



Citizen Science is Blooming

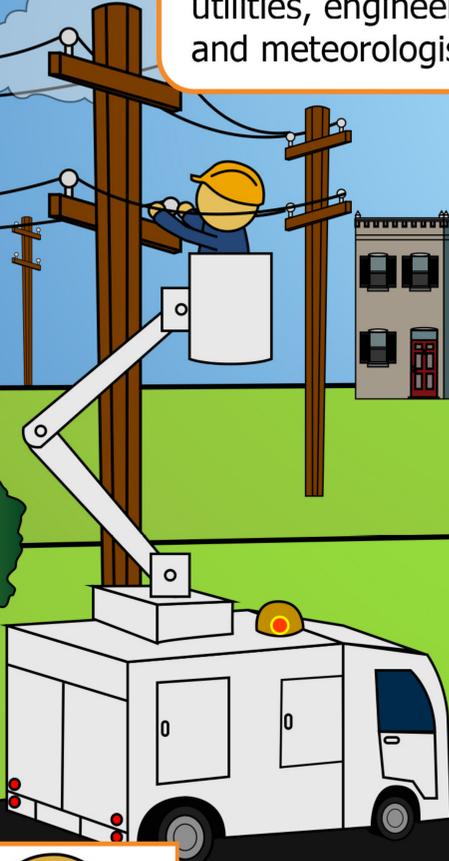
Make discoveries where you live.

Weather data collected by volunteers is used by emergency responders, city utilities, engineers, farmers, and meteorologists.



Volunteers tallied over 48 million bird observations—about one-fifth of all living bird species—during the 2019 Christmas Bird Count.

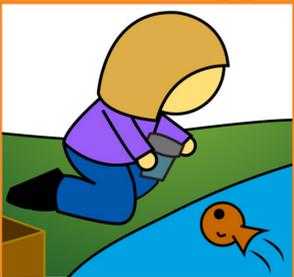
Clergyman John Campanius Holm took the earliest known weather observations in the United States in 1644-45.



Project Noah Volunteers have used their mobile phone app and website to contribute more than 1.5 million wildlife photos covering six continents.



Volunteers at a Bioblitz in Hawai'i Volcanoes National Park found 415 different species in 24 hours—including 73 threatened species and 22 species previously unknown there.

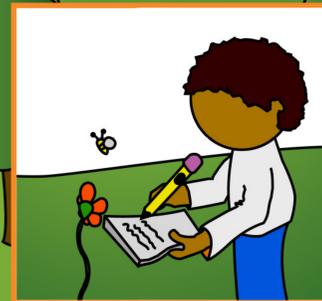


Participants tested water quality almost 16,000 times across 3,250 sites around the nation in 2018 for the World Water Monitoring Challenge.

Strength in numbers: citizen science volunteers can collect data on a larger geographic scale and over longer periods of time than is possible in more traditional scientific research.

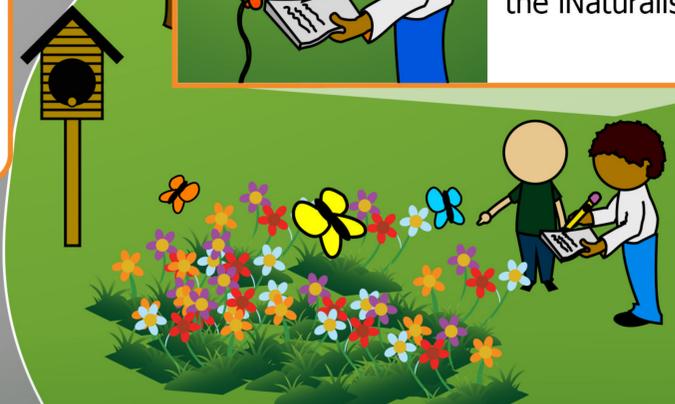


Data from Journey North project volunteers helped map the first detailed fall migration flyway of monarch butterflies in eastern North America.



A new nature observation is taken about every 45 seconds through the iNaturalist app.

More than 60 scientific papers have used data from the Cornell Lab of Ornithology's citizen science programs.



Nature's Notebook volunteers have contributed over 2.8 million observations on the timing of seasonal events like spring blooms.

Sources:

- Audubon
- Community Collaborative Rain, Hail and Snow Network
- Cornell Lab of Ornithology
- Howard, E. and A.K. Davis. *J. Insect Conserv* 2009; 13(3): 279-286
- iNaturalist
- National Geographic
- California Academy of Science

- National Park Service
- National Science Foundation
- National Weather Service
- Project Noah
- USA National Phenology Network
- World Water Monitoring Challenge
- Journal of BioScience