

USA-NPN:

Volunteers Needed to Monitor the Pulse of the Planet

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Spring officially began on March 20, and summer arrives June 21. But many of us mark the seasons by events occurring in our backyards or the surrounding countryside. Saguaros blooming and tortoises emerging from hibernation in the Sonoran desert, the departure of sandhill cranes in Cochise County, aspens leafing out in the higher elevations—these are some signs of spring across Arizona.

The study of these recurring plant and animal life cycle events is *phenology*. Many of these events are sensitive indicators of climatic variation and change, making them valuable tools for identifying and understanding environmental trends. Uses of phenology data include:

- predicting wildfires and pollen production,
- detecting and controlling invasive species,
- monitoring drought conditions,
- assisting agricultural decision-making, and
- evaluating impacts of climate change.

Unfortunately, scientists lack instruments to tell them when plants leaf out or bloom, crops ripen, and insects emerge. Collecting the necessary data requires human observers—lots of them—in rural and urban areas, across every state.

The National Phenology Network, USA-NPN, is a partnership of federal and state agencies, non-governmental organizations, academic researchers, and the public with its headquarters at the University of Arizona. USA-NPN was created to recruit tens of thousands of volunteers

to observe and report on plants and animals, in their backyards and neighborhoods, or where they work and play.

Many plant and animal species throughout the world are being affected by climate change. For example, some plants and animals respond to warmer winter and spring temperatures by shifting the timing of activities, including fish, mammal and bird migrations, insect emergence and flight, honey production, and flowering and leafing of plants. Other natural events such as insect breeding, some bird migrations, and the flowering and leafing of other plants, are based on length of day rather than temperature. This can result in ecological mismatches; for example, flowers may bloom before their pollinators arrive, leaving both out of luck. In other cases, migratory birds may arrive at their summer breeding grounds after their primary food source has come and gone. Such mistimed behavior has already been noted across many parts of the world.

As an USA-NPN observer, you can help scientists and natural resource managers better understand these changes, and develop adaptation strategies. Volunteering is easy. You can visit www.usanpn.org and follow these four simple steps to begin observing:

1. Learn which plant species in your area are included in the monitoring program, get information about them, and find out what phenophases to monitor. About 60 plants found in Arizona currently are being monitored, with another 30 to be added soon. Whether you live in Yuma or Flagstaff, you'll find many plants on the list native to your part of the state. (Monitoring of insects, birds, and other animals is scheduled to begin spring 2010.)
2. Get the details on monitoring. Find out what you should consider when selecting a site or plants, how to mark your plants, and about recording your phenophase observations.
3. Sign up to be an observer. Become an official participant and set your username and password. All you need is an email address and Internet access.
4. Log in to MyNPN. Now you are ready to register your site and the plants you will observe, and start reporting! As you collect data during the season, log in to your account at "MyNPN" and enter the observation data you recorded.

Participating in usanpn.org is simple and fun. Check it out and consider joining this effort to monitor our local environment.