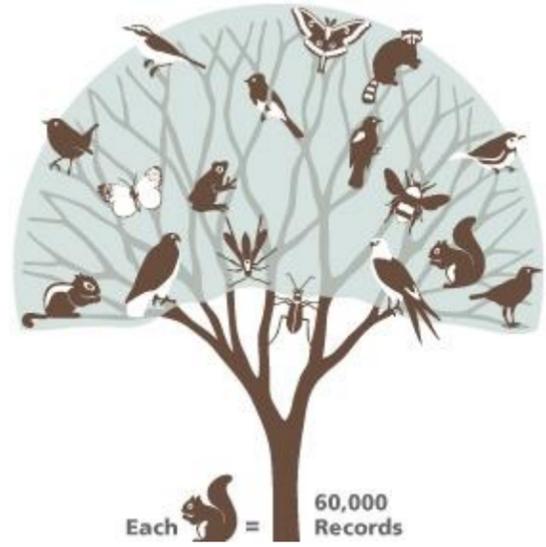


NATURE'S NOTEBOOK

A CITIZEN'S SCIENCE PROJECT

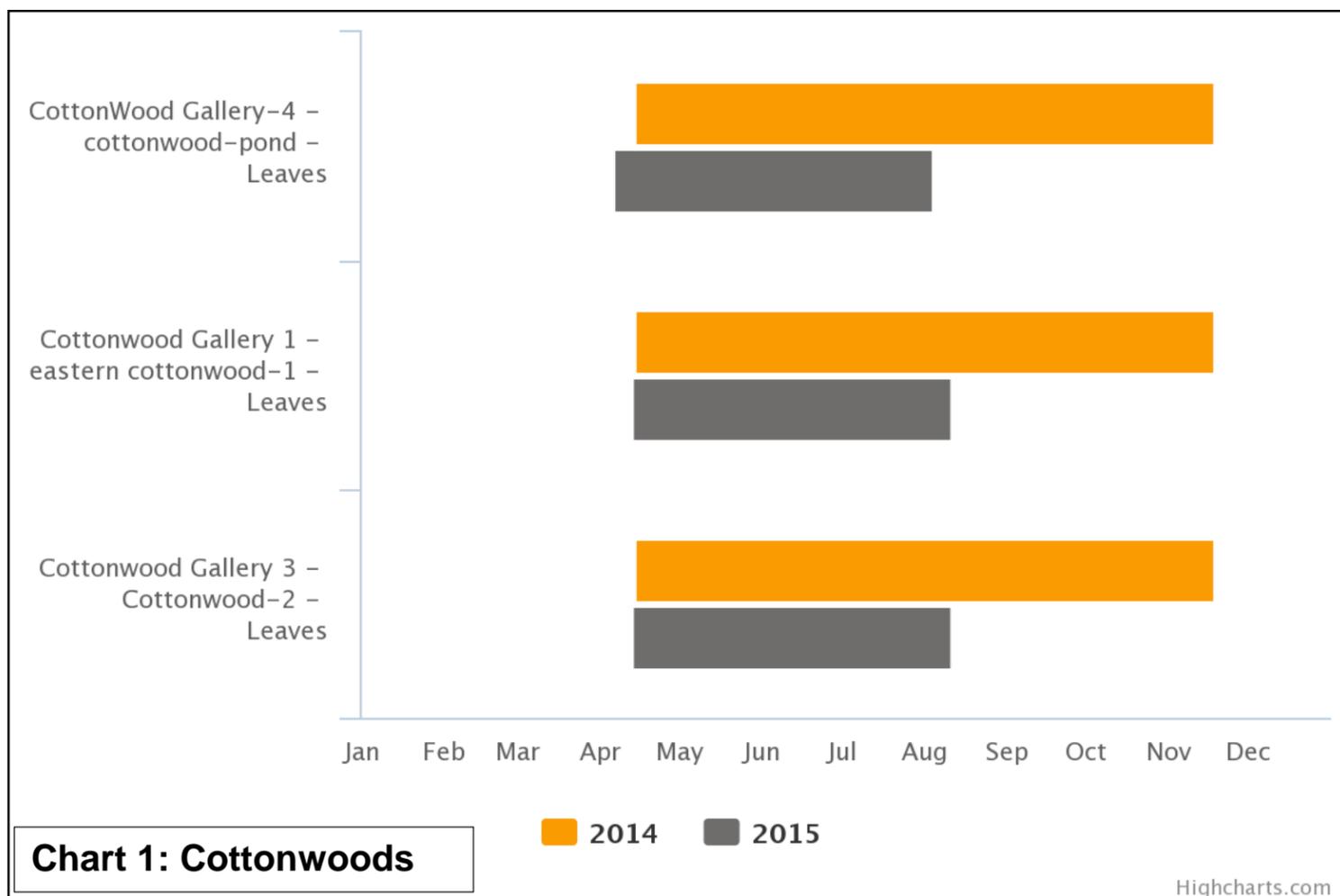


Connecting People with Nature to Benefit Our Changing Planet

Phenology is the study of the seasonal timing of biological events. By collecting data over a number of years, we can begin to see underlying trends in the cycles of life. Understanding phenology is especially important for climatology, wildland management, and agriculture.

TRACKING
Seasonal **CHANGES**
IN PLANTS AND ANIMALS

The Albuquerque Botanical Garden has teamed with the USA National Phenology Network (NPN) to monitor long-term changes in the Cottonwood Gallery. Volunteers use the Nature's Notebook website provided by the NPN to record weekly observations of a number of plant species at four stations.



Three cottonwoods (*Populus wislizenii*) are being monitored. Chart 1: Cottonwoods shows the periods when leaves were observed for each station. 2015 data is, of course, incomplete since it is the middle of the season. Note that the cottonwood by the pond at Station 4 leafed out a little earlier than the others this year (grey bars).

Nature's Notebook is a national, online program where amateur and professional naturalists regularly record observations of plants and animals to generate long-term data sets used for scientific discovery and decision-making.

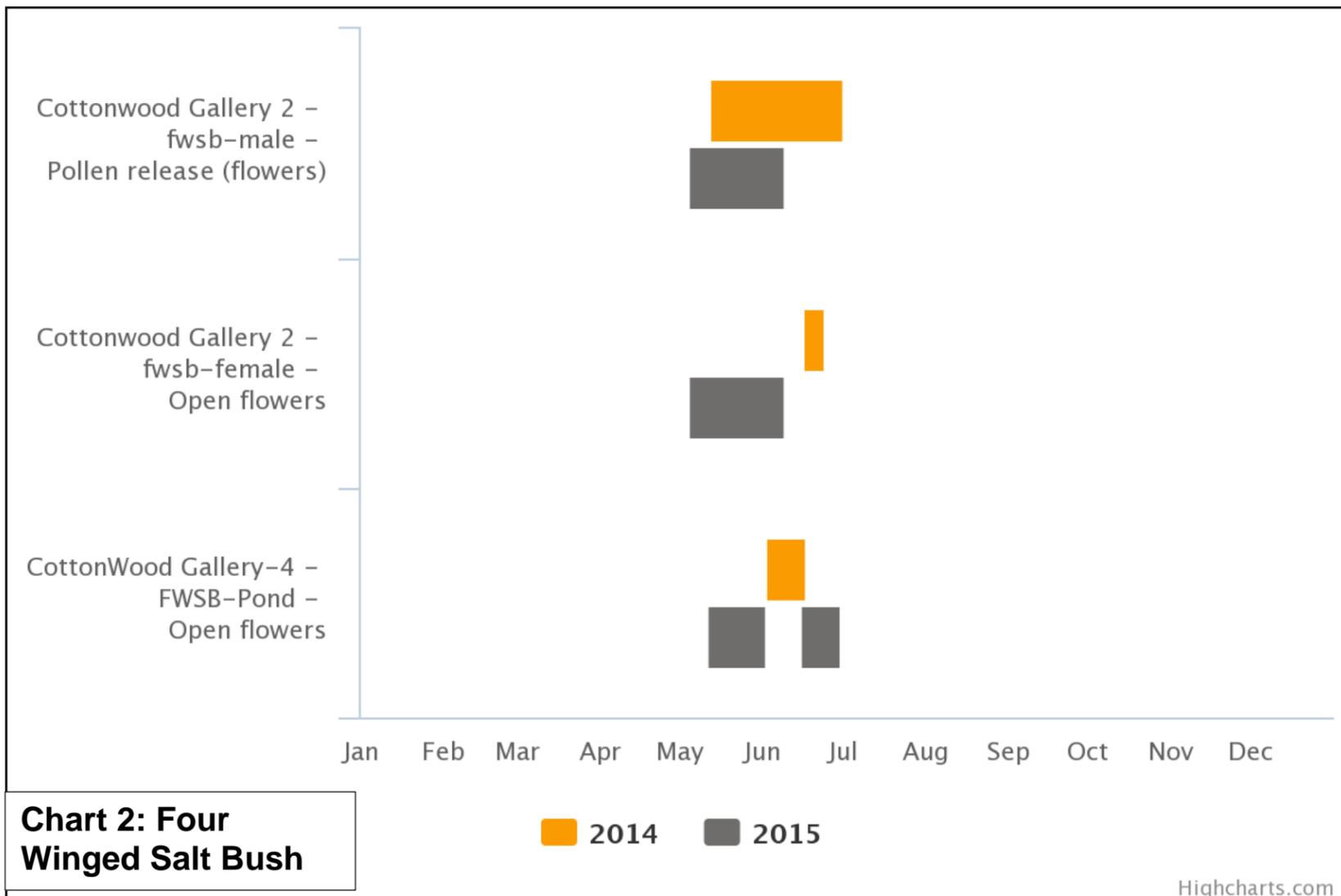


Chart 2: Four Winged Salt Bush

Four-winged salt bush plants (*Atriplex canescens*) are either male or female. We are watching one male and two female individuals. Flowering was slightly earlier this year (grey bars) than last year (orange bars), Chart 2. The *Atriplex* by the pond at Station 4 had a second bloom this year, perhaps due to our record rainfall in July.

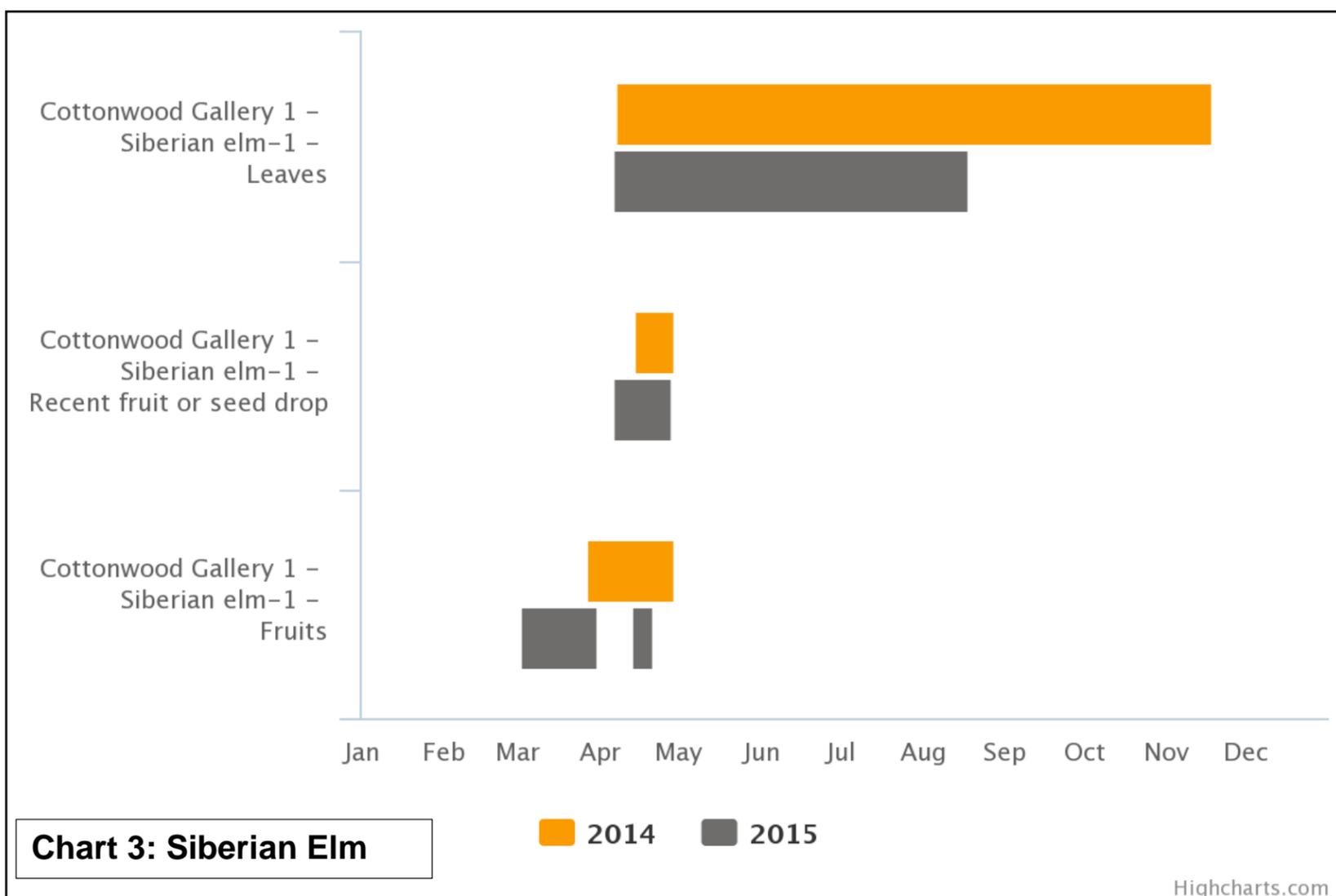


Chart 3: Siberian Elm

The Botanic Garden volunteers are collecting data on two Siberian elms (*Ulmus sibirica*) for NPN. Chart 3 shows data on leaves, fruits, and fruit drop. In Albuquerque everyone notices the elm fruits when the spring winds blow millions of the brown papery fruits into drifts in streets and patios. A month or so later, elm seedlings begin germinating, often as weeds in garden beds.

Nature's Notebook is a national, online program where amateur and professional naturalists regularly record observations of plants and animals to generate long-term data sets used for scientific discovery and decision-making. The Botanic Garden's phenology study is part of NPN's Rio Grande Phenology Trail, which includes the Santa Fe Botanic Garden and Valle de Oro National Wildlife Refuge. Together we create a regional picture of the timing of biological events that are included in the NPN's national database for use by researchers, educators, and the public.