EXPLORE EARTH

Overview of the NASA Earth Action Strategies Wildland Fire Initiative

Amber Soja (NASA)
NASA Earth Action Strategy Wildland Fire program
April 2024

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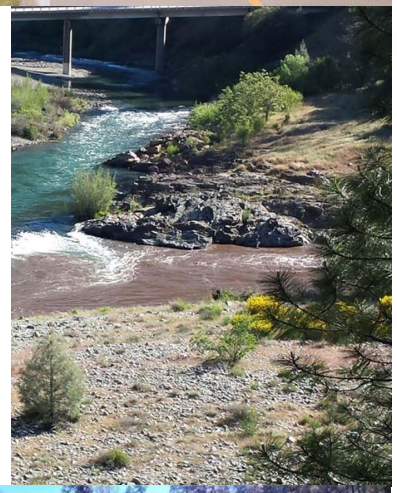
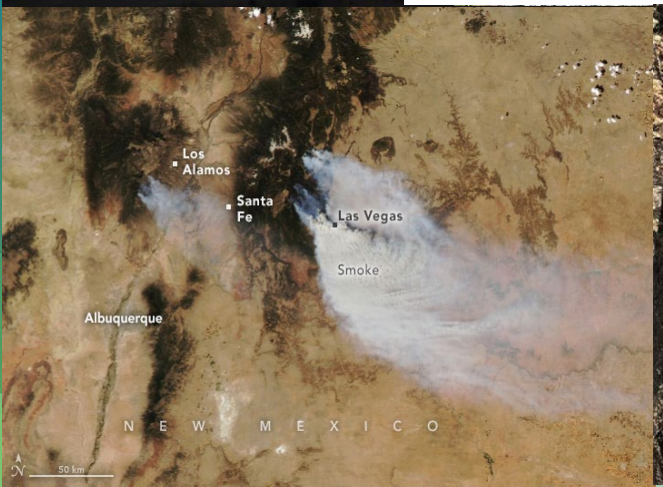
Wildland Fire program: Amber Soja, Joanne Hall, Ana Prados, Robert Sohlberg
FireSense Team: Michael Falkowski, Teresa Kauffman, Barry Lefer, Melissa Martin, Haris Riris, Jacquelyn Shuman, Justin Boland

National Aeronautics and Space Administration

NASA





Science Mission Directorate
Earth Science Division
Earth Action Strategies

Wildland Fire Initiative includes:

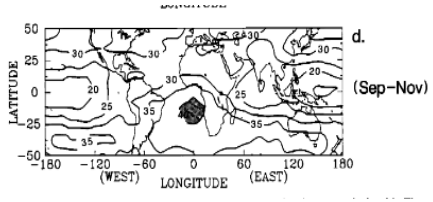
1) Wildland Fire program
2) FireSense project

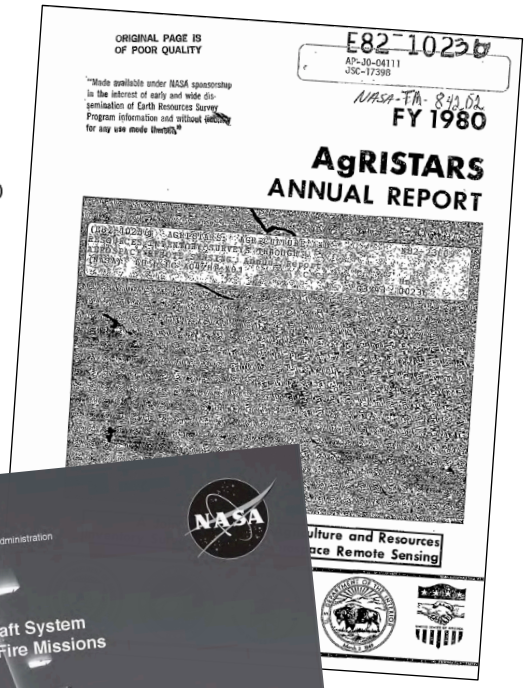
Bringing together NASA Science and Applications for wildland fire and community well-being.

October 2023

50+ years of NASA Fire Science

1972 - Landsat used for forest and fire scar inventory
1980 - AgRISTARS tech demos with USDA & DOI
1987 - Fundamental science, O_3 downwind of fire
1986 - Prescribed chaparral fire, California, Emissions Factors (EF)
1992 - SAFARI & TRACE-A (verified ozone chemistry)
1993 - Bor Island, Siberia (EF, albedo and carbon science)
1994 - BOREAS, Canada (EF, albedo and carbon science)
1998 - LBA, Brazil (EF and carbon science)
1999 - MODIS 1st instrument designed for fire (FRP, burned area)
2001 - MODIS Land Rapid Response Active Fires (FIRMS)
2006 - CALIOP provides vertical distribution of smoke aerosols
2006 - Western States Fire Missions (IKHANA w/ AMS)
2013 - 1st Applied Sciences Wildland Fires Program
2015 - ABoVE, Alaska & Canada (ecology and vulnerability)
2019 - NASA/NOAA FIREX-AQ 2019 (Fuel2Fire team)
2022 - 2nd Applied Sciences Wildland Fires Program
2023 - FireSense and Wildland Fire Initiative



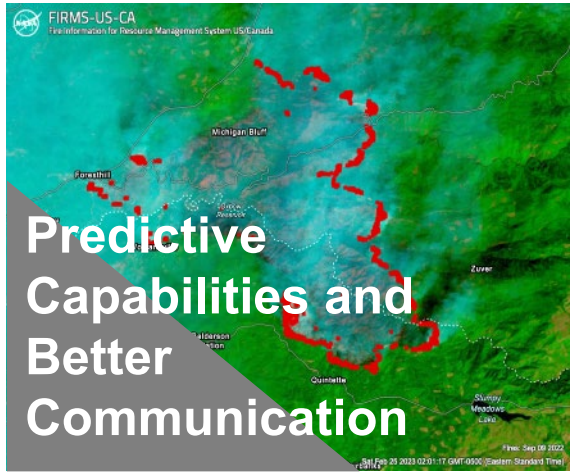


Earth Action - Wildland Fires

NASA Wildland Fire Engaged Earth Action Partnerships

Motto: Scale-up, Build Bridges (to R&A) and User-centric

Future Today



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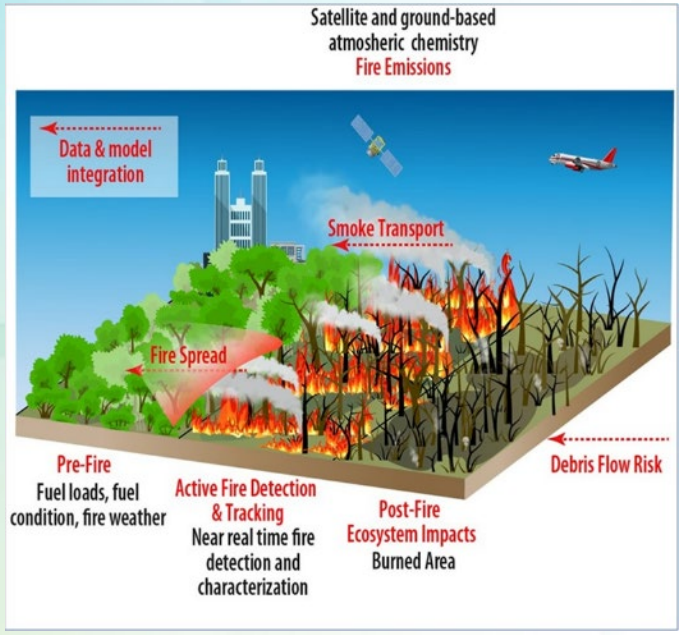
Wildland Fires Program
Applied Sciences

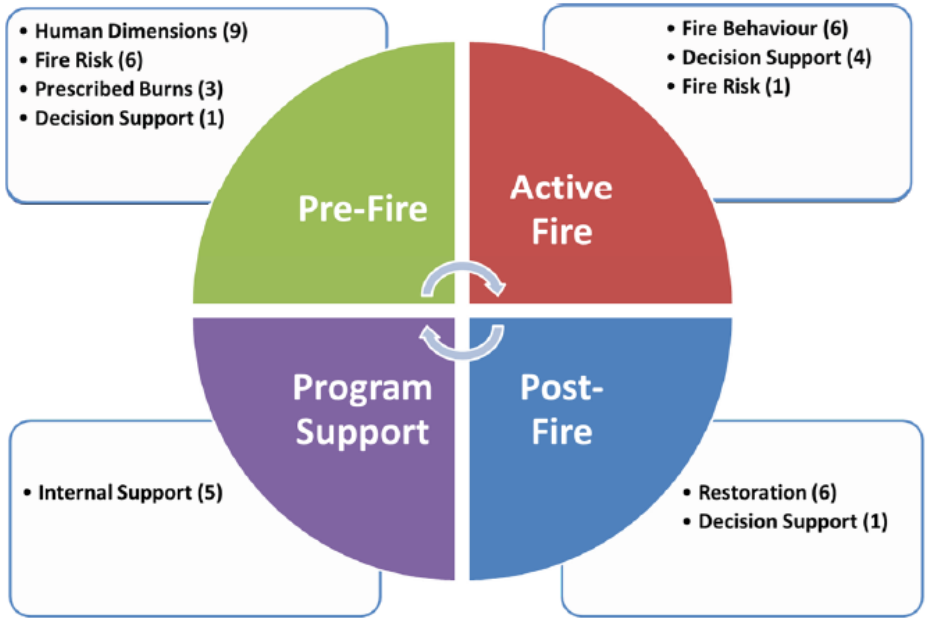
Rebirth of NASA Wildland Fires: 2022-2023 Overview

40 projects selected & seeded across diverse wildland and prescribed fire communities

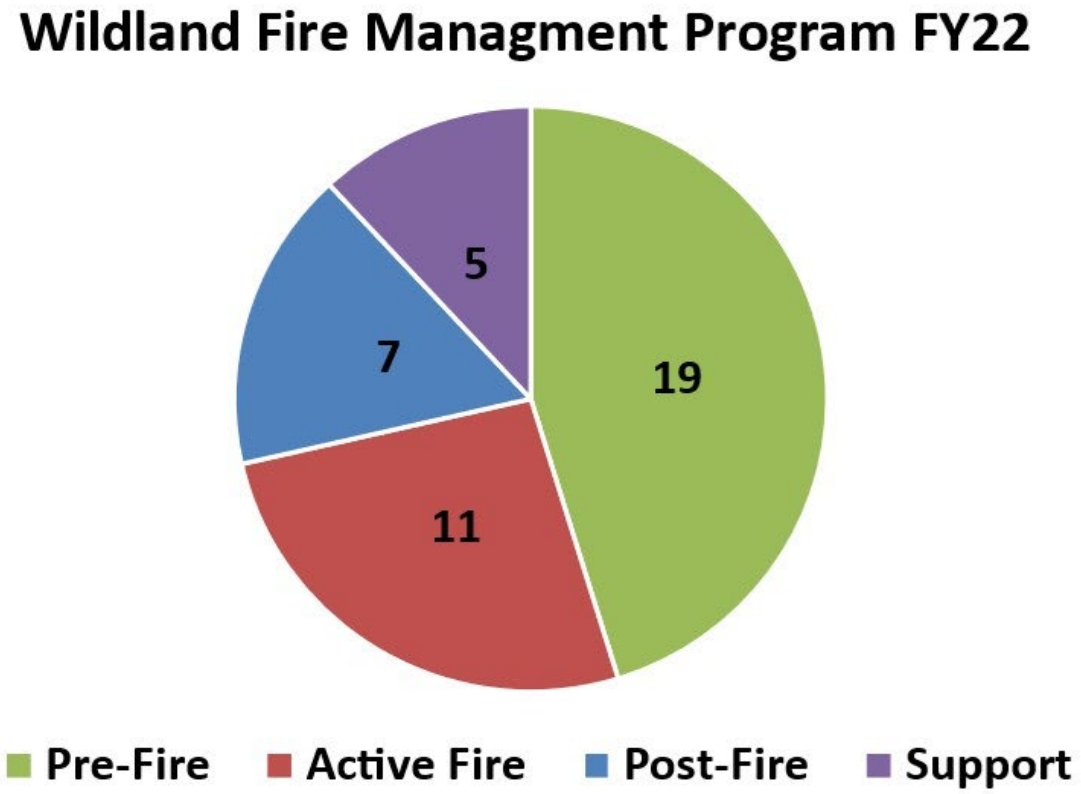
- Western, Central, Southern, Eastern U.S. + International

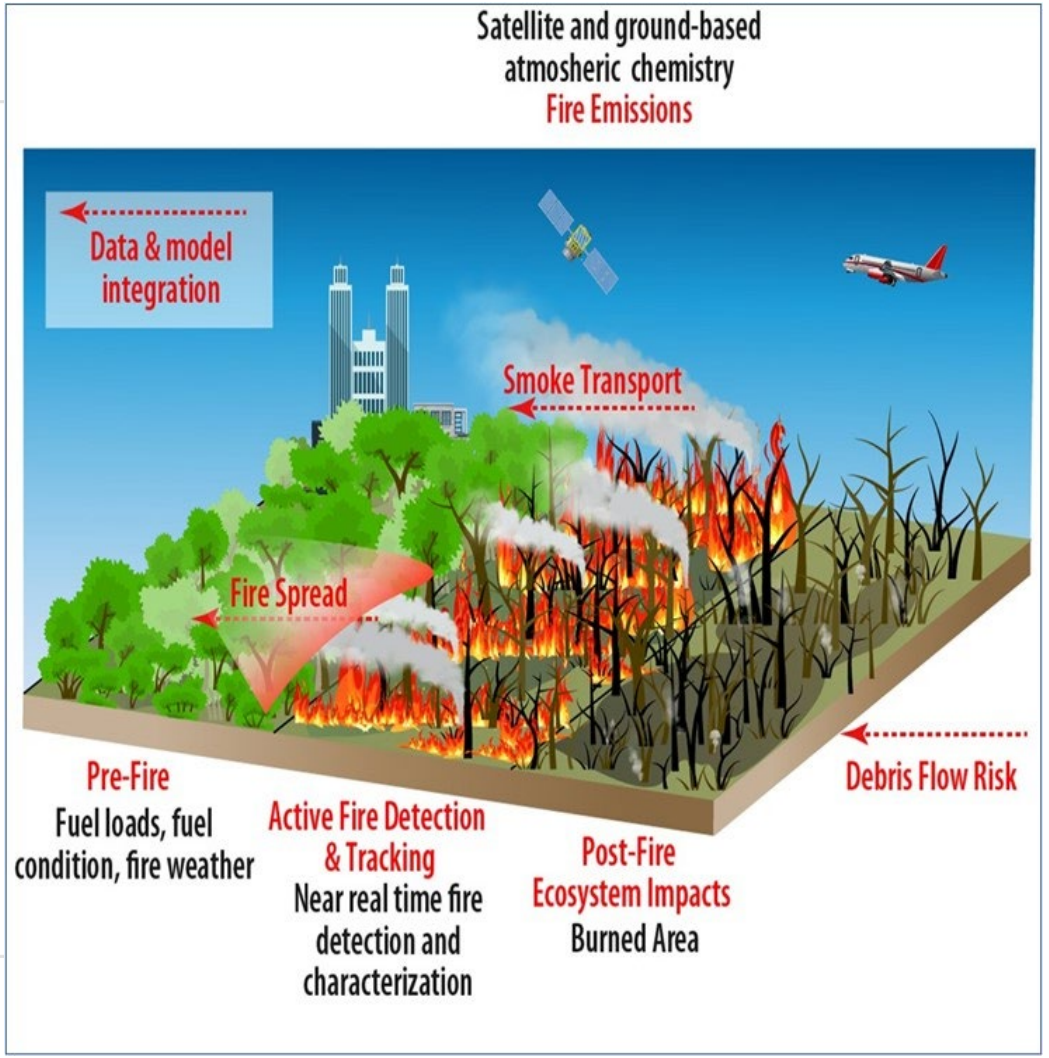
- *Anticipating Competitive RFP in ROSES24*



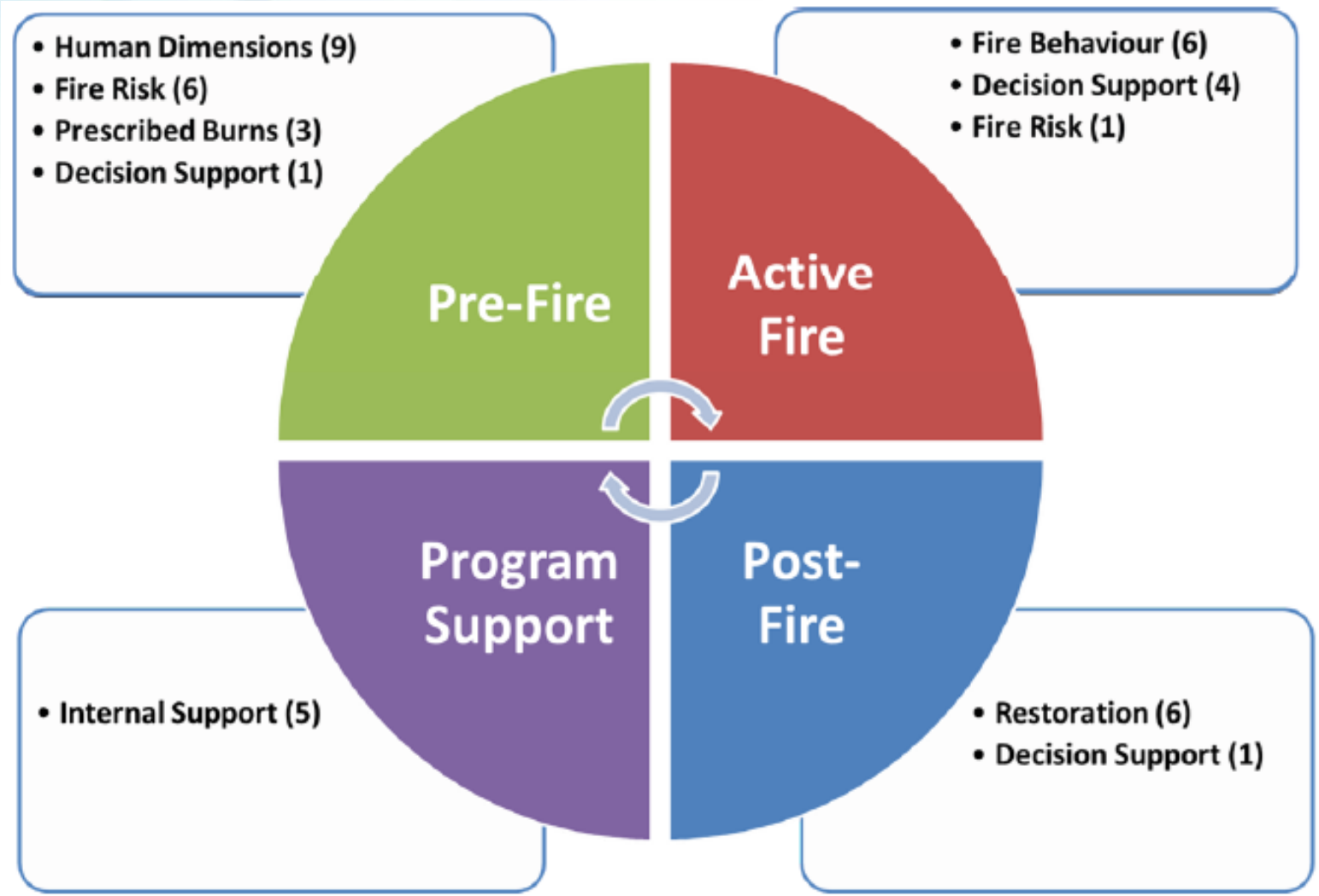


Portfolio across the Wildland Fire Cycle

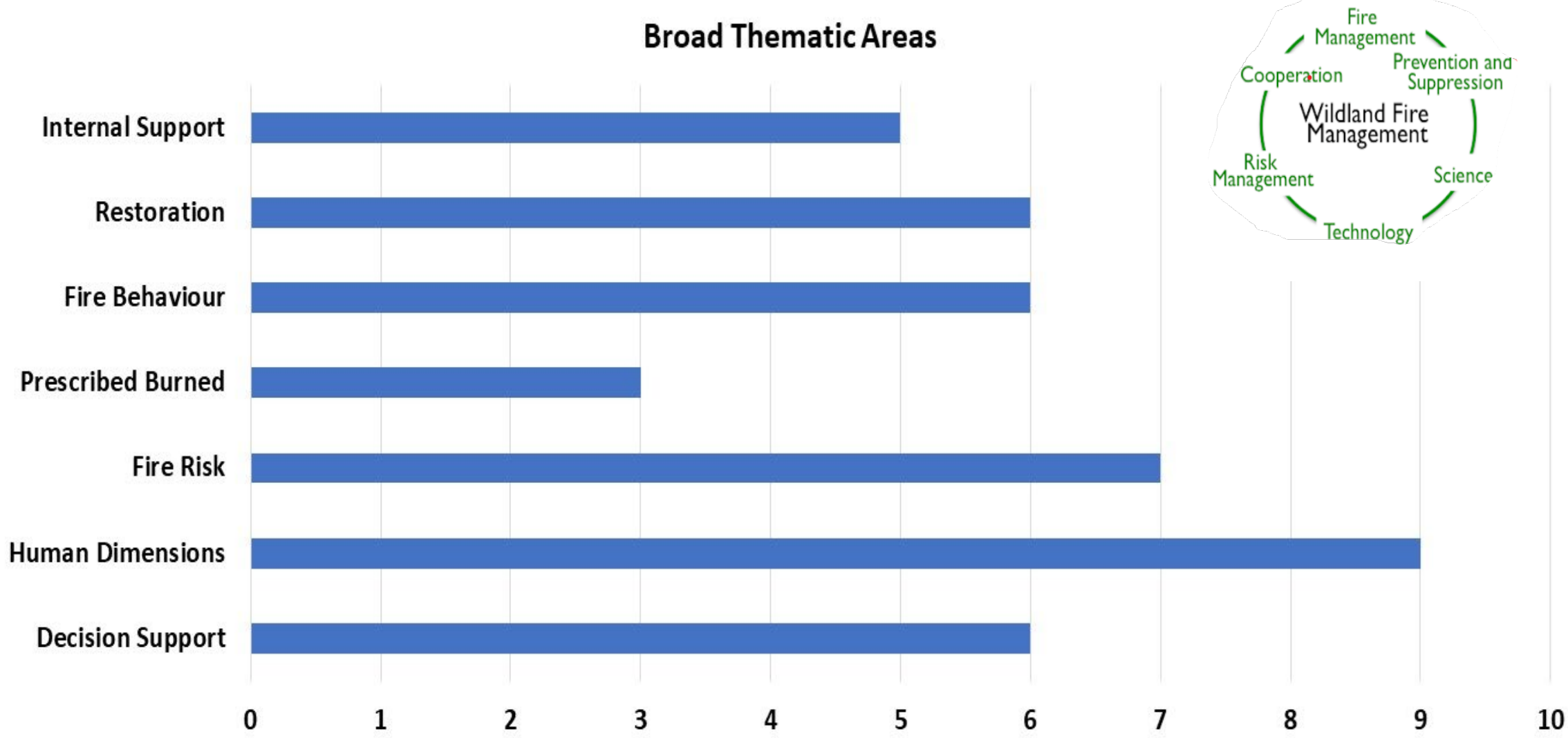




Portfolio Scope



Portfolio Themes



FIRMS: an early Earth Action success

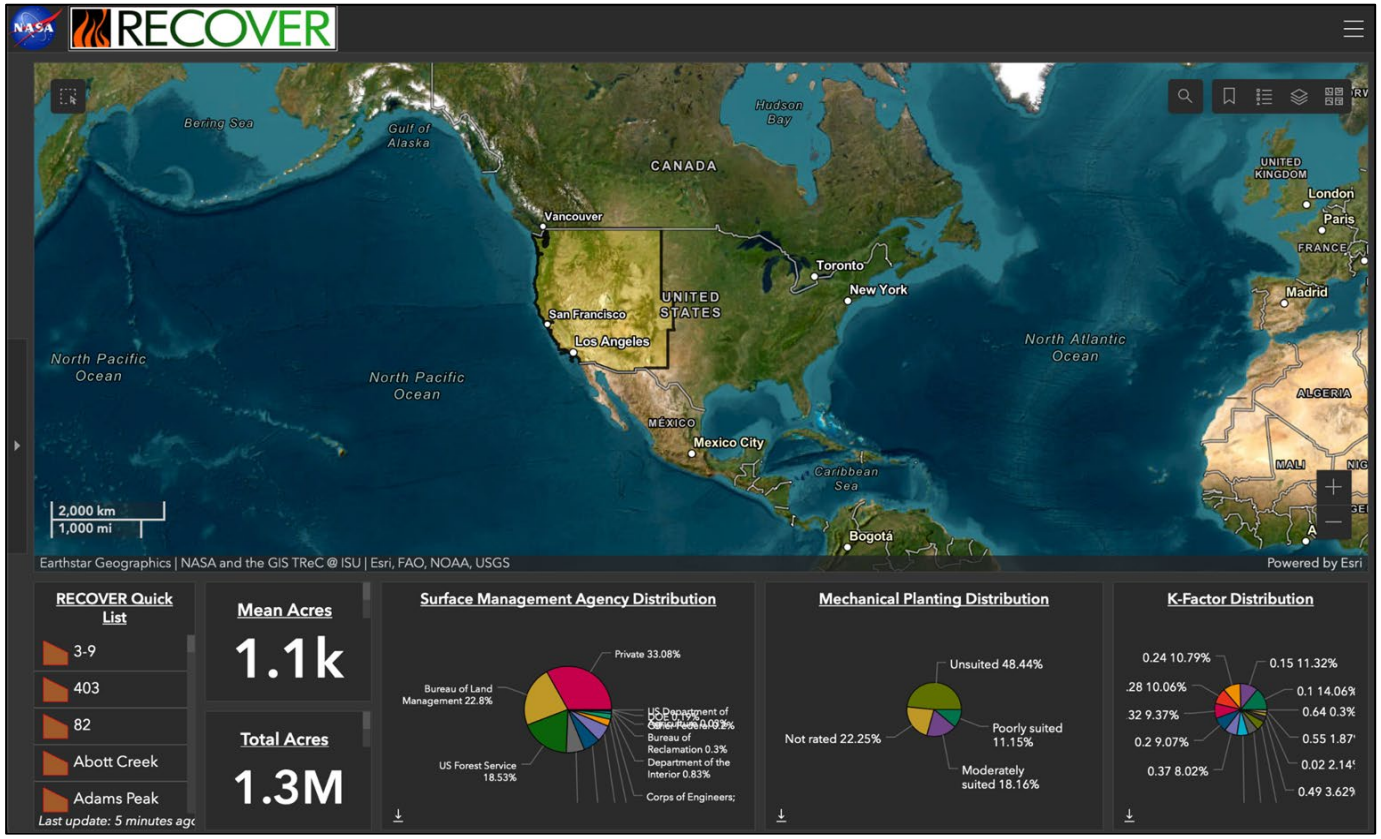
- Built upon the business practices of operational agencies.
- Delivered the first synoptic view of active fire, updated continuously.
- Provides near real-time active fire detections and fire radiative power from a range of USG and European assets including MODIS, VIIRS, Landsat, Sentinel and GOES.
- Continued integration of new instruments as they come online.
- Robust user support and education.

Earth Action - Wildland Fires

RECOVER: Integrated Data for Post-Burn Assessment

Rapid and effective mitigation of post-fire hazards is critical. RECOVER provides curated data for Burned Area Emergency Rehabilitation.

- Protect water quality
- Mitigate erosion and debris flows
- Stabilize soil organic matter
- Promote healthy regeneration



Integrating **geospatial data from operational partners with NASA remote sensing** to rapidly assess risks and target remediation efforts given limited resources.

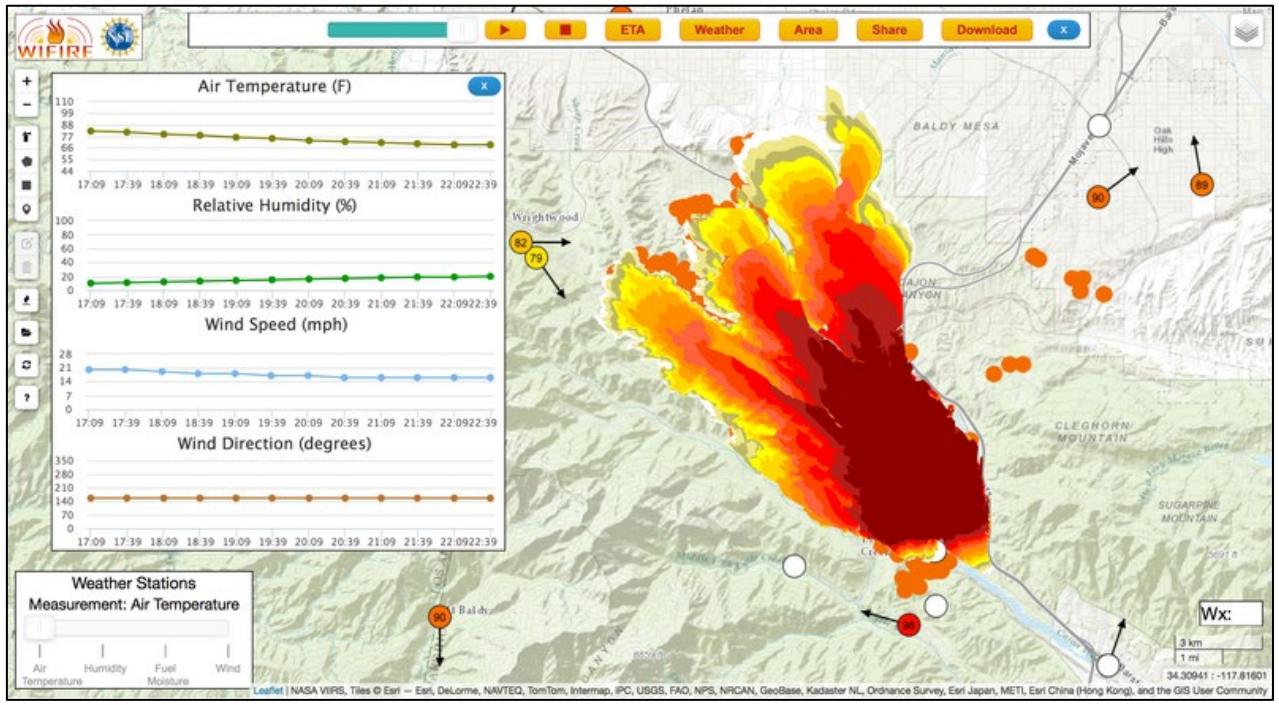
- Topography
- Burn perimeters
- Burn severity
- Soil factors
- Treatment suitability

150+ BAER incidents supported in 2023

Earth Action - Wildland Fires

WIFIRE: Beyond Initial Attack Modelling

Enhanced Value with Firemap – The adoption of WIFIRE Lab's Firemap by the fire response community has led to improved decision-making during initial attack operations. In California, the Fire Integrated Real-time Intelligence System (FIRIS) program uses Firemap to monitor and model fire behavior for the initial five hours of an incident.



Addressing the Gap – However, wildfire response efforts take place over time scales of days, weeks and even months, with ongoing risk to communities, ecosystems, and firefighters.

Solution – We are extending Firemap with a suite of science-based fire models that can predict the direction and speed of fire spread over an extended period that matches the incident response timeline.

Earth Action - Wildland Fires

Using GEDI data to calibrate fine-grained Canopy Height Models for monitoring wildfire risk and behavior

Tony Chang, Vibrant Planet, Bogdan State, Vibrant Planet and Leo Tsourides, Vibrant Planet

Project Description: Use satellite (GEDI and Sentinel-2) data, airborne data and imagery and modeled data to implement transformative vision models to assess and accurately quantify forest structure and height.

Objectives: The primary goal is to provide forest structure data to delineate and prioritize landscape treatments for healthy forest management. These data are being used.

Driven by Stakeholders: Bottoms-up, Stakeholder voices are central

- Stakeholders requested these data, and they continue to interact

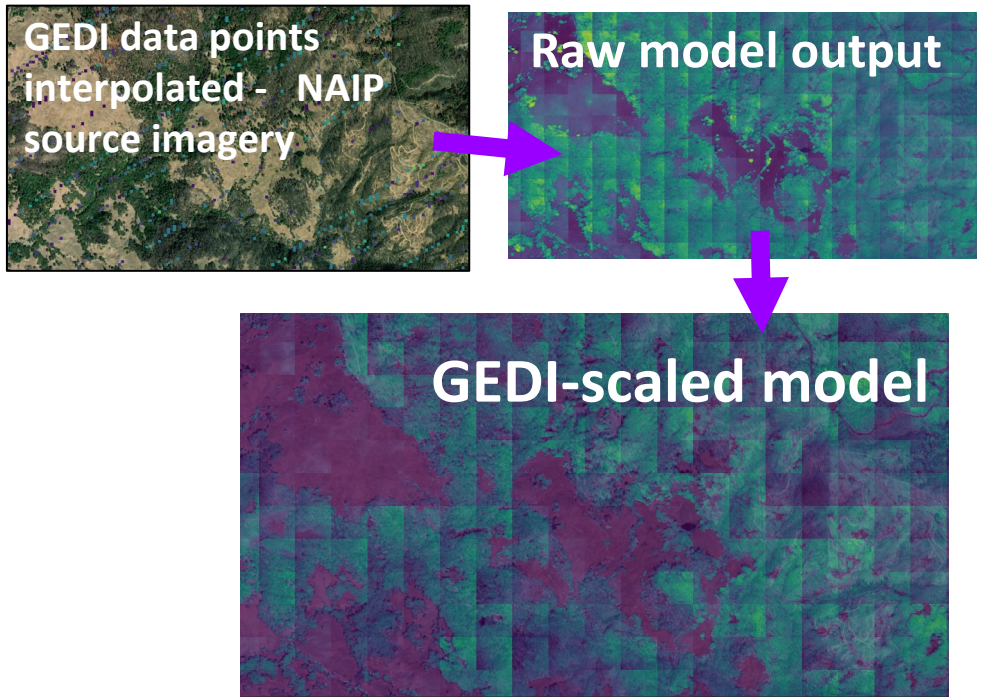
Trinity County Partners: The Watershed Research and Training Center (WRTC) and Shasta-Trinity National Forest

Central Sierra Partners: Placer County, PG & E, USFS Tahoe National Forest, California Tahoe Conservancy, Tahoe Resource Conservation District and Truckee Fire - Fire Protection District

Outcomes:

- Updated data have been provided where data did not previously exist
- This product is being tested and evaluated and used by the stakeholders

Satellite and Modeled Data Transforms to Useable Information



NASA GEDI data are used to calibrate a NAIP-based synthetic CHM (Canopy height model) and synthetic TAO (tree approximate object) models. The lidar was from 2018 and the models previously underestimated tree density, height canopy cover and basel area.

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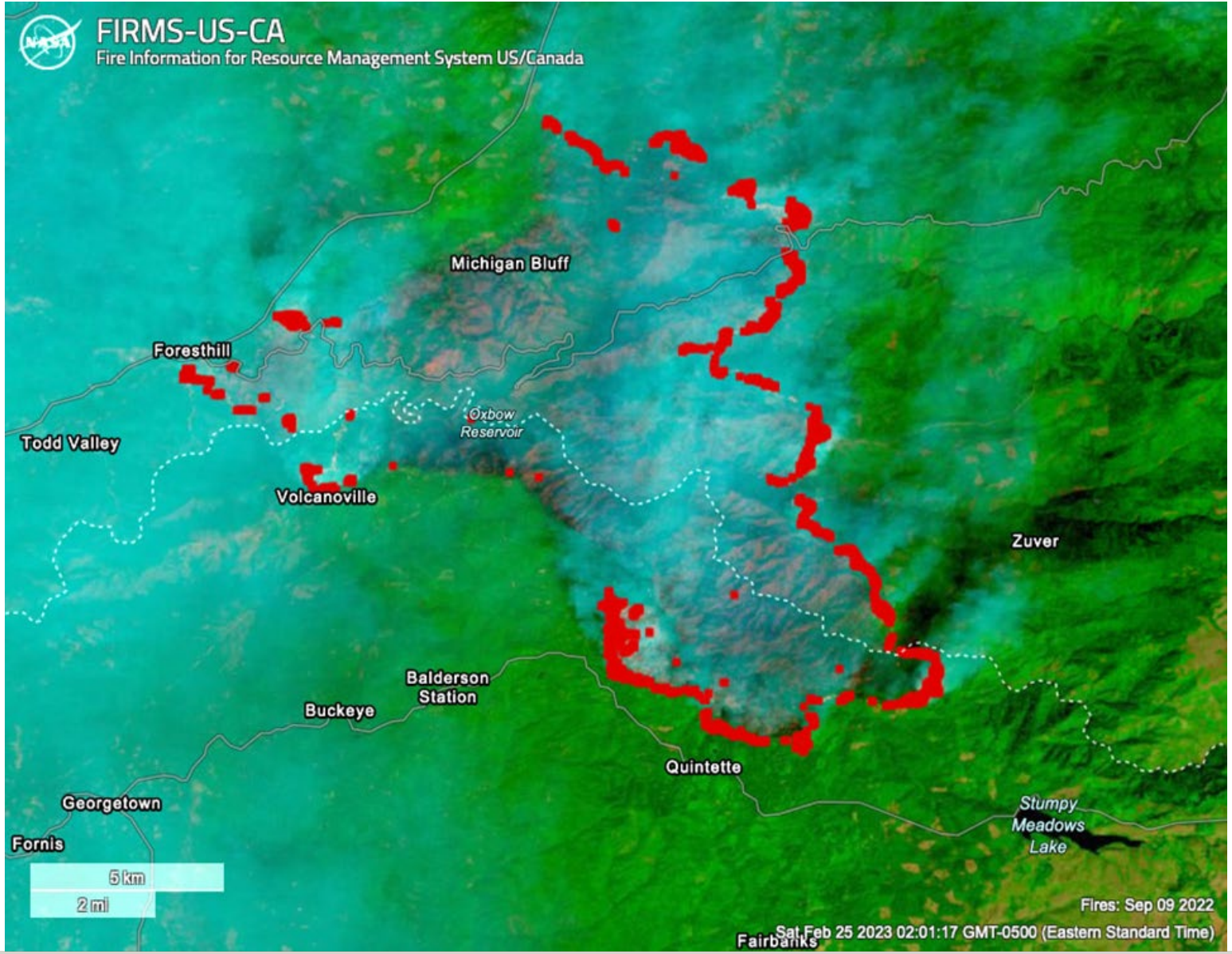
Portfolio Example : Navteca, a woman-owned start-up, is using NASA's Earth observations in game engine platforms to create accessible video game cinematography for players to interpret and translate critical wildland fire scientific data into a multidisciplinary visual framework. This can be easily understood by a diverse stakeholder population - and run many scenarios to "game out" the end results of various management strategies Navteca is currently collaborating with NASA Wildland Fire programmatic interns to recreate a digital twin of the Hermit's Peak prescribed burn set by the USFS in New Mexico, which escaped and grew into a wildfire in May 2022.



Portfolio Example: Landsat active fire map (red dots) of Mosquito Fire on September 9, 2022. A University of Maryland team along with NASA, USDA Forest Service, and USGS have integrated 1) global, multi-platform geostationary active fire data in near-real-time, and 2) low-latency, high-resolution Landsat active fire data for North America into FIRMS US/Canada. NASA FIRMS has a large, extremely broad user base (researchers, land managers, land & homeowners, legal professionals, etc.).

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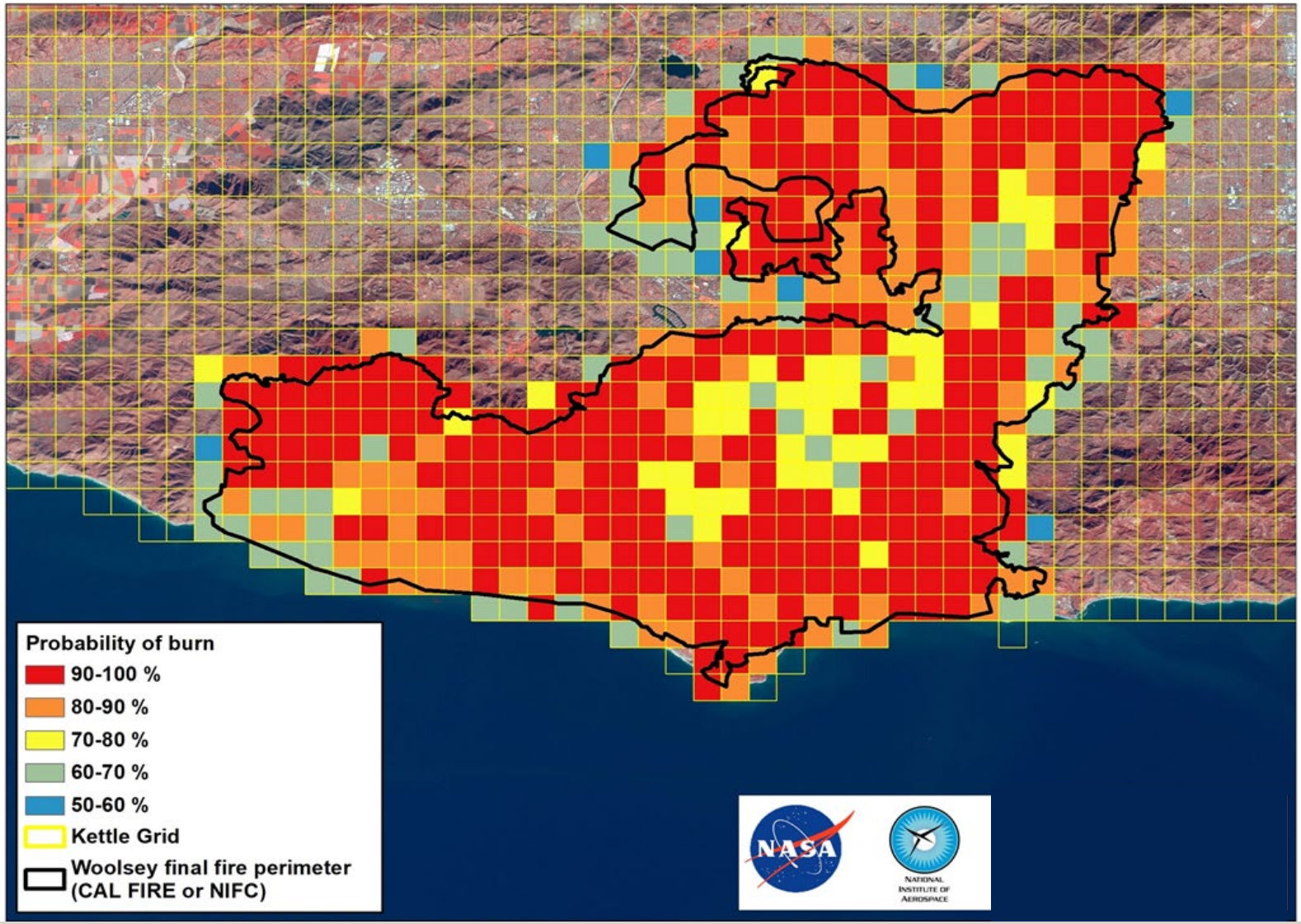

Portfolio Example: Working with Kettle Limited, a reinsurance company, researchers at NASA Langley and National Institute of Aerospace use multiple satellite data sources to co-develop a Probability Burn Index to enable homeowners and businesses to rapidly recuperate losses following fire events, decreasing the time for reimbursement from 1+ years to a couple of months. People will rebuild their communities and lives faster than they would have been able to otherwise, and, when the product is transitioned, it will be made available to the larger reinsurance industry.

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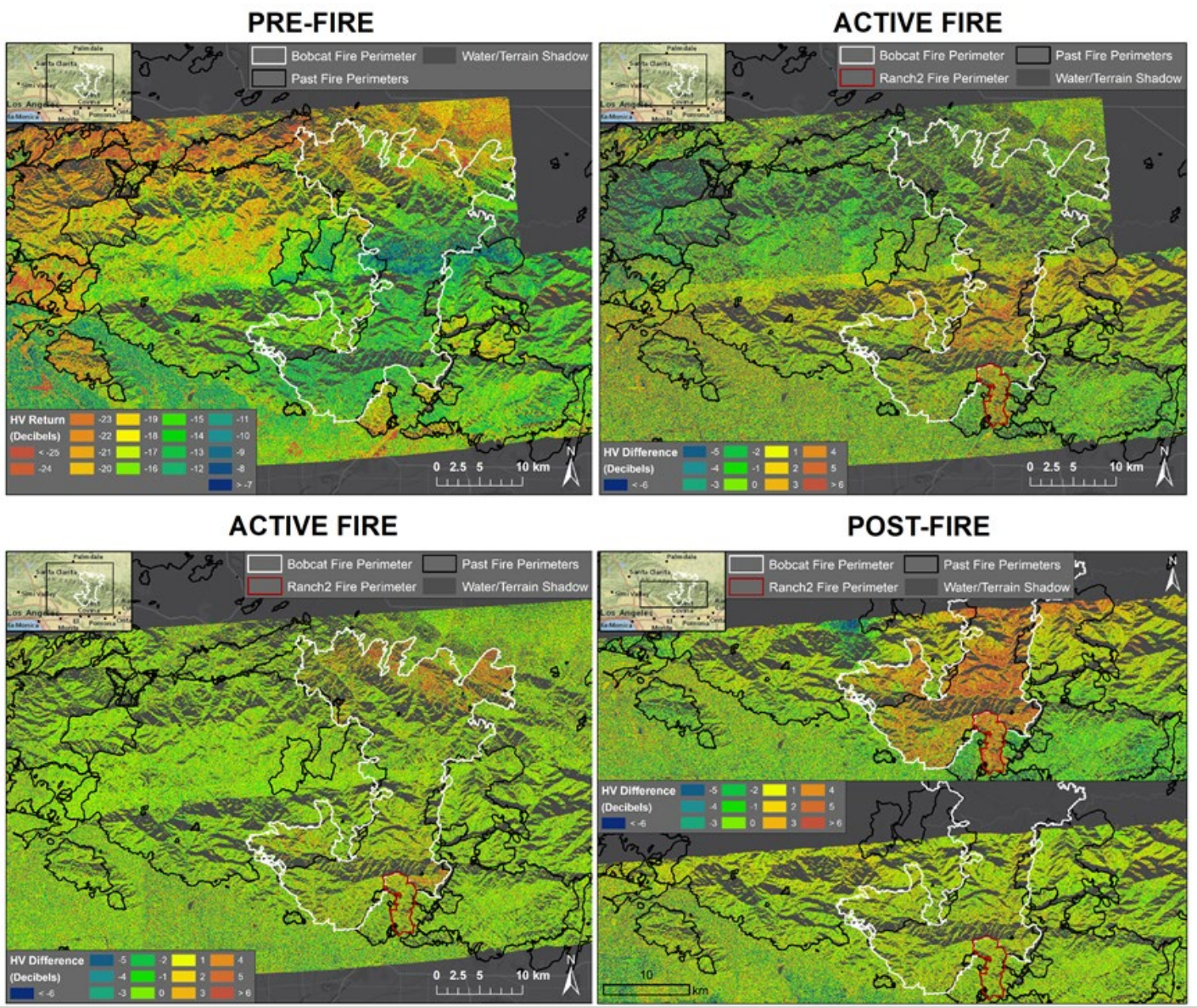


Portfolio Example: Yunling Lou and Karen An (JPL), working with the USFS, are demonstrating the capability of L-band SAR to improve detection of burned area, burn severity, and burn progression. These UAVSAR polarimetric products preview the NASA and the Indian Space Research Organization (ISRO), or NISAR's, application to wildfire management when launched in 2024.

Actionable Fire Science Information Hub 2.0

https://wildland-fires-nasa.hub.arcgis.com/

- Designed with end-users in mind to d to build a community
- Created to improve program management and collaboration
- Highlight innovative efforts of the Wildland and Prescribed Fires community
- Provide trusted resources in a curated setting

Intern Emily Gelbart at her first day with NASA (2021).

The NASA Science Mission Directorate (SMD) FireSense project is a 5-year effort focused on delivering NASA's unique Earth science and technological capabilities to operational agencies, striving towards measurable improvement in US wildland fire management. The NASA SMD FireSense project is part of a larger NASA wide Wildland Fire Initiative involving SMD, the Aeronautics Research Mission Directorate (ARMD), and the Space Technology Mission Directorate (STMD).

The FireSense project will include an airborne science component (annual campaigns) where improved capabilities and technologies will be developed and evaluated, and ultimately demonstrated to agency stakeholders in a large capstone airborne campaign in year 5 of the project (2027-2028).

Through initial stakeholder engagement activities, the FireSense project will begin by focusing on four uses-cases focused on characterization and measurement of (i) pre-fire fuels conditions, (ii) active fire dynamics, (iii) post fire impacts and threats, and (iv) air quality impacts and forecasting, each co-developed with identified stakeholders.

Delivering improved technology and capabilities to operational agencies through technology development, capability demonstration and transfer to operations.

Co-development with operational agencies and stakeholders for improvements across fire life cycle:

- Updated characterization of fuels
- Better forecasts for risk assessment
- Faster fire behavior models
- Increased detection and tracking of active fire dynamics and smoke plumes
- Improved mapping of burn severity
- Reduced uncertainty for post-fire hazards to air, land and watersheds




FireSense Use Cases

Pre-fire: Improved fire prevention by providing fire fuel maps with higher accuracy and resolution.

Provision of near real-time fire risks assessments based on fuel conditions, soil moisture, surface temperature, etc.

Stakeholders: USFS and USGS

Active Fire: Better detection and tracking of fire via satellite, airborne, and ground-based imagery with higher spatial resolution and update frequency

Development of new, innovative sensors for precisely tracking and locating fires, fuels conditions, and smoke plumes.

Stakeholders: USFS and CalFire

Post-Fire: Improved maps of burn severity to aid in post-fire ecosystem rehabilitation efforts.

Predictions of post fire hazards and impacts including debris flow and landslide risks and water quality impacts.

Stakeholders: USFS and USGS

Air Quality: Enhanced tracking and characterization of smoke plumes and smoke transport.

Improved forecasts of air quality impacts to human health and safety.

Stakeholders: NOAA and EPA

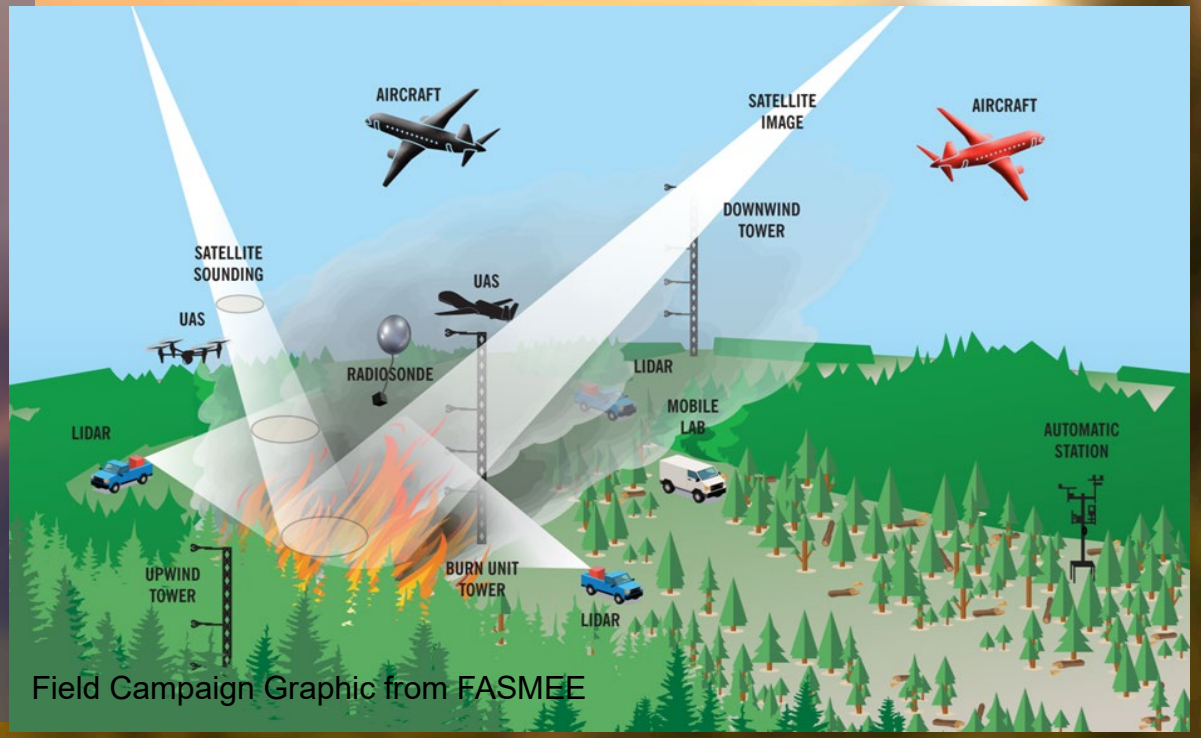
FireSense 2023 Airborne Campaign
USFS FASMEE component

NASA FireSense
- partnership US Forest Service (USFS) and Fish Lake National Forest (FLNF) and USFS FASMEE (Fire And Smoke Model Evaluation Experiment)

2023 fall prescribed burn
- stand replacing crown fire
- restore aspen to improve elk habitat
- reduce hazardous fire fuels
- measure extreme fire behavior and smoke plumes
- improve fire behavior and smoke models

NASA instruments coordinated with ground sampling
- airborne sampling with UAVSAR, AVIRIS, SLAP, MASTER
- measurements of pre-fire fuel type and moisture
- active fire dynamics (e.g., intensity)
- post-fire effects (e.g., burn severity)

Photos from a previous FASMEE prescribed fire



Field Campaign Graphic from FASMEE

FireSense 2023 Airborne Campaign
USFS FASMEE component

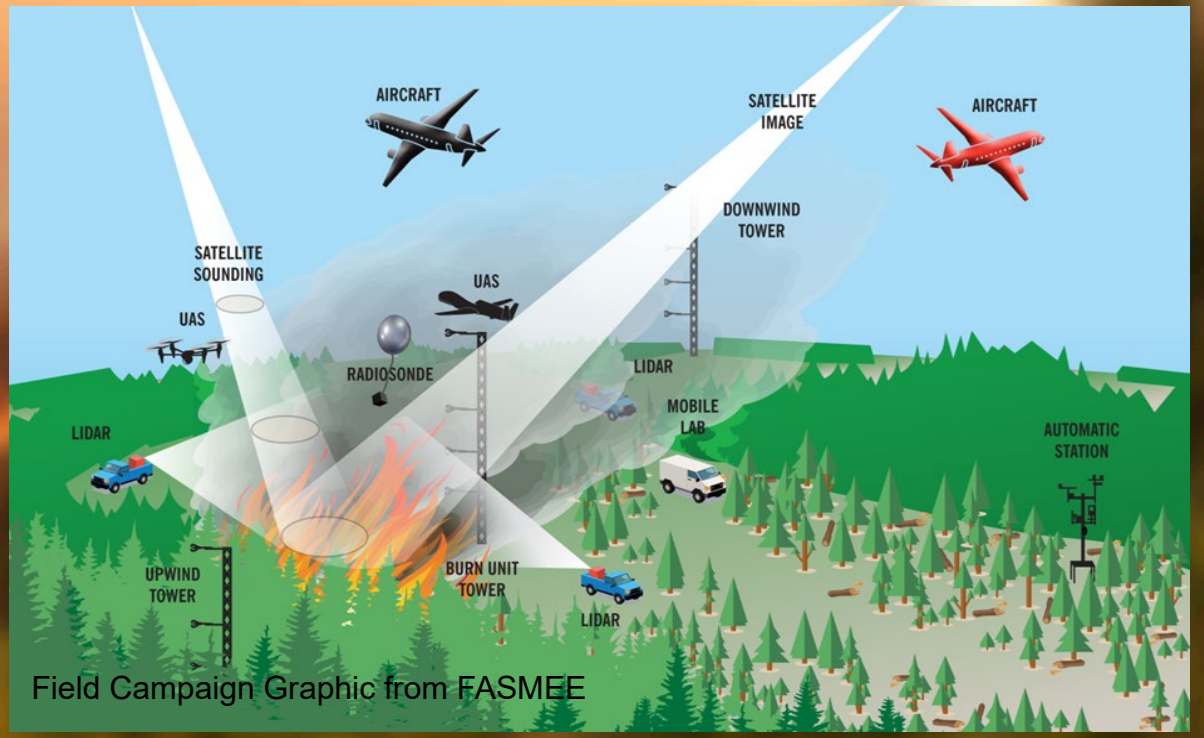
NASA FireSense Project has partnered with the US Forest Service (USFS) Fish Lake National Forest (FLNF) and the USFS Fire And Smoke Model Evaluation Experiment (FASMEE) for a fall field campaign.

The FLNF conducts large scale prescribed burns (in the form of canopy fires) on a biannual basis for ecosystem restoration purposes (aspen regeneration to improve elk habitat) and to reduce hazardous fire fuels. In addition to ecosystem benefits, these large intense prescribed burns offer a unique opportunity to measure and better understand fire behavior and smoke production. The FASMEE experiment collects data at these burns to support the improvement of behavior and smoke models.

NASA instruments (e.g., UAVSAR, AVIRIS, SLAP, MASTER) will be flown on several aircraft to take synoptic measurements of pre-fire conditions (e.g., fuel moisture), active fire dynamics (e.g., intensity), and post-fire effects (e.g., burn severity). NASA will also fly other targets of interest in addition to the FLNF prescribed fire.

Operational fire management partner agencies such as the US Forest Service are excited to understand how NASA data can support operational prescribed fire and wildfire management, planning, and mitigation efforts.

Photos from a previous FASMEE prescribed fire

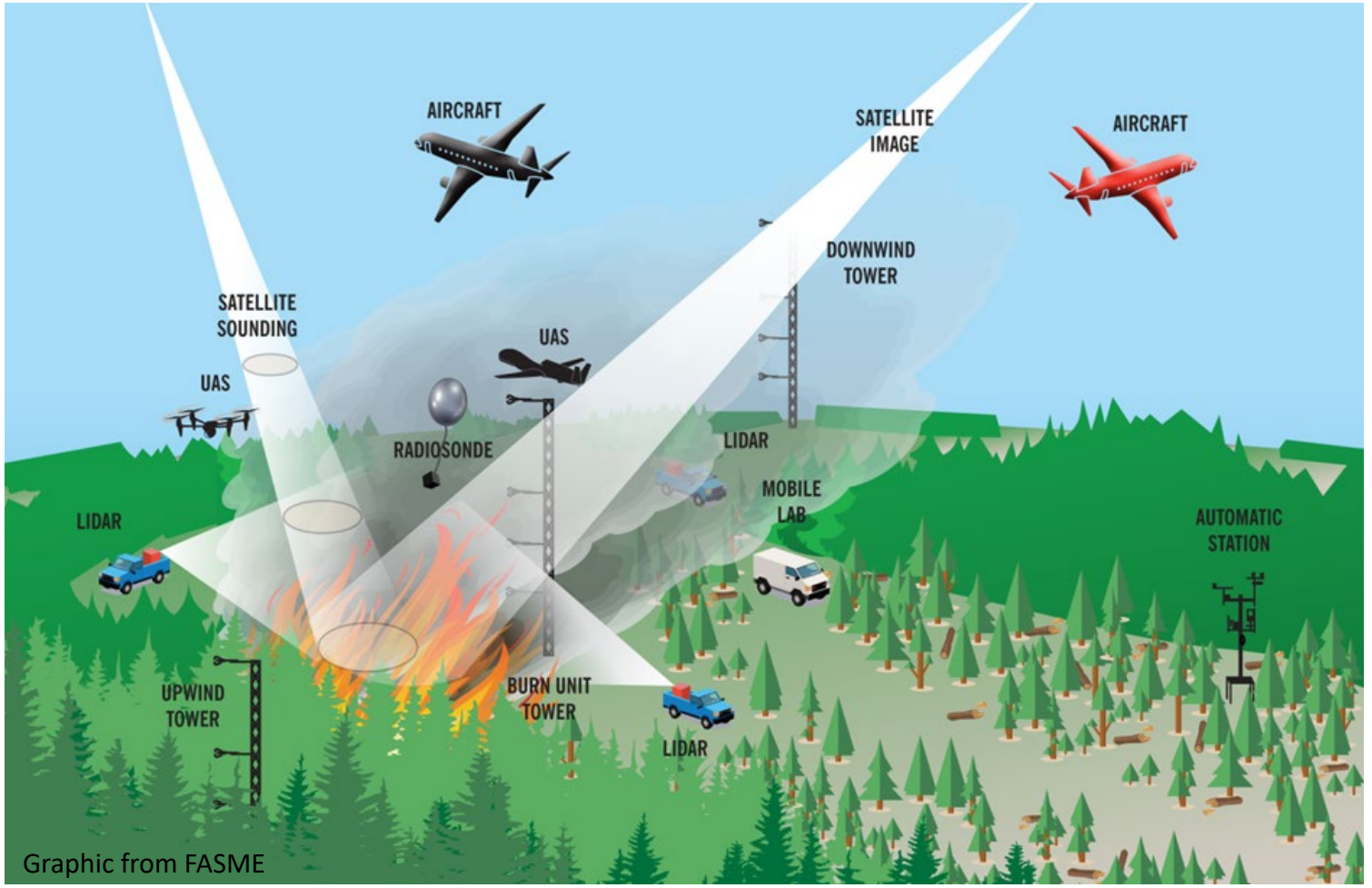


Field Campaign Graphic from FASMEE

Capstone Field Campaign in Year 5 (2027-28)

The Capstone Field Campaign will serve as a technology demonstration event for stakeholders to use/evaluate the tools, products, sensors, and capabilities developed during the first four years of FireSense.

The goal is that the success of the Capstone Field Campaign will enable the successful adoption/transition of FireSense developed capabilities by our stakeholder/operational agencies.



Graphic from FASME

Thank You – Questions?

Please contact Michael Falkowski for further questions
michael.falkowski@nasa.gov

Slide Details below contain the Wildland Fire projects funded for 2022-2023 and more.

Reach out of partnerships

Pre-Fire
Directed Applications and Studies 22-SMDSS22-00XX

Space for timer

	PI Org	Partners	Proposal Title
29	S. Cutter Univ. SC	Columbia U Center for the International Earth Science Information Network's CIESIN, NASA's Socioeconomic Data and Applications Center SEDAC, South Carolina Emergency Management, and SC State Office of Resilience SCOR	Identification of Disadvantaged and Low-capacity Communities subject to wildfire Risks (ID-LCR)
33	K Easterday The Nature Conservancy TNC	Esri Jack and Laura Dangermond Preserve, Univ. of California, Santa Barbara UCSB Santa , National Center for Ecological Analysis and Synthesis Ynez Band of the Chumash Indians, the Chumash Fire Department, Santa Barbara County Fire Department, The U.S. Forest Service, California State Parks, University of California Agriculture and Natural Resources, University of California, and local rangeland property owners.	Linking freshWater to Wildfire Risk in support of regional community fire protection planning WWR
42	M Mockrin USDA, US Forest Service	USGS Environmental Change Science Center, Univ. of Wisconsin-Madison, Northeast Region Cohesive Wildland Fire Management Strategy Committee , Wildland Fire Leadership Council , State of Wisconsin Dept. of Natural Resources, Oregon office of State Fire Marshal	A new perspective on the wildland-urban interface: merging satellite and Census data to quantify defensible space, invasive species, and social vulnerability in the WUI
47	I Kellman riskRED	Global Alliance for DRR and Resilience in Education Sector	Wildfire Disaster Avoided WDA
49	Thomas Buchholz Spatial Informatics Group SIG-GIS	Spatial Informatics Group Natural Assets Laboratory, University of California –San Diego UCSD - UC Cooperative Extension, Santa Barbara Regional Wildfire Mitigation Program	Expanding the Regional Wildfire Mitigation Program (RWMP) Concept E-RWMP

Pre-Fire
Directed Applications and Studies 22-SMDSS22-00XX

Space for timer

	PI Org	Partners	Proposal Title
50	Thomas Buchholz Spatial Informatics Group SIG-GIS	Spatial Informatics Group Natural Assets Laboratory, Regional Wildfire Mitigation Programs, CalFIRE Fire and Resource Assessment Program	Mapping Fire Probabilities to Support Fire-Related Carbon Accounting FRCA
51	E Wiggins NASA LaRC	National Institute of Aerospace NIA, Our Kettle Inc., US Forest Service, NOAA, USGS EOS Data Center	Gridded Fire Probability Maps GFFM
58	Madeleine Pascolini-Campbell NASA JPL	US Forest Service, Pacific Northwest National Laboratory PNNL, National Interagency Fire Center NIFC	Fire Risk Vulnerability Prediction and Active Fire Tracking FRVP-AFT
64	Christopher Uejio Florida State University	Georgia Forestry Commission GFC, Florida Forest Service FFS	Prescribed fire, risk management, health, and equity PFR-HE
66	Forrest Melton, NASA ARC	Western Watershed Managers, OpenET	Mapping fire risk across watersheds in the Western US with OpenET -FIRE
67	J Lieberman Open Geospatial Consortium OGC	OGC Disaster Stakeholder Coordination Group, (international consortium of more than 500 businesses, government agencies, research organizations, and universities), Natural Resources Canada NRCAN, USGS, CEOS, GEO/GWIS, multisector	Multi-hazard Disasters Awareness – Wildfires and Drought MDA-WD
69	B Poulter GSFC	US Forest Service's Next Generation Fire Smoke and Model Evaluation Experiment, Tall Timbers Research Station	Enabling FireSense Partnerships with FASMEE and Tall Timbers – Prescribed Fire Burned Window PFBW
72	Sean Nolan SAIC Gemini, Inc.	CalFire, StormCenter Communications	Advanced Forest Fire Planning introducing Qualitative Complexity Management (QCM)/Artificial Intuition QCMAI

Pre-Fire
Directed Applications and Studies 22-SMDSS22-00XX

Space for timer

	PI Org	Partners	Proposal Title
73	Yunling Lou NASA JPL	US Forest Service FASMEE, NISAR Early Adopters, NOAA NESDIS	Implementation and Validation of L-Band SAR Fuel Products for the Wildfire Cycle in Conjunction with FASMEE Prescribed Burn Campaigns SAR-PB
76	T Chang Vibrant Planet, PBC	Tahoe National Forest, Trinity County CA Resource Conservation District	Using GEDI data to calibrate fine-grained Canopy Height Models for monitoring wildfire risk and behavior CH-RISK
82	D Jones StormCenter Communications	Moraga-Orinda Fire District, Coalitions and Collaboratives, US Forest Service Geospatial Management Office and Geospatial Technology and Applications Center GTAC, Earth Science Information Partners ESIP Federation Clusters, All-Hazards Consortium, Weather Enterprise, NOAA	Engaging the Wildfire Community and Decision Makers With Improved Trusted Data Integration and Interoperability Through Real-time Synchronous Cross-platform Sharing Using GeoCollaborate FIRE-GC
89	Shubharoop Ghosh ImageCat	University of California, Irvine UCI, Fire Protection Research Foundation FPRF	Community Wildfire Vulnerability Index for Risk Assessment and Response Planning using Earth Observation (EO) Data and Modeling CVI
96	Tamara Wall, Desert Research Institute	DRI Western Regional Climate Center, Western Regional Climate Center (WRCC); the program for Climate, Ecosystem, and Fire Applications (CEFA); and the California-Nevada Applications Program (CNAP) Indigenous Community Partners, Climate Science Alliance	Building Access and Capacity with Indigenous Communities to Utilize Environmental Data and Traditional Knowledge in Support of Wildfire and Fuels Stewardship – I-FUELS
Eart h21-407	A. Ballantyne University Of Montana, Missoula	Northern Arizona University	An Open Source, Multiplatform Framework to Estimate Ecosystem Resilience to Forest Fire ER2FR.
Eart h20-0022	V Kane, University of Washington	Northern Arizona University, USDA FS, UC Davis, CA Dept of Forestry and Fire Protection,	When can Wildfires Improve Forest Resilience to Future Fire and Drought? A study using Spaceborne Data FutureFire

Active-Fire
Directed Applications and Studies 22-SMDSS22-00XX

Space for timer

	PI Org	Partners	Proposal Title
23	K Hilburn CIRA/CSU (Colo. State Univ.)	SJSU, CU Denver, San Diego Gas & Electric and Pacific Gas & Electric, U.S. Forest Service and National Predictive Services, Technosylva	Integration and Evaluation of WRF-SFIRE application for interoperability in Decision Making WRF-SFIRE DM
32	S. Skolnik Solis Navteca	Univ. of California San Diego (UCSD) WIFIRE, CIESIN, NASA's Socioeconomic Data and Applications Center SEDAC, Esri, USGS, DOE/ Los Alamos, GWIS	Translating Data into Interactive Frameworks TDIF
35	N Stavros Univ of Colorado, Earth Lab Analytics Hub	JPL NISAR Applications Team, NASA Disasters, GSFC, USDA Forest Service Geospatial Tec & Applications Center GTAC	Fire Event Delineation Python Package FIREDpy, for near-real time event perimeter mapping using fusion optical and radar data
35	M Halem * UMBC	Howard University Ltd., SJSU Research Foundation, GSFC, University of Colorado – Denver, System Science & Applications Int SSAI, Earth Science Information Partners (ESIP), Veterans Administration of Maryland and Baltimore, NOAA, NIEHS	A NASA Unified WRF-CHEM-GOCART-SFIRE Wildfire Digital Twin, for predicting distant smoke impacts on Health & Air Quality WDT-HAQ
40	I Altintas UCSD	Pyrogence – Spatial Informatics Group (SIG-GIS), DOE	Extending WIFIRE's FIREMAP - Beyond Initial Attack, modeling with a suite of open-source tools FIREMAP – BIA
41	L. Gumley University of Wisconsin, Madison – Space Science and Engineering Center SSEC	NASA LANCE/FIRMS, NOAA National Weather Service, Direct Broadcast Users	Low Latency Wildfire Detection via a Network of Direct Broadcast Ground Stations LLWD

Active-Fire
Directed Applications and Studies 22-SMDSS22-00XX

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	PI Org	Partners	Proposal Title
44	R. Albayrak UMBC	NASA GSFC, Istanbul Technical University, Oak Ridge Associated Universities, Inc. Massive Connections LLC, Earth Science Information Partners ESIP, CAL OES	Detecting is not enough; Fire Event Situation Awareness from Space FESA
51	A. Soja National Institute of Aerospace NIA	NASA LaRC, Our Kettle Inc., US Forest Service, NOAA, USGS EOS Data Center	Gridded Fire Probability Maps GFFM
54	L Giglio, University of Maryland – College Park	USDA Forest Service Geospatial Technology and Applications Center GTAC, NOAA,	Support and Maintenance of Near Real-Time Landsat and Harmonized Geostationary Satellite Active Fire Data in NASA's Fire Information for Resource Management System LL-FIRMS
60	K Green	Humboldt County Public Works Department, North Coast Resource Partnership NCRP, Sonoma County Water Agency, Sonoma County Agricultural Preservation and Open Space District, Alta Vista Company Inc,	Actionable Lidar-Based Data for Wildfire Prevention Planning, Response, and Rehabilitation on California's North Coast ACT
81	G Schumann ImageCat Inc.	Health Solutions Research, Inc, Intuition Machines, Inc	FireCapture FC
85	Joel Johnson, Ohio State University	GSFC, JPL	Application of Synthetic Aperture Radar Data for Wildfire Risk Assessment and Monitoring SAR-RAM

Post-Fire
Directed Applications and Studies 22-SMDSS22-00XX

Space for timer

	PI Org	Partners	Proposal Title
24	K Weber ID State Univ. (ISU)	US Forest Service USFS Geospatial Technology and Applications Center GTAC, Bureau of Land Management BLM, National Park Service NPS, USGS BAER Teams, US Army Corps of Engineers USACE	Rehabilitation Capability Convergence for Ecosystem Recovery : Cloud-Enabled wildfire decision support system RECOVER 2.0 - CE
39	M Miller Michigan Technology University MTU	Univ of CO/ University Consortium for Atmospheric Research UCAR, US Geological Survey USGS, USDA Forest Service	Enhancing Fire Management with Thermal Earth Observations – Soil Burn Severity Maps SBSM
57	D Morton GSFC	US Geological Survey Earth Resources Observation and Science EROS Center, Burned Area Emergency Response BAER program, Advanced Integrated Fire Sciences AIFS program, Monitoring Trends in Burn Severity MTBS program, National Interagency Fire Center NIFC, , National Park Service NPS, USDA US Forest Service, University of Maryland, Baltimore County, GSFC	Using NASA Earth Observations for Rapid Wildfire Severity Mapping and Extended Recovery Assessments WSM
79	M. Villarreal USGS Western Geographic Science Center	USGS Water Resources Mission, USGS National Innovation Center, USGS Unscrewed Systems, Desert Research Institute DRI, National Park Service Fire Management NPS, NPS CA Invasive Plant Management, Lassen Volcanic National Park Resource Management	Mapping Post-Wildfire Hydrologic Risk Using Satellite-Based Soil Moisture Observations HYDRO-RISK
90	P Robichaud, USDA US Forest Service	Eugene Water & Electric Board, Clackamas Water Providers in, Oregon, The Water Research Foundation, State of Washington Health – Drinking Water, Western Waters Applications Office, ImageCat Inc., University of Idaho, US Army Research & Development Center ERDC, Michigan Technology University, USGS, Washington State University and the Rocky Mountain Research Station	Mapping and Modeling Post-wildfire Ash in Forested Environments to Protect Critical Water Sources MAPASH

Portfolio

Project Portfolio: 40 Projects
2 Contracts

Performance
New projects are not currently assessed by ARLs

Selection based on largely on Stakeholder community assessment of 1. barriers to management improvement, that 2. can only be achieved through S&T collaboration enabled by NASA;

Selection guided by alignments, integration and interoperability including 1. the leveraging of unique NASA capabilities and 2. partnerships across the fire cycle;

Selected Projects promote co-development, transition of novel research to applications and resilient outcomes that identify with Communities of Practice for situational awareness, preparedness, and risk mitigation

All projects were required to complete an initial pitch template that identified impact to management, partnerships and users, innovation, geography, leveraging of existing initiatives, scaling, transition etc.

SMDSS Proposals were reviewed by a combination of NASA, community subject matter experts and users

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NASA Science Mission Directorate (SMD) Wildfire Stakeholder Engagement 1 Workshop Feb 3-4, 2022: Summary and Key Findings

https://aam-cms.marqui.tech/aam-portal-cms/assets/ki2yd52vavkccskc

NASA Science Mission Directorate (SMD) Wildfires internal workshop Apr 28-29, 2022
Output: 1. Mapped NASA Center's capabilities useful for addressing pre-, active-, and post-fire management from research, applications, and technology; 2. Envisioned a 5-year project, FireSense, with directed and competed funding, ending with a demonstrated system useful to the community