



«Hazel campaign 2011» – Developing a web-based plant phenological database, data collection and visualisation tool in Switzerland

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Species-specific observations is one important way to understand the impact of environmental change on seasonal development of plants and animals. A plethora of records have been analysed and reveal strong relationships with temperature, light and – in some regions – rain. But plant phenology is also a prime example for informing the public about possible impacts of climate and environmental change on the biosphere. Moreover, plant phenology has been recognized as a very valuable tool to increase science literacy of students from kindergarden to high school (K-12) and universities (e.g. «project budburst», www.projectbudburst.org). In Switzerland, there is a number of institutions that have been collecting plant phenological data for decades including the Swiss Plant Phenological Network (MeteoSwiss), the BernClim network (University of Bern), the Forest Phenology Network (University of Bern, MeteoSwiss, WSL) and GLOBE Switzerland. However, there is no web-based data collection tool at present to provide real-time data for visualisation and now-casting of plant phenological phases.

In late 2010, GLOBE Switzerland (Global Learning and Observations to Benefit the Environment, www.globe-swiss.ch, www.globe.gov) initiated the «Hazel campaign 2011». Primarily this project focuses on K-12 students to record plant phenology as a part of the science education and learning about environmental change. The campaign provides several tools to students and teachers that are also open for the general public and observers of existing networks. We selected hazel (*Corylus avellana*) that is wide-spread across altitudes and is simple to recognize and observe for layman of all ages. First, the project builds a web-based plant phenological database for Switzerland that is compatible with archives of existing networks and programs. Consequently, collected data can be merged with ongoing networks (GLOBE International database, Swiss plant phenological network, PEP-725 database, Swiss forest phenology network). Second, a web-interface offers the collection of phenological observations. The protocol includes event and status observations as well as phenometric measurements of leaf-length in spring and leaf colour changes in autumn. Third, real-time visualisation of observations are provided for instant feedback and spatial comparisons. In addition to traditional protocols additional information and teaching material was assembled to adapt to students of all ages and enhance data. Here, we present the layout and motivation of the project together with first results of the hazel data collection. Web-based records are compared with data from traditional collection tools. Finally, we lay out future options how to make best use of the collected data in order to optimize follow-up campaigns.

<http://www.globe-swiss.ch/de/Angebote/Kampagnen/Hasel/Teilnehmen/>