

Lower Rio Grande Valley

City Nature Challenge 2021

Overview & Results





The City Nature Challenge is about Connections: People with Nature + People with People

This year, the City Nature Challenge was about celebrating collaboration between cities and countries around the world. Here in the Lower Rio Grande Valley, folks from numerous organizations helped spread the word about the event. Thank you - together we helped get more than 100 new people involved in the City Nature Challenge!

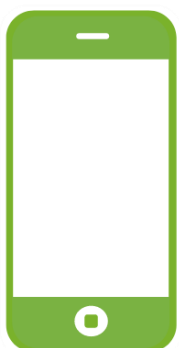
Exploring Nature in Urban Areas

Our towns and cities host a lot of life. All it takes is a walk outside to find it!



Sharing Observations with iNaturalist

iNaturalist is a nature program that helps people learn about nature. It's a crowdsourced identification system and organism occurrence tool available online ([inaturalist.org](https://www.inaturalist.org)) and as an app (iOS & Android).



Helping each other learn local Plants and Animals

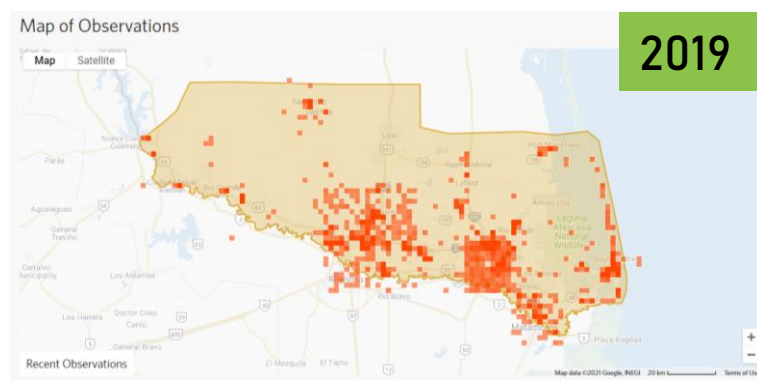
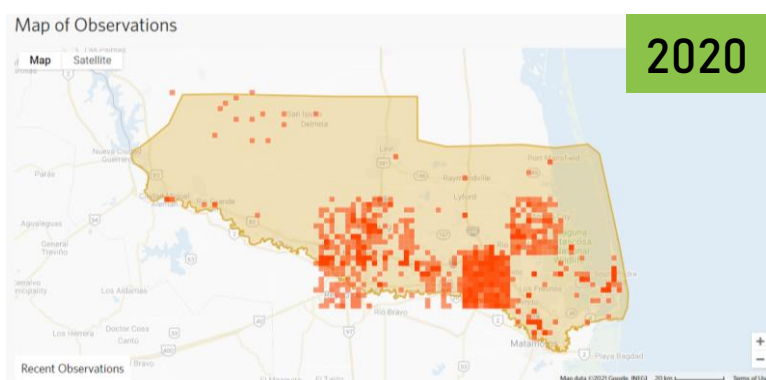
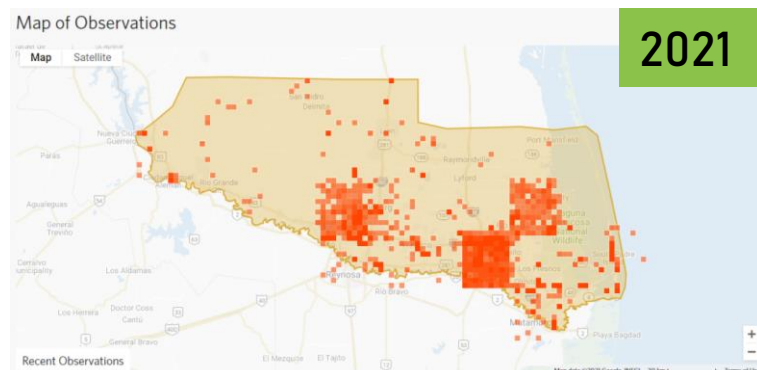
On iNaturalist, users can help each other by adding identifications to observations, and can add helpful tips – or comments – to each others' findings.



Our Community

Our City Nature Challenge area includes all four counties in the Lower Rio Grande Valley (LRGV) – Cameron, Hidalgo, Starr, and Willacy – and any observations added in that area during the event are automatically added to the project.

Year	2018	2019	2020	2021
Observations	8,755	8,773	7,499	7,806
Species	1,661	1,874	1,674	1,715
Identifiers	281	349	415	439
Observers	194	127	150	144

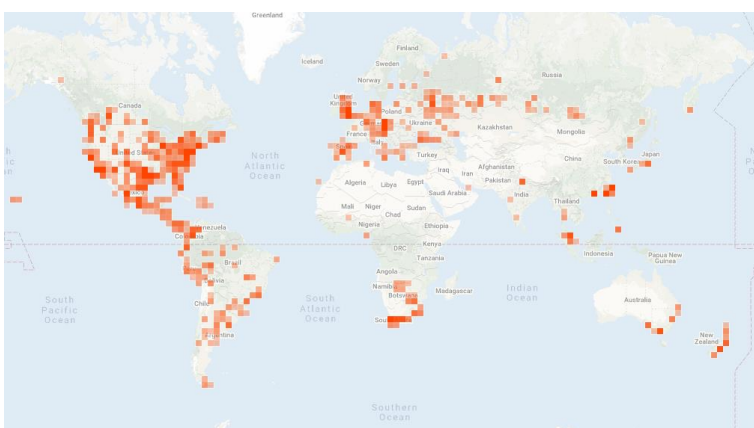


1 of every 7 iNaturalist observations in the LRGV have been uploaded during City Nature Challenges (2018-2021)

LRGV Observers make more observations of more species! On average, City Nature Challenge 2021: LRGV observers made 54 observations, with a rate of 1 species per 4.5 observations. This is more than double the CNC global average of observations per observer (24.4), with a rate of 1 species per 28 observations.

Around the World

We joined 418 other cities in 44 countries around the world during this year's City Nature Challenge. Despite the ongoing pandemic, there were over 10,000 more observers than last year—the best participation the CNC has had!



CITY NATURE CHALLENGE THROUGH THE YEARS

	2016	2017	2018	2019	2020	2021
Cities	2	16	68	159	244	419
Countries	1	1	17	28	40	44
Observations	19,800	125,000	441,000	963,000	815,000	1,270,000
Species	2,500	8,600	18,000	31,000	32,600	45,300
Observers	1,000	4,000	17,000	32,000	41,000	52,000

For the first time in CNC history, we made over one million worldwide observations in the four days of the challenge.

Tell Us About Your Observations

We asked City Nature Challenge observers which of their observations they liked the most, and why. Here's what they shared!



Common pauraque
@jzoeg

"Common pauraque because it was so well-camouflaged with its beautiful plumage and I love that we're fortunate enough to live in some of the species' northernmost range."

"Arachnids always excite me so seeing my first pseudoscorpion was great just after finding some Texas Recluses."



Pseudoscorpion
@jciv

This incredible capture of predation makes a great observation.



Crab spider
@candi12

"On the last day, I added 8 more spider species at Edinburg Wetlands, the best one being a bunch of baby Black Widows"



Black widow
@jciv

You can see all the observations at:
<https://www.inaturalist.org/projects/city-nature-challenge-2021-lower-rio-grande-valley>

Some of Our Favorite Observations

We went through some of the observations made by participants and picked a few that we wanted to showcase.



Black spotted newt
@drewrdavis

Texas Spiny Lizard
@frank_aguirre_outdoors



Mexican fan palm
@susanupton

Philadelphia vireo
@guyincognito



Ataxia crypta
@jciv



Spanish dagger
@dmit



You can see all the observations at:
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Border Paloverde (*Cercidium macrum*) @jciv

© Jciv - Do Not Copy
<http://photos.jciv.com/>



Prickly Pears (Genus *Opuntia*) @dmit



Northern Parula (*Setophaga americana*) @guyincognito



Common Mexican Tree Frog (*Smilisca baudinii*) @drewrdavis

The City Nature Challenge is About Documenting Biodiversity: The Who's, Where's, and When's of Plants and Animals

The City Nature Challenge adds hundreds of thousands of observations to iNaturalist, resetting the baseline for each year. This data is used by scientists and educators around the world, helping us better understand and conserve biodiversity.

iNaturalist & Education

"iNaturalist as an engaging tool for identifying organisms in outdoor activities."

Unger et al. 2020

-Journal of Biological Education

"Amphibian & Reptile Research Using iNaturalist."

Julie Wittman ([Protecthabitat](#))

iNaturalist & Science

"Using iNaturalist in Coverboard Protocol to Measure Data Quality: Suggestions for Project Design"

Wittmann, Girman, & Crocker 2019 – Citizen Science: Theory & Practice

"Citizen science can improve conservation science, natural resource management, and environmental protection." McKinley et al. 2017 –

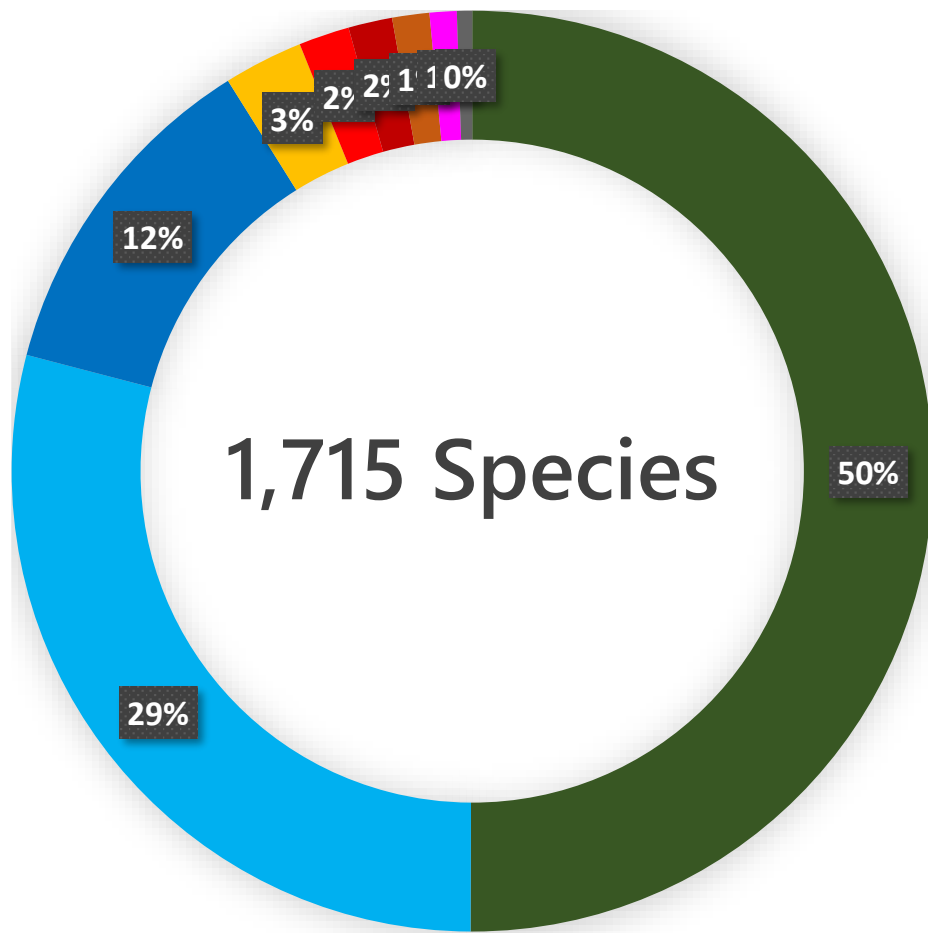
Journal of Biological Conservation

Learn about using iNaturalist and the CNC for education with the: [Teacher's Guide](#) & [Education Toolkit](#)

Check out the Center for Urban Ecology's [blog post](#) on the scientific uses of iNaturalist

What We Found in 2021

We documented more species in 2021 than we did last year!



1,715 Species

Organisms by Group

- Plants
- Insects
- Birds
- Arachnids
- Reptiles
- Mammals
- Other Animals
- Fungi
- Amphibians

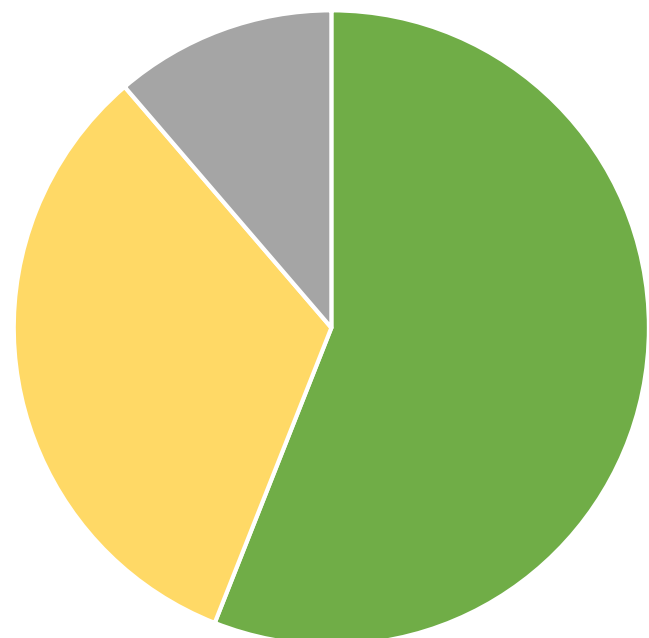
Data Quality

The building block of iNaturalist is the verifiable observation, an observation that has: a date, a location, photos or sounds, and is of a wild organism.

Verifiable observations are labeled as Needs ID until they either attain Research Grade status (the community agrees on species-level ID or lower, i.e. when more than 2/3 of identifiers agree on a taxon) or are voted to Casual via data quality assessment.

Once a week, Research Grade observations on iNaturalist licensed for reuse are shared with the Global Biodiversity Information Facility.

Observations by Status



Research Grade Needs ID Casual










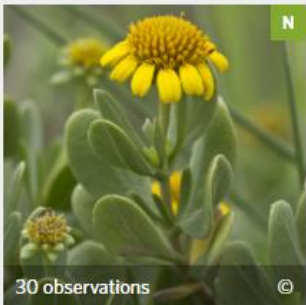


Plants

Half of all the LRGV's observations were of plants this year. This is in line with our three previous years; in 2020 plants made up 51% of all observations, in 2019 they made up 54% and in 2018 they made up 49%. You can explore all of this year's plant observations on [iNaturalist](#).

Top 10 Plant Families

Plant Family	Plant Common Names	# Observations
Asteraceae	Sunflowers, Daisies, Asters, and Allies	564
Fabaceae	Legume Family	466
Cactaceae	Cactus Family	190
Boraginaceae	Borage Family	176
Acanthaceae	Acanthus Family	130
Euphorbiaceae	Spurge Family	128

Top 10 Observed Species

 45 observations CC	 43 observations CC	 42 observations CC	 37 observations ©	 35 observations CC
Retama <i>(Parkinsonia aculeata)</i>	Honey Mesquite <i>(Prosopis glandulosa)</i>	Anacahuita <i>(Cordia boissieri)</i>	Anacua <i>(Ehretia anacua)</i>	Cenizo <i>(Leucophyllum frutescens)</i>
 34 observations CC	 32 observations CC	 30 observations ©	 30 observations ©	 29 observations CC
Common Sunflower <i>(Helianthus annuus)</i>	Silverleaf Nightshade <i>(Solanum elaeagnifolium)</i>	Sea Ox-Eye <i>(Borrichia frutescens)</i>	Sorrelvine <i>(Cissus trifoliata)</i>	Alkali Heliotrope <i>(Heliotropium curassavicum)</i>

Fun Finds

1. Devil's Bouquet (@bjones)
2. Hoary Pea (@bcfl14)















Insects

Insects made up 29% of our total observations this year. This is lower than last year at 31% but higher than both 2019 and 2018 at 26% of observations. You can explore this year's insect observations on [iNaturalist](#).

Top Insect Families

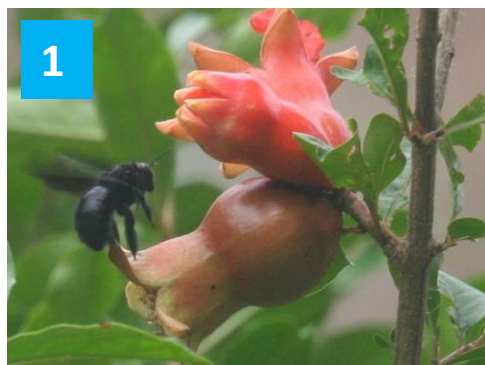
Insect Family	Insect Common Names	# Observations
Erebidae	Underwing, Tiger, Tussock, and Allied Moths	106
Geometridae	Geometer Moths	75
Culicidae	Mosquitos	72
Formicidae	Ants	67
Noctuidae	Cutworm Moths & Allies	66

Top 10 Observed Species

 27 observations CC Indomitable Graphic ... (<i>Melipotis indomita</i>)	 17 observations CC Western Honey Bee (<i>Apis mellifera</i>)	 15 observations CC Tropical Checkered-Skipper (<i>Burnsius oileus</i>)	 11 observations CC Genus <i>Geron</i>	 11 observations © Red Harvester Ant (<i>Pogonomyrmex barbatus</i>)
 9 observations CC Reakirt's Blue (<i>Echinargus isola</i>)	 8 observations CC Garden Webworm Moth (<i>Achyra rantalis</i>)	 7 observations CCO Guinea Paper Wasp (<i>Polistes exclamans</i>)	 7 observations CC Subterranean Dart (<i>Feltia subterranea</i>)	 7 observations CC <i>Acrolophus griseus</i>

Fun Finds

1. Mexican Carpenter Bee (@cbrown78501)
2. Milkweed Tussock Moth (@candi12)






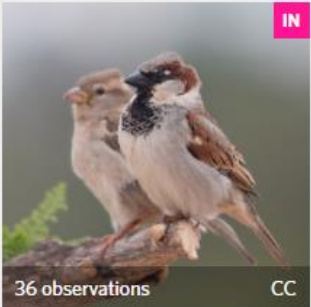



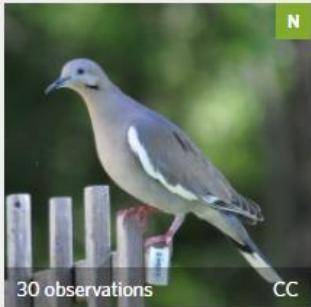



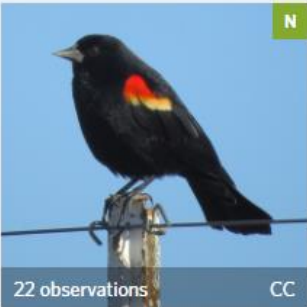
Birds

Birds made up 12% of our observations this year, one percent higher than last year. We observed just over 200 species this year compared to the 185 species documented during last year's CNC. You can explore this year's bird observations on [iNaturalist](#).

Top Bird Families

Bird Family	Bird Common Names	# Observations
Icteridae	New World Blackbirds & Orioles	219
Parulidae	New World Warblers	123
Tyrannidae	Tyrant Flycatchers	119
Scolopacidae	Sandpipers & Allies	89
Columbidae	Doves & Pigeons	83

Top 10 Observed Species

 46 observations CC	 36 observations CC	 34 observations CC	 33 observations CC	 32 observations CC
Great-tailed Grackle (<i>Quiscalus mexicanus</i>)	House Sparrow (<i>Passer domesticus</i>)	Baltimore Oriole (<i>Icterus galbula</i>)	Northern Mockingbird (<i>Mimus polyglottos</i>)	Black-bellied Whistlin... (<i>Dendrocygna autumnalis</i>)
 30 observations CC	 28 observations CC	 26 observations CC	 22 observations CC	 22 observations CC
White-winged Dove (<i>Zenaida asiatica</i>)	Golden-fronted Wood... (<i>Melanerpes aurifrons</i>)	Plain Chachalaca (<i>Oryzopsis vetula</i>)	Buff-bellied Humming... (<i>Amazilia yucatanensis</i>)	Red-winged Blackbird (<i>Agelaius phoeniceus</i>)

Fun Finds

1. Black-bellied Plover (@djringer)
2. Rose-breasted Grosbeak (@erikostrander)















Arachnids

Arachnids only made up 3% of our observations this year, but that is a higher rate than previous years at 2.3% and 2.9%. You can view our arachnid observations on [iNaturalist](#).

Top Arachnid Families

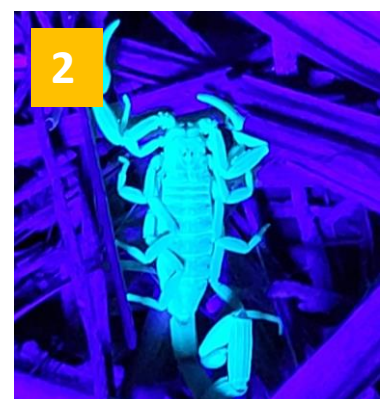
Spider Family	Spider Common Names	# Observations
Araneidae	Orbweavers	23
Salticidae	Jumping Spiders	16
Theraphosidae	Tarantulas	11
Thomisidae	Crab Spiders	10
Lycosidae	Wolf Spiders	8
Oxyopidae	Lynx Spiders	7

Top 10 Observed Species

 7 observations © Texas Tan Tarantula (<i>Aphonopelma anax</i>)	 4 observations CC Genus <i>Trachelas</i>	 4 observations CC Genus <i>Tetragnatha</i>	 4 observations CC Tropical Orbweaver (<i>Eriophora ravilla</i>)	 4 observations CC <i>Hogna antelucana</i>
 3 observations CC Gall and Rust Mites (Family Eriophyidae)	 3 observations CC Silver Garden Orbweaver (<i>Argiope argentata</i>)	 3 observations CC Striped Lynx Spider (<i>Oxyopes salticus</i>)	 3 observations CC Leafcurling Sac Spiders (Genus <i>Clubiona</i>)	 3 observations © Pantropical Jumping S... (<i>Plexippus paykullii</i>)

Fun Finds

1. Texas Recluse (@jcriv)
2. Striped Bark Scorpion (@johnyochum)



Species of Greatest Conservation Need

Along with species that have been afforded legal protection due to risk of extinction, Texas hosts well over 1,300 species that are considered to be Species of Greatest Conservation Need (SGCN). Native animals or plants designated as a SGCN are generally those that are declining or rare and in need of attention to recover or to prevent the need to list under state or federal regulation. These species are the focus of Texas Parks and Wildlife Department's Texas Conservation Action Plan and guide the department's nongame conservation efforts. You can read more about SGCN at:

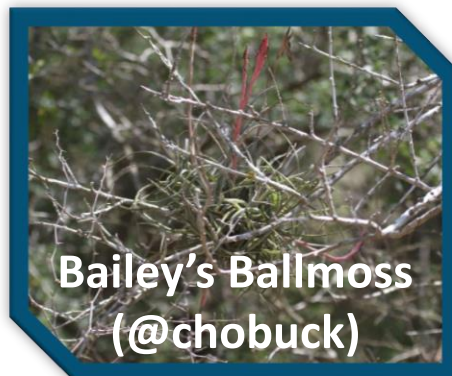
tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/tcap/sgcn.phtml

Lower Rio Grande Valley participants made 329 observations of Species of Greatest Conservation Need, for a total of 63 species. Birds were the most documented SGCN group, followed by reptiles, plants, amphibians, and mammals.

See all the SGCN observations at the link below!

<https://tinyurl.com/ykdp4v5j>

A Few SGCN from City Nature Challenge 2021: Lower Rio Grande Valley



Other Wildlife



Spotted Bee Fly
Anthrax irroratus

@candi12



Flame-colored Tanager
Piranga bidentata

@guyincognito



Milkweed Tussock Moth
Euchaetes egle

@candi12



Crab Spiders
Family Thomisidae

@candi12



Four-spotted Green Lacewing
Chrysopa quadripunctata

@jciv



Portuguese Man O' War
Physalia physalis

@mollysmith24



iNaturalist observations are pooled into a variety of other projects created by conservation organizations & other users. Here are some of the projects our City Nature Challenge observations are contributing to:

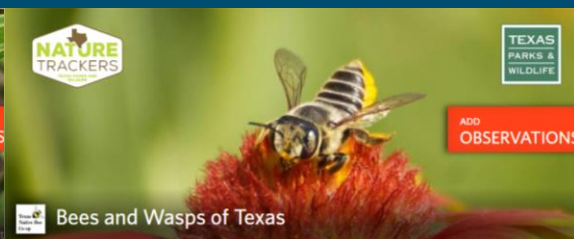


Texas Nature Trackers (TNT), part of the Wildlife Diversity Program, tracks the status of wild populations of plants and animals throughout Texas. Our projects are critical to understanding the distribution and seasonality of plants and animals in Texas, and how both are changing over time.

Texas Nature Trackers Projects



Texas Milkweeds and Monarchs



Bees and Wasps of Texas



Herps of Texas

Other Projects



LRGV Phenology of Flowers

The purpose of this project is to track the flower phenology of plants in the LRGV.



Invasives of the Lower Rio Grande Valley

The purpose of this project is to record observations of invasive species of the LRGV.



Biological Interactions of the RGV

The purpose of this project is to observe and document species interactions found within the LRGV.

Thank You for Sharing in This Year's City Nature Challenge!

Thank you to everyone for helping to make this year's City Nature Challenge such a success! Each and every observation contributes to our understanding of the natural world, while also being a way to share the Lower Rio Grande Valley's amazing diversity of plants and animals with our community. With nature, you never know exactly what you will find – but I hope that the process of getting out into nature, looking at familiar places with an inquisitive eye, and being surrounded by life was a fun and relaxing experience for you. See you next year!