**What is Phenology?**

Phenology is the study of periodic plant and animal life cycle events and how these are influenced by seasonal and year-to-year variations in climate. Examples include the timing of leafing and flowering, agricultural crop stages, insect emergence, and animal migration. All of these events are sensitive measures of climatic variation and change, relatively simple to record and understand, and are vital to both the scientific and public interest.

**Phenology - A Critical Tool for Enabling Adaptive Responses to Climate Change**

Phenology is:
- An integrator of climatic variation and change across scales
- Simple to record and understand
- Important to science, health, agriculture, natural resources, and recreation
- Phenology data + models = human adaptation to climate change

The USA-NPN is:
- A continental science and monitoring initiative

- Agencies, NGOs, academia, public
- Plants + animals; contemporary + legacy data
- On-line data entry, maps, downloads
- Education: “more kids in the woods”
- Remote sensing facilitates scaling

**Why employ citizen scientists?**

- Distributed data collection network across the entire U.S.
- Casual observers become dedicated observers
- Engagement in meaningful activities
- Education/awareness engenders science literacy
- Increases number of long-term phenology datasets and analyses through formal and informal science education programs
- Generation of policy/support
- Historic/baseline data (pre-network)
- Potentially rich datasets collected by individuals
- Engenders self-directed, voluntary learning using inquiry-based approaches
- Provide training in the tools and applications of phenological studies to citizens
- Enhances opportunities for public to interact with professional scientists

**Summary**

The USA-NPN has a number of programs through which learners of all ages can observe and interpret their environment using phenology as a platform to facilitate understanding through active learning, engagement, and inquiry-based approaches. The programs and products being developed by the USA-NPN capitalize on myriad educational opportunities and a new readiness of the public to participate in science literacy through formal and informal science education programs. The USA-NPN is a collaborative partnership that includes federal agencies, the academic community, and the general public, all working together to monitor and understand the importance of seasonal cycles on the Nation’s biological resources.