

## Press Release

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# A Big Day for Science: Citizens Have Contributed One Million Observations to Top Nature Database

RESTON, Va. — Thanks to citizen-scientists around the country, the [USA National Phenology Network](#) hit a major milestone this week by reaching its one millionth nature observation.

The millionth observation was done by Lucille Towers, a citizen-scientist in Portland, Ore., who entered a record about seeing maple vines flowering. Her data, like all of the entries, came in through USA-NPN's online observation program, [Nature's Notebook](#), which engages more than 4,000 volunteers across the country to observe and record phenology – the timing of the recurring life events of plants and animals such as when cherry trees or [lilacs](#) blossom, when robins build their nests, when salmon swim upstream to spawn or when leaves turn colors in the fall.

Each record not only represents a single data point — the status of a specific life stage of an individual plant or animal on one day – but also benefits both science and society by helping researchers understand how plants and animals are responding to climate change and, in turn, how those responses are affecting people and ecological systems.

"My dream is that through the wonders of modern technology and the National Phenology Network we could turn the more than six billion people on the planet into components of our scientific observing system," said USGS Director Marcia McNutt. "We could make giant leaps in science education, improve the spatial and temporal coverage of the planet, lower the cost of scientific data collection, and all while making ordinary citizens feel a part of the scientific process."

Jake Weltzin, a U.S. Geological Survey scientist and the executive director of USA-NPN, concurs. "Hitting the one millionth observation is exciting because researchers and decision-makers need more information to understand and respond to our rapidly changing planet. More information means better-informed decisions that ensure the continued vitality of our natural areas that we all depend on and enjoy."

For example, said Weltzin, the data in *Nature's Notebook* are already being used to benefit society, including the development of more accurate indicators of spring, forecasting the onset of allergy seasons or the chances of western wildfires, managing wildlife and invasive plants, and setting goals for habitat restoration. Ultimately, such information can be used for better managing water resources, wildlife and ecosystem management, and even help farmers and ranchers across the nation.

Changes in phenology are among the most sensitive biological indicators of global change. Across the world, many springtime events are occurring earlier — and fall events happening later — than in the **U.S. Geological Survey**

past. These changes are happening quickly for some species and more slowly, or not at all, for others, altering relationships and processes that have been dynamically stable for thousands of years. Some wildlife —like caribou and butterflies — are becoming mismatched from their plant food resources, which are responding differently. Migrations for some birds are changing too, as they can now overwinter instead of moving south for the winter, or as they fly north more quickly to keep pace with an advancing front of spring flowering.

Because of this, said Weltzin, scientists need more and better information about the pace and pattern of nature — locally to nationally — to answer important scientific and societal questions, and to build the tools and models needed to help people understand and adapt to the changes.

"So much of our improved understanding about global environmental changes is driven by varied and valuable sources of information that include networks of citizen-scientists," said John Wingfield, National Science Foundation's assistant director for biological sciences. "The public at large has played an important role collecting observations and data for a hundred years and more. Knowledge and data gained from their work will continue to have a lasting effect on how we understand regularly recurring biological phenomena for hundreds of plant and animal species and contribute to the policy arena."

Gwen Lundburg in Seattle is one citizen-scientist who has contributed hundreds of entries into *Nature's Notebook*. "Just noticing small changes like tiny purple lilac buds suddenly turning green has taught me to look more closely at my plants," Lundburg said. "I see things in my garden I never saw before."

With the help of citizen-scientist volunteers, working in concert with professionals, the USA-NPN, which was established in 2007, collects, stores and freely shares phenological data on more than 800 species of plants and animals. The *Nature's Notebook* observing program has been in operation since 2009. The coordinating office of the organization is located at 1955 E. 6<sup>th</sup> St., Tucson, Ariz., 85721. For more information about USA-NPN, visit [www.usanpn.org](http://www.usanpn.org), or contact Jake Weltzin at 520-626-3821 or [jweltzin@usgs.gov](mailto:jweltzin@usgs.gov).

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