

NOAA Technical Memorandum OAR GSL-79

DOI: <https://doi.org/10.25923/0vz0-ra19>



An Evaluation of the Next Generation Fire System for Predictive Services

The NOAA Fire Weather Testbed

Ansley Baring, Benjamin J. Hatchett, Laura B. Sample McMeeking,
Phil Schumacher, and Kyle J. Thiem

March 2026

National Oceanic and Atmospheric Administration
Oceanic and Atmospheric Research
Global Systems Laboratory
Boulder, Colorado, USA

An Evaluation of the Next Generation Fire System for Predictive Services

The NOAA Fire Weather Testbed

Ansley Baring¹

Benjamin J. Hatchett^{1,2}

Laura B. Sample McMeeking^{1,2}

Phil Schumacher^{1,2}

Kyle J. Thiem¹

¹ NOAA Global Systems Laboratory, Boulder, CO

² Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University, Fort Collins, CO

Acknowledgements

The evaluation team extends sincere thanks to the six Predictive Services personnel who participated in this evaluation. Their candid operational perspectives made this evaluation possible and directly shaped its findings and recommendations. We also thank the NGFS development team at NOAA/NESDIS for their facilitation of the introductory training session and responsiveness to user feedback. This research was supported in part by the NOAA Cooperative Agreement NA19OAR4320073, for the Cooperative Institute for Research in the Atmosphere.

AN EVALUATION OF THE NEXT GENERATION FIRE SYSTEM FOR PREDICTIVE SERVICES

Fire Weather Testbed Evaluation #005

PREPARED BY THE NOAA FIRE WEATHER TESTBED TEAM

**Ansley Baring
Benjamin J. Hatchett
Laura B. Sample McMeeking
Phil Schumacher
Kyle J. Thiem**



Cite as: NOAA Fire Weather Testbed, 2026: An Evaluation of the Next Generation Fire System for Predictive Services. NOAA Technical Memorandum OAR GSL-79, <https://doi.org/10.25923/0vz0-ra19>.

TABLE OF CONTENTS

Executive Summary	1
<i>Key findings, evaluation outcomes, and high-priority recommendations at a glance.</i>	
Introduction	2
<i>Background on the Fire Weather Testbed, the NGFS, and the objectives of this evaluation.</i>	
Methods	2
<i>Evaluation design, participant recruitment, session structure, and analytical approach.</i>	
Findings	4
<i>What participants said about NGFS speed, usability, workflow fit, and integration barriers.</i>	
Discussion	8
<i>Cross-cutting themes exploring the tension between NGFS enthusiasm and concern about tool proliferation.</i>	
Conclusions	10
<i>A synthesis of evaluation outcomes and their implications for NGFS adoption across Predictive Services roles.</i>	
Recommendations	11
<i>A three-category framework covering interface refinements, development opportunities, and user support.</i>	
NGFS Implementation Status	12
<i>An overview of the development updates made in response to this and prior evaluations.</i>	
References	13
<i>Sources cited in this report, including NGFS documentation and evaluation methodology references.</i>	

APPENDICES

Appendix A — Glossary of Terms	A-1
<i>Definitions of technical terms, acronyms, and system-specific terminology used throughout this report.</i>	
Appendix B — Full Evaluation Question Set	B-1
<i>Complete set of questions used to guide all aspects of the evaluation.</i>	
Appendix C — Session Agenda and Focus Group Protocol	C-1
<i>Evaluation session agenda and structured discussion questions used during the evaluation.</i>	
Appendix D — Extended Participant Perspectives	D-1
<i>Full quote matrix organized by topic area and subcategory, with participant identifiers and sentiment coding.</i>	

TABLE OF FIGURES

Figure 1. Geographic distribution of evaluation participants.	3
Figure 2. An overview of the hands-on “working lunch” activity (left) and follow-up briefings (right).	4
Figure 3. A generalized comprehensive operational workflow for Predictive Services personnel, with callout boxes describing participant processes prior to integrating NGFS.	5
Figure 4. A screenshot from the hands-on activity where a participant misidentified an NGFS detection of a solar panel farm as a new wildfire.	6
Figure 5. An illustration of how NGFS was integrated as a complementary tool during the evaluation, with callout boxes highlighting specific ways participants used NGFS data.	7
Figure 6. A visual walkthrough of NGFS detection leading to an operational decision during the evaluation’s hands-on activity.	8
Figure 7. Example FRP time series from the NGFS for the Lee fire in Rio Blanco County, Colorado, August 8, 2025.	9
Figure 8. A strategic roadmap for optimizing NGFS integration into Predictive Services operational workflows, with callout boxes detailing participant recommendations.	12
Figure 9. The evolution of a generalized Predictive Services workflow from the current baseline without NGFS to the current use of NGFS, ending with recommendations for optimization.	13

EXECUTIVE SUMMARY

The Fire Weather Testbed evaluated the Next Generation Fire System with Predictive Services personnel, who found it to be an operationally valuable complement to existing fire detection workflows. Participants also identified improvements, opportunities, and support needed to make it a more integrated part of operations.

"I definitely see a lot of value [in NGFS], and I think that I, for sure, would be very interested in showcasing it."

— Participant 7

Background

The Next Generation Fire System (NGFS), developed by NOAA's NESDIS, integrates near-real-time satellite fire detection, fire weather outlooks, terrain-corrected locations, and LANDFIRE fuel data into a single dashboard. This report presents findings from the second Fire Weather Testbed evaluation of NGFS, conducted May 20, 2025, with six predictive services personnel, representing the NICC and five Western U.S. GACCs.

What's Working

Participants consistently noted the value of NGFS's speed. Its near-real-time detection cadence was faster and more actionable than existing tools, and its value was demonstrated live: during the hands-on activity, a participant used the dashboard to identify a potential new fire, cross-referenced the detection across multiple systems, and contacted local dispatch. They also valued the consolidation of fire detection and weather information into a single platform, with users noting the potential to reduce the number of tools required during active fire periods. Participants were broadly enthusiastic and expressed a willingness to advocate for NGFS within their organizations.

"The speed at which these are ingested and displayed on the dashboard is the most valuable feature for me."

— Participant 2

Challenges

The central challenge is integration, not capability. Participants noted they already navigate dozens of platforms simultaneously, so there is a risk that

NGFS becomes one more open tab rather than a consolidating asset. The most unanimously requested development priority was a robust API enabling NGFS data to be ingested into existing Common Operating Platforms. Usability barriers compound this challenge: participants found that map navigation was cumbersome, technical terms like FRP lacked in-tool definitions, and visual differentiation between thermal event types was insufficient. They also requested configurable push notifications to allow for different office environments.

"One of the disadvantages I see is that it has to be monitored. A number of our other systems provide either a chat message, or an e-mail...that alerts us."

— Participant 7

Recommendations

Through their feedback, participants identified a clear path forward. The full report organizes these into three categories: Interface Refinements, Development Opportunities, and Ongoing User Support. Several of these were identified as top priority based on the focus group analysis. Together, these categories reflect that successful integration requires advances across technical infrastructure, interface design, and user support.

HIGH-PRIORITY RECOMMENDATIONS[†]

1. Watchbox feature with visual differentiation of event types
2. API access for workflow integration
3. Push/email notification system for new detections
4. Role-specific training materials and knowledge base

[†]Several recommendations have already been implemented since this evaluation. See the full report for details.

INTRODUCTION

The Next Generation Fire System (NGFS) is an advanced satellite-based wildfire detection system under development by NOAA's National Environmental Satellite, Data, and Information Service (NESDIS). NGFS identifies and tracks wildland fires using real-time observations from Geostationary Operational Environmental Satellite-R Series (GOES-R) and low Earth orbit Joint Polar Satellite System (JPSS) satellites, in conjunction with expert-curated algorithms and spatiotemporal analysis meant to emulate human expert interpretation of satellite imagery (Pavolonis, 2025). Unlike earlier detection tools, NGFS accounts for atmospheric attenuation (e.g., clouds and smoke), incorporates terrain-corrected geolocations, and includes information about fire weather outlooks, Red Flag Warnings, and LANDFIRE fuel model types, offering a more complete picture for fire and emergency management (Otkin, 2025).

As wildfire risk grows across the United States, Predictive Services personnel require timely, reliable, and actionable data to support detection, prioritization, and resource coordination. Housed at both national and regional coordination centers, Predictive Services provides decision support through three specialized roles: meteorologists who forecast fire weather, fire analysts who assess fuels and fire danger, and intelligence coordinators who track current fire situations and resource availability. NGFS is intended to address the requirements of these different roles by improving the temporal resolution and utility of satellite-based fire detection information.

Fire Weather Testbed Approach

The Fire Weather Testbed (FWT) supports the operational transition of research tools like NGFS by connecting developers, forecasters, and end-users. A collaboration between NOAA's Office of Oceanic and Atmospheric Research, the National Weather Service, and NESDIS, the FWT combines physical science expertise with robust social science evaluation methods to ensure fire weather products are tested rigorously and in realistic operational contexts. Transparent documentation, iterative partner engagement, and evidence-based

recommendations are central to the FWT's role in ensuring that emerging products meet end-user needs and can be transitioned into operational environments (Wells et al., 2025).

Purpose of the Evaluation

This evaluation builds on the FWT's week-long evaluation of the NGFS (June 2024), which assessed utility and implementation pathways based on NWS meteorologist and state land management partner feedback (NOAA Fire Weather Testbed, 2025). The primary objectives of the current study were to assess NGFS's operational utility for Predictive Services, identify areas for system and training improvement, and support the development of relevant use cases. The evaluation addressed the following overarching questions:

- How do Predictive Services staff currently detect and respond to wildland fires, and where does NGFS fit into that process?
- Does the NGFS dashboard effectively present fire detection information in a way that supports operational use?
- What barriers or resources affect users' ability to navigate, understand, and apply NGFS data in practice?
- Is NGFS sufficiently accurate (e.g., locational precision, low false-positive rate), reliable (e.g., timeliness, low omission rate), and complementary to other tools to support fire detection and response decisions?

The full set of evaluation questions used to guide instrument development and analysis is provided in Appendix A.

METHODS

Evaluation Framework and Design

This evaluation used a qualitative design to explore the NGFS tool's operational relevance, usability, and integration into Predictive Services workflows. The design was grounded in Utilization-Focused Evaluation (Patton, 2008), emphasizing actionable findings for primary users, including NGFS developers and NOAA partners. To ensure independence, the evaluation was conducted by the Fire Weather Testbed (FWT), with the NGFS team providing technical context and tool demonstrations. The session was structured to

simulate real-world use, reflecting a realistic operational decision-making environment.

Participants and Structure

Six Predictive Services staff members participated in a virtual half-day evaluation session on May 20, 2025. The participant group was purposively selected to represent a range of key operational roles and geographic areas. Participant demographic and background information (e.g., role and geographic area) was collected orally during the session introduction. The group included three intelligence officers, two fire analysts, and one wildland fire meteorologist, from the National Interagency Coordination Center (NICC) and five distinct Geographic Area Coordination Centers (GACCs) across the Western United States (see Figure 1): Northern Rockies (NRCC), Rocky Mountain, (RMCC), Southwest (SWCC), Northern California (ONCC; CONUS only), and Southern California (OSCC).

The virtual session (see Appendix B) was structured in four parts:

1. Introductory training and demonstrations were led by the NGFS team, providing an overview of system features, fire detection output interpretation, and available data layers.

2. A working lunch activity where participants tested NGFS within their standard workflows using real-time data (see Figure 2).
3. A series of short operational briefings where participants described NGFS integration.
4. A 1-hour semi-structured focus group discussion, facilitated by the FWT, exploring system usability, decision support value, workflow integration, and areas for refinement.

Data Collection and Analysis

The primary data sources for this evaluation were (1) verbatim transcripts from the semi-structured focus group discussion and participant briefings, and (2) detailed observation notes taken by the evaluation team. Qualitative data were analyzed using a hybrid deductive-inductive thematic analysis approach (Braun & Clarke, 2006). An initial codebook based on core evaluation domains (e.g., usability, workflow integration, decision impact) guided the analysis. Throughout the analysis, the codebook was iteratively refined to systematically capture emergent themes from the data. The final coded transcript was then reviewed in its entirety to ensure consistency in the application of the final codebook. Following the review, key illustrative examples were extracted to represent the identified

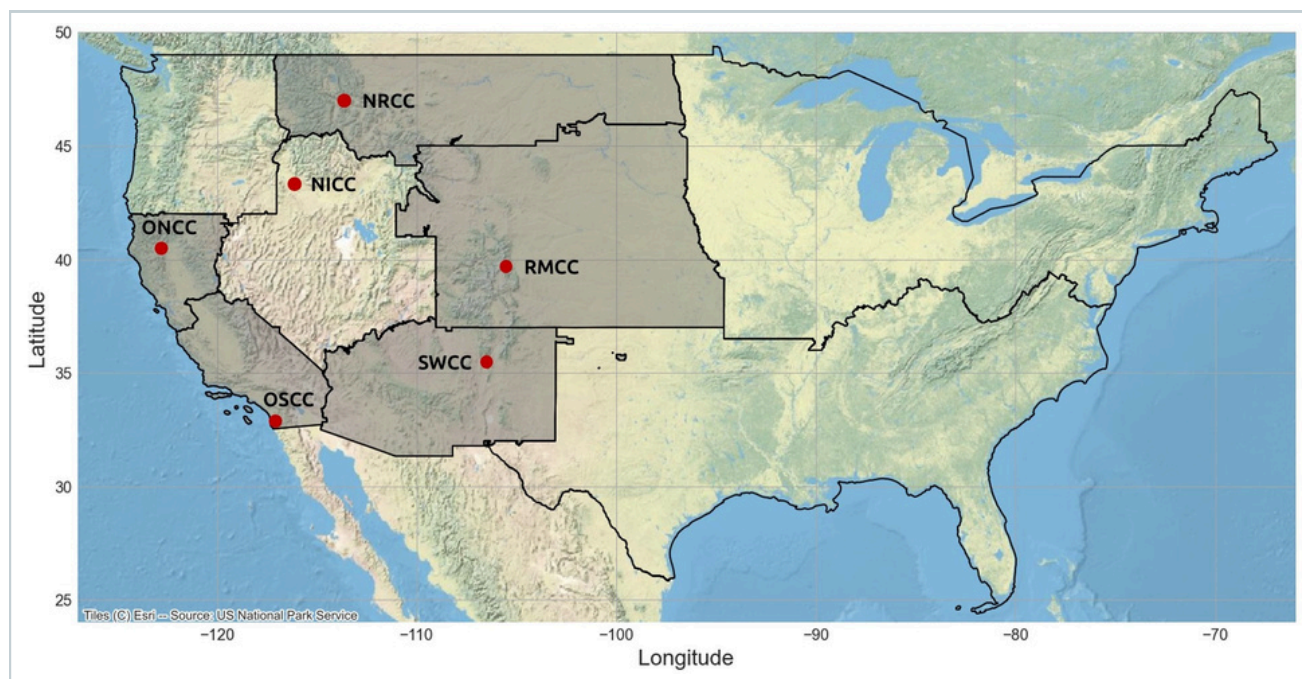


Figure 1. Geographic distribution of evaluation participants. Shaded areas indicate the GACC regions and red dots show Center locations represented in the study.



Figure 2. An overview of the hands-on "working lunch" activity (left) and follow-up operational briefings (right).

themes. To maintain confidentiality while allowing for the tracking of specific participants' views, direct quotes are attributed to participants using pre-assigned identifiers from a larger participant database (e.g., Participant 8).

FINDINGS

Predictive Services personnel operate within a complex, multi-layered, and often redundant ecosystem of tools and data sources for fire detection, validation, and monitoring. This operational reality is captured in Figure 3, which illustrates the cyclical process of gathering, verifying, and sharing information. A key finding that contextualizes all subsequent feedback is that the primary action taken by Predictive Services personnel is communicating validated intelligence to operational partners, rather than engaging in direct fire response. This core role fundamentally shapes their workflow and their assessment of new tools. There is no single product or system; instead, personnel must navigate and synthesize information from a wide array of systems. This includes a suite of satellite data portals like FIRMS (Fire Information for Resource Management System) and EGP (Fire Enterprise Geospatial Portal) for "VIIRS [Visible Infrared Imaging Radiometer Suite] and MODIS [Moderate Resolution Imaging Spectroradiometer] detects" (Participant 4), data from other satellite-based programs like FireGuard (Participant 2; Participant 7), an increasing number of terrestrial camera networks like "ALERTWest [and] Pano..." (Participant 7), and foundational 911 calls and data from "other partner agencies" (PID0003).

Appendix C serves as a glossary of major tools and acronyms common to participants.

Baseline Operational Processes

To fill information gaps within this ecosystem, particularly the challenge of distinguishing wildfires from planned prescribed burns (which may include broadcast, pile, ecocultural, or cultural burns), participants described developing creative workarounds. For example, Participant 8 referred to the national Spot Monitor as a "secret weapon": "...a lot of times we get some fire activity that's showing heat on satellite, but we can't figure out what it is, or if it's prescribed, or wildfire and kind of the last ditch effort is to go over and look and see if anybody's asked for a spot forecast for that [location]..."

This complex tool environment necessitates a workflow centered on the guiding principle of corroboration, or the concept that multiple sources of evidence are necessary for confirmation. This mindset was best summarized by one participant who stated, "I'm always a...trust but verify kind of person" (Participant 3). A detection from any single source is treated as an unconfirmed tip, not an established fact. Before a detection is considered trustworthy and actionable, users cross-reference multiple systems. As Participant 2 explained, the trigger for taking action is seeing multiple confirmations: "[There will] be others like MODIS hits, FireGuard hits, and even if it pops up in our dashboard here multiple times then that would be something that would definitely clue me into calling [fire management partners]."

This corroboration-based workflow is a

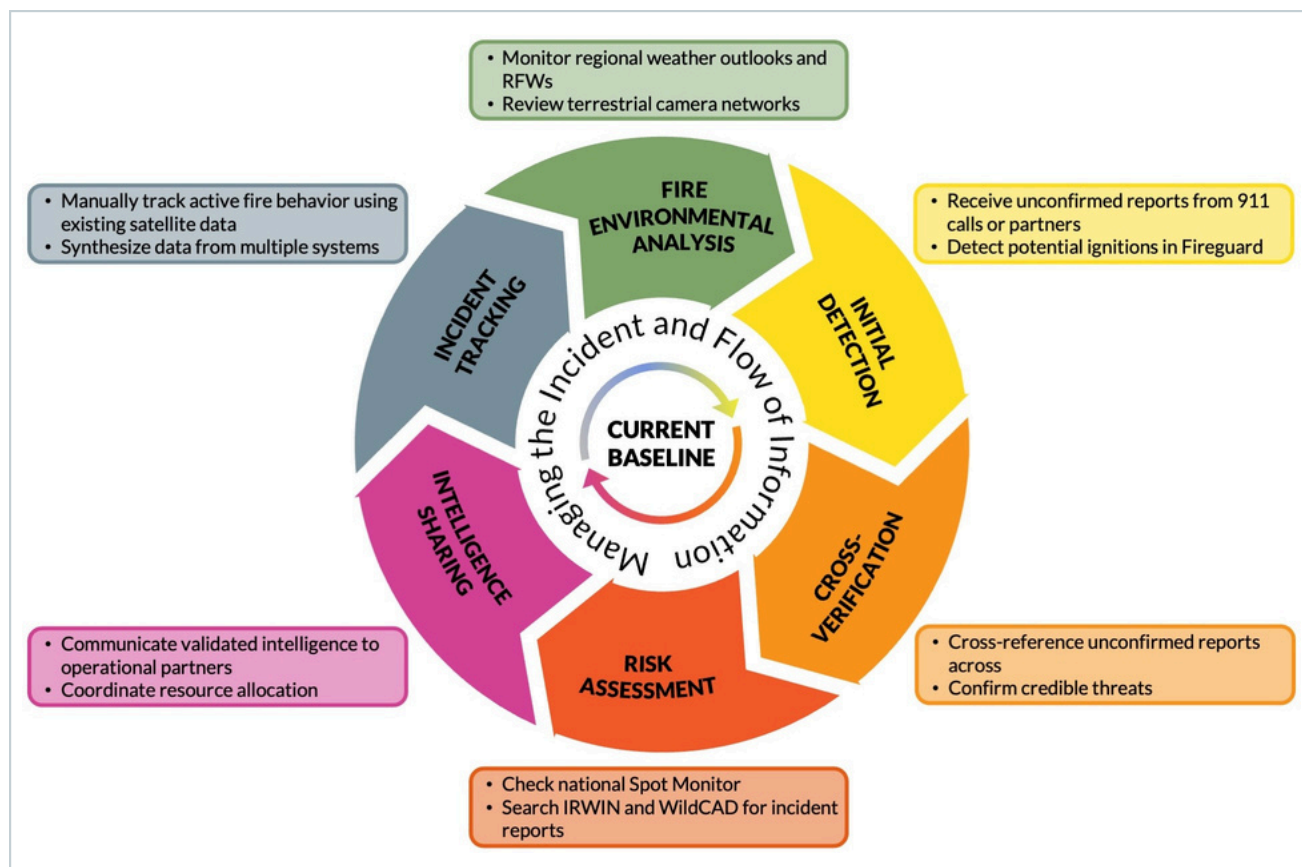


Figure 3. A generalized comprehensive operational workflow for Predictive Services personnel (Intelligence, Weather, and Fire & Fire Danger), with callout boxes describing participant processes prior to integrating NGFS.

fundamental aspect of the users' operational reality. After an initial alert, they "fall back into [their] regular habits" (Participant 8) of checking systems like the Integrated Reporting of Wildfire Information IRWIN) and WildCAD (a wildland fire Computer-Aided Dispatch system) to confirm a detection before taking action.

NGFS Performance and Usability

This section details the specific findings related to the NGFS tool itself. Participants evaluated the tool's core data quality, its overall user experience, and its alerting capabilities, providing a clear picture of its current strengths and areas for refinement.

Data Quality

The temporal resolution of NGFS was its most universally praised attribute. The speed of the data was repeatedly cited as a primary advantage over other systems, directly enhancing situational awareness. As Participant 2 summarized, "the

speed at which these are ingested and displayed on the dashboard is the most valuable feature for me."

Feedback on spatial resolution, however, was highly dependent on the user's role. For participants involved in local dispatch or initial attack, high spatial resolution (and the resulting operational precision and accuracy) is critical for resource allocation and jurisdictional correctness. One participant noted, "[You do] the best you can do because it is a DPA [Direct Protection Area] issue" (Participant 3). In contrast, a participant with a national-level, strategic role stated that for their purposes, "great precision is not necessary...just getting it in the right dispatch center...is sufficient" (Participant 8).

Finally, while users were generally positive about the tool's reliability, their trust and confidence are conditional. Trust is eroded by clear data conflicts, such as an active fire being displayed on land cover that "shows that [the land cover is] nonflammable" (Participant 3). Further,

participants expressed a desire for a clearer, more intuitive wildfire confidence metric that moves beyond simply identifying heat. This need was perfectly captured by Participant 8 when they noted, “I know we’re confident it’s hot, but...are we confident it’s a wildfire?”

User Interface and Data Interpretation

The overall user experience was a major topic of discussion, with participants praising the clean design of the dashboard but also identifying significant challenges in navigation and data interpretation. While Participant 7 noted, “I do like how clean the initial dashboard is,” the most significant usability challenge was map navigation. Participants found the process of getting to their area of interest frustrating and inefficient, which was articulated well by one participant: “Having to drag to it every time...made it very complicated for me to get over to [my area] because I had to continuously drag and drag and drag...” (Participant 3).

A second major theme was the challenge of interpreting the data presented. This manifested several ways, beginning with a lack of basic, in-tool definitions for core concepts, exemplified by the question, “what is the FRP [Fire Radiative Power]?” (Participant 6). To address this, users strongly suggested adding more in-tool context, noting that “even at the basic level, a pop up to give you some information on what those things mean would be incredibly beneficial” (Participant 3).

More critically, some participants struggled to visually distinguish between different types of thermal events. In a significant finding, an experienced fire analyst misidentified a solar panel array as an active fire, stating they “just assumed that was the fire” (Participant 3). Although the data sidebar in the interface correctly identified the “Event Type: Solar panel,” the participant’s focus on the map and the pop-up box led them to miss this critical piece of text (see Figure 4). This incident led to a participant-initiated request for enhanced visual cues (e.g., “maybe [the known non-fire event] has a color...”) to clearly and quickly “see the different attributes easily so that you know it’s...a solar panel” (Participant 3). Participants also articulated a broader challenge in distinguishing between different types of active fires, such as “differentiating between existing...Rx versus the wildfire” (Participant 3).

Finally, these interpretation challenges were compounded by concerns over the tool’s complexity for a wider audience. Participants expressed that the interface could be a “stumbling block for at least the staff outside of the mets” (Participant 4), explaining that a “dispatcher that’s looking at it...might run into some...issues with understanding how to...interpret the remote [sensing] data” (Participant 4).

Alerting Functionality

The tool’s alerting capabilities were identified as a critical area for improvement. While the speed of

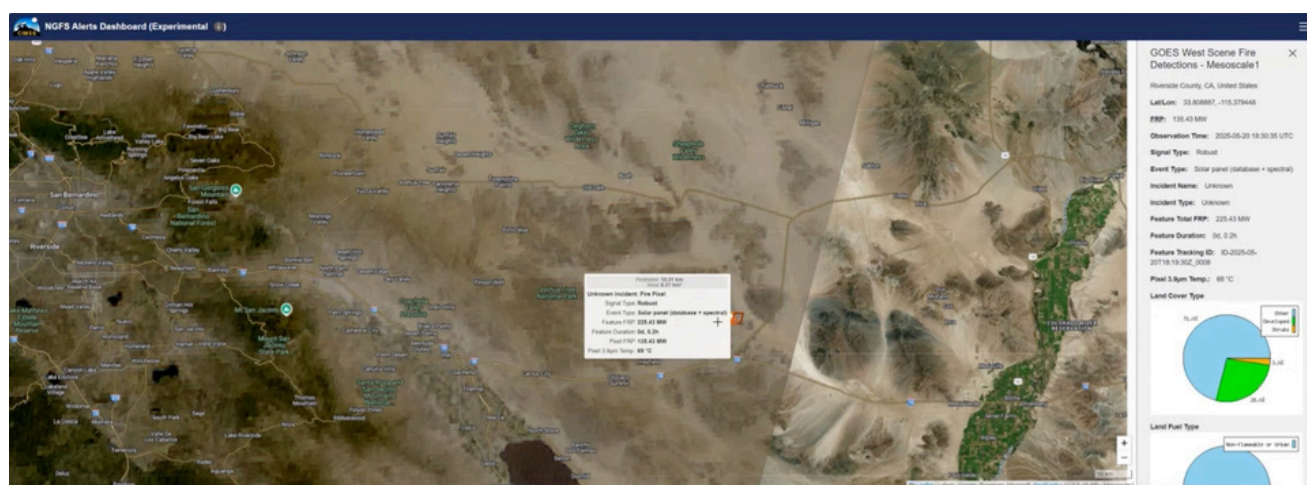


Figure 4. A screenshot from the hands-on activity where a participant misidentified this NGFS detection of a solar panel farm, believing it to be a new wildfire.

NGFS detections was a noted strength, the current notification system was seen as impractical for operational use. The in-browser audio alert was not seen as viable in a shared office environment, leading one user to state, “I know you can turn the sound on, but I work in a shared office, so that can be challenging” (Participant 7).

There was strong consensus that the tool needs a “push” notification capability, with the most requested feature being an email or chat alert. A participant noted that “if there was a way to get an alert, even if that was just simply as an email...I think that would be one advantage” (Participant 7).

However, participants were concerned about being overwhelmed with irrelevant alerts. To manage this, they requested more advanced filtering capabilities to control what one user termed the “signal-to-noise ratio” (Participant 4).

NGFS Integration Impact

Beyond its specific features, the evaluation focused

on how NGFS fits into the complex, multi-system workflow of Predictive Services personnel. The findings show that NGFS is viewed as an effective complementary tool that enhances situational awareness and reinforces high-consequence decisions (Figure 5). This was clearly demonstrated when one participant (Participant 6), while monitoring the NGFS dashboard during the lunchtime activity, spotted a new, unconfirmed heat detection in their area (see Figure 6). Following their standard “trust but verify” workflow, they cross-referenced the detection, observed additional corroborating heat signatures, and concluded the signal was a credible threat. The participant then made the operational decision to “give [their partner] a call” (Participant 6) at the local dispatch center to report a potential new fire, serving as a clear end-to-end example of NGFS successfully triggering an operational decision.

However, participants currently see NGFS’s

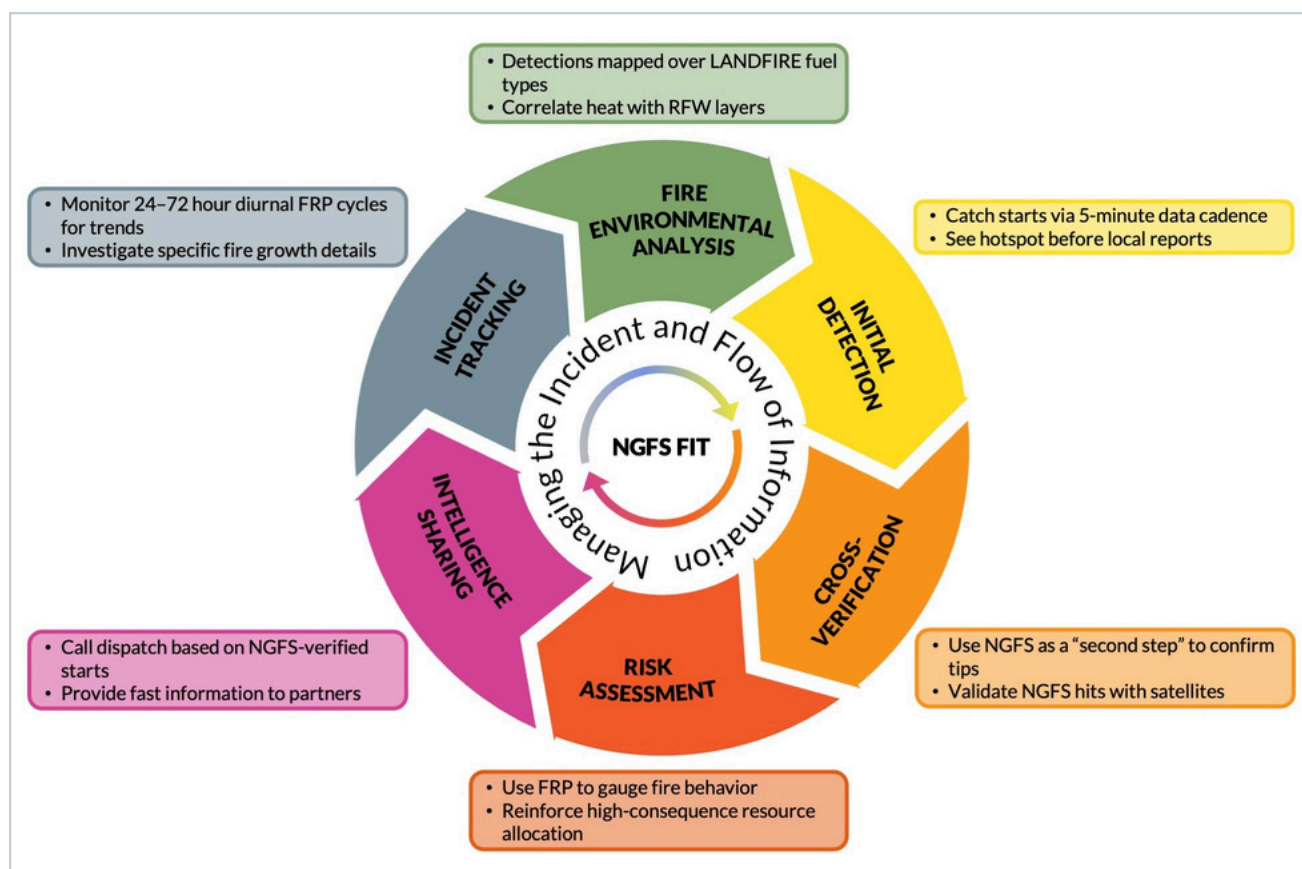


Figure 5. An illustration of how NGFS was integrated as a complementary tool during the evaluation, with callout boxes highlighting specific ways participants used NGFS data to enhance their workflow.

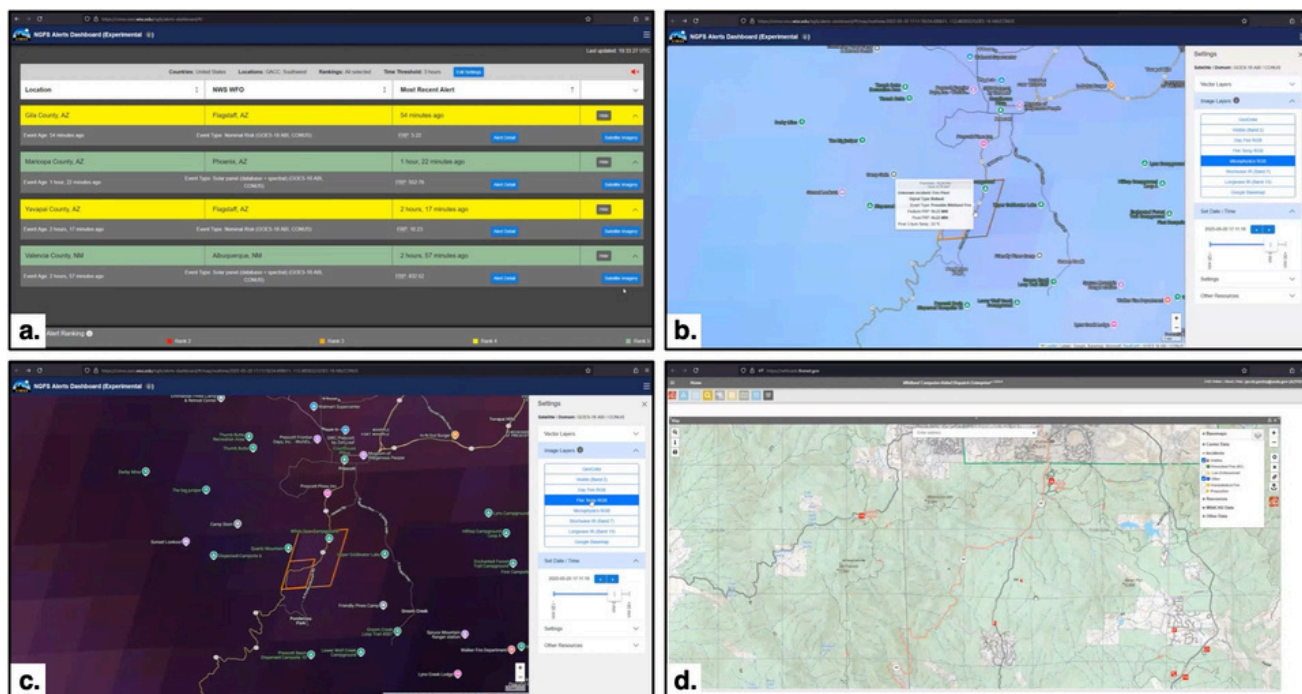


Figure 6. A visual walkthrough of NGFS detection leading to an operational decision captures a participant's real-time analytical workflow during the evaluation's hands-on activity. (Panel a): The participant identifies a potential new fire on the NGFS dashboard. (Panels b and c): The participant executes their standard "trust but verify" process, moving from the NGFS map to cross-reference the detection with other operational data sources to search for corroborating evidence. (Panel d): After finding corroborating heat signatures and no existing incident report, the participant concludes the detection is a credible new start and makes the operational decision to act by contacting their local dispatch partners.

current role as a valuable addition to their existing toolkit rather than an immediate replacement for it. It serves as a “cross-reference database” (Participant 7) and “another place [to] go verify [information]” (Participant 6). A common workflow described was using a familiar tool to spot a potential fire and then using NGFS as the “second step to get more information” (Participant 8) and “drill in” (Participant 8) on the details. Its high temporal resolution also makes it a “really quick way to...verify” (Participant 6) uncertain initial reports, such as those from public calls.

The timely and precise information from NGFS is seen as a crucial asset that helps “reinforce the decision-making” of those partners, especially when resources are limited, as Participant 4 explained: “...if resources are pretty tight, and we’re having to make the decision ‘is this...the fire that we need to allocate [resources] to’...having a little bit nearer term information...helps be able to reinforce the decision making that the [decision-

makers] are making.”

While users appreciate having another tool, their ultimate goal is to reduce workflow friction. The central challenge for NGFS adoption is to avoid becoming “one more thing to check” (Participant 8) in an already crowded digital environment. The aspiration, echoed by multiple participants, is for NGFS to leverage its unique advantages to a point where it can be “...one thing to check that allows [them] to cross off a couple other stops and streamline [their] assessments” (Participant 8).

DISCUSSION

The findings from the focus group, when viewed together, tell a coherent story about the potential integration of NGFS in Predictive Services and the key considerations for its operational adoption to be successful. While participants expressed optimism about NGFS’s potential, for it to become an indispensable part of the Predictive Services workflow requires addressing a central tension:

participants are excited about its power, but wary of adding another standalone tool in an already-saturated digital environment. This discussion will explore this core challenge along with the other key cross-cutting themes from the findings: the path to operational integration, the challenge of the “expertise gap,” and the need to meet the diverse needs of different user roles.

Challenges and Opportunities

Participants consistently reiterated that they want solutions that make their existing process more efficient since they already have “40 tabs...open at one time” (Participant 3). The unanimous request for an API to ingest NGFS data to existing Common Operating Platforms (COP) was a direct response to this challenge. By making NGFS a data layer within trusted systems like EGP or local dispatch CADs, users can leverage its key strength of high temporal resolution, which allows for both timely initial detections and ongoing fire behavior monitoring (via 5-10 minute interval FRP retrievals; see Figure 7), without adding to their cognitive load or disrupting their established validation process.

Design and Training

A key narrative thread throughout the focus group findings is the relationship between the tool’s design, its complexity, and barriers to widespread adoption. While this was partially framed by participants as an expertise gap between specialists and non-expert partners, the findings reveal a more fundamental usability challenge that impacts all users, including experts. This was

clearly demonstrated when an expert misinterpreted a solar panel array as an active wildfire because of the lack of clear visual differentiation between event types. This risk is compounded by lack of basic in-tool context, such as a definition for core concepts and acronyms. This suggests the problem is not just a training issue for a novice audience, but a potential design flaw. Participants had issues understanding specific parameters and quickly finding necessary information to make rapid, confident assessments.

The findings suggest a two-pronged approach to bridge this gap, combining improvements to both the interface design and formal training resources. First, participants repeatedly suggested that in-tool context, such as tool tips that provide additional information, descriptions, and definitions would reduce cognitive load. Furthermore, addressing the participant-initiated request for clear visual differentiation between non-fire thermal anomalies (like solar panels) and active fires (like prescribed burns and wildfires) is a critical design-based solution that brings support directly into the NGFS interface, preventing errors before they happen.

Second, participants expressed a strong desire for more formal, in-depth documentation, such as a white paper that explains the tool’s methodology and purpose. This documentation would act to both deepen their own understanding and equip them to provide explanations to their colleagues. Several participants expressed excitement about the potential to bring NGFS back to their

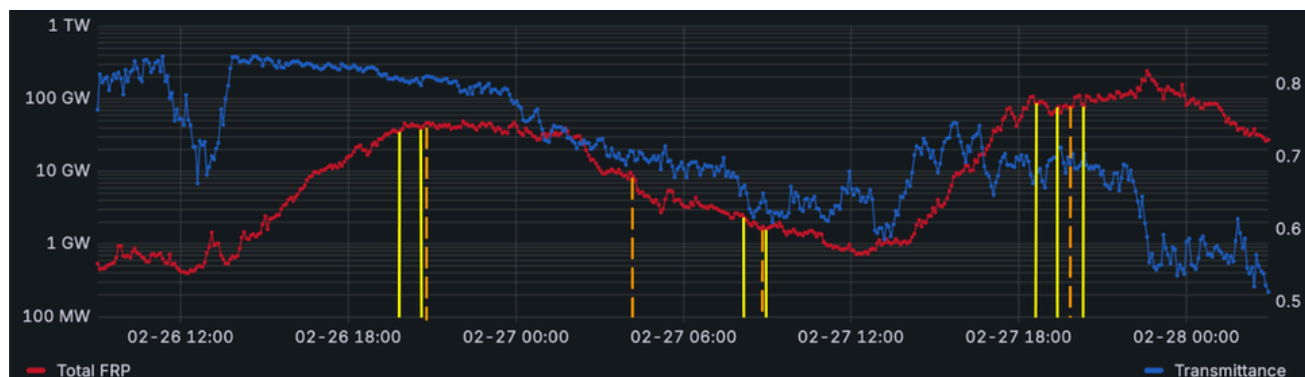


Figure 7. Example time series from the NGFS using geostationary GOES-16, 5-minute data of FRP [red] and transmittance [blue] for the Smokehouse Creek Fire, from 0900 UTC, 26 February 2024 through 0300 UTC, 28 February 2024. Vertical lines show intervals of observations from polar-orbiting satellites: VIIRS / NOAA-20 & Suomi NPP [Yellow, solid], MODIS / Aqua & Terra NPP [orange, dashed].

colleagues, highlighting the importance of not just user training, but also “train the trainer” resources that can support organic, peer-to-peer learning. Ultimately, a successful adoption strategy should include both an intuitive interface that guides the user and robust external documentation that builds confidence.

Role-Specific Requirements

The evaluation revealed that a “one-size-fits-all” approach to NGFS design and implementation may be insufficient to meet the needs of the entire Predictive Services community. The findings demonstrate that the tool’s value, desired features, and definition of “usability” differ across various user roles.

For strategic users, such as those at the national level, the primary mission is “far less focused on initial detections versus emerging large fires and significant fire growth on existing large fires” (Participant 8). Consequently, their most critical need is not for raw alerts but for filtering capabilities that allow them to “focus on the areas of greatest interest first” (Participant 8). For this cohort, high spatial precision is a lower priority than the ability to monitor and prioritize both known, large-scale events and emerging, rapidly intensifying fires. This finding supports a participant suggestion for a potential “variant” of NGFS designed specifically for monitoring existing large fires.

In contrast, for regional-level personnel supporting tactical decision-making, the requirements are inverted. Participants who regularly communicate with regional and local partners noted that for “the folks that are going to be sending the resources directly” (Participant 7; e.g., dispatchers and fire management officer partners), building trust in the data’s accuracy is the paramount concern. For this group, a key use case is integrating NGFS as a “handy layer at a local center’s CAD view on their map” (Participant 6) to support initial response decisions. Similarly, technical specialists have their own unique requirements; fire behavior analysts, for example, value specific analytical features like side-by-side comparisons of FRP to understand fire behavior characteristics such as fire spread rates and fireline

intensity.

These divergent use cases present a key strategic consideration for the future of NGFS. The challenge is to serve these different needs within a single, coherent platform without making it overly complex for any single user group. This suggests an opportunity to develop role-specific views, user presets, or tailored training materials that optimize the NGFS experience for the distinct missions of strategic monitoring, tactical response, and specialized analysis, thereby maximizing the tool’s value across the entire fire management community.

CONCLUSION

This evaluation provided critical insight into both the operational potential and current limitations of NGFS for Predictive Services personnel. The findings build upon those identified in the first FWT evaluation (NOAA Fire Weather Testbed, 2025) by confirming that the NGFS tool is viewed as a valuable addition to the wildland fire toolkit, particularly regarding its temporal resolution and FRP, by an additional high-level fire management user group. However, the evaluation also revealed that operational adoption is currently hindered by significant workflow and usability barriers.

The central conclusion of this evaluation is that for NGFS to achieve a more seamless operational integration, it should address the workflow friction defined by users who already navigate saturated digital environments. As summarized in Figure 8, the path from the current processes to an optimized workflow would be facilitated by moving NGFS from a supplemental tool to an integrated, primary data stream. The evaluation highlighted that without a robust API to ingest data into existing platforms, NGFS risks becoming an additional “open tab” rather than a streamlined, integrated tool. Further, usability issues pose a risk to data interpretation; the evaluation documented instances where experienced users struggled to distinguish between fire and non-fire events or encountered data conflicts that eroded trust. The effectiveness of this study to help the

RECOMMENDATIONS

Recommendations are based on the thematic analysis of the focus group findings and are categorized to provide actionable paths forward for the NGFS development team. To evolve NGFS to better fit into a streamlined workflow, the development team should focus on these technical refinements that map directly to the operational workflow (Figure 9). These recommendations are designed to reduce cognitive load and move the system toward a proactive, integrated intelligence solution.

INTERFACE REFINEMENTS

- Implement a user-defined “watchbox” feature, to solve the primary navigation pain point of excessive map dragging.
- Add in-tool contextual aids (e.g., “tooltips”), by providing on-demand pop-up explanations for key terms like FRP.
- Improve visual differentiation of event types, such as using more distinct colors or icons.
- Enhance filtering capabilities, by providing more robust filters, particularly the ability to filter the dashboard by a specific time window or FRP (change over time and/or current or peak magnitude).
- Implement a flagging or monitoring feature, to allow users to select a specific incident to watch, enabling them to easily monitor a developing fire remotely.

DEVELOPMENT OPPORTUNITIES

- Develop and expose a robust API that allows users to ingest NGFS data into other common operating platforms.
- Implement a “push” notification system to aid users in passively monitoring or bypassing the dashboard.[†]
- Explore a “large fire monitoring” feature specifically designed to assess intensity and fire growth in existing large fires, in addition to the current focus on initial detection.

ONGOING USER SUPPORT STRATEGIES

- Create and distribute a centralized, formal knowledge base, such as a white paper, shareable slide decks, or a centralized, public-facing resource (like a website or wiki).
- Develop tiered and role-specific training materials, such as a basic module for dispatchers and an advanced module for analysts.
- Create a transparent and visible user feedback loop, such as a survey for reporting bugs and suggesting features and a public “changelog” or “updates page” that shows users how their feedback has been acknowledged and addressed.

[†]The NWS Hotspot Notification Tool previously evaluated in conjunction with the NGFS for Integrated Warning Teams (NOAA Fire Weather Testbed, 2025) could serve as an initial system to meet this need.

development team respond to these barriers was significantly enhanced by an evaluation design that intentionally paired real-time user feedback with a responsive development team. By involving the developers in training and the direct observation of scenario-based activities, the team was able to witness user friction firsthand. This success was predicated on the development team’s willingness and technical ability to quickly triage and implement high-priority changes immediately following the evaluation. This proactive approach allowed the team to address some of the critical

interface refinements while planning for more intensive, long-term strategic developments.

Ultimately, even with the noted barriers and limitations of using NGFS in an operational context, participants expressed a willingness to champion NGFS adoption within their own teams. The responsiveness of the development team directly builds on this participant enthusiasm. Taking these continued steps may help NGFS realize its potential value as what could become an integral asset in the decision support toolkit for the wildland fire community from national to local levels.

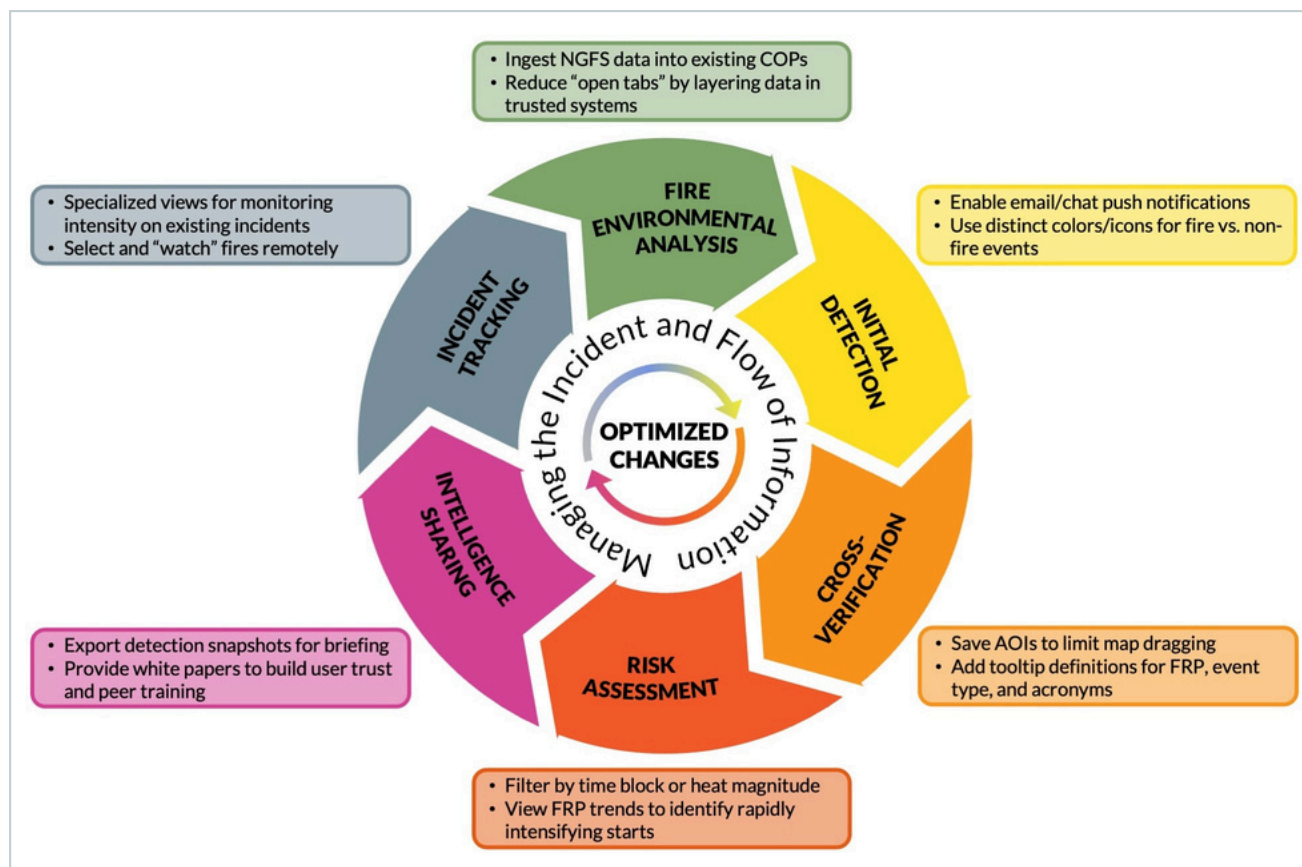


Figure 8. A strategic roadmap for optimizing NGFS integration into Predictive Services operational workflows, with callout boxes detailing participant recommendations.

NGFS IMPLEMENTATION STATUS

This section highlights the specific recommendations from the evaluation that have received updates or reached completion during the report's development in early 2026.

RECOMMENDATION	STATUS	UPDATE NOTES
Watchbox feature	Existing	Already available feature; identified as a communication gap with documentation and outreach underway
Enhanced filtering	Implemented	Dashboard now supports sorting by GACC and filtering notifications by land management authority
Monitoring feature	Implemented	Updated fire activity monitoring application released
Robust API	Implemented	Publicly accessible API launched; integration with USFS Enterprise Geospatial Portal in progress
Knowledge base	In Progress	Documentation improvements ongoing
Feedback loop	Implemented	Feedback survey added to NGFS websites
Detection Accuracy	Implemented	Improved detection sensitivity and accuracy since evaluation

Phase	Current Baseline	Current NGFS Fit	Optimized Changes
FIRE ENVIRONMENTAL ANALYSIS	- Monitor regional weather outlooks and RFWs - Review terrestrial camera networks	- Detections mapped over LANDFIRE fuel types - Correlate heat with RFW layers	- Ingest NGFS data into existing COPs - Reduce "open tabs" by layering data in trusted systems
INITIAL DETECTION	- Receive unconfirmed reports from 911 calls or partners - Detect potential ignitions in Fireguard	- Catch starts via 5-minute data cadence - See hotspot before local reports	- Enable email/chat push notifications - Use distinct colors/icons for fire vs. non-fire events
CROSS-VERIFICATION	- Cross-reference unconfirmed reports across - Confirm credible threats	- Use NGFS as a "second step" to confirm tips - Validate NGFS hits with satellites	- Save AOIs to limit map dragging - Add tooltip definitions for FRP, event type, and acronyms
RISK ASSESSMENT	- Check national Spot Monitor - Search IRWIN and WildCAD for incident reports	- Use FRP to gauge fire behavior - Reinforce high-consequence resource allocation	- Filter by time block or heat magnitude - View FRP trends to identify rapidly intensifying starts
INTELLIGENCE SHARING	- Communicate validated intelligence to operational partners - Coordinate resource allocation	- Call dispatch based on NGFS-verified starts - Provide fast information to partners	- Export detection snapshots for briefing - Provide white papers to build user trust and peer training
INCIDENT TRACKING	- Manually track active fire behavior from satellite data - Synthesize data from multiple systems	- Monitor 24–72 hour diurnal FRP cycles for trends - Investigate specific fire growth details	- Specialized views for monitoring intensity on existing incidents - Select and "watch" fires remotely

Figure 9. The evolution of a generalized Predictive Services workflow from the current baseline without NGFS to the current use of NGFS within that workflow, and ending with recommendations for optimizing the system for a more seamless workflow integration.

REFERENCES

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- NOAA Fire Weather Testbed, Baring, A., Hatchett, B.J., Hoekstra, S., Sample McMeeking, L., Thiem, K., Tolby, Z., Vickery, J., Wells, E.M., 2025: Fire Weather Testbed Evaluations #002–004: An End-to-End Evaluation of NOAA's Emerging Wildland Fire Detection and Warning Capabilities. NOAA Technical Memorandum OAR GSL-71, <https://doi.org/10.25923/4pqf-7g49>
- Otkin, J. A., Pavolonis, M., Pierce, B., Sieglaff, J., Batzli, S., Bellon, B., Birdsong, C., Feltz, J., Heuscher, L., Jasmin, T., Kumar, A., Lindstrom, S. S., Parker, D., Schmidt, C., & Wang, F. (2025, January). The next generation fire system: Ongoing development and testing during the 2024 wildfire season [Conference presentation]. 21st Annual Symposium on Operational 67 Environmental Satellite Systems, 105th American Meteorological Society Annual Meeting, New Orleans, LA.
- Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, 34(5), 1189.
- Pavolonis, M. J. (2025, January). New NOAA satellite tools for wildland fire management [Conference presentation]. First Conference on Fire Weather, Technology, and Risk, 105th American Meteorological Society Annual Meeting, New Orleans, LA.
- Wells, E. M., Hatchett, B. J., Thiem, K., Tolby, Z., Hoekstra, S., Vickery, J., & Nietfeld, D. (2025). NOAA Fire Weather Testbed Launches First In-Person Evaluation. *Bulletin of the American Meteorological Society*, 106(6), 359-363.

SUPPLEMENTARY MATERIALS

Appendix A: Glossary of Key Operational Tools

Appendix B: Full Evaluation Question Set

Appendix C: Session Agenda and Focus Group Protocol

Appendix D: Extended Participant Perspectives

The scientific results and conclusions, as well as any views or opinions expressed herein, are those of the author(s) and do not necessarily reflect those of NOAA or the Department of Commerce.

ACKNOWLEDGEMENTS

The evaluation team extends sincere thanks to the six Predictive Services personnel who participated in this evaluation. Their candid operational perspectives made this evaluation possible and directly shaped its findings and recommendations. We also thank the NGFS development team at NOAA/NESDIS for their facilitation of the introductory training session and responsiveness to user feedback. This research was supported in part by the NOAA Cooperative Agreement NA19OAR4320073, for the Cooperative Institute for Research in the Atmosphere.

Cite as: NOAA Fire Weather Testbed, 2026: An Evaluation of the Next Generation Fire System for Predictive Services. NOAA Technical Memorandum OAR GSL-79, DOI: <https://doi.org/10.25923/0vz0-ra19>.

ABOUT THE FWT

The Fire Weather Testbed serves as a bridge between researchers, operational forecasters, and end-users to advance fire weather decision-making. By integrating both social and physical sciences, the FWT addresses the technical and human dimensions of fire weather challenges, ensuring that evaluations are scientifically rigorous, operationally actionable, and contextually appropriate.

The FWT's approach is interdisciplinary by design, combining meteorological expertise with robust social science methodologies. Employing a range of qualitative and quantitative evaluation methods, we produce findings that are both user-centered and technically sound, leading to outcomes that meet the needs of diverse stakeholders. Transparent documentation and clear findings attribution are central to our process, reinforcing the trustworthiness and relevance of each evaluation.

As part of a collaborative effort between NOAA's Global Systems Laboratory, National Weather Service, and NESDIS, the FWT focuses on transitioning research capabilities into operational settings. We recognize the complexity of bridging diverse stakeholder needs and mitigate potential biases through diverse sampling strategies, interdisciplinary evaluation practices, and proactive user engagement. Our commitment to rigor and continuous improvement support the successful implementation of fire weather innovations across the operational community.



APPENDIX A - GLOSSARY OF KEY OPERATIONAL TOOLS

ACRONYM/TOOL	FULL NAME AND/OR DESCRIPTION
ALERTWest	A network of mountaintop cameras providing real-time, publicly-available imagery for fire detection across several western states.
AGOL	ArcGIS Online. An Esri cloud-based mapping and analysis platform used to create and share interactive maps and data.
AWIPS	Advanced Weather Interactive Processing System. The primary operational software system used by the National Weather Service (NWS) to visualize meteorological data and issue forecasts and warnings.
CO-WIMS	Colorado Wildfire Information Management System. A web-based system used in Colorado for sharing and mapping wildland fire information.
EGP	Enterprise Geospatial Portal. The primary interagency geospatial portal for fire management, hosting numerous data layers including satellite detections.
FIRMS	Fire Information for Resource Management System. A NASA-operated system that provides near real-time VIIRS and MODIS active fire/thermal anomaly data to a global audience.
FireGuard	A U.S. Air Force and National Guard system that synthesizes military and civil data sources for fire detection and monitoring.
FRP	Fire Radiative Power. A measurement of the heat output of a fire, used to estimate its intensity.
FWW	Fire Weather Watch. An NWS product issued to alert land management agencies that critical fire weather conditions are possible over the next 12 to 72 hours.
GACC	Geographic Area Coordination Center. One of 11 centers that coordinate the regional allocation of resources for wildland fire.
GOES	Geostationary Operational Environmental Satellite. A series of satellites operated by NOAA that provide continuous, real-time weather imagery and data for the Western Hemisphere.
inFORM	Interagency Fire Occurrence Reporting Modules. A (now-legacy) system used by federal, state, and local partners for reporting and managing wildland fire incident data.

ACRONYM/TOOL	FULL NAME AND/OR DESCRIPTION
IR	Infrared. A portion of the electromagnetic spectrum used by satellite sensors to detect heat, which is the primary method for identifying thermal anomalies and active fires.
IRWIN	Integrated Reporting of Wildland Fire Information. A data service that exchanges incident information and synchronizes data between different wildland fire computer-aided dispatch (CAD) systems.
MODIS	Moderate Resolution Imaging Spectroradiometer. A key satellite sensor aboard NASA's Terra and Aqua satellites, providing daily global thermal anomaly (heat detection) data.
NGFS	Next Generation Fire System. The NOAA-developed fire detection and characterization system that is the subject of this evaluation.
OGC	Open Geospatial Consortium. An international standards organization that develops and publishes open standards for geospatial data and services.
Pano	Pano AI. A commercial service that uses AI-powered, high-definition cameras on mountaintops to provide early fire detection for utilities and other clients.
RFW	Red Flag Warning. An NWS product issued to warn that critical fire weather conditions (a combination of dry fuels, low humidity, and high winds) are either imminent or occurring.
Rx	Prescribed Burn. A planned, intentionally set fire managed for the purpose of fuels reduction or land management.
SA/SAD	Situational Awareness (Display). The comprehensive understanding of the operational environment; a SAD is often a large monitor displaying real-time data feeds.
VIIRS	Visible Infrared Imaging Radiometer Suite. A key satellite sensor aboard the Suomi NPP and JPSS satellites, providing higher-resolution thermal anomaly data than MODIS.
WFDSS	Wildland Fire Decision Support System. A (now-legacy) web-based system used by fire managers to document and support strategic and tactical decisions for wildland fire incidents.
WildCAD	Wildland Fire Computer-Aided Dispatch. A dispatch software system used by interagency partners to manage and track incidents and resources.

APPENDIX B - FULL EVALUATION QUESTION SET

Exploratory Questions

- How do different Predictive Services positions use fire detection? How does fire detection fit into the current workflow?
- What are the most common and/or useful fire detection avenues currently? How do Predictive Services staff currently receive fire detection?
- Do Predictive Services currently integrate NGFS fire detection data into their workflows? If so, how?

Usability/Support Questions

- What usability challenges exist in NGFS's data presentation, navigation, or accessibility?
- To what extent is training and support sufficient to meet the needs of Predictive Services? How can it be improved?
- How do different user groups (e.g., those with and without satellite analysis experience) interpret fire detection outputs (i.e., NGFS and other tools), and how does this affect their decision-making?
- What happens after a fire detection (i.e., NGFS and other tools) is identified?
 - How is the information received?
 - How do users determine whether the detection is actionable?
 - What decisions do they make based on received information (NGFS-derived and others)?
- How does Predictive Services validate NGFS detections?
 - What other data sources do they use to confirm fire presence?
 - Is NGFS resolution and accuracy sufficient for distinguishing between critical areas and supporting response? If not, what other data support this effort?
- What other data sources do they use to confirm fire presence?
- Is NGFS resolution and accuracy sufficient for distinguishing between critical areas and supporting response? If not, what other data support this effort?
- How well does NGFS complement or integrate with other fire detection tools and data sources?
- Beyond fire detection, how can NGFS support resource allocation and situational awareness for Predictive Services?
- What refinements or enhancements would make NGFS more valuable for land management agencies?

APPENDIX C - SESSION AGENDA & FOCUS GROUP PROTOCOL

Agenda

SEGMENT	DURATION	DESCRIPTION
Welcome & Introductions	20 min	Opening remarks from FWT leadership, participant introductions, and an overview of the day's agenda, evaluation objectives, and logistics.
NGFS Overview & Demos	55 min	Presentation of the NGFS tool's purpose, features, and intended use cases, including demonstrations by the development team to familiarize participants.
Hands-On Activity	75 min	Participants explored the NGFS interface independently during the lunch break, applying it to their own operational roles and workflows.
Operational Briefings	50 min	Participants delivered short briefings using the NGFS tool in a simulated operational context, providing a realistic test of the tool's utility for decision support.
Focus Group Discussion	60 min	Structured, moderated discussion covering workflow integration, usability, feature preferences, and recommendations for development.
Wrap-up	10 min	Closing session where participants were able to ask questions of the FWT and development team, and to provide open feedback on the evaluation experience.

Focus Group Protocol

The following protocol documents the discussion questions and structured activities used during the evaluation session. Questions were posed across three phases of the day: after the NGFS overview and demonstrations, during and following the hands-on activity and operational briefings, and during the formal focus group discussion.

After Overview and Demonstrations

Following the NGFS overview and live demonstrations, participants were invited to share initial reactions before beginning the hands-on activity.

- To begin, we want to understand what your first impressions of the NGFS are overall. Can you tell us more about your thoughts?
- Based on the demo alone, do you see any immediate advantages or drawbacks of NGFS compared to your current (other) detection tools?
- Next, we would like to ask specifically about how you see this fitting in with your typical workflow. Does the NGFS align well with your typical workflow, or do you see potential workflow conflicts?
- How comfortable do you feel navigating NGFS after this training?

Hands-on Activity

Participants were given structured time to explore the NGFS interface independently. The following tasks oriented their exploration. Participants were asked to take notes on their experience as they worked.

Participant Tasks

1. Find fires in your area of responsibility.
2. Gather fire weather intelligence for those fires.
3. Judge fire significance based on the information available.
4. Plan your next operational moves.

Note-taking Prompts

- Which features of tools did you use?
- What did you find most helpful?
- What was confusing, missing, or frustrating?
- Did anything surprise you?

Operational Briefings

Following the hands-on activity, participants delivered a brief operational summary using the NGFS as their primary source. Briefings followed a four-point structure:

- What you found,
- What you know (situational assessment)
- What you are going to do next,
- What tools and features you relied on.

Briefings were followed by brief group discussion and clarifying questions from facilitators.

Focus Group Discussion

The structured focus group discussion used the questions below, organized by topic area. Facilitators followed up with probes as appropriate based on participant responses.

Workflow and Integration

1. Can you walk us through your current typical workflow?
 - How do you currently detect and validate wildland fires? (e.g., satellite checks, cameras, calls to dispatch, etc.)
 - Would you take any actions in response to emerging or intensifying wildland fires? (e.g., sending a recon flight, dispatching resources, waiting for more data, etc.)
 - Would anything change with your actions if you received multiple detections (i.e., an emerging wildland fire outbreak) or an especially intense wildland fire?
2. Given your experience and perception of the NGFS, would you incorporate it into your future detection, validation, and/or response workflows?
 - What information did you find valuable?
 - What information was not useful?
 - Do you feel that the NGFS improved your situational awareness of wildland fires and/or fire behavior in your area?
 - What information are you looking for when you receive a detections that would either trigger a response from you or would assist you in making a decision?
 - How would your decision-making change based on the use of the NGFS, if at all?
 - Is there any information that is missing that would help or accelerate your decision-making ability?

3. Would you want to integrate NGFS data into your system?
4. How well does NGFS complement or integrate with your other fire detection tools or data sources?

Usability and Interface

1. Did the NGFS Dashboard effectively present fire detection information in a way that supports operational use?
2. Which parts of the NGFS interface were straightforward?
3. What aspects did you find challenging?
4. What are your thoughts on the NGFS Dashboard alerting capabilities?
 - How would frequent NGFS alerts affect your workload, if at all?
 - Are there situations where you wouldn't want to receive notifications of emerging fires in your area?
 - In a real scenario, how quickly could you act on an NGFS detection once alerted to it?

Data, Products, and Features

1. How comfortable do you feel in navigating, understanding and applying NGFS data in practice after today?
2. Based on your exposure, do you trust the NGFS to be sufficiently accurate and reliable for your needs? Would the spatial and temporal resolution of the NGFS benefit or hinder your operations?
3. Did you have any trouble interpreting the detection (like location accuracy, confidence levels, etc.)?
4. How important is locational precision? What level of precision (say within 1 mile, 1 km) is the minimum actionable (knowing as exact as possible is preferred)?

Training, Support, and Adoption

1. If NGFS were to be integrated operationally in your common operating platform, what barriers or pushback do you foresee?
2. What training or documentation would help you use NGFS more effectively?
3. Do you think the NGFS would be helpful if given directly to dispatch centers? Too complicated?

Recommendations and Priorities

1. What refinements or enhancements would make the NGFS more valuable to you?
2. What is the biggest improvement needed to enhance the operability of the NGFS?
3. What is the most valuable feature of the NGFS?
4. In one sentence, how would you summarize your final impressions of the Next Generation Fire System?

Wrap-Up

The closing session was reserved for participant questions directed at the FWT and development team, and for open feedback about the evaluation experience itself. Facilitators used the following prompts to open the floor:

1. What questions do you have for us about the NGFS development process or timeline?
2. Is there anything about today's session — the format, the activities, the questions — that you think we should do differently in future evaluations?
3. Any final thoughts you didn't get to share today?

APPENDIX D - EXTENDED PARTICIPANT PERSPECTIVES

This table presents extended participant perspectives drawn from the focus group discussion, organized by topic area and subcategory. Each row includes a direct quote from a participant, paired with a sentiment code indicating the nature of the response: Critical (identifying a problem or barrier), , Mixed/Neutral (nuanced or context-dependent), Positive (affirming or enthusiastic), or Suggestion (constructive or forward-looking). Participants are identified by assigned participant IDs (P1–P[n]) to preserve anonymity. Quotes within each subcategory are organized alphabetically by sentiment.

ID	QUOTE	SENTIMENT
USABILITY & INTERFACE		
Interface Design & Navigation		
P8	"I saw a couple things that I thought were drawbacks that have been mentioned. One was mentioned and that was, you know, that you're not really pushing alerts. That's not really a big problem for me, my job function, but I could see where that might be a limitation seen by some."	Critical
P4	"I don't know if it's just due to the frequency compared to things like VIIRS and MODIS, or if it's just a more sensitive algorithm but it'll detect a lot of stuff out on the plains that's likely ag burning, and that's what I think these couple of detections out in Nebraska were."	Mixed / Neutral
P7	"Feeling comfortable, even more comfortable after the training. Especially the clarification that it isn't just the continental United States and looking closer at the filters there getting a better feel for that. I do like how clean the initial dashboard is."	Positive
P7	"I think there's a few places, one that's been becoming more and more apparent to me is that. Scan frequency or detection frequency it just it seems like it is one of the first systems to notice something. Even notice something small. So I'd say that's definitely an advantage. The other one is that radiative power."	Positive
P7	"I think the feedback I would provide... I've been using it for a little while, introduced by our geographic area of meteorologists to this tool, and one of the things from just this presentation that I appreciate is the defining those image layers between, you know, geocolor all the way down to the just the basic Google Maps."	Positive
P2	"OK. Well, I was kinda just going how I would normally go about my day-to-day operation. So I was thinking how am I integrate it into our visuals or situation? Awareness throughout the day, but normally we have we have cameras up a bunch of different platforms and I was thinking it might look might work out well if I had the alert page here with the filters that you can see up on the top set so as they."	Positive
P3	"So I'll throw the couple that I already talked about, but better filtering from the front, just getting into it so you can more quickly do that or being able to set up favorites or being able to put some sort of Polygon or something on there as a watch area using different colors to define different attributes."	Positive

ID	QUOTE	SENTIMENT
P6	"Really appreciate that whether it's the AI side of things, or exactly not sure what's causing it, but that we're going to be able to filter out solar farms because those always throw a little bit of a hesitation when we see that on an IR band, you have to zoom in on the earth layer to see: Oh, that's just that solar farm."	Positive
P8	"So a lot of the things I've jotted down have been said, but one thing I think I'm seeing there will be especially useful is at least at the higher levels of the management hierarchy. I mean we want to, we want to focus on the areas of greatest interest first. So I like the ability to put some constraints on the detections."	Positive
P2	"...you can see a number on there. I don't necessarily know what that means, but if it's a confidence level and then if I can verify it and see it, then that's something that more inclined to make a phone call."	Suggestion
P3	"And I think. Yeah, I think that. The other one too is. It would be really nice to highlight your area. So if I could pick like some sort of, either put a, you know box on the map or something to track a particular area or particular fire, that would be incredibly useful because."	Suggestion
P3	"The other thing too is differentiating between existing I guess, like you said, the RX versus the wildfire...I guess some of them already do have solar panels, but just being able to be very clear, maybe it has a color, being able to see the different attributes easily so that you know it's...a solar panel like that. Just differentiating them so that they're easier to figure out."	Suggestion
P6	"But like if I click on the microphysics, what is the pink mean versus the blue when I'm looking directly at a heat detector, unknown fire? That would be pretty beneficial."	Suggestion
P6	"Might be nice to be able to see the dashboard or the new updates as they come in while in the map view instead of having two different tabs. [Bringing back trainer and closing comments about next steps, etc. removed from transcript.]"	Suggestion
Interpreting Output & Terminology		
P8	"No, no detections. So I was like, OK, that does that answer my question. But you know, I'm not a believer yet, right? So you know skeptic. So my next step was kind of fall back into kind of my regular habits. So I went and checked IRWIN data. I use the inFORM reporting interface and there were in fact these are the bottom 2 maps."	Critical
P7	"I'm curious why it's just the continental United States and not any of the outlying states or territories. Is that a limitation of the satellites?"	Mixed / Neutral
P4	"I think one thing I could see being maybe a bit of a stumbling block for at least the staff outside of the mets. Since mets are used to looking at goes data we understand how the different channels work, how they can be put together in some of the composite ones, the RGBs, it's a little bit easier for us to dig into that."	Mixed / Neutral

ID	QUOTE	SENTIMENT
P3	"Yeah. My question is just to add on, are you going to be adding some sort of information about what you're talking about, by the, you know what the 1000 is or where it might transition to pyrocum ulus]? Is there going to be some sort of way to get that information about those numbers as it comes out for the users?"	Mixed / Neutral
P6	"So we're good on that. Sorry I have to move this for the Teams bar. It's always in the way of tabs. So then I went on to the next one and that oops, that was in a different area and it is not part of a known fire or and it was a normal detection. To get said relatively."	Mixed / Neutral
P8	"I got a question on [unknown]. Those four detections, those four alerts. So GOES 18 had a mesoscale alert, but not a conus alert. So, is it, is it the case that you can...I mean, obviously that can happen, that's surprising to me... So can you kind of act that a little bit?"	Mixed / Neutral
P7	"I think the feedback I would provide... I've been using it for a little while, introduced by our geographic area of meteorologists to this tool, and one of the things from just this presentation that I appreciate is the defining those image layers between, you know, geocolor all the way down to the just the basic Google Maps."	Positive
P3	"So this one right here shows screen with NGFS displayed]. The land cover type was pretty interesting, mostly because it does pull up the juniper, but it doesn't actually pull up grass, which I found very interesting, so I'm not really sure what the other is supposed to actually denote, but."	Positive
Alerting & Notifications		
P8	"I saw a couple things that I thought were drawbacks that have been mentioned...you're not really pushing alerts. That's not really a big problem for me, my job function, but I could see where that might be a limitation seen by some."	Critical
P8	"4 fires reported so far today in the red flag warning highlighted area of Northeast Minnesota and there are 5 fires I believe reported today in the Fire Weather Watch highlighted area of Central California, so that may be kind of wonder what was happening with that. Why didn't I get some alerts with those filter criteria for NGFS and the fact that there is some presumably known fire activity there?"	Critical
P7	"I'll double down on Participant 6 comments there about the near-real-time, and it's just his previous comment there. One of the disadvantages I see is that it has to be monitored. A number of our other systems provide either a chat message, or an e-mail that we can turn into a chat message, that alerts us."	Critical
P3	"And certainly if it's going to be a tool for initial activity, we need some sort of alerting...at some level or at least a bell that gives you a notification that something new has happened on the map."	Critical
P4	"...on what you were kind of mentioning there with like states like in the Midwest states, if I were to turn on like the auditory alerts, I'd have to do something either change the filter so that I just don't have those in there."	Critical

ID	QUOTE	SENTIMENT
P7	"I know you can turn the sound on, but I work in a shared office so that can be challenging to keep my headphones on or just having to monitor it. So, if there was a way to get an alert, even if that was just simply as an e-mail [when] there's a new detection in an area where you can click a link, and it would open the dashboard."	Suggestion
OPERATIONAL WORKFLOW		
Workflow Fit & Tool Comparison		
P8	"I saw a couple things that I thought were drawbacks that have been mentioned. One was mentioned and that was, you know, that you're not really pushing alerts. That's not really a big problem for me, my job function, but I could see where that might be a limitation seen by some."	Critical
P7	"Another facet to the multifaceted approach to fire detection and monitoring."	Mixed / Neutral
P6	"Yeah, P6 here. So, I don't like I said earlier, we don't do a lot of detection here from my perspective."	Mixed / Neutral
P8	"I'm trying to figure out the sequence in which I would use this with existing tools, or if it would fully replace... So, you know, if I didn't start with alerts but rather started with monitoring the map, and NGFS, that might potentially replace some of my existing workflows."	Mixed / Neutral
P7	"OK. So I was introduced to the NGFS by our geographic area meteorologist. He uses it quite frequently and I think it's more familiar with those bandwidths and different layers and viewing that kind of stuff, much like P8. I am not so bit of a new person to using it, but trying to integrate it into our workflows or daily processes."	Positive
P7	"I think there's a few places, one that's been becoming more and more apparent to me is that. Scan frequency or detection frequency it just it seems like it is one of the first systems to notice something. Even notice something small. So I'd say that's definitely an advantage. The other one is that radiative power."	Positive
P4	"So I am the predictive services title here for the [GACC]. I'm a Park Service employee and really no different than everybody else has said: Mostly the VIIRS and MODIS detects, on things like FIRMS and EGP, but I have occasionally pulled up the NGFS dashboard just as a good [Situational Awareness] to have just on a screen in the background."	Positive
P6	"But to detect something in a different way than just straight IR detection where we're using the different bands in the comparison to try to say, you know, we have this tiny pixel of actual vector image data, but what can we do with that? Very interesting. I think it'll be another tool for the kit."	Positive
P6	"So I too have not used the NGFS previously. Besides hearing about it for this I was unaware of it all together. I kind of have an idea of how IR works, just infrared itself, so it's cool to see that we're kind of utilizing that."	Positive

ID	QUOTE	SENTIMENT
P8	"So a lot of the things I've jotted down have been said, but one thing I think I'm seeing there will be especially useful is at least at the higher levels of the management hierarchy. I mean we want to, we want to focus on the areas of greatest interest first. So I like the ability to put some constraints on the detections."	Positive
Current Tools		
P2	"You kind of hit it is we went over the cameras a little bit, but that's primarily we're sitting with the monitor, that's. Kind of focused on those, I think I still have it up. I'm not really sharing my screen but. We have a monitor that is going full time."	Mixed / Neutral
P3	"SI think a lot of them have been discussed, but we also have our 911 that come through and our other partner agencies, they also have products that through our cross-boundary sharing we get information from them as well. There's also some of the utility agencies to actually have some products. As well as down in [area], they have some GOES products that also do send out alerts."	Mixed / Neutral
P2	"Participant 7 mentioned it, but the ALERTCalifornia systems. A lot of ArcGIS products and everything that feeds into there. So as far as FireGuard, any other satellite detections."	Mixed / Neutral
P3	"I can give you from my perspective much more on what the Intel side of the House is utilizing. EGP and the cameras. Is probably primarily where I get my normal walkthrough. And then the validation usually is at the same time."	Mixed / Neutral
P4	"So I am the predictive services title] here for the [GACC]. I'm a Park Service employee and really no different than everybody else has said: Mostly the VIIRS and MODIS detects, on things like FIRMS and EGP, but I have occasionally pulled up the NGFS dashboard just as a good SA to have just on a screen in the background."	Mixed / Neutral
P3	"I think that. Yeah, P8, I think you got most of it. I have a CalGuard overlays because that will give you the pixel that that extent. That was talked about earlier. The other thing too is differentiating between existing I guess, like you said, the RX versus the wildfire or. Or the. I think the other one said."	Mixed / Neutral
P6	"I focus on using the IR detects, the VIIRS and MODIS, you can see in EGP, as well as on the FIRMS platform. However, Hawkeye seems to only be in EGP and not available on FIRMS. So, I thought that was interesting. And then yeah, we use Pano pretty extensively in [GACC area]."	Mixed / Neutral
P7	"If we're seeing something both from FireGuard and GFS, we're thinking oh, it's more and more likely kind of like Participant 2's saying multiple systems do. A quick glance at Wildweb and it, I can't remember if it was in there immediately. If it's not, or if it is. Again looking at the lat long that's reported to dispatch."	Mixed / Neutral
P8	"And then my secret weapon, it's weird, but Spot Monitor, so a lot of times we get some fire activity that's showing heat on satellite, but we can't figure out what it is, or if it's prescribed, or wildfire and kind of the last ditch effort is to go over and look and see if anybody's asked for a spot forecast ..."	Mixed / Neutral

ID	QUOTE	SENTIMENT
P8	"So in terms of the satellite based products, huge, huge user of FIRMS, less so EGP nowadays, but EGP next Gen might draw us back in. You know, we do look at the, I look at the GOES Infrared on the College of DuPage and the CIRES sliders/CSU...I used the InFORM fire reporting platform which has the capability to display somewhat stale VIIRS data, but that's helpful to kinda see how that aligns with map parameters. And we do look at the cameras occasionally to just see what's going on if we have a hint of some activity that might be interesting, at least at the national level."	Mixed / Neutral
Role-Specific Use		
P6	"So if we get informed of a fire, this will be another place we could go verify it and even say, oh, we might have known about this so much sooner had we been monitoring this versus another source. But you know, Intel, we're typically after the fact. We're not the cutting edge of discovery and saying, oh, go check here for a fire. We're more like oh, you found a fire. Here's what we know about it."	Mixed / Neutral
P7	"Feeling comfortable, even more comfortable after the training. Especially the clarification that it isn't just the continental United States and looking closer at the filters there getting a better feel for that. I do like how clean the initial dashboard is."	Positive
P7	"And I feel like more use is just going to give me a better sense of reliability and maybe it's not me that needs to be convinced, but the local dispatch center's duty officers fire management, the folks that are going to be sending the resources directly --gaining their trust from using it more passing this information along."	Positive
P4	"A good extension of the human forecaster interpreting IR data."	Positive
P2	"I can't really speak too much as far as the individual dispatch centers, the ECCs, but they may for sure if some of them are currently looking at the infrared detections already then they would benefit from this platform as well."	Positive
P3	"I'll second you there, P8. I would really like that. I think that this is a very nuanced product, which again is super useful. I think, though, your user group... I'm not sure what your projected audience would be..."	Positive
P6	"Yeah, in the same manner, like I said earlier, you know it's another tool in the kit. So if we get informed of a fire, this will be another place we could go verify it and even say, oh, we might have known about this so much sooner had we been monitoring this versus another source. But you know, Intel, we're typically after the fact."	Positive
P6	"I also think it could be a really handy layer at a local center's CAD view on their map so that they could. I don't how I would notify them, but so they could see those detections on that map as they're plotting incidents and such."	Positive
P8	"So a lot of the things I've jotted down have been said, but one thing I think I'm seeing there will be especially useful is at least at the higher levels of the management hierarchy. I mean we want to, we want to focus on the areas of greatest interest first. So I like the ability to put some constraints on the detections."	Positive

ID	QUOTE	SENTIMENT
P8	"I'm here at the [agency], we're probably far less focused on initial detections versus emerging large fires and significant fire growth on existing large fires."	Positive
P3	"I had one other suggestion. If at all, you do have the time slider, but it would be really nice to have a split screen so you could look from the time frame, you know, the colorations between the two if you're, especially if you're looking at fire temp."	Suggestion
P3	"I agree with everything that has been said. I think one of the other user groups of this would be the [Fire Behavior Analyst & Long-Term Fire Analyst] group. For getting more information about actually how the fire is burning and so as a tool that would be incredibly useful because it just adds depth to understanding propagation."	Suggestion

Fire Validation Process

P8	"Another limitation, even though this is focused on the GOES and near-real-time, you know, we're so highly attuned to the VIIRS and MODIS data, as well, you know, seeing that, particularly if there is a variant that shows, you know, something associated with large fire growth days, for example, having those additional data sources on is perhaps, confirmations or comparisons."	Critical
P2	"Little mapping platform and then just start doing my investigation. So what that includes is. Trying to verify it on camera, this does normally. This is kind of the typical thing that we would do, but if it was in an area that you couldn't see, then you know this wouldn't be available to us."	Mixed / Neutral
P4	"So what I'd normally do, if I'm if I'm the one poking around since I'm the meteorologist and do this quite as much, I'd go to something like FIRMS. EGP or our redacted state] equivalent to EGP and just see whether there's any other detections, whether it's from FireGuard or from some of the polar orbiters, just to see if there was anything out there. Especially with something out on the plains. Might also check our RX report just to see if that was maybe some kind of prescribe. Burn that we were going to do and then check Wildcad as well, just to see if the appropriate dispatch center had anything on it. And then you know, I'd probably just pass it off to our Intel folks and let them chase it down a little bit more"	Mixed / Neutral
P3	"I think as a tool in the toolbox it would be amazing because it does give you some a different attributes to validate whether or not something is actually happening, which would be incredibly helpful. In those areas that, like Participant 2 was talking about either in wilderness, late in the evening, like after, we don't necessarily have resources on before you make that call, you know, validating some of those features. And then also if for like rekindle or some of those things that, really nice early on, especially at that lower heat signature, to be able to get somebody out there to potentially keep things as small as possible and not to have anything after you know it's not supposed to be there."	Positive
P2	"Yet another great validation tool for existing heat detections."	Positive

ID	QUOTE	SENTIMENT
P7	"I think there's a few places, one that's been becoming more and more apparent to me is that. Scan frequency or detection frequency it just it seems like it is one of the first systems to notice something. Even notice something small. So I'd say that's definitely an advantage. The other one is that radiative power."	Positive
P6	"And so because now actually when I was looking at this earlier, there was only two of these [NGFS] centroids and now I'm getting five of them. At that point, I wouldn't have taken any action, but if I happen to be on the phone with [Partner], I would tell them, hey, I got some heat to text in the area [location], in case you guys wanted to send somebody to go patrol that area, if you. Getting in your reports, I didn't do that yet, but now that I'm seeing more of those heats coming in from Hawkeye. I probably will give them that call and then."	Positive
DECISION SUPPORT		
Situational Awareness & Confidence		
P8	"So, bottom line, I think I kinda had a confirmation but still left with some doubts, so I probably have to just keep checking, you know, go look at the cameras, see if those reported fires, look like they were doing anything or go look at some other source for."	Mixed / Neutral
P4	"The one thing I found very useful in integrating it into my workflow was the fact that there is the dashboard."	Positive
P4	"So I am the predictive services title here for the [GACC]. I'm a Park Service employee and really no different than everybody else has said: Mostly the VIIRS and MODIS detects, on things like FIRMS and EGP, but I have occasionally pulled up the NGFS dashboard just as a good [Situational Awareness] to have just on a screen in the background."	Positive
P2	"...if it's a confidence level and then if I can verify it and see it, then that's something that more inclined to make a phone call."	Suggestion
P3	"I think that we definitely would need some more information on the confidence levels. I think the location accuracy, if there were a couple of those layers we already talked about in there that would be very easy to clean up."	Suggestion
Decision & Action		
P6	"And I would say for my view it's really dependent on where the actual fire is. Assuming we're getting a true detect because if we're talking it's in the middle of a Forest Service block of land or, you know ownership and protection, then we only need to know it's as precise as this hillside versus that or this valley versus another."	Critical
P2	"Little mapping platform and then just start doing my investigation. So what that includes is trying to verify it on camera...this is kind of the typical thing that we would do, but if it was in an area that you couldn't see, then you know this wouldn't be available to us."	Mixed / Neutral

ID	QUOTE	SENTIMENT
P7	"Anyway, if I'm seeing something in the NGFS first thing I do is go and look either in the e-mail that we get or make sure we've set up a flow here that just sends a chat message to our Intel team here at the geographic area and it just spits in pertinent information."	Positive
P4	"I think it's mostly just the temporal, just the more up to date information we have as we're trying to, especially if things are resources, are pretty tight and we're having to make the decision is this, is this the fire that we need to allocate to or do we need, would it be better off used somewhere else?"	Positive
Information Value & Gaps		
P4	"All right. So we did actually have a few detections in the Rocky Mountain area. But it's all out in Kansas, and this is one of the things I have kind of noticed with the NGFS."	Mixed / Neutral
P3	"Just over my general use of NGFS that it does pick up on Ag burning out in like [the Great Plains] pretty well. So, our dashboard can get pretty lit up if I have those states in there. And I don't necessarily see that as being a problem, I'd rather have more detections that are fire. Though it does at times potentially mask just in the stream of stuff on the dashboard. [For example,]there might be a Colorado incident that picks up and then New Kansas ones roll in and kind of push it down the list because they're just a little bit more recent, so...if you're not always on top of it, it might get pushed down the list pretty quickly."	Mixed / Neutral
P7	"I think there's a few places, one that's been becoming more and more apparent to me is that. Scan frequency or detection frequency it just it seems like it is one of the first systems to notice something. Even notice something small. So I'd say that's definitely an advantage. The other one is that radiative power."	Positive
P2	"Yeah, the speed at which these are ingested and displayed on the dashboard is the most valuable feature for me."	Positive
P6	"I like that it's not just was detected, per say, but it's got that FRP to give you a measure of severity."	Positive
P8	"This is the first platform or application that I've seen where there's really good integration with other data. So, you know, we can see dark black things on other GOES viewers, but then you gotta turn on the county lines or the highways or something to try to figure out where that's at specifically and then go start chasing that down in another application. And none of them, so far as I know, have ever made the attempt to associate current thermal detections."	Positive
Accuracy & Reliability		
P3	"So this one right here shows screen with NGFS [displayed]. The land cover type was pretty interesting, mostly because it does pull up the juniper, but it doesn't actually pull up grass, which I found very interesting, so I'm not really sure what the other is supposed to actually denote."	Critical

ID	QUOTE	SENTIMENT
P6	"And I would say for my view it's really dependent on where the actual fire is. Assuming we're getting a true detect because if we're talking it's in the middle of a Forest Service block of land or, you know ownership and protection, then we only need to know it's as precise as this hillside versus that or this valley versus another."	Critical
P8	"...as this matures having a confidence rating that could be included in the filtering would probably be appreciated. And by that, I mean, I know we're confident it's hot, but what we're talking about is, are we confident it's a wildfire?"	Critical
P3	"So I'm gonna say the best you can do because it is a DPA issue. I mean that is going to tie you to lots of things like your response cost, all of those things. So it's hard to actually give you a actual real scale because it does matter if you're on the wrong side of the road. That's a very big deal."	Mixed / Neutral
P8	"For the reliability piece, I mean it's a little bit outside the scope of the exercise today, but you know I think most of us would say [is] that you know the things that kind of affect our reliability are not so much the confidence level we have in our data sources, but just the reliability of the applications that deliver the data...we don't see frequent outages or see outages at times where we are really dependent upon the data so that rattles our confidence."	Mixed / Neutral
P7	"Yeh, the sensing frequency, how often it's detecting."	Positive
P4	"I'll say that you know, there have been times when we would hear about a fire from dispatch and try to go, you know, actually figure out where it is on the map and if we're using some of the tools like CO-WIMS or EGP. Which is all just polar orbiter based sometimes we run into trouble actually trying to geolocate because there hasn't been a pass yet, so the higher temporal resolution that the geostationary satellite gives with the NGFS. I think that would be a lot more helpful in a for us to try and narrow down where it is so we can see what kind of terrain it's in, what kind of fuels it might be in."	Positive
P2	"Yeah, the speed at which these are ingested and displayed on the dashboard is the most valuable feature for me."	Positive

FUTURE DEVELOPMENTS

Enhancements & Refinements

P7	"One of the disadvantages I see is that it has to be monitored. A number of our other systems provide either a chat message, or an e-mail that we can turn into a chat message, that alerts us."	Critical
P3	"I think the bigger thing would be is there's probably 40 different tabs that our Intel people could have open at one time. Not saying that one is better than the other or anything, but it's just realistic, in this day and age, there's a huge amount of data sets."	Critical

ID	QUOTE	SENTIMENT
P8	"I saw a couple things that I thought were drawbacks that have been mentioned. One was mentioned and that was, you know, that you're not really pushing alerts. That's not really a big problem for me, my job function, but I could see where that might be a limitation seen by some."	Critical
P3	"And I think. Yeah, I think that. The other one too is. It would be really nice to highlight your area. So if I could pick like some sort of, either put a, you know box on the map or something to track a particular area or particular fire, that would be incredibly useful because."	Suggestion
P3	"I think that. Yeah, P8, I think you got most of it. I have a CalGuard overlays because that will give you the pixel that that extent. That was talked about earlier. The other thing too is differentiating between existing I guess, like you said, the RX versus the wildfire or. Or the. I think the other one said."	Suggestion
P6	"Might be nice to be able to see the dashboard or the new updates as they come in while in the map view instead of having two different tabs."	Suggestion
P8	"Another limitation, even though this is focused on the GOES and near-real-time, you know, we're so highly attuned to the VIIRS and MODIS data, as well, you know, seeing that, particularly if there is a variant that shows, you know, something associated with large fire growth days, for example, having those additional data sources on is perhaps, confirmations or comparisons."	Suggestion
Complement & Integrate		
P7	"Yeah, I'd agree. EGP. I think one of the barriers is or the advantages of the current setup is it's not password protected. Folks can access that without needing an account or anything like that. That's potentially a barrier for some of our users that could be interested in NGFS."	Mixed / Neutral
P3	"...there's probably 40 different tabs that our Intel people could have open at one time. Not saying that one is better than the other or anything, but it's just realistic, in this day and age, there's a huge amount of data sets."	Mixed / Neutral
P7	"I agree with P2 that ingesting it into something or an option to export the data."	Suggestion
P2	"Yeah. I think the biggest improvement to enhance it would be to be able to ingest it into to other common operating platforms."	Suggestion
P6	"I also think it could be a really handy layer at a local center's CAD view on their map so that they could. I don't how I would notify them, but so they could see those detections on that map as they're plotting incidents and such."	Suggestion
P8	"It did make me think that one of the data integrations that could be helpful, maybe it's kind of a surrogate or aid to that precision piece of this would be the lightning detection data. Now that can really clobber your system cause a lot of data, but you know having near real-time heat detections and association with lightning detections would probably be really useful to the field."	Suggestion

ID	QUOTE	SENTIMENT
Training & Support		
P4	"I think one thing I could see being maybe a bit of a stumbling block for at least the staff outside of the mets. Since mets are used to looking at goes data we understand how the different channels work, how they can be put together in some of the composite ones, the RGBs, it's a little bit easier for us to dig into that."	Mixed / Neutral
P6	"Might be hard too though to explain for a general user how the tool works or how it's different than other ones we've used before that they might be more familiar with."	Mixed / Neutral
P2	"I'm gonna show everybody all the other Intel officers at the at the office here in the next couple of days, how it could be practical and useful for our day, day-to-day jobs."	Positive
P3	"I thought the training was great. I think that I'd only seen it. I had not utilized it much, but I definitely see a lot of value, and I think that I, for sure, would be very interested in showcasing it."	Positive
P3	"As a whole adding more [embedded tool-tips] at a more core scale is a great thing. It's just gonna be who is your end user for the particular tools and the time needed to get up to speed to understand some of those nuances."	Suggestion
P6	"...it be nice if I just had a white paper that I could read about the purpose behind it and exactly what it does and maybe a legend."	Suggestion
P8	"I think I could get in there and be, you know, relatively capable right off the bat given what you gave us. Does raise a question though, I grabbed screenshots of all your slides, 'cause I'm like that, but if you guys share the slide decks back with us, that would, you know, that would be helpful."	Suggestion