

Desert Refuge: Monarch Community Science Pilot

KIM PEGRAM, DESERT BOTANICAL GARDEN



**DESERT BOTANICAL GARDEN &
USA NATIONAL PHENOLOGY NETWORK**

Support from Monarch Joint Venture and USFS International Programs



Goal: Measure timing and presence of monarchs in Arizona

Used Nature's Notebook app

Pilot March-May 2022 with broader launch
October 2022 - present

Secondary Goal: Provide a platform for monarch community science that captures P/A data and requires lower time investment

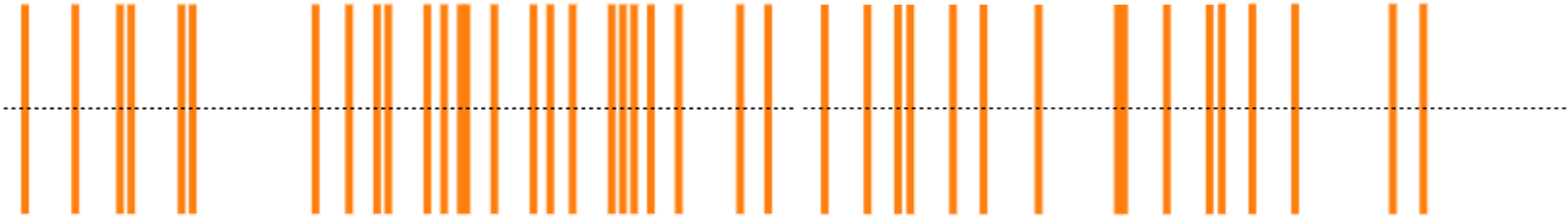
Participation and Retention

Southern and Central Arizona

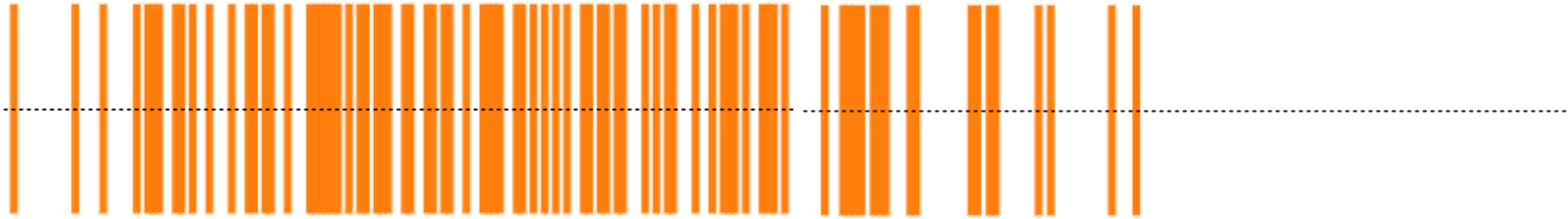
	1st pilot	MLMP	Current
Number of sites (at least one observation)	24	6	62
Sites only making one observation	25%	33%	19%
Sites observed at least 50% weeks	50%	16%	35%
Stayed active entire period	61%	N/A	62%

Adult Monarch Activity

Winter 2021-2022



Winter 2022-2023



Monarchs were present and active all winter

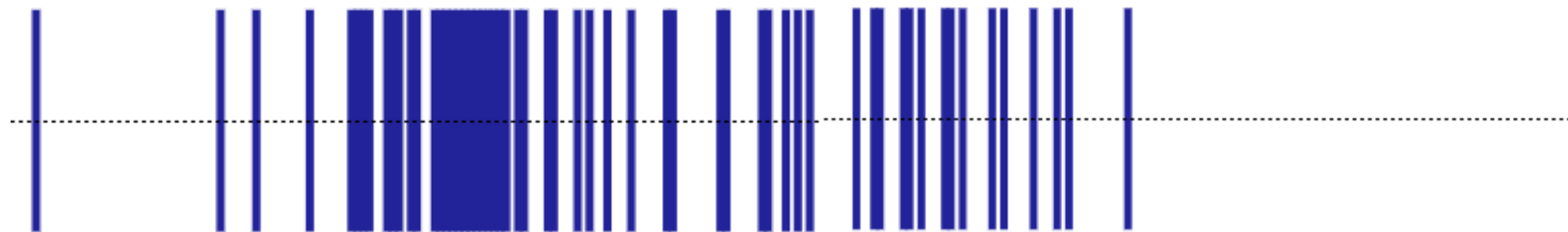
September October November December January February March April May

Monarch Breeding (Caterpillars)

Winter 2021-2022



Winter 2022-2023

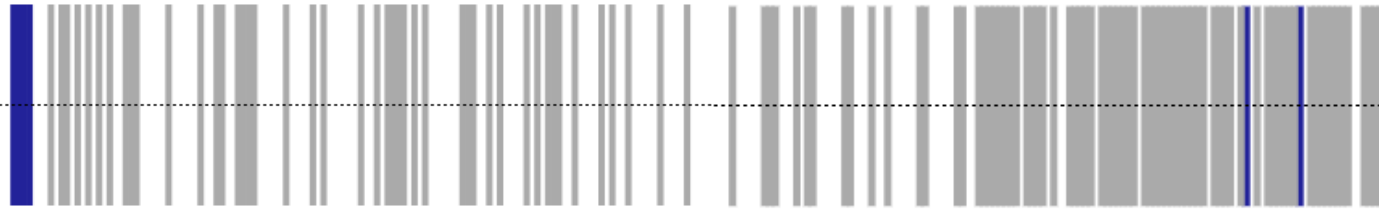


Monarchs were unexpectedly breeding all winter this year

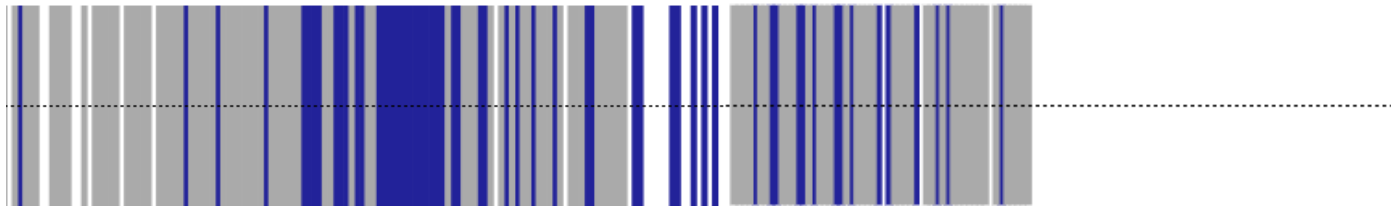
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All Caterpillar Observations

Winter 2021-2022



Winter 2022-2023



Absence data is important – lack of caterpillar presence not due to lack of observation

September October November December January February March April May

USA National Phenology Network, www.usanpn.org

Lessons

- Post Pilot Survey:
 - 100% participants felt like they had enough training, and nothing was confusing
 - 83% were encouraged to plant more milkweed or tell others about monarch conservation
- Nature's Notebook is an excellent platform for collecting monarch timing data
- Need more promotion to increase sample size and seeking funding for future years

