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USGS Releases Remote Sensing Data on Annual Biological Cycles: Salazar Announces Satellite Data on Nature's Timing Can Help Track Climate Change

WASHINGTON, D.C.--The USGS has made its long-term historical remote sensing data and graphics about biological life-cycle events available to the public at no charge on the web, Secretary of the Interior Salazar announced today.

“These historical datasets, along with continuous monitoring, hold the promise of helping scientists detect how climate change, wildfire, land use change, and other phenomena alter the timing of plant and animal life cycle events,” the Secretary noted following his testimony about energy and climate change before the Senate Energy and Natural Resources Committee.

Orbiting hundreds of miles above the earth, remote sensing satellites track plant and animal life cycle events that occur at certain times of the year, such as plant leafing and flowering or bird migrations. The scientific term for the study of these recurring life cycle events is *phenology*. Many phenological events are sensitive to climatic variation and change, and observing these events – for example, noting when certain plant species flower (such as lilacs) compared to a long-term norm – can help scientists understand environmental trends so society can better adapt to climate change.

Dating back to 1989, the USGS historical datasets provide a widely accessible and impartial record (at one-kilometer resolution) of the time of year that measurable cyclic events in nature have occurred over the conterminous United States. These historical remote sensing phenology data for the conterminous United States can be accessed online at http://phenology.cr.usgs.gov/get_data.php. The data are acquired from satellites and then compiled and maintained at the USGS-EROS Center in Sioux Falls, S.D.

“With its long-term observational networks, extensive databases, and diverse research expertise, the USGS is helping provide the broad scientific perspective needed to expand our understanding of climate change and its impact on the nation’s resources and economy,” said Secretary Salazar.

Satellite data provide a unique perspective of the planet and allow for regular, even daily, monitoring of the entire global land surface, according to Jonathan H. Smith, USGS coordinator for the Geographic Analysis and Monitoring Program. “What’s more, because data collection by satellite sensors can be standardized, the data are reliably objective,” he points out.

“Remote sensing phenology,” Smith continued, “can reveal broad-scale phenological trends that would be difficult, if not impossible, to detect from the ground.”

The USA National Phenology Network (NPN) brings together citizen scientists, government agencies, non-profit groups, educators and students of all ages to monitor and record by personal observation the impacts of climate change on plants and animals, providing powerful "ground truthing" of the satellite phenology data from local to global scales. Learn more at <http://www.usanpn.org>.

“The broad view of satellites from high above Earth complements and reinforces human observations of similar natural events on the ground,” observed Jake Weltzin, USGS biologist and Executive Director of the USA National Phenology Network. “In turn, human observations provide a literal reality check – ‘ground truth’ is the trade term – that can be used to evaluate, or validate, the satellite data. You could even say there’s a certain satellite-citizen symbiosis at work.”

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