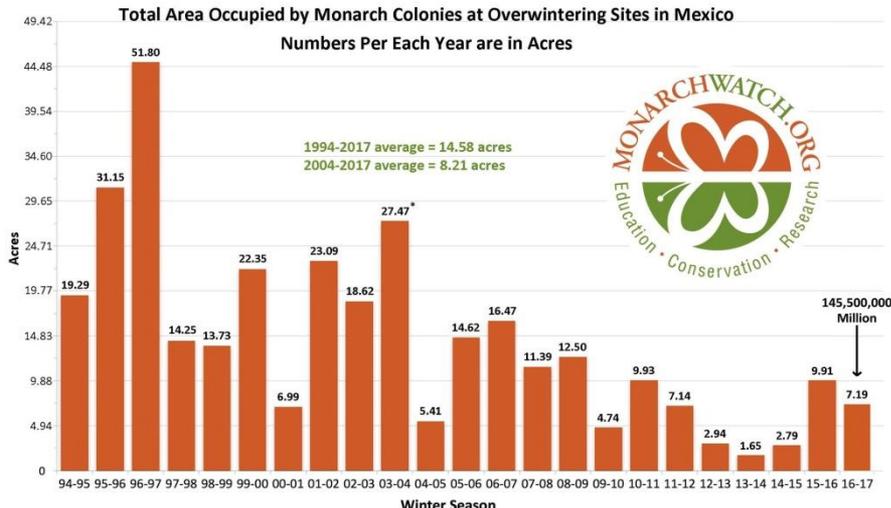


How the Hill Country Landscape Affects Monarch Butterfly Populations



Data for 1994-2003 collected by personnel of the Monarch Butterfly Biosphere Reserve (MBBR) of the National Commission of Natural Protected Areas (CONANP) in Mexico. Data for 2003-2017 collected by World Wildlife Fund Mexico in coordination with the Directorate of the MBBR.

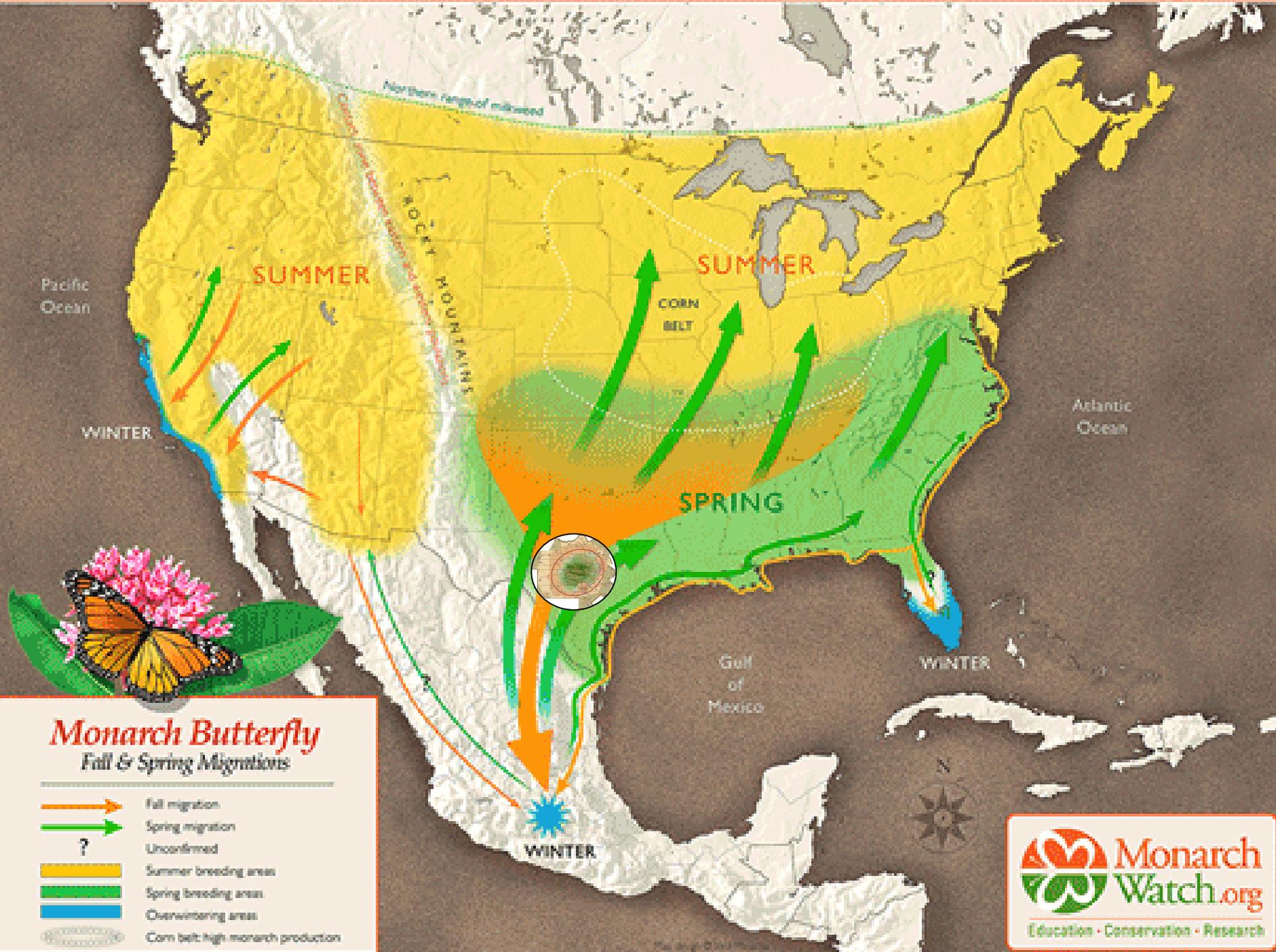
* Represents colony sizes measured in November of 2003 before the colonies consolidated. Measures obtained in January 2004 indicated the population was much smaller, possibly 8-9 hectares. CT

Hill Country Alliance
 Leadership Summit

September 21, 2017
 Cathy Downs

- ❖ Plant native milkweed and nectar plants and use native seed from the local ecoregion
- ❖ Promote mowing schedules which best benefit migration calendar
- ❖ Reduce herbicide use and eliminate pesticide use in pollinator areas
- ❖ Incorporate Citizen Science programs for continuity of land use

Monarch Habitat Best Practices



Monarch Butterfly Fall & Spring Migrations

-  Fall migration
-  Spring migration
-  Unconfirmed
-  Summer breeding areas
-  Spring breeding areas
-  Overwintering areas
-  Corn belt: high monarch production



**Monarch
Watch.org**
Education • Conservation • Research

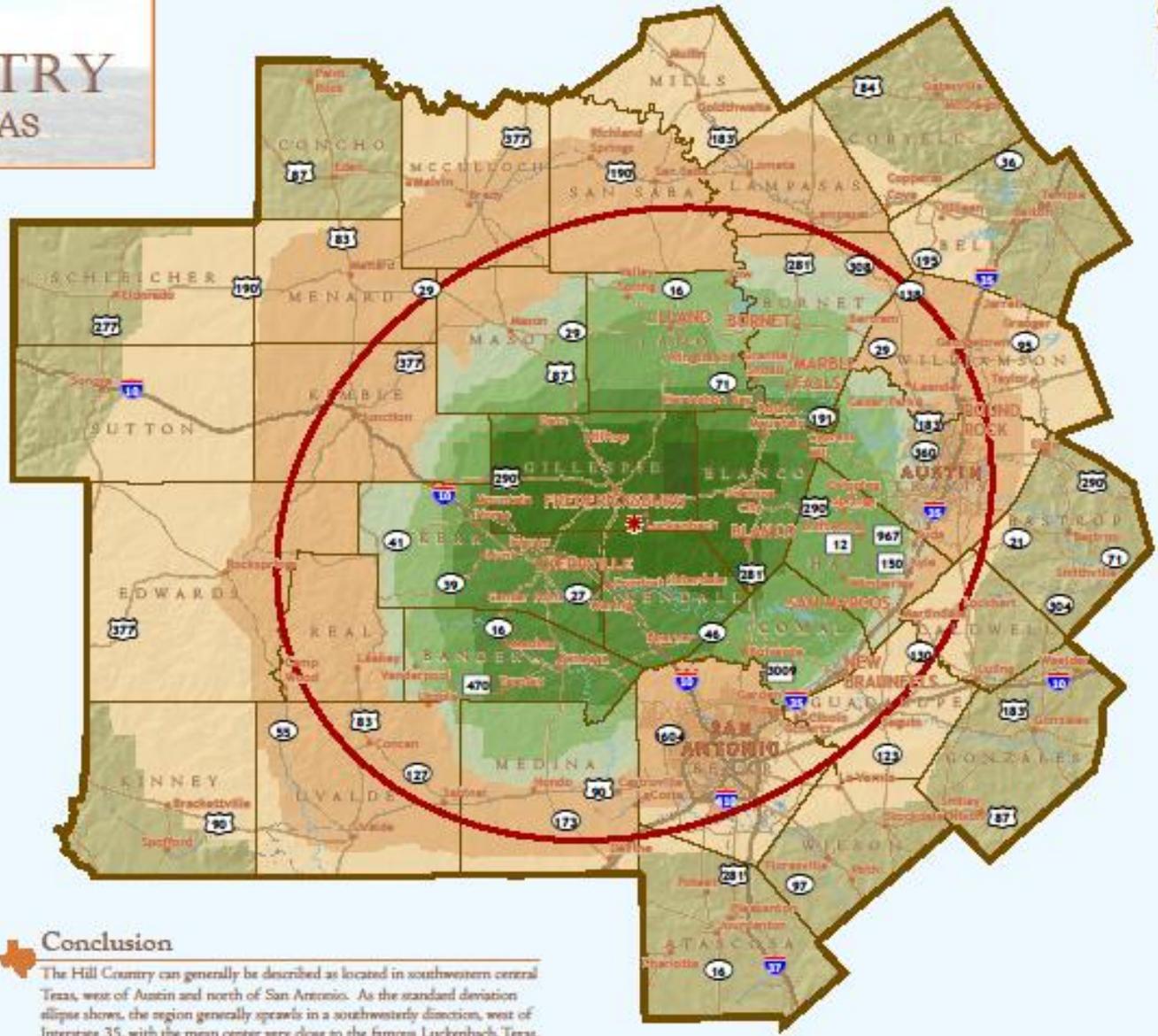
MAP OF THE HILL COUNTRY REGION OF TEXAS

Introduction

Many maps exist throughout Texas outlining the beautiful landscape referred to as the Texas Hill Country. Created by natural resource agencies, tourist companies, or even realtors, it is apparent that each agency or individual has its own personal definition of the Hill Country. Can a general consensus be reached on the boundary of this vernacular region? Where is the Texas Hill Country?

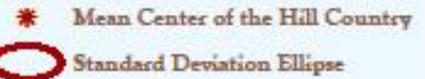
Methodology

Maps with the boundary of the Hill Country from 100 different sources were collected and imported into ESRI's ArcGIS software for geographic comparison. This data was overlaid to calculate the percentage of agreement for all areas between the selected maps. This map depicts areas in Texas where at least 25% of the selected maps were in consensus. Those areas with higher percentages give a better idea of the most agreed upon boundary of the Hill Country. Further analysis was conducted to determine the mean center and standard distribution ellipse of the region.

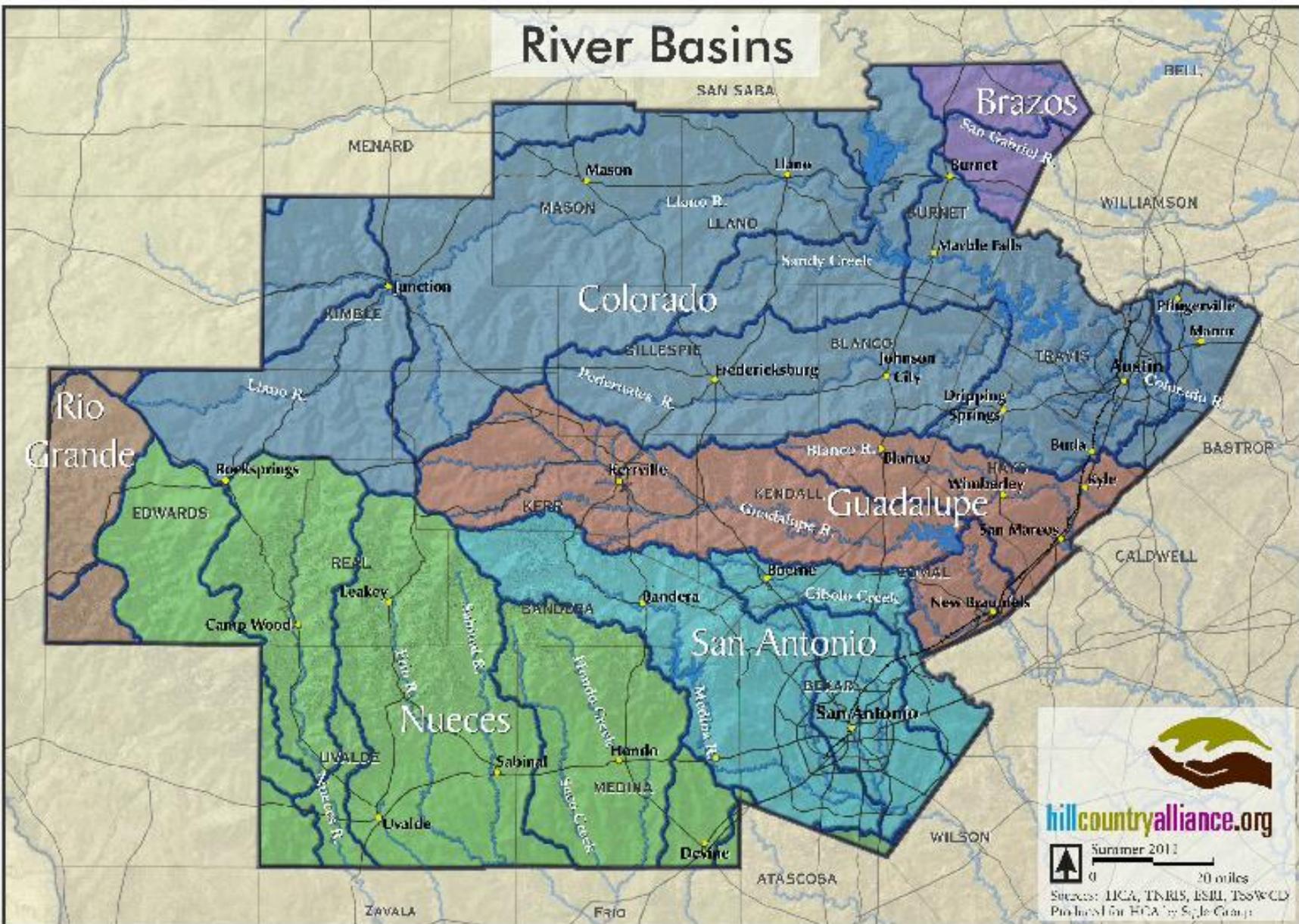


Conclusion

The Hill Country can generally be described as located in southwestern central Texas, west of Austin and north of San Antonio. As the standard deviation ellipse shows, the region generally sprawls in a southwesterly direction, west of Interstate 35, with the mean center very close to the famous Luckenbach, Texas. The heart of the Hill Country is considered to primarily be located in Gillespie and Blanco counties, along with portions of Kerr and Kendall counties.



River Basins



hillcountryalliance.org

Summer 2011
0 20 miles
Sources: TCA, TNRS, ESM, TSWCD
Produced for HCA by Seyle Group

- Milkweed in the Spring



- Nectar in the Fall



Hill Country Challenge - Provide the resources necessary to sustain migratory populations.

- Agriculture

- Rural

Local

County



State

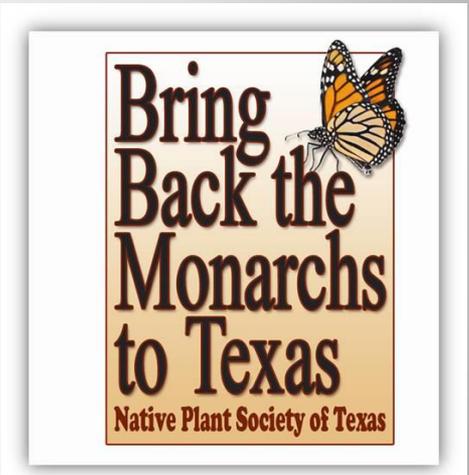
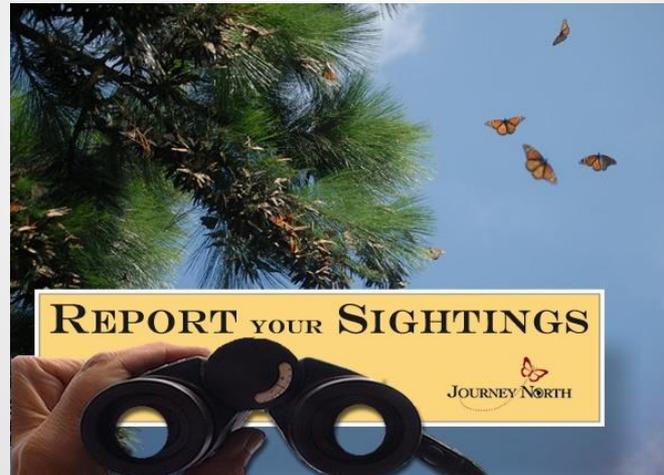
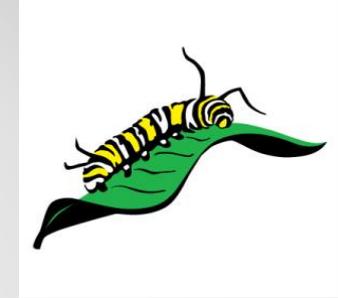
Region

- Urban

- Suburban



The University of Minnesota Monarch Lab



Educational resources

- ❖ Texas Master Naturalists
- ❖ Native Plant Society of Texas
- ❖ Texas Master Gardeners
- ❖ Texas Agrilife Extension Service
- ❖ Texas Parks and Wildlife Department
- ❖ NRCS

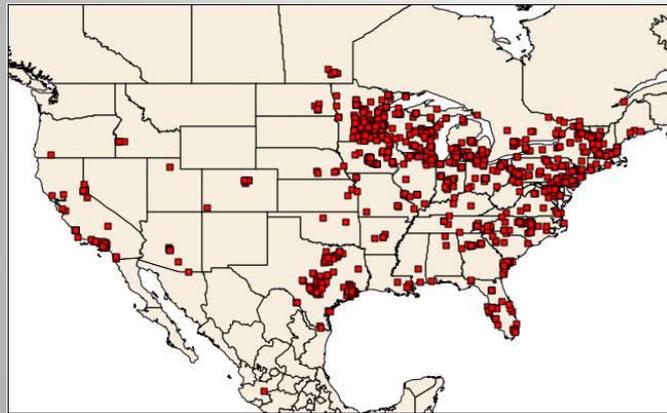
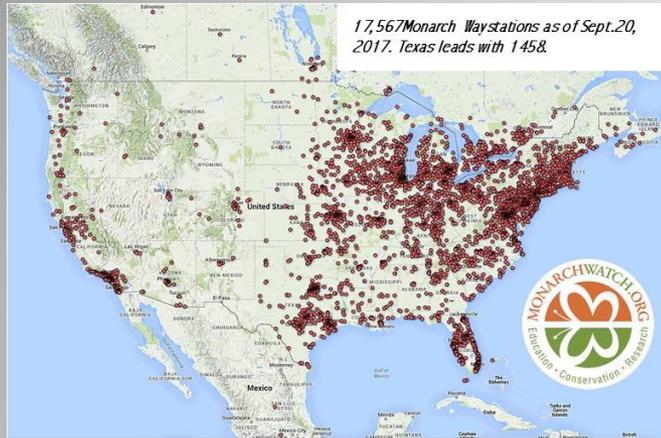
Local & county resources

- ❖ Bring Back the Monarchs to Texas (NPSOT)
- ❖ Monarch Wranglers (Texan by Nature)
- ❖ Habitat Evaluation Guide (NRCS)
- ❖ I Naturalist (Texas Parks and Wildlife)

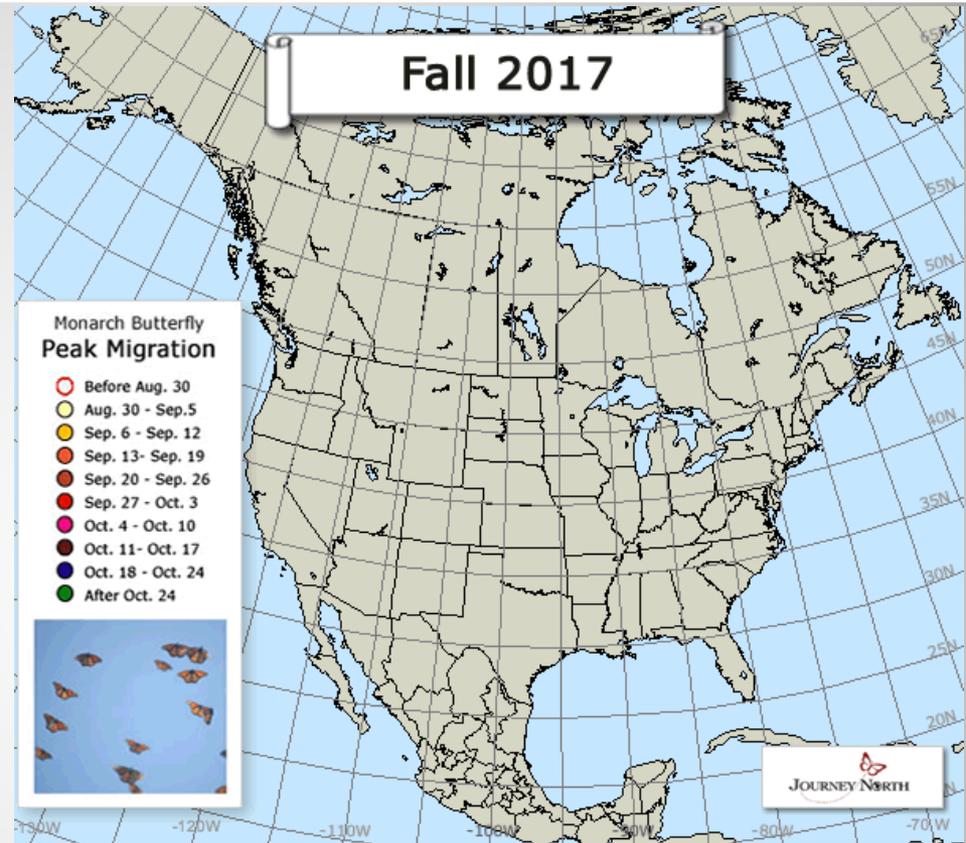
Regional & state resources

- ❖ National Wildlife Federation - Mayors for Monarchs Challenge, Monarch Heroes
- ❖ Monarch Watch - Milkweed Restoration Program
Schoolyard Garden Milkweed Program
- ❖ Monarch Lab - Monarchs in the Classroom

National resources



The Monarch Larva Monitoring Project
Supported by the University of Minnesota, the National Science Foundation, and the National Geographic Society



Hill Country representation in Monarch culture



Engage students and children

MONARCH & OTHER BUTTERFLY SITES

Compiled by Kip Kiphart, Revised March 7, 2016

1. Monarch Joint Venture www.monarchjointventure.org/
2. Monarch Lab www.monarchlab.org/
3. Monarch Larval Monitoring Project www.mlmp.org
4. Monarch Watch www.monarchwatch.org
5. Journey North www.learner.org/jnorth/
6. Monarch Health www.monarchparasites.org/
7. Monarch Butterfly in N.A. www.fs.fed.us/wildflowers/pollinators/monarchbutterfly/
8. Monarch Butterfly Fund www.monarchconservation.org/home/
9. Monarch Net www.monarchnet.org/
10. Texas Monarch Watch www.texasento.net/dplex.htm
11. Texas Milkweed Photos www.homestead.com/asclepias
12. USDA/NRCS Milkweeds of USA www.plants.usda.gov/core/profile?symbol=ASCLE
13. BONAP N.A. Plant Atlas www.bonap.net/NAPA/TaxonMaps/Genus/County/Asclepias
14. North American Butterfly Association www.naba.org
15. The Xerces Society www.xerces.org
16. Spica's World www.linknot.com/Magic-Garden/Monarch-eggs.htm
17. Bas Relief, LLC www.basrelief.org
18. Boerne NPSOT www.npsot.org/wp/boerne/community/bring-back-the-monarchs-to-texas/
19. Dallas County Lepidopterist's Society www.dallasbutterflies.com/
20. Butterfly Encounters www.youtube.com/channel/UCPPrXuU30BROmIJZN22AbTQ



Coming soon to a Frostweed near you - Thank You!

cdowns@monarchwatch.org