

## **AT Phenology Monitoring Project Goals and Objectives**

**REVISED JULY 2013**

Purpose of the Project: Aligning and coordinating existing phenology programs along the Appalachian Trail (those led by AMC, ATC, and various NPS units) and adopting common protocols and tools.

### Science/Monitoring Goals:

1. Provide information about baseline phenology of selected indicator species that permits tracking of future change in phenology and allows resource managers to make informed decisions.
2. Ensure appropriate and high-quality information is collected so that analysis reveals how changing phenology may be correlated with climate change

### Science/Monitoring Objectives:

1. Select a list of key species that are suitable for phenology monitoring along the Appalachian Trail. The species will be readily identifiable by trained observers, exhibit observable phenophases, be broadly distributed along the trail, and be of interest to resource managers.
2. Establish long-term transects along elevational and latitudinal gradients of the Appalachian Trail.
3. Identify climatic data (and locations) that are needed in order to understand the relationship between phenological and climate change along the Appalachian Trail.

### Education/Outreach Goals:

1. Increase public understanding of phenology and the relationship between phenological patterns and climate change.
2. Improve public science literacy via hands-on participation in citizen science.

### Education/Outreach Objectives:

1. Engage a diverse public by promoting citizen science opportunities through Trail Clubs, Trails to Every Classroom, AT Communities, Junior Ranger, and other existing programs.
2. Establish monitoring sites along the A.T. that are accessible and culturally relevant to key audiences.

### Programmatic Goals:

1. Promote collaborative science among NPS and other partners, with an emphasis on engaging the public in data collection.
2. Build capacity for, and interest in, citizen science related to climate change and natural resources along the length of the Appalachian Trail.

### Programmatic Objectives:

1. Define, agree on, and share common tools, techniques, and approaches to phenology citizen science.
2. Expand the community of partner organizations who can use and contribute to the scientific database, and who can engage the public in citizen science related to phenology along the Appalachian Trail.
3. Identify and pursue additional sources of funding to sustain a coordinated phenology monitoring program along the Appalachian Trail.

### **Species List**

#### Trees:

##### *Primary (For trail-long S-N transect):*

Acer rubrum, Red Maple  
Acer saccharum, Sugar Maple  
Quercus alba, White Oak  
Quercus rubra, Northern Red Oak

##### *Secondary (For local comparisons):*

Prunus pensylvanica, Pin Cherry  
Cornus florida, Flowering Dogwood  
Betula alleghaniensis, Yellow Birch  
Fagus grandifolia, American Beech

#### Shrubs and Herbaceous:

Claytonia virginica, Spring-Beauty  
Maianthemum canadense, Canada Mayflower  
Podophyllum peltatum, May-Apple  
Trillium erectum, Erect Trillium  
Trillium undulatum, Painted Trillium  
Viburnum alnifolium (=lantanoides), Hobblebush

#### Animals:

Dendroica caerulescens, Black-Throated Blue Warbler  
Dendroica virens, Black-Throated Green Warbler  
Troglodytes hiemalis, Winter Wren  
Poecile atricapillus, Black-Capped Chickadee  
Malacosoma americanum, Eastern Tent Caterpillar (tents) - Pin Cherry and other host trees  
Pseudacris crucifer, Spring Peeper (chorus) - not in Smokies  
Rana sylvatica, Wood Frog (chorus) - not in Smokies