

Northern Rockies Fire Science Network (NRFSN) Annual Report for Fiscal Year (FY) 2015

Participation by Organization, FY2015: In FY15, the NRFSN saw 11% growth in membership from FY14, bringing current membership to 487 (not counting 25 JFSP Fire Science Exchange Consortia members). The most notable increases in membership were from students (41% growth), NGOs (40%), researchers (38%) (USFS, USGS, University, College), and the BLM (33%). Additional growth came from the USFS, EPA, NRCS, foreign, city and local community, private association, consultant, and Nature Conservancy. Federal, tribal, and state managers comprise 56% of NRFSN members, reflecting the high public and tribal land ownership in the Northern Rockies, including 181 USFS managers, 24 NPS managers, 22 MT/ID state managers, 20 BLM managers, 8 FWS managers, and 4 BIA managers. In addition to the 4 BIA managers, our members include 14 members of tribal nations.

Participation by Activity, FY 2015: In FY15, the NRFSN continued to gain visibility through in-person talks, briefings, presentations, and consultations. We also substantially increased our production of original written products including field trip summaries and science reviews, engagement through Twitter, and the online availability and accessibility of relevant resources.

Talks and Briefings. In FY15, we organized and staffed the Fire Science Exchange Network exhibit at the IAWF Human Dimensions Conference (Boise, April 2015) and conducted in-person NRFSN briefings to solicit new, and strengthen existing, relationships with NRFSN members. Briefings were held with the interagency Greater Yellowstone Coordinating Committee's Fire Subcommittee, USFS R1 Regional FMOs, USFS R4 Regional Fuels Specialists, interagency NWCG Fire Behavior Subcommittee, Idaho Forest Restoration Partnership (serving >15 collaborative groups throughout Idaho), Idaho/Montana Airshed Group, Missoula Fire Sciences Lab, and the USFS Human Performance Research, Development, and Application Program. These events were useful for increasing NRFSN awareness and membership and developing potential collaboration opportunities, and they also helped identify pressing management issues. We gained 40 of our 50 new members in FY15 through these events.

Poster Presentations. We continue to use the NRFSN poster display to reach new audiences in the Northern Rockies. For example, in FY15, we displayed the NRFSN poster at the national Wildfire Risk and Fuel Treatment Workshop (Missoula, Jan 2015; 61 fuels managers and scientists) and at the Crown of the Continent Roundtable poster session (Missoula, Sept 2015) (serving an interdisciplinary group of managers and agency line officers).

Newsletters. We produced five bimonthly newsletters, supplemented by NRFSN event announcements, which were sent to all our members via email and posted on our web site. NRFSN newsletters are resource-focused with short articles about new scientific resources and categorized lists of new and relevant publications, upcoming events, etc.

Fact Sheets and Handouts. New this year, we produced seven field trip summaries highlighting key discussion points from past workshops and field trips either hosted or co-hosted by the NRFSN. In addition to documenting workshop and field trip highlights and lessons learned, the summaries provide links to relevant publications, videos, and other resources. These briefs summarize key information for those not able to attend workshops and field trips in person.

Videos. Since 2014, we have invested considerable effort into video documentation of field trips either hosted or co-hosted by the NRFSN. In FY15, we added 2 videos on the Bitterroot Fires of 2000 (addressing burned area rehabilitation). We also drafted, but have not yet released, an additional three videos on old-growth larch restoration, the Jocko Lakes fire spanning Forest Service and tribal lands, and the challenges and benefits of collaborative restoration. These will be released in FY16. Additionally, through the wilderness fire video project initiated in FY14, we filmed an additional eight interviews (including two line officers) and are now identifying key themes that will be featured in the videos.

Social Media. The NRFSN began using Twitter in March 2014. In FY15, we increased our number of Tweets by 417 and number of followers by 323. While we realize that this is just one method of sharing fire science and advertising fire science events, we see our increase in content and followers through social media as useful for event advertising, science delivery, and increasing awareness of the NRFSN. We intentionally decided not to use Facebook because of the cost / benefit tradeoff of exposure versus time investment to maintain the site as well as other priorities we have for our Coordinator's time. We will reassess this decision periodically.

Webinars. Because there are so many other webinar series, the NRFSN does not host a regular webinar series. Rather, we host webinars on key topics as requested by scientists and archive relevant webinars (see below). In FY15, we hosted webinars on the following cutting edge issues: reburns, resilience of dry mixed conifer forests, a new age of wildland fuel science, and post-fire regeneration.

Searchable Webinar Archive Database. In response to feedback that the plethora of recorded webinars now available are dispersed and difficult to find, in June 2015, we added a searchable Webinar & Video database to our website. The 134 webinar and video recordings are searchable by fire topic, ecosystem, and date. Since its release, the archive received 218 page views according to Google Analytics.

Searchable Publication Database. We expanded the NRFSN Research & Publications database, which now provides access to more than 1,900 searchable and filterable documents. In FY15, we added 214 new documents to the database, and the database received 657 page views.

Experimental Forests and Demonstration Sites. New this year, the NRFSN's website includes an interactive map of the region's nine Experimental Forests and Demonstration Sites. The map provides context about each site's location, information about dominant ecosystems, links to past research resources, and proposed future research.

Syntheses. In FY15, the NRFSN produced its second science review, *Effects of Climate Change on Fire and Other Disturbances in the Northern Rockies*, authored by Rachel Loehman. This review is in final hard copy production and will be publicized in early FY16. We drafted another science review this year: *Managing Forests to Protect Municipal Watersheds from the Negative Impacts of Post-Fire Debris Flows*, authored by David McWethy, Charlie Luce, and James Benes. This will be finalized and released in FY16.

Based on JFSP Program Office advice to take a thematic approach to dissemination, we experimented with a new synthesis method this year. We developed our first two online topic-focused webpage reviews: *Fire and Bark Beetles* and *Climate Change, Disturbances, and Management*. The online topic-focused webpage reviews summarize and provide a framework for thinking about research on critical management topics and provide links to supporting resources (syntheses, webinars, journal articles, fact sheets). They are peer reviewed by scientists prior to release. We are currently experimenting with a format for moving the webpage reviews into hard copy products for expanded distribution.

Field Tours. In FY15, we hosted fewer field trips than anticipated. We have learned that our windows for field trips in the spring and fall are short, situated between formidable winter travel conditions (November - April) and fire season / field data collection season (July – August) which preclude manager and scientist involvement. In addition, it is extremely valuable to interact with members at conferences and pre-season meetings (see talks/briefings section). We took the lead on organizing two field trips in FY14 and partnered on another four. In FY15 we organized one multi-day field trip and began preparations for three field trips to occur in FY16.

In FY15, we spent a considerable amount of time and effort organizing a two-day Fire History and Fire Ecology Field Tour in Yellowstone National Park. Participating scientists included Cathy Whitlock, Monica Turner, Dave McWethy, and Brian Harvey. Late in the year, the dates of this event were shifted to FY16

(Oct 1 & 2) because of the Forest Service's FY15 travel freeze; we are recording this as an FY15 event, and we will have other endeavors on which to report next year. We had planned on hosting a multi-day tribally-focused cultural resilience and climate roadshow, but that has been postponed until FY16 based on the lead scientist's request. That roadshow is actively being planned for spring 2016 for the Crow and Wind River areas, and will likely serve more as conversations and consultations than field tours. In addition, we postponed a fuel treatment effectiveness field trip at Lubrecht Experimental Forest from October 2015 to October 2016 as we prioritized organization of the fall 2015 Yellowstone Field Trip. This turned out to be a good choice, given the long fire season in the Northern Rockies and the early federal travel cap this year.

Requests for Information. The NRFSN is increasingly being contacted by scientists who are interested in collaborating to solicit manager input to research and/or disseminate research results. In FY15, we responded to such requests from two individual scientists and the leader of the Fire Effects Information System. In addition, we met twice with the USFS National Fire Ecologist as we filled a request to host information on a national risk assessment workshop.

Field Consultations and Expert Cadres. Field consultations are initiated by NRFSN, either in person or by phone, to solicit feedback on NRFSN emphases and activities. During winter 2015, we consulted with a risk assessment cadre of 8 individuals (scientists and USFS WO managers) to learn how we might assist their information dissemination efforts. Additionally, we consulted with the Network of Fire Science Champions twice to see which topics are on the minds of these savvy managers. This year, we also consulted individually with a forest-level timber/fire staff officer on wilderness fire management issues, the Great Northern Landscape Conservation Cooperative coordinator on management issues around climate change in the National Park Service and to obtain feedback on the Yellowstone field tour, and with the coordinator of the Southwest Crown Collaborative Forest Landscape Restoration Project on the potential to co-host events.

The Network of Fire Science Champions meetings kicked off with scientists sharing the latest on repeat fires in dry mixed-conifer forests and the latest in wildland fuel science. Following the meetings, corresponding event webpages were populated with call notes and links to all discussed resources. In FY15, Network of Fire Science Champions pages on our website received 388 page views.

Leadership Briefings. Leadership briefings have the dual goals of informing decision makers of the NRFSN as a resource and obtaining feedback on issues of importance to managers working at this level. In FY15, the NRFSN met with the Greater Yellowstone Coordinating Committee's 12 leaders of public land management in the Greater Yellowstone Area, including NPS Park Superintendents, USFS Forest Supervisors, FWS Refuge Managers, BLM District Managers, and in some cases their designees. Additionally, we individually briefed the Montana Department of Natural Resource Conservation's Northwestern Land Office's Area Manager, Glacier National Park Superintendent, and two USFS District Rangers.

Highlights and Achievements, FY2015

An Established Resource in the Northern Rockies

As a Round 2 Fire Science Exchange, our third year showed the NRFSN as an established player in the Northern Rockies. Awareness of the NRFSN has grown among both managers and scientists, and scientists are increasingly contacting us for assistance in gathering manager input, disseminating research results, and developing workshops and field tours.

For example, the NRFSN had the infrastructure and capacity to develop and host a webpage housing content from the national Wildfire Risk Assessment Framework for Land and Resource Management

Workshop (Missoula, January 2015), which was organized by the USDA FS Washington Office Fire and Aviation Management (WO-FAM) Fuels and Fire Ecology group, the Rocky Mountain Research Station, and several other partners. Although we were not involved in the creation or development of the workshop, organizers saw the NRFSN as a resource for making workshop materials available to attendees and other interested parties with a short turnaround time. This is just one of our past event webpages, which serve as a dynamic and useful resource for attendees and non-attendees searching for information on topics covered during events.

Governance

We are excited to share that USFS Northern Regional Fuels Specialist Stu Hoyt joined our work planning team this year. In addition to bringing new energy to the team, Stu has been able to provide invaluable feedback into the relevance of activities and issues under consideration.

FY15 Priorities

Each year, NRFSN has tackled new and important priorities. Whereas last year's "awareness" and "understanding" activities largely focused on the launch of a new website and online publication database, our first science review, and the release of our first videos, this year's "understanding" activities including maintenance and expansion of those but we also focused on developing several types of syntheses. These include work with partners to write our 2nd and 3rd science reviews, two topic-focused online reviews, and seven field trip summaries. We now have a variety of written products to distribute at in-person events.

We have found that in-person events are the most productive for building relationships and fostering collaborative dialogue. Most of our membership gains resulted from in-person talks, briefings, and consultations. Notably, we increased the number of agency leaders briefed this year, to include 15 NPS Park Superintendents, USFS Forest Supervisors and District Rangers, FWS Refuge Managers, BLM District Managers, and State Area Managers.

Geographically, we worked to expand the area served by the NRFSN. In FY15, we emphasized interactions within the Greater Yellowstone Area. This culminated with a field trip revisiting the Yellowstone Fires of 1988. With 33 participants from a range of organizations and disciplines, we successfully facilitated engaging discussions. These were captured in the following sample of comments from our post-trip evaluations:

"The best part was the opportunity to meet and have meaningful discussions with such a diverse and engaged group of scientists and managers."

"Diversity of participants and speakers. Ability to speak-up, we weren't preached to - it was more of a conversation."

"Discussion based! Focused on dialogue not lecturing."

"Great to see the different effects of the fires in the Park. And the fact the discussions were allowed to go wherever they went."

"Awesome trip. Thanks so much for the coordination. I would do this again!"

We also expanded our presence in Idaho and the USFS Intermountain Region, by presenting at the Idaho Forest Restoration Partnership's annual workshop in Boise and making a second presentation at the Region 4 Annual Fuels meeting in Logan, UT (the first was in FY13).

Art and Science

Capitalizing on art to disseminate science, the NRFSN partnered for a second year with the Rocky Mountain Research Station, Flathead National Forest, University of Montana, and Plum Creek Timber

Company to bring a fire science dance to the Flathead Valley, Montana. This dance used art as a medium to teach approximately 1,000 students and teachers in Grades K-6 about the fire triangle, heat transfer, and the fire ecology and regeneration of whitebark, lodgepole, and ponderosa pines. The NRFSN is now actively partnering with the National Park Service to bring this amazing opportunity to Boise in March 2016.

Transition to FY16

In summary, the NRFSN is a go-to resource in the region, offering a variety of opportunities for building awareness, understanding, and application of science to critical fire and fuels management issues. We have developed and tuned our online and social media presence; expanded accessibility to existing resources searchable by topic, ecosystem, and event type; produced regionally focused syntheses; built and strengthened relationships with key cooperator and regional supporters; and hosted successful workshops and field tours. In FY16, we will continue to expand the areas served by the NRFSN, host additional workshops, field tours and focus groups, and continue to respond to field requests for exchange activities focused on emerging management topics.