

# MEETING NOTES

## WILDLAND FIRE INVESTIGATION SUBCOMMITTEE

**Dates:** October 24-28, 2022

**Location:** USDA Forest Service  
Lake Tahoe Basin Management Unit  
Forest Supervisor's Office  
35 College Drive  
South Lake Tahoe, CA 96150

**Time:** 8:00 a.m. – 5:00 p.m.

**Meeting called by** Jerry Hepler

**10/24/22**

**Attendees:** WFISC Members: Jerry Hepler (USFS, Chair), Shawn Zimmermaker (NASF, Vice Chair), Jeff Moyer (BIA, Primary Member), Scott Fischer (BLM, Primary Member), Steven Holmes (FWS, Primary Member), Jan Lemons (NPS, Primary Member), Carrie Bilbao (CEPC Liaison), Sarah Lee (NWCG Program Coordinator), Jim Shanley (Associate Member), Alan Carlson (Associate Member), Curt Cogan (Associate Member), Jeff Henricks (Associate Member), Ken Ness (Associate Member), Richard Woods (Associate Member), Theo Bailey (Associate Member) and Terry Taylor (Liaison Sierra Front)

### **Introduction – Jerry Hepler**

- Introduction from new member Theo Bailey, Alberta, Canada, Senior Wildfire Investigator. Theo filled Jeff Henricks position when Jeff retired. Worked for gov't of Alberta for over 10 years.

### **Roster Review – Jerry Hepler**

- Review the NWCG, WFISC roster periodically. If any corrections are needed, send your request to the WFISC Chair to correct.

### **Research – Ken Ness**

- Has anyone heard of new planned research on probability of cigarette ignitions in the wildland? Answer was "no." We are still relying on research conducted back in the early 1980's. Jeff Hendricks and Ken Ness' research in Alberta, which was presented at last WFISC meeting, but hasn't been published is the latest and greatest.
- Alberta's literature review on probability of cigarette ignitions is almost complete, and will be shared with WFISC
- NWCG Coordinator Sarah Lee is checking to see if the NWCG could house technical papers to be peer reviewed.

- Shawn Zimmermaker advised that Cal Poly Humboldt University in Arcata, CA is willing to take on research on fire pattern indicators and cigarette research. Shawn Zimmermaker will be the liaison with Cal Poly Humboldt University.

### **Task Team Review and Revision – Jerry Hepler**

- PMS 412 revision (Shawn is Lead)
- Reference Manual (Shawn is Lead)
- FI-310 Revision Beta 2 (Scott and Jerry are Leads)
- FI-310 Learning Portal (Scott is Lead)
- FI-210 Learning Portal (Scott is Lead)
- Glossary (Jerry and Shawn)
- Azimuth (Scott, Shawn and Neil are the Leads)
- WFLP Editing Trainer (Scott, Shawn, Jeff M and Jan)
- Indicator Research
- Indicator Videography (Curt Cogan is Lead)
- Archives (Richard Woods is Lead)
- Reference Research (Gary and Alan are the Leads)
- FI-110 OLT (Jeff H is Lead)
- CEPC Training Review (Ryan Finn is Liaison)
- FLETC LMPT Updates (Scott and Jerry)
- FI-210 course update (TBD)
- FI-210 Task Book addition ((TBD)

### **NFPA Update – Jim Shanley**

- Jim provided updates on 921 Guide for Fire & Explosion Investigations, 1033 Standard for Professional Qualifications and 1321 Standard for Fire Investigation Units
  - 921 is on 2nd draft, closing date for comments 1/4/23
  - spring of 2023 TC will meet to review the comments
  - 921 is on a 3-year cycle
  - 1033 Standard for Professional Qualifications for Fire Investigator is on a 7-year cycle
  - 1321 is on a similar cycle as 921
    - 1321 FIU Technical Committee started in 2019
    - anticipate publishing in 2024
  - Chapter 27 Wildland Fire Investigation update in 921:
    - 2021 edition essentially same as 2017 version
- Chapter 27 Task Group (chair is Steve Rinaldi) started in 2020 for 2024 edition, with the following objectives:
  1. Harmonize terminology
  2. Source references
  3. Process public input
  4. Draft new chapter
- The public input period closed 11/10/21, with only six PI's received and three were submitted by the TG
- Comment period open until 1/4/23
- Jim will try to provide a draft copy of Chapter 27, 2024 edition to WFISC

- Alan C's comment to Jim re: does NFPA have a plan to reduce the present three terms for where the fire started (point of origin, origin, and area of origin), and would 'ignition area' be the best term? Jim advised Alan to provide a comment to NFPA for that change to be made.
- A graduate student is doing a project on comparison of terms between NWCG and NFPA. Jim can provide WFISC with that document.

### **Wildfire Cause Categories – Jeff Moyer**

- The NWCG's Data Management Committee (DMC) and Communication, Education and Prevent Committee (CEPC) created a joint task group in Oct 2018 to develop a data standard for wildfire causes. USFS has changed their wildfire investigation form. It's up to each agency to teach their specific cause categories. FI-110 online version is using the new cause categories. The process of wildfire investigation is still the same, even if different agencies have different cause categories vs the cause categories in FI-210. The new categories will be incorporated into the revision of PMS 412.

### **Liaison Update – Sarah Lee**

- Funding Guidance is approved for FY24 proposals and will be posted soon
- Three NWCG position vacancies now
- Contractor will work to revamp much of NWCG materials
  - re: the grant for Archives, where can research be posted for peer review and feedback?
  - Sarah will check with webmaster and get back to us.
- There's a push to digitize paper documents for archive.

### **Prevention - Carrie Bilboa**

- Discussion on interagency user guide for fire causes
- USFS working on fire prevention programs i.e., youth fire setters
- Looking into fire restrictions to reduce fire starts?
- How can we better promote arson fire information and training for First Responders?
- Discussion on CEPC course planning
- Discussion on history of the FI-311 Civil Case Management course and if there's a need for this training. It's still "on the back burner" and WFISC will move on this when appropriate.
- Course revision cycles are 3-5 years
- Discussion on Smoky Bear awards in area of wildfire prevention. Carrie will get more info and send to Jerry.

### **FI-110 OLT Update – Jeff Henricks**

- It has been completed with the programmers. As of today, Jeff has a link to it but he's having problems opening and viewing it. Plan is to share it with our group on Tuesday.

### **FI-210 Minimum Instructor Qualifications – Jerry Hepler**

- Presently on the NWCG site for the FI-210 course minimum instructor qualifications: "Lead and unit instructors must be qualified as Wildland Fire Investigator (INVF) and should have actual hands-on experience to teach participants the duties of this position without regard for the type of incident."
  - concern over the word "should" in the above-noted statement
  - only INVFs with experience should be allowed to instruct FI-210
  - concern over some agencies not supporting the NWCG Position Task Book

- some folks (wrongly) believe it's easy to "read off the slides" and be an instructor for FI-210
- Presently a person can take an FI-210, get their Task Book signed off then become a Lead Instructor for FI-210 the following week, which is not a good scenario
- Discussion on wildfire investigation refresher training
- Should there be a Train the Trainer Course? How do you deliver this specific training?
- Good idea to be a "shadow" instructor first, before an INV teaches an FI-210 unit
- We'll have to address this before the problem gets worse
- One advantage of using the Learning Portal is there is a permanent record of course completion
- Discussion of having a separate entry in the Position Task Book "have 3 years of wildfire investigation experience with no less than 10 fires/year" to become qualified to be an FI-210 instructor

### **Wildland Fire Learning Portal – Scott Fischer**

- Demo from Scott

**10/25/22**

### **In Attendance: 10/25/22**

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### **FI-310/FI-210—Scott Fischer**

- 310 Beta 2
  - 2 classes simultaneously (Andersen and Reno)
  - Virtual format with shared instructors.
  - Learning portal utilized
  - 44 total students
- Showed that this format is possible but not the desirable format
  - Although doing one or two section virtual is reasonable
- Expanded Behavioral analysis
- Facility is important. Need break out rooms.
- Pre-class Zoom calls for each group to introduce themselves and meet their group lead
  - Positive result as it saved time on the first day
  - Better suited to classes that don't already know each other
  - Allows for setting the expectations for the class and to express who the class is targeting
- Documents/guides have been built for the instructor to answer students' questions
- New pre-work is being designed to introduce skill used on investigations.
  - Intended to be 8 hours of pre-work
- Overall positive feedback from the students
- Some adjustments to the units, exercises, and final exam still needed

- Minor adjustments, shouldn't take a lot of time
- One Federal class planned for spring of 2023.
- Quick review/presentation of the learning portal
- FI-210
  - Presentation of learning portal indicator exam

#### **PMS 412 Translation—Jerry Hepler**

- Translation to French completed
- NWCG does have a contract for Spanish translation at minimum. There may be other translation options available, Sarah will check into other options
  - Look for grants to fund translations
  - The translation is done through one of multiple vendors who bid on individual project. Prices can vary based on this.
- If it has the NWCG stamp of approval, we need to ensure it was translated correctly.

#### **FI-110 update—Jeff Henricks**

- Broken into six units with an exam. Student must go through all units and successfully pass the exam to complete.
- Plan to coordinate the use of colors, where red is advancing, blue backing and yellow lateral
- Label arrows with a term other than "fire progression" such as advancing or backing fire
- Expected to take a student 1-2 hours to complete
- Goal is to have the course completed by December 25, 2022.

#### **InFORM and adoption of the new cause categories—Gary White**

- Built on top of IRWIN and it can utilize all the data within IRWIN
- Based on ESRI GIS forms, surveyor and collectors
  - These auto populate to IRWIN which then populates InFORM
- Federal agencies already using the program
- New cause categories
  - "General Causes" are further broken down into "Specific Causes" which then is broken down again into "Specific Cause Details."
  - The first two are required for the data collection in InFORM
  - The third, "Specific Cause Detail" is optional for data collection

#### **X-900—Jerry Hepler and Sarah Lee**

- X-902-Railroad course. Online course available now. Decision made to leave this course alone.
- Use available funds for X-900
- Statement of work completed
- Waiting on list of SMEs
- Joe Hitselberger is working on developing contractors for the project
- Gary White and TBD will assist Joe

#### **Archives—Richard Woods and Robin Brooks**

- For publishing--documents are sent to NWCG Publications and their group where they are reviewed for edits, then published
- Unclear how much material is required to be collect.
- Desired option is to digitize all the materials and store in a location where it can be accessed

- NWCG does not have the space to keep hard copy storage. Digital document could likely be stored on NWCG's website
- One of the fire research laboratories may be capable of storage, both digital and hard copy. There is funding available to offer the laboratory if need be.
- Jerry addressed the concern with storage of these documents with a primary agency rather than NWCG. NWCG should be the owner of this archiving and storage.
- Sarah, Robin, and Richard will meet offline to discuss further options and planning.

**10/26/22**

**In Attendance: 10/26/22**

WFISC Members: Jerry Hepler (USFS, Chair), Shawn Zimmermaker (NASF, Vice Chair), Jeff Moyer (BIA, Primary Member), Scott Fischer (BLM, Primary Member), Steven Holmes (FWS, Primary Member), Alan Carlson (Associate Member), Curt Cogan (Associate Member), Jeff Henricks (Associate Member), Ken Ness (Associate Member), Ricard Woods (Associated Member) Jim Shanley (Associate Member), Jeremy Verdiel (Associate Member), Trevor Maynard (Associate Member), Theo Bailey (Associate Member), and Terry Taylor (Liaison Sierra Front)

**Glossary Items (azimuth)—Shawn Zimmermaker**

- Add glossary terms for Azimuth and Bearing. Use definitions from "The Dictionary of Forestry"
- Within PMS 412, remove and replace "Azimuth measurement technique" with "Compass measurement technique."

**Videography of Fire Indicators—Curt Cogan**

- Proposal to video indicators before, during and after a fire burns through.
- Secured \$30,000 funding for project. Must be used by October 2023
- Curt has identified a potential consultant from Missoula Fire Lab to provide videography and editing services. Travel would be the primary cost.
- Propose a small work group to plan out what we want, be present for any burning/filming and review of final documentation.
- Potential burn locations—FI-210 courses, prescribed fires, Cal Poly Humboldt studies.
- BLM may be able to provide some funding for travel funding if travel was to Nevada.
- First step is to set up parameters of videography project. Task group will develop these parameters. Early spring start identifying potential burn locations.
- Task group consists of Curt Cogan, Scott Fischer, Jim Shanley, Jeff Henricks, Ken Ness, and Jeff Moyer.

**PMS 412 and Reference Manual Timeline—Jerry Hepler and Shawn Zimmermaker**

- Work on both the reference manual and the PMS 412 concurrently.
- Expectation that the PMS 412 review would be completed and approved much sooner than the reference manual. The revised PMS 412 would then be ready for a release.
- As work continued on the reference manual, the WFISC will identify any additional updates needed in the PMS 412 and we could make additional revisions as needed.
- Subcommittee plans to attempt to finish a revision to the current PMS 412 by spring 2023. The next steps will be to finalize the "Ref Manual" (which may be renamed later) sometime in 2024. Once the Ref Manual is completed, a pocket guidebook will be developed as well as a revised

FI-210. The end goal is to have two documents, a larger Reference Manual and a smaller field pocketbook. Voted on with all in favor.

#### **PMS 412 Unit and Picture Review—Shawn Zimmermaker**

- Task group will be completed with review of PMS 412 by mid-November
- Once direction from today is updated in the documents, they will be post on the Teams site with two versions, one with all the proposed changes visible, the second with all changes "accepted."
- Subcommittee will have until January 15, 2023, to review and submit comments back to the task group.
- Should Chapter 8 "Court preparation and testimony" be removed from PMS 412 but still include in FI-210? Subcommittee agrees to keep this chapter in until the reference manual is completed.
- Need photographs

#### **Cal Poly Humboldt Studies—Shawn Zimmermaker**

- The subcommittee supports continued communications with Cal Poly Humboldt to develop research and studies. Subcommittee needs to play a large role in assisting them set up studies and research.
- Shawn will inquire about capabilities of their fire lab and use of other Cal Poly Humboldt programs such as assisting videography. Fire lab possible studies include cigarettes, spontaneous combustion and/or electric fences.
- Consider doubling the number of burns, consider increasing to 30 burns
- Studies on wind and humidity on fire pattern indicators, particularly backing and lateral

#### **IAAI CFI Trainer module for Wildland Fire Investigation**

- May be reaching out to the subcommittee to seek expertise and knowledge related to wildland fire investigation. IAAI wants to update the information in the current module. This means creating a new module.
- Subcommittee supports helping them only if they promote and support the NWCG methodology
- Jerry will reply to their email to ascertain what they are seeking from WFISC

#### **FI-210 revision task group**

- Shawn Zimmermaker, Scott Fischer, Jerry Hepler, Alan Carlson, Ken Ness, Jeff Henricks, Richard Woods
- Tentative target date for revisions is May 2023

#### **Chair and Vice Chair Nominations and Voting—Jerry Hepler**

- Call to nominate Shawn Zimmermaker as Chair. Steve Holmes seconds. Committee voted anonymously to confirm. Motion passed.
- Nominations for vice chair—Call to nominate Scott Fischer by Jerry Hepler. Seconded by Steve Holmes. Committee voted anonymously to confirm. Motion passed.

**10/27/22**

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### **Wenatchee Burns—Jim Shanley**

- Reliability of burn pattern indicators study.
- 10 burn unit approximately 1 acre each. Place temperature, radiation, and wind instruments within the plots. Most test plots were done in old burn areas. However, these old burn patterns were not used in the study. Purchased wooden stakes, bricks, stones and PVC pipes were placed inside of the burn plots. Fires were ignited with a point start with a drip torch. Fires were low intensity, primarily backing and lateral with flame heights of 1-2 feet maximum.
- Jim and Jeff attended as adjuncts
- WPI group are researchers, not fire investigators
- No results published to date. Unknown deliverable or deadline. Jim and Jeff will reach out to the researchers to see if they have any additional information.

### **New Jersey Burns—Steve Holmes**

- Study of the reliability of fire pattern indicators, conducted on the Pineland National Reserve. Relatively flat. Burn plots were laid out on approximately 1-acre plots. Actual burns ended up being around a ¼ acre. Single point ignition used.
- Rocks, fence poles, bricks and PVC pipes placed inside plots. Set up like Wenatchee burn plots.
- Plots were likely too small as the fires were just getting establish when they were extinguished.
- Favored micro fire pattern indicators but did not allow for macro fire pattern indicators.
- More burning is planned. Goal is to push for bigger fire plots.

### **Reference Manual Chapter Review—Alan Carlson**

- Chapter, assignments and status reviewed. Details are listed on the Teams site
- During our 2021 meeting the topic of curling was discussed. The consensus was curling was a good example of fire intensity but lesser example for fire pattern direction
- During our 2022 meeting, curling was reopened as a valid fire pattern indicator.
- Based on the dialogue, it was decided to hold a vote during a February meeting on how to address the topic of curling with three options identified. Which are
  - ☐ Remove curling as a fire pattern indicator
  - ☐ Keep curing as a fire pattern indicator
  - ☐ Discuss curling as a fire effect and discuss it how it forms and what it is telling us, i.e., demonstration of fire intensity
- Subcommittee is asked to provide their personal experience with the reliability of each of the fire pattern indicators. A document will be posted on the teams site for collaborative sharing and documentation.

### **Photograph nomenclature**

- Picture name format



- What is show\_Photographer\_Where take\_When taken
- Example—Angel of Char fire travel Left to Right\_Shawn Zimmermaker\_FI-210 Redding CA\_10152022

**Closing—Jerry Hepler**

- Next meeting—virtual Microsoft Teams Meeting on February 1, 2023, at 12:00 p.m. PDT