The SECAS Third Thursday Web Forum

From uncertainty to action: A structured approach to filling knowledge gaps in rare species conservation

8-15-2024

Agenda

- Introduction
- Monthly topic
- Q&A and discussion
- Preview of next webinar
- Staff updates

From uncertainty to action: A structured approach to filling knowledge gaps in rare species conservation

Jonah Evans, Texas Parks and Wildlife Department

8-15-2024

From Uncertainty to Action:

A Structured Approach to Filling Knowledge Gaps in Rare Species Conservation

TEXAS PARKS & WILDLIFE






NRSP

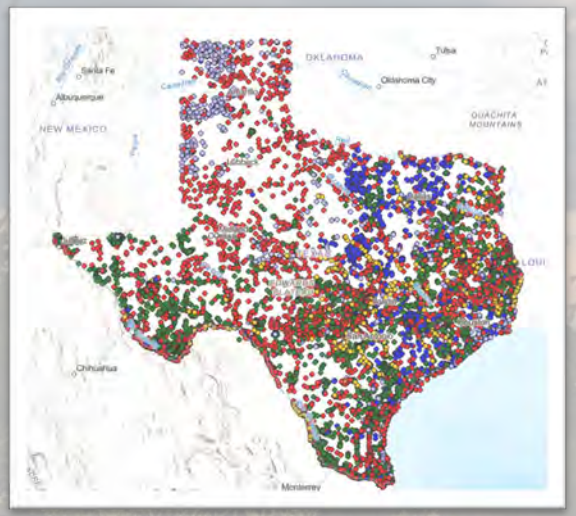
TPWD Nongame & Rare Species Program

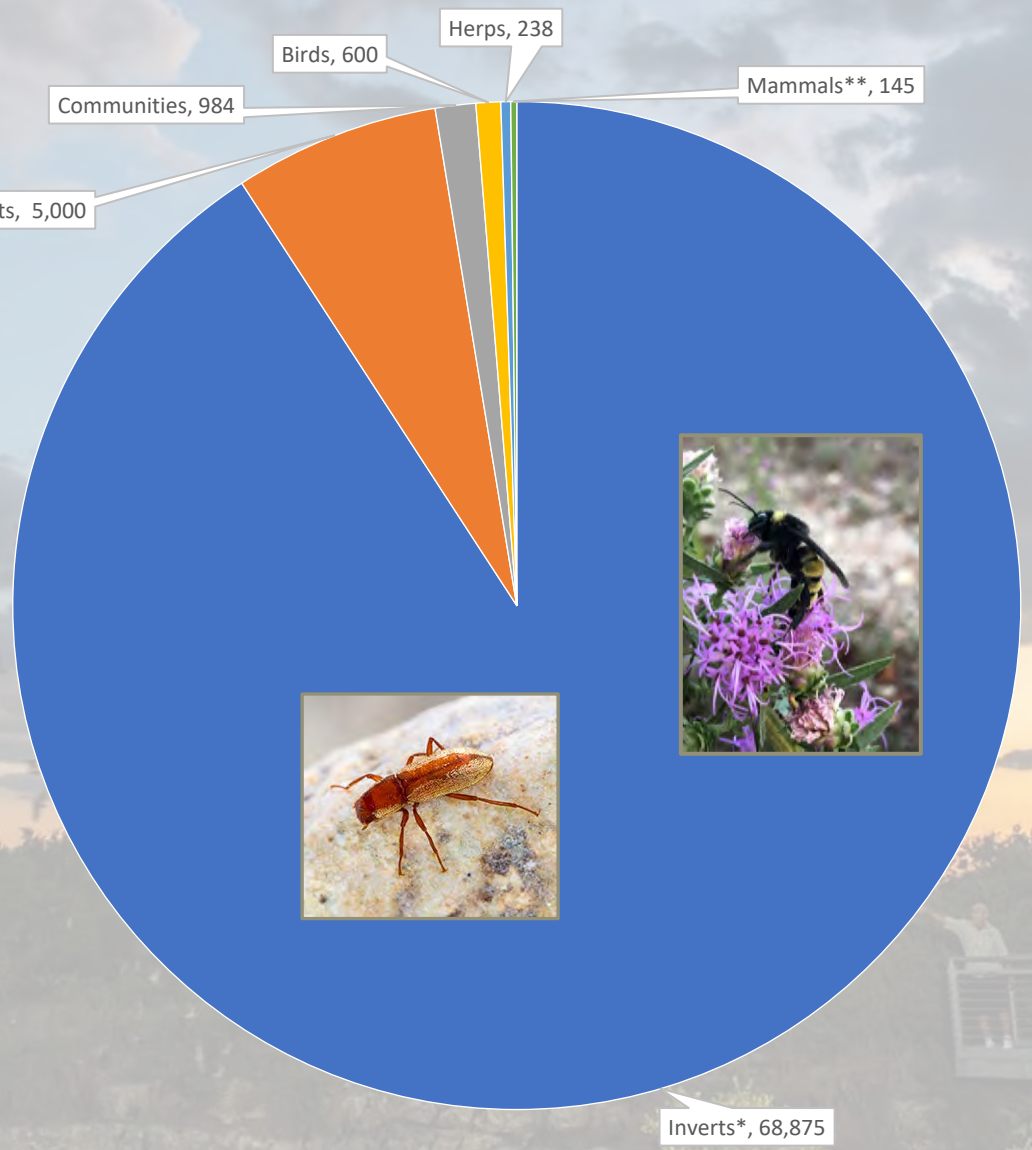
Mission: To conserve and recover imperiled species and habitats through research, management, policy, and partnerships.

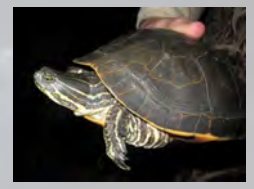
Bat Specialist – Samantha Leivers	**Botanist – Anna Strong**	**Cons. Initiatives Specialist – Darren Proppe**	**Herpetologist – Paul Crump**
Invertebrate Biologist – Hannah Gray	**Mammal Specialist – Dana Karelus**	**Ornithologist – Tania Homayoun**	**Plant Community Ecologist – Jason Singhurst**

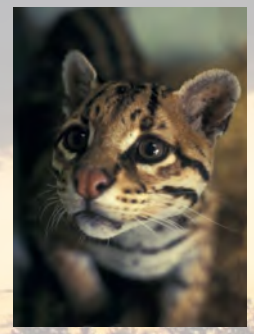
*Do not include: game animals, fishes, marine species, most aquatic invertebrates, fungi, lichens, molds, etc.

Total Described Texas Species: 75,906**









*Described species. Estimated undescribed = 492,000
**Does not include fungi, lichens, molds, etc

76,000 Species…

- How to determine which species are SGCN?
- How to spend research funds?
- How to track research progress towards conservation?
- When to shift focus from research to improving conservation status?
- Specifically what actions should we take to have the biggest impact on improving status?

Program Strategy

Classify

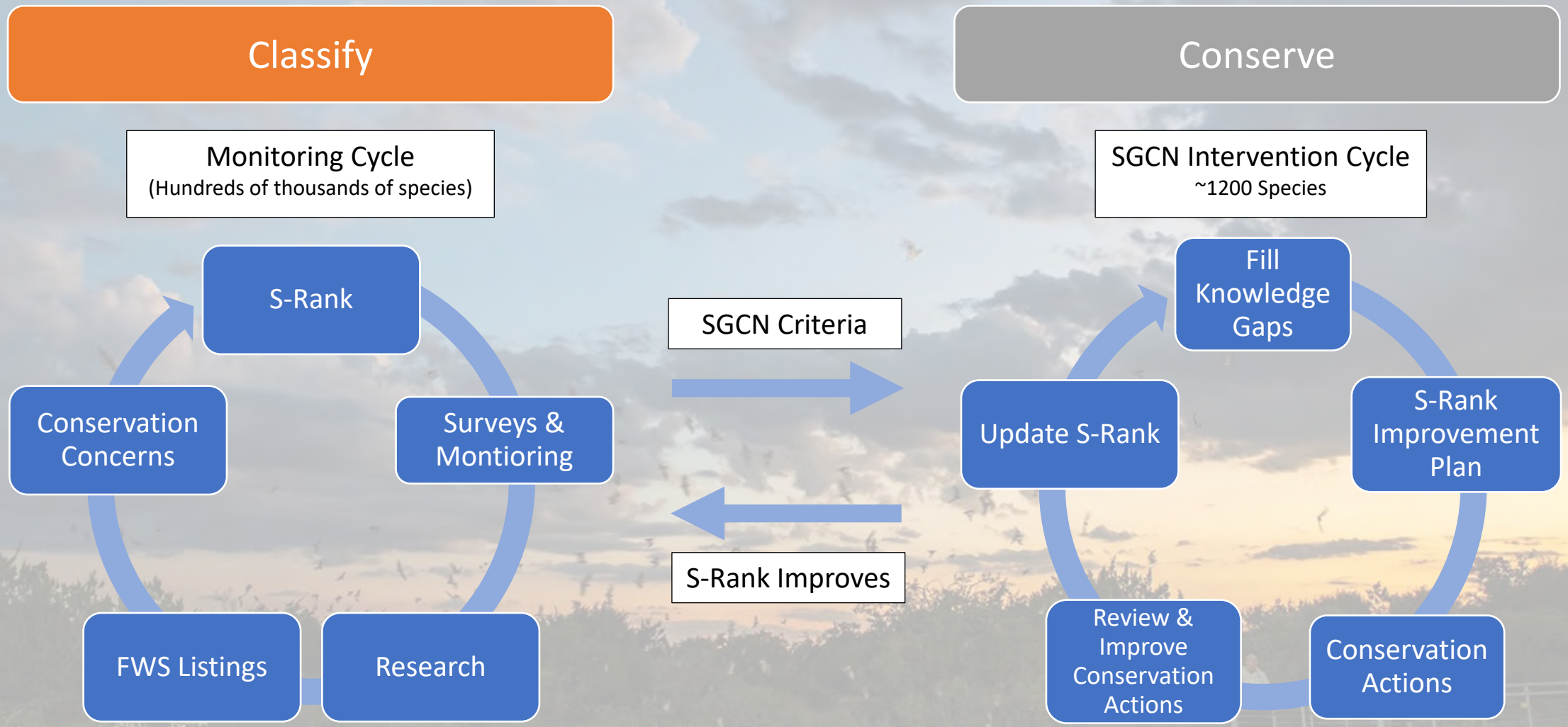
- Determine Species of Greatest Conservation Need (SGCN)

Conserve

- Clear obstacles to conservation
- Recover priority species

Communicate

- Publish scientific reports
- Build public support
- Increase relevancy


Classify
Conserve
Monitoring Cycle
(Hundreds of thousands of species)
SGCN Intervention Cycle
~1200 Species
S-Rank
Surveys & Montioring
Research
FWS Listings
Conservation Concerns
SGCN Criteria
S-Rank Improves
Fill Knowledge Gaps
S-Rank Improvement Plan
Conservation Actions
Review & Improve Conservation Actions
Update S-Rank

Classify

Determining SGCN

1. SGCN Criteria

- *Relies on NatureServe ranks and other transparent criteria to determine SGCN*

2. Research to determine status of priority species

- *Fund & conduct research on species status, distribution, trends, etc. to determine which species are SGCN*

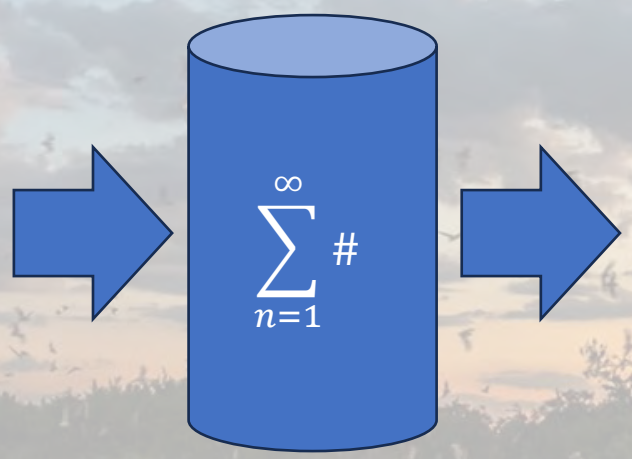
3. Review existing research efforts

- *Literature reviews, attending conferences, etc*

Classify

NatureServe Ranking Calculator

- Range Extent
- Area of Occupancy
- Number of Occurrences
- Population Size
- Good Viability
- Threat Impacts
- Short-term Trends
- Long-term Trends



Global Rank	State Rank	Conservation Status
G1	S1	**Critically Imperiled**
G2	S2	**Imperiled**
G3	S3	**Vulnerable**
G4	S4	**Apparently Secure**
G5	S5	**Secure**
GH	SH	**Possibly Extirpated**

Add

Remove

Conserve

Recovering Priority Species

1. Fill knowledge gaps

- Gather critical data needed to take conservation measures for “Data Deficient” SGCN

2. Conservation actions

- Work to improve the status of “Conservation Ready” SGCN
- Incentivize conservation actions (CCAA’s, Safe Harbor, etc)
- Ensure appropriate use of nongame wildlife (Wildlife Permits)
- Review and update state and federal regulations

Conserve

Recovering Priority Species

SGCN are Grouped into 2 Buckets

"Data Deficient"

- Insufficient knowledge exists for conservation actions to occur for a species
- Limited conservation actions ok
- Most species are "Data Deficient"
- 321 Species identified

"Conservation Ready"

- Sufficient information exists to begin conservation work
- Some limited research may still be needed
- 38 Species Identified so far

Conserve

Knowledge gaps – “Data Deficient” SGCN

7 Knowledge Categories

(Based on “USFWS SSA”)

1. Taxonomic clarity
2. Distribution defined
3. Individual needs
4. Population needs
5. Current condition of populations
6. Threats
7. Conservation action understood

5 Progress Categories

(Step “3” is considered sufficient to move ahead)

1. Uncertain
2. Some progress made towards understanding, but significant uncertainties remain whether the species designation is accurate and an appropriate conservation unit for management action.
3. **Stable with no specific concerns or reasons for questioning the current nomenclature. A thorough taxonomic review has not been conducted.**
4. Some specific taxonomy work has been done, few uncertainties remain, and additional changes are unlikely
5. Fully resolved through a comprehensive and specific assessment

Conserve

Knowledge gaps – “**Data Deficient**” SGCN

Assessing knowledge gaps in Airtable

New research must identify knowledge gaps being targeted

Example below: 5 “steps” needed for eastern spotted skunk

COMMON_NAME	Taxonomic certainty	Occurrence viability	Distrbution well defined	Individual needs	Population needs	Threats known	Conservation possi...
Swift fox	4	4	5	3	3	3	4
Texas kangaroo rat	5	3	5	3	3	3	4
Ocelot	5	4	3	4	4	4	3
Tricolored bat	5	3	3	3	3	4	3
Eastern spotted skunk	5	2	4	3	2	1	2

Conserve

Knowledge gaps – “**Data Deficient**” SGCN

For species with no information (all 1’s):

7 categories, 2 “steps” in each to reach a 3 (conservation ready)

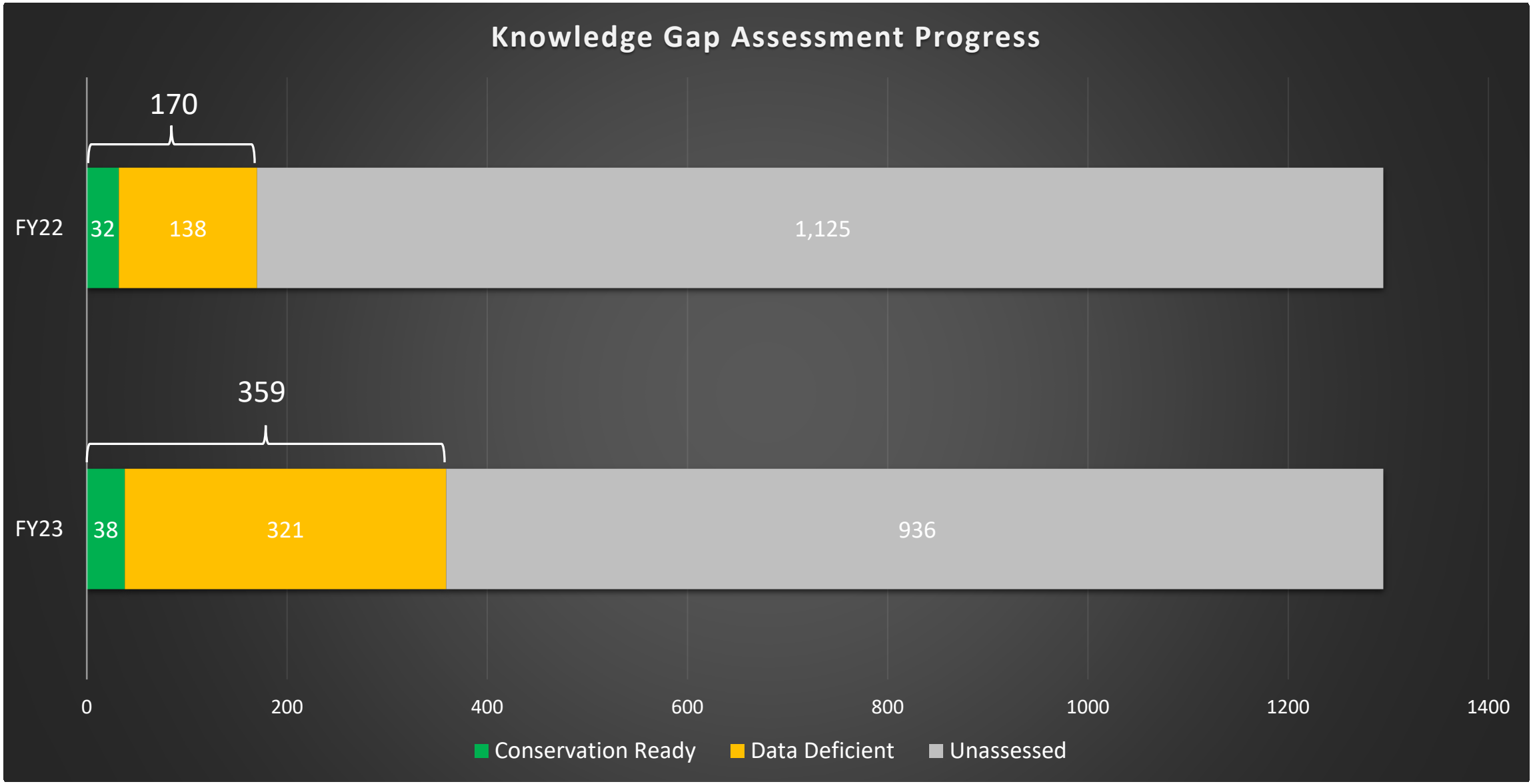
Total of 14 “steps” needed for a species to reach “Conservation Ready”

Cost per step: roughly equivalent to a single $200-300k project

COMMON_NAME	Taxonomic certainty	Occurrence viability	Distrbution well defined	Individual needs	Population needs	Threats known	Conservation possi...
Swift fox	4	4	5	3	3	3	4
Texas kangaroo rat	5	3	5	3	3	3	4
Ocelot	5	4	3	4	4	4	3
Tricolored bat	5	3	3	3	3	4	3
Eastern spotted skunk	5	2	4	3	2	1	2

Benefits

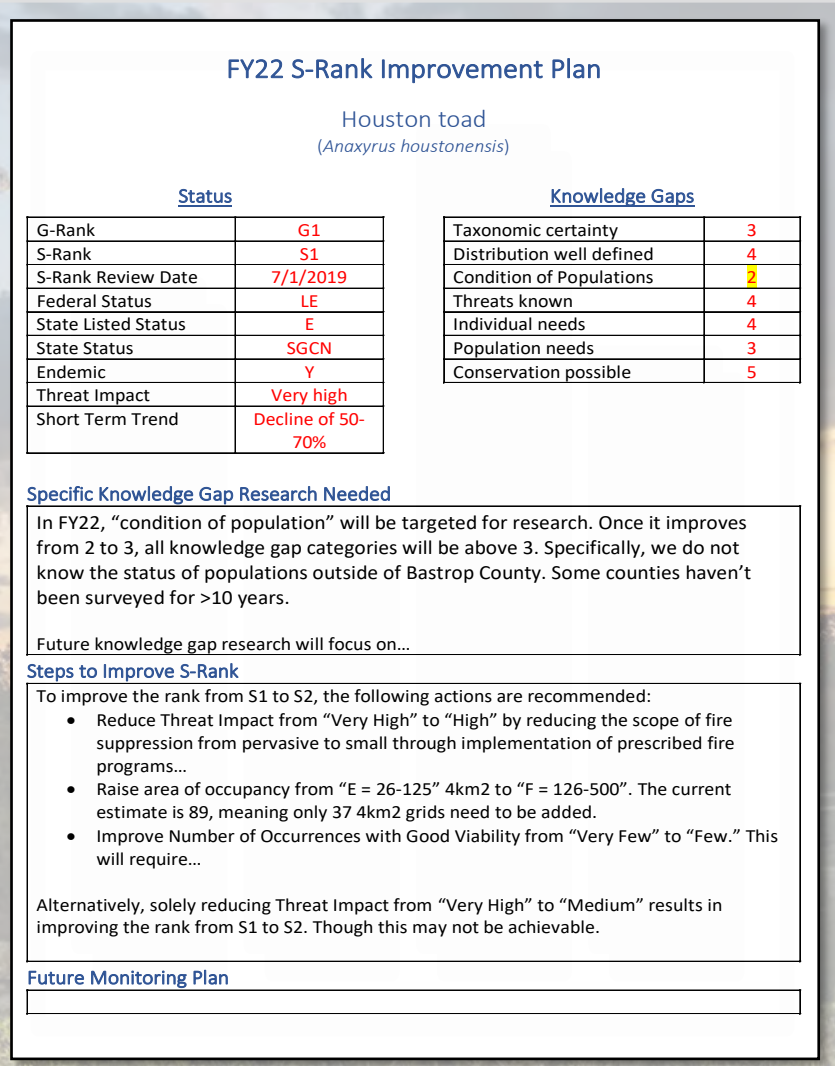
- Creates a roadmap for future research needs
- Helps transition from research to management
- Provides a meaningful measure of progress towards conservation
- Communicates needs to partners
- Helps maintain focus through staff transitions


Knowledge Gap Assessment Progress
170
FY22
32
138
1,125
359
FY23
38
321
936
0
200
400
600
800
1000
1200
1400
Conservation Ready
Data Deficient
Unassessed

Conserve

Conservation actions – “**Conservation Ready**” SGCN

- S-Rank Improvement Plans
  - Simple to create
  - Identifies least cost path to recovering SGCN
  - Imperfect, but simple
  - Some species will require full management plans



FY22 S-Rank Improvement Plan

Houston toad

(*Anaxyrus houstonensis*)

Status

G-Rank	G1
S-Rank	S1
S-Rank Review Date	7/1/2019
Federal Status	LE
State Listed Status	E
State Status	SGCN
Endemic	Y
Threat Impact	Very high
Short Term Trend	Decline of 50-70%

Knowledge Gaps

Taxonomic certainty	3
Distribution well defined	4
Condition of Populations	2
Threats known	4
Individual needs	4
Population needs	3
Conservation possible	5

Specific Knowledge Gap Research Needed

In FY22, “condition of population” will be targeted for research. Once it improves from 2 to 3, all knowledge gap categories will be above 3. Specifically, we do not know the status of populations outside of Bastrop County. Some counties haven’t been surveyed for >10 years.

Future knowledge gap research will focus on…

Steps to Improve S-Rank

To improve the rank from S1 to S2, the following actions are recommended:

- Reduce Threat Impact from “Very High” to “High” by reducing the scope of fire suppression from pervasive to small through implementation of prescribed fire programs…
- Raise area of occupancy from “E = 26-125” 4km2 to “F = 126-500”. The current estimate is 89, meaning only 37 4km2 grids need to be added.
- Improve Number of Occurrences with Good Viability from “Very Few” to “Few.” This will require…

Alternatively, solely reducing Threat Impact from “Very High” to “Medium” results in improving the rank from S1 to S2. Though this may not be achievable.

Future Monitoring Plan

		CURRENT
S-Rank	1	Range extent
2	A	<100 sq km (< ~40 sq mi)
2	B	100-250 sq km (~40-100 sq mi)
2	C	250-1,000 sq km (~100-400 sq mi)
2	D	1,000-5,000 sq km (~400-2,000 sq mi)
3	E	5,000-20,000 sq km (~2,000-8,000 sq mi)
3	F	20,000-200,000 sq km (~8,000-80,000 sq mi)
3	G	200,000-2,500,000 sq km (~80,000-1,000,000 sq mi)
3	H	>2,500,000 sq km (> 1,000,000 sq mi)
3	U	Unknown

S-Rank	2	Area of Occupancy
1	A	1 4-km2 grid cell
1	B	2 4-km2 grid cells
2	C	3-5 4-km2 grid cells
3	D	6-25 4-km2 grid cells
3	E	26-125 4-km2 grid cells
3	F	126-500 4-km2 grid cells
3	G	501-2,500 4-km2 grid cells
3	H	2,501-12,500 4-km2 grid cells
3	I	> 12,500 4-km2 grid cells

S-Rank	3	Number of Occurrences
2	A	1 – 5
3	B	6 – 20
3	C	21 - 80
3	D	81 - 300
3	E	> 300
3	U	Unknown

S-Rank	4	Population Size
1	A	1 - 50 individuals
1	B	50 - 250 individuals
2	C	250 - 1,000 individuals
3	D	1,000 - 2,500 individuals
3	E	2,500 - 10,000 individuals
3	F	10,000 - 100,000 individuals
3	G	100,000 - 1,000,000 individuals
3	H	>1,000,000 individuals
3	U	Unknown

Next Steps

Challenges and Opportunities

Need system for selecting “focal” species

Bottlenecks:

- Conducting S-Ranks is slow
- Most species are “data deficient” – lots of research needed
- Staff capacity – partnerships necessary going forward

Funding limitations

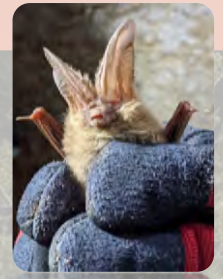
- 57 active research projects
- ~15 new projects added each year

Conserve

Focal “Data Deficient” SGCN

Bats

- Cave myotis
- Tricolored bat
- Migratory tree bats
- West Texas myotis



Birds

- Seaside Sparrow
- Smith's Longspur
- Gray Hawk
- Chihuahuan Meadowlark

Herps

- Big Bend mud turtle
- Western chicken turtle
- Texas and Cascade Caverns Salamanders

Inverts

- *11 Cave Ground Beetles*
- *13 Cave Rove Beetles*
- *11 Cave Harvestmen*
- *57 Cave Spiders*

Mammals

- Texas kangaroo rat
- Swift fox
- Plains spotted skunk
- Black-tailed prairie dog

Plants

- Brush-pea
- Bushy whitlow-wort
- Lloyd's Mariposa cactus

Plant Communities

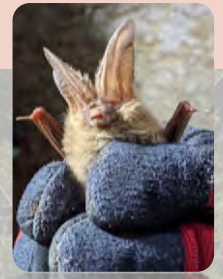
- Arid Land Springs (Cienegas)
- Silveus Dropseed Prairies
- River Scour Prairies
- Rolling Plains Prairie

Conserve

Focal “Conservation Ready” SGCN

Bats

- Cave myotis
- Tricolored bat



Birds

- White-faced ibis
- Aplomado falcon
- Attwater’s prairie chicken

Herps

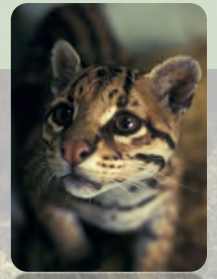
- Alligator snapping turtles
- Houston toads
- Brazos water snake

Inverts

- *N/A

Mammals

- Texas kangaroo rat
- Swift fox
- Black bear
- Ocelot



Plants

- *N/A

Plant Communities

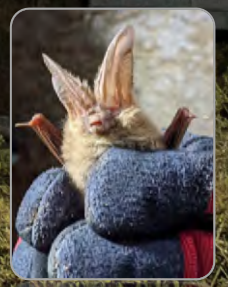
- Blackland Prairies
- Coastal prairies
- Fayette prairies

Questions?

TEXAS PARKS & WILDLIFE








SERPPAS: Engaging cross-sector approaches to climate resilience

Next Third Thursday Web Forum

9-19-2024

10:00 am ET

Michelle Covi & Addie Thornton

Southeast Regional Partnership for Planning and Sustainability (SERPPAS)

Staff updates

- Southeast Conservation Blueprint 2024 release coming mid-October
- Blueprint 2024 workshop registration open for late Oct/early Nov

Southeast Conservation Blueprint 2024 release coming mid-October

- Indicator improvements in the inland and marine continental Southeast
- Improving prioritization methods with a new version of Zonation
- Blueprint 2024 release web forum on Nov 21st @ 10 am ET

Blueprint 2024 workshop registration open for late Oct/early Nov

- By popular demand, moving workshops to after the Blueprint release so final indicator data and documentation is available to inform feedback
- October 22 – Nov 7
- 13 virtual workshops via Zoom, 1.5 hours long
- At least 2 workshops for every single part of the SECAS geography (inland continental, marine continental, U.S. Caribbean)
- Register here: https://secassoutheast.org/workshops

How to get involved in SECAS

- Sign up for the SECAS newsletter

  secassoutheast.org

- Connect with SECAS staff or partners

  secassoutheast.org/staff

  secassoutheast.org/partners

- Explore the Southeast Conservation Blueprint

  secassoutheast.org/blueprint

Southeast Conservation Adaptation Strategy


Questions?