Great Basin Fire Science Exchange – FY 2017 Annual Report

Reporting Period: October 1, 2016 to September 30, 2017

Participation

In FY 2017, the number of Great Basin Fire Science Exchange (GBFSE) members, as assessed by our MailChimp mailing list subscribers, was 668. This is up from 602 in FY 2016, an annual increase of about 10%. Exchange membership is largely federal managers, which reflects the vast amount of federally administered lands across our region. Of the total GBFSE membership, the largest management group is the Bureau of Land Management (20%) followed by US Forest Service Managers (15%), and the largest research group is University Faculty and Staff (18%) (Figure 1).

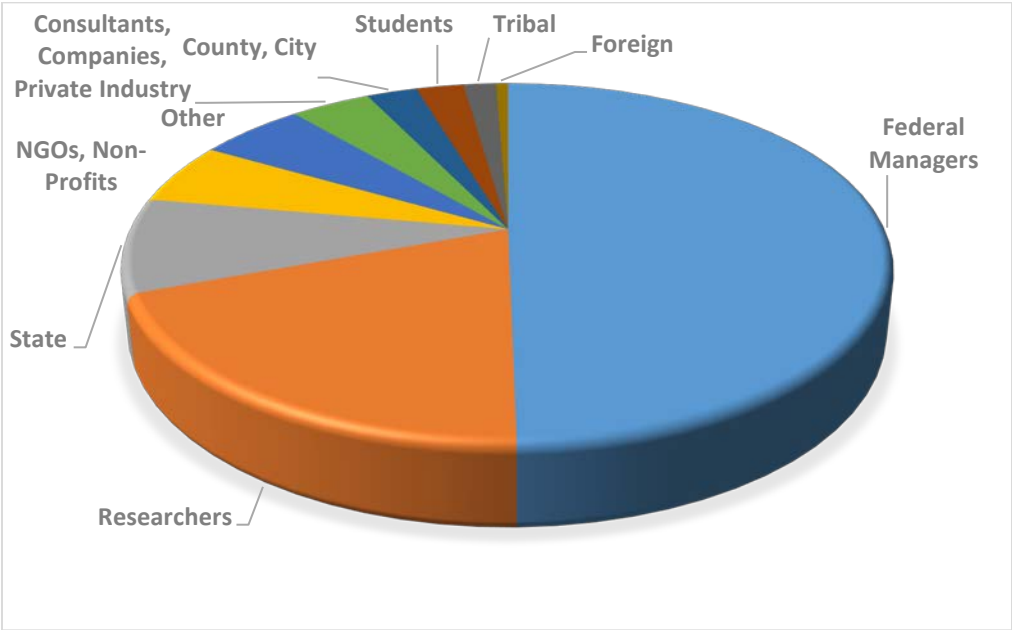

Figure 1. Current Great Basin Fire Science Exchange listserv subscribers by organization/association.

To evaluate the performance and potential growth of the GBFSE, we participated in this year's Joint Fire Science Program Fire Science Exchange Network Evaluation conducted annually by the University of Nevada Reno. While response rates were low, survey results generally suggest

GBSFE is important in helping to increase cooperation and communication between scientists and managers and is an important source of fire science information (Tables 1 and 2).

Table 1. Responses from managers and researchers surveyed about their experiences with the GBFSE and its efforts. All survey questions were answered based on a 1-5 scale, where 1 corresponded to "strongly disagree" and 5 to "strongly agree." Below are the averages of these responses, which generally ranged from 3.5 to 4.7.

Survey Questions	Managers (n=18)	Researchers (n=6)
The Fire Exchange (FE) is needed to help coordinate sharing of fire science information in my region.	4.50	4.83
The FE has improved the use & application of fire science information in my region.	4.17	4.67
The FE has improved policy regarding fire management in my region.	3.67	3.50
The FE has improved communication among fire managers/practitioners and fire researchers/scientists in my region.	4.11	4.50

The GBFSE website is frequently used by managers and researchers to find fire science information. When survey respondents were asked: During the last year, how often did you use information obtained from your Fire Exchange's website in your job? The majority of respondents indicated they used the GBFSE website very often, often, or occasionally.

Table 2. The percentage of manager and researcher survey respondents who reported using the GBFSE website along a frequency of use scale ranging from "very often" to "never," followed by averaged responses regarding website function on a 1 (strongly disagree) to 5 (strongly agree) scale.

Frequency of use	Managers (%)	Researchers (%)
Very often	6	0
Often	38	66
Occasionally	38	33
Rarely	13	0
Never	6	0

Survey Questions	Managers (n=17)	Researchers (n=6)
My FE's website is user-friendly.	3.76	4.33
My FE's website provides a way for me to share my research products or fire science delivery activities.	3.94	4.67

Accomplishments

The Great Basin Fire Science Exchange continued to improve its visibility as a science-sharing organization and to cement its role as science-management boundary spanner through co-hosting and attending in-person events, by providing trainings and supporting fire and fuels management coursework, and through website updates, webinars, and written products.

Conferences and Trainings

We are highlighting two significant conference and training accomplishments this year: First, the *Charting a Course for Rangeland Science in the Sagebrush Biome* conference in Reno in February co-hosted with the Great Basin Consortium (GBC); second, the *Restoration of Sagebrush Ecosystems* weeklong class in Reno in April co-hosted with the BLM National Training Center. The GBFSE has taken the lead on the preparation of an important product from the GBC conference, a summary of existing and needed research, as well as research prioritization, addressing the 37 action items in the October 2016 *Integrated Rangeland Fire Management Strategy Actionable Science Plan*. This document is being reviewed internally and will be available for outside input and comment by early 2018. Eighty three percent of conference attendees found the *Actionable Science Plan* topic breakout sessions moderately to extremely useful. Positive written comments included:

> *It was refreshing to have a conference with a group goal that facilitated interaction. Seemed like a good way to advance the science strategy.*
>
> *Best conference I have attended in 25 years for hands on and networking.*
>
> *I liked the mix of people from agencies, academia, and sponsors. I liked the topic addressed - as an academic, it helps me to know what the biggest information gaps are from an agency standpoint so that I can be sure to address them in my research.*
>
> *I appreciated being a part of a process that will result in a product.*

The Restoration of Sagebrush Ecosystems class was attended by 29 managers representing many federal (BLM, USFS, NPS, USGS, FWS, NRCS, ARS), state, and tribal agencies or organizations. Overall, participants indicated that they found all lessons of the training to be relevant, with most rating all days as highly relevant to their jobs (Table 3). The majority of participants also rated their level of skill or knowledge gained as high to very high for content presented on each day of the training. Lessons on Wednesday focused on Setting Restoration Objectives, Monitoring, and Invasive Species and Sagebrush Relationships provided the greatest skill or knowledge gains (Figure 2).

Table 3. Daily topic focus of the Restoration of Sagebrush Ecosystems week-long course.

Monday	Landscape Characterization and Prioritization
Tuesday	Case Study (CS), Site Characterization, Web Soil Survey
Wednesday	Setting Project Objectives, Monitoring, Invasive Species, Sagebrush
Thursday	Treatments: Mechanical, Fire, & Fuel Breaks, Seeding Equipment & Techniques, Panel
Friday	Implementation, Evaluation, Land Treatment Digital Library, Weather Applications, CS Report-Out

Figure 2. Ranking of each course day or topic focus (Table 3) as to job relevance and level of skill or knowledge gained by survey respondents taking the Restoration of Sagebrush Ecosystems week-long course.

Positive written comments included:

> *Thank you for this training and all the helpful references. I'm looking forward to diving deep and becoming more familiar with these. Sharing your knowledge has been very beneficial, and I appreciate the varying perspectives. Thanks again for making this class possible.*
>
> *Great class. A ton of information. Great instruction.*
>
> *Thank you to all presenters. Love that you provided a thumb drive of information!*

Great Basin Fire Science Online

Through our partnership with the University of Idaho and our support of the *Great Basin Fire Online* project, 212 students took one or more of the 14 online fire courses offered in FY 2017, and 60% of those students currently work for federal and state agencies in seasonal or full-time positions. Many of these courses incorporate materials developed or supported by the GBFSE. For example, the *REM 460: Integrating GIS and Field Studies in Rangelands* course incorporated the resistance to invasives and resilience to disturbance framework, juniper treatment guidelines, and aspen management guidelines as described in supported publications and our treatment field guides and factsheet products. These products and concepts were used in class and in-field. Graduate students use GBFSE webinars to understand resistance to invasion and resilience to fire in different sagebrush types depending on the soil temperature/moisture regimes and vegetation structure and composition. In *REM 459: Rangeland Ecology*, students can earn extra credit by visiting the Great Basin Fire Science Exchange website, choosing a fact sheet or webinar, and writing a paragraph on how the information is relevant to their interests and future professional goals. Examples will soon be collected and compiled for the GBFSE for

use in illustrating the impact of our work on student learning. One success story for the Great Basin Fire Science Online project involves a student earning the Masters of Natural Resources degree while working full-time for the Bureau of Land Management in Reno, NV. After taking the online *GIS in Fire Applications* course, Darcy McDaniel was inspired to develop GIS training modules for fire professionals in Nevada.

Webinars

Our annual webinar series continues to be a highlight of our program. The GBFSE hosted nine webinars in FY 2017 (Table 4), but they were not part of a thematic series as in previous years. Topics were generally brought forward by Great Basin researchers and practitioners who volunteered to present information they (and we) believed was relevant to existing issues and concerns. In response to an internal review of the past 3 years of webinars and engagement, the GBFSE has decided to go back to a thematically planned out webinar series for FY 2018.

Table 4. Webinars offered by the GBFSE in FY 2017, attendance, and video views (please note that several webinars were uploaded to our YouTube channel only days before the views were counted).

Webinar Topic	Live Attendance	Recorded Views
Engaging communities in sagebrush restoration	15	23
Assessing the impacts of post-fire drill seeding on archaeological resources	45	97
Weed-free **seed**, unicorns, and other myths	35	132
Weed-free **mulch**, unicorns, and other myths	24	116
Drone Noxious Weeds and Fuel Load Program	8	4
Do you suffer from biocrust blindness?	40	114
Mid-succession fire effects and reburn potential	5	60
Successful vegetation management practices in sagebrush	66	37
Rangeland Fire Protection Associations in OR and ID	10	1

To evaluate the applicability of the webinars, live attendees were asked to answer three survey questions. Surveys were optional and not completed by all attendees. Responses show that a large percentage of respondents find the information presented in the webinars useful to their work (Figure 3).

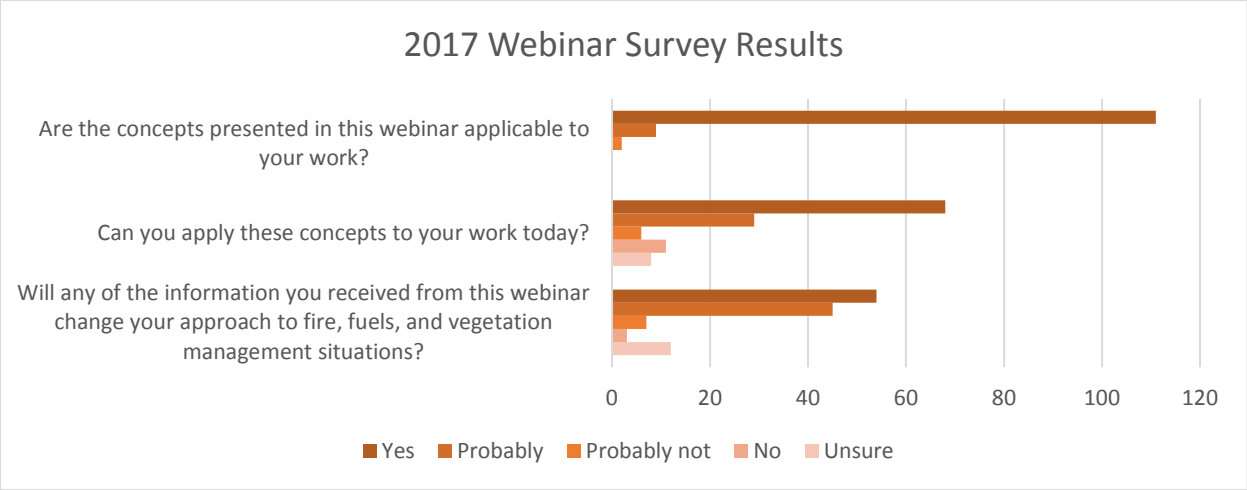

Figure 3. Number of live webinar attendees who indicated the level of the webinar's applicability to their work and future management decisions (all 9 webinar survey results grouped).

Partners

We continue to work with our federal and institutional partners on shared activities. In addition to the examples above we also worked with the BLM and The Nature Conservancy's Conservation Training center to complete an *Integrated Rangeland Fire Management Strategy* Action Item (Section 7.b.iii, Action Item #5) to compile, share, and distribute the "Successful Vegetation Management in the Sagebrush-Steppe" online learning series. We also joined the new SageWest group of communicators led by the National Audubon Society and Intermountain West Joint Venture, with a membership of 250 participants from over 83 different public and private organizations across the Sagebrush Biome. We continue to look for new ways to reach out to and collaborate with partners to further our mission of creating and sharing fire, fuels, and vegetation science information and tools between Great Basin researchers and land managers to build more resilient lands together.