New MexicoView Remote Sensing Activities 2015 - 2016

Outreach – The Wildlife Society Geospatial Advisory Committee

Federal agencies, tribal, state and local governments, nongovernmental organizations, and private entities are seeking experts to assist their conservation management. The Southwest Section and New Mexico Chapter of The Wildlife Society (TWS) and New MexicoView have created a geospatial committee for TWS membership and the conservation community as a whole. TWS is an international professional society focused on wildlife management and conservation.

The Southwest Section Geospatial Advisory Committee (GAC) of TWS and the associated state chapters (AZ, NM, and TX) is a newly created committee working on providing outreach and education to TWS members and other interested individuals. Participants on the committee represent the Arizona, New Mexico, and Texas state chapters of TWS and the Southwest Section of The Wildlife Society. This includes members from university research teams, K-12 schools, federal agencies, tribal, state and local governments, nongovernmental organizations, and commercial enterprises. New MexicoView sponsored a webinar for wildlife professionals in 2015 (attended by 30+ individuals) regarding climate projection datasets and applications (https://youtu.be/EXYAeJrd-Bk). Additional webinars are planned for the coming fiscal year. A similar workshop was completed at the 49th Joint Annual Meeting of the Arizona-New Mexico Chapter of the American Fisheries Society and TWS in February of 2016 in Flagstaff, AZ.

Landsat Imagery available through the USGS App ObservedEarth

TOOLS AND TECHNOLOGY

A Toolbox of Apps

MOBILE TECHNOLOGY SUPPORTS WILDLIFE DATA COLLECTION

By Leland Pierce and Ginny Seamster

In July 2015, wildlife biologists and volunteers met at the Pecos National Historical Park in northern New Mexico to conduct a "herp-blitz" designed to help develop a list of amphibian and reptile species found in the park. During the event, sponsored by the National Park Service and organized by Partners in Amphibian and Reptile Conservation, participants tried to catch or observe as many amphibians and reptiles as possible. Each time a lucky participant caught a toad, snake or other herp, they took a picture of the animal and then uploaded the photos from their smartphones — along with the species name and location where the animal was found — to the iNaturalist database using the iNaturalist mobile app.

Wildlife biologists have never been shy about using new technology. Whether it's attaching satellite vests to bald eagles to follow their movements, tagging animals with passive integrated transponders for mark-recapture studies, or modeling the impact of climate change using statistical analyses in combination with GIS, wildlife researchers and managers have taken advantage of many technological advances. Mobile apps are among the latest tools in wildlife biologists' technology toolbox.

Nowadays, we can't leave home without our smartphones. These ubiquitous mobile devices have changed the way we live and how we communicate. And the opportunities they present for wildlife-related data collection are exploding. Mobile phone applications, or apps, allow for field-based collection of spatial data on wildlife and activities related to managing wildlife and can also be used to help enforce wildlife-related laws and regulations.

Extremely easy to use, mobile phone apps rely on communication to a cell phone tower. Even in remote wilderness areas without coverage, users can collect data that later can be synced with web-enabled databases when the user returns to an area with service. One of the most powerful aspects of this technology is the ability for anyone to collect data and readily share it with others.

Citizen Science Apps

When it comes to wildlife observations, citizen scientists are making a big impact. Apps enable anyone to take pictures and report wildlife sightings, and in many cases the app even records the user's location. The data that these observers collect represent a potentially valuable source of information on wildlife occurrence, distribution and ecology.

The iNaturalist app allows anyone interested in the natural world to upload their photographs and observations into a larger database. Started in 2008 by students at the University of California Berkeley's School of Information, the app's website — iNaturalist.org — now boasts more than 70,000 users who have contributed over one million observations of plants, animals and other organisms worldwide. Users have created and contributed to over 2,000 different projects such as taxa- and location-specific species inventories called bioblitzes, roadkill observations, animal track cataloging, and documenting the spread of invasive species.

Credit: Dean Pentiger, Arizona Game and Fish Department

▲ The Arizona Game and Fish Department designed its own mobile app to collect information on roadkill observed by department personnel. After selecting the app on a mobile device, the user enters information on the species found and can upload a photograph to document the report.

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Article published in The Wildlife Professional regarding the use of Citizen Science Apps by organizations, agencies, and in education. Copyright 2016. Image used with permission of The Wildlife Society.

Leland Pierce and Ginny Seamster, the co-chairs of GAC, with assistance from New MexicoView, completed an article for the TWS publication *The Wildlife Professional*. The article discusses the use of Apps in wildlife conservation. One of the examples of the topics the article discussed is New MexicoView's use of the Field Photo App created by OklahomaView in conjunction with the NASA and USGS Adopt a Pixel Program.

This New MexicoView activity assisted in identifying the data and information requirements of TWS members, established partnerships with personnel across organizations, and provided education and training to professional wildlife biologists. The goal of the effort is to establish a long-term geospatial committee that provides expertise and documentation on using remote sensing data in wildlife management.

New MexicoView 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.

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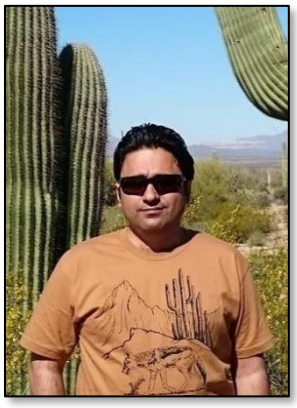
Benefits to New Mexico

New MexicoView is working to provide increased awareness about remote sensing data, products, and the uses of the data, and to facilitate methods to get the data into people's hands. Remotely sensed data are used in New Mexico by state and federal agencies, universities, private entities, and non-profit organizations. Uses have focused on natural resource management activities (including fire and range management), and biodiversity conservation. A challenge for the New Mexico remote sensing community is to get applications into the hands of managers in a format that can be applied on the ground. These applications have been developed by USGS, USDA, and New MexicoView partners. The New MexicoView consortium is working on methods to bring the research and application communities together in New Mexico. These efforts include:

- Expertise
- Collaboration
- Data use and applicability
- Cutting edge applications
- State and regional contacts



Graduate Students Nathan Lopez-Brody and Reza Goljani were awarded the 2016 New MexicoView Geospatial Scholarships for their use of remote sensing in their graduate research.

New MexicoView Consortium Membership

New MexicoView continues to build a consortium of public, private, and non-profit organizations that are promoting remote sensing in New Mexico through sharing of resources, developing infrastructure, and supporting research and education in the state. Collaboration with the New Mexico Geographic Alliance and NASA provide the foundation for education and outreach opportunities across the state.

New MexicoView partners develop, leverage, and disseminate remote sensing resources, applications, and research. New MexicoView's programs, supported by other AmericaView members, have the capacity for national reach.

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

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