

Stakeholder Perspectives

The USA National Phenology Network encourages people of all ages and backgrounds to observe and record phenology as a tool to discover and explore the nature and pace of our dynamic world. The Network makes phenology data, models, and related information freely available to empower scientists, resource managers and the public in decision-making and adaptation in response to variable and changing climates and environments.

Here are comments from our stakeholders on the value of the Network in meeting their objectives.

Close Communication With Partners to Deliver a Complete Package of Benefits

“As a Co-PI and field director of an emerging state-wide phenological monitoring program based in the California National Parks, I’ve found that the expertise and tools provided by the Network are **essential to the success** of our project. For example, staff at the USA-NPN National Coordinating Office have worked with our team to adjust its protocols and species list to include taxa specific to the California Phenology Project, and to **accommodate the special needs** of a citizen science-based project that ranges from the deserts to the coasts to the mountains.”
Susan Mazer, Professor,
University of California—Santa Barbara

Support for Science

“**Widespread and spatially** dense collection of plant and animal phenological observations across the continent, as envisioned by the Network, will **revolutionize** our thinking of research in ecology and global change science, just

as the legacy of spatially extensive and long-term weather collection stations fostered our understanding of global climate dynamics.”

Mark D. Schwartz, Distinguished Professor of Geography,
University of Wisconsin—Milwaukee



The Network offers a wide array of services, products, and benefits to its federal, state, university, corporate and non-profit partners.

“The Network provides thousands of standardized observations that can be used to develop and calibrate carbon flux models. While intensive measurements (e.g., Long Term Ecological Research Network and the National Ecological Observatory Network) provide insight into ecological processes at discrete locations, the USA-NPN provides **thousands of direct observations across the entire continent**. Fusing these approaches provides the tools to understand and manage the natural carbon sinks across the USA.”

David Moore, Associate Professor of Phenoclimatology,
University of Arizona

Value-Added Products to Support Decision-Making in Human Health and Resource Management

“Phenological data are critical for the success of our commercial **agricultural** efforts.”

Joe Russo, President and Senior Scientist, *ZedX, Inc.*

“**Web-enabled tools**, such as those the Network seeks to develop, will open up the marketplace of ideas for citizens to synthesize ecological data into meaningful information, resulting in innovative uses of that information for **discovery and learning**.”

Brian Wee, Chief of External Affairs,
National Ecological Observatory Network, Inc.

“Working with USA-NPN leverages an **in-situ observational network** for ground-based measurements with satellite data collected by NASA. In the short term, these observations provide excellent seasonal data sets. In the long term, these data sets provide observations linking climate variability to plant phenology. Both **greatly enhance the value** of NASA satellite data sets in climate research.”

Jeffrey Luvall, Senior Research Scientist,
NASA—NSSTC, Global Hydrology and Climate Center

“**Phenology is the gateway to climatic effects on the biosphere.** As such, phenological models integrated with climatic forecasts, and calibrated with USA-NPN observational data, will become increasingly vital for societal adaptation to climate variability and change.”

Julio Betancourt, Senior Scientist, *U.S. Geological Survey*

Standardized Protocols for Phenology Data Collection and Storage and Delivery of Contemporary and Legacy Data

“The Network has constructed the **only easily accessible, standardized, and dynamic database** comprising the seasonal behavior of a wide diversity of native and exotic plants and animals.”

Susan Mazer, Professor,
University of California—Santa Barbara

“As the NSF Long Term Ecological Research network has demonstrated over the past three decades, ecological dynamics reveal themselves slowly to the **careful observer**. In a similar manner, the strength of USA-NPN arises from its gathering of thousands of contemporary observations through **consistent community protocols**, rescuing **historical datasets**, archiving these data in one location, and providing the **nexus for a diverse community** of professional and citizen scientists. From this confluence of

information and interest will emerge a new understanding of how to enable adaptive management and mitigation in the face of global environmental changes influencing ecological dynamics in local places.”

Geoff Henebry, Professor, *South Dakota State University*

Avenues for Public Engagement

“The USA-NPN is the primary resource in the United States where **scientists, informal and formal science educators, families, and novice-to-expert naturalists** can combine their observational skills in a collaborative and timely research effort that will contribute to the health and sustainability of our natural resources and to the ecological literacy of everyone in the United States.”

Susan Mazer, Professor,
University of California—Santa Barbara

“I am involved in USA-NPN because of the importance of the program to terrestrial ecology and as a means of **engaging and empowering people with the science of climate change**. It is important to the science efforts of several agencies, and I value participation in these types of interdisciplinary and interagency efforts.”

Bruce Wilson, Group Leader,
Client and Collaboration Technologies Group, Oak Ridge National Laboratory

“The value of phenological data for demonstrating, monitoring and predicting the consequences of climate change is now well documented. By encouraging collection of such data by scientists and citizen-scientists from across the country, the USA-NPN is fostering the creation of a database that will have tremendous value. Broader impacts of the program include... **recording baseline data for measuring future change**.”

David Inouye, Professor, *University of Maryland*



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