DATASET | PUBLISHED 2018 | urn:uuid:4917e71e-b4fc-4f18-9ca3-245d164f2317

The effects of chilling on bud burst in seven North American deciduous woody species

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Metadata: The_effects_of_chilling_on_bud_burst_in_seven.xml		EML v2.2.0	14 KB	3 views	Download (https://knb.ecoinformatics.org/knb/d1/mn/v2/object/urn%3Auuid%3A4917e71e-b4fc-4f18-9ca3-245d164f2317)
Budburst_Chill.csv	More info (/view/urn%3Auuid%3A4917e71e-b4fc-4f18-9ca3-245d164f2317#urn%3Auuid%3A0f17d39c-b1f2-43f0-9d76-4e5286325cb2)	text/csv	693 KB		Download (https://knb.ecoinformatics.org/knb/d1/mn/v2/object/urn%3Auuid%3A0f17d39c-b1f2-43f0-9d76-4e5286325cb2)

General

Identifier: urn:uuid:4917e71e-b4fc-4f18-9ca3-245d164f2317

Abstract: This dataset was collected to explore the impact of chilling duration on budburst and leafout of seven woody species dominant to forests in Eastern North America. Using branch clipping collected in the December 2015, we conducted a growth chamber experiment with four different chilling temperatures and three different durations of chilling. Following chilling, all samples received the same forcing and photoperiod conditions. The data consists of the day of budburst and leaflet for each individual, categorized using a version of the BBCH scale modified for these focal species.

Keywords: None

Keyword	Type
Phenology	
Chilling	
Forcing temperatures	
climate change	
daylength	
forest communities	
temporal niche	

Publication Date: 2018

People and Associated Parties

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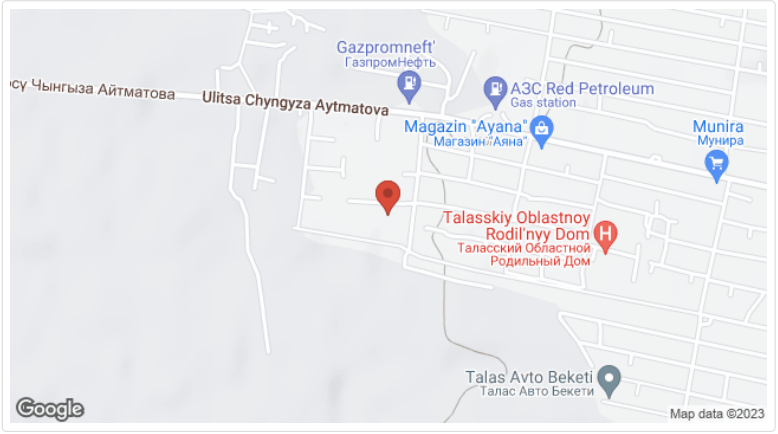
Geographic Region

Geographic Description	Harvard Forest, 324 N Main St, Petersham, Massachusetts, United States	
Bounding Coordinates	North	42.5314 degrees
	South	42.5314 degrees
	East	72.1900 degrees
	West	72.1900 degrees



(https://maps.google.com/?ll=42.5314,72.19&z=15)

Temporal Coverage

Date Range	Begin	2015-12-18
	End	2016-04-01

Taxonomic Range

General Coverage	We identified seven dominant woody plant species characteristic of deciduous forest in this area.	
Classification	Rank Name	Species
	Rank Value	Acer saccharum
Classification	Rank Name	Species
	Rank Value	Betula alleghaniensis
Classification	Rank Name	Species
	Rank Value	Hamamelis virginia
Classification	Rank Name	Species

Rank Value Ilex mucronata

Classification
Rank Name Species
Rank Value Quercus rubra

Classification
Rank Name Species
Rank Value Viburnum cassinoides

Classification
Rank Name Species
Rank Value Fagus grandifolia

Methods & Sampling

Methods

Step 1

Description: This experiment was conducted during the winter of 2015/2016, with sampling in December and a subsequent growth chamber experiment. Seven dominant woody plant species were identified and up to ten individuals of each species tagged with the Harvard forest. Branch clippings of approximately 30-45 cm in length were collected, with multiple clippings from a single individual taken when possible. Samples were immediately placed on ice in coolers and transported back to the lab facilities where they were stored in complete darkness in a walk-in cold room.

Step 2

Description: Each sample was randomly assigned to treatments and placed in Erlenmeyer flasks of water at the start of the experiment. The water was changed every 2-3 weeks during chilling and then weekly during the forcing period of the experiment. During the changing of water, approximately 1 cm was clipped from the terminal end to prevent the closure from callus formation.

Step 3

Description: Samples were randomly assigned to the treatments of chilling temperatures, with temperatures of either 1 °C day and night, 2 °C day and night, 4 °C day and night, or 8 °C day and night, and durations, with the chilling periods lasting either 0, 16, or 32 days.

Step 4

Description: Following the respective chilling treatment periods, conditions were changed to replicate forcing conditions, with a daily cycle of 20 °C during the day and 10 °C at night, with a 12 hour photoperiod.

Step 5

Description: Stages of bud burst were scaled using a modified version of the BBCH scale (doi:10.5063/F1M906MP). Observations were made for each sample ever 2-3 days.

Step 6

Description: Chill portions were calculated according to Fishman et al. (1987) and growing degree hours calculated according to Anderson et al. (1986).

Data Table, Image, and Other Data Details

Other Entity

Entity Name: **Budburst_Chill.csv**

Download (https://knb.ecoinformatics.org/knb/d1/mn/v2/object/urn%3Auuid%3A0f17d39c-b1f2-43f0-9d76-4e5286325cb2) Data Object

Type: text/csv

Description: Day of bud burst and leafout for seven woody plant species in eastern North America.

Attribute(s) Info:

VARIABLES

- **Date**
- **id**
- **sp**
- **rep**
- **ind**
- **twig**
- **Row**
- **Column**
- **Treat**

Name: Date

Label:

Definition: Day observation

Storage Type:

Measurement Type: dateTime

chill **Time** **Term.fl** **Lat.fl** **Term.lf** **lat.lf** **Comments** **Observer** **day1** **day2** **day3** **day** **chillport**	Measurement Domain	**Format** YYYY-MM-DD **Precision**
	Missing Value Code	
	Accuracy Report	
	Accuracy Assessment	
	Coverage	
	Methods & Sampling	

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