

NGCP Celebrates Citizen Science

Suzi Taylor

MSU Science Math Resource Center
Montana Girls STEM Collaborative
NASA AEROKATS and ROVER Education Network
Montana NSF EPSCoR



Science Math
Resource Center



— MONTANA —
NSF EPSCoR



Mountains & Minds



**What it is
is beautiful.**

Have you ever seen anything like it? Not just what she's made, but how proud it's made her. It's a look you'll see whenever children build something all by themselves. No matter what they've created.

Younger children build for fun. LEGO® Universal Building Sets for children ages 3 to 7 have colorful bricks, wheels, and friendly LEGO people for lots and lots of fun.

Older children build for realism. LEGO Universal Building Sets for children 7-12 have more detailed pieces, like gears, rotors, and treaded tires for more realistic building. One set even has a motor.

LEGO Universal Building Sets will help your children discover something very, very special: themselves.

Universal Building Sets



3-7 years old

LEGO

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COMMODORE VIC-20™
"THE WONDER COMPUTER OF THE 1980s. UNDER \$300."
 —WILLIAM SHATNER

"The best computer value in the world today. The only computer you'll need for years to come."

IDEAL **1000 PROJECT** **SCIENCE LAB**
CHEM **CRAFT**

UNLOCK THE SECRETS OF CHEMISTRY!
 Test for poisons and their antidotes, discover gemstones, measure the specific gravity of substances with the hydrometer, discover why all balloons pop!

INCLUDES ALL THE EQUIPMENT
 1000 pieces of equipment, including 1000 pieces of glassware, 1000 pieces of plasticware, 1000 pieces of metalware, 1000 pieces of paperware, 1000 pieces of woodware, 1000 pieces of leatherware, 1000 pieces of stoneware, 1000 pieces of potteryware, 1000 pieces of glassware, 1000 pieces of plasticware, 1000 pieces of metalware, 1000 pieces of paperware, 1000 pieces of woodware, 1000 pieces of leatherware, 1000 pieces of stoneware, 1000 pieces of potteryware.

WARNING!
 This product contains small parts which are a choking hazard. Use only as directed. Do not use for anything other than the intended purpose. Do not use for anything other than the intended purpose.



Early influences



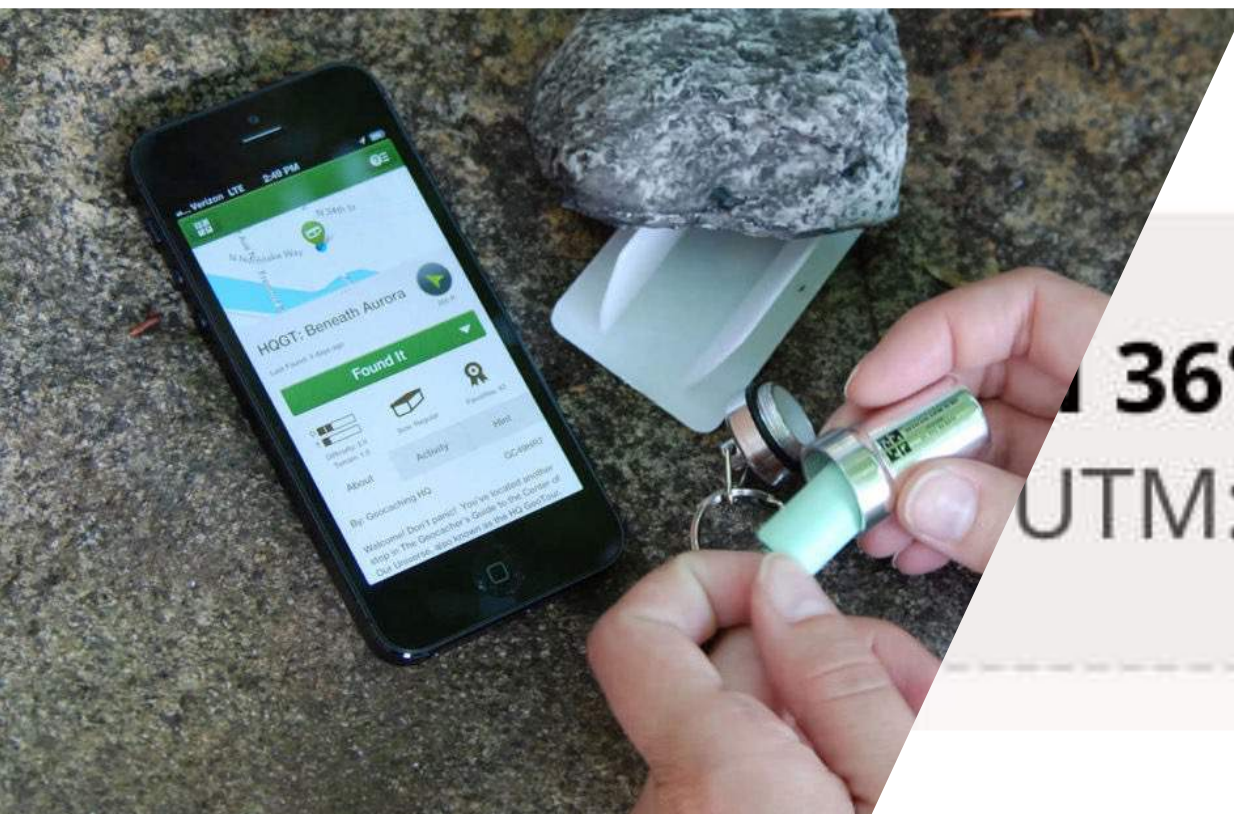
My job rocks!



Citizen Science and Me (and You!)



Geocaching



43° 36' 20.593" W 115° 18' 18.736" N ✎
UTM: 11S E 651456 N 4023339

NASA AEROKATS and ROVER Education Network (AREN)

We fly kites for science!



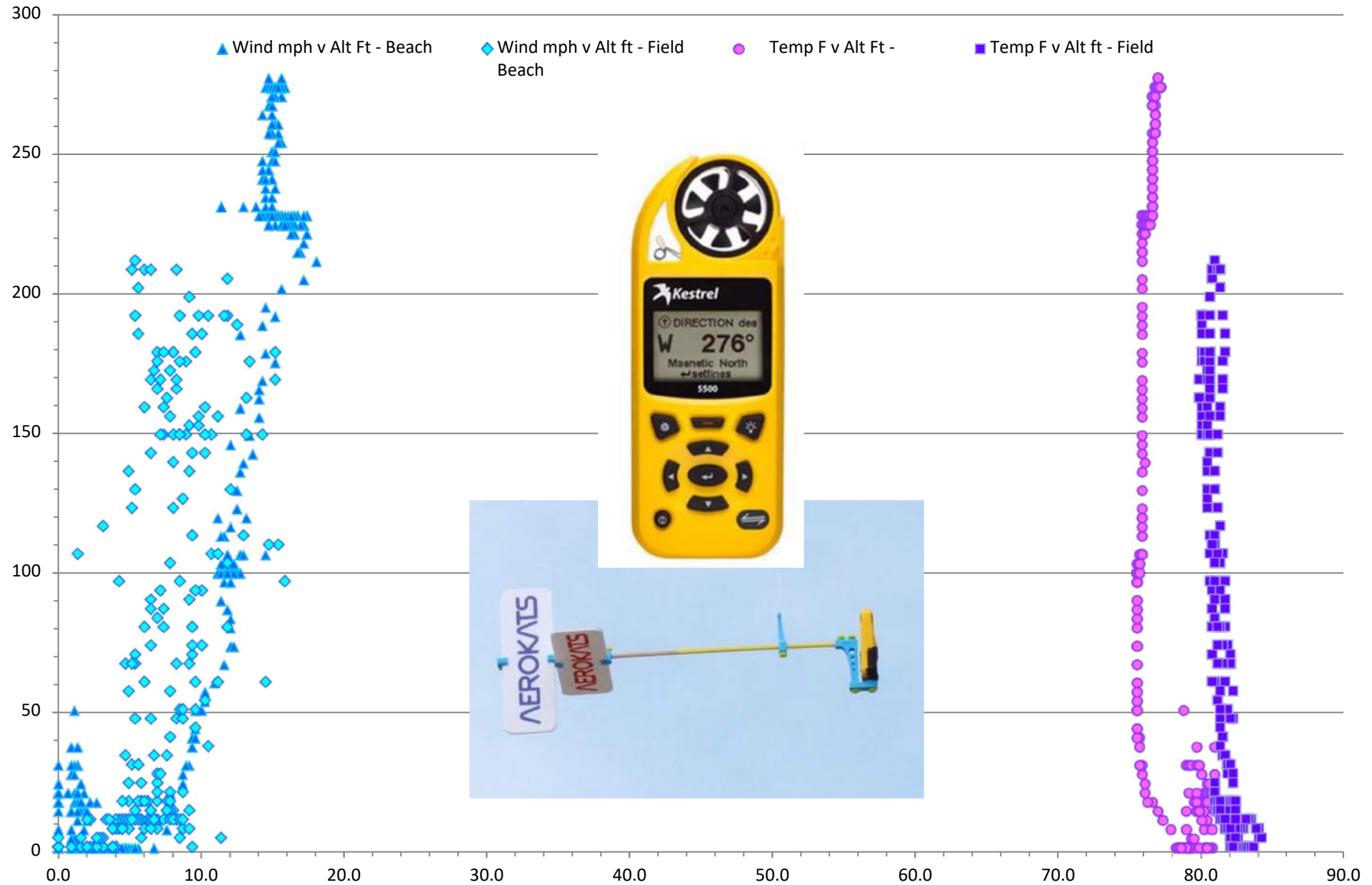


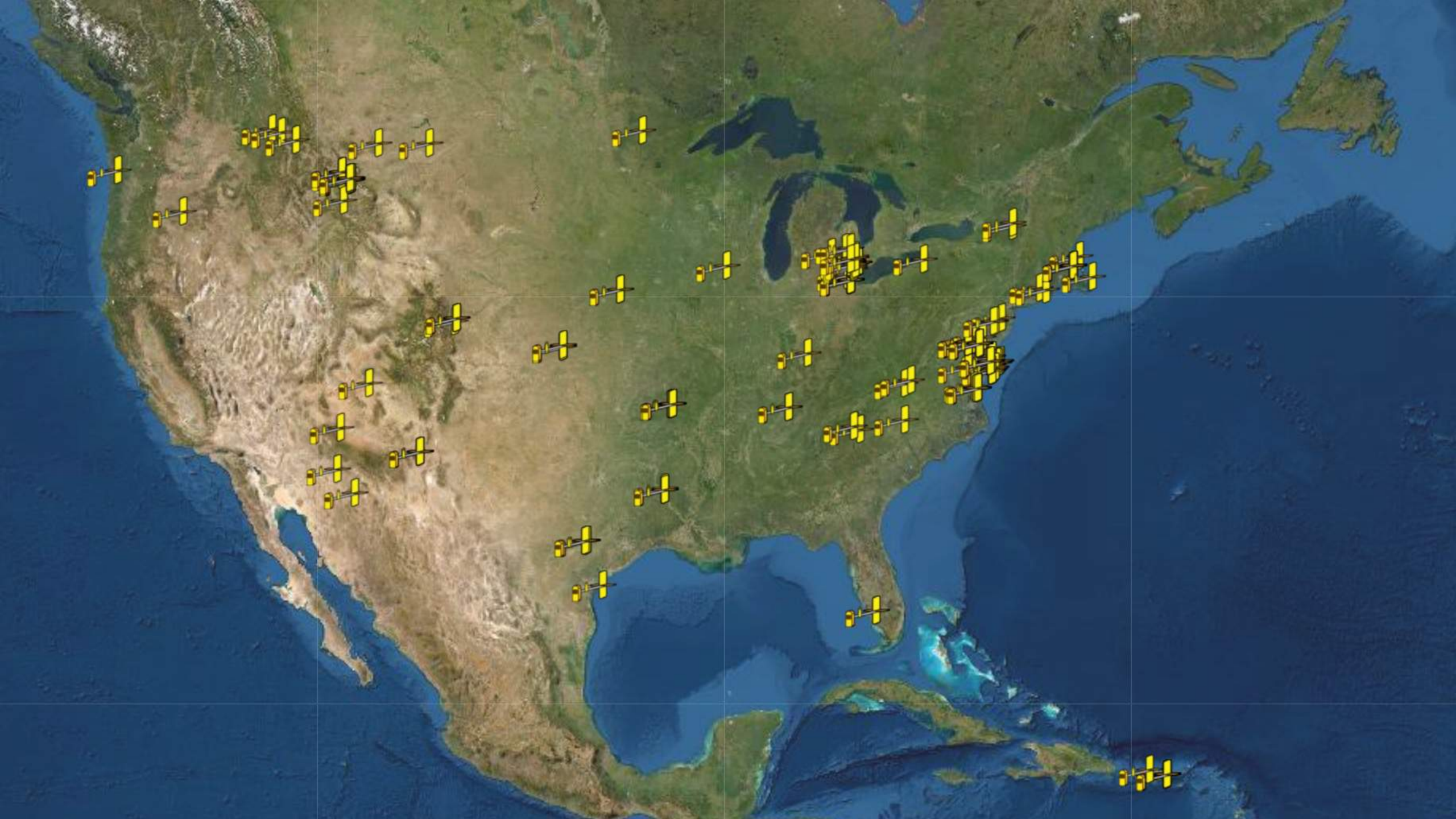






Profiler







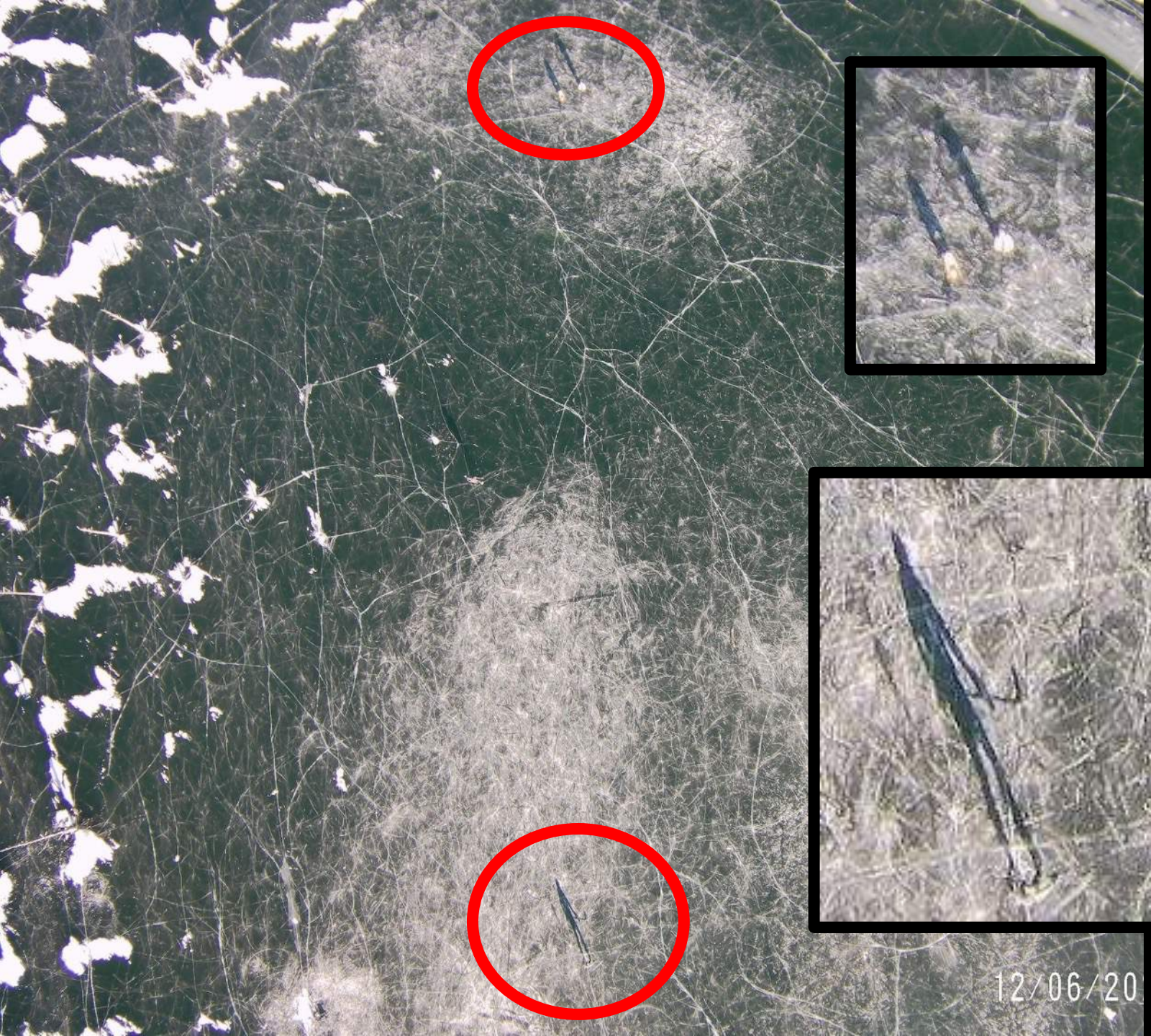




**What time
of day is it?
What else
might you
want to
know?**



What is this?



12/06/20

What is this?



NASA AEROKATS and ROVER Education Network (AREN)

We fly kites for science!



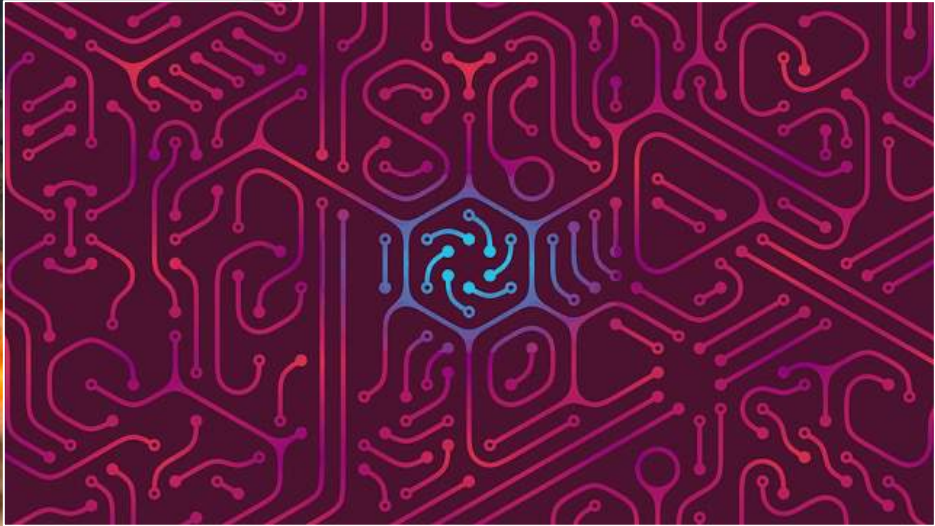
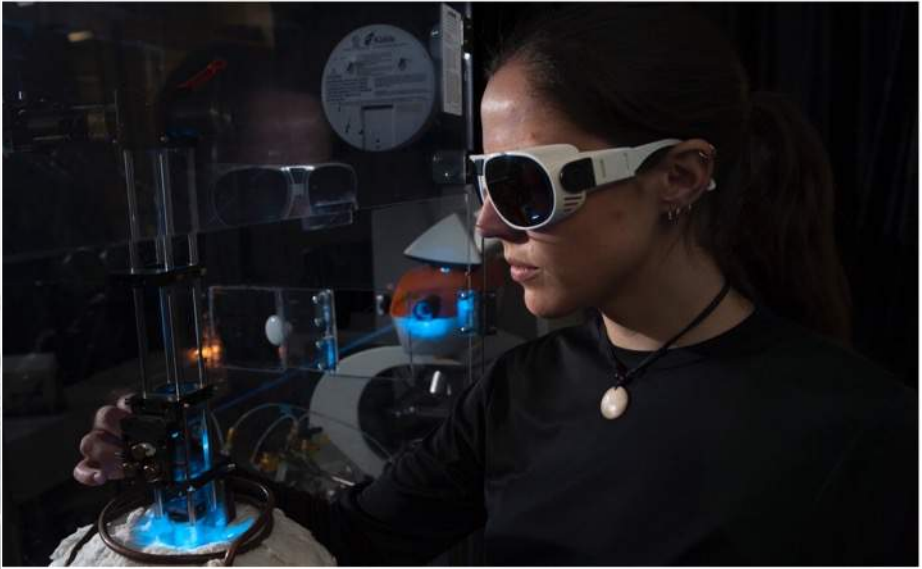
SMART FIRES: Sensors, Machine Learning, and Artificial Intelligence in Real Time Fire Science



———— MONTANA ————
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National Science Foundation

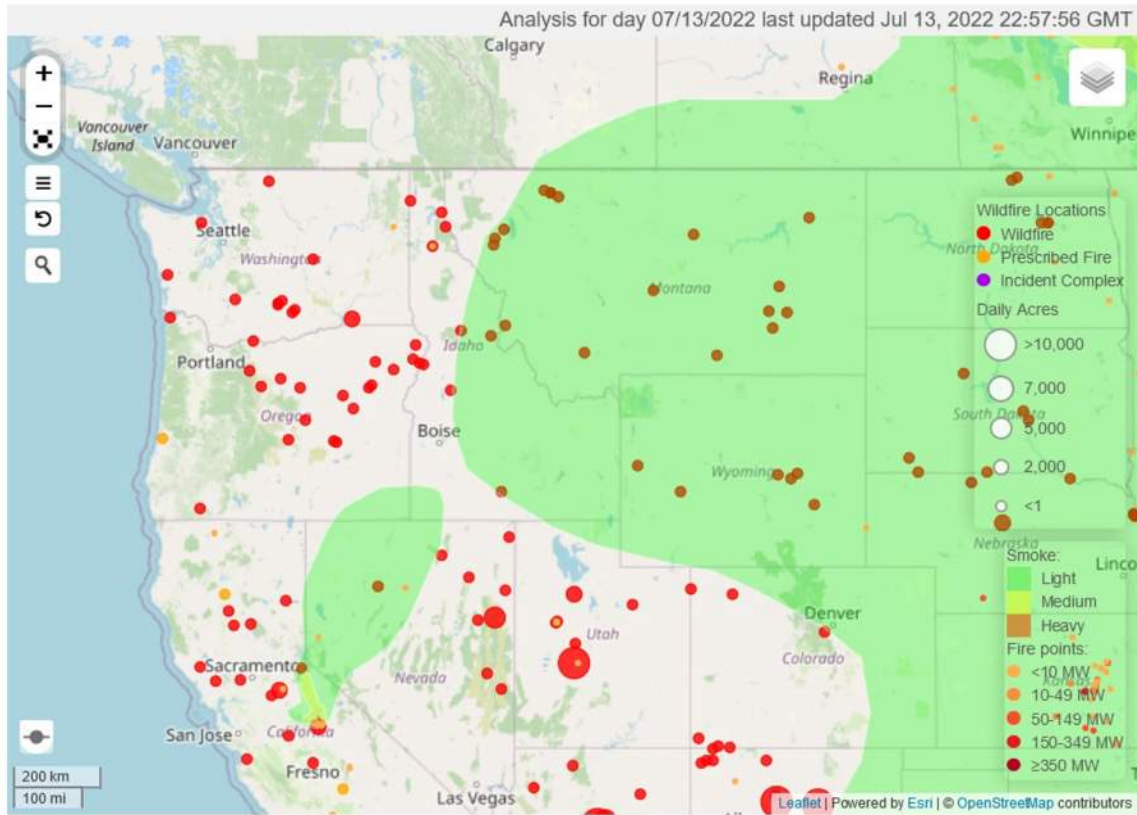


Hazard Mapping System Fire and Smoke Product

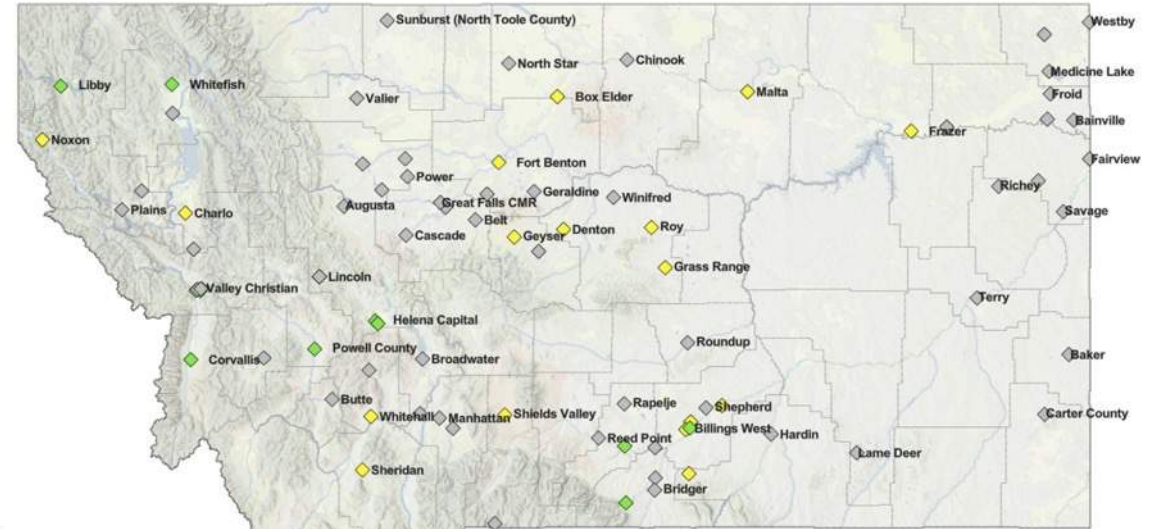
Current Analysis

Analysis for day 07/13/2022 last updated Jul 13, 2022 22:57:56 GMT

Calgary



Disclaimer: The location of the fires displayed may be slightly offset from the actual fire location due to satellite resolution. [Read more](#)



Summary

12 schools live PurpleAirs
57 schools have PurpleAirs
18 in the process of approval

◆ Live PurpleAirs
◆ Have PurpleAirs
◆ In the process of approval

GOALS:

- Grow a Citizen Science Network in Montana
- Explore possibilities for fire and air quality citizen science projects

My favorite citizen science projects



1. GLOBE Observer

- Free app – supported by NASA
- Take photos and observations of clouds, trees, the land and mosquito habitat
- Your data is sent to NASA scientists, and they use it to help our Earth

GLOBE Observer

- Use it whenever you are outside – playing in the park, taking a walk with your family, going on a trip to another town, etc.
- Connect with satellite observations
- Watch for special challenges and contests





GLOBE Cloud Observations Paired with NASA Satellite Data

Total Satellite Comparisons: 39

Useful Resources: [How to Read My NASA GLOBE Clouds Satellite Comparison Table](#), [How to Compare My Cloud Observations with Satellite Data](#), [Cloud Cover](#), [Cloud Transparency](#), [Opacity](#), [Satellites](#)

Observation	GLOBE	GOES-16 Satellite	NOAA-20 Satellite
Universal Date/Time	2024-03-13 20:48:00	2024-03-13 20:33	2024-03-13 20:34
Latitude	19.69	19.37 to 20.01	19.31 to 20.11
Longitude	-98.85	-99.17 to -98.53	-99.21 to -98.41
Total Cloud Cover	Isolated (10-25%)	Isolated 24.53%	Scattered 40.41%
High Clouds	Cirrus Cover: Few (<10%) Opacity: Transparent	No Clouds	Cover: Few (4.39%) Altitude: 10.95 (km) Phase: Ice 231.85 (K) Opacity: Transparent
Mid Clouds	Altostratus Cover: Few (<10%) Opacity: Transparent	Cover: Isolated 24.53% Altitude: 3.23 (km) Phase: Water 295.25 (K) Opacity: Translucent	Cover: Scattered 36.02% Altitude: 5.44 (km) Phase: Water 272.69 (K) Opacity: Opaque
Low Clouds	Cumulus Cover: Isolated (10-25%) Opacity: Translucent	No Clouds	


2. iNaturalist

- Observe and upload photos of almost anything in nature – trees, insects, mushrooms, etc.

- Others in the worldwide community will help identify them




Western Honey Bee (*Apis mellifera*) Research Grade Edit



jeannie103
13 observations

Observed: Oct 5, 2022 - 5:32 PM MDT
Submitted: Oct 5, 2022 - 5:32 PM MDT



Goldenstein Ln, Bozeman, MT, US Details

Be the first to fave this observation!

The screenshot shows a user's observation on iNaturalist. It features a photo of a Western Honey Bee on a pink flower, a map of the location in Bozeman, Montana, and metadata including the user's name (jeannie103), the number of observations (13), and the date and time (Oct 5, 2022 - 5:32 PM MDT). The observation is marked as 'Research Grade' and includes an 'Edit' button. A map shows the location near Goldenstein Ln in Bozeman, MT, with nearby areas like Four Corners, Bozeman, and Patterson labeled. A prompt encourages users to be the first to favorite the observation.



3. Photo Monitoring (ChronoLog)



Organizations set up a chronolog photo station.



A passerby aligns their phone, snaps a photo, and emails it to chronolog.

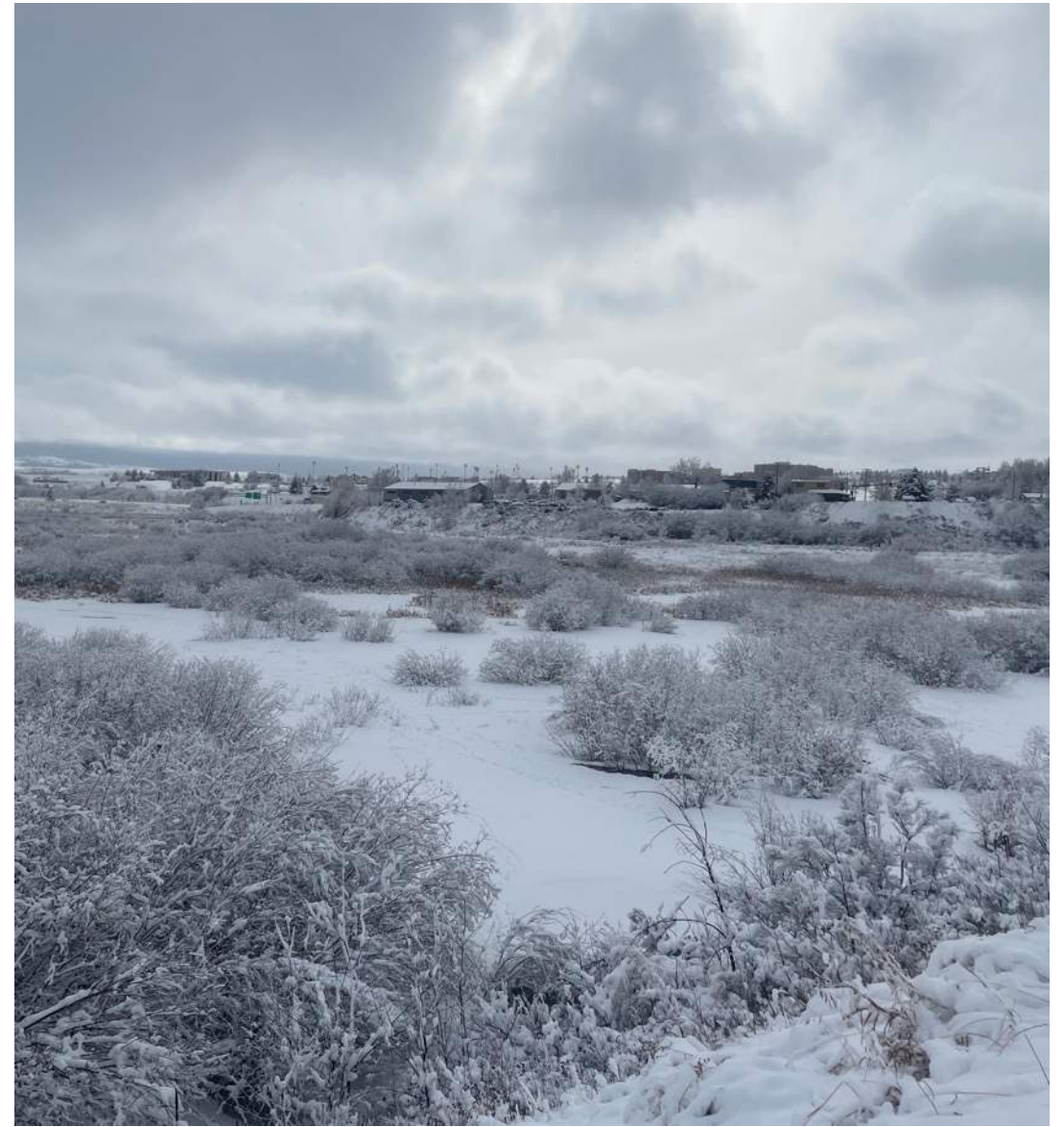


Their photo is automatically added to the right chronolog time lapse.



Chronologs engage your community and record environmental change.





<https://www.chronolog.io/site/SAS104>

Search by name, location, or category



Not sure where to start? Try [Updated today](#) [National park](#) [Rivers](#) [Colorado](#)

[South Africa](#)



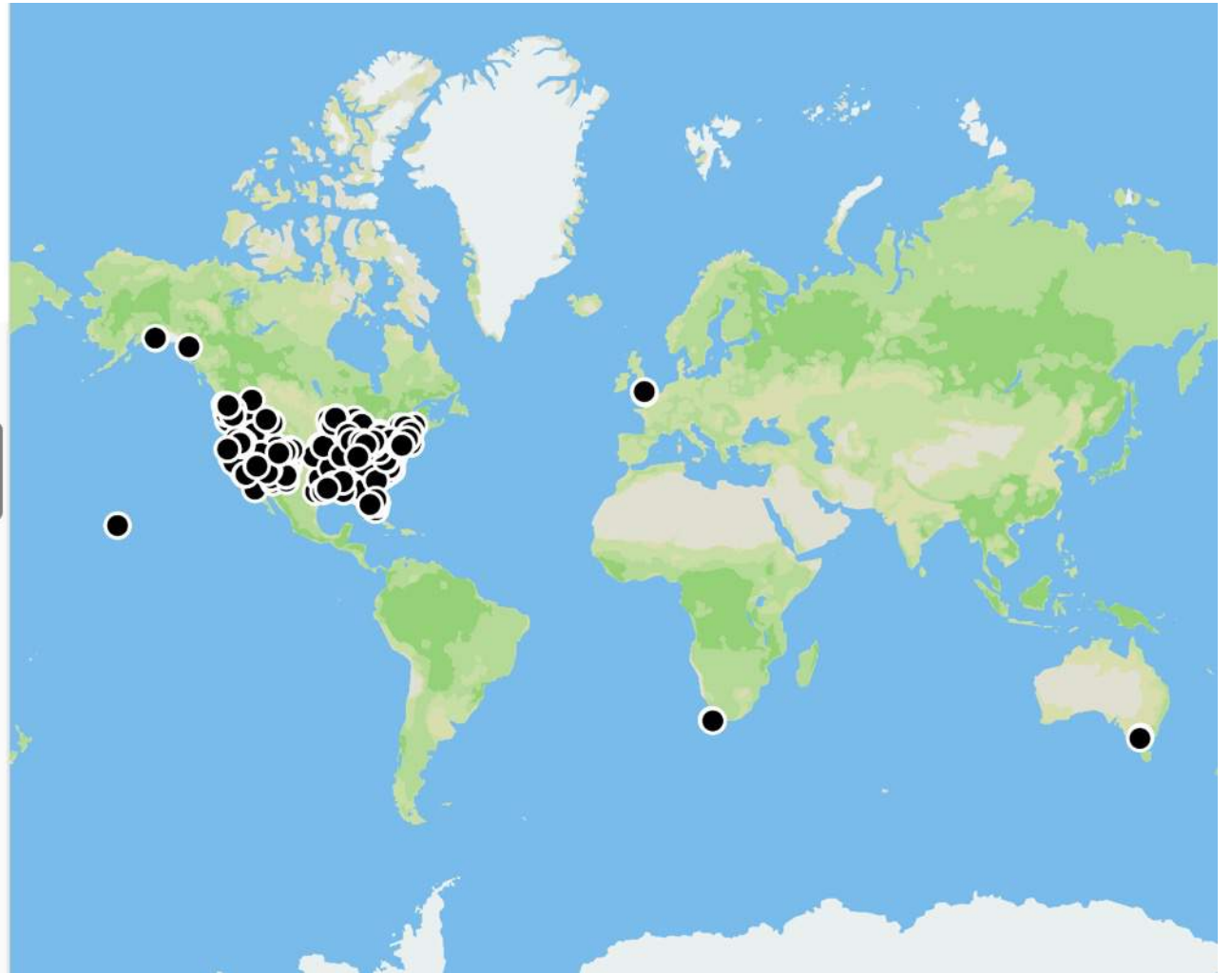
Coastal Research Center Dock - Oyster, VA

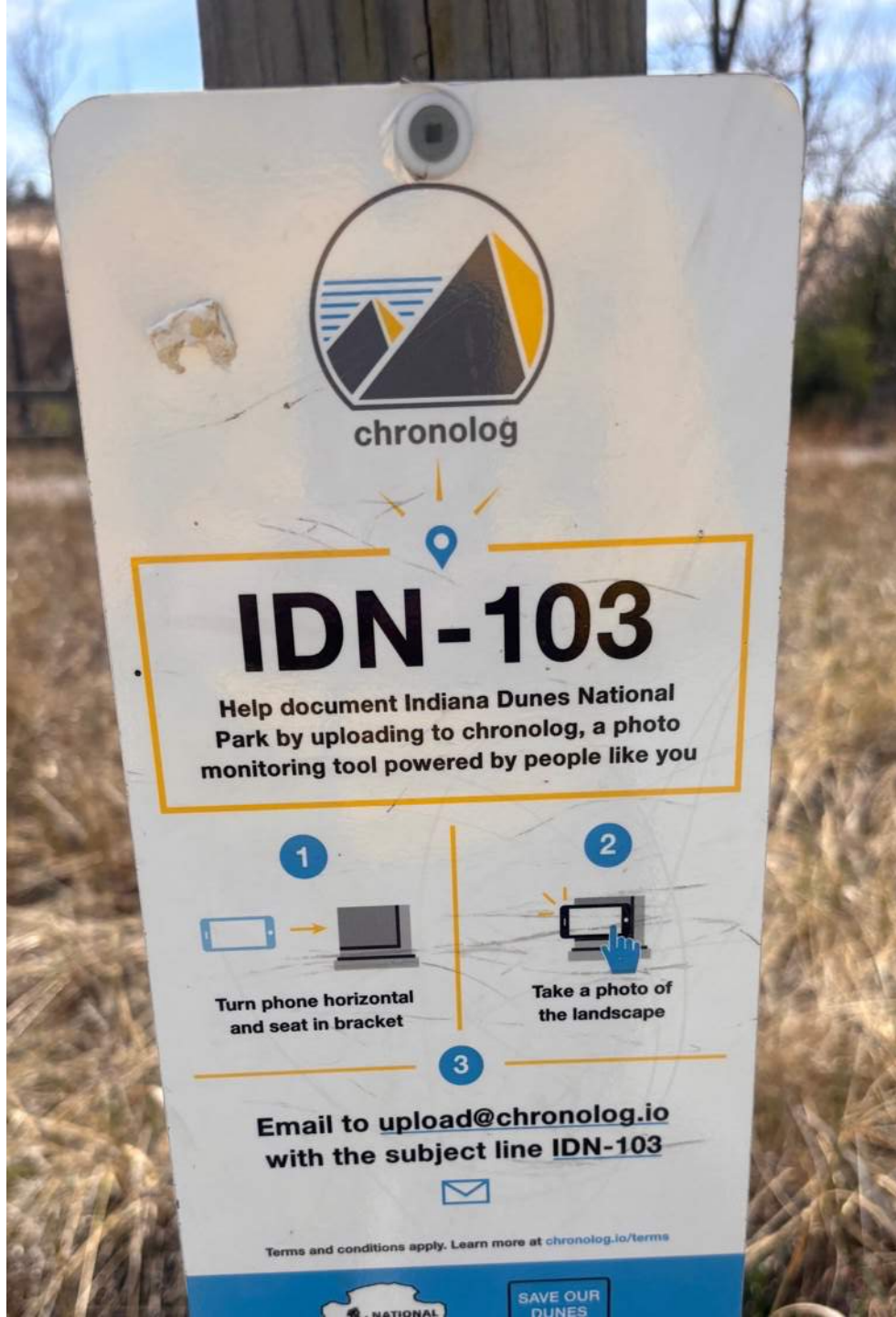
Virginia Coast Reserve LTER

Virginia, US

[Updated today](#) [Shorelines](#) [Restoration](#) [Native species](#)

● New photo added 1h ago





chronolog

IDN-103

Help document Indiana Dunes National Park by uploading to chronolog, a photo monitoring tool powered by people like you

1



Turn phone horizontal and seat in bracket

2



Take a photo of the landscape

3

Email to upload@chronolog.io with the subject line **IDN-103**



Terms and conditions apply. Learn more at [chronolog.io/terms](https://www.chronolog.io/terms)



SAVE OUR DUNES



<https://www.chronolog.io/site/IDN103>

Citizen Science Selling Points

- Anybody can do citizen science
- Participation is usually free and easily accessible
- Citizen science is a nice complement to other activities
- Whatever topic interests you, there's probably a citizen science project attached to it
- **You are contributing to something bigger than yourself**
- **Your observations and data can make your community a better place**



Thank you!

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Montana Citizen Science Network

montana.edu/smrc/citizenscience.html

bit.ly/msucitizenscience



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