

## OKLAHOMAVIEW 2018 - 2019



## **OKLAHOMAVIEW HISTORY AND SUCCESSES**

History: OklahomaView became a full member of the AmericaView consortium in 2014.

**High Impact Activity (HIA) Successes:** *State-wide geospatial datasets of forests and surface water resources*: Oklahoma state is dominated by a transient climate from sub-humid to cold and dry, and characterized by diverse natural resources. OklahomaView HIA are centered in developing and improving remote sensing capacity to monitor, report and verify the spatial-temporal dynamics of natural resources in the state. It leverages various research activities and resources available in the OklahomaView consortium. The major outcomes include (1) improved knowledge and mapping tools for forests and surface water body in Oklahoma, and (2) geospatial datasets of forest and open surface water body during 1984-2015 (Zhou et al, 2017). The surface water mapping tool was further applied to generate annual maps of surface water body in the contiguous United States during 1984-2016 (Zhou et al., 2018).





**Publications**: Zhou et al., 2017, Continued decrease of open surface water body area in Oklahoma during 1984-2015, *Science of the Total Environment*. Zhou et al., 2018, Divergent trends of open surface water body area in the contiguous United States from 1984-2016, *The Proceedings of National Academy of Sciences of the United States*.



Participants photo in 2015 workshop



Student talk in 2015 GISday Expo

**OklahomaView Consortium Development Activity**: Oklahoma Workshop on Remote Sensing Technology and Applications: OKView organized the workshops in 2014 and 2015 at the University of Oklahoma. Each workshop brought together 50+ participants from universities (researchers, students, and faculty members), federal, state, and tribal government agencies as well as private industries.

**OklahomaView Consortium Education Activity**: *Geospatial Information Science Day (GISday)*: GISday is an international event to showcase spatial information science and technology (remote sensing, geographic information system, global positioning system) and their applications in the society. OkView is one of leading groups to organize annual GISday at the University of Oklahoma, which was held in November during 2013-2018. Each year, a few hundreds of students from the universities and high schools attended. It had tens of exhibit booths from the universities, federal, state and tribal government agencies, and private companies. It gave best student poster awards to graduate and undergraduate students who presented their work in posters.

*Federal consortium members identified above do not receive funding from AmericaView.* 

OklahomaView is a member of the AmericaView Consortium, a nationally coordinated network of academic, agency, non-profit, and industry partners and cooperators that share the vision of promoting and supporting the use of remote sensing data and technology within each state. AmericaView is funded by USGS grant agreement G18AP00077.



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## OKAHOMAVIEW 2018 - 2019 ACTIVITIES

**OklahomaView HIA: Surface Water Resources:** Surface water resources are critical to state economy and ecosystems. During GY14-17, we developed annual maps of surface water area in Oklahoma and the CONUS (see figure on the right) at 30-m spatial resolution. As many surface water bodies in Oklahoma are even smaller than 30-m and many small streams dried out in drought years, which posed threads to wildlife. In the GY18 HIA, we explored the potential of using time series Sentinel-2 images (10-m spatial resolution) to identify and map surface water body in Oklahoma. The figure below shows a comparison in Thunderbird Lake between Landsat-based (30-m) and Sentenel-2 (10-m). This work layouts the foundation for us to monitor, report and verify surface water body in Oklahoma at 10-m spatial resolution, and to estimate the year-long, seasonal, and ephemeral surface water area.



**OklahomaView Consortium Education Activity**: *Geospatial Information Science Day (GISday) in 2018*: OKView co-led the annual GISday Expo event at the University of Oklahoma in November 2018. The event had 300+ participants from universities, federal, state, tribal government agencies, and private companies. OKView also had a booth in the Oklahoma GISday at the Capital Hill in March 2019, which introduced AmericaView to the participants and may help recruit new members for OkView in the future.

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