

FY22 Annual Report to JFSP Covering October 1, 2021-September 30, 2022

Background: Partnership with Alaska Wildand Fire Coordinating Group

The activities of the <u>Alaska Fire Science Consortium</u> (AFSC) have their fundamental basis in AFSC's primary partnership with Alaska's interagency fire management community. This partnership is steered by the 17 member <u>AFSC advisory board</u>, whose membership reflects that of the <u>Alaska Wildland Fire Coordinating Group</u> (AWF-CG), the oversight organization for planning and implementing interagency fire management statewide since 1994. AFSC's ongoing collaboration with the AWFCG and its <u>committees</u> includes iterative information exchange to develop AFSC's activities to meet the community's <u>identified fire science needs</u>. AFSC continues to be strongly valued, trusted, and called upon as a resource by this community. Their feedback has been overwhelmingly positive, and they continue to reach out to AFSC for a range of assistance from help desk inquiries and webinar questions to workshop organizing, direct briefings, and trainings. Photos from FY22 events are available at <u>this link</u>.

Success 1: Public/media awareness efforts related to climate change

Another very active, unusual, and high impact Alaska fire season in 2022 again raised public and media interest in wildland fire in the region, particularly in the context of climate change. AFSC fielded many media inquiries this summer, including mentions in the New York Times, High Country News, CNN, The Guardian, Reuters, and the Anchorage Daily News. In this work, AFSC relied heavily on our ongoing partnership with the Alaska Climate Specialist Rick Thoman playing a prominent role.

AFSC and agency staff, including agency administrators and Public Information Officers (PIO), continue to refer to and draw on AFSC's <u>Alaska's Changing Wildfire Environment</u> (ACWE) in their interactions with media and the public; details on this publication's development were provided in the AFSC FY21 annual report. This glossy 16 page outreach booklet, which compiles information on the factors contributing to the intensifying patterns of wildland fire in Alaska and is accessible to a general reader, is available both online and in print. In FY22, the online version has been accessed more than 8000 times, and AFSC distributed approximately 1200 printed copies, many of them to managers for use in public presentations or to share with colleagues. AFSC has continued to get positive feedback on the product in FY22:

- Email from Beth Ipsen, BLM Alaska Fire Service (AFS) PIO, Subject line: Still getting a lot of valuable use out of the Alaska's Changing Wildfire Environment. The Alaska's Changing Wildfire Environment publication has been helpful for a variety of reasons and uses. The Public Information Officers in the Joint Information Center we activated during the busy part of the fire season found great value in it. Chris Demers, who is now filling the fuels specialist position for the Zones continues to take it with him when he visits communities to talk about fuels mitigation projects. I also sent one out with Tanana Zone FMO Branden Petersen who met with BLM Director Tracey Stone-Manning in Allakaket yesterday. He was able to refer to it when she started asking climate change questions. It was in a packet of information I put together for her so she went home with it.
- From an event evaluation: Alaska's Changing Wildfire Environment was a very useful product for me and I have used some of that information in multiple community and organizational meetings I presented at.
- From an event evaluation: The publications such as Alaska's Changing Wildfire Environment have proven very useful when briefing new management officials or new employees.

In FY22, AFSC led several follow up activities based on ACWE, including:

The three top leaders of fire management in the state (Norm McDonald, DOF; Bobette Rowe, US Forest Service; and Kent Slaughter, BLM AFS) asked AFSC to ghostwrite a press release based on the booklet, titled "Alaskans Should Prepare for Wildfire Season". As part of Alaska Wildfire Prevention week, the press release was distributed through agency communications channels and published in early May 2022 as an op-ed in the <u>Anchorage Daily News</u>, the <u>Mat-Su Valley Frontiersman</u>, and the <u>Fairbanks Daily News-Miner</u>, reaching the vast majority of newspaper readers in the state. AFSC anticipates that we will continue to assist agency staff with preparing a press release on the general topic annually.

AFSC Science Communication Specialist Zav Grabinski was invited by three different organizations to present on the ACWE material to general audiences in FY22:

- Webinar to the <u>In a Time of Change</u> (ITOC) group (24 artists collaborating with <u>Bonanza Creek Long Term Ecological Research</u> [LTER] scientists on a project called Boreal Forest Stories) in November 2021
- Opportunities for Lifelong Education course at University of Alaska Anchorage in autumn 2021 (12 students)
- <u>Science Pub event</u> sponsored by NSF <u>Alaska Established Program to Stimulate Competitive Research</u> (EP-SCoR), in November 2021 (40 participants in person, 25 online)

This success drew on the following activities from the AFSC 2021-22 Logic Model:

- Outreach focused on fire management needs
- Serve as subject matter experts at the national and regional levels

The relevant **societal impact categories** are:

- *Conceptual:* We expect that these projects have increased awareness of the interactions of climate change and wildland fire in Alaska and other northern locations in the general public, the fire and resource management community, and the scientific community in Alaska and nationally.
- *Capacity building*: AFSC's management partners have shared that ACWE has been a valuable resource for them in communicating internally and with the public, and AFSC has also found it useful; for example, AFSC has shared it with reporters and with participants at multiple field trips this summer (see success 3).

Success 2: Seasonal and topical workshops

In FY22, AFSC led three workshops and assisted an interagency task group with organizing one. All presentations and materials are archived on the AFSC site.

Seasonal workshops. Since 2014, AWFCG has given AFSC a portion of the agenda of its two seasonal interagency management meetings (Fall Fire Review and Spring Operations) to present fire science content. In FY22, both of these meetings were online only, and based on past event evaluations, AFSC was invited to distribute science content among the relevant management presentations, instead of all in one "workshop" block. According to the workshops' evaluations, this approach was well received:

- It seems to get better participation if it is dispersed. The shortened and virtual format was dealt with well.
- Yes, nice to mix them because they are (should be) integrated topics
- I thought the agenda was a good format, my brain gets tired when too many smart people go back to back.
- As a scientist, I appreciate more opportunities to interleaf science and management perspectives. As long as the managers like it too, it's great.
- Lots to absorb, but better to have it split up.
- I thought the integration of the AFSC portion in conjunction with the fuels topics was a particularly good fit
- I don't think I've ever been to a Fire Review that included current/ongoing fire research. I found it a very good use of time.

October 21, 2021: <u>Alaska 2021 Fall Fire Science Workshop</u>, in association with Alaska Interagency Fall Fire Review. Presentations included AFSC Fire Ecologist Randi Jandt with a recap of recent science news, and Zav Grabinski sharing progress and requesting management input for a story map on burn severity. A research presen-

tation on the performance of an experimental seasonal forecast product followed the Predictive Services briefing. After a presentation from the interagency fuels management committee, we shared updates from three projects related to fuels. Approximately 134 people attended the virtual meeting. Quotes from evaluations include:

- Emphasis on fuels which is getting a big boost in funding. Thanks for paying attention to management trends.
- Very interesting presentations, I bookmarked multiple links and will be doing a bunch of reading in the coming months. Especially interested in the fire severity mapping, forest treatments to reduce fire hazards, AK changing wildfire environment, multiple papers related to tundra fires, and the Firewall workshops.
- This information exchange is always helpful to connect with researchers and understand what kind of work is being done or planned. Excellent opportunities in the world of research to operations.
- Amazing wrap up and summary of several fairly "deep" journal articles and explaining the significance to managers! Great job and thank you for continuing to do this. I think this is useful not only for fire managers, but also ecologists who can't always keep up with all the literature coming out about fire science.
- Great information about fuel treatments. Very useful for thinking about their design and impacts.
- Pretty cool stuff. Makes me reconsider thinning.
- Great to see the presentation of this all. I think this is a great dataset! We hope to add to the knowledge with our long term monitoring sites of thinned fuels treatments on park lands.
- Fascinating, I will be following up with Jennifer {presenter}. That's exactly the kind of tool I need for a current project developing 6 new CWPP's in the Copper River Basin.
- Very eager to learn how this effort advances in coming seasons. Improved accuracy of long-range forecasts will be helpful for planning. If we find that this method only has skills in a sub-set of the PSAs, or is more liable in one part of the season than in another part, that will still be very actionable info.
- The seasonal forecasting is critical to my work, and is just beginning to provide insight into how we may be able to provide some more information on what to expect in the upcoming season. This can help with planning when to begin and end seasonal training, know what kind of resources may be needed in the shoulder seasons, and to know how severe the main part of our fire season may be.
- This is such tangible research into something that is critical to setting our communities up for success and preventing disasters that can be avoided by some planning and outreach.
- This is a part of wildfire management that hasn't really been addressed in Alaska, but clearly has impacts on fire management and infrastructure management of energy.
- Nice to see these new tools that technology has provided applied to communication. We can now offer the public info that is attractive to the eye, relevant to their lives, and scientifically on target. More of these will be nice in coming years.

March 23-25, 2022: Alaska 2022 Spring Fire Science Workshop, in association with Alaska Interagency Spring Operations. Again, this meeting format allowed AFSC to coordinate fire science content with relevant management presentations. Session 1 focused on fire weather and climate, with presentations from Predictive Services followed by an experimental seasonal forecast product, updates from projects working on lightning prediction, and introductions from two new post-doctoral fellows working in fire and climate interactions in Alaska. Session 2 focused on useful science, with Jandt offering a recap of recent science news, an update from agency GIS staff, and Grabinski presenting his now completed story map on burn severity. Session 3 focused on fuels, with a presentation from the interagency fuels management committee, a progress report on the development of a new risk exposure metric, and the introduction of a new statewide vegetation map. Approximately 110 people attended the virtual meeting. Quotes from evaluations include:

- The fire science presentations were very informative and provided a more holistic view concerning wildland fire management
- I heard a comment from a self-professed, "tool dragger" that he and his peers in the room with him were listening and heard the messages coming from researchers speaking on fire and climate change. This illustrates to me a very tangible benefit of this session.
- Was familiar with the story map before this, but great to hear Zav talk about the process. The story map is extremely valuable-have already linked to it in documents.
- We are doing CWPP planning in the Copper River Basin and really want to use the Exposure Matrix, however the ABoVE14 data excludes a large amount of our area, so we are looking at aligning with a different vegetation layer.

- Thank you for the in-depth presentation on your tool development. We are interested in finding an appropriate vegetation layer to assign values to, which it also sounds like others are looking into. Hoping to collaborate or reach out to those folks so we do not do duplicate work and so it can be more 'standardized' from a quality control perspective.
- Thank you for the information you presented and addressing the Alaska Vegetation Wetland Composite. Looking forward to future products.
- I hope that people see the value in this for fire and contribute \$ to development

Topical workshops. AFSC was involved in two topical workshops in FY22, the first in support of an interagency task group, and the second as organizers, conveners, and facilitators.

April 7, 2022: Alaska Resource Planning for Fuel Treatment Projects Virtual Workshop. As an initial step in the coordination needed to implement the growing workload in fuels management, an ad hoc interagency task group requested AFSC's assistance with a workshop targeting agency staff tasked to prepare plans for small-scale and landscape level vegetation treatments. The workshop was intended to improve understanding of the relevant resource laws and regulations for both non-federal and federal projects to facilitate efficient collaboration among resource professionals and fuels specialists. AFSC served on the workshop organizing committee, hosted the workshop website and the online meeting, helped develop the agenda and evaluation, shared information about the workshop, served as facilitators for the meeting as a whole and for breakout sessions, and assisted with preparing workshop products. 107 people attended the virtual meeting. Quotes from evaluations include:

- Fantastic presentations and an initial introduction of all the programs involved. For future planning, I look forward to options that allow for more collaboration, diving into details, and allowing for discussion time. This is not a criticism of this workshop. It was fantastic! It's just a desire to now get collaborating after such great exposure to so much talent!
- Really opened my eyes to the types of treatments and considerations and options for planning purposes. Great presentation that would be beneficial to present to all BLM IDT meetings.
- It was great to have all of this information in short bursts to give a broad overview off all the considerations. I am very excited to view the video recordings again and resource links that were listed in the presentations.
- So many folks attended!! Lots of useful topics. This just touched the surface and all of these topics are wells when you have to implement them.
- Some good discussion and refreshers relevant to all NEPA analyses we do; updates on things like BGEPA revisions.
- Even though presentations were short, provided contacts. Good initial start on a big multi-faceted topic.
- The variety of presentations and the short overviews of all the different topics were all really helpful!
- Great agenda, great flow. Look forward to a future time to dive in deeper to some of the topics presented.

May 12-13, 2022: Research to Operations (R2O) workshop: Using Remotely Sensed Data in Fire and Resource Management. The 2022 R2O workshop contributes to AFSC's ongoing line of work on applying remotely sensed data to fire and resource management, and built on the foundation laid in 2017 with AFSC's first workshop on the topic, sponsored by the NASA Applied Sciences program. The 2022 workshop used the opportunity to engage leading remote sensing (RS) and field scientists working on the Arctic-Boreal Vulnerability Experiment (ABoVE). ABoVE, a major NASA field campaign focused on environmental change in Alaska and western Canada, convened its annual Science Team meeting earlier the same week in Fairbanks. AFSC led all aspects of the workshop. Following an introductory session, workshop participants (the majority university researchers but also agency scientists and managers) took a field trip to the nearby Alaska Division of Forestry and Fire Protection Northern Region facility. The field trip included tours of the dispatch, GIS, aviation, and logistics facilities. Participants were very engaged and asked many excellent questions of the agency staff, and several mentioned the field trip in their workshop evaluations as a very informative highlight.

The workshop covered the three priority workshop topics (soil moisture, vegetation, and smoke/emissions/combustion) from both a management and science perspective. The agenda allowed considerable time for productive and informative discussion across these perspectives. A workshop report is in preparation. 68 people attended the meeting, offered in a hybrid format. Quotes from evaluations include:

- Learning what managers need and engaging with them is critical to R2O!
- As an applied RS and climate data scientist, these workshops provide critical input to research question development.
- Diversity of highly experienced voices from both the research and management communities.

- This oriented my fuels research towards variables used in management. Excellent dialogues.
- *I liked the synthetic topies and long discussions.*
- Great info on both management needs and cutting edge work. Covered a lot of different topics and did not get bogged down.
- Fire is a primary driver of environmental change on the unit I manage. I need to access, use, and drive research.

This success engages all four activities from the AFSC 2021-22 Logic Model:

- Outreach focused on fire management needs
- Support collaboration on regional fire science problems
- Serve as subject matter experts at the national and regional levels
- Program evaluation

The relevant **societal impact categories** are:

- *Instrumental:* These workshops provided specific information on a variety of issues.
- *Conceptual:* Evaluation data from the workshops show that the workshops' presentations and discussions increased participants' understanding of the research results, issues, processes, trade-offs, and feasibility of various options and of the information resources needed to support planning and decision making.
- *Capacity building:* The workshops' materials provided useful information resources for participating agency staff and scientists.
- *Connectivity*: The workshops connected multiple communities, including academic and agency scientists and managers.

Success 3: Developing a field demonstration site

In July 2021, lightning ignited the <u>Yankovich Road fire</u> on the University of Alaska Fairbanks (UAF) research arboretum adjoining a neighborhood in Fairbanks. This wildland-urban interface fire drew a rapid and effective response due to the numerous values at risk and was suppressed at around 3.5 acres. The fire scar is located on university land, easily accessible by a short walking trail. In partnership with BLM Alaska Fire Service Fire Ecologist Eric Miller, a member of the AFSC advisory board, AFSC organized a <u>field crew of UAF faculty and students</u> to help install fire effects monitoring transects in August 2021. Our initial motivation was to collect fire effects data and train students and agency staff on fire effects monitoring protocols, but it quickly became evident that the site had more to offer. In 2021, AFSC hosted two field trips to the site for artists participating in the ITOC project. In 2022, AFSC and Miller hosted joint field trips for participants in the Intertribal Timber Council's annual <u>Indian Timber Symposium</u> and the <u>Alaska Society of American Foresters Annual meeting</u> (about 220 people total), as well as field tours for several visiting scholars and dignitaries, including NOAA's Senior Advisor for Climate Ko Barrett and NOAA Administrator Rick Spinrad. Miller also used the site to educate hotshot crews from the lower 48 about the unique features of the Alaska fire environment, and hosted a school field trip for 5th graders.

These experiences encouraged AFSC to develop the area as a demonstration site that could be used for self-guided tours by a variety of audiences. In 2022 AFSC received approval from UAF to install interpretive signage and a 250 m wood chip trail in the fire scar. AFSC is collaborating with the International Arctic Research Center's science communications lead and an artist from the ITOC project to develop the signage, which will be installed in the spring of 2023. The signage will cover fire as a natural element of boreal forest ecology, the unique fuels of the boreal forest, the management response to the incident, fire effects and successional trajectories, the effects on wildlife, the influence of climate change, wildland-urban interface issues, and Firewise guidance. The signage will include a QR code linking to the AFSC website for more information on each topic. Interviews are planned with homeowners affected by the fire for a podcast series to document their experience and encourage Alaskans to Firewise their property and be prepared for evacuation. The draft signage will be reviewed by the AFSC advisory board and the AWFCG Wildland Fire Education and Prevention Committee. In addition to AFSC funding, the project has received support from the Alaska NSF EPSCoR Fire and Ice project, U.S. Department of Agriculture's National Institute of Food and Agriculture Hatch project 1018914, and the State of Alaska.

This success drew on the following activities from the AFSC 2021-22 Logic Model:

- Outreach focused on fire management needs
- Support collaboration on regional fire science problems
- Serve as subject matter experts at the national and regional levels

The relevant **societal impact categories** are:

- *Conceptual:* We expect that participating in the field trips has increased participants' knowledge and awareness of wildland fire impacts in the boreal forest.
- *Capacity building:* The fire effects transects provide useful information resources; installing and collecting data from the transects enhanced the skills of UAF faculty and students.
- Connectivity: The field trips connected multiple communities, including academic and agency scientists and managers.

Evaluation results

Results from our event evaluations in FY22 give us confidence that AFSC is meeting our target audience's needs and encourage us to continue our program of work in the same general direction. Quotes from these evaluations include:

- I say just keep up the good work, I enjoy the variety of projects and have learned a whole lot over the years I've been following AFSC.
- I could not conduct meaningful research without AFSC.
- I think AFSC and JFSP are exemplary in their approach and hugely impactful for how applied science should be done.
- The most important function of AFSC is to connect Managers and Researchers so that they can exchange information and coordinate.
- Remarkable that scientist-to-manager direct communication is now a given in this management community.
- Bringing these presenters and providing small snippets of science is extremely valuable to the fire community in Alaska (and beyond). Most people don't have the time to read scientific papers (or even short summaries or web sites!) but when you can help present the information it really works.
- AFSC has been integrated into our committees and supports many of our events in varying capacities. The main benefit of this is that they also embed themselves in the research community and help to facilitate participation from fire managers and researchers in each other's events.
- No doubt about it, the information I have learned through AFSC projects just makes me a better FMO and informs decisions I make all the time. I am often able to find answers to questions I can't answer by searching through information AFSC provides.
- I have used AFSC when speaking with legislators regarding budget and the future of wildland fire in Alaska.
- There continues to be a great need for a specific focus on fire science and management for Alaska.
- I use AFSC to inform my thoughts and decision-making. I would be years behind without AFSC!
- Bringing together the wide variety of research each spring and fall is also very helpful. I know I can always pick up the phone or send an email to Alison or Randi to get connected to researchers and the current state of knowledge.

Staffing

Mitch Burgard joined the AFSC staff in the role of part-time fire analyst in February 2022. Burgard has decades of experience in wildland fire modeling, geospatial and weather data analysis, science communication and technology transfer, and operational systems. Burgard provides advice on modeling and weather issues to agency staff and Alaska research projects and, with USFS funding, works directly with the NWCG Fire Behavior Subcommittee to help develop and update training materials. Other members of our staff remain the same, all of whom work on a part-time basis: Coordinator, Alison York; Fire Ecologist, Randi Jandt; Science Communication Specialist, Zav Grabinski.

October 28, 2022

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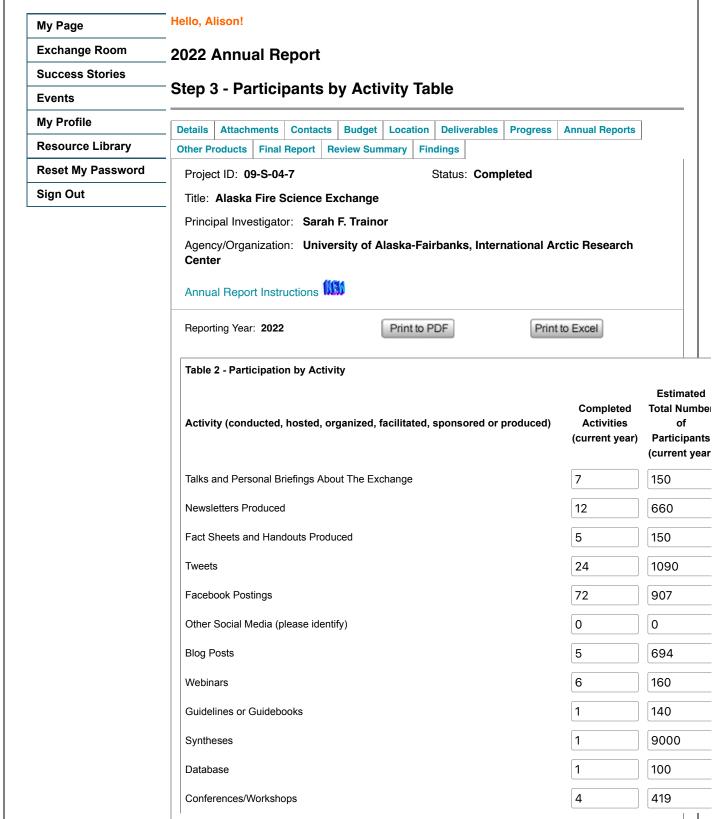


My Page	Hello, Alison!					
Exchange Room	2022 Annual Report					
Success Stories	·					
Events	Step 3 - Participants by Activity Table					
My Profile	Details Attachments Contacts Budget Location Deliverables Progress An	nnual Reports				
Resource Library	Other Products Final Report Review Summary Findings	<u> </u>				
Reset My Password	Project ID: 09-S-04-7 Status: Completed					
Sign Out	Title: Alaska Fire Science Exchange					
	Principal Investigator: Sarah F. Trainor					
	Agency/Organization: University of Alaska-Fairbanks, International Arctic Research Center					
Annual Report Instructions						
	Reporting Year: 2022 Print to PDF Print to Excel					
Table 1 - Participation by Organization (as shown from your mailing list subscribe						
	Organization	Unique Total Number of Participants				
	Tribal Nations	10				
	States	63				
	Counties/Burroughs/Parishes Cities and Local Communities Regional Authorities Orivate Landowner					
	1					
	Companies	15				
	Consultants	11				
	International	6				
	University and College Faculty or Researchers					
	University and College Students	44				
	Prescribed Fire Councils	0				

Fire Learning Network and The Nature Conservancy	2			
Non-Governmental Organization (not listed above)	28			
Bureau of Indian Affairs	12			
Bureau of Land Management	72			
Fish and Wildlife Service	36			
Forest Service (National Forests, Grasslands, State and Private Forestry)	55			
Forest Service Research	18			
Geological Survey	9			
National Park Service	29			
Natural Resources Conservation Service	1			
US Bureau of Reclamation	0			
National Oceanic and Atmospheric Administration and National Weather Service	21			
Agricultural Research Service	2			
National Aeronautics and Space Administration	4			
Department of Defense including Coast Guard	9			
United States Fire Administration	0			
Federal Emergency Management Agency	2			
Environmental Protection Agency	2			
Media	2			
Other:				
Canadian subscribers	32			
Save Before Continuing to Step 2				
Go to Step 2 - Participation by Activity Table				
<< Go Back				

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1 1	Conference or Symposia Presentation (note participants are for the talk not the entire conference)	7	160			
	Poster Presentation (note persons engaged not the entire conference)	0	0			
	Short Courses and Continuing Education Units	1	12			
	Academic Credit Courses	0	0			
	Bibliography or Annotated Bibliography	1	100			
	Video/Vimeo productions	47	303			
	Requests for Information, Assistance, or Referrals	82	300			
	Field Trip, Tour, Demonstration or Roadshow	5	300			
	Field Consultations and Expert Cadres	5	40			
	Training Sessions	0	0			
	Leadership Briefings	3	15			
	Podcasts	0	0			
	Other:					
	media interviews	7	100000			
	Save Before Continuing to Step 3					
	Go to Step 3 - Attach pdf					
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