



Technical Notes

Periodic Updates on Current Technology
From Urban Forestry South

Date: March 16, 2010

Project: Urban Tree Phenology Observation and Data Collection

Summary: Phenology is the scientific study of periodic natural phenomena (e.g. flowering or first leaf appearance) as these events are influenced by climate. The observed events can serve to monitor the progression of seasons across a region¹, and assess longer-term change resulting from climate variations. Urban Forestry South has initiated the Urban Tree Phenology (UTP) project in cooperation with UCAR² and Project Budburst. UTP is an effort to increase the observation and collection of urban tree phenological events by urban forestry professionals to support research and urban forest management.

Objectives: Phenology data collection and resulting research frequently focus on long-term climate change and genetic studies. The UTP project supports these and other initiatives with multiple objectives:

- utilize the Budburst network to encourage collection of **urban-specific** tree phenology data
- expand the participation of tree phenology data collection by **engaging urban forestry professionals**
- engage other community tree activists in observation and reporting of tree phenophases
- investigate the role phenology data can play in **arboricultural & urban forest research**
- investigate the role knowledge of tree phenology can play in **urban forest management**
- increase awareness of the role that phenology data of all types plays in our lives

Background: Observation and collection of plant phenology data has been practiced for centuries in Japan, China and England. Today there is vast network of individuals worldwide recording plant, animal, bird, and insect observations. Planning for the National Phenology Network in the United States was initiated in 2004 with data collection efforts coordinated in 2008 and 2009. Project Budburst is a result of these efforts. Many regional and species-specific efforts preceded this organization. The current international phenology effort can best be summarized by this quote from the Wisconsin Phenological Society, "To really make phenology work for us we need to collect information on many natural events, over a large geographic area and over a long period of time."

Phases to Observe: Phenological observations vary slightly by species but generally include:

- Flowering events including the observation of flowers and/or pollen
- Leaf events including first leaf, fall color, and senescence
- Fruiting

Phenophase Field Guides are available for all of the targeted urban tree species to help you identify these plant stages. In addition, many species have detailed *Resource Pages* that include a map of the "last 100 observations".



Acer rubrum 'October Glory', March 15, 2010
34.0503986, -83.122922
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¹ See: <http://www.naturescalendar.org.uk/map/all.htm> for data intensive seasonal maps in the UK

² University Corporation for Atmospheric Research <http://www.ucar.org>



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Getting Started at www.UrbanTreePhenology.org: To get started, visit the UTP project page at Budburst (www.urbantreephenology.org) and view or download the *Helpful Materials*. There are four, short documents that will give you a better understanding of the project and your participation. Review the list of UTP species and select one of these, or select another species of importance in your community.

Things to consider when selecting a species and the individual tree you will be observing:

- Select a species that is commonly planted and an important component in your urban forest (native, exotic, or cultivar)
- Select a specific tree of this species that you see daily (if possible) or at least weekly
 - ✓ A tree in front of your home or office will be most convenient to observe
 - ✓ Or, a tree along your daily walking or jogging path
 - ✓ Avoid trees that you must “go out of your way” to observe, or that you see infrequently
- Select a tree that is in good condition, of any age (i.e. size)
 - ✓ Proper species identification is critical; record the cultivar if applicable and known
 - ✓ Trees in any stage of decline should be avoided
 - ✓ Avoid trees with obvious signs of damage from storms, construction, or improper management
 - ✓ List the phenophases that you will be observing with their approximate dates in your area (visit the *Budburst* species *Resource Page* or *Budburst* results and data links if necessary)
- Join UTP and register your location and species
- Initially, concentrate your efforts on a single tree (or maybe two)
 - ✓ In the weeks preceding an anticipated phenophase event, observe daily
 - ✓ Report promptly on-line
- Get others involved
 - ✓ Enlist Master Gardeners, Garden Clubs, Tree Board members, or college classes/students
 - ✓ Extend your reach to additional trees of the same species
 - ✓ Or, other common species in your community

Reporting Observations: Observation reporting is done on-line at www.urbantreephenology.org. A series of short instructional videos are available through Urban Forestry South. (<http://www.urbanforestrysouth.org/resources/urban-forestry-and-phenology>) A smartphone application is being developed to make reporting even easier.

Other Involvement: The Urban Tree Phenology project is in need of regional photographs of our primary species at various phenophases.

Additional Phenology Resources:

Budburst <http://www.budburst.org>
Nature’s Calendar <http://www.naturescalendar.org.uk/>
Phenology Networks http://www.usanpn.org/?q=node/49#phenology_networks
US National Phenology Network www.usanpn.org/
Live Oak Phenology Network <http://www.cbs.umn.edu/cavender/LOPnet/>

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