



Great Basin Fire Science Exchange – FY 2020 Annual Report

Reporting Period: October 1, 2019 to September 30, 2020

Participation

In FY 2020, the number of Great Basin Fire Science Exchange (GBFSE) mailing list subscribers grew from 842 to 877, an annual increase of about 4%, which is smaller than our increase in FY 2019. This more modest increase is likely because in-person events, where we get most subscriber signups, were curtailed by the COVID pandemic. Exchange participation remains largely federal agency personnel (43%) (Fig. 1), which reflects the vast amount of federally administered lands across our region. The Bureau of Land Management (BLM) makes up 18% of this group followed by US Forest Service (USFS) managers at 14%. University and federal agency researchers make up 21% of subscribers, with university faculty and staff making up the largest part of researcher participation (16%). The makeup and proportion of our participation has remained stable for many years.

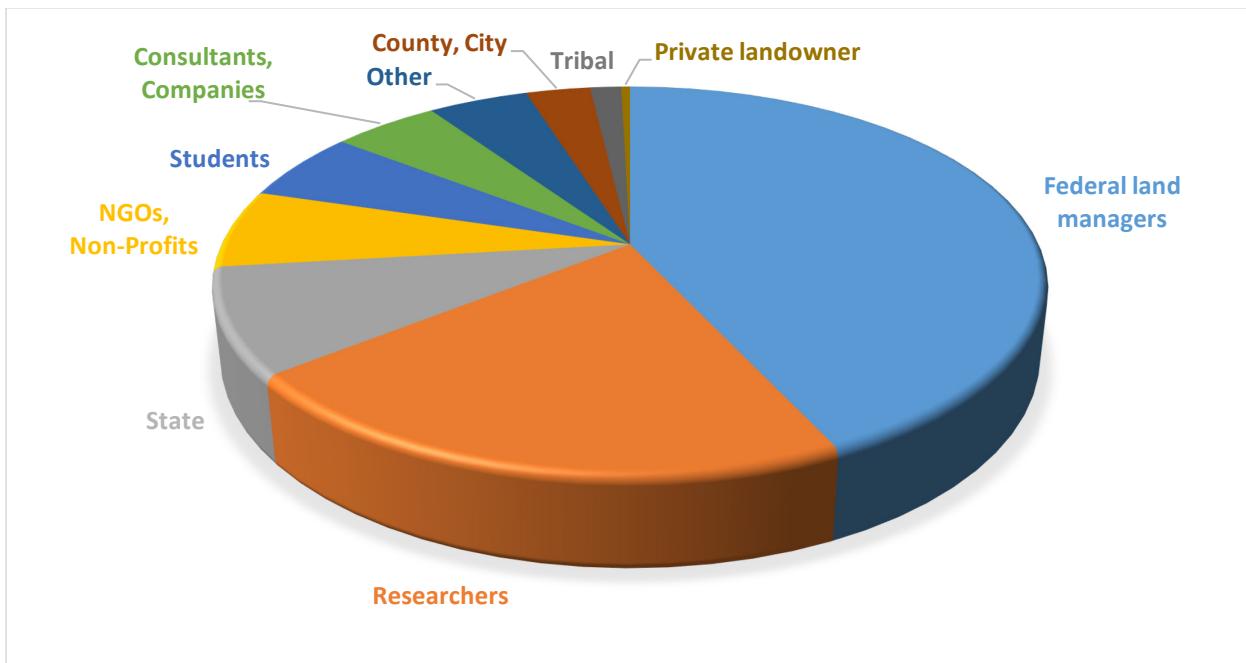


Figure 1. Great Basin Fire Science Exchange listserv subscribers by organization/association as of September 30, 2020.

Accomplishments

The GBFSE continued to serve Great Basin fire science communities by hosting and attending in-person events(until March 2020), supporting fire and fuels management coursework, growing our website content, contributing to the development of several written products, hosting a small webinar series, and alerting our users to new resources, upcoming events, and opportunities via our newsletters and social media platforms. As described below, all of these accomplishments are the result of engagement with our Great Basin partners.

Training, Coursework, and Conference Highlights. The GBFSE, through its Fire Online partnership with the University of Idaho (UI), continued to increase the quality and quantity of Great Basin fire, ecology, restoration, policy, and technology topics presented in online coursework. UI offers 14 online courses featuring Great Basin content. These were taken by 361 students in FY 2020 (up from 219 in FY 2019). The online Master of Natural Resources (MNR) program has 138 students (up from 108 in FY 2019). Many MNR students are place-bound professionals who face limits on travel budgets and are challenged to effectively accomplish science-based management to address pressing needs for management and conservation. Enrollment in the online MNR program for spring 2020 is up by nearly 22% from the previous semester. In addition, three graduate students completed MS or PhD degrees informed by content from the Fire Online program, and all are now agency-employed in related fields.

Due to the COVID pandemic, for the first time in 5 years, we had to cancel the annual Restoration of Sagebrush Ecosystems week-long course that we co-host with the Bureau of Land Management National Training Center. Before doing so we helped the team of instructors make content and format improvements based on survey responses from the previous year's students that will serve to improve the next trainings.

The Great Basin Consortium Conference scheduled for mid-March 2020 was also cancelled. The decision came just days before the conference start date, representing another event to which we devoted considerable planning effort but was usurped by the pandemic. While there were attempts to transition the conference to a virtual format and keep the original schedule, this was not possible in the short time frame, and the planning committee has agreed to instead reschedule for FY 2022.

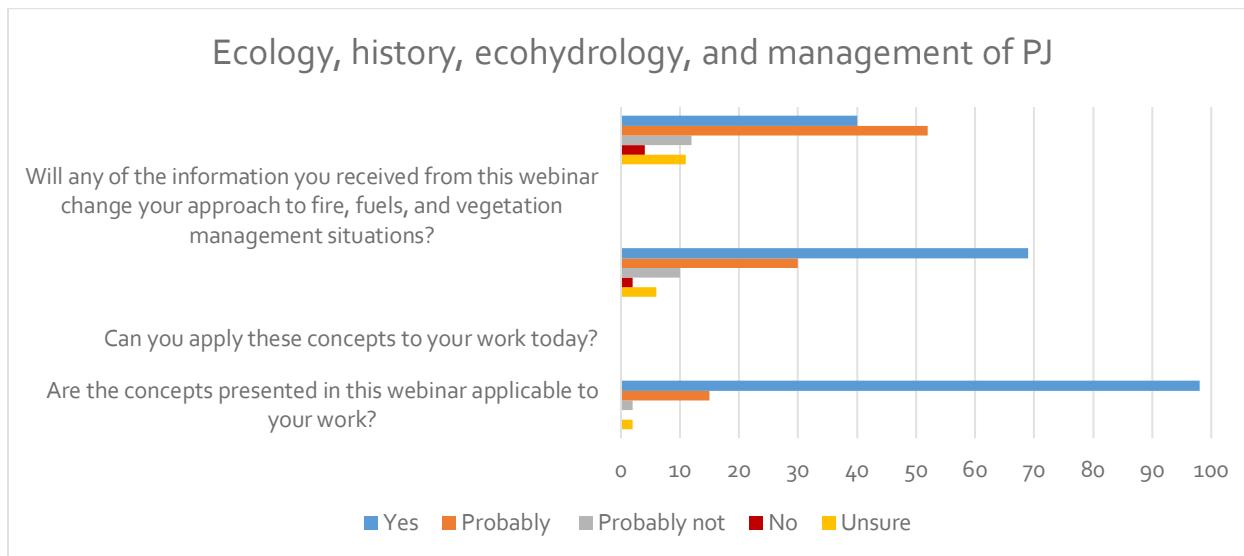
We were able to participate in many meetings and conferences prior to the shutdown of in-person events in March 2020. For the first time, we attended Oregon's Sagebrush Conservation (SageCon) bi-annual meeting that occurred in Burns, Oregon, which allowed us to reach a section of the Great Basin that we have underserved for the last few years. We also provided an exhibit and co-sponsored a special session with the BLM and U.S. Department of Agriculture (USDA)-Agricultural Research Service at the 2020 Society for

Range Management Conference in Denver, Colorado. The Targeted Grazing special session was one of the best attended special sessions.

Webinar Highlights. The GBFSE hosted two well-attended webinars in FY 2020 (Table 1). The webinars followed the release of our pinyon-juniper synthesis and worked to: 1) familiarize our audience with the organization and content within the very thorough and extensive synthesis, and 2) highlight new science and tools for considering sagebrush- and woodland-obligate songbirds, like pinyon jay, in conifer management. Live attendees who completed the online survey following the webinars reported that the featured concepts were largely applicable to their work (Fig. 2). These webinars addressed a need expressed by our agency and institutional partners for the latest science on pinyon and juniper management (see Customer Responsiveness section below).

Table 1. Webinars offered by the GBFSE in FY 2020, attendance and video views from our YouTube channel.

Webinar Topic	Live Attendance	Recorded Views
The ecology, history, ecohydrology, and management of pinyon and juniper woodlands in the Great Basin	224	315
New tools for pinyon-juniper management: Balancing needs of sagebrush and woodland obligate birds	135	189



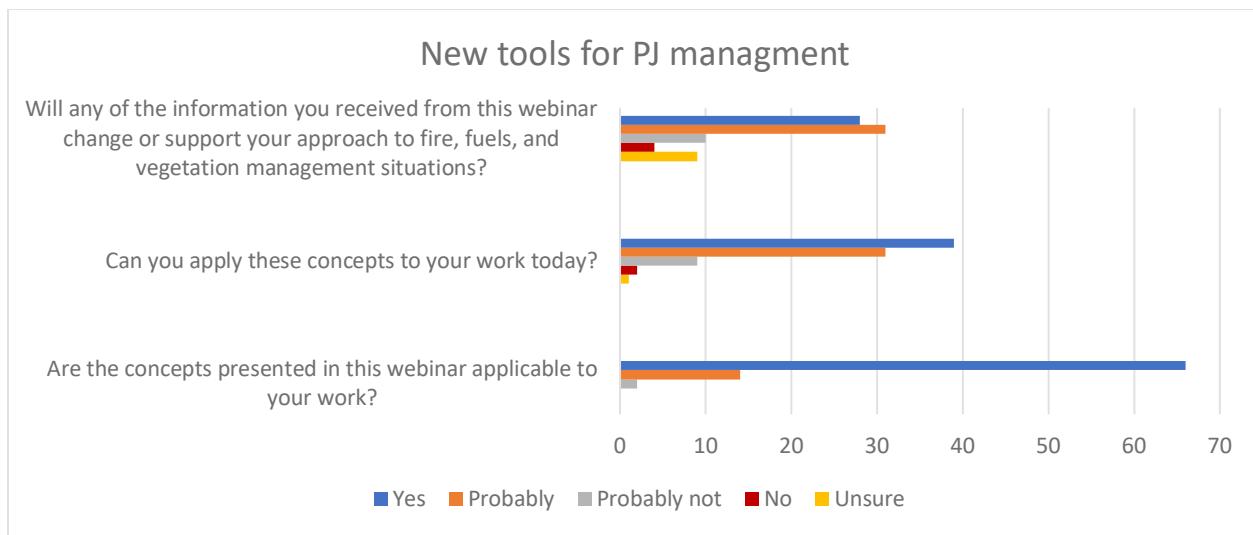


Figure 2. Number of live webinar attendees who filled out the survey about the applicability of the pinyon-juniper webinars to their work and future management decisions.

Website Improvements and Updates. This year we overhauled our website structure to improve ADA accessibility (Americans with Disabilities Act, Section 508) of navigation and content and to keep up with current standards. We continue to systematically update our existing pdf documents to be accessible. The total number of website users and sessions has increased steadily over time and since FY 2019 (Table 2). However, some of this increase was likely influenced by the pandemic and more of our users restricted to online learning.

Table 2. A selection of web metrics that compare total and average visitation by the GBFSE user between FY2015 and FY2020.

Web Metric - showing increased usage	FY 2015*	FY 2019	FY 2020
Total number of sessions	4,840	6,148	7,707
Total number of users	3,679	4,938	5,730

*The 2015 date was chosen because of a long undetected technical web monitoring glitch from 2016-17.

Under the guidance of retired Oregon State University Rangeland Ecologist, Rick Miller, we developed, and are close to launching, a website for Great Basin Pinyon and Juniper Ecology, History, and Restoration (greatbasinpinyonjuniper.org). While the site contains a lot of background information on PJ woodlands and highlights existing management tools, the vision for the site is to provide quick access to new tools, literature, and photos, which will feature comments from Miller that highlight ways the new information fits or challenges current understanding.

Communications, Information Access, Publications. *The ecology, history, ecohydrology, and management of pinyon and juniper woodlands in the Great Basin and Northern Colorado Plateau of the western United States* synthesis by Rick Miller and others was published and printed in FY 2020, in partnership with the USFS Rocky Mountain Research Station. It is an in-

depth treatment of Great Basin *Pinus* and *Juniperus* species providing background into the past and present distribution of these woodlands and an understanding of when, how, and where their management is recommended. Following the release of this synthesis, the GBFSE produced [four summary factsheets](#) that further condensed the major synthesis sections: *Geology, Topography, and Soils of Pinyon and Juniper in the Great Basin and Northern Colorado Plateau*, *Twenty Thousand Years of Pinyon and Juniper Woodland History*, *Ecohydrology of Pinyon and Juniper Woodlands*, *Restoration and Management of Pinyon and Juniper Woodlands*. These are timely pieces, as controversy over pinyon and juniper management has been increasing in the public sphere and there is a need for clarification of the science behind current practices.

The Ecology, History, Ecohydrology, and Management of Pinyon and Juniper Woodlands in the Great Basin and Northern Colorado Plateau of the Western United States

Richard F. Miller, Jeanne C. Chambers, Louisa Evers, C. Jason Williams, Keirith A. Snyder, Bruce A. Roundy, Fred B. Pierson

Pinyon & Juniper Woodlands in the Great Basin
A brief summary of the history, management, & available research

Geology, Topography, and Soils of Pinyon and Juniper in the Great Basin and Northern Colorado Plateau

Pinyon & Juniper Woodlands in the Great Basin
A brief summary of the history, management, & available research

Twenty Thousand Years of Pinyon and Juniper Woodland History

Pinyon & Juniper Woodlands in the Great Basin
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Ecohydrology of Pinyon and Juniper Woodlands

Pinyon & Juniper Woodlands in the Great Basin
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Restoration and Management of Pinyon and Juniper Woodlands

USDA
United States Department of Agriculture

Rocky Mountain Research Station
General Technical Report RMRS-GTR-403
December 2019

The GBFSE has continued to contribute to development of the online book, [Western Forbs: Biology, Ecology, and Use in Restoration](#), through partnerships with the Bureau of Land Management and the USFS, RMRS Great Basin Native Plant project. To date, *Western Forbs* now includes 26 chapters synthesizing existing research and practical knowledge and experience useful to using native Great Basin forbs in restoration. The GBFSE website provides a quickly and easily updated web presence for this growing online resource. In FY 2020, this resource received 1,182 unique pageviews.

In FY 2020, we made a budgetary decision that reduced our time dedicated to social media communication, reducing the number of posts to our social media platforms (Facebook and Twitter). We made posts to Twitter and Facebook nearly every day in FY 2019; in FY 2020, Twitter posts were reduced by about 25% and Facebook posts were reduced by almost 50%. While we have not evaluated our audience response to this change, we did not lose followers and our number of Facebook and Twitter followers increased slightly. We continued to regularly communicate with our mailing list by sending newsletters every month.

Just a quick note to tell you that I appreciate receiving the Great Basin Fire Science Exchange newsletter. It is informative and I get a lot of useful information from it.
----*National Science Liaison, USDA Environment and Natural Resources*

Customer Responsiveness. In summer 2019 we were approached by several partners (BLM, Utah Department of Natural Resources, and USDA Natural Resources Conservation Service) to help coordinate and develop a plan that would help land managers better communicate the science behind treating pinyon-juniper woodlands for sagebrush and sage-grouse conservation (Fig. 3). The initial step in support of this effort was a webinar presented by GBFSE principal investigator, Mark Brunson, and Eric Thacker, Utah State University Rangeland Extension. The webinar, *How to Respond When People Question the Effectiveness of Woody Vegetation Treatment* included a lengthy question and answer session and drew 534 attendees and 433 recorded views. Building upon this webinar, the GBFSE, SageGrouse Initiative, Intermountain West Voint Venture, SageSTEP, Extension, and agency partners have developed a consistent communication and education effort including an infographic and a simple document of answers to frequently asked questions. From this partnership, University of Nevada Extension is now leading an effort to create a website to educate the public about woody vegetation management in the West, with regular and requested input from the GBFSE.

Thank you all so much, I am more informed on this subject. My prejudice has been dispelled ----*Woody Vegetation Treatment Webinar Attendee*

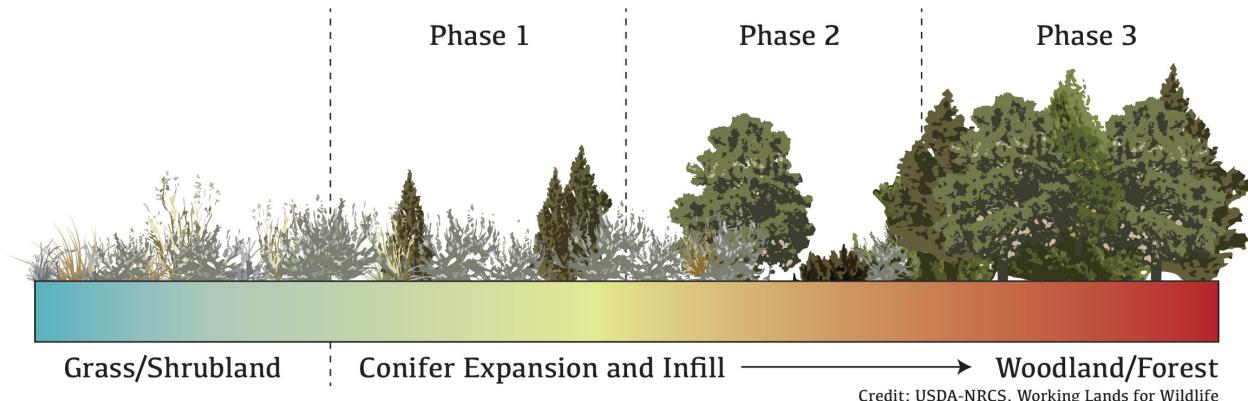


Figure 3. Sagebrush and pinyon-juniper community changes and dynamics in the Great Basin. Infographic developed by the multi-organizational pinyon-juniper literacy project.

The GBFSE is working with the Society for Ecological Restoration to convert the Revegetation Equipment Catalog from a website using the DreamWeaver platform to a simple webpage with all content available in topic-focused pdfs. This change will make the document more user friendly when it comes to soliciting updates from various experts. While the format is being changed, the Revegetation Equipment Catalog will remain available to users on our website.

In August 2020, we sent out a survey about knowledge transfer between researchers and managers developed by Kerry Grimm, Northern Arizona University. The survey went to our entire MailChimp listserv and so far, we have received 166 responses, which is good for our region. We look forward to seeing the results and what we might learn about the GBFSE impacts on research-manager-practitioner relationships.

We are also particularly excited to have begun discussions that we hope will foster true co-production of science between land managers and researchers surrounding applied research questions related to post-fire restoration, including native seed sourcing and planning, logistical coordination, and evaluation of restoration treatments on burned sites. This project will likely involve development of an interdisciplinary team of researchers, managers, and practitioners, which the GBFSE will help to facilitate and support. The goal of this project is to move land management agencies from reactive to proactive strategies when it comes to post-fire restoration.