University of Wisconsin Milwaukee
UWM Digital Commons

Field Station Bulletins | UWM Field Station

Fall 1969

Phenology - the layman's science

Forest Stearns
University of Wisconsin-Milwaukee

Follow this and additional works at: https://dc.uwm.edu/fieldstation_bulletins

 Part of the Forest Biology Commons, and the Zoology Commons

Recommended Citation
Stearns, F. 1969. Phenology - the layman's science. Field Station Bulletin 2(2): 6-7.

This Article is brought to you for free and open access by UWM Digital Commons. It has been accepted for inclusion in Field Station Bulletins by an authorized administrator of UWM Digital Commons. For more information, please contact open-access@uwm.edu.

PHENOLOGY – THE LAYMAN'S SCIENCE

In the Spring issue of the *Field Stations Bulletin* Dr. Salamun wrote of the pleasure to be gained from observation of natural events, the arrival of the first warblers, the flowering of the blood root, the beginning of leaf development or the sight of the first bumblebee. Fall events are of equal interest although we prefer to pay less attention to these events which mean the onset of winter. Many natural events still register (perhaps imperfectly) in the urban brain. Like it or not, we are all phenologists--biochemist, biologist and bartender all take note and glory in the vast flights of geese while artisan and artist, psychologist and plumber, club woman and clerk alike note the onset of leaf color.

Phenology is embedded in human folklore and culture but it is also a science--a science of the relationships between biological events and environmental changes, chiefly those of season and weather. As a science phenology is closely related to ecology, physiology, meteorology and genetics. Agriculture, forestry and game management are among the applied sciences that depend heavily on phenological knowledge.

Most of the observations recorded by the Wisconsin Phenological Society are made on wild species which occur in close proximity to the homes of members. Efforts are made to choose uniform exposures and to obtain well defined observations. However, this is difficult to do on a statewide basis. A non-biological parameter, the depth of frozen soil, is relatively easy to standardize but the grave diggers who provide these reports work in a variety of soil and moisture conditions which in turn influence their observations.

In Europe, phenological gardens have been established to obtain precise data relative to the formation of leaves and flowers, development of fruit and leaf abscission in the fall as well as many other events. Plants of uniform genetic orgin are observed and often observations are closely correlated with weather observations. In North America phenological information on plants, other than major corps, is relatively sparse. There were a few early studies; more recently several extensive networks for observations on lilac have been developed in the Northeast and Northwest. Airborne pollen and spores have been recorded for some years but insufficient data are available to relate the airborne materials to time of release. Likewise the arrival and disappearance of migrating birds have been observed and studied for many years. Yet the effect of weather on the timing of other important avian events, egg laying, hatch and moult, etc. has received relatively little attention.

The International Biological Program is especially interested in the relationship of the timing of biological events to productivity. Understandably, the dates on which buds open, the duration of the vegetative period, the time of fruit development and finally of leaf fall are events closely related to plant productivity. Similarly the time of birth and length of juvenile period, etc. are related to productivity and to survival in wild animals and birds.

The United States International Biological Program is considering a network of benchmark stations at which both phenological and climatological data would be obtained. A variety of plant species, vegetatively propagated for uniformity, would be planted at each network station. Indiana now has a network of 11 such stations designed to procure precise phenological data. Plants under observation include lilac, honeysuckle, indiangrass, spirea and big bluestem grass.

The UWM Cedar-Sauk Field Station is one of several locations at which such a benchmark station might be established. The Field Station has land and talent for observation; absent at present are funds for essential climatological instrumentation. Climatological data although obtained to investigate phenological relationships would be valuable in many other field station studies. Phenological observations at benchmark stations will be reported to a US phenological network and each station will receive in return a summary of data from other stations.

The value of observations made in a specific garden or woodlot may increase rather than diminish if benchmark stations are established. The nuances of microclimate that influence plant and animal development are too fine to be delimited by a thin network of instrumented stations. Local observations, even of relatively brief duration, become more useful when they are related to the network longterm record. Climatic and phenologic data from the benchmark network. supplemented by geographically intensive observations by many observers, will provide the facts necessary to make useful phenologic maps and to analyze the mechanisms of phenologic response.

Phenology is a quiet science which claims no specialists. Observers represent many disciplines and maintain their records for some specific purpose--to forecast the advent of a plant disease, to decide when to attempt pollination of an interspecies hybrid, to determine the date at which the whitetailed deer shift to a woody diet,--or for the edification and enjoyment of the observer. The need to record natural events is increasingly apparent in many fields and observers interested in a range of plant and animal species are needed to provide a spectrum of information useful for forecasting purposes. The Wisconsin Phenological Society will welcome your participation.

NOTE: For membership in the Society contact the Secretary,

Mrs. K. Lettau
Atmospheric and Space Science Building
The University of Wisconsin
Madison, Wisconsin 53706

Forest Stearns
UWM Department of Botany