

## WYOMINGVIEW HISTORY AND SUCCESSES

WyomingView was established in 2002 to promote remote sensing science, technology and applications in Wyoming. Over these years, WyView has successfully conducted educational outreach, data distribution, and applied research activities:

- Applied research projects that include WyView partners (federal and state agencies) and agricultural producers for mapping natural resources, croplands, and wildfires.
- Train future workforce in image processing and information extraction by completing projects involving remotely sensed data.
- Targeted outreach activities in Laramie area schools (grades 2 – 8) to integrate remotely sensed data in the classrooms.
- Teach pre-conference workshops on Landsat Collections & Analysis Ready Data to GIS professionals
- Visit [www.uwyo.edu/wyview](http://www.uwyo.edu/wyview) for complete details.



Connor Elbert (above), WyView intern presenting the findings from his crop growth research using Landsat data. WyView PI, Sivanpillai (bottom), talked about tracking changes in waterbodies using satellite images to 2<sup>nd</sup> graders in a Laramie school.



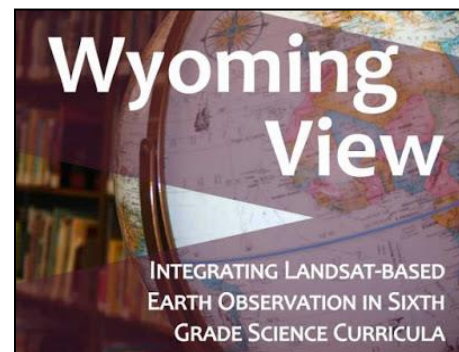
Identifying WY waterbodies in the word puzzle (2<sup>nd</sup> grade students).

“Thank you so much for coming to ... present information on the water cycle, water pollution and conserving water. The topics were of high interest to our students ... they really like the satellite pictures. These pictures are a great tool to show visuals...”

– Stacy Hoffer, 2<sup>nd</sup> grade teacher

WyView has contributed to AmericaView program by serving on its board, and leading in few efforts to showcase AmericaView in national conferences. Wyview PI has organized three panels in ASPRS (2014), and Pecora (2017 and 2019) to highlight the importance of Landsat data for research and teaching.

WyView has contributed to disaster response activities through the Intl. Charter on Disasters by serving as Project Manager for two events.



A highlight article on integrating Landsat data in sixth grade science curricula was published in Photogrammetric Engineering & Remote Sensing 81(6): 425-431. 2015.

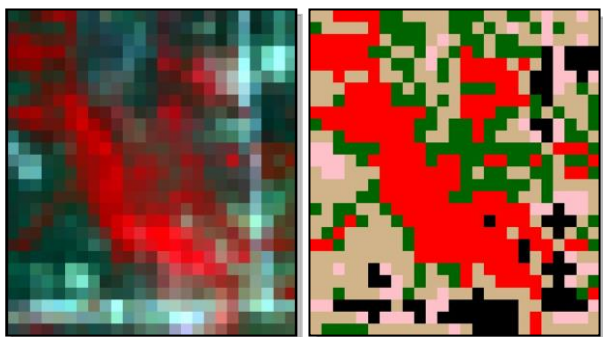
## I. Educational Outreach activities:

- Demonstrated environmental remote sensing applications to 325 students in 2<sup>nd</sup>, 5<sup>th</sup> and 6<sup>th</sup> grades in 4 Laramie schools.
- Taught remote sensing concepts (reflection) to 225 eighth graders in Laramie Middle School (LMS). Students also completed a hands-on activity using ALTA Spectrometer.
- Taught two, ½ day workshops on Landsat Collections and Analysis Ready Data to 10 participants as part of the GIS in the Rockies Conference held in Denver, CO (Sept. 16, 2019).
- Published a peer-reviewed article in *Science Activities* (2019 – 56(1):19-26), describing the educational activities conducted in the 8<sup>th</sup> grade classrooms (LMS). Article DOI: 10.1080/00368121.2019.1638746.



Sixth graders @ Laramie Middle School saw how human actions can influence and shape their environment, and how changes occurring in one corner of the world can impact other areas (credit: Ms. Petty, 2019)

*"Thank you again for coming into our class and sharing ... satellite images with us! It was nice having access to those images and made a bigger impact understanding of events..." – Ms. Petty and Mr. Bauman, 6<sup>th</sup> grade teachers*



WyView intern Jacob Disney, processed Landsat data for 6 years starting from 2010 to track vegetation changes in his parent's 40 acre ranch in NE WY. Vegetation pattern extracted from the images matched the management practices implemented in this field.

## Applied Research: b) Rapid Flood mapping

- Trained 2 interns, Ela Piskorski and Kevin Jacobs on rapid flood mapping methods using pre- and post-flood satellite data.

## III. Emergency Response

- WyView PI served as the Project Manager for the 2018 Woosley Fire in California (Activation ID: 591).
- As a part of the response, 11 UW student volunteers received training in processing pre- and post-fire satellite images, and generating burn severity maps. In addition to generating the fire maps, students mapped daily changes in the direction of the smoke plumes from MODIS and VIIRS images provided by WisconsinView.

## II. Applied Research: a) Rangeland vegetation monitoring

- Trained 2 interns to process Landsat data for rangeland vegetation monitoring in NE Wyoming. Tyler Jones, Rangeland Ecology major, assessed the effect of reseeding with cover crops in his parent's ranch using before- and after Landsat images. Jacob Disney, also Rangeland Ecology major, processed multi-year Landsat images to track changes resulting from improvements made to a 40-acre property owned by his parents. Both interns shared the findings with their parents for validation & obtained testimonies.

*"The satellite image maps have shared some valuable information concerning our 40 acres. The colored images help to confirm what we have been hoping to achieve on this acreage... We would never have had the opportunity to access this imagery if the university hadn't been able to share it. Being a small producer makes it difficult to financially do a study such as this." – Ms. Karen Disney*

Visit <http://wyomingview.blogspot.com/p/interns.html> for further details and testimonies from WY interns.



UW students Magali Romanet & Morgan Elsom analyze the smoke plumes from the Woosley Fire.

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