



Great Basin Fire Science Exchange – FY 2019 Annual Report

Reporting Period: October 1, 2018 to September 30, 2019

Participation

In FY 2019, the number of Great Basin Fire Science Exchange (GBFSE) mailing list subscribers grew from 753 to 842, an annual increase of about 11%. Exchange participation is largely federal agency personnel (Fig. 1), which reflects the vast amount of federally administered lands across our region. Of the total GBFSE subscribers, the largest management group is the Bureau of Land Management (19%) followed by US Forest Service managers (16%). University and federal agency researchers make up 21% of subscribers, with University Faculty and Staff making up the largest part of this group (16%).

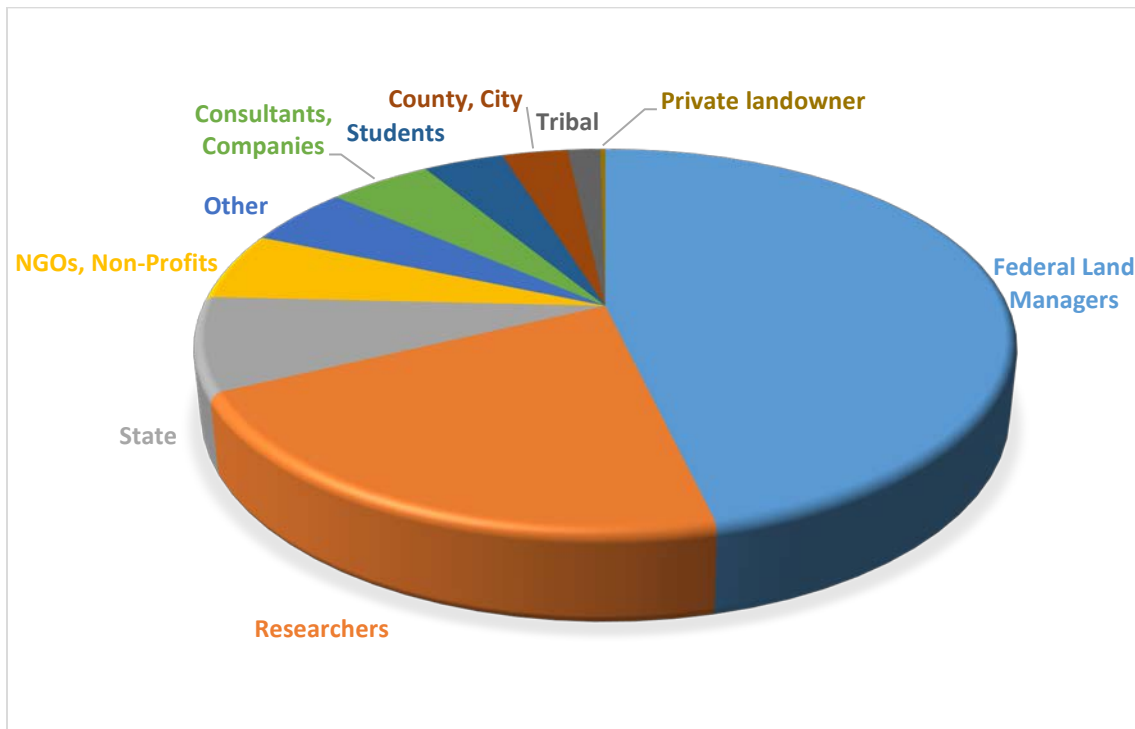


Figure 1. Great Basin Fire Science Exchange listserv subscribers by organization/association as of September 30, 2019.

Accomplishments

The GBFSE continued to serve Great Basin fire science communities by hosting and attending in-person events, supporting fire and fuels management coursework, updating our website, growing our website content, contributing to the development of several written products, and alerting our users about new resources, upcoming events, and opportunities in our newsletters.

Training and Coursework Highlights. For the 4th consecutive year we co-hosted the annual Restoration of Sagebrush Ecosystems week-long course with the Bureau of Land Management National Training Center. Of the 30 students that attended, the majority were federal land managers (26), but representatives of a variety of our region’s non-profits including Pheasants Forever, The Nature Conservancy, and the Great Basin Institute also attended. Of the federal agency participants, 46% represented the Natural Resources Conservation Service (NRCS), 38% the Bureau of Land Management (BLM), and the rest represented the US Fish and Wildlife Service, Department of Energy, and US military.

Overall, participants evaluating the course indicated the training was relevant to their jobs and resulted in some to a lot of knowledge gained (Fig. 2). Particularly useful to those that evaluated the course were the sections on Landscape Characterization & Prioritization, Site Characterization, Land Treatment Digital Library (LTDL), Land Treatment Exploration Tool (LTET), Web Soil Survey, and Weather Applications, which represent the backbone of the course and are used to address more specific land management challenges later in the course.

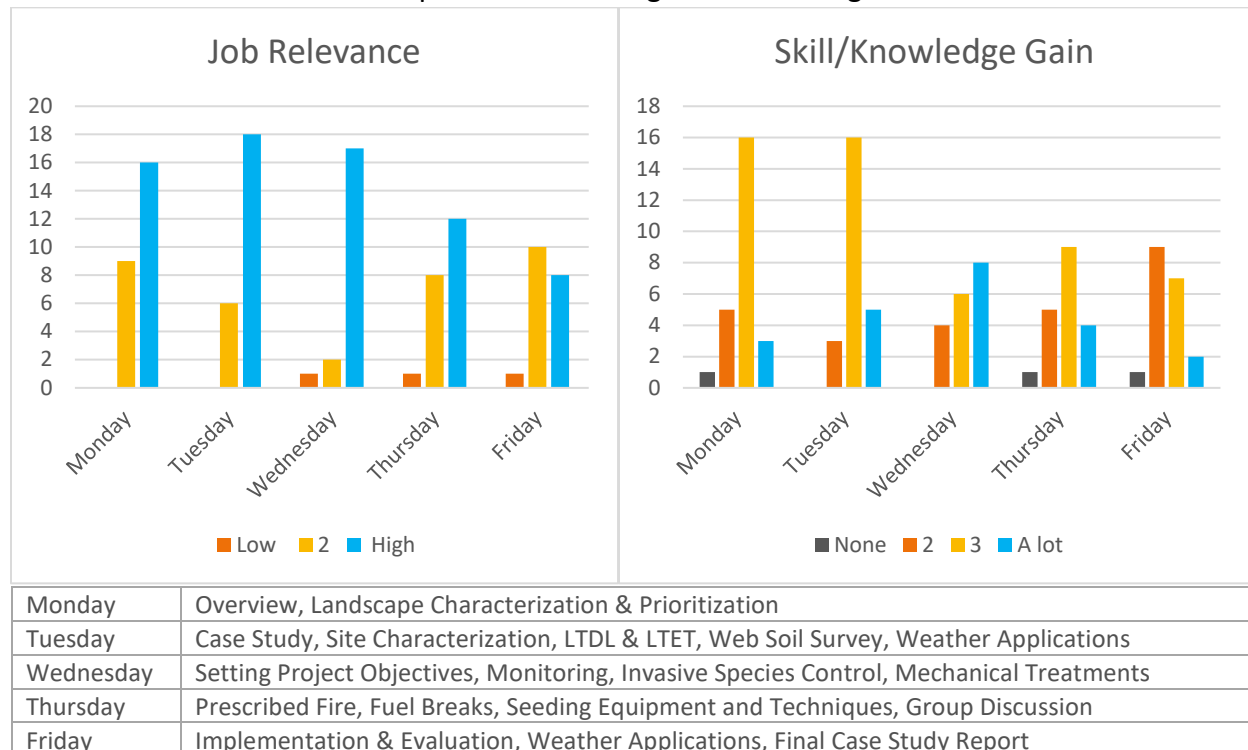


Figure 2. Overall training relevance and knowledge gained in the Restoration of Sagebrush Ecosystems class.

The GBFSE compiled a participant evaluation report for course instructors to use as they modify and adapt next year's course. The report highlighted the topics and tools participants found most useful and any specific recommendations they provided for course improvements.

Positive participant feedback included:

As someone coming from a very fine-scale soil ecology background, who's new to the landscape scale of land management, this workshop was incredibly helpful.

This training was very informative and will provide a great resource for future planning and restoration in sage-steppe...

I enjoyed the case study, and it helped me work through the process of planning and implementing a restoration project...

I loved starting at the landscape level (broad thinking), and then revisiting that thinking throughout the process.

The GBFSE, through its 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 now offers 14 online courses featuring Great Basin content and these were taken by 219 students in FY 2019. The online Master of Natural Resources (MNR) program has 108 students, many of whom are professionals who are place-bound, face limits on travel budgets, and/or are challenged to effectively accomplish science-based management on the ground to address pressing needs for management and conservation. Enrollment in the online MNR program for spring 2020 is up by 25 from the previous semester.

Successes include:

MS student S. Wozniak assisted the SageSTEP project and will soon submit his work, *Treatment longevity and changes in surface fuel loads after pinyon-juniper mastication* in a special SageSTEP issue of Ecosphere. Sam graduated in June 2019 and is now employed by the Natural Resources Conservation Service in Moscow, ID.

PhD student C. Bowman-Prideaux served as an online teaching assistant for Landscape and Habitat Dynamics (REM507) and will graduate in fall 2019. He plans to submit three manuscripts related to invasive species, restoration treatments, and fire regimes in the Wyoming big sagebrush in southern Idaho.

Webinar Highlights. The GBFSE hosted three well-attended webinars in FY 2019 (Table 1). Particularly successful was the webinar series that summarized project findings from the USGS SageSuccess Project, which included 2 webinars featuring 3 topics and 6 presenters. Live

attendees who completed the online survey following the webinar, reported that the featured concepts were largely applicable to their work (Fig. 3).

Table 1. Webinars offered by the GBFSE in FY 2019, attendance and video views from our You Tube channel.

Webinar Topic	Live Attendance	Recorded Views
The SageSuccess Project, sagebrush restoration, and implications for resistance and resilience	115	157
Sagebrush recovery after fire, population trajectories, and to plant or seed?	95	109
Management applications for the Science Framework for conserving and restoring sagebrush ecosystems	54	54

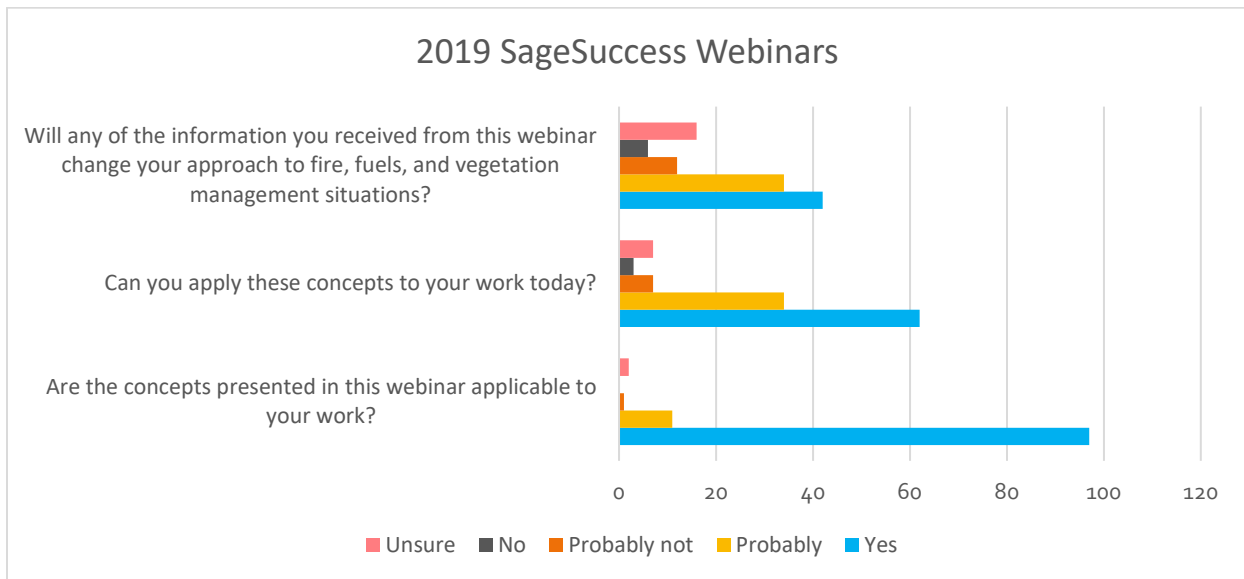


Figure 3. Number of live webinar attendees who filled out the survey about the applicability of the SageSuccess webinars to their work and future management decisions.

In FY 2019, we developed hard-copy briefs summarizing the take-home messages from all five webinars in last year’s *Managing Cheatgrass by Putting What We Know into Practice* webinar series. The webinars covered topics representing widespread Great Basin management challenges and are available online.

Website Improvements and Updates. At the beginning of FY2019, the GBFSE transferred its website from Squarespace to a WordPress content management system to improve functionality. We added features allowing users more options to search for content, for example by searching topics and resource types concurrently and using a calendar feature to search for events. These and other operational changes allow for improved sorting, searching, and at a glance content recognition for the user, and quicker updating and uploading of content

by the web manager. With a considerable dedication of time and effort, we made the website move without any disruption. Total number of users and sessions has increased steadily (Table 2).

Table 2. A selection of web metrics that compare total and average visitation by the GBFSE user between FY2015 and FY2019.

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

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

Also in FY2019, we began putting together resource collections to further ease visitor searches for important and commonly requested products. This effort is still under way and may be combined with a similar USFS RMRS effort to create a more effective method of fire and fuels science information transfer.

Communications, Information Access, Publications.

In addition to growing our newsletter and social media audiences, we made a concerted effort to increase our social media presence by posting content nearly every day. Our increased messaging reached nearly 88,000 social media users over the year and contributed to a growing public awareness of Great Basin weed management and rangeland fire challenges, which have been elevated to the national stage with articles in *The Atlantic*, the *Washington Post*, *Bloomberg Environment*, and *High Country News*.

The GBFSE is particularly excited about the soon to be released synthesis on *The History, Ecology, and Management of Piñon-Juniper Woodlands in the Great Basin* by Rick Miller and others. This is an in-depth treatment of Great Basin *Pinus* and *Juniperus* species which provides the necessary background into the past and present distribution of these woodlands together with when, how, and where their management is recommended.

The GBFSE has also contributed to development of *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. *Western Forbs* is an online book that synthesizes all existing research together with practical experience gained over the last 20 years. It is designed to aid seed collectors, seed growers, nurserymen, landowners, restoration contractors, and land managers as they increase the supply and use of native forbs. Each chapter (16 online at the end of FY 2019) focuses on an individual species’ biology, ecology, seed technology, and use in restoration. The GBFSE website provides a quickly and easily updated web presence for this growing online resource. In FY 2019, this resource received 2,377 pageviews of which 1,875 were unique.

Customer Responsiveness. The GBFSE continues to operate as a nimble, responsive organization, and several times in FY 2019 were able to provide support and expertise as requested. The GBFSE was able to provide the web expertise and web space necessary to re-release the online version of the Revegetation Equipment Catalog. Now, this once lost resource produced through agency and research partnerships, is again accessible to users. Providing this online access will also be important as funding and expertise is gathered for the next round of updates to this catalog

The GBFSE was also able to provide expertise in the form of timely comments and a focused webinar, when incomplete information was being circulated regarding proposed pinyon-juniper (PJ) treatments in Utah. The webinar (co-hosted by Utah State University Extension), which attracted 573 live participants, featured a full discussion of the pros and cons of PJ treatments and the context necessary to fully explore those pros and cons. The experts asked to present the webinar (Mark Brunson and Eric Thacker) provided an extensive question-and-answer (Q & A) session. Due to the number of questions asked by webinar attendees, the researchers could not address them all in the time allotted but later provided written responses to all attendee questions. The Q & A document was mailed to all attendees and is available as an attachment to any video viewers.