

# River Warrior Citizen Science Projects



SAN ANTONIO RIVER **FOUND.**

SAN ANTONIO  
RIVER AUTHORITY



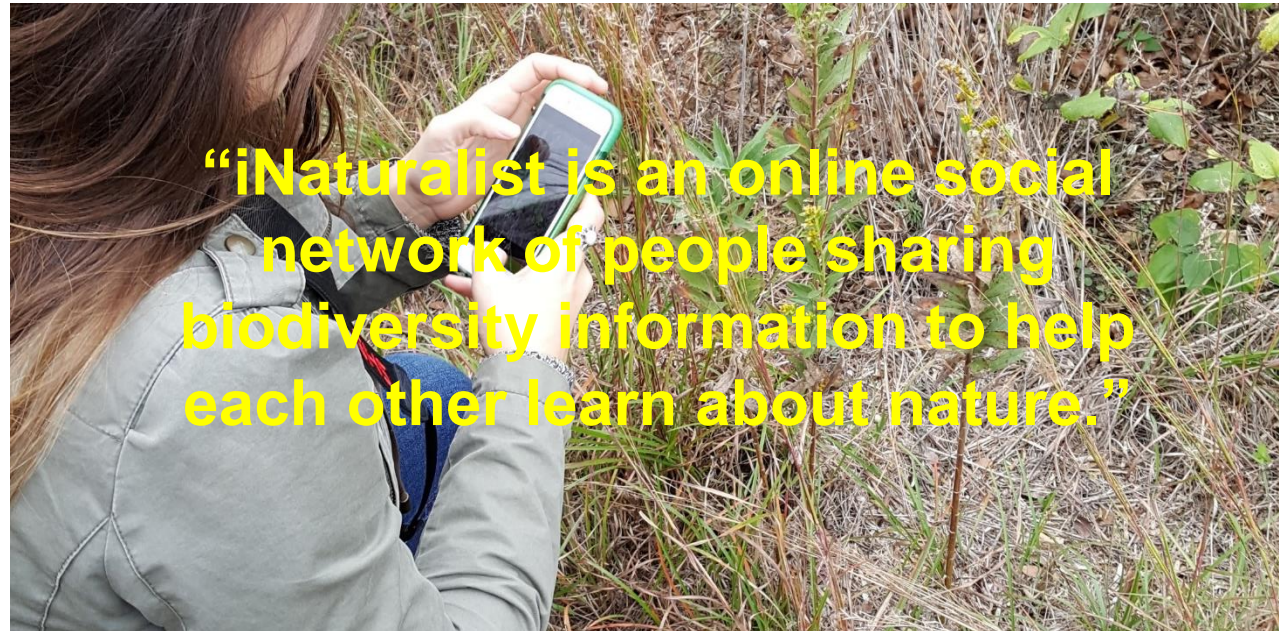


# Citizen Science: Making a Difference for Science and Conservation



## Two Primary Goals of using iNaturalist free App:

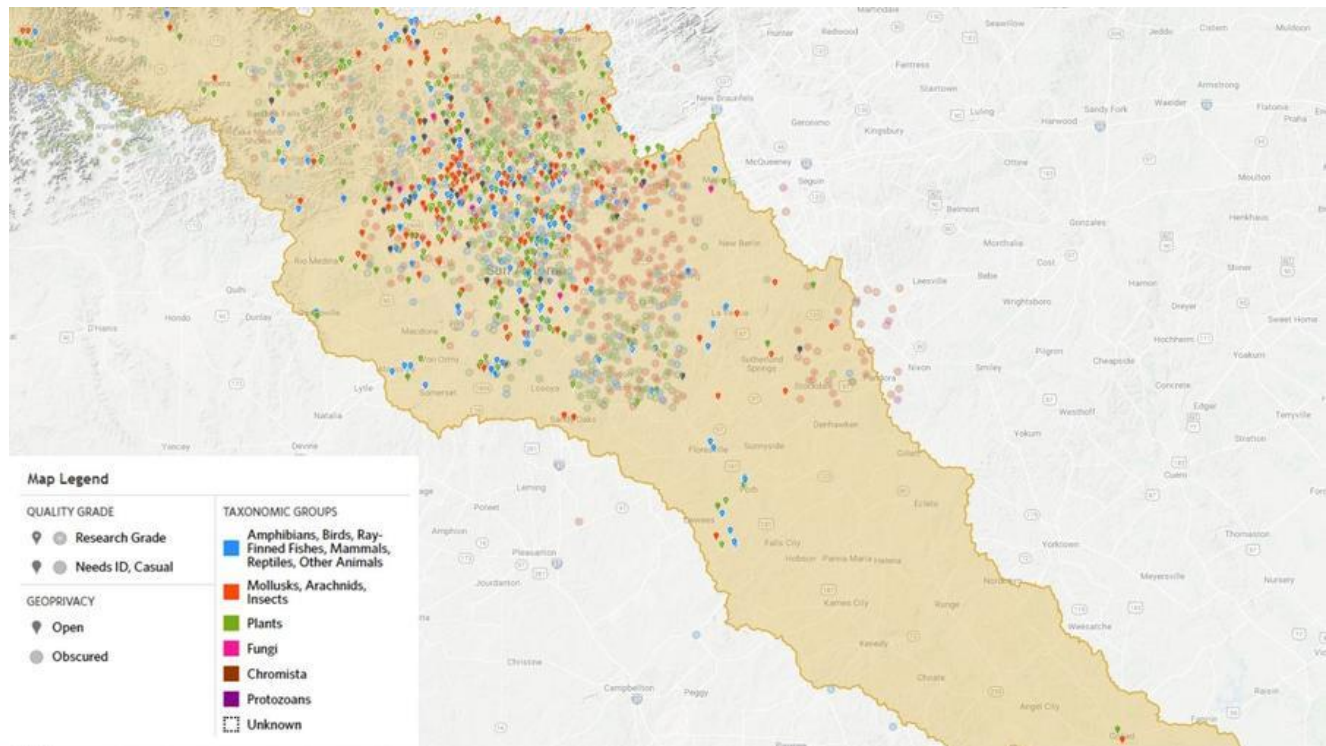
- connect people to nature and the river
- generate scientifically valuable biodiversity data from user's personal encounters with nature



# iNaturalist City Nature Challenge, (CNC) 2023

## Citizen Observations in the SA Metro Boundary

- 20,119 observations
- 2,561 species
- 883 observers



# Making CNC History in 2023!

**San Antonio beats Austin for the first time in City Nature Challenge history!**

**(San Antonio Metro Area places 3rd in Texas)**

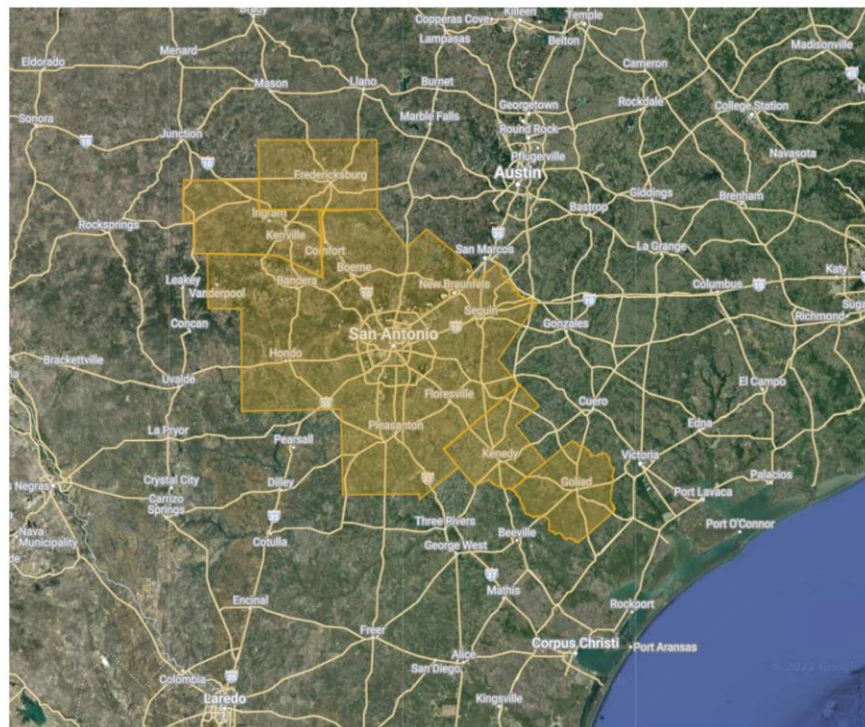
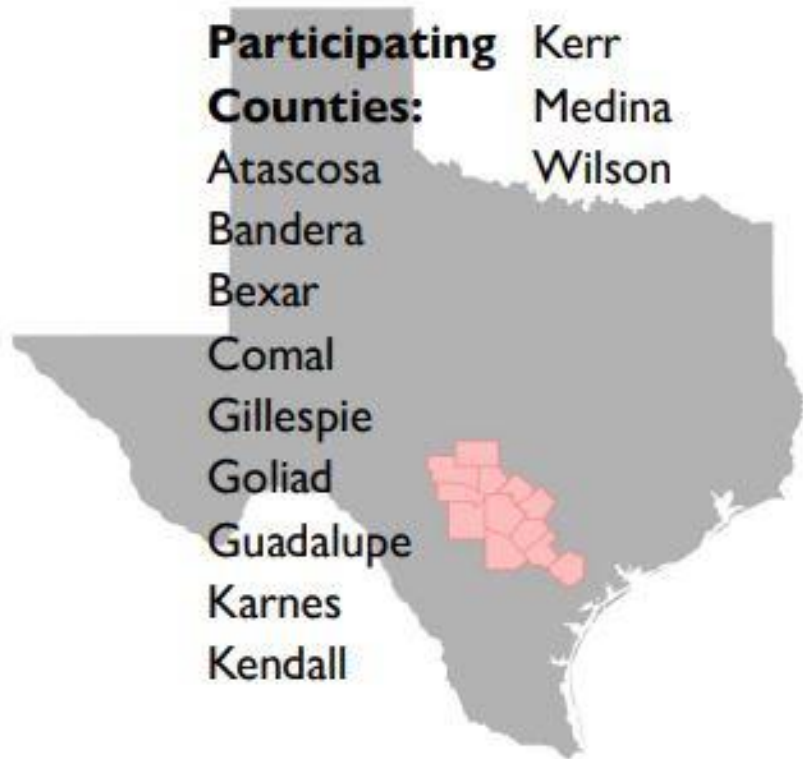
- 15 participating cities in Texas
- number of observations at 20,119. Research Grade Observations : 64.1%
- number of species at 2564; 30 species are on the threatened list
- average observations/observer went up from 17.75 in 2022 to 23.27 in 2023
- global ranking - moved up to 18th place out of 482 cities worldwide







# Counties included in San Antonio Area City Nature Challenge (CNC), 2023







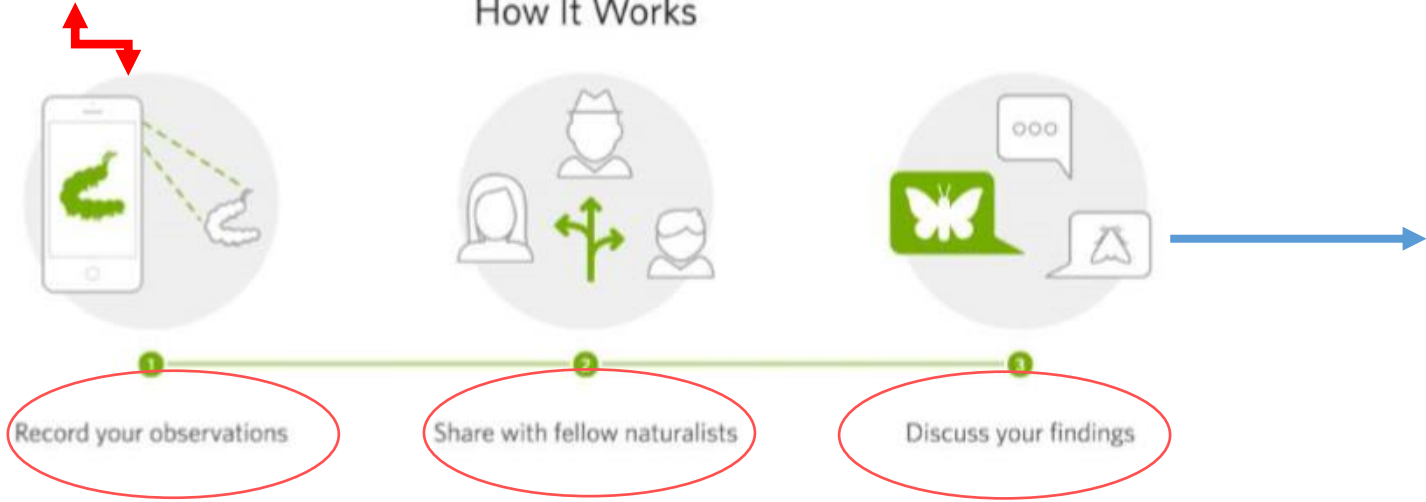
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# Citizen Science Data Flow



Artificial Intelligence

How It Works



## Database – Used By:

TPWD Texas Nature Tracker Project

**SARA**

- Watershed Projects
- Natural Area Projects
- Bioblitzes

USTA

National Parks

Audubon (eBird / iNaturalist)

City of San Antonio tracking



# Goal: Move high quality, robust citizen science data into the Texas Natural Diversity Database



**iNaturalist Projects**

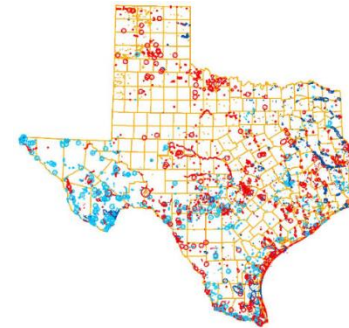


**Collect data on wide variety of native plants & animals throughout Texas**

**Species of Greatest Conservation Need**



**TX Natural Diversity Database**



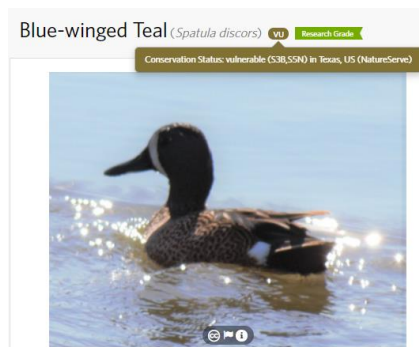
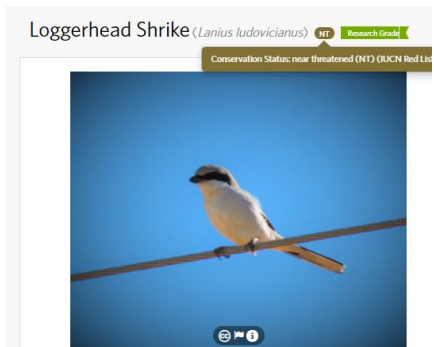
**Conservation Planning & Research**





# How is iNaturalist data used?

- *Wildlife Land Management Tax Exemption Tracking*
- *Seed Progradation Location*
- *On Vacation – its my Eco Tourist Map.*
- *Wildscapes Certification tracking at home*
- *Use iNaturalist filters – to find observations for Native Plant Sale Pictures and Training*
- *Finding Species of Greater Conservation Need (SGCN)*



# Texas Stream Team (TST) Water Quality Monitoring Citizen Science Project

TST Monitoring Sites Map



- 22 River Warrior TST volunteers
- 30 TST active monitoring sites
- State coordinator is impressed with local Warrior volunteer effort



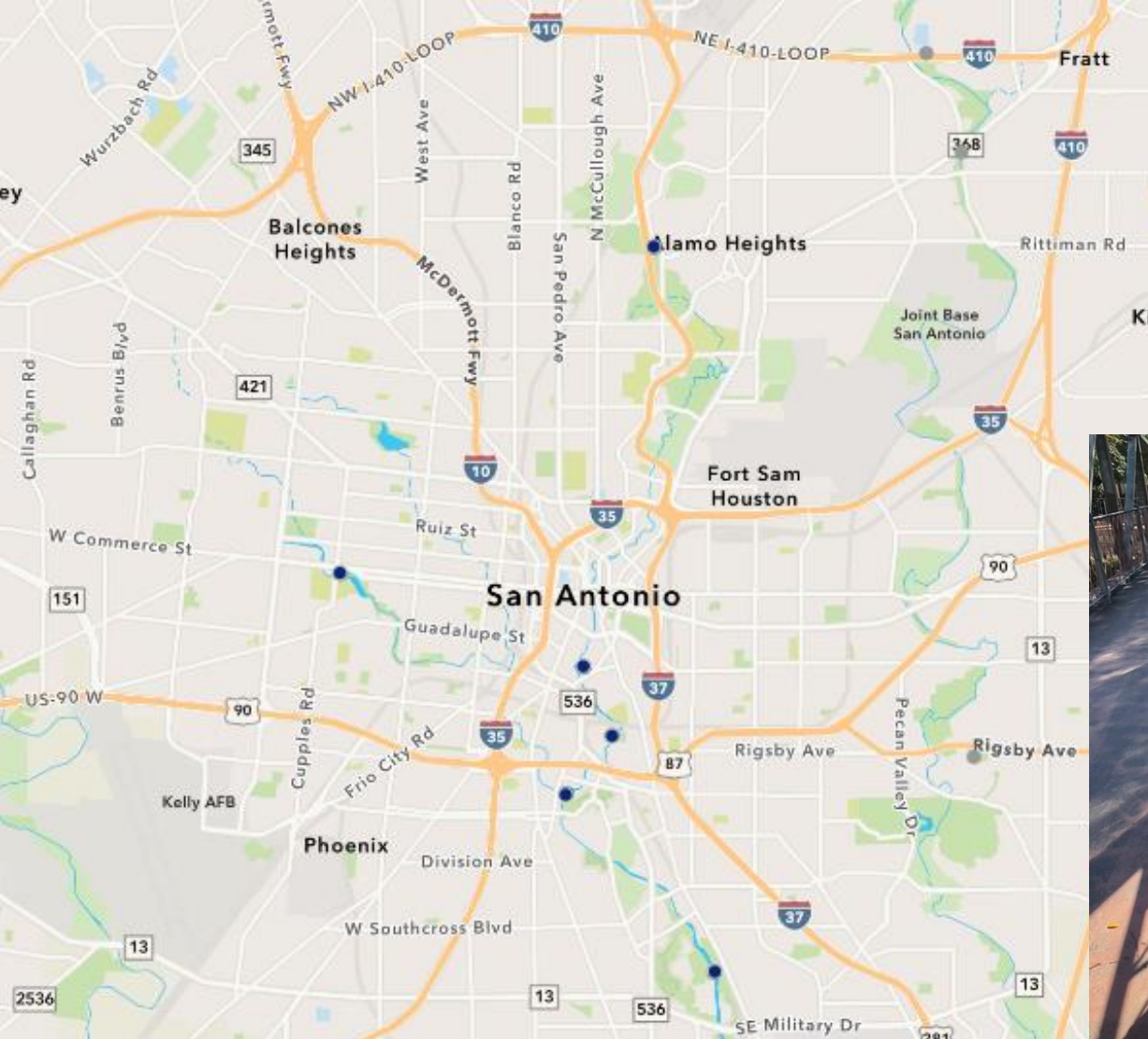
## What is TST?

- Certified Citizen Scientists collect water quality data at sites across the watershed
- Data is compiled in a report to analyze trends.
- Reports are reviewed & approved by Texas Commission of Environmental Quality (TCEQ)
- Data is available to TCEQ & River Authority Scientists





# Citizen Scientist Water Quality Monitoring Sites in San Antonio, Texas



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# River Warrior Apple Snail Removal Reporting





# Apple Snail Removal Champion River Warrior: David Mullins passes the 3000 mark!

- Removed 3,504 snails and 1,639 egg cases
  - > 94% of all volunteer snail collections
  - > 41% of all volunteer egg collections
- David has taken on role of “Apple Snail Removal Ambassador”
- River Warriors contribute more than 30% of total removals



# Inspiring Stewardship in the Community to address Litter Issues



**Be an  
Environmental  
Hero**

Join the community that's  
cleaning the planet.



**LITTERATI**

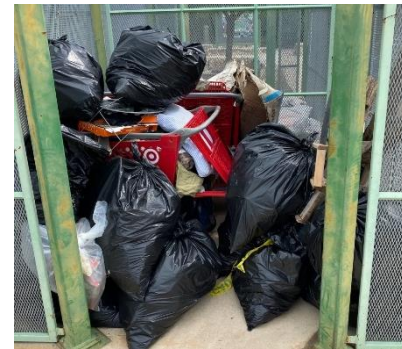
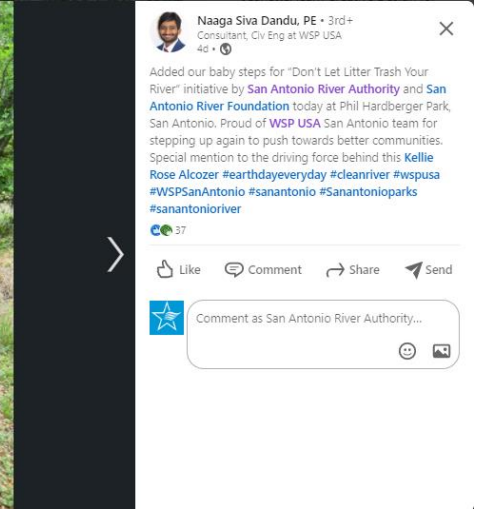


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# Be River Proud Earth Week Litterati Challenge, 2022

- 15 local corporations, universities and non-profits
- 9,813 litter observations
- trash trophy



# Don't Let Litter Trash Your River Campaign Volunteer Initiative Statistics

- 29,495 total litter observations on Litterati in our watershed
- 15 groups made 9,813 Litterati observations during Earth Week Corporate Challenge
- 320 volunteers took part in litter clean-ups
- 27 submissions for self-led group clean-ups through website
- 82 total volunteer pledges
- 10 virtual educational trainings conducted for large groups with anti-litter messaging
- A unique plogging (picking up litter while jogging) event conducted Sept 17, 2022



Naaga Siva Dandu, PE • 3rd+  
Consultant, Civ Eng at WSP USA  
3w • 🌱

Added our baby steps for "Don't Let Litter Trash Your River" initiative by [San Antonio River Authority](#) and [San Antonio River Foundation](#) today at Phil Hardberger Park, San Antonio. Proud of [WSP USA](#) San Antonio team for stepping up again to push towards better communities. Special mention to the driving force behind this [Kellie Rose Alcozer](#) #earthdayeveryday #cleanriver #wspusa #WSPSanAntonio #sanantonio #Sanantonioparks #sanantonioriver





# Questions?

