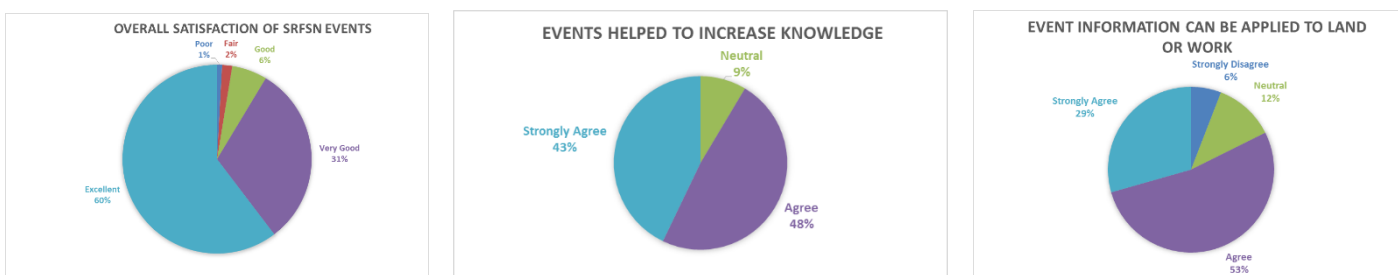


October 31, 2017

Priorities and Initiatives

The Southern Rockies Fire Science Network experienced substantial successes in activities, online products, partnerships and growth through FY 2017. We are exceeding projected work plan and outputs for the year, and are developing new ways of engagement with our constituents through improved website development by subregion and addressing new wildfire issues. Figure 1 below shows that the majority of participants indicate a “very good” to “excellent” experience with SRFSN in-person events:

Figure 1:



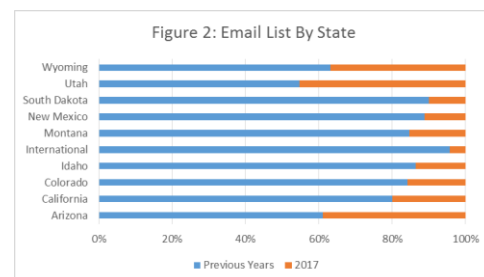
Priorities for SRFSN this last fiscal year included:

- 1) Grow and improve programs and relationships with new sub-award partners: University of Utah Forestry Extension and University of Wyoming, Colorado Rx Fire Council and neighboring states developing products and knowledge exchange to address knowledge gaps and new trends in regional wildfire
- 2) Improve online learning and social media presence by implementing our improved communication strategy – streamlining online interfaces and navigation while addressing regional issues
- 3) Create opportunities for science exchange supporting long-term social and policy change addressing prescribed fire, forest restoration, wildland fire management, and landscape restoration issues

Highlights & Achievements

In 2017, SRFSN:

- 1) Reached a total of 3,077 people with over 55 in-person and direct contact events (conferences, meetings, field trips, academic courses, presentations, expert cadres, and requests for information). Increased requests for science information, networking, experts, and referrals show that SRFSN is established as a resource for wildfire information in the region (Figures 2 and 3). See Table 1 for expanded list.
- 2) Significantly expanded social media presence: SRFSN now has a combined online audience of 2,110 followers/subscribers across 9 states and internationally; E-mail list alone has grown over 20% in FY 2017



- 3) Implemented a successful fire ecology class and prescribed fire burn experience for University of Wyoming students. Class will be repeated Spring 2018
- 4) Successfully expanded the activities and products within the Utah Biomass Resource Group demonstrating both pyrolysis and kiln biochar production to address regional fuel removal
- 5) Released two series of videos: The West Fork Fire: Bridging the Divide (4 videos) and Chadron Forestry: Growing Fire Tolerant Forests (recently released), and video summarizing JFSP-sponsored research in pinyon-juniper. Combined SRFSN YouTube channel views total over 4,500 and 40 subscribers
- 6) Major contributor and planner for the Colorado Wildland Fire Conference, held this year in Pueblo, CO, attracting almost 200 people from around the nation
- 7) Directly or co-planned 9 webinars addressing topics from modeling to economics and post-fire restoration with a total audience of over 1,100
- 8) Expanded relationships with surrounding states: Utah State University Forestry Extension co-partnering on webinar series, field trips, conferences, and products, increased outreach in Wyoming through University of Wyoming, and developed new outreach events in South Dakota. The Chadron Video series will provide additional exposure throughout the state of Nebraska
- 9) Continued to expand collaboration with neighboring FSEN's: we will be working with the Great Basin FSEN for outreach to the Dixie and Fish Lake National Forests, with the Great Plains FSEN providing collaboration between Prescribed Fire Councils, with Northern Rockies FSEN in outreach to the Bighorn and Laramie Mountain areas, and with the Southwest Fire Science Consortia at regional conferences and potential tribal projects.

Table 1: SRFSN Activity Highlights: (Major or unique events supporting fire science exchange)

Activity	Audience	Number of Participants
In-Person:		
Agriculture Expo, CO Western Slope (Pyrolysis demo)	Landowners, contractors, consultants, ranchers, farmers, public	250
Black Hills National Forest/SRFSN Meet and Greet	BHNF Supervisor, fire staff, SRFSN Board member	6
Colorado/Wyoming SAF Chapter Meeting SRFSN Booth, Outreach	Federal, state, and municipal agency staff, consulting foresters, Timber Industry, NGO's	75
Colorado Wildland Fire Conference – co-planning and logistics	Federal, state, and municipal staff and policy makers, firefighters, mitigation specialists, public	183
Pagosa Signage Project: fire use and forest restoration, Pagosa Town Park (in progress)	Federal, state, and municipal staff and policy makers, , mitigation specialists, public	unlimited
Society for Range Management: SRFSN special session and booth	Federal, state, and municipal staff, policy makers, agriculture industry, farmers, ranchers, consultants, public	200
High Park Fire Post-fire science exchange	Federal, state, and municipal staff, mitigation specialists, university and agency researchers	50
Restoring the West: logistical support, booth, poster	Federal, state, and municipal agency staff, consulting foresters, ecologists, NGO's	150
Southwest Fire Ecology Conference: booth, presentation	Federal, state, and municipal agency staff, consulting foresters, ecologists, NGO's	200
Utah State University Timber/Forest Practices Tour	Federal, state, and municipal agency staff, consulting foresters, Timber Industry, NGO's	35
Utah Biomass Resource Group: DIY Biomass Event	Federal, state, and municipal staff and policy makers, mitigation specialists, ecologists, public, PIO's media	60
Tooele Prescribed Fire Field Trip	Federal, state, and municipal agency staff, consulting foresters, Timber Industry, NGO's , public	38
Media & Online Resources:		
Webinar: Post-fire Rainfall Thresholds and Erosion	Federal, state, and municipal agency staff, consulting foresters, ecologists, NGO's, university researchers	43
Webinar: Science of budgeting fire programs	Federal, state, and municipal agency staff, consulting foresters, ecologists, NGO's, university researchers	30
Gambel oak white paper	Federal, state, and municipal staff and policy makers, mitigation specialists, ecologists, public	unlimited
West Fork Fire Video Series	Federal, state, and municipal staff and policy makers, mitigation specialists, ecologists, public, PIO's media	unlimited

Success Stories:

- Colorado Wildland Fire Conference (CWFC):** This regional conference grew to new audiences and attendance this year with attendees from Washington to Utah, Arizona, Wyoming, and eastern states, featuring Washington



DC keynotes, practitioners, educational groups and researchers, with inquiries as far as Canada and Africa. SRFSN continues its role as a major planner and contributor to the Colorado Wildland Fire Conference (CWFC), providing logistical, informational, and financial support with conference fiscal agent Fire Adapted Colorado (FACO). BLM grant funds continue to support conference development, helping to leverage SRFSN contributions. The CWFC is an excellent example of an exchange event that has become established with SRFSN assistance and valued by other funders as an important regional exchange event. CWFC 2018 will be held in Crested Butte, drawing attendance from the 4-corners area.

- Biochar and Pyrolysis Demonstrations/Workshops:** With direct SRFSN support, USU Forestry Extension and the Utah Biomass Resource Group (UBRG) hosted a DIY (Do It Yourself) Biochar Kiln Workshop and Demonstration at



the Lone Peak Conservation Center with 60 people attending. A diverse audience of Master Gardeners, arborists, wildland fuels specialists, city infrastructure managers, forest landowners and forest managers, participated in Draper, Utah, on May 17, 2017. After the workshop the kilns were operated by the Lone Peak Fire Crew in the forest near Soldier Summit, making many batches of biochar from a Douglas-fir thinning operation on private land. This project is done in partnership between USU Forestry Extension, the Utah Division of Forestry, Fire and State Lands, the Southern

Rockies Fire Science Network, and USU Extension faculty.

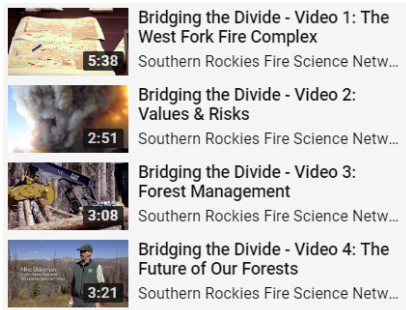
- Prescribed Fire Tour, Timber/Forest Practices Tours:** The Utah Biomass Resources Group (UBRG) cooperated with the Bioenergy Alliance of the Northern Rockies, Colorado State University Extension, SRFSN, Garfield County, Colorado, and Amaron Energy and to conduct two demonstrations of a mobile pyrolysis unit in western Colorado in early February, 2017. These demonstrations took place at the Garfield County Agricultural Exposition at the Garfield County Fairgrounds in Rifle, Colorado, and another in Whitewater, Colorado. Hundreds of people attended, people came from as far as Steamboat and Pagosa Springs to see our operation and ask questions about mobile pyrolysis and biochar application.
- Second Annual Utah Wildland Fire Tour** in partnership with the Bureau of Land Management, the Southern Rockies Fire Science Network and the Intermountain Society of American Foresters. Thirty-nine people participated as fire managers and scientists presented the pros and the cons of fire and mastication of PJ woodlands. We examined prescribed fire and wildfire effects in masticated fuels on Thursday, June 22, 2017. Notable that a federal agency Fire Management Officer from eastern Montana traveled specifically for the event and asked many pertinent questions, as he is facing the same issue of dealing with masticated fuels on his district.

- University of Wyoming Fire Ecology Class and Prescribed Fire burn:** Dr. Derek Scasta, a member of the SRFSN leadership team, completed an Applied Fire Ecology class at the University of Wyoming Spring 2017 semester. This class serves as the first of its kind at the University and is sponsored by SRFSN. During Spring Break, students participated in a prescribed burn on University of Wyoming Sustainable Agriculture Research and Extension Center property in Lingle, WY: a unique opportunity to gain hands-on experience operating drip torches, water tanks, and various suppression techniques. In addition, students were exposed to burn plans, the implementation of line, variation in weather patterns, and safe prescribed fire measures.



- Gambel Oak/Mountain Shrub Fire Ecology and Management:** Interest in Gambel oak/mountain shrub fire ecology continues to grow. SRFSN released our Status of Knowledge synthesis/white paper a year ago and it has turned out to be our most used printed asset both online and hardcopy. We had originally printed 1,000 and are down to under 200 copies. In response to need, SRFSN is planning a Gambel Oak/Mountain Shrub Ecology and Management Symposium in Western Colorado October 2018 to provide opportunity for best practices, research presentations, and discussion.

- West Fork Fire: Bridging the Divide video series:** This 4-part series brought together three years' worth of field trips, workshops, wildfire footage, and presentations to illustrate how remote communities in the headwaters of the Rio Grande adapted to extreme post-fire conditions, and are working to manage regional forests to adapt to more fire and warming climate. The series includes an Introduction, Values at Risk, Forest Management, and Future of our Forests. The series garnered 500 views within the first week, and SRFSN will continue to use this as a resource in outreach and regional post-fire response.



- Chadron Forestry: Growing Fire Tolerant Forests,** another 4-part video series complete and under release at this writing. The Nebraska Forest Service and University of Nebraska, Lincoln (UNL) are excited to be using these to demonstrate fire management methods in NW Nebraska. Since the series is currently under release, metrics are not yet available but UNL will be using them widely.
- Black Hills "Meet and Greet"** with SRFSN, USFS supervisor and fuels staff, and Black Hills Forest Resource Association created unique knowledge exchange opportunity: SRFSN will be arranging a knowledge exchange between USFS "old guard" retiring wildfire personnel, new USFS wildfire staff, and Black Hills researchers to exchange and validate decades of field knowledge. SRFSN seeks to have the meeting moderated and a technical writer develop a knowledge paper that can be used on websites and in NEPA documents. If successful we anticipate this may be a template for other knowledge exchange events.

Comparison with Planned Work

SRFSN is currently ahead of projected events in our submitted plan of work, with the exception of the Ferris Mountain Sagebrush Ecology Field trip. The SRFSN Board is discussing completing this field trip in summer 2018. The Colorado Wildland Fire Conference was originally planned for 2019, but planning staff decided to continue to hold the conference every 18 months, placing it in September of 2018 – a change to program of work for this funding cycle.

Participation and Growth

SRFSN continues to grow in interest and participation. This fiscal year to date we have 904 followers/participants on our main delivery list, and have generated over 31 newsletters and announcements disseminating the latest regional issues, research, events, webinars, news, and resources. Open rate for newsletters on our listserv ranges from 20% to 40%.

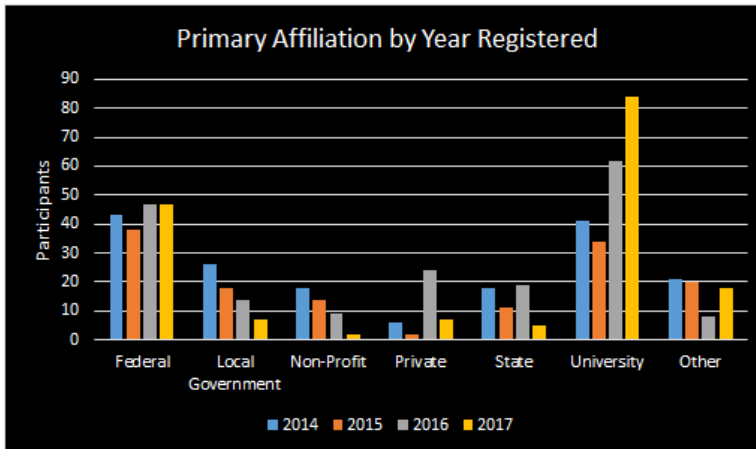


Figure 3: Primary Affiliation.

Participation continues to be predominantly from Colorado, universities and federal agencies, with increased growth in University users and Utah and Wyoming participants.

Regional Trends

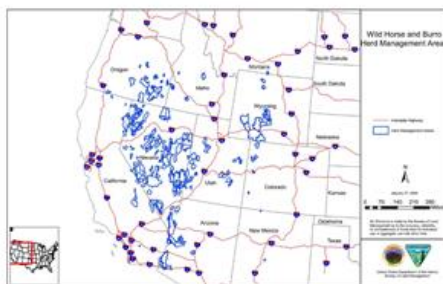
Wildfire behavior and home ignition: The SRFSN region continues to prioritize activities and information that behavior continues to grow throughout the region. Utah experienced some of its largest recent wildfires during the summer of 2017. While SRFSN will continue with WUI efforts here in Colorado, we have made significant contacts through the Utah BLM and Utah Department of Natural Resources to conduct outreach with wildfire mitigation staff. We also plan on expanding outreach in the wildfire mitigation community in South Dakota.

Chipping, Mastication, and Fuels Management: This is a topic that is ubiquitous throughout our region. Although our upcoming document focuses on research in Colorado's Front Range, we hope to leverage this document with field trips, workshops, and additional online products and support.

Sagebrush and Fire: SRFSN is continuing to identify resources and activities in our region that can help build science and knowledge exchange for sagebrush habitats and fire management. Continued outreach and planned field trips in Wyoming will help to address this issues, as well as providing online resources by this subregion through the SRFSN website.

Grazing effects and Fire, Wild/Feral Horse Populations and Fire

Figure 4: Wild Horse/Burro Management areas in the SRFSN region



“There are approximately 13,500 wild horses and burros in short-term government holding pens and an additional 32,500 on long-term leased pasture, costing taxpayers nearly \$50 million annually... ecologists, rangeland managers, and ranchers are concerned that overpopulated wild horse herds have caused and are causing irreversible damage to delicate desert ecosystems” (National Geographic, 2/2017). This article came out at the same time as a special Wild Horse session at the Society for Range Management that SRFSN attended. Figure 4 shows Wild horse Management

Areas within the SRFSN region, and there is scant research on fuel and fire effects, and an issue of significant

concern to the SRFSN region. SRFSN has added this as a regional issue and is developing scientific website content for users.

Challenges

Contract Modification: Changes to original contract from TNC subaward to Teocalli Consulting took almost 9 months to resolve. Contract revisions are now in place and progress is moving forward to support facilitation of the Colorado Prescribed Fire Council.

Capacity: SRFSN has generally been staffed by a full-time coordinator supported by varying arrangements of undergraduate and graduate students. However, this can present challenges in consistent support and ownership of ongoing projects. At the time of this writing, SRFSN has a proposal in to the Coordinator and Board of Fire Adapted Colorado (FACO) to share their part-time coordinator to support ongoing social media development and smaller events. We also have a University of Wyoming graduate student (Bryn Maher) working on Wyoming regional issues, research contacts, technical advisory team, and federal agency outreach.

Website and Social media: Scientists and managers are increasingly seeking out the SRFSN as a method of delivering new science, as a source for expert cadres and speakers, and for support relating to wildfire knowledge exchange and education events. Our web analytics indicate that it is not getting much traffic, those who visit can't find what they need and don't stay for very long. Additionally, the SRFSN area has a multitude of land cover types within the region, making it difficult for users to find and use relevant assets. See *Online Learning* below.

Online Learning

The coordinator, social media consultant Marjie Brown, and SRFSN student assistants held a social media strategy workshop in June of 2017. All types of social media communication methods were addressed: purposes, audiences, objectives, staff roles, challenges and solutions were addressed. SRFSN social media methods focus on the SRFSN website, E-mail list, Twitter, Facebook, and YouTube. Results are outlined below:

Website

Outcomes of our meeting included a major assessment of the website. Headings will be revised to guide the user through what we do, how we do it, and the subregions of the Southern Rockies. An interactive map will be provided with clickable subregions helping the user to find website assets tagged by subregion as well as an improved set of tags that help to highlight our major regional issues.

Gamble Oak Ecology document was the most popular asset for the year.

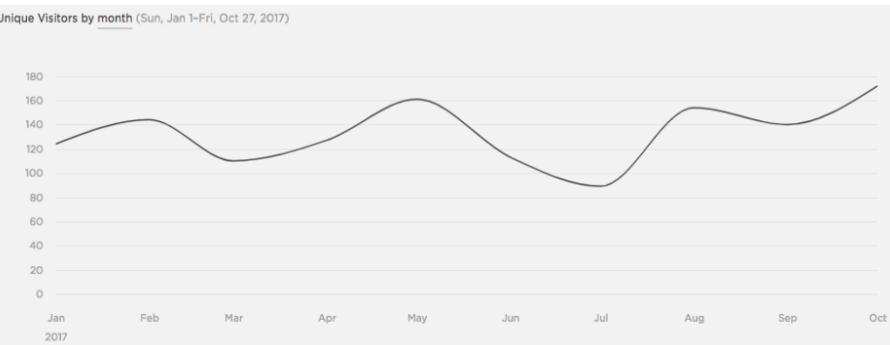


Figure 6: Website visitation since 01/2017

Figure 5: new subregion interactive maps

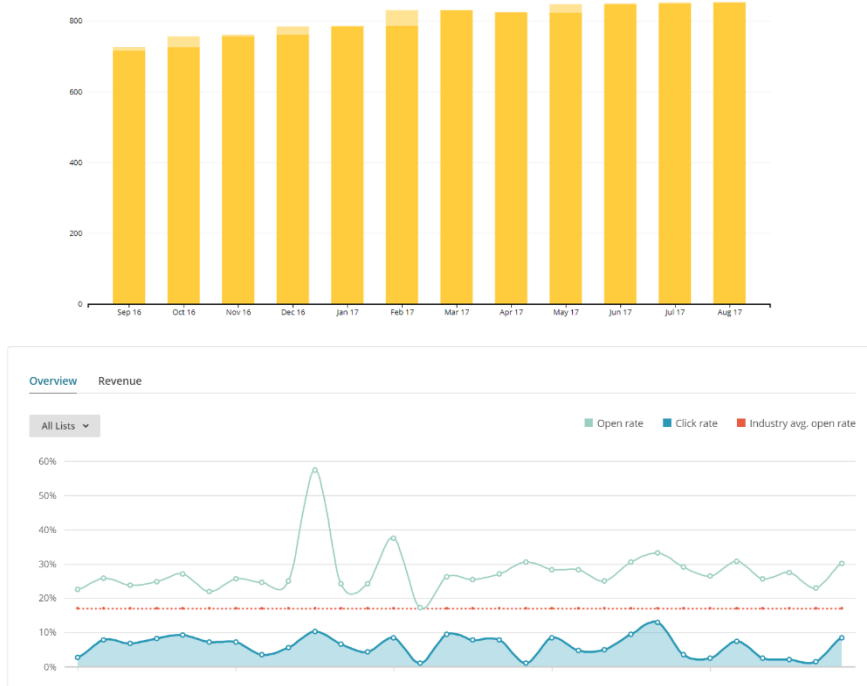


Unique visitors are currently increasing. However we don't expect meaningful traffic growth in until the website upgrade is complete. It will feature the new, more user-friendly subregion framework.

E-mail List, Newsletters, and Announcements

SRFSN currently has 904 subscribers on our e-mail listserve.. We produced 31 newsletters and announcements for both SRFSN and regional content, ultimately shared 18,046 times. The E-news continues to be one of the most followed and engaging way to build a wildfire information community with all stakeholders.

Figure 7: Top: Showing increase in subscriptions, Bottom: E-news open rates (blue line), industry average (red line), and click rates (solid blue)

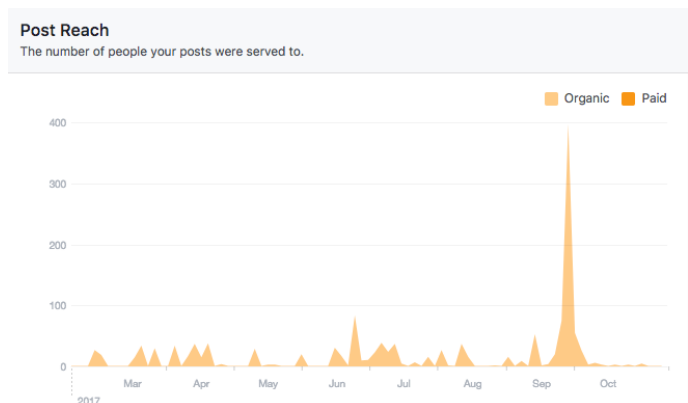


Two newsletters were also sent to the SRFSN Technical Advisory team resulting in research shared and referrals to experts on social science, and mountain pine beetle effects on wildfire behavior.

Twitter: Of all SRFSN social media, Twitter grows the most rapidly, with new followers weekly. Live-tweeting from events has been the best opportunity to build an audience of targeted followers and increase influence with our stakeholders. It's also an efficient way to gain the attention of journalists.

- Tweets since January 2017: 406
- Total Followers: 1,066
- 2017 New Followers: 201
- Post Reach: Peaked during live tweeting from Restoring the West Conference

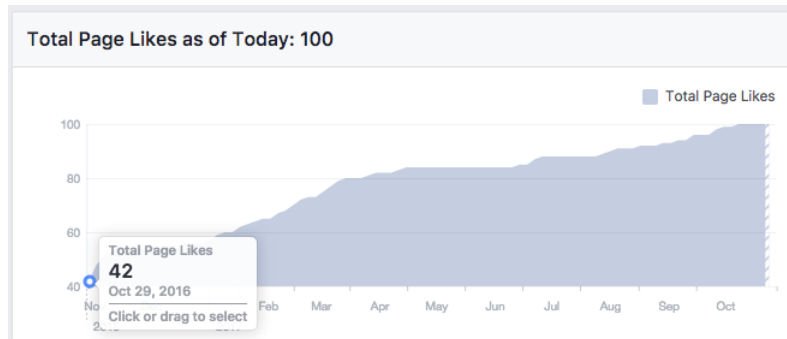
Figure 8: SRFSN Post Reach since January 2017



Facebook:

The SRFSN page was completely restarted in early 2017. The “Like” trend is moving in the right direction. We are fighting the ever constrictive Facebook algorithm that limits the visibility of pages with < 500 likes. To accelerate our reach, a campaign is underway encouraging “Likers” to share our page and request Likes.

Figure 9: Trends in SRFSN Facebook “Likes” since January 2017

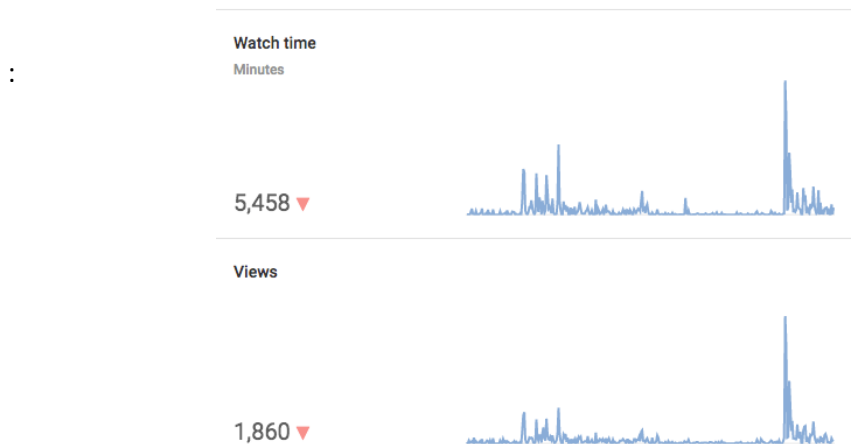


SRFSN YouTube Channel:

Our investment in video production continues to help our audience by providing content and messaging relevant to managers and communities alike. A primary success of 2017 is our “Bridging the Divide” 4 part video series that has garnered over 700 views to date.

- Total Views - 1,860
- Total minutes watched - 5,458

Figure 10: SRFSN YouTube Analytics since January 2017



All social media data indicates solid growth and following through FY 2017. SRFSN plans to improve social media posts during in-person events, and revise our photo bank to be used more easily by program assistants.

Selected Upcoming Events and Projects:

In Person:

- Association for Fire Ecology Congress, Orlando: booth, presentation & poster
- Society for Range Management 2018: SRFSN table and outreach activities
- Colorado Wildland Fire Conference 2018: Planning, Logistics, financial support
- Ferris Mountain Prescribed and Wildfire Effects: SRFSN financial and logistical support

- U. WY fire ecology class 2018
- Gambel oak/Mountain Shrub Ecology and Management Symposium, October 2018
- Field manager/research/staff exchange event, Rapid City, SD, spring 2018
- Possible TREX in Utah
- Pagosa educational signage project
- Continued biomass and prescribed fire tour activity

Online:

- Improved and expanded user-friendly website
- Expanded Facebook
- YouTube channel: SRFSN HotSpots:
 - Post-Fire Pine seedling recruitment (research currently being updated by scientists)
 - Cheat Grass: Prescribed Fire and Herbicides
 - Smoke and firefighter exposure study

Printed Products:

- Guidelines for Chipping and Mastication in the Front Range of Colorado: Now in final edits and layout; we anticipate this to be in print by December and distributed similarly to the SRFSN Gambel oak document
- Factsheets/Science Briefs: We will be exploring the possibility of providing science briefs for selected issues now that our region is becoming more familiar with our network, and we have had repeated requests for this type of science delivery.

Testimonials:

Bridging the Divide:

- *When it was over I left with a great feeling of "encouragement" for the future of our forest*
- *I actually LOVED the academic atmosphere and information. When all the factions were at one event-it was easier to try and see where the dots might connect or which variables might not be taken into account?*

Colorado Wildland Fire Conference:

- **Kathy Lower- North Park County Fire Safe Council**
As veterans of many trade conferences, we found this conference to be among the best produced and managed events I've experienced.
- **Lauren Dupey- Utah State University**
I gained a tremendous amount of knowledge on how people who work with wildland fire are working to address issues in cities and the WUI, and the research/technology that is being used to collect and analyze data. I was blown away by the number of different organizations that are involved in wildland fire, and how these individuals and different groups work together to address common goals. After attending the conference, I feel more confident in conceptualizing the management and policy aspects of working through my dissertation research; both of which are contributions I seek to make with my research.
- **Tom Austin- Log Hill Mesa Fire Protection District**
We were able to exchange ideas in many different forums and settings on a variety of topics which will greatly enhance the programs in my area. This interaction allowed me to go home with new and exciting ideas of programs to try to take my district's preparation to the next level.

Society for Range Management:

- *I'm so glad you were at SRM, and really enjoyed having you part of the CSU gang. I truly appreciate your support for the things I'm doing. It's not very often that people take the time to say "thank-you" — so thanks to you! And thanks for all you do for CSU. I believe you have the best interests of the department and college at heart as you go about your work with the fire network.*