



REPORT: Summary and Outcomes from the May 2022 Research-to-Operations Workshop in Fairbanks Alaska

Randi Jandt, Alaska Fire Science Consortium, UAF



Overview

- May 12-13, University of Alaska-Fairbanks
- Over 60 people registered
- Mission: researchers and managers engage directly to explore the use of promising research products in decision-making settings



ABOVE SCIENCE TEAM MEETING
ASTM 8 | May 9-13, 2022
FAIRBANKS, ALASKA

Integrating Science into Workflows

- Involve collaborators during project planning (often improves project relevance to needs “fitness”, but also gives a sense of **ownership**)
- **Pilot projects** or examples at a small scale (N.French example of wetlands maps, Yukon Flats Refuge invited scientists to a workshop)
- Link the maps, models, or projects to popular public platforms or **agency systems** (example Predictive Services page, WFDSS)
- Arrange delivery of the product from the heads of agencies (or communities) so that the source will be a ‘known’ and **trusted entity**

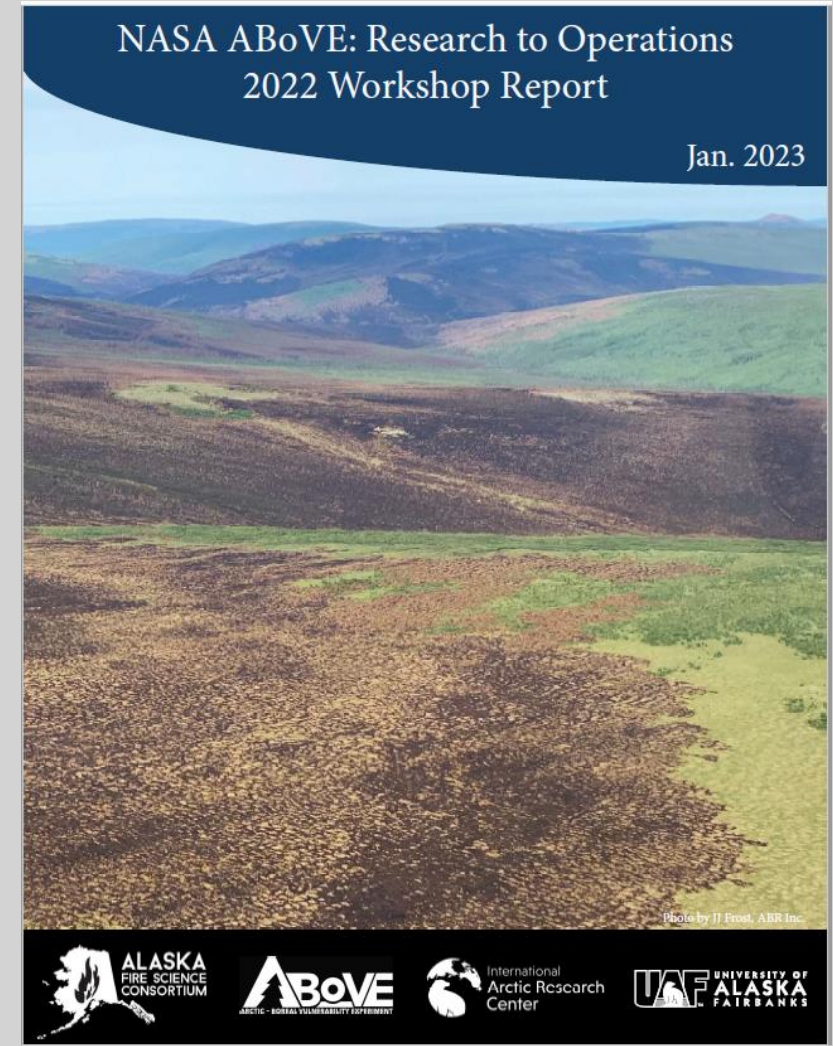
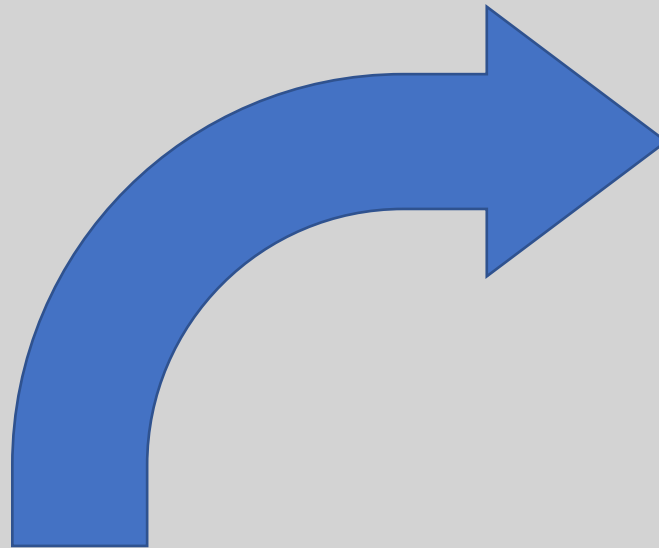


Opportunities to Apply Remote Sensing in Boreal/Arctic Wildfire Management & Science: A Workshop

Supported by NASA Applied Sciences (Wildfire) Program



What have we accomplished?



The [AFSC website](#) has 15 recordings available from the presentations at this workshop, as well as links to materials from the 2017 R2O workshop.



Leadership Perspectives



The jobs of public agencies are immense. They serve residents and visitors across Alaska from urban areas to rural settlements, wilderness, parks and refuges. There are 150 m acres under State of Alaska fire protection & BLM AFS is responsible for 237 m acres under Federal agencies and tribes.



Examples of specific outcomes (success stories):

- **Awareness and networking** → collaborations

JGR Biogeosciences

RESEARCH ARTICLE
10.1029/2021JG006608

Topography, Climate and Fire History Regulate Wildfire Activity in the Alaskan Tundra

Arif Masrur^{1,2}, Alan Taylor^{1,2}, Lucas Harris^{1,2}, Jennifer Barnes³, and Andrey Petrov⁴

¹Earth and Environmental Systems Institute, College of Earth and Mineral Sciences, Pennsylvania State University, University Park, PA, USA, ²Department of Geography, Vegetation Dynamics Lab, Pennsylvania State University, University Park, PA, USA, ³USDI National Park Service, Fairbanks, AK, USA, ⁴The ARCTICenter, University of Northern Iowa, Cedar Falls, IA, USA

Key Points:

- Alaskan tundra fire activity increased after 2010 consistent with a climate change threshold effect
- Terrain, climate and self-reinforcing/self-limiting processes related to fire-vegetation dynamics are regulating tundra fire activity



ABOVE Fire Disturbance Working Group:
Tundra Fire Synthesis:

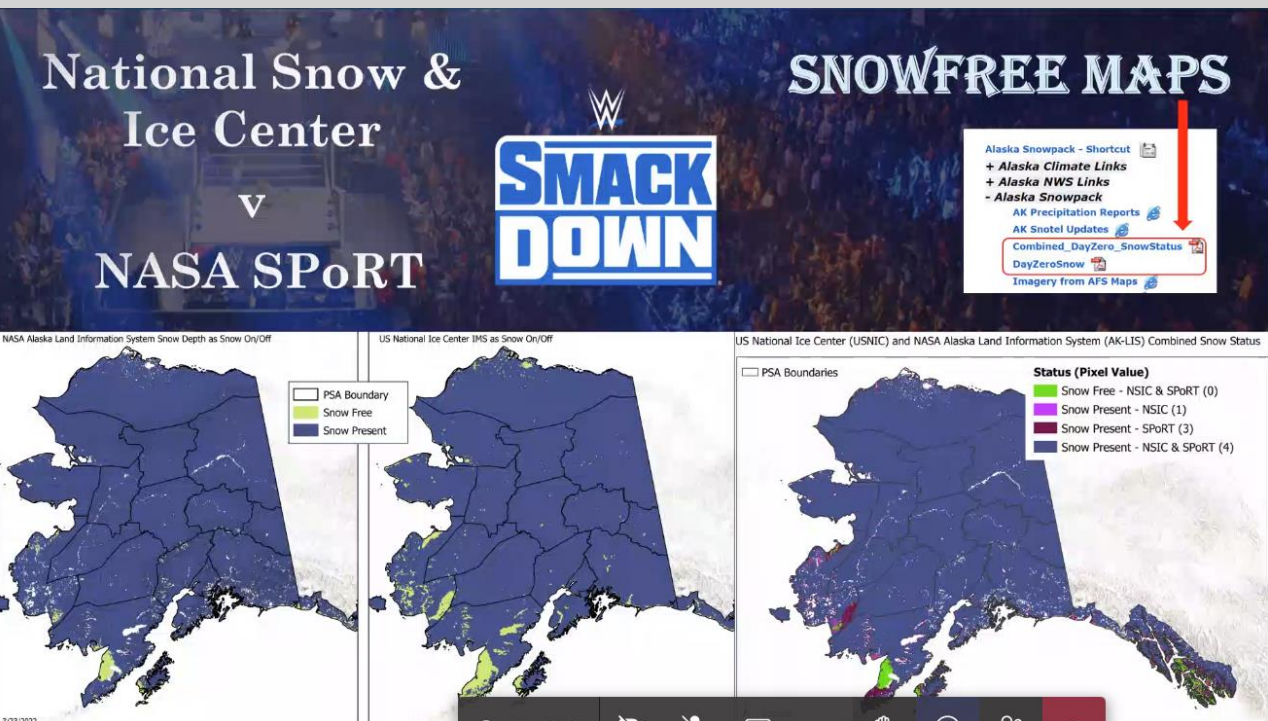
Check out the live spreadsheet in progress
at <https://tinyurl.com/229stbk>

Examples of specific outcomes (success stories):

- **Fire Danger and Risk Assessment: snow-off date**



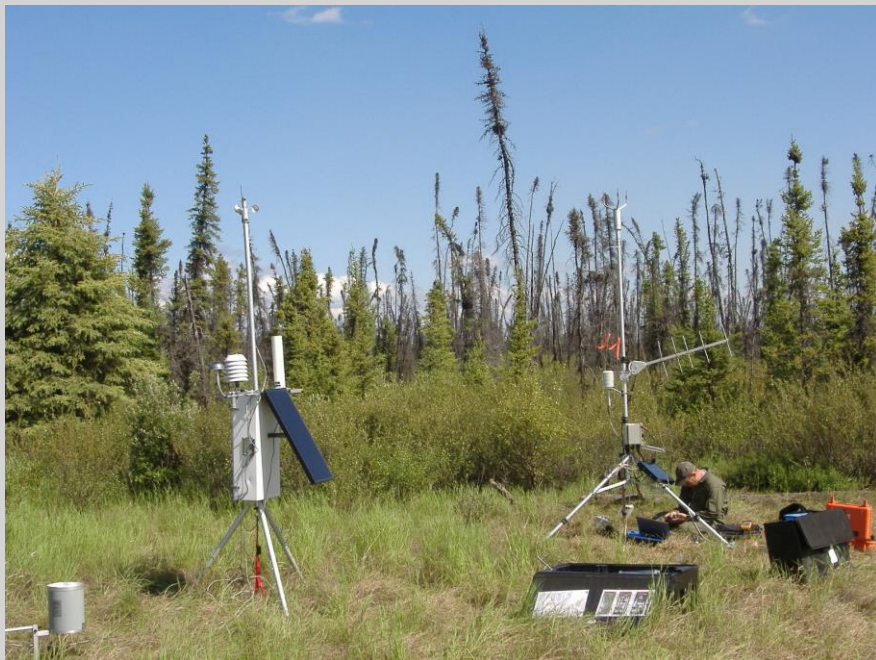
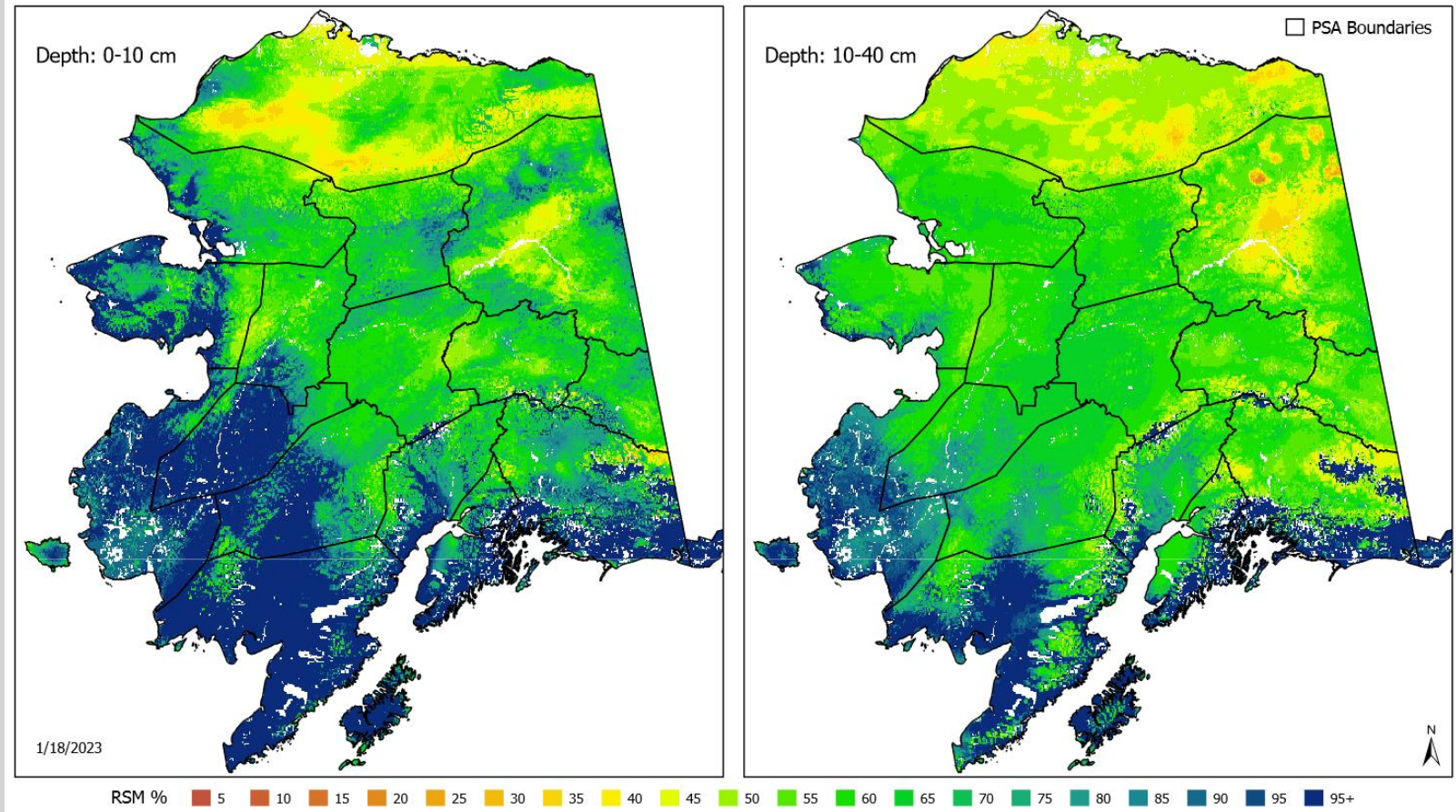
Photo: Kwethluk Fire, April 21, 2022, Alaska DOF



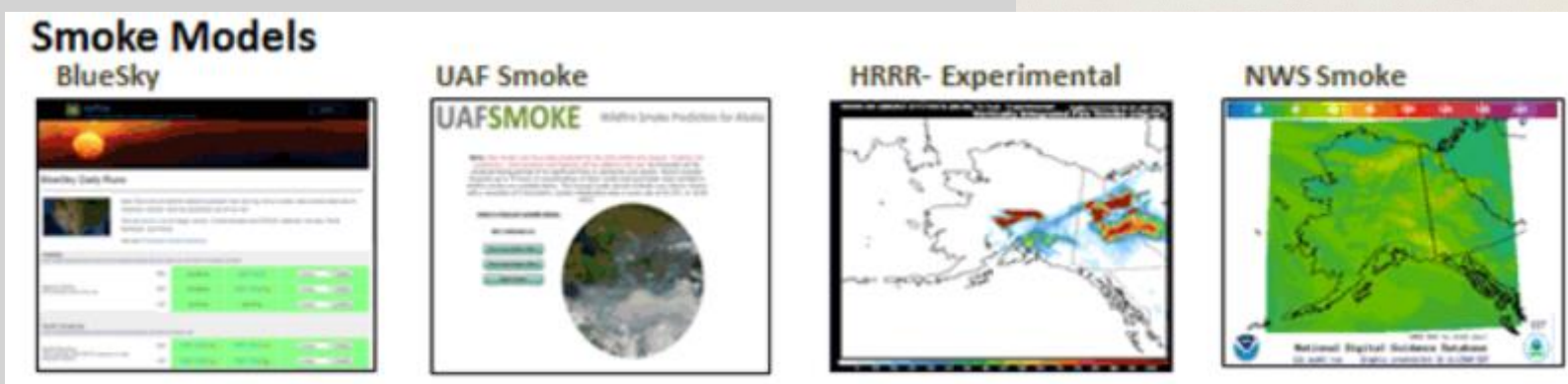
Examples of specific outcomes (success stories):

Soil (Duff) Moisture:

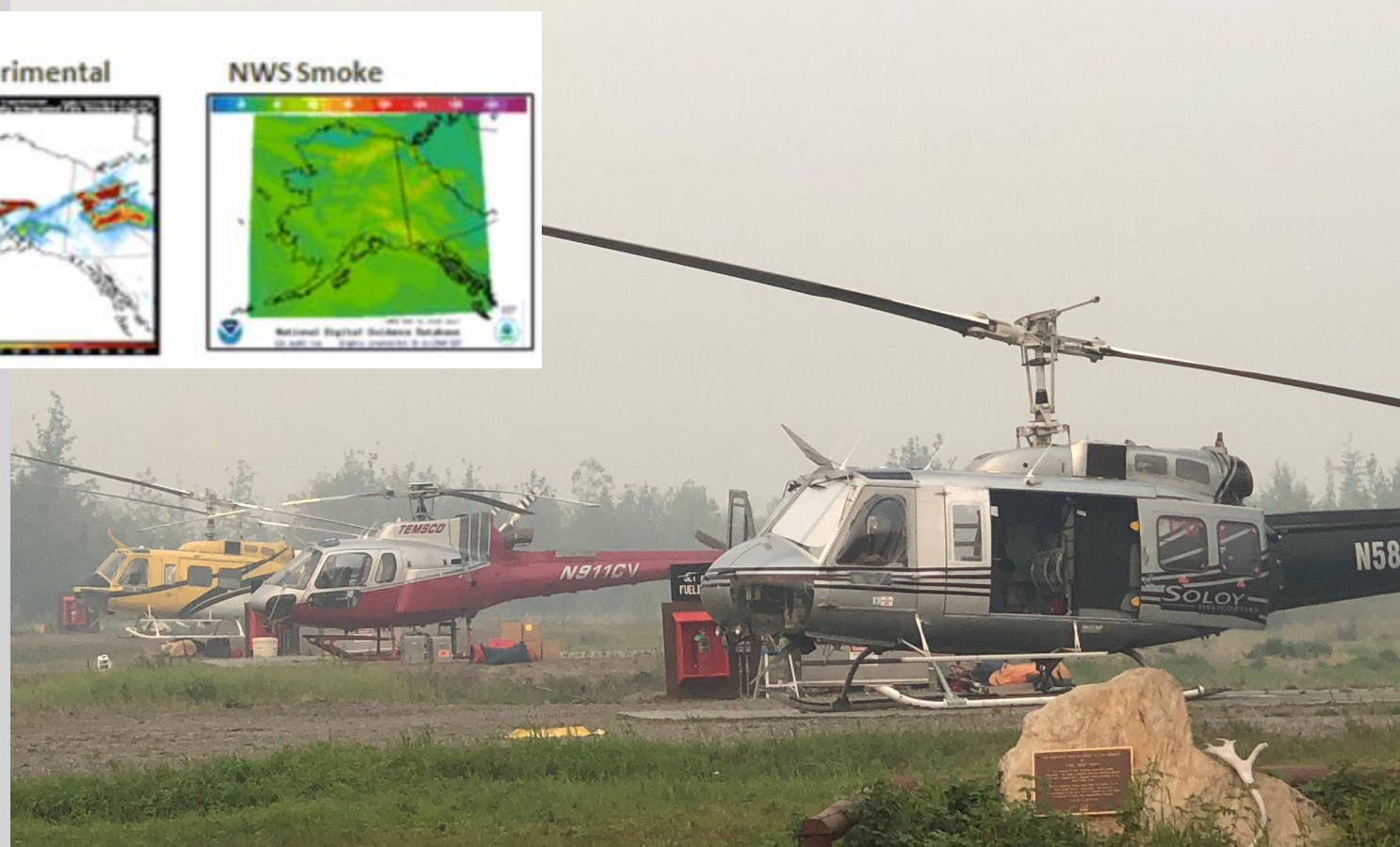
NASA Alaska Land Information System Relative Soil Moisture (%)



Examples of specific outcomes (success stories):



Smoke: Testing new models



Helicopters grounded in smoke at Ft. Yukon in 2019 (BLM Alaska Fire Service).

Examples of specific outcomes (success stories):

Emissions and C Combustion: Using new tools

Wildland Fire Emissions Inventory System v2.2020.10
Home | Calculator | Stats | About

BURNED AREA SOURCE ⓘ + MCD64A1
DATE RANGE + 2020-01-01 THROUGH 2020-12-31
AREA-OF-INTEREST + US_STATES: ALASKA

Filter results: 355 burned areas (155.6 km²)

GeoJSON
SHP

EMISSIONS CALCULATION OPTIONS + DEFAULT

OUTPUTS

output	total
Area burned	116.9 km ²
CO ₂	1,681,034 Mg
fuel consumption	1,055,098 Mg
PM _{2.5}	10,572 Mg

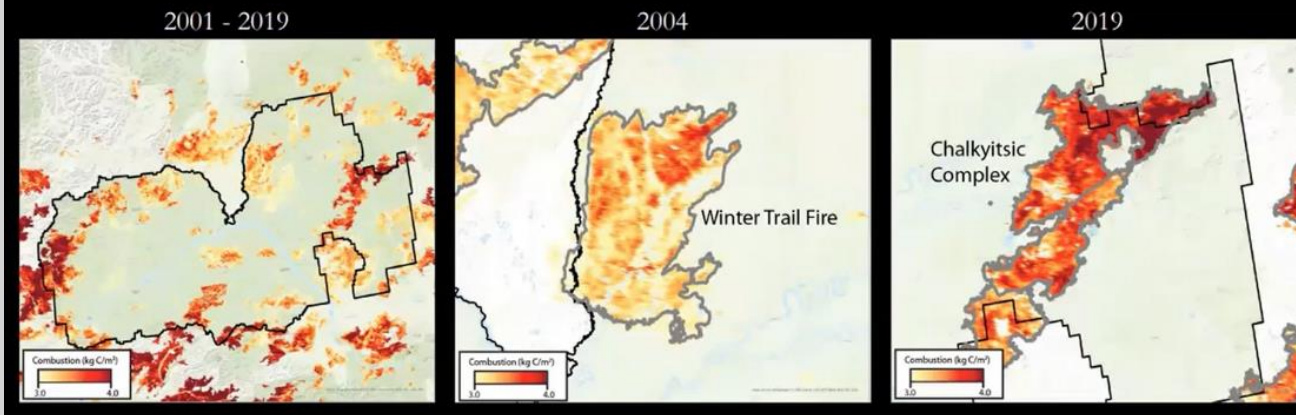
+ expand/collapse full list

FCCS fuelbed distribution

area
consumption

Combustion: YFNWR

Figure, Brendan Rogers, 2022 R2O Workshop



Examples of specific outcomes (success stories):

Fire Danger & Risk

Assessment: increased use of RS detection/monitoring & direct connection to NESDIS



NOAA National Environmental Satellite Data and Information Service
DEPARTMENT OF COMMERCE

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EARTH FROM ORBIT
NOAA's GOES-18 is now GOES West
Read About the Satellite →



Thank you!

*Copies of
proceedings are
available*

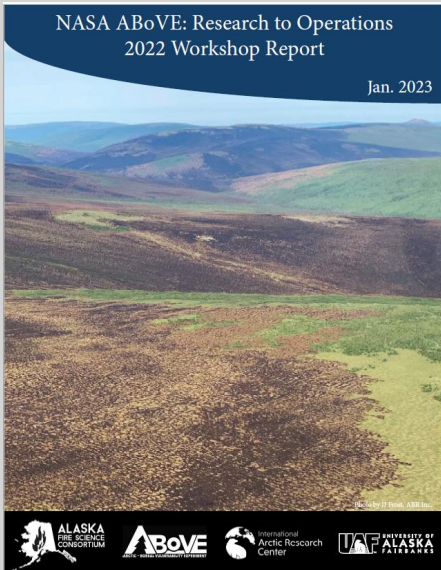


Photo: 2022 Fire, John Kern