THE ALDO LEOPOLD FOUNDATION

Fostering the Land Ethic through the legacy of Aldo Leopold

APPLYING HOPKINS' LAW

Andrew D. Hopkins was an American entomologist who in 1889 described the relationship of elevation, latitude, and longitude to seasonal events. Unless otherwise noted, the dates in the Aldo Leopold Foundation's Phenology Calendar reflect data collected primarily in south-central Wisconsin. To apply these dates to a different area, apply Hopkins' Law, which states that phenological events vary at the rate of 1 day for each 15 minutes of latitude, 1.25 days for each degree of longitude, and 1 day for each 100 feet of altitude. This means there is an approximate 22-day difference between Wisconsin's southern border with Illinois and the northern border with Michigan. There is also an approximate 10-day difference between the east and west portions of the state, due to Lake Michigan's cooling effect.

See below for a guide to using Hopkins' Law in various Midwestern cities.

LOCATION	COORDINATES	ALTITUDE	APPROX. CALENDAR ADJUSTMENT
Madison, WI	**43.0731° N, 89.4012° W**	**873'**	**0 Days (Baseline)**
Milwaukee, WI	43.0389° N, 87.9065° W	617′	4.5 Days
Green Bay, WI	44.5133° N, 88.0133° W	581′	10 Days
Eau Claire, WI	44.8113° N, 91.4985° W	787′	14 Days
Wausau, WI	44.9591° N, 89.6301° W	1207′	11 Days
Chicago, IL	41.8781° N, 87.6298° W	597'	10 Days
Des Moines, IA	41.5868° N, 93.6250° W	955'	12 Days
Minneapolis, MN	44.9778° N, 93.2650° W	866'	12.5 Days
Indianapolis, IN	39.7684° N, 86.1581° W	715'	19 Days