

# **Sycamore Creek Wildlife Monitoring**

## **for the San Dieguito River Park**

### **(2021-2025)**



# SAN DIEGUITO RIVER PARK

## Coast to Crest Trail and Other Trails

The **Coast to Crest Trail** extends from the ocean at Del Mar to the San Dieguito River's source on Volcan Mountain near Julian. Today, we have about 45 miles of the planned 70 miles of the Coast to Crest Trail completed. In addition, over 20 miles of auxiliary trails within the River Park are open. Auxiliary trails are not part of the Coast to Crest Trail, and may have limited use regulations which will be clearly noted.



### Staging Areas

1. San Dieguito Lagoon Staging Area
2. Dust Devil Nature Trail Staging Area
3. Santa Fe Valley Staging Area
4. Bernardo Bay Natural Area
5. Sikes Adobe Staging Area
6. Highland Valley Trail Staging Area
7. Old Coach Trail Staging Area North
8. Ysabel Creek Road Staging Area
9. San Pasqual Valley Staging Area
10. Clevenger Canyon South\*
11. Clevenger Canyon North\*
12. Santa Ysabel Preserve West\*
13. Highway 79 Parking Area\*
14. Santa Ysabel Preserve East\*
15. Volcan Mountain Wilderness Preserve\*

### Spring / Summer Hours

April 1 - September 30:  
6:00 AM - 7:30 PM

### Fall / Winter Hours

October 1 - March 31:  
6:00 AM - 6:00 PM

Overnight parking is not permitted.  
Vehicles left overnight may be subject to towing at the owner's expense.

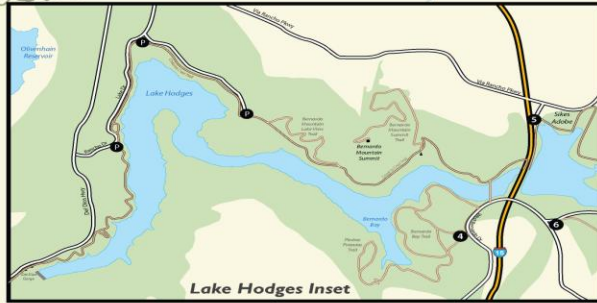


- Trailheads/Parking
- Coast to Crest Trail
- Proposed Alignment
- Auxiliary Trails
- Focused Planning Area
- San Dieguito Watershed



Visit [sdrp.org](http://sdrp.org) for trail maps and rules

\* Staging Areas operated by other partner agencies. See City or County website for operating times



### Leave No Trace

If we all follow a few simple tips, we can help maintain the natural beauty of the San Dieguito River Park and keep San Diego waterways like the San Dieguito River clean, safe, and beautiful well into the future:

1. Pick up your pet's waste and dispose of it properly. Bacteria from pet waste can be harmful to humans and wildlife.
2. Stay on designated trails and tread lightly to minimize erosion. Soil erosion clogs waterways and impedes natural flows.
3. Please pack out what you pack in, or place trash in designated containers. Containers are located throughout the Park and at designated trailheads.



# Goals of the River Park

- ❖ Preservation of Open Space
- ❖ Conservation of Sensitive Resources
- ❖ Protection of Water Resources
- ❖ Preservation of the Floodplain
- ❖ Retention of Agricultural Uses
- ❖ Creation of Recreational and Educational Opportunities
- ❖ Coast to Crest Trail: 71 miles planned at full buildout, with 47 miles currently completed and 23 miles of auxiliary trails.

# Longstanding Research & Education Partnerships

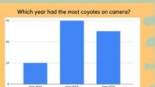
- ❖ Established partnership with the San Diego Tracking Team in the early 2000s
- ❖ Data has supported multiple student research projects and theses at UCSD and CSUSM
- ❖ For the past 8 years, High Tech High students have utilized the data for hands on projects, including kiosk exhibits

## RESEARCH AND CONSERVATION

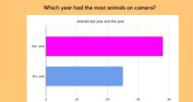
### AS STUDIED BY HIGHTECH ELEMENTARY 3<sup>RD</sup> GRADE

Third graders used trail cameras to learn more about the population of animals in the River Park

Which year had the most animals on camera?



Which year had the most captures on camera?



Last year, 2023, had more captures on the camera trap. I think we saw less captures because humans are killing them. Or maybe pollution is killing the things they eat.



Wildlife is around here. We did not see that many animals while we were in the River Park, however, when we were out there the camera trap caught a lot of animals.


We think we did not see that many animals when we were there because we are being noisy, and they may have gotten scared and hid. Can't be too loud around wildlife. They might come out to see you can them.

We expected to see the mountain lion on the mountain because mountain lions is their name, but we found no evidence of mountain lion on the Valley. Mountain species trap. We found them on the trail camera trap by the trail camera trap by the trail camera trap.

Do not take over animals' habitat so they have a home to live. Mountain lions need food, space to hunt, and water to survive.

The camera is in the animal's path. Camera trap is a way to learn about the animals in the habitat. Take care of the wildlife by not littering, keep it clean, stay on trails and leave nature in nature. If you had been reading this that you and captured the world for them. Thank you readers for coming and we hope you go explore the River Park.

Made by 3rd grade students at  **Join Our Team!** What projects will you observe in the park? Share your discoveries with our 3rd grade research team at High Tech Elementary North County by scanning this QR code. 

In collaboration with 


## THE SAN DIEGUITO RIVER PARK: DAY AND NIGHT

### AS STUDIED BY HIGHTECH ELEMENTARY 3<sup>RD</sup> GRADE


Third graders used trail cameras in the San Diego River Park to investigate when animals are the most active

Are the animals out more at day or night?


Camera Trap Under the I-15 Camera Trap Near Main Office




What is the most common animal to see in the San Diego River Park at night?





What did you see on the trail?




What did you see on the trail?



"You should go out and explore."  
"There used to be a lot more animals here, so we need to protect the animals that are still here."  
"These animals need a lot of space."  
"Protect people from nature & nature from people."  
"Don't go off trail and protect nature because you might step on the plants deer eat, and that causes them to have less food."

Made by 3rd grade students at  **EcoUpdates** Want to learn more about habitats around the world, animal sightings near you, and how you can help protect animal homes? Scan the QR code to see the news while other students at third graders at High Tech High North County! 

In collaboration with 

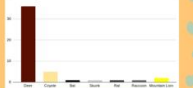
## A BALANCED ECOSYSTEM

### AS STUDIED BY HIGHTECH ELEMENTARY 3<sup>RD</sup> GRADE

What is the BIODIVERSITY of the San Diego River Park?


Third graders from High Tech elementary North County investigated the biodiversity, or all of the different living things, of the San Diego River Park with the help of trail cameras and San Diego River Park rangers. We are lucky to be in a biodiversity hotspot!

Animals seen on the trail cameras in the San Diego River Park!





We were very surprised to see more different animals than we saw. We saw more animals than we expected, especially deer. We found the highest diversity of animals here in 2023. Hightechers, probably because it's a good habitat for animals with everything they need, and they are comfortable here. People leave nature alone and do not take anything. The animals will get what they need from nature. They give each other food and give their energy around the ecosystem." - 3rd Graders


Caught on camera under the I-15



Food Webs Show Relationships

"This is an example food web for the chaparral habitat. It begins with the sun. The sun gives energy to the plants. The bird eats the seed, and the tree gets energy from the plant. The kangaroo rat also gets the energy from plants when it eats seeds. Next, the kangaroo rat passes its energy to the ground snake. The hawk eats the squirrel and snake. When the hawk dies, decomposers and the cycle goes around again." - 3rd Graders

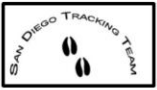
Made by 3rd grade students at  **Engage With our Ecosystem!** Want to learn more about the biodiversity of the River Park? Download our activity book! 

In collaboration with 

# Thank You

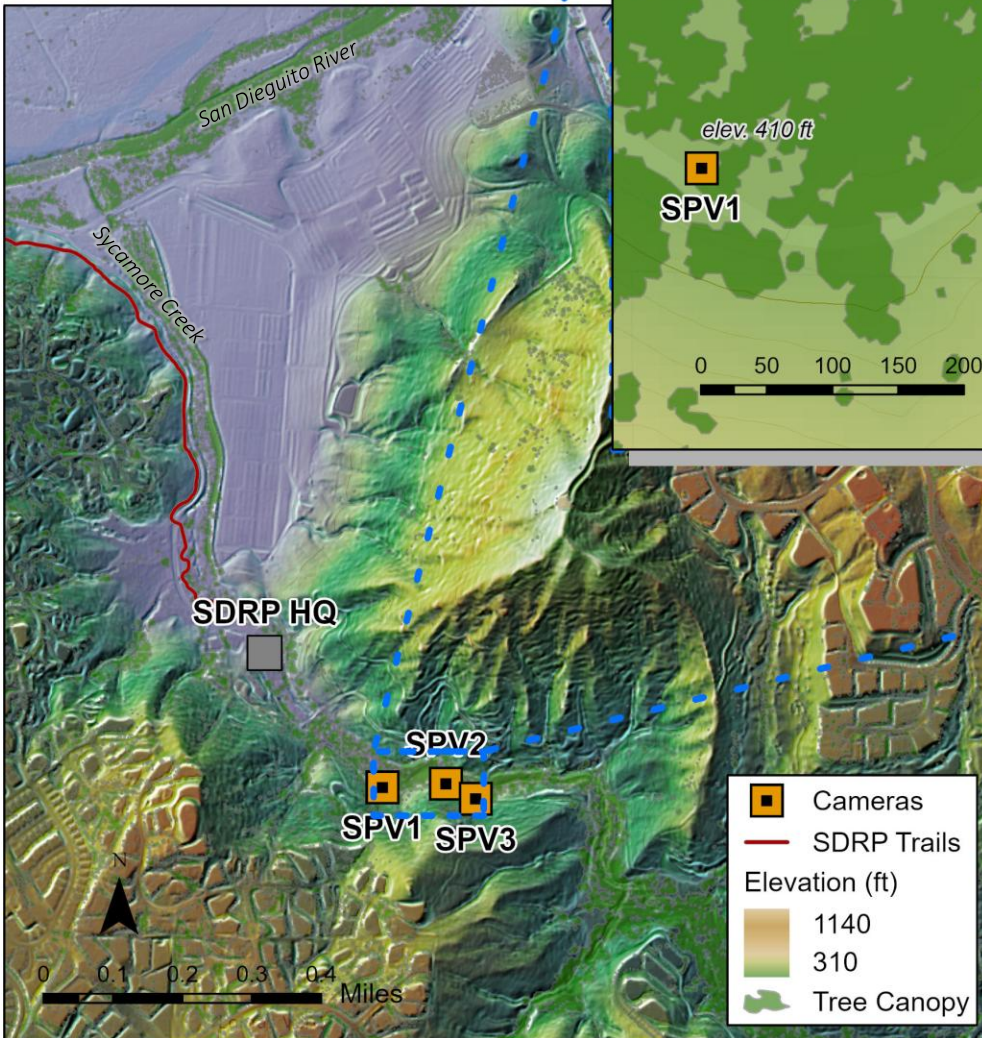
- The San Dieguito River Park Staff
- Shawn Carroll
- Liz Rozycki










# Wildlife Sightings at Sycamore Creek Cameras

## Location of Cameras



	Cameras
	SDRP Trails
Elevation (ft)	
	1140
	310
	Tree Canopy

# Past SDTT Monitoring (1999-2013, Transect 25)



# Camera Locations



# Monitoring Focus

- Why
  - Identify species currently using the area
  - Identify mid-to-large-size mammal movement patterns in the area
- How
  - Wildlife cameras
  - Acoustic monitors, for bats and audible sounds
  - Visual sightings, tracks and sign

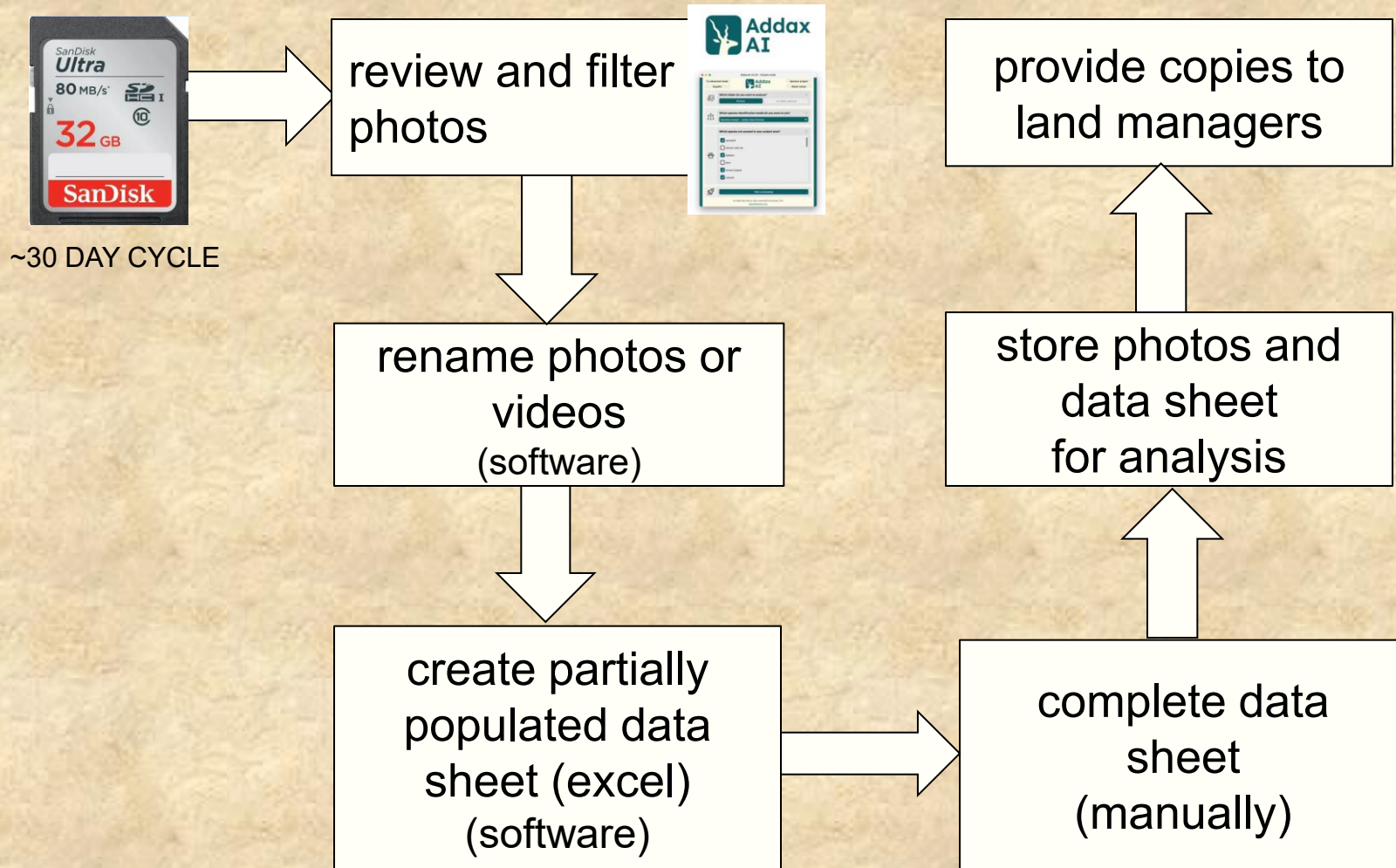
# Camera Installations

Camera Station	Install Date	Camera Days*	Card Photos**	Down Days
<b>SPV1</b>	2/17/2021	1,715	38,508	28 (on/off oops)
<b>SPV2</b>	7/1/2021	1,560	12,505	49 (on/off oops, camera malfunction)
<b>SPV3</b>	2/3/2022	1,169	39,802	49 (camera malfunction)

\* Camera days – operational days from install date through November 2025

\*\* Card Photos – total number of all photos reviewed between install date and end of November 2025

# Camera Data Processing

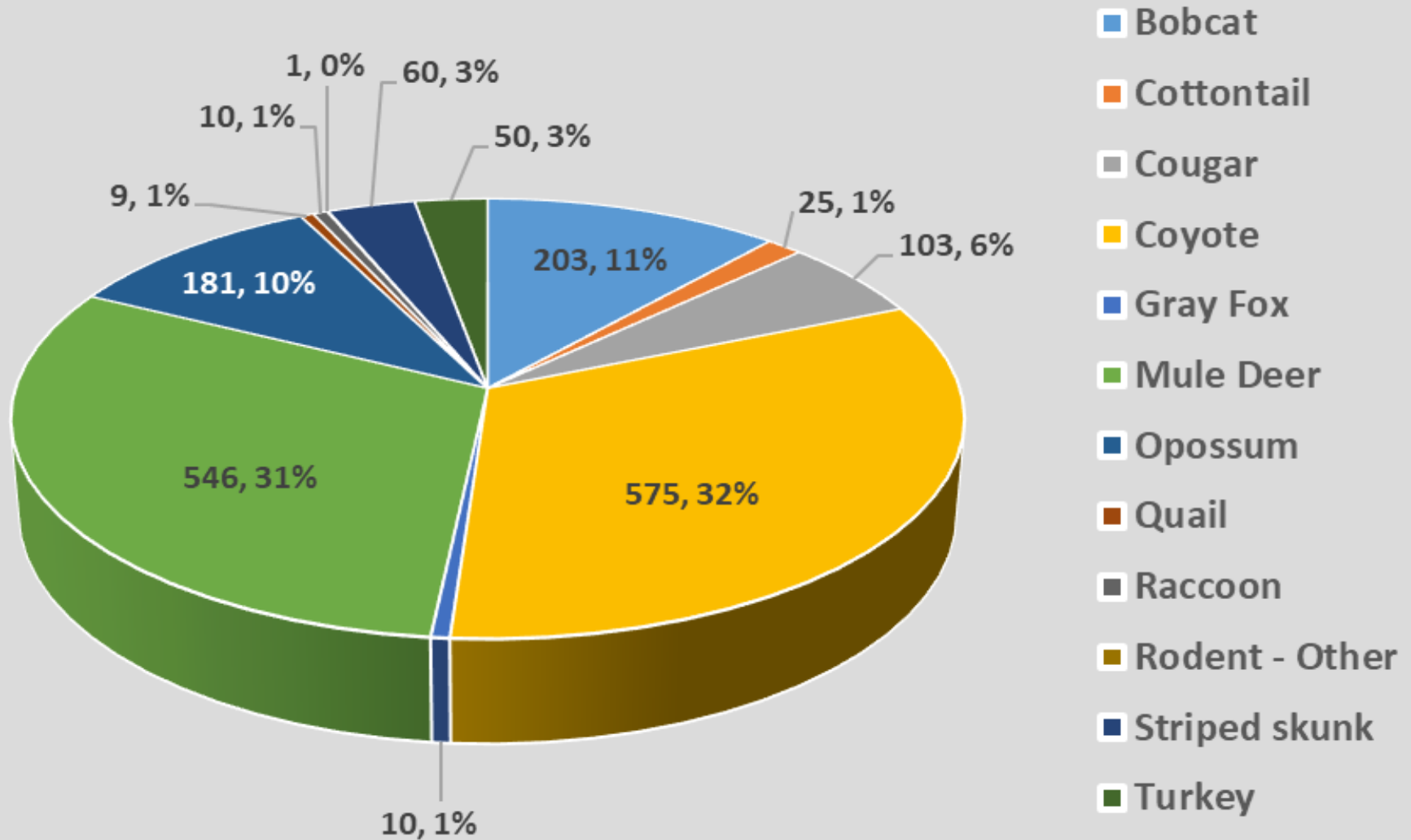


# Data Sheet Content

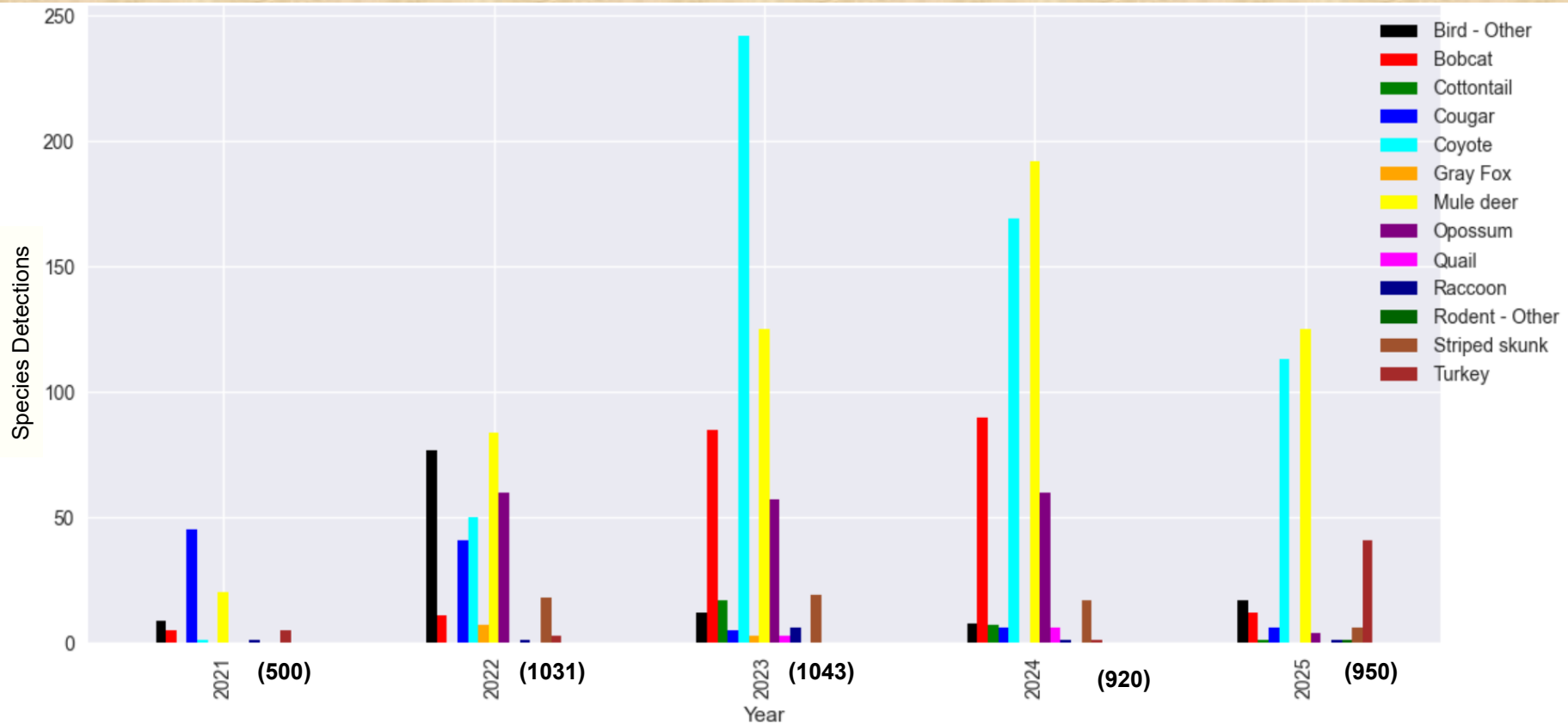
- Date
  - Season
  - Species
  - Type (Photo or Video)
  - Number of same species in photo
  - Time
  - Image ID
  - **Sequence Number\***
  - Camera Station ID
  - Image Quality
  - Direction
  - Description
  - Comments
  - **Ignore\***
- *Sequence Number and Ignore fields used to minimize overcounting of species detection events for analysis and relative abundance (visitation) index calculation*

# **SPECIES DETECTION SUMMARY**

# Sycamore Creek Species Detections All Cameras



# Yearly Detections

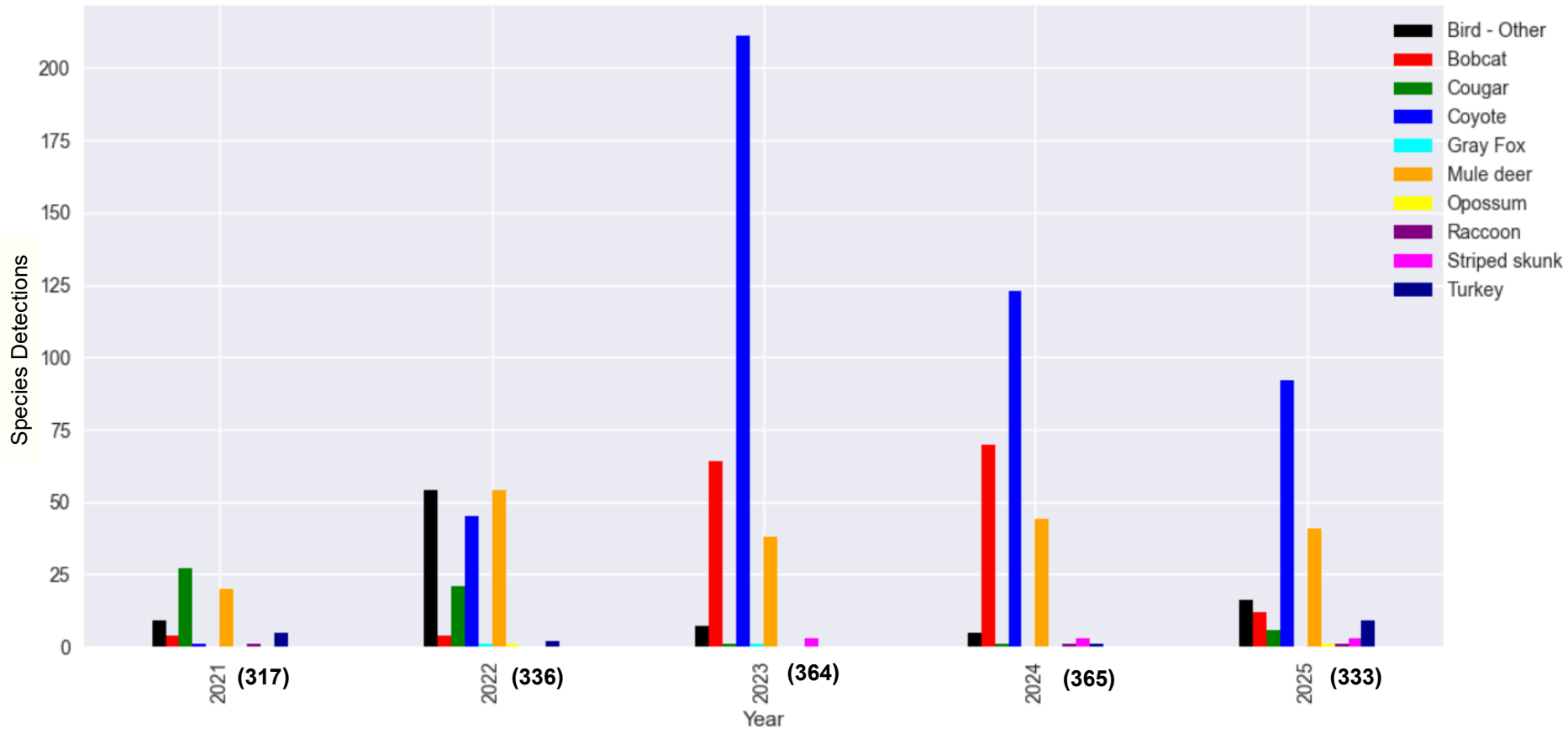


( xxx ) = camera days

# Camera Station 1



# Camera 1 - Yearly Detections



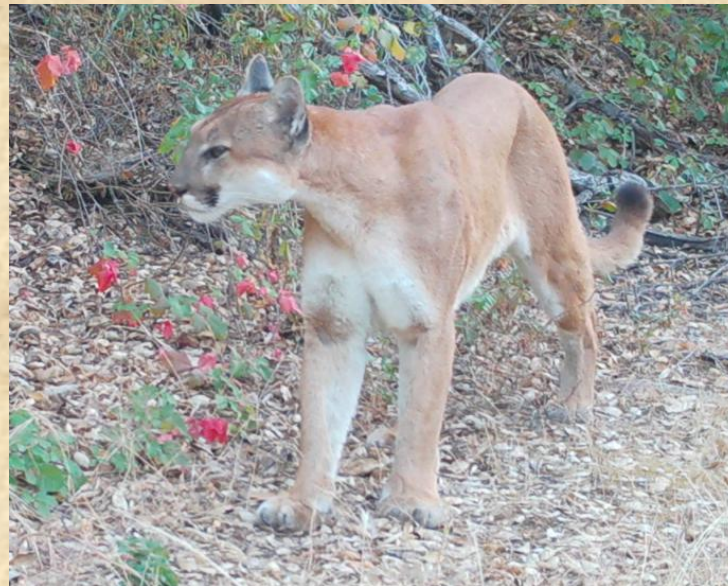
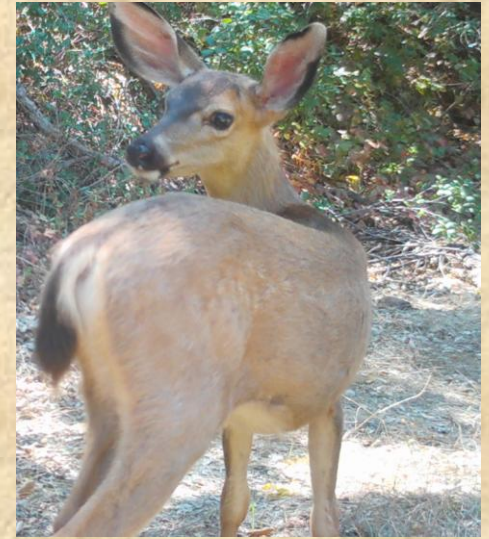
( xxx ) = camera days

# Visitation Summary

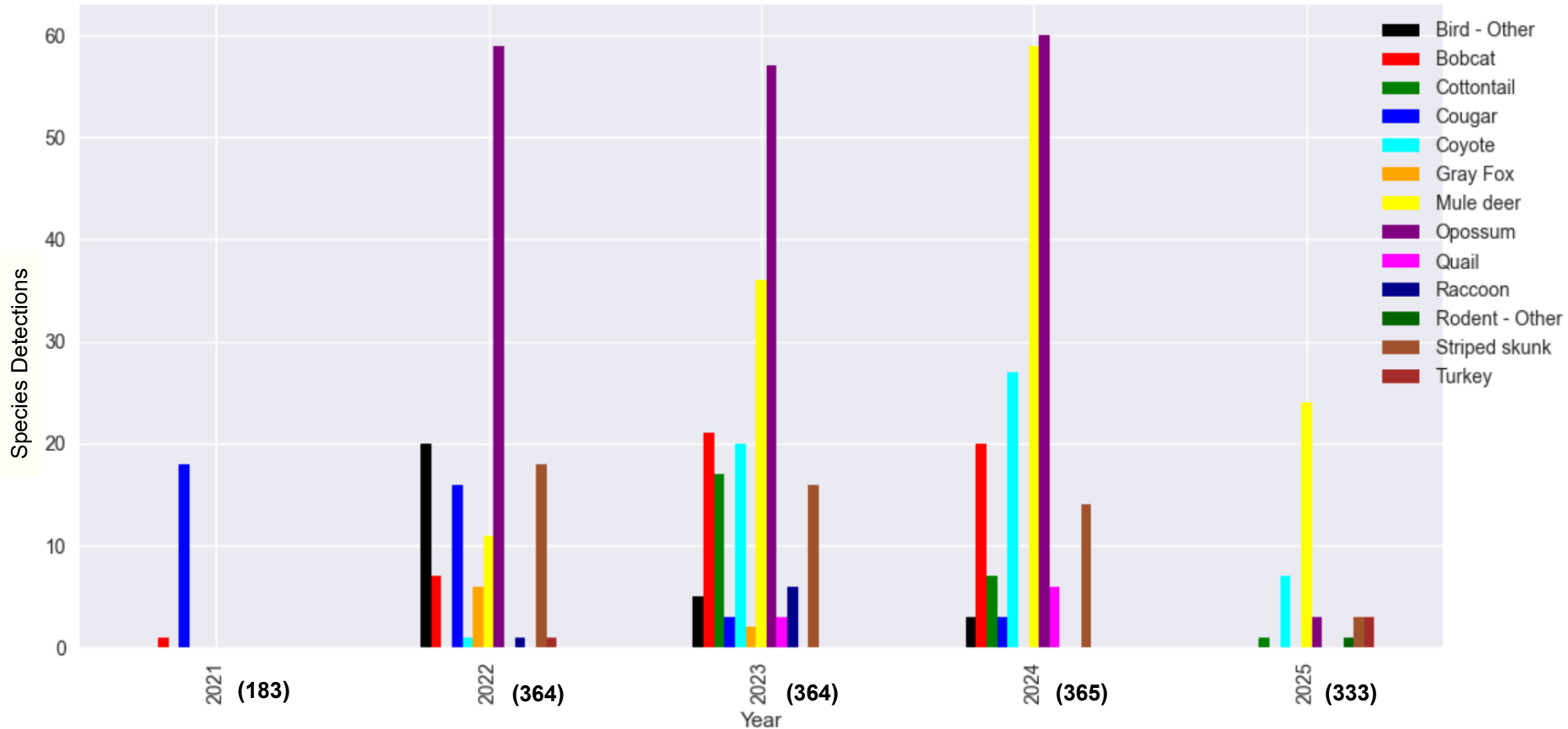
(Camera 1)

- Highest Visitation for:
  - Bobcat
  - Cougar
  - Coyote
- Second Highest Visitation for Mule Deer
- Highest number of bird detections
  - Owl, Hawk, Scrub Jay, Towhee, Northern Flicker, Hummingbird, Thrasher, Robin, Acorn Woodpecker, Mourning Dove, etc....

# Camera Station 2



# Camera 2 -Yearly Detections



( xxx ) = camera days

# Visitation Summary

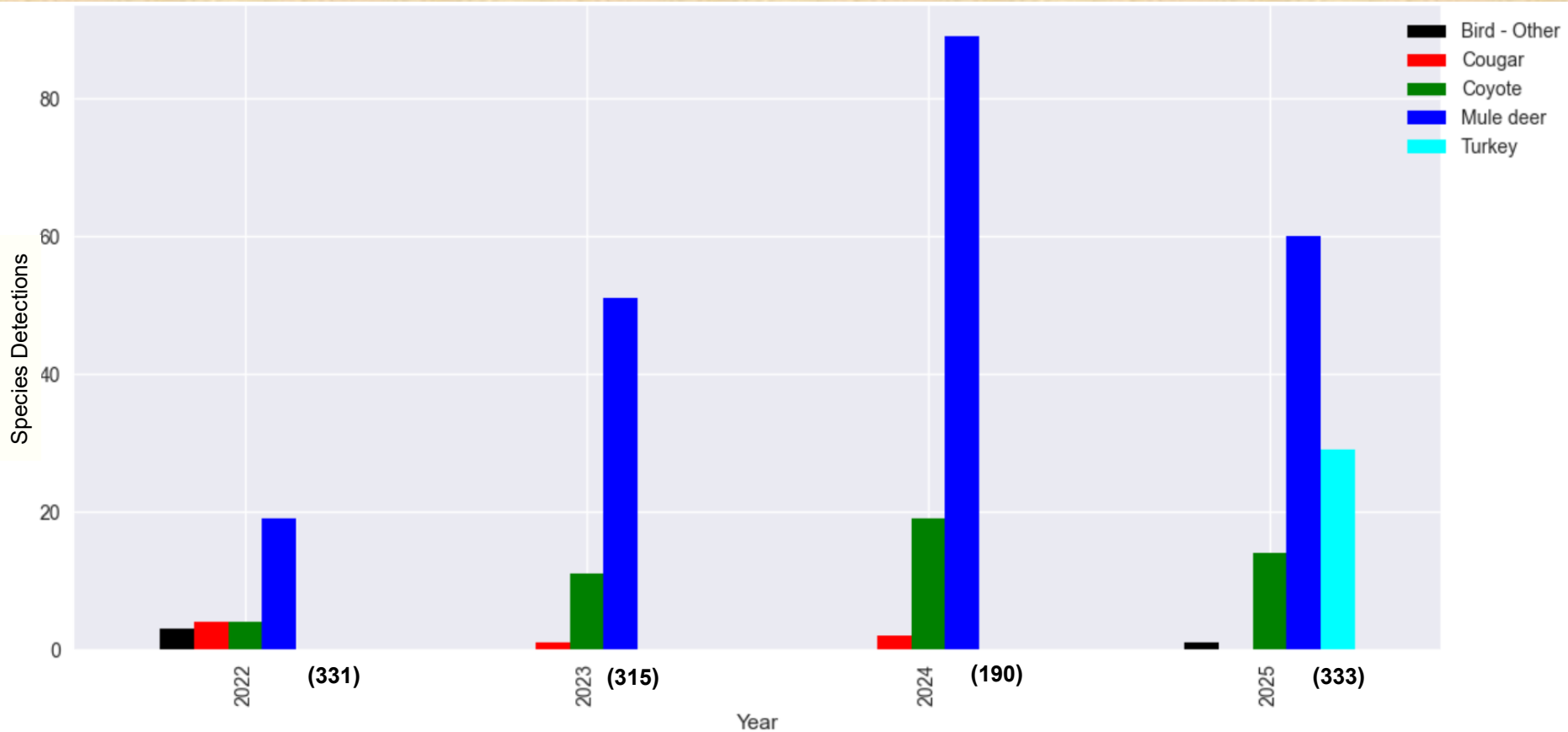
(Camera 2)

- Highest Visitation for:
  - Cottontail
  - Gray Fox
  - Opossum
  - Raccoon
  - Striped Skunk
- Second Highest Visitation for Cougar, Bobcat

# Camera Station 3



# Camera 3 -Yearly Detections



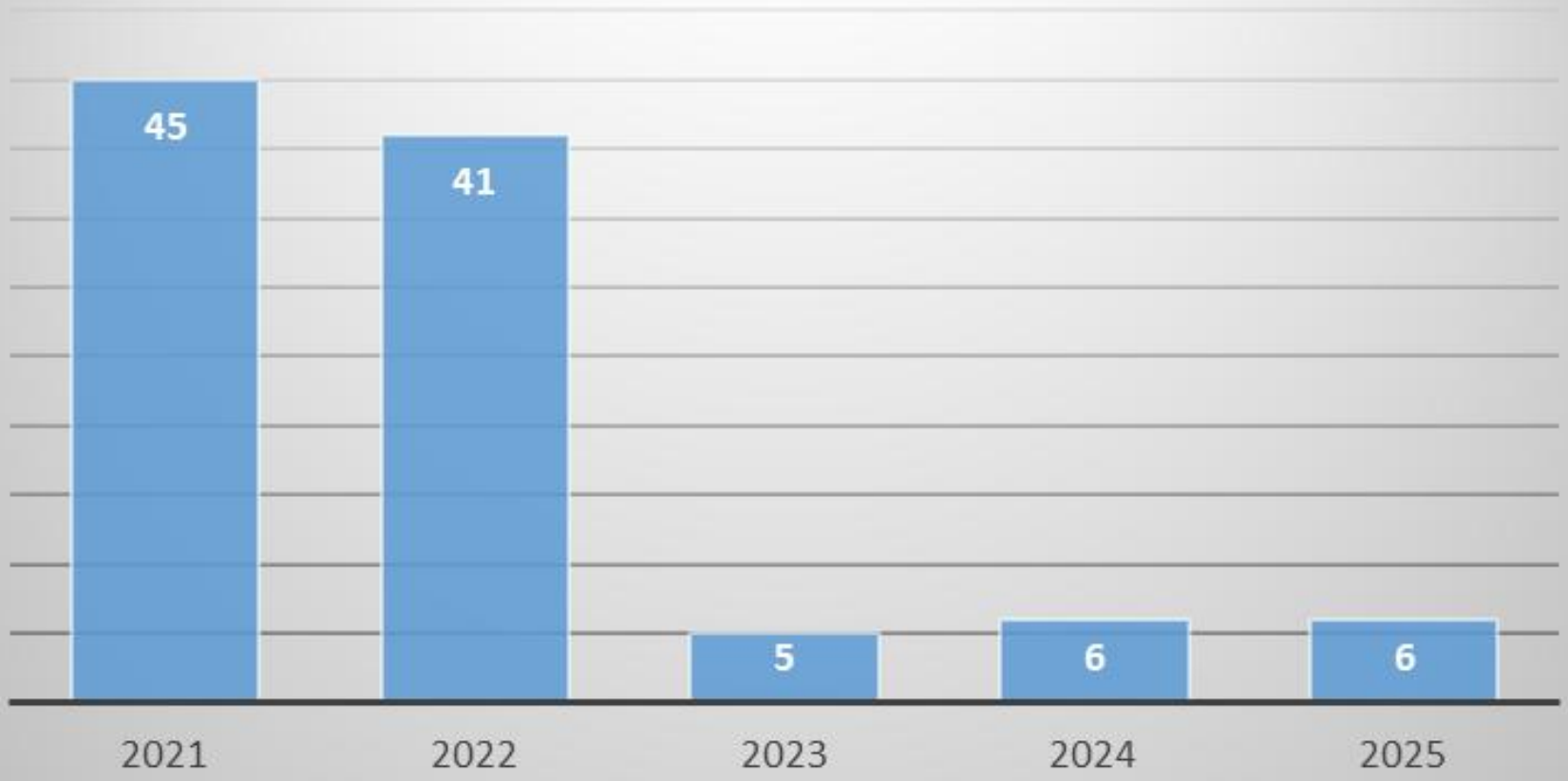
( xxx ) = camera days

# Visitation Summary

(Camera 3)

- Highest Visitation for:
  - Mule Deer
  - Turkey
- Second Highest Visitation for Coyote

# Cougar Detections



# 2021-2022

- **2021**
- Detections each month from March through December
- **2022**
- Detections in January through August, October, none in November or December



# 2023

- Only detections in mid January (Jan 11, 18 and 24)

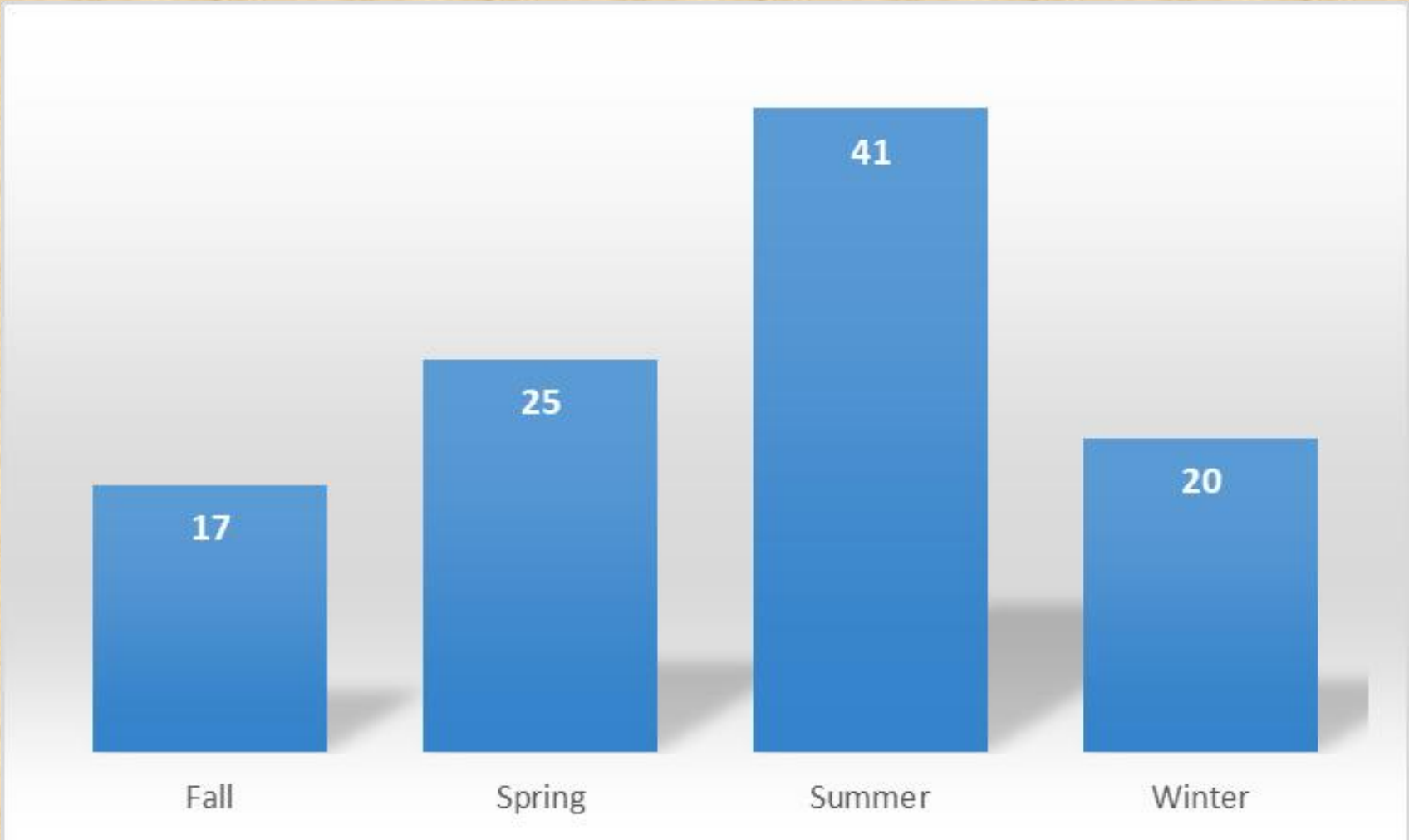


# 2024-2025

- **2024**
- Detections in July – September and December
- **2025**
- Detections in February-April, September and October

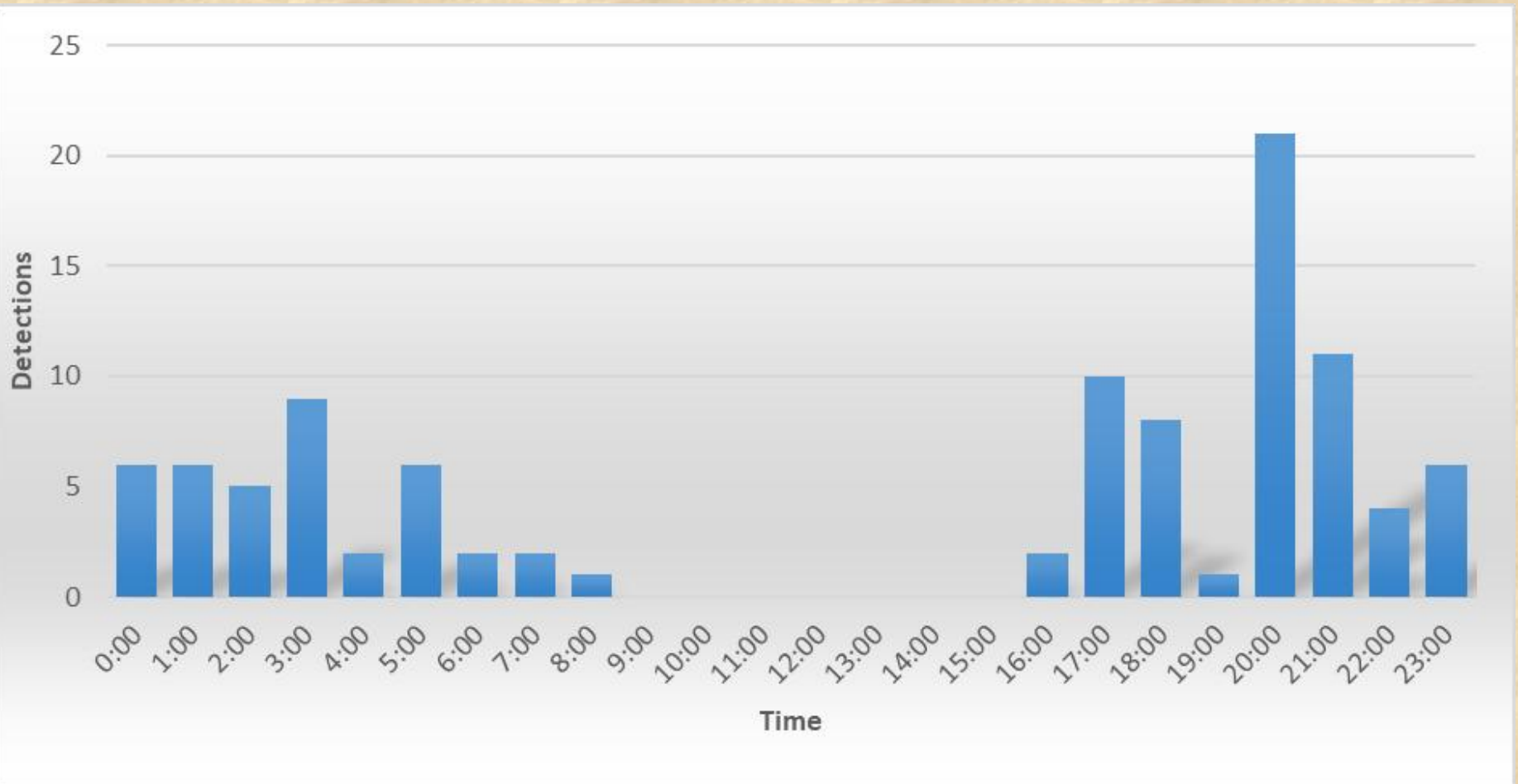


# Cougar Detections By Season



# Movement Analysis

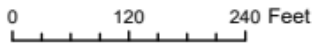
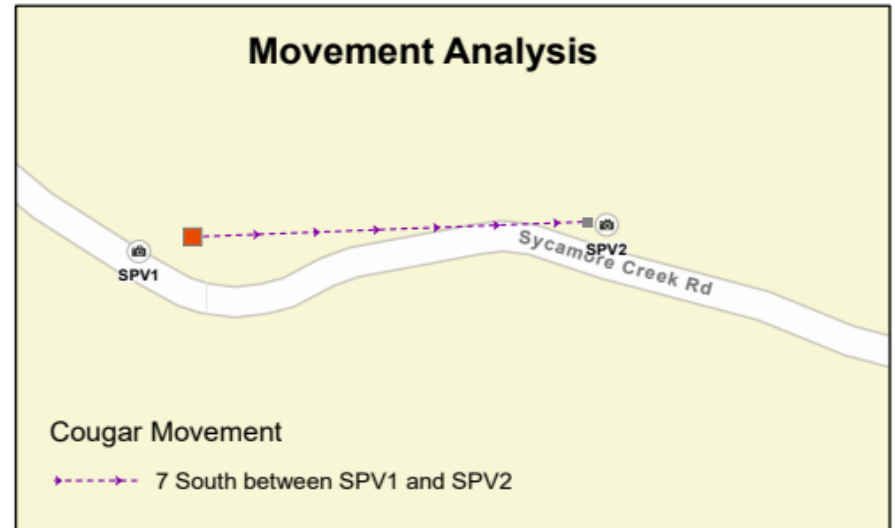
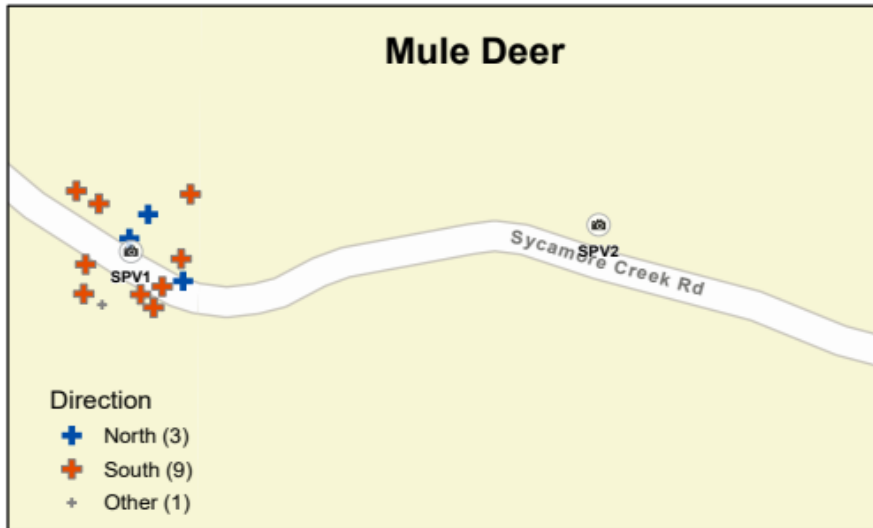
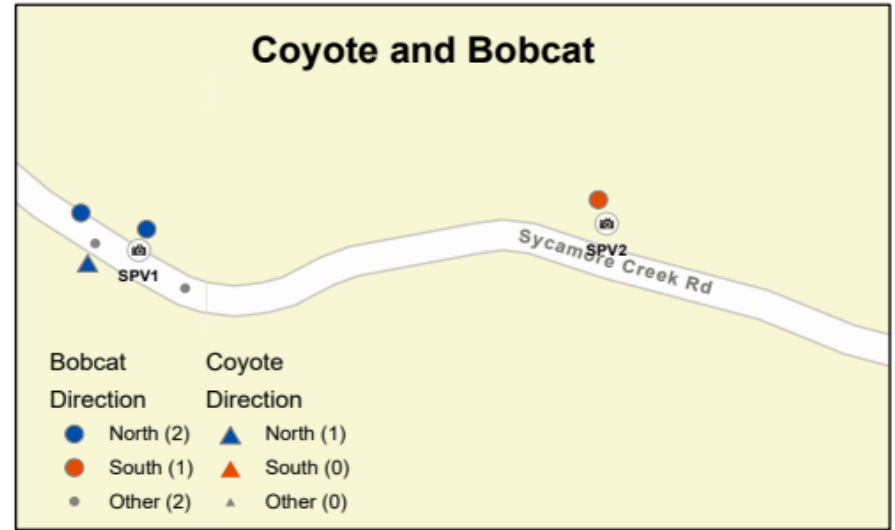
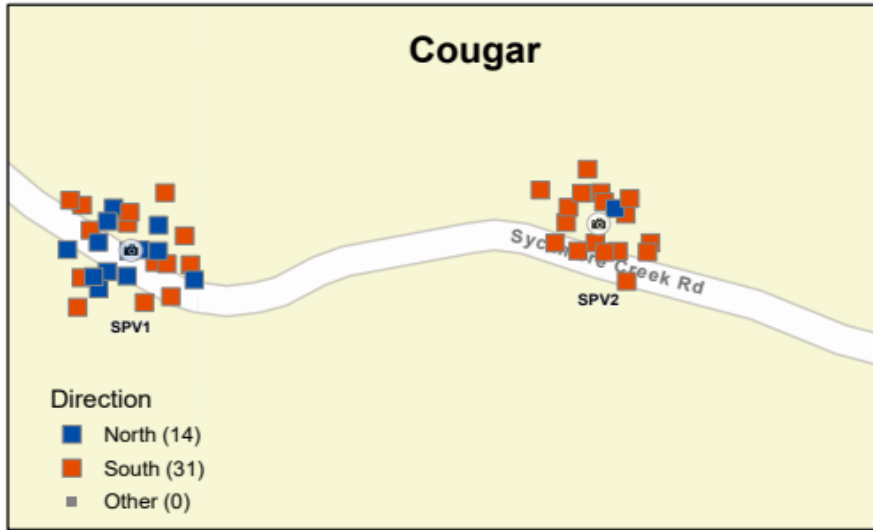
# Cougar Activity 2021-2025





# Wildlife Sightings at Sycamore Creek Cameras

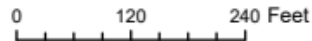
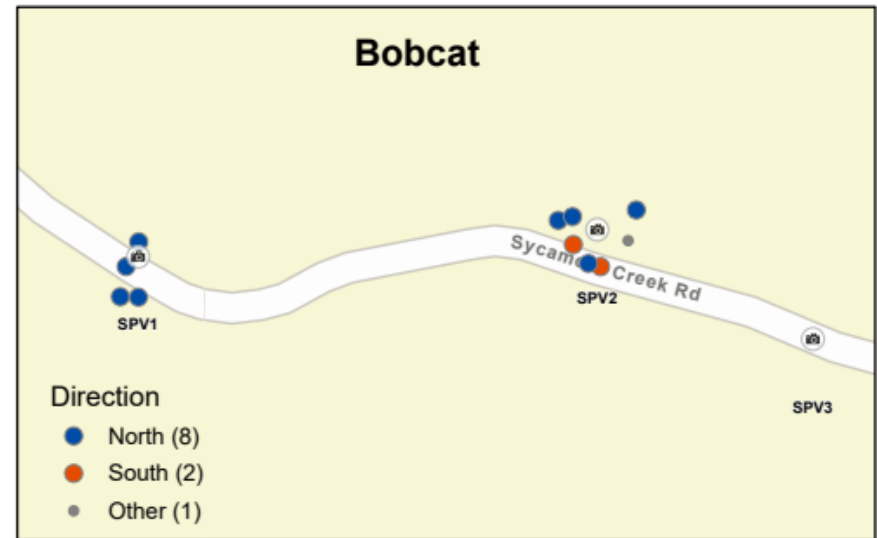
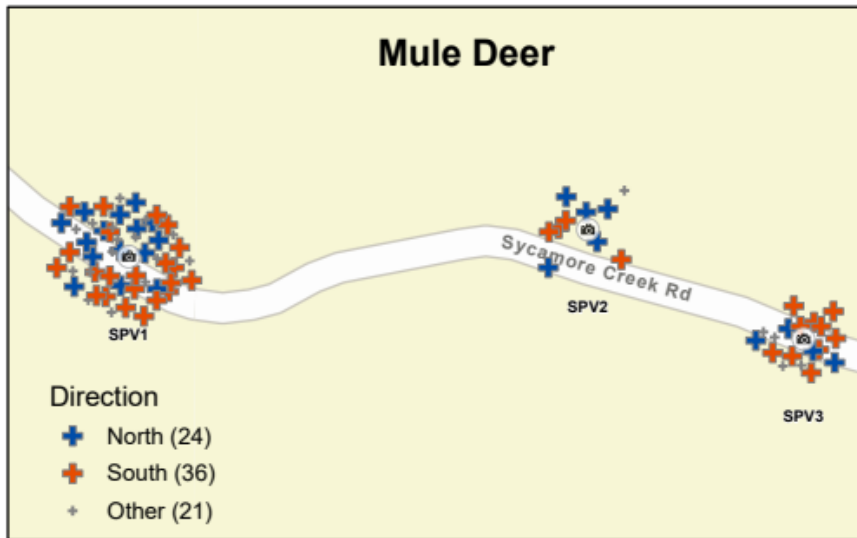
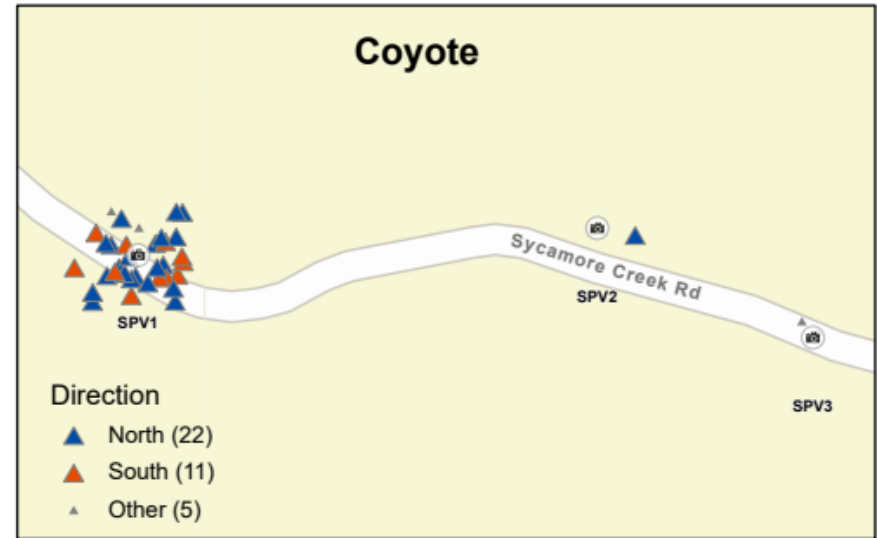
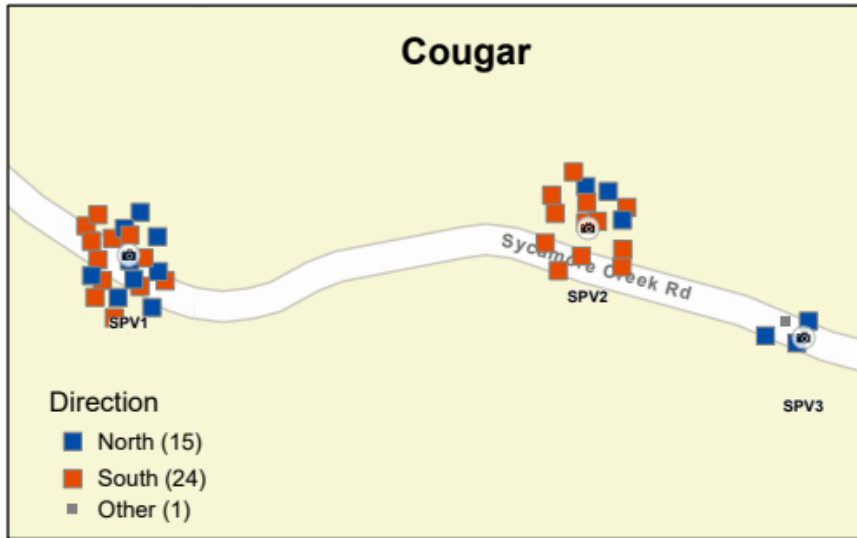
## Direction of Movement per Species - 2021





# Wildlife Sightings at Sycamore Creek Cameras

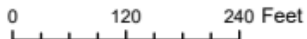
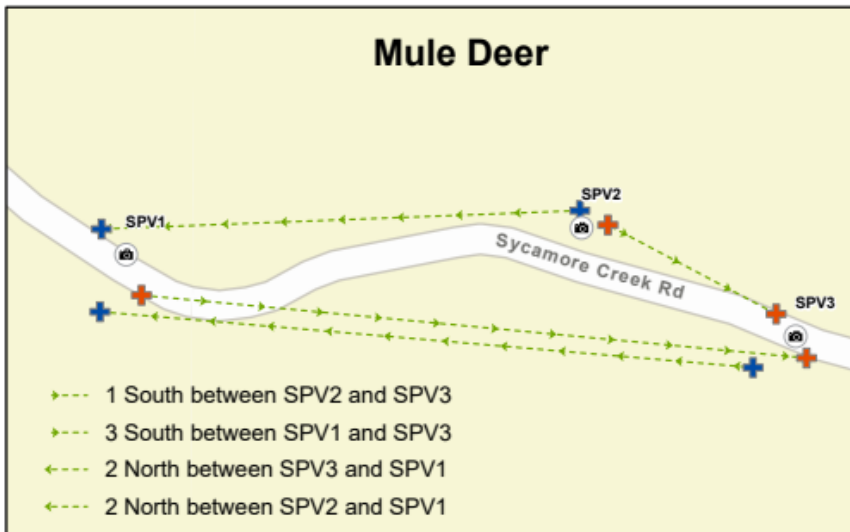
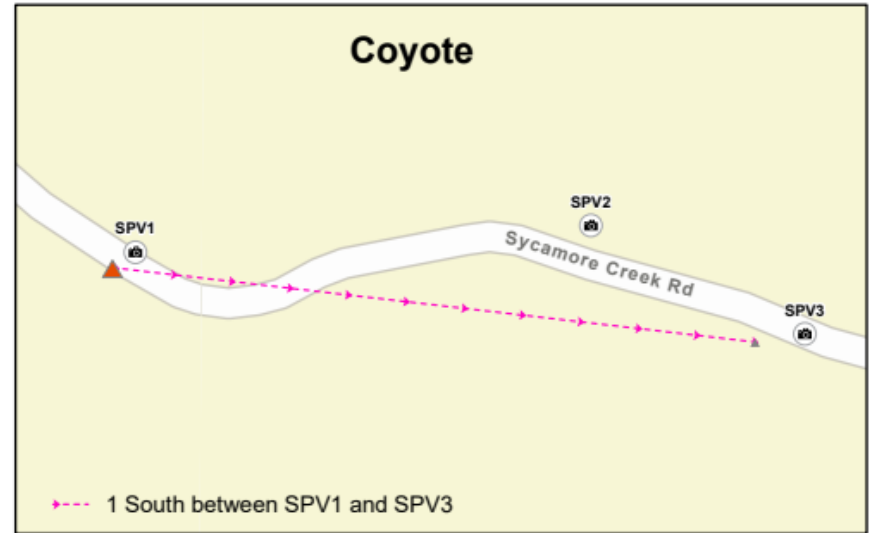
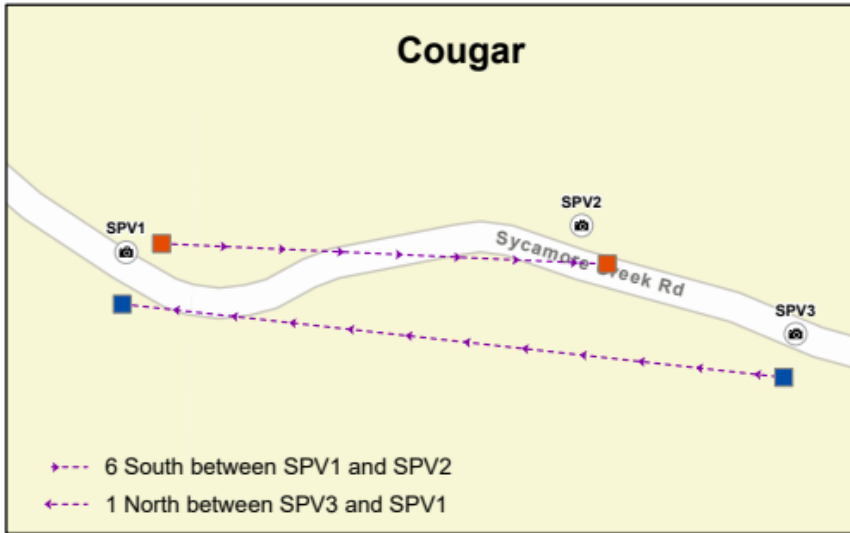
## Direction of Movement per Species - 2022





# Wildlife Sightings at Sycamore Creek Cameras

## Movement Analysis per Species - 2022



Species	Station ID	Date	Time	Direction
Cougar	SPV1	03/15/2022	21:56:57	South
Cougar	SPV2	03/15/2022	22:01:41	South
Cougar	SPV1	06/20/2022	01:22:21	North
Cougar	SPV3	06/20/2022	01:16:42	North

Species	Station ID	Date	Time	Direction
Coyote	SPV1	12/15/2022	10:02:27	South
Coyote	SPV3	12/15/2022	10:10:03	

Species	Station ID	Date	Time	Direction
Mule Deer	SPV1	02/19/2022	10:14:22	North
Mule Deer	SPV2	02/19/2022	10:08:04	North
Mule Deer	SPV1	03/07/2022	17:37:41	South
Mule Deer	SPV3	03/07/2022	17:52:33	South
Mule Deer	SPV1	04/25/2022	06:49:04	North
Mule Deer	SPV3	04/25/2022	06:46:09	North
Mule Deer	SPV2	11/11/2022	03:14:57	South
Mule Deer	SPV3	11/11/2022	03:21:07	South

Examples of movement between cameras

# Other Movements

## Camera Station 1



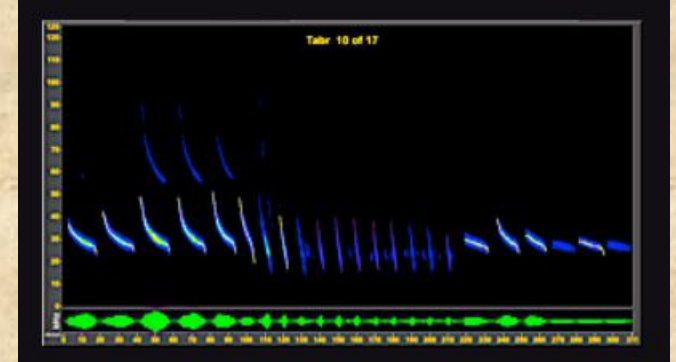
## Camera Station 2



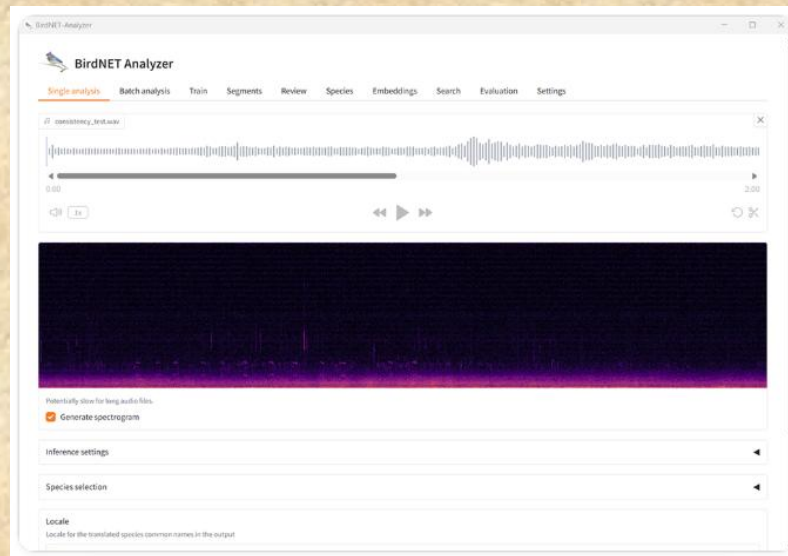
# Acoustic Monitoring



Audio Moth



SonoBat



BirdNet Analyzer

# Acoustic Analysis Process for Bats Overview



Filter out files containing no bat tonal features (Sonobat)

Process files through Sonobat software

Manually review classified (ID'd) calls using software's vetting tables

**Confirm Species**

Re-review low likelihood calls - confirm, reclassify or reject

Review Sonobat species summary

Reclassify files, as needed

# Acoustic Monitors



Acoustic Station 1



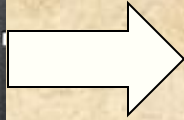
Acoustic Station 2

# Acoustic Station 2

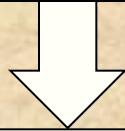
## Bat Detections

Scientific Name	Common Name
<i>Nyctinomops femorosaccus</i> †	pocketed free-tailed bat
<i>Tadarida brasiliensis</i>	Brazilian free-tailed bat
<i>Corynorhinus townsendii</i> †	Townsend's big-eared bat
<i>Eptesicus fuscus</i>	big brown bat
<i>Lasiurus blossevillii</i> †	western red bat
<i>Lasiurus cinereus</i>	hoary bat
<i>Lasiurus xanthinus</i> †	western yellow bat
<i>Myotis californicus</i>	California myotis
<i>Myotis ciliolabrum</i>	western small-footed myotis
<i>Myotis evotis</i>	long-eared myotis
<i>Myotis volans</i>	long-legged myotis
<i>Myotis yumanensis</i>	Yuma myotis
<i>Parastrellus hesperus</i>	canyon bat

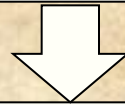
# Acoustic Analysis Process for Birds



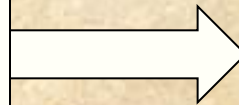
Download recordings



Batch process files through BirdNet Analyzer, export results to .csv file



Review data in Kaleidoscope Lite



**Confirm Species**

Correct or delete species



Identify unlikely species

# Acoustic Station 1

## Nocturnal Bird Detections

Species	Season
Great horned owl (at least one pair)	Summer, Fall, Winter, Spring
Western screech owl (at least one pair)	Summer, Fall, Winter, Spring
Common poorwill	Summer, Fall, Winter, Spring
American barn owl	Summer, Fall, Winter, Spring

### Other Detections

- 66 other bird species
- Pacific Tree Frog
- Mountain lion (steps and breathing, matched with camera date/time)
- Coyote (numerous 'choruses')
- Multiple cricket species (distinct patterns/frequencies)

# Acoustically Detected Species Summary

Taxon	Total Observed or Detected	Active Observations	Acoustic Detection	Detected Acoustically Only
Invertebrates	6	6	0	0
Amphibians	1	1	1	0
Reptiles	2	2	0	0
Birds	70	45	66	25
Mammals	19	5	15	14
<b>TOTALS</b>	<b>98</b>	<b>59</b>	<b>82</b>	<b>39</b>

**39 of 98 (40%) of species detected only acoustically**  
**39 of 92 (42%) of vertebrate species detected only acoustically**

List



*Thank you!*

*San Dieguito River Park*

*San Diego Tracking Team*