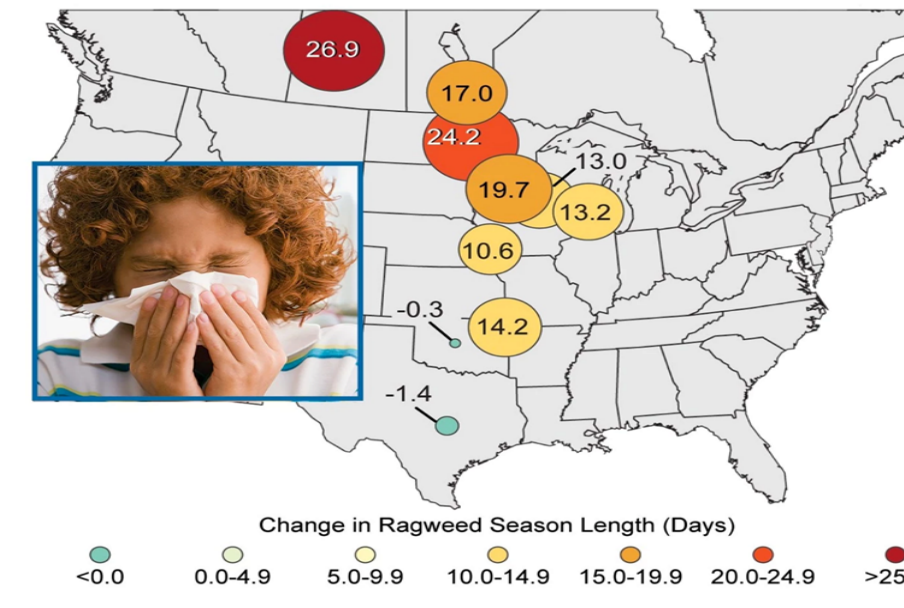


Looking for a few good citizen scientists: Phenology brings climate change to your own backyard!



Monitoring Seasonal Change

- **Phenology** is the timing of seasonal biological events such as budburst, flowering, bird migration and leaf coloring. It has provided the most compelling evidence that plants and animals are responding to changes in climate across the globe.
- **Phenology observations** are local, easy to do, and if collected carefully, provide reliable data for research and management. The data can help understand what is changing and what is not changing in the natural world in and around our local communities.
- A **phenophase** is “an observable stage or phase in the annual life cycle of a plant or animal that can be defined by a start and end point. Phenophases generally have a duration of a few days or weeks. Examples include the period over which newly emerging leaves are visible, or the period over which open flowers are present on a plant” (USA-National Phenology Network, NPN).

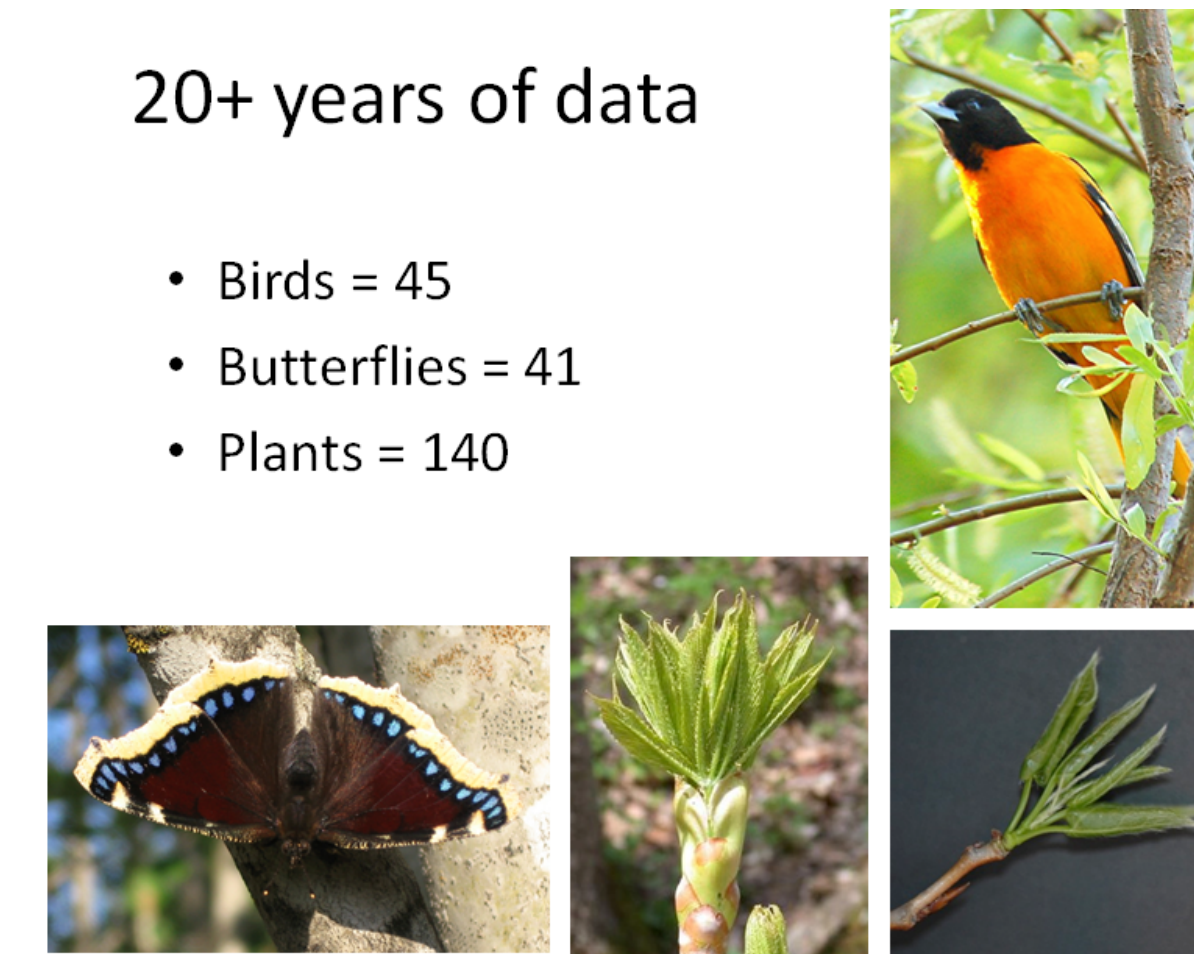


Historical observations of phenology made in Minnesota over the past 100 years coupled with new data from trained observers across the state is helping to identify species and species interactions that may be vulnerable to climate change.

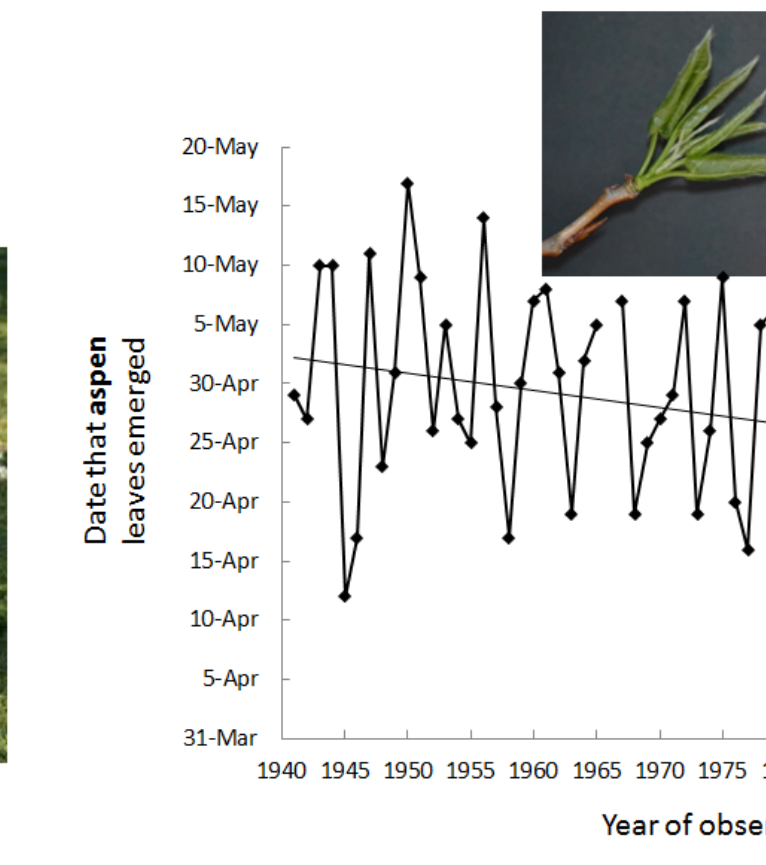
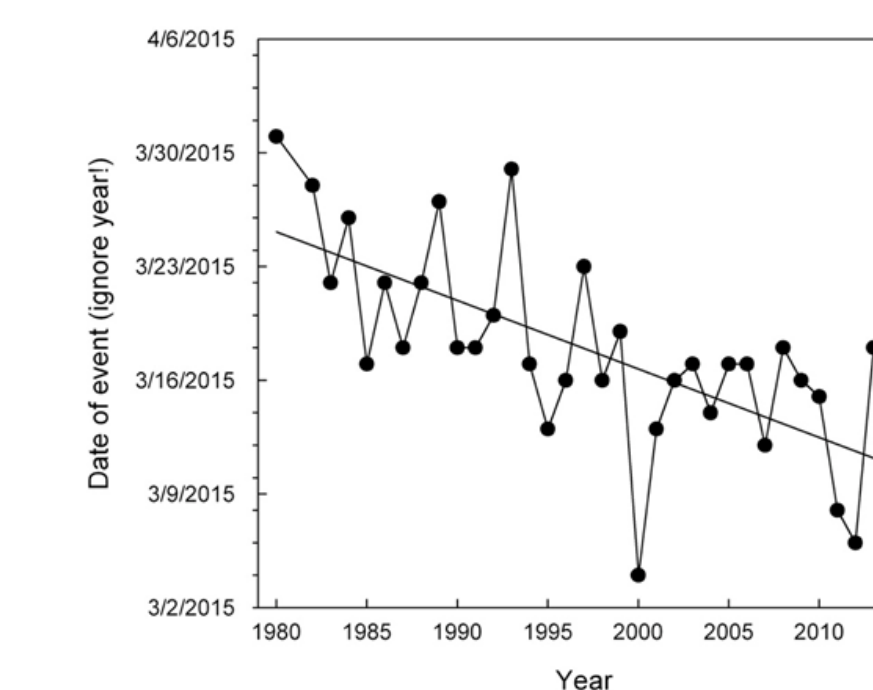
Goal: 200 observers state-wide

20+ years of data

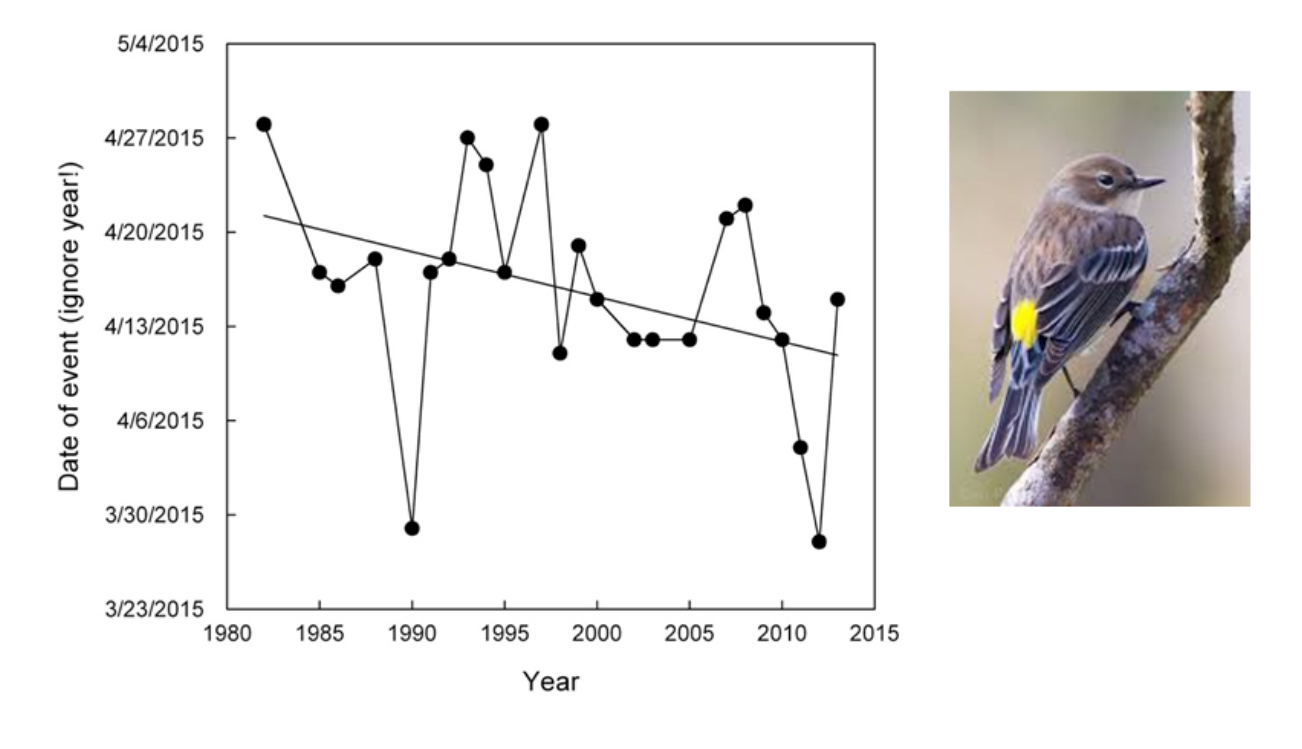
- Birds = 45
- Butterflies = 41
- Plants = 140



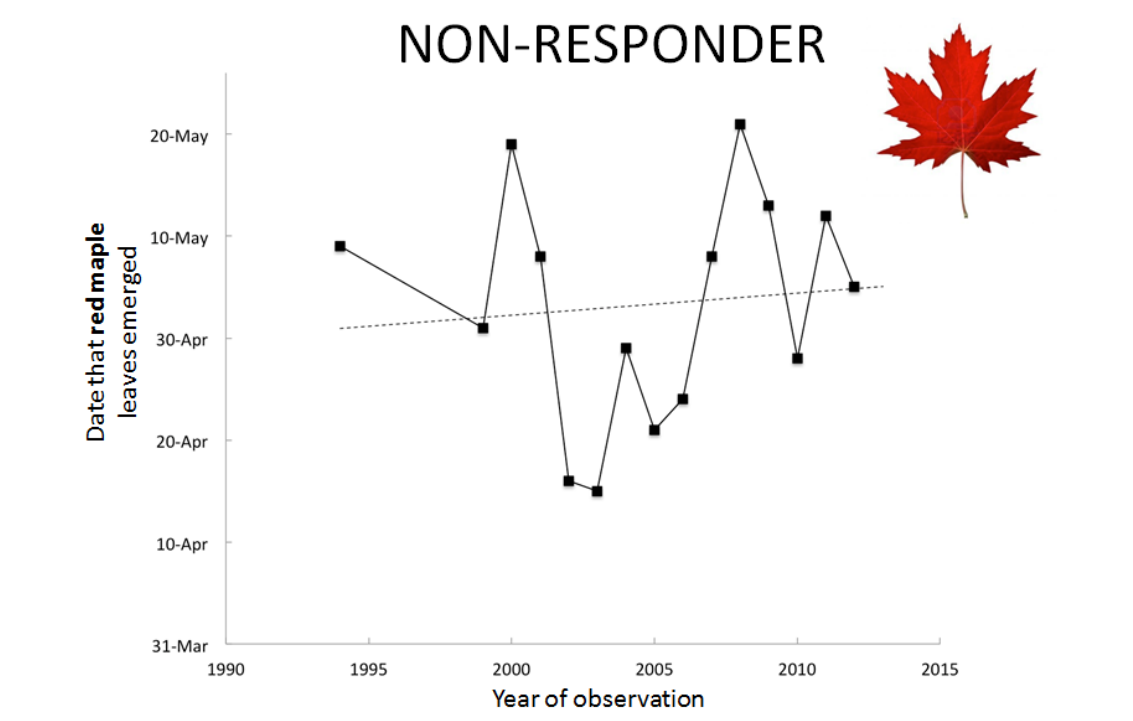
Sandhill Crane arrival



Yellow-rumped Warbler arrival



Not all species are responding as expected.



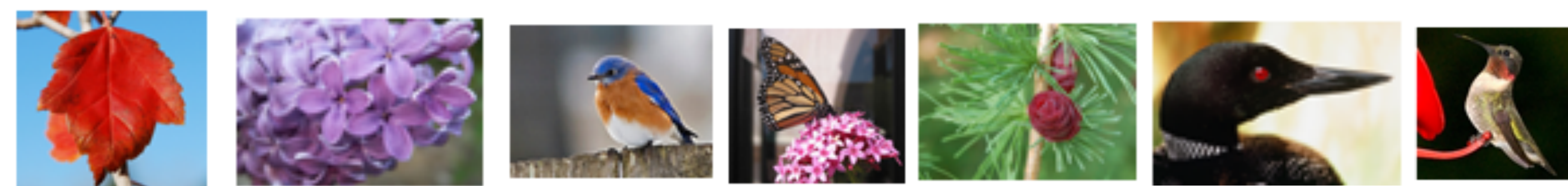
Want to become one of the two hundred?

Join the Minnesota Phenology Network (MnPN) and USA-NPN Nature's Notebook and start observing in your backyard.

Next MnPN phenology observer training workshop: UMN Landscape Arboretum, Oct. 29th, 2015. Registration via MN Master Naturalist

MORE INFORMATION:

- Minnesota Phenology Network: <http://usanpn.org/mnnpn>
- Extensive resources and support from USA-NPN: <http://usanpn.org>.
- Contact us: Stephan Carlson, carls009@umn.edu or Rebecca Montgomery rebeccam@umn.edu



Minnesota's seven focus species: We encourage observers to focus on these species to the extent it is practical: Red maple, *Acer rubrum*, Common lilac, *Syringa vulgaris*, Eastern bluebird, *Sialia sialis*, Monarch, *Danaus plexippus*, Tamarack, *Larix laricina*, Common loon, *Gavia immer*, Ruby-throated hummingbird, *Archilocus colubris*.

