **natural range of variation looks like for riparian ecosystems**. Ecologist Steve Acker also provides leadership on the technical aspects of **DecAID**, the Decayed Wood Advisor, a key component of project plans throughout the Region.

The Ecology Program is significantly ramping up its support to planning at the Regional level, by significant contributions to the **BioRegional** Assessment. Moreover, we have initiated a significant overhaul of the state and transition models for our vegetation types. These are the underpinning of landscape assessment work in determining departure from the range of natural variation, timber yields, wildlife habitat modeling, and other applications. Ecologist Nathan Poage is leading a team of ecologists representing each Area in the Region, charged with standardizing and updating the legacy state and transition model set.

Partnerships

Collaborative Forest Landscape Restoration Program (CFLRP)

Ecologists continue to serve the five **CFLRP** projects through monitoring work and support to citizen monitoring efforts. The projects are Northeast Washington Vision 2020 (Colville NF), the Southern Blues (Malheur NF), Lakeview Collaborative (Fremont-Winema NF) and Tapash (Okanogan-Wenatchee NF). Ecologists in the areas where these projects occur serve the CFLRP collaboratives with monitoring and planning advice. Tom DeMeo serves at the Regional level as part of a three-person team facilitating the CFLRPs Regionally. (The others are assistant natural resources director Aly Warren and Regional fuels planner Dana Skelly.) Tom facilitates CFLRP monitoring, and also assists National CFLRP Coordinator Lindsay Buchanan with annual reporting and other CFLRP applications.

The Nature Conservancy (TNC)

In 2018 we published our expanded forest structure restoration needs assessment, in collaboration with **The Nature Conservancy**. This expansion to include the full area west of the Cascade Crest was timely, since it helped to inform discussions on what restoration should look like on the west side . This information was also used in our TNC collaboration as we provided information to the Washington Department of Natural Resources, as they informed the Washington legislature regarding a forest health bill for the eastside.

We also participate in the **TNC fire TREX** (training exchange) efforts held each spring. Jessica Hudec participated as an instructor in the Washington TREX, and Tom DeMeo was a participant and mentor at the Ashland TREX in May.

Partnerships with Other Science Partners

We are strengthening our partnerships with the Washington Department of Natural Resources (**DNR**) and the Institute for Natural Resources (**INR**) at Oregon State University as we develop our state and transition modeling effort. We are also working with Max Wahlberg from an **Enterprise Team** in this effort.

What's New in 2019

In 2019 the program is **strengthening and expanding our support to planning**, through significant assessment contributions to the BioRegional Assessment. Our work to standardize and upgrade state and transition models will form the underpinning to support planning efforts for years to come.

We will assist with clarifying **Late Successional Reserve (LSR) policy** developed for the Northwest Plan, seeking to resolve this with current science and providing guidance to the field.

Now that Collaborative Landscape (CFLRP) Projects have been reauthorized, we will support the three 2012 projects (Lakeview, Colville, and Southern Blues) as they anticipate further funding, and support a new round of project applications after the new advisory committee has been formed. We are hearing from the field they would like an **increased Regional role in CLFRP monitoring** because of diminished field capacity. We will assist in this transition, drawing on lessons learned and coordinating with others to develop efficient monitoring plans.

We are developing a Story Map effort, assisted by Lindsey Kiesz of DRM staff, to explain **restoration needs** in the Region. This is expected to become a useful communication tool both internally and externally.

The potential natural vegetation map is now completed at vegetation zone and subzone scales, and in 2019 we will develop a GTR to document the work.

A departure analysis and restoration needs assessment is being completed for the BioRegional Assessment area and will be available soon.

In November 2018, Ecosystem Services specialist Nikola Smith took a promotion to Partnerships Coordinator for the Region. In consultation with our ecosystem services partners, it was decided she would take the ecosystem services portfolio with her into her new position. We thank Nikola for all her service to the ecology program over the years, wish her all the best, and look forward to continued collaboration on ecosystem services.

To support planning and monitoring work, and serve as a focal point to find efficiencies, Ecology is advocating a data management position at the Regional level to serve multiple needs in inventory, landscape assessment, CFLRP and other monitoring, and communication.

Finally, at the annual meeting of Forest natural resources staff officers in November 2018, the staff officers supported full funding of zone positions, such as those in ecology and genetics. We will follow up on this and start to work out how it could be implemented.

Pacific Northwest Region Ecology Program

Plant association training, Northwest Oregon Ecology Area, June 2018. East side of the Mt. Hood National Forest.

Western Washington Ecology Program (Area 1)

Gifford Pinchot, Mount Baker-Snoqualmie, and Olympic National Forests

Program Priorities

In 2018, Natural Resource Staff Officers, Area Ecologists, and the Regional Ecologist agreed on the following priorities for Western Washington:

- Monitoring: understand the level of data collection and monitoring efforts occurring across the WWA; continue with data entry and formatting of legacy ecology monitoring data.
- Special forest products: integrate with resource specialists to develop habitat suitability models and associated management recommendations.
- Support to planning: Plant association trainings, climate change education, presentations, and planning team participation.
- Information transfer: review Late Successional Reserve Assessments based on new science since plan inception.
- Collaboration: Work with partners and collaborative groups on project planning, monitoring, and public outreach.
- Inventory and mapping of special habitats including chinquapin, oak savannahs, aspen, whitebark pine, and non-forested plant communities such as meadows and balds.

FY18 Area 1 Ecology Program Team:

Jessica Hudec

Kevin James

Susan Piper

Accomplishments

Monitoring and collaboration

- Released a first annual monitoring report for Western Washington identifying data collection and monitoring activity among resource programs and across Area Forests.
- Continued our partnership with PNW-Olympia to compile MBS and OLY legacy ecology data from multiple sources into a single dataset. Data entry was completed for MBS and OLY overstory plot cards (>5000 plots).
- Completed a 40-year Rocky Fire monitoring summary with Northwest Oregon Ecology with photo-informed state and transition models.

Special forest products and collaboration

- Finalized Gifford Pinchot Huckleberry Management Strategy with Pinchot Partners Collaborative group. Held two public meetings, coordinated with other partners, and presented at Northwest Scientific Association meeting.
- Assisted partners with huckleberry treatment effectiveness monitoring and huckleberry habitat surveys.
- Led Stillaguamish Tribal Youth engagement ecological field trip with 20 participants. Activities focused on silvicultural approach to restoration and ways to incorporate traditional ecological knowledge into project design.

Support to planning and collaboration

- Completion of the mountain goat management plan and FEIS, and assisted in first year of implementation with Olympic National Park and WDFW.
- Completed landscape restoration and climate change analysis as part of the Snoquera Landscape Restoration Environmental Assessment (>100,000 acres) on the MBS South Zone Planning Team. This work provided spatial and temporal context for integrated restoration in support of ecological restoration and climate change.
- Participated on the MBS North Zone Planning Team in support of integrated landscape

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restoration project development (>100,000 acres). Provided landscape scale ecological context for developing purpose and need.

- Completed forest landscape analysis and design process for the Wind River Watershed with GP south zone planning team and South Gifford Pinchot Collaborative group. Results were used to define desired conditions, treatment objectives, and design criteria based on land management documents and other values identified.
- Forest Service as part of East Cascades Oak Partnership, including science and mapping subcommittee.
- Developed a routine to describe changes in understory plant community diversity across forest successional stages within plant associations group on the Mt. Baker-Snoqualmie NF using legacy ecology data. This work continues in FY19.
- Initiated Area-wide analysis of Late Successional Reserve Assessments (LSRA). This work compared current pattern of forest structure within and among LSRs for the all three Forests in WWA against the LSRA descriptions. This work continues in FY19.

Information transfer and collaboration

- Climate change coordinator for GP and MBS. Co-led efforts to compile Southwest Washington Climate Change Vulnerability Assessment, which is in final stages of review, with PNW-Seattle and University of Washington.
- Fire ecology and fire effects presentations to Philanthropic Educational Organization, Trout Unlimited, local schools, and at an OMSI event hosted by Friends of the Gorge.

Mountain goats captured in the Olympic National Park are ready to be released in the Mt. Baker-Snoqualmie National Forest, September 2018.

- Supported the prescribed fire training exchange (TREX) hosted by the Nature Conservancy and the Forest Service by serving as a mentor firing boss and fire effects monitor.
- Provided large fire support to Northwest Coordination Center and Multiagency Coordination Group as a fire analyst.

Presentations and Papers

- Hudec, J.L.; Halofsky, J.E.; Peterson, D.L.; Ho, J.J., eds. 201X. Climate change vulnerability and adaptation in Southwest Washington. Gen. Tech. Rep. PNW-GTR-xxx. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. Xxx p. In press.
- Hudec, J. 2018. A collaborative approach to landscape analysis and design. White paper. On file at Gifford Pinchot National Forest: Trout Lake, WA.
- Hudec, J., ed. 2018. Gifford Pinchot National Forest Huckleberry Management Strategy. White paper. On file at Gifford Pinchot National Forest: Trout Lake, WA.
- James, K.M. 2018. Identifying Restoration Opportunities on the Mt. Baker-Snoqualmie National Forest. White Paper on file at Mt. Baker-Snoqualmie National Forest: Everett, WA.
- Piper, S. 2018. Mountain goat management in the Olympic Mountains and North Cascades. Presentations to Huxley College of Environmental Studies and Black Hills Audubon.

Responding to Future Needs:

Many priorities from 2018 will be carried over into 2019 as we continue to compile legacy monitoring data, develop landscape analyses in support of restoration planning, update components of huckleberry management and monitoring strategies, We aim to continue with an annual monitoring report for Western Washington and to draft a white paper on Late Successional Reserves that reconciles Northwest Forest Plan direction with current science and identifies opportunities for fostering restoration across Western Washington.

Eastern Washington Ecology Program (Area 2)

Okanogan Wenatchee and Colville National Forests

Program Priorities

The priorities for 2018:

1. Establish relationships across both National Forests.
2. Establish the role of landscape ecology within the Eastern Washington Area.
3. Develop projects to demonstrate the role of landscape ecology in disturbance prone ecosystems.
4. Identify opportunities to support ongoing management projects.
5. Create research and management partnerships to address new issues.

Left: FIREMON sampling within the Sanpoil Project Area
Right: Bitter Root (*Lewisia rediviva*), one of the many edible culturally significant plants found within the Sanpoil Project Area
Photo Credit: Olivia Golemon, Fire Engine Operator, Umpqua National Forest

Area 2 Ecology Program Team

James Dickinson, Landscape Ecologist

Monique Wynecoop, Fire Ecologist

Accomplishments

On the Okanogan-Wenatchee NF (OWF) the Northwest Forest Plan (NWFP) was an important and sizeable work load this past year. As the conversation topics of pace, scale, restoration, resilience, and wildfire have become more common in the current vernacular, they are notably less prominent in the Lands Management Plans of the NWFP forests. The Area Ecology program worked closely with OWF, Region 6 Representatives and the USFWS to better define pathways forward in accomplishing the planning necessary to reduce risk to the endangered species while reducing risk to other critical resources. A four day field trip covering 4 project areas, 3 districts, and a variety of ecosystems was successfully completed; resulting in two difficult projects moving forward through the NEPA process.

Lastly, the Area 2 Ecologists have had considerable participation with the Washington Department of Natural Resources to support the development and implementation of cross boundary restoration and monitoring as part of the DNR's new 20-year Forest Health Strategic Plan. This partnership will continue to expand the impact of restoration work across Eastern Washington. This effort is defining a new way of managing natural resources in Eastern Washington.

On the Colville National Forest (CNF), this year was the first year of implementing the new CNF Fire & Fuels Monitoring Plan. The Fire Ecologist led a crew that established nineteen ecological monitoring plots utilizing FIREMON methods (Lutes *et al*. 2006) within the Eagle Rock Unit of the Sanpoil Project area that borders the Confederated Colville Tribes (CCT) Reservation, in order to look at the effects of prescribed fire within areas that have and have not been previously burned with prescribed fire. The monitoring crew was comprised of Colville National Forest Silviculture Crewmembers, University of Idaho Graduate and PHD students from the Department of Forestry, Rangeland, and

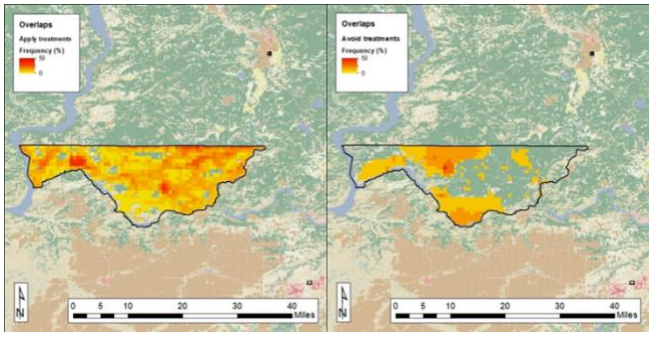
Continued from previous page

Fire Sciences. Dr. Eva Strand from University of Idaho assisted with the monitoring planning and implementation. O. Golemon, Assistant Fire Engine Operator on the Umpqua National Forest assisted in the monitoring efforts to obtain plant ID skills as part of a Fire Leadership Development Program! This monitoring program was indeed a collaborative effort and was funded partially by the CNF Fire Program, CFLRP monitoring funds, and by the Region 6 Ecology funds. Within the plots, many edible culturally significant plants that are known to depend on low-intensity fire were found and reported to the CCT cultural plants specialist for record. It is expected that these plants will respond favorably to the planned prescribed burn, which the monitoring plots will assess.

In addition, the Colville National Forest Districts are working together with the Fire Ecologist to make sure monitoring efforts are efficient, reflect current science, and address CNF and Regional monitoring requirements (see 2018 CNF Fire & Fuels Monitoring Plan). The 2018 CNF Fire & Fuels Monitoring Report will be available to read in January, 2019.

The Fire Ecologist has been working with the Northern Rockies Fire Science Network (NRFSN), which is part of the Fire Science Exchange Network, to help them determine how they can best support the needs of the tribal and non-tribal natural resource managers and scientists. This year that involved planning a NRFSN information workshop on the Colville National Forest, as well as another workshop for the local Tribal Natural Resource Managers in Spring of 2019.

The CFLRP Spokane Tribal Values Monitoring Project was completed spring of 2018. There were 21 participants. The Participatory GIS Project was completed primarily by Spokane Tribal Fire and Fuels Mangers, and the comments were speaking primarily to the Spokane Reservation and neighboring agencies, including the CNF. The project was beneficial in building trust and transparency between the Spokane Tribe and CNF Fire & Fuels programs. It was also beneficial for sharing ideas about how to best incorporate community and tribal feedback into fuels treatments. The Spokane Tribe Fuels Manager is hoping to utilize the feedback for planning Spring 2019 fuels



Where Spokane Tribal PGIS participants stated fuels treatments (prescribed burning, pile burning, and understory thinning) should (Left) and should not (Right) be done.

treatments and the CNF Fire & Fuels program plans to learn about the perspectives and values of their neighboring tribal agencies which will hopefully foster future collaborative projects with the Spokane Tribe. This project has sparked the discussion about developing an interagency fire & fuels monitoring workshop and looking into addressing some landscape-scale questions through interagency collaboration.

PRODUCTS, PAPERS, PUBLICATIONS

Wynecoop, M.D., P. Morgan, E. Strand, F. Sánchez Trigueros. 2018. Getting back to fire sumés: incorporating traditional knowledge into fuels reduction treatments. Fire Ecology (In Press)

Responding to Future Needs

Restoring the resilience on our federal lands is a national priority. Increasing scale and pace is irrelevant if the restoration actions do not create resilience to disturbances. Resilience exists at different scales and so too do the requirements for management actions at each scale. A variety of disturbances, ecosystems, habitats, and social environments creates opportunity to learn and adapt.

The Area 2 program will continue to coordinate with the Washington DNR in identifying restoration opportunities that span multiple ownerships and designed to promote more resilient ecosystems and communities.

Field and data analysis efforts will continue to explore the impacts of both management and natural disturbances on the ecosystem. This work will expand on implementation monitoring, further develop effectiveness monitoring; and administrative studies will look at specific the roles of ecosystem components in restoration.

Northeast Oregon Ecology Program (Area 3)

Malheur, Umatilla, and Wallowa-Whitman National Forests

Program Priorities

The Northeast Oregon Ecology Team meets annually with all natural resource staff officers and other natural resource specialists to discuss program priorities, respond to assistance requests from Forest units, and to jointly build the annual program of work. Nathan Poage, with a background in forest ecology, joined the team to provide valuable assistance as the Blue Mountains forests ramp up accelerated restoration. We continued long-term vegetation and habitat monitoring, provided field visit support to specialists, and managed ecology legacy data. In addition, we worked on the following program priorities:

- Support Collaborative Forest Landscape Restoration (CFLR) on the Malheur National Forest and other collaborative groups
- Develop tools and strategies for landscape-level restoration
- Provide assistance to Interdisciplinary Teams for Allotment Management Plan Revisions on the Malheur NF
- Support Malheur and Wallowa-Whitman NFs with Climate Change Coordination
- Assist in developing silvicultural approaches to meet restoration needs of Area NFs
- Assist with monitoring on Malheur and Wallowa-Whitman NFs

Area 3 Ecology Program Team:

Team Members:	Affiliates:
Michael Jennings, PhD	Paula Brooks, BA
Nathan Poage, PhD	Susan Geer, MS
Upekala Wijayratne, PhD	Kerry Kemp, PhD
	Joe Rausch, PhD

Accomplishments

- Established the first Global Observation Research Initiative in Alpine Environments (GLORIA) target region in the Northwest with partners from Native Plant Society of Oregon, Institute for Natural Resources, and citizen participation.

GLORIA team members, Wallowa Mountains, Wallowa-Whitman NF

- The Landscape Pattern Monitoring Portal was publically released in January 2018 (https://southern-blues-dev.appspot.com/). Tool featured in a GTAC webinar (https://usfs.adobeconnect.com/ptnv7mdkphkw/) and presentations to Malheur NF Forest Leadership Team and collaborative groups.
- Collaborated with La Grande RD (Wallowa-Whitman NF) to conduct baseline riparian vegetation monitoring in advance of restoration activities.
- Supported the Malheur NF Range NEPA team with South Silvies AMP.
- Provided extensive field-based consultation for aspen restoration on the Walla Walla RD (Umatilla NF).
- Continued with soil disturbance monitoring in range allotments with the endangered Spalding's Catchfly in Hells Canyon NRA.
- Developed a predictive habitat distribution model for Spalding's Catchfly.
- Continued to provide technical assistance, vegetation data, and geospatial analytical products to natural resources specialists, leadership teams, and collaborative groups on all three Area NFs.

- Increased the frequency of participation by Area ecologists in meetings and fieldtrips of all four collaborative groups on all three Area NFs.
- Continued to provide clients with *Walter Climate Diagrams* showing month-by-month current and expected future changes in seasonal climate for client-specified areas of interest. The ArcGIS tool developed allows any user to produce these diagrams and is available to those with Forest Service T-drive access at: T:\FS\NFS\R06\Program\ResourceInfoMgmt\GIS\Climate\Walter_Climate_Diagram_Tool_Package.
- Conducted plant association trainings on Umatilla and Malheur NFs. Expanded the Malheur NF training to include a fuel monitoring component; attendees included fuels managers and contractors.
- Assisted with development of a "one-zone" approach to coordinating whitebark pine restoration efforts across all three Area NFs.
- Continued development of – and presentation of results from – the first whitebark pine predictive habitat distribution model for the Blue Mountains. The mean monthly snowpack dataset developed in FY2017 was critical in developing this whitebark pine habitat distribution model.
- Coordinated 3-day tree-climbing certification training to build Area-wide pool of USFS-certified climbers.
- Assisted with caging and collection of cones from whitebark pine trees previously identified as having increased resistance to blister rust.
- Received ISSSP funds to revisit long-term whitebark pine plots and survey for additional potential elite trees in FY19.
- Began project with University of Washington researchers to develop LIDAR-based tools to 1) develop spatially-explicit, stand-level silvicultural prescriptions and 2) model American marten habitat at landscape scales. This project is funded through $76,000 of external funding competitively obtained from the Oregon Department of Forestry's Federal Forest Restoration Program through a grant proposal co-authored with The Nature Conservancy.
- Reviewed and provided feedback on the Potential Natural Vegetation dataset
- Member of silviculturist certification panel (Jennings)

Products, Papers, and Publications

- Daniels, J.M., M. Nielsen-Pincus, M. Paruszkiewicz, and N. Poage. 2018. The economic contribution of stewardship contracting: two case studies from the Mount Hood National Forest. Journal of Forestry 116(3):245-256.
- Jennings, M. 2018. A tool for measuring and monitoring landscape patterns. Presentation, National Forest Health Monitoring 2018 Meeting: February 14, 2018, Phoenix, Arizona.
- Jennings, M. 2018. Climate change and ecosystem composition across large landscapes. Presentation, International Association for Vegetation Science 2018 Symposium: July 27, 2014, Bozeman, Montana.
- Jennings, M. 2018. Landscape scale forest health assessment and prioritization. Presentation, Forest Health Protection 2018 Technical Meeting. November 28, 2018, Portland, Oregon.

Responding to Future Needs:

Riparian management continues to be a major challenge for all three forests. It remains our long-term vision to develop spatially explicit future desired conditions within riparian valley bottoms and describe appropriate management actions.

- Advance riparian management consensus by providing a science review to assist with project planning
- Develop a process to evaluate existing ecological conditions of riparian corridors

As climate change becomes an increasingly important focus, we will continue to develop tools and strategies to aid forests with incorporating climate change into planning and management activities

- Implementation of Climate Vulnerability Assessment
- Blue Mountains whitebark pine strategy using future prediction of habitat

Central and South Central Oregon Ecology Program (Area 4)

Deschutes, Fremont-Winema, and Ochoco National Forests
Crooked River National Grassland

Program Priorities

The Central and South Central Area Ecology Team met priorities for 2018 which included several long-term projects:

- Provide riparian and meadow ecological expertise, conduct monitoring of ecological status attributes for Rangeland Allotment Management Plan renewal NEPA process.
- Develop understory and fuel profile development models for Central Oregon ponderosa pine forests to assist restoration and fuel treatment planning through our Alternative Fuel Treatment and the Repeated Fire Return Interval Administrative Studies.
- Assistance with Ecological Site Descriptions for the Crooked River National Grassland.
- Provide support for invasive weed management and monitoring.
- ID Team Member and analyst support for the Ochoco NF Big Summit Wild Horse EIS and Management Plan.
- Provide program support to Region, Forest, and Ranger Districts.

Area 4 Ecology Program Team:

Gregg Riegel, PhD
Mike Simpson
Cristina Mckernan
Denine Schmitz
Susan Theis
Claire Addis
Elizabeth Johnson
Kristen McBride

Cooperators

Steve Gibson
Ben Goodin
Jim David
Joe Washington
Jennifer Ferriel
Christina Veverka

Accomplishments

- **Effectiveness Monitoring**
  - Re-measured and established streambank vegetation using Multiple Indicator Monitoring (MIM) protocol overlaid on riparian "scorecard" monitoring plots, Ochoco and Fremont-Winema NFs.
  - Re-measured and established new effectiveness monitoring riparian plots for the Lakeview BLM District in the Warner Mountains.
  - Measured vegetation attributes for the Ecological Site Description (ESD) Crooked River National Grassland.
  - Alternative Fuels Treatments Administrative Study data analysis and information sharing was our focus this year. This long term study began in 2001 and covers the Deschutes, Fremont-Winema and Modoc NF's. Treatments include prescribed fire, prescribed mowing, thinning followed by prescribed fire, and untreated control.
  - Assisted with whitebark pine permanent plot transect re-measurements on the Deschutes NF.

Photo: To help determine ecological status and function, rooting depths are measured in the Carex nebrascensis-Aquoll-Floodplain Ecological Type. Denine Schmitz (l), Ecologist (Detail) and Desi Zamudio (r) (retired USFS Soil Scientist (FRE-WIN) on plot F0277, 12 Mile Creek headwaters, South Warner Mountains, FRE-WIN NF. Photo by Gregg Riegel, 10/10/18.

- **Planning** *Continued from previous page*

  - Continued work on Region-wide Potential Natural Vegetation (PNV) mapping. Extended mapping into California to support R5/R6 Bio-Regional Assessment scheduled for 2018.
  - Landscape Assessments for Twin Project on the Deschutes NF, and Blue Mile Project on the Fremont- Winema NF.

- **Technology Transfer**

  - Provided mentorship through promotional details for Cristina Mckernan (Okanogan-Wenatche NF) and Denine Schmitz (Vale District BLM).
  - In collaboration with Becky Kerns (PNW, Corvallis) we held "*Ventenata dubia* Listening and Learning Sessions" lead by Joe Washington in Lakeview, Fremont-Winema NF, and Sarah Callahan in Prineville, Ochoco NF. Over 50 people from USFS and BLM from OR and CA, ARS Burns, USFWS, Crook County, ODA, OSU Dept. of Forest Ecosystems and Society, OSU Extension, UC Extension, ranchers, and land management consultants participated in these information sharing sessions.
  - President of the Northwest Scientific Association. Coping with Change through Innovation: *New Approaches, Tools & Collaborations.* Welcome Address. 89th Annual Meeting, Olympia, WA.
  - National Cadre Instructor: Implementing Indicators of Rangeland Health. Reno, NV and Cheyenne, WY.
  - Regional Cadre Instructor: Rx 310 Fire Effects Flora Module, PNW Training Center.
  - Course Instructor: FOR 209 Fire Ecology and Effects, 3 units, spring term, Central Oregon Community College.
  - Courtesy Faculty Member, OSU: 1) Kayla Johnston MS Defense: *The Past, Present, and Future of Fire and Ponderosa Pine Stand Dynamics in the Metolius Research Natural Area, Central Oregon,* and 2) RNG 441 Rangeland Analysis, lecture.

Products, Papers, and Publications

Case, M.J., B.K. Kerns, J.B. Kim, M. Day, A. Eglitis, M. L. Simpson, J. Beck, K. Griener, G. Riegel Halofsky, J.E. and D.L. Peterson. In Press. In Climate Change Vulnerability in Central and South Central Oregon. Gen. Tech. Rep. PNW-GTR-XXX.

DeMeo, T., R. D. Haugo., C. Ringo, J. Kertis, S. Acker, M. Simpson, and M. Stern. 2018. Expanding Our Understanding of Forest Structural Restoration Needs in the Pacific Northwest, USA. Northwest Science. 92(1): 18-35.

Riegel, G. C. Addis, and E. Johnson. 2018. Riparian Ecological Status Monitoring Reports for the Fremont-Winema and Ochoco NF's.

Riegel, G.M., R.F. Miller, C.N. Skinner, S.E. Smith. C.A. Farris, and K.E. Merriam. *Northeastern Plateau Bioregion*. 2018. In: *Fire in California Ecosystems*, 2nd Edition. van Wagtendonk, J., N.G. Sugihara, S.L. Stephens, A.E. Thode, K.E. Shaffer, and J. Fites-Kaufman (Editors). University of California Press, Berkeley, CA. Pgs. 211-250.

Pellant, M, D.A. Pyke, J. E. Herrick, P.L. Shaver, Lepak, N., G. Riegel, E. Kachergis, B.A. Newingham, D. Toledo, and F.N. Busby. *Interpreting Indicators of Rangeland Health-Version 5*. USDI Bureau of Land Management, Denver, CO. TR 1734-6. *In Press*.

PRESENTATIONS

M. Pellant, P. Shaver, D. Pyke, J. Herrick, F. Busby, G. Riegel, N. Lepak, D. Toledo, B Newingham, E. and Kachergis. 2018. Introducing Version 5 of Interpreting Indicators of Rangeland Health. Soc. For Range Manage, 71th Annual Meeting, Jan. 28-Feb. 2, Sparks, NV.

Simpson, M. Landscape Departure Assessments to Support Insect and Disease Analyses in the Pacific Northwest. Presentation Western Forest Insect and Disease Work Conference Denver CO 3/27/2018.

Simpson, M. Update on Potential Vegetation Mapping in OR, WA and CA. and Departure Assessments to Support Planning. Presentations at R6 Regional Ecology Meeting Florence, OR 10/18/2018.

Simpson, M. Landscape Departure Assessments to Support Insect and Disease Analyses. Presentation at the Region 6 Forest Heath Protection Technical Meeting Portland, OR 11/29/2018

Responding to Future Needs:

Effectiveness monitoring of livestock grazing on rangeland and riparian vegetation. Discerning grazing effects from hydraulic flux in a changing climate is key to understanding management impacts.

Long-term fire effects monitoring and administrative studies examining the effects of various fuels treatments and historic return intervals.

Assistance with developing management strategies to address invasive annual grass concerns.

Analyst support for the Big Summit Wild Horse EIS and Management Plan, Ochoco NF.

Southwest Oregon Ecology Program (Area 5)

Rogue River-Siskiyou and Umpqua National Forest

Program Priorities

The Southwest Oregon Ecology Program works with the forest Natural Resources Staff Officers and Forest Supervisors to develop a program of work and determine priorities. We worked closely with both Forest Leadership Teams so that we were aligned for forest priorities. Throughout the year we worked closely with forest program managers and specialists as well as our local collaboratives to strengthen our support for forest planning and restoration. In addition, we also responded to requests for help from program managers, planners, and ID teams as needed. We also felt it was a priority to reach out to Forest District staff and we have visited several districts to reintroduce the Ecology Program. Both forests went through some leadership transitions, with a new Forest Supervisor on the Rogue River-Siskiyou and a new Natural Resources Staff Officer on the Umpqua.

Program priorities for 2018 included:

- Continuing our support of large scale forest restoration projects on both forests
- Coordinating with the Southwest Oregon Climate Adaptation Partnership (SWOAP) team to organize and run a two-day workshop and to complete a draft of the climate adaptation assessment.
- Support both forests by convening a two-day workshop on post-fire restoration.
- Work closely with Forest Leadership Teams to support ecological concerns
- Support the Region to complete the new R6 Potential Natural Vegetation (PNV) map
- Maintain strong working relationships with the local collaboratives, interested stakeholders, and other agency staff to further shared understanding and goals.

Area 5 Ecology Program Team:

Bill Kuhn
Patricia Hochhalter
Vacant (vice Amy Nathanson)

Accomplishments

- We continued our close involvement as members of the team working on developing a new Region 6 Potential Natural Vegetation (PNV) map. Pat and Amy attended many working meetings to review and discuss methods and draft map products, and improved data quality. They also solicited review from specialists across all forest districts to improve map accuracy.

- We continued to support the development of the Calf-Copeland restoration project on the Umpqua National Forest. Amy collected and managed project data. Amy continued to foster a working relationship with the Umpqua Forestry Coalition (UFC), a local collaborative which represents a broad range of views from environmentalists, timber industry advocates, and members of the public. She attended UFC meetings, provided project information, and planned group field trips.

- Pat and Bill assisted with vegetation departure analysis, wildfire departure analysis, and DecAID analysis for the Stella landscape restoration project on the Rogue River Siskiyou National Forest.

- We assisted on an effort to update LSR assessments in portions of the southern Cascades across both forests.

- We continued our involvement in the implementation and monitoring of the Ashland Forest Resiliency (AFR) project within the Rogue River-Siskiyou National Forest.

- We continued to act as climate change coordinators for both forests. This included planning for and running a two-day climate change adaptation workshop for both forests in the spring for the

SWOAP team. We also assisted in writing some sections and reviewing others of the draft Southwest Oregon Climate Change Adaptation final report.

- At the request of the Rogue River-Siskiyou leadership, we convened a two-day workshop on post-fire restoration strategies and helped to write a draft post-fire management framework and assessment for the 2017 Chetco Bar Fire. This draft framework and assessment was designed to be applied to any post-fire management.
- We continued to promote the Rogue Basin Cohesive Forest Restoration Strategy across the Rogue River-Siskiyou National Forest.
- We all assisted in securing funding to collect plot vegetation data and to plan for this field data collection to complement the LiDAR data for the Umpqua National Forest.
- Conducted downed wood and snag analyses (DecAID) for both forests to assist with forest planning and restoration goals
- We have been assisting with the Bioregional Assessment as needed to support that effort.
- We assisted in the development of a proposal to the Oregon Watershed Enhancement Board to support forest-wide restoration implementation, monitoring, and public outreach for the Rogue River-Siskiyou and surrounding lands.
- We continued cataloging the historic Fred Hall photos.
- In response to requests, we have begun a process to improve the modeled existing vegetation map for planning areas within southwest Oregon so that wildlife habitat and restoration needs can be more accurately reflected.

Products, Papers, and Publications

Presentations:

Post-fire restoration workshop. "Post-Fire Restoration and Reforestation: Ecology." Grants Pass. May, 2018. (B. Kuhn)

Chetco Bar Fire Restoration Meeting. "Chetco Bar Fire Restoration Framework and Assessment." Gold Beach. October, 2018. (B. Kuhn)

1 Huckleberry Special Interest Area, Rogue-Umpqua Divide, post-fire assessment.

Responding to Future Needs:

The Southwest Oregon Ecology group will continue to engage with forest leadership, program managers, ID teams, and specialists to support forest priorities. We are assisting both forests to determine how to manage forests in the present and future in the face of changing climate and fire regimes to make the forests and vegetation as resilient as possible. We will be ready to analyze historic range of variability, vegetation departure and wildfire departure, and down and standing dead wood. In addition, we will work with local collaboratives and forest staff to address restoration needs and the strategies and tools necessary to adequately plan for actions.

Northwest Oregon Ecology Program (Area 6)

Mt. Hood, Willamette and Siuslaw National Forests and Columbia River Gorge National Scenic Area

Program Priorities

The Northwest Oregon Ecology Program meets yearly with its working group (natural resource specialists from Forests, the Scenic Area, and Northwest Oregon BLM) to discuss ecological issues and develop potential program of work ideas. Ideas are vetted, proposal are written and work is prioritized with the steering committee of Forest Natural Resource staff, Regional Ecologist, and BLM representatives.

Program priorities for 2018 included:

- Continuing long-term, landscape projects:
  - Special habitat mapping and classification
  - Historical range of variability
  - Deadwood analysis
  - Continuing to facilitate climate change information exchange
  - Post-fire vegetation and CWD trajectories
  - Tools for riparian vegetation management
- Providing technology transfer
- Assisting Forests with high priority issues:
  - Dunes restoration
  - Collaborative Rigdon Landscape analysis
  - Meadow management
- Assisting with the completion of the R6 Potential Natural Vegetation (PNV) map as well as Bioregional Assessment Area including portions of R5
- Collaborating with NRCS, Regional soils program

Area 6 Ecology Program Team:

Steve Acker

Doug Glavich

Jane Kertis

Accomplishments

- Special habitat mapping/classification: mapped ~1000 polygons and over 1000 acres in the West Rigdon planning area Willamette using LIDAR; began developing automation mapping options. Coast Range Special Habitats plant community guide draft completed.
- Historical range of variability: Completed analysis for west Cascades (westside Mt. Hood and most of Willamette) using state and transition modeling. Graphic results available for structural, seral stage ranges for multiple potential vegetation types across landscape area. Investigating using individual landform groups and complementary patch analysis. Initial results prepared and ready for review.
- Deadwood analysis: Completed and distributed final version of Siuslaw deadwood white paper. Met with NW Oregon BLM and Mt. Hood to review white paper goals and identify initial projects. Completed 2017 fire effects and snag recruitment reports in two watersheds on Mt. Hood and seven watersheds on Willamette. Contributed to new version of DecAID website, and provided consultation to users in Region 6.

Oregon Coast Plant Association Training

- Climate Change information exchange: Climate change coordinator for Siuslaw National Forest. Management core team co-lead and vegetation/disturbance group members for Columbia River Gorge, Mt. Hood, Willamette and Coast Range vulnerability assessments.
- Post-fire vegetation and CWD trajectories: Co-Principal Investigators of funded Joint Fire Science study ("Post-fire landscape management and fire severity influences in Western Oregon forests"; J.B. Kauffman of Oregon State University PI). Completed vegetation and fuels monitoring sampling in Mt. Washington Wilderness
- Tools for riparian vegetation management: Completed stream reach classification for West Cascades and Coast Range. Completed first version of vegetation reference conditions for West Cascades and current conditions for North Clackamas (Mt. Hood) planning area. Met with McKenzie River RD (Willamette) to deliver information for Flat Country planning. Completed second draft of manuscript for submission to scientific journal.
- Technology transfer:
  - Two Plant Association Trainings–one each in Coast Range and Cascades; classroom and field exercises focused on how to use plant associations to read and manage the landscape.
  - Bioregional Assessment–provided feedback on potential themes, data and analysis methods; collaborated with R5 planners to provide potential data sources and metrics.
  - Conducted a field workshop *Mixed Severity Fire Footprint in the West Cascades* that discussed spatial and temporal findings from the 1991 Warner fire.
- Forest high priority issues:
  - Dunes restoration–co-facilitator of the Oregon Dunes Restoration Collaborative; Interdisciplinary team member for large scale restoration planning project.
  - Rigdon Landscape Analysis-Co-landscape assessment facilitator–worked internally and with Collaborative on assessment. Beginning application to Young's Rock Rigdon planning area.
- Meadow Butterfly Habitat: sampling method development and first year data collection completed to assess butterfly oviposition site selection for Oregon Silverspot Butterfly on the Siuslaw NF.
- Regional Potential natural vegetation mapping—Finalized R6 vegetation zone layer. Began developing protocol for subzone layer. Collaborated with R5 Ecologists to finalize vegzone version and develop subzone layer for the upcoming Bioregional Assessment
- Collaborated with Natural Resource Conservation Service (NRCS) to analyze the Major Land Resource Area (MLRA) to propose updated Land Resource Units (LRU). Worked with Willamette Soil Scientists and NRCS staff, to help hone plant association skills in their soil mapping efforts.

Products, Papers, and Publications

Presentations:

Northwest Scientific Association 2018 Annual Meeting: "Classification of Riparian Ecosystems in Northwest Oregon for Restoration Planning."

Fire ecology and fire effects presentations for Central Cascade Adaptive Management Partnership (and webinar), Clackamas Stewardship Partners, McKenzie River Watershed Council, Portland State Univ. ecology class, and Interagency Frontliners conference

Publications

Spies, T, P. Hessburg, C. Skinner, K. Puettmann, M. Reilly, R.J. Davis, J. Kertis, J. Long. 2018. Old growth, disturbance, forest succession and management in the area of the Northwest Forest Plan. In: Synthesis of Science to Inform Land Management within the Northwest Forest Plan Area: PNW-GTR-966.

DeMeo, T., R. Haugo, C. Ringo, J. Kertis, S. Acker, M. Simpson, and M. Stern. 2018. Expanding our understanding of forest structural restoration needs in the Pacific Northwest. Northwest Science 92:18-35.

Responding to Future Needs:

The NW Oregon Ecology group will continue to engage with our working group and steering committee to ensure we deliver timely and relevant products. We will continue to make progress on long term landscape projects. We will assist in Regional products and tools. We will promote applied ecological principles while consulting, partnering and serving our Area and Region.