



Great Basin Fire Science Exchange – FY 2016 Annual Report

Reporting Period: October 1, 2015 to September 30, 2016

Governance

Steering Committee

PI, Mark Brunson, USU – Overall program administration, coordination with academic partners, USU liaison, SageSTEP liaison, lead website, co-lead evaluation

Co-I, Mike Pellant, BLM (Don Major and Fred Edwards shadowing for next year) – Idaho State BLM liaison, plant and fire ecology liaison, lead “Browse the literature” summaries, co-lead network of experts

Co-I, Jeanne Chambers, USFS RMRS (Francis Kilkenny shadowing for next year) – USFS RMRS liaison, lead syntheses

Co-I, Brad Schultz, UNCE – University Extension liaison, lead evaluation

Co-I, Beth Leger, UNR – UNR liaison

Co-I, Steve Bunting, UI (Eva Strand shadowing for next year) – U of I liaison, lead web-based training

Co-I, Cheri Howell, USFS HTNF – USFS liaison, lead field practitioner connections

Co-I, Beth Newingham, ARS – ARS liaison, lead Network of Experts

Co-I, Jeremy Maestas, NRCS – NRCS liaison, lead field workshops

Coordinator, Eugénie MontBlanc, UNR – Manages project activities, budget, and outreach

Advisory Committee

Raul Morales, BLM NV Deputy State Director

Mesia Nyman, USFS R4 Regional Fuels Specialist

Rick Kearney, Great Basin Landscape Conservation Cooperative Coordinator

Sue Phillips, USGS Aridlands Research Manager

Rick Miller, OSU Fire Ecology

Steven Mietz, Great Basin National Park Superintendent

Penelope Morgan, University of Idaho, Rangeland Ecology and Management

Program Accomplishments

Sagebrush Ecosystem Conservation: All Lands, All Hands (sagebrushconference2016.org)

In February 2016 the Great Basin Consortium (the Great Basin Fire Science Exchange is an active member), the Western Association of Fish and Wildlife Agencies, and Utah State University partnered to host the largest attended annual conference to date, with over 500 on-site attendees and 300 online participants. The focus of the conference was collaboration to conserve sagebrush ecosystems through the guidance of the Integrated Rangeland Fire Management Strategy (implementation plan for Secretarial Order 3336 – see IRFMS website at IRFMS.org). Of the survey respondents, 95% were either satisfied or extremely satisfied with the conference. Sixty percent of the respondents said the best aspect of the conference was the broad diversity of topics presented ([view the survey results article](#)). Respondents also suggested many science topics for future conferences.

In addition to the Sagebrush Conference, the Great Basin Fire Science Exchange (GBFSE) co-hosted one other conference, *Restoring the West 2015: Restoration and Fire in the Interior West*, and presented or exhibited at 6 additional conferences and meetings that focused on topics such as restoration, fire, and the preservation of native plant materials. These efforts resulted in exposure to over 800 attendees and resulted in 62 additional newsletter subscribers.

Field Workshop Series

This spring, in partnership with the USDA Natural Resource Conservation Service (NRCS) and the Sage Grouse Initiative, we held five field workshops titled, *How to Determine the Most Appropriate Treatments Before and After Wildfire in Sagebrush and Piñon-Juniper Ecosystems*. These occurred in four of the five states of the Great Basin and were led by Dr. Rick Miller, Retired Rangeland and Fire Ecologist from Oregon State University, and Jeremy Maestas, Sagebrush Ecosystem Specialist for the NRCS. The workshops taught attendees how to use the concepts of resistance to invasive plants and resilience to land disturbance in order to select appropriate vegetation management treatments. The workshops utilized the two Miller et al. field guides we published in 2014 and 2015.

Participants were primarily from the NRCS, Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), U.S. Forest Service (USFS), universities, tribes, NGOs, state and local governments, consultants, and the interested public. One attendee of the Baker City workshop (Joshua Dillon) published an article about it in the *Baker City Herald* titled, “The Science of Sagebrush.” Of the 153 attendees, nearly 75% identified themselves as science information users (managers/practitioners) and 25% identified as science producers (scientists/researchers). In addition to excellent feedback about how we can improve future

field workshops, workshop participants stated that what they liked best about the workshops was the field-based hands-on learning at various field sites, the presentation and exchange of new information, group discussion that involved numerous individuals with varied backgrounds, discussions about climate and juniper, the opportunity for one-on-one learning and networking in the field, site rating exercises, presentations by experts, and direct applicability to day-to-day work. Below are examples of written comments provided by workshop attendees:

“I learned more from this event about how I should be managing sage than I would have after months of picking through the literature.”

“Wish there were more events like this where researchers crossed paths with managers.”

“This is the kind of training we need. When is the next level one?”



Rick Miller and workshop attendees in Alturas, CA on 1 June 2016. Photo courtesy of Cyndi Sidles.

A sixth workshop was conducted for the USFS Ecology and Soils Program Workshop and Training in Utah and was led by Dr. Mark Brunson, Professor of Environment and Society, Utah State University; Dr. Bruce Roundy, Professor and Range Ecologist, Brigham Young University; and Jeff Bruggink, Regional Soil and BAER Program Manager, USFS, Ogden. This workshop had

multiple soil scientists in attendance that contributed greatly to the treatment evaluation discussions.

Right Seed in the Right Place at the Right Time Webinar Series Continued

With our partners from the Great Basin Native Plant Project, the BLM, the USFS, and the Society for Ecological Restoration Great Basin Chapter, we continued the webinar series, *The Right Seed in the Right Place at the Right Time: Tools for Sustainable Restoration*. This included webinar topics that ranged from “Evaluating Bee Community Benefits among Available Species to Seed after Fire” to “Sage-grouse Forb Preference by 12 Plant Categories.” The series had 621 attendees and our YouTube channel had an additional 1,164 views of the archived webinars. Ninety-five percent of survey respondents stated that these webinars applied to their work, and 79% said “I can apply these concepts to my work today” and “The information presented will change my approach to fire, fuels, and vegetation management.”

Academic Courses and Trainings

The online education component of the GBFSE, through our partnership with the University of Idaho, continued to expand while serving the educational needs of current and future natural resource managers and fire practitioners. Great Basin-specific content focused on fuels and on fire ecology of aspen, juniper, and sagebrush ecosystems has been incorporated into many courses, for example, the senior-level college courses REM429 *Landscape Ecology* and REM 459 *Rangeland Ecology*. Dr. Eva Strand also incorporated the Resistance and Resilience assessment ([Miller et al. 2015](#)) into REM 460 (*Integrating GIS and Field Studies in Rangelands*) which includes a 5-day field trip for students in the Rangeland Ecology and Management program at the UI. Ten online fire and fuels courses incorporate Great Basin content. Attendance in these courses increased over 100% compared to last year, with a total of 487 students. About 80% of these students currently work for federal and state agencies in seasonal or full-time positions. With the expanded menu of graduate courses, both current and future professionals can focus on fire while pursuing a Master of Natural Resources *without ever coming to campus*. All of these courses were peer reviewed and again passed the Framework for Effective Courses at the University of Idaho.

The Great Basin Fire Science Exchange also hosted three trainings this year. In partnership with the Bureau of Land Management National Training Center we conducted the *Restoration of Sagebrush Ecosystems* course led by Mike Pellant, Great Basin Ecologist, Idaho State BLM, and co-led by Beth Newingham, Research Ecologist, USDA ARS and Jeremy Maestas, Sagebrush Ecosystem Specialist, NRCS. Along with five other instructors, the course was attended by 58 students, primarily land managers/practitioners from federal and state agencies, and focused on landscape and site characterization, setting objectives, treatment options, available tools,

implementation, and monitoring. We also conducted two plant identification trainings led by Beth Leger, Plant Ecologist, University of Nevada, Reno: *Identifying Common Plants of the Sagebrush Steppe: A Field and Lab Training* and *Asteraceae of the Great Basin and Eastern Sierra*.

Syntheses, Factsheets, and Guides

The GBFSE, in collaboration with the Great Basin Research and Management Partnership, the Great Basin Landscape Conservation Cooperative, the Sagebrush Steppe Treatment Evaluation Project, and the NRCS, produced six additional factsheets (total = 14) in FY 2016. Examples of topics include “Fuel Breaks that Work,” “Wind Erosion Following Wildfire,” and “Post-fire Grazing Management.” We compiled all 14 factsheets into one publication titled, *Great Basin Factsheet Series 2016: Information and Tools to Conserve and Restore Great Basin Ecosystems*. This year we also saw the publication of the *Ecohydrologic Impacts of Rangeland Fire on Runoff and Erosion: A Literature Synthesis* ([Pierson and Williams 2016](#)). Finally we provided financial support for additional copies of the highly sought after restoration handbook series published by the U.S. Geological Survey, *Restoration Handbook for Sagebrush Steppe Ecosystems with Emphasis on Greater Sage-Grouse Habitat – Part 1: Concepts for Understanding and Applying Restoration* and – *Part 2: Landscape Level Restoration Decisions*.

An important management application accomplishment is the use of our *Field Guide for Rapid Assessment of Post-Wildfire Recovery Potential in Sagebrush and Piñon-Juniper Ecosystems in the Great Basin: Evaluating Resilience to Disturbance and Resistance to Invasive Annual Grasses and Predicting Vegetation Response* ([Miller et al. 2015](#)) by the BLM's Owhyee Field Office to evaluate large portions of the Soda Fire to determine if reseeding was warranted on first year seedings and post-fire recovery areas. This was one of the most extensive applications of this protocol on a high profile project.

Websites, Databases, and Social Media

With the addition of program support staff this year, and with our Great Basin Research and Management Partners at the USGS Snake River Field Station we were able to fully transition to our new website at greatbasinfirescience.org. Working with our partner, the Great Basin Landscape Conservation Cooperative, and with guidance from the Joint Fire Science Program, we made the Great Basin Fire Science Exchange website the home of the Secretarial Order 3336 Science Support Center. And with additional input from the Secretarial Order 3336 coordinator, Mike Haske, we also created a website for background information and documentation on the Secretarial Order 3336 implementation plan, *The Integrated Rangeland Fire Management Strategy* (IRFMS.org). We have also nearly completed the *Great Basin Weather Applications for Rangeland Restoration* website (greatbasinweather.org) with our

partners from the USDA Agricultural Research Service. The Great Basin Research and Management Partnership also created two new databases; the Advanced *Bromus* Database and the Morley Nelson Birds of Prey National Conservation Area Publications Database, as well as added Information Management Working Group informational pages.

Additional program support also allowed us to ramp up our social media activity, with two to four times more fire and fuels science information posted on Facebook and Twitter. Also, we have nearly 200 more followers on each platform, than in the previous reporting period. Finally, nearly 100 additional Great Basin fire, fuels, and other natural resource managers and researchers have subscribed to receive our project information.