The Tech. Spec.

Wildland Fire Management RD&A Summer 2019

Inside

WFM RD&A Supports the Field – Fire Season 2019

Once again, the WFM RD&A is supporting fires this season. Our primary goal is to assist managers in making the best fire decisions they can. Most of our work is centered around the Wildland Fire Decision Support System (WFDSS), which provides a risk-informed decision process

through a deliberative risk analysis. Our team is comprised of an experienced cadre of people to help federal, state, tribal and local government land management agencies with wildland fire decision making. We assist them in obtaining site-specific fire modeling results and answer questions regarding decision documentation, publishing and other WFDSS issues. Much of our work is done virtually, but we can also set up local Decision Support Centers when needed, and many of us participate on incidents as LTANs, FBANs, SOPLs, and GISSs. Learn more about our team here: https://wfmrda.nwcg.gov/staff_bio.php

Managers Corner

Tim Sexton – Program Manager WFMRD&A

T he last few months have been marked by a great deal of personnel changes in the WFM RD&A, including the retirement of my supervisor Colin Hardy (Director of the Missoula Fire Sciences Laboratory) and the selection of Sara Brown as his replacement. Lisa Elenz--who served as our direct link to WO-FAM as the Assistant Director of FAM for Capabilities, Development, and Integration--retired in April and immediately went on a lengthy Paris vacation. Sounds like fun after a great career! Rhonda Toronto has ably stepped in for a 120-day detail in this position with a wealth of experience and skill in managing federal information technology units. We are lucky to have her. Another detailer will likely fill the position before a permanent replacement is selected. Our own Dan Mindar retired in June after 25 years of federal service. He was a strong leader in the fire behavior arena and we will miss his myriad of skills and mentoring--congratulations, Dan! We finally replaced Marlena Hovorka (retired in August 2017) and Mark Hale (promoted to Deputy Manager of the WFM RD&A) from talent-laden certificates for the positions. After much deliberation and review, we selected Erin Noonan-Wright and Morgan Pence and, in turn, outreached the vacancies left by them.

The Wildland Fire Decision Support System

(WFDSS) application continues to be our highest priority. As many of you know, we have experienced chronic "bugs", degraded performance, and outages, requiring increasing amounts of staff time with our Project Manager and the contractor to identify and resolve. However, we are committed to maintaining decision support by working directly with users and Geographic Area Editors. The good news is, we are initiating planning for the "Next
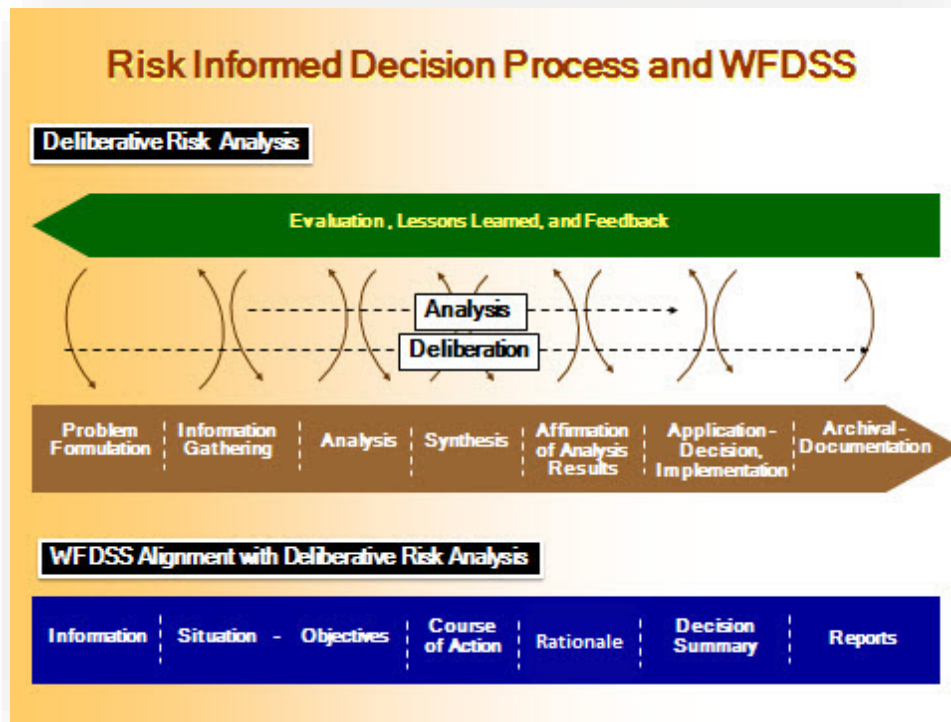
Generation" WFDSS. We started conversations with US Forest Service research scientists on new WFDSS capabilities and analytics to include. We are developing a plan for engaging the broad interagency community of users to ensure we consider their collective needs and desires for wildland fire decision support.

As for me, I am serving as one of three Area Commanders, agreeing to continue serving after the end of my initial three year commitment until a trainee can replace me. There are currently only three federal employees qualified for any of the Area Command positions (myself and Yolanda Saldana of the Forest Service and Jim Loach of the National Park Service). I participated in the development and initial delivery of a new S-620 training course with CalFire. We now have about 30 trainees to get qualified this year. I am the USFS lead for developing a response to the [Dingell Act (https://www.congress.gov/bill/116th-congress/senate-bill/47/text](https://www.congress.gov/bill/116th-congress/senate-bill/47/text)) Wildland Fire Decision Support requirements (Sec. 1114), and will work with Anne Black to develop the response and enhancements to our systems. I am also serving on the Risk Management Assistance steering committee and will provide support as needed.

It is an exciting time for the WFM RD&A as we navigate all of these changes while providing the highest level of support to the interagency fire community in wildland fire technology transfer and decision support. I have a talented team of employees and am confident that we will be successful.

WFM RD&A Supports the Field – Fire Season 2019
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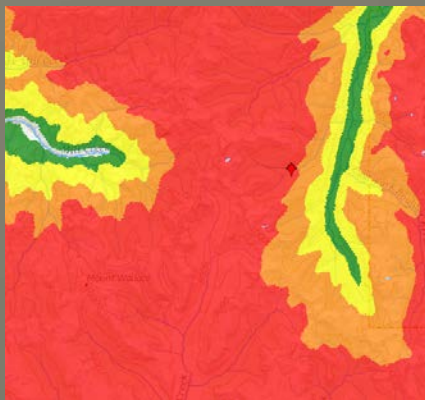**Risk Informed Decision Process and WFDSS**

Risk-informed decision making requires both analysis and deliberation. Usually, analysis informs deliberation to facilitate understanding of issues relevant to the decision. This graphic, taken from the WFDSS Home Page, shows how a deliberative risk analysis (top portion) relates to the steps of a Decision in WFDSS (blue bar at bottom).

WFDSS Data Refresh Plan

WFDSS users know that the application hosts a lot of geospatial data including base maps, fire history, active MODIS and more. To see when layers are updated, who owns the data, data standards, your local data contact, spatial data downloads, or the FMU Update Schedule, check here: https://wfdss.usgs.gov/wfdss/WFDSS_Data.shtml

This is the" Estimated Ground Evacuation Time" layer from the WFDSS Situation Tab. Red means it will take 6+ hours for any firefighter extraction. Did you know that you can download the firefighter evacuation layer for use in ArcGIS? See the data link provided and select Spatial Data Downloads.

WFDSS "Help and Feedback" Always Available

You can always reach us by using the "Feedback" button in WFDSS, or calling the *Analysis and Decision Content Support* phone number on the WFDSS Home page - https://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml

That phone number is changing this summer and we are working to ensure it is posted on all our documentation-- please make a note of the new number: **208-387-5253.**

Detailers Bring Experience and Perspective to the WFM RD&A

Shaniko Cowie completed a 120-day detail this spring with the WFM RD&A, coming from the Malheur National Forest and working as a Fire Management Specialist working mostly on fuels related projects. During her detail she worked to keep the WFDSS Help documentation current and update documents and links available on the WFM RD&A webpage. She says, "Detailing with the RD&A was a great opportunity to meet a great group of people, be exposed to a set of national issues from a different perspective, and learn a lot about WFDSS." We enjoyed her skills and enthusiasm!

Tony Beauchaine is a Supply Technician for BLM-NIFC with great GISS skills. He detailed with the WFM RD&A this spring and helped us update 26 datasets for WFDSS, completing Quality Assurance/Quality Control on all input and output datasets, configuring schema, obtaining authoritative data sources, and resolving data issues. Many users don't realize how much behind-the-scenes data work our team must accomplish to get the system to run. It's people like Tony who work to make it happen!

Rick Mowery is a fire ecologist on the Fremont-Winema NF in Oregon. During his detail, he supported O&M for the WFDSS application. When asked by people at home what my detail was like, he says: Imagine you show up to a new job in a new place, and as you walk in for your first day, you realize the building is on fire. And there is this fantastic group of helpful people showing you around while they battle the blaze, working cheerfully with each other in the midst of the chaos. And this is your desk – sorry about the flames, let me get that. And over here is our employee breakroom where … Ack! Warthogs! I thought we got rid of those last month!" Rick worked on contingency planning, error tracking, contract amendments, troubleshooting problems and working with users on incidents and learned more about what goes on behind the curtain of WFDSS than he ever dreamed. His favorite part is the opportunity to work with a really great team, and he can't imagine a finer group of folks to chase warthogs with!

Ian Rickert came to us as the Interagency Fire Planner on the Sawtooth National Forest and the Twin Falls District of the BLM in Idaho. Ian jumped on board in January and quickly took up duties as a key player in managing the many complex duties associated with WFDSS. Ian was a terrific asset to the team and we're excited to have his expertise in the field to call on when things get busy. Thanks Ian!

A Big Thank You to all the Detailers we have had over the years – we couldn't do it without YOU!

Moroccan Fire Modeling Workshop

Globally, destructive wildfires in chaparral ecosystems are becoming more prevalent. Over the last decade, fatality fires in the Mediterranean regions of Italy, Portugal, Spain, and Greece have occurred, in part, due to climate change. Northern Morocco, located just south of Spain on the African continent, shares similar characteristics in vegetation and fuels as those neighboring countries to the north. The Moroccan High Commission of Waters, Forests and Combating Desertification in collaboration with the U.S. Forest Service International Programs facilitated a 5-day workshop in Tetouan, northern Morocco to teach fuel and spatial fire modeling to better prepare for these types of wildfires. Erin Noonan-Wright taught aspiring fire modelers how to cross walk vegetation to the 40 surface fuel models (Scott and Burgan 2005); utilize LANDFIRE methodology for mapping vegetation; and model emerging wildland fires using FlamMap 6.0 which allows for fire behavior and fire growth modeling and analysis using Basic fire behavior, Minimum Travel Time and FARSITE (Finney 2002, 2004). In coordination with Firelab Spatial Analyst, Chuck McHugh, Erin developed a customized workshop using geospatial information and vegetation data tailored to the Moroccan landscape. The workshop included lectures, field visits to the Zeitoun Fire, and hands-on application of FlamMap 6.0, facilitated by both Erin and Mark Rooney (US Forest Service International Programs).

Erin Noonan-Wright demonstrates the use of the Avenza iPad application

to capture geo-spatial data for mapping surface fuel models for the Zeitoun Fire, south of Tetouan, Morocco.

Congratulations to Dan Mindar on his Retirement in June, 2019. Twenty Five Years of Federal Service. We will miss him and hope to continue to work with him on future fires.

Fire Behavior Field Reference Guide, PMS 437

Chock full of fire behavior assessment information.

It's available here and will be updated often:
https://www.nwcg.gov/publications/pms437

It is a hands-on publication for use in the field, in fire behavior training and as a learning reference. It is intended to be used in conjunction with the Fireline Handbook, Appendix B: Fire Behavior, PMS 410-2

IFTDSS: Interagency Fuels Treatment Decision Support System

https://iftdss.firenet.gov

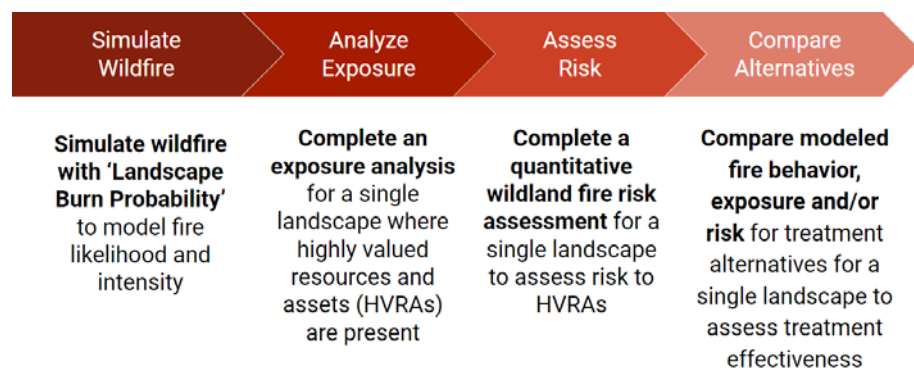*Phasing in Quantitative Wildfire Risk Assessment (QWFRA)*

A Wildfire Risk Assessment Framework for Land and Resource Management

Under development

A workflow and tools to perform a Quantitative Risk Assessment (QRA) from the project to the unit scale is under development in IFTDSS. The process follows the steps outlined in GTR-315, "A wildfire risk assessment framework for land and resource management." IFTDSS is unique in that it will contain a comparison functionality allowing users to complete a QRA and then compare treatment alternatives to understand the potential impacts on risk.

- Create and edit Landscapes directly in IFTDSS
- Characterize Highly Valued Resources and Assets (HVRAs)
- Users choose from the National HVRAs or upload their own HVRA shapefiles.
- Landscape Burn Probability is completed with a customized version of FlamMap developed specifically for use in IFTDSS
- Automated wildfire exposure and risk calculations. Map products, reports containing summary tables and charts, and downloadable data to be used in further analysis outside of IFTDSS if needed
- Use IFTDSS to compare different fuel treatment alternatives to evaluate impacts to the risk assessment after completion of QRA

The IFTDSS development team and technical advisors began work on the technical details of the Quantitative Risk Assessment through the summer of 2018. The Landscape burn probability model will be available in July 2019. Throughout the remainder of 2019, the team will develop the user interface, workflow and data specifications within IFTDSS with portions of the workflow being incrementally available throughout the year.

Simulate Wildfire → **Analyze Exposure** → **Assess Risk** → **Compare Alternatives**

Simulate wildfire with 'Landscape Burn Probability' to model fire likelihood and intensity

Complete an exposure analysis for a single landscape where highly valued resources and assets (HVRAs) are present

Complete a quantitative wildland fire risk assessment for a single landscape to assess risk to HVRAs

Compare modeled fire behavior, exposure and/or risk for treatment alternatives for a single landscape to assess treatment effectiveness

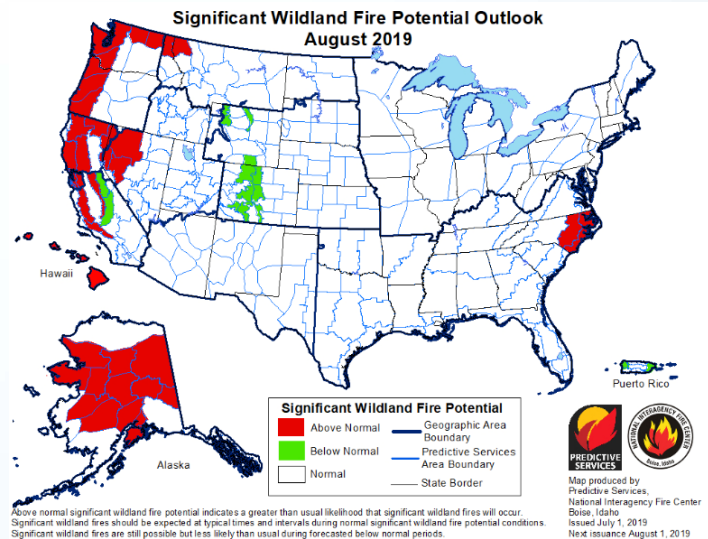# WFM RD&A Assists with Line Officer Certification

Line Officers face challenging decisions when faced with landscape-scale Wildfires

Tami Parkinson has been an ad hoc member to the USFS National Line Officer Team (NLOT) since 2011, annually coordinating review of the Line Officer Agency Administrator Desk Guide and assisting with updates to the Interagency Standards for Fire and Fire Aviation Operations (aka Red Book). In 2017, a team of line officers and fire staffs began discussions to update requirements for Agency Administrator Wildfire Certification and provide Prescribed Fire Certification standards. The outcome of these meetings was the development of the USFS Agency Administrator (AA) Task Book to document the certification elements for both wildfire and prescribed fire qualifications. This new process of using the task book is very similar to the use of task books to document fire line qualifications, although this document is managed by NLOT and not NWCG. The task book is in a pilot year, and the working group is looking for additional feedback or recommendations for a plan to have a final version for the 2020 field season. Changes to the AA certification, crosswalk, Frequently Asked Questions (FAQs) and requirements can be found on the WFM RD&A Decision Support Toolbox webpage https://wfmrda.nwcg.gov/line_officer_resources.php

If you haven't seen it, the *National Significant Wildland Fire Potential Outlook* is available at the start of each month.
https://www.predictiveservices.nifc.gov/outlooks/monthly_seasonal_outlook.pdf

Update from the Advanced Fire Environment Learning Unit (AFELU)

Remaining current with all the new fire behavior modeling techniques, tools, and resources can be challenging. Additionally, being away from some of the tools for a short time might require a reminder or refresher. The Advanced Fire Environment Learning Unit (AFELU) continues to create content relevant to fire behavior field practitioners. Dan Mindar stepped down since he retired, but committee members include Wesley Hall, Diane Abendroth, Tonja Opperman, Tami Parkinson, and Paul Schlobohm. Information about AFELU is on their website, which also includes links to all the videos from the November 2018 Season AAR--check them out and stay tuned for another fall webinar to showcase more tools and lessons learned!
https://www.nwcg.gov/committees/advanced-fire-environment-learning-unit

...also on the Fire Behavior Subcommittee YouTube Channel:
https://www.youtube.com/user/FireBehaviorSC

The Sixth Fire Behavior and Fuels Conference:
Albuquerque, NM and Sydney, Australia

Highlighting Women in Fire and a Spotlight on Emerging Technologies

The Sixth Fire Behavior and Fuels Conference, sponsored by the International Association of Wildland Fire (IAWF) began in Albuquerque, NM on April 29, 2019. Tami Parkinson coordinated and facilitated a deep-dive session to promote and share emerging technologies used to inform fire management. Workshop experts included Dan McEvoy, Assistant Research Professor and Regional Climatologist for Desert Research Institute (DRI); Jonathon Case from ENSCO NASA SPoRT; Todd Lindley, Science and Operations Officer NOAA/NWS; Adam Watts, DRI Associate Research Professor; and Jessica Block, Assistant Director WIFIRE UC San Diego. The abstracts for the session are posted here:
http://albuquerque.firebehaviorandfuelsconference.com/program-schedule/

Tami partnered with Dr. Tamara Wall (DRI) to lead an international panel co-hosted in Australia and the US to share information about "What happens when women thrive – a life and career in fire". Across the globe there are low numbers of women working and participating in fire. There are many reasons why that is the case – some historical, some cultural, some political. Despite widespread commitment in recent years to improve diversity and inclusion, many organizations have been slow to change and miss out on the benefits of having a more representative workplace – more innovation, reduced turnover, a wider access to talent, and more. This panel discussion featured prominent women in fire management from the United States and Australia, at various stages of their careers, and with different stories of success, failure, hope and ambition. The session invited the audience to share their own stories of gender diversity and inclusion regarding what has helped or hindered their own careers, and what needs to be done to achieve real change. This session was moderated by Dr Tamara Wall from the Desert Research Institute, Reno, Nevada, and Tami Parkinson, from the US Forest Service at the US conference, plus a moderator in Australia. This session was recorded and the vimeo feed can be found here: https://vimeo.com/335612890

Women in fire management shared their career stories across the globe. Tami Parkinson is on the U.S. panel in Albuquerque, shown on the screen listening to panelists in Sydney, Australia.

WFM RD&A Staff Participate on Facilitated Learning Analysis Team:
Pole Creek and Bald Mountain Fires

Sam Amato participated in the FLA for the Pole Creek and Bald Mountain Fires of 2018 as an LTAN. This assignment built on a previous wildfire assignment to the Pole Creek Fire as the LTAN trainer of Annie Benoit (LTAN-t). Retrospective fire behavior, weather and climatological analyses were completed, building upon Annie's previous analyses with additional input from multiple interviews. The goal of these analyses was to provide the FLA audience a more faceted understanding of the entire situation, through an examination of weather and fuel trends and conditions, with the advantage of hindsight. Follow the link below to read the Pole Creek FLA and its conclusions.
https://www.wildfirelessons.net/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=d6101e63-2423-f5a7-d342-6c8c353c9504&forceDialog=0
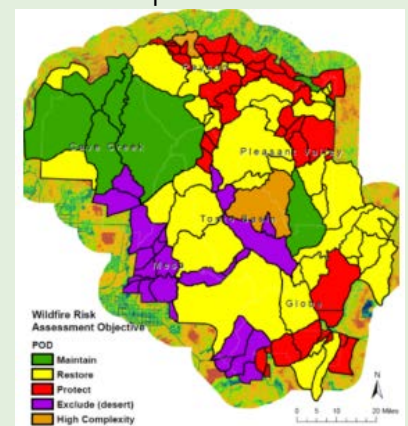
Diane Rau Completes Detail as Fire Planner in the USFS Southwest Regional Office

Early in 2019, Diane Rau completed a 120-day detail as Region 3 Fire Planner at the USFS Southwestern Regional Office. Her WFDSS and planning expertise was an asset to the Region at a time when many Forests were behind in planning tasks as a result of the partial government shutdown. She helped the Coconino N.F. update its spatial fire plan by aligning language in WFDSS with direction in the Forest's new Land and Resource Management Plan; provided assistance to Forests beginning to incorporate Potential Operational Delineations (PODS) into WFDSS; and provided in-depth WFDSS workshops to multiple Forests in AZ and NM. She also started coordinating the next steps for the NFDRS16 fire danger process for the Southwest Geographic Area, served as an administrator for FIRESTAT, and attended the National Fire GIS Coordinator's call as a Region 3 representative.

Diane was glad to be of service to the Southwestern Region's Fire Program; it was a great opportunity to repurpose her skills, serve a targeted audience and gain insight that will benefit her role as a Fire Technology Transfer Specialist in the WFM RD&A program.

Example of a POD map for the Tonto National Forest.

Implementing the Cohesive Strategy

Tami Parkinson represents the WFM RD&A on the Western Region Cohesive Strategy Committee (WRSC). She has been on the planning committee for the last two national workshops held in Reno, NV and is one of the chairs for the National Cohesive Strategy Workshop in Plymouth, MA 2019. The national workshops provide an opportunity for practitioners and researchers to share information about what is or isn't working to promote landscape resilience, fire adapted communities and wildfire response. The national workshops bring together all three regional areas to share and transfer knowledge. The National Cohesive Strategy pushes us to challenge our current and historical

approaches to our nation's rapidly changing wildfire realities and reach beyond our jurisdictional borders to: redefine and understand risk, share and co-manage risk, set large, landscape-level and community-wide priorities and collectively invest in outcome-based approaches to achieve resilient landscapes, fire adapted communities and a safe effective wildfire response. More information on the 3rd Workshop can be found here: https://www.iawfonline.org/event/2019_cohesive_strategy_workshop/

Learning Lab – Two Day Workshop on Living With Fire in Valley County, ID

Tami worked locally with the Valley County Fire Working group to host a two-day learning lab in May, 2018 and the group is planning to implement a follow-up workshop in July, 2019. The learning lab exercise brought together key stakeholders, community members and fire leaders to work together and chart a collaborative approach to fire management prior to smoke in the air. Katie Lighthall (WRSC Coordinator) and Joe Stutler (WRSC Chair) assisted with the implementation of the learning lab in 2018; they will assist with the follow up workshop in July of 2019. A video from the 2018 workshop can be found here: https://www.youtube.com/watch?v=OrPk-E3HcSA&feature=youtu.be

Mentoring Efforts by the WFM RD&A Staff

Last year, Tim Sexton challenged our staff to take positive steps toward mentoring employees outside of the WFM RD&A. We almost always have Detailers and mentor fire behavior trainees through our Call When Needed program, or during fires, but Tim asked us to be more deliberate in our efforts. In the past year, our staff have provided mentoring via the Thurgood Marshall internship to newly hired local fire ecologists, at local school "maker clubs" and fire demonstrations, for recent PhD graduates interested in fire, to fuels technicians who benefit from IFTDSS tools, to Tall Timbers employees, at W-TREX programs, via the USFS Mentoring Program, on staff rides to Mann Gulch for MTDC and RMRS employees, for S-495 students learning fire behavior modeling, and via the Women in Wildland Fire Program. We all decided there are a lot of opportunities out there, and mentoring others is pretty satisfying work.

Announcements

Cohesive Strategy Workshop: https://www.iawfonline.org/event/2019_cohesive_strategy_workshop/

8th International Fire Ecology and Management Congress: http://afefirecongress.org/

Looking for More Continuing Ed? Check out the calendar at FRAMES.gov for all kinds of fire-related meetings, conferences, and events. https://www.frames.gov/events/calendar/2019-08

Off the Clock…

We thought you'd like to get to know some of our folks outside of their amazing skill and dedication to the WFM RD&A. We have an incredibly diverse staff that has fun-filled action packed lives outside of wildland fire.
Enjoy!

Morgan Pence: Fisherwoman Extraordinaire!

Morgan spends some portion of most weekends fishing for kokanee with her young kids and husband in local and regional reservoirs and lakes. Kokanee, a red meat fish, are a non-anadromous form of sockeye salmon. With the mild winters in western Oregon, it has become her family's year-round hobby. They usually eat some fresh and freeze the rest to smoke or make fish sticks for the kids. Morgan's family loves fishing so much they have even designed their own fishing shirts featuring their favorite dodger, the "Big Eye Cotton Candy Dodger"! "Teaching my kids about fishing and watching them get excited reeling them in is the best, it's become something the whole family enjoys."

Morgan and kids with kokanee, Detroit Reservoir, Willamette National Forest

Morgan's kids show off their dodger shirts

Ice fishing for kokanee, Mackey Reservoir, Mackey Idaho

About half of the WFM RD&A staff runs regularly to blow off steam, stay in shape, and stay sane during winter meeting season and summer fire season. Many of us compete in local races, belong to running groups, and track our stats through the year.

Andrew ran the Weiser River 50K this spring in Idaho--super effort!

In May, eight of us ran 437 miles, or about 55 miles per person. Way to go, team!