

Concentration of Barred Tiger Salamander in Wheeler Lake

BAMphibians

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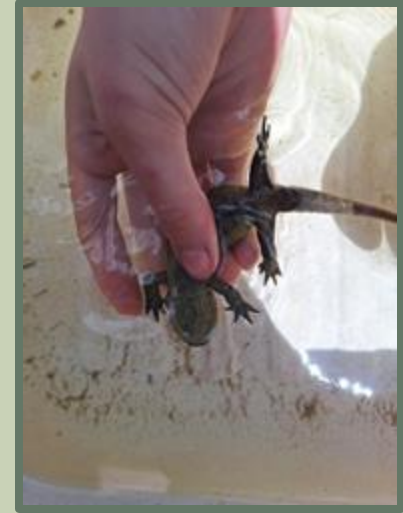
Why Salamanders?



- Interest in wildlife biology
- Colorado State Amphibian
- Threatened/vulnerable
- They're cute :)

Background:

- We were immediately interested in the Salamanders and their behavior
- Our attention was turned towards the salamanders in the lake and our research question was born





Research Question:

**How does the time of day
affect general salamander
concentration by the shore
of Wheeler Lake?**

Hypothesis:

If the temperature is warm, then we will observe a higher concentration of salamanders by the shore of Wheeler Lake.

Variables:

01

Gilled
Salamander
Count

02

Non- Gilled
Salamander
Count

03

Three 1x2 meter
sites

04

Weather
Conditions

05

Water
Temperature

06

Time of Day

07

Depth of the water

Materials Used:



01

Thermometer

04

Stopwatch

02

Measuring tape

05

Notebook



03

Flags

06

Bucket



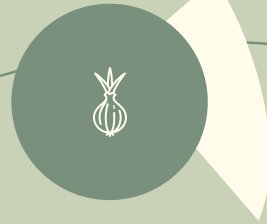
Planning Structure:

Designate sites for data collection



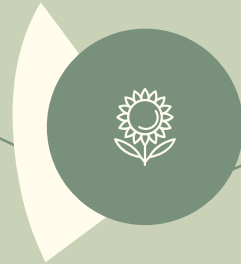
1

Visit sites 10 times a day for five minutes each



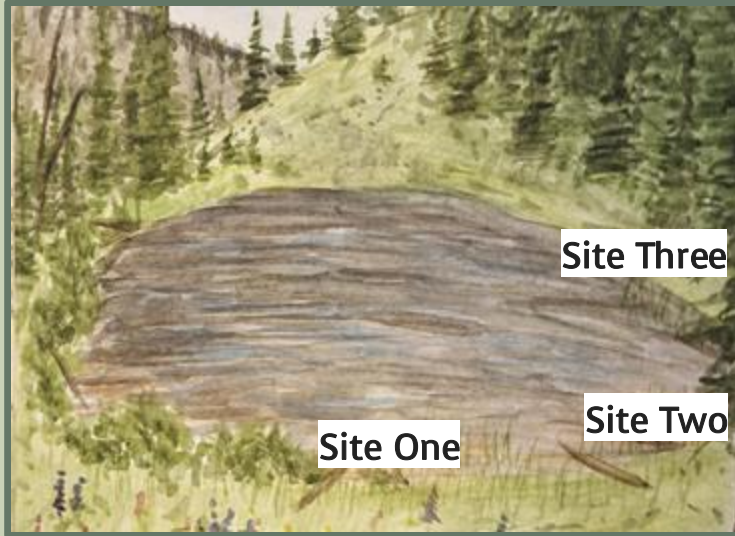
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Record gilled and non-gilled salamander count



3

Map of Wheeler Lake:



- Area: 14,583.1 m²
- Perimeter: 465 meters

Water Depth at Research Sites:



01

Site One

Water – 15 cm

02

Site Two

Water – 25 cm



03

Site Three

Water – 17 cm



Barred Tiger Salamander Length



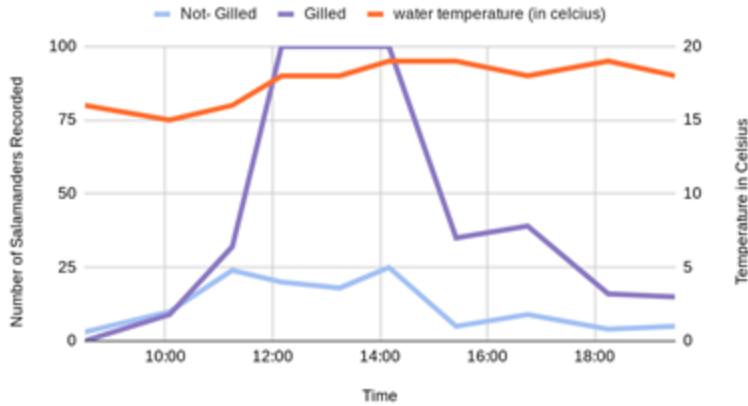
Length (cm)			
Gilled		Non- Gilled	
15	Bill	17	Tiny Tim
16	Ted	19	Fred
18	Massive Myrtle	22	Big Bertha

Data table at Site 1 on Day one

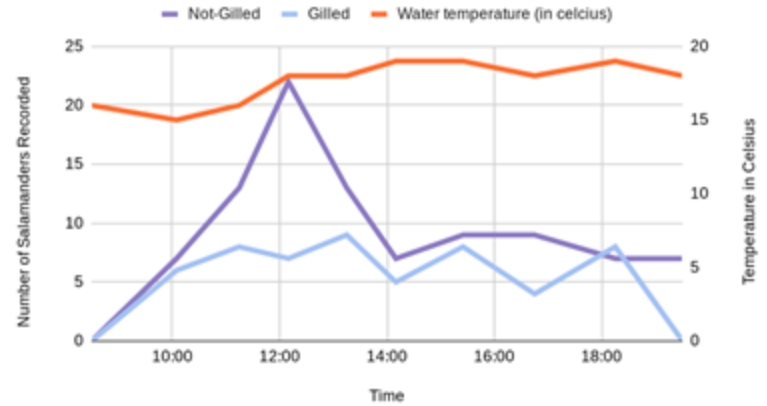
🕒 Time	# Not- Gilled	# Gilled	# water temperature (in celcius)
8:30	3	0	16
10:05	10	9	15
11:15	24	32	16
12:10	20	100	18
13:15	18	100	18
14:10	25	100	19
15:25	5	35	19
16:45	9	39	18
18:15	4	16	19
19:30	5	15	18

Data Distribution on Day 1:

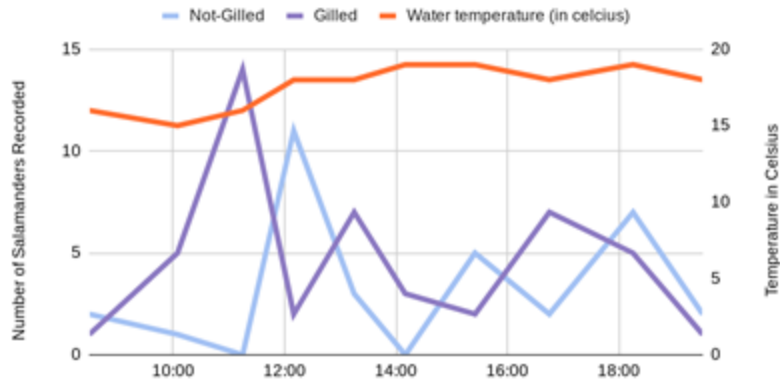
Data Collection from Site 1 on Day one



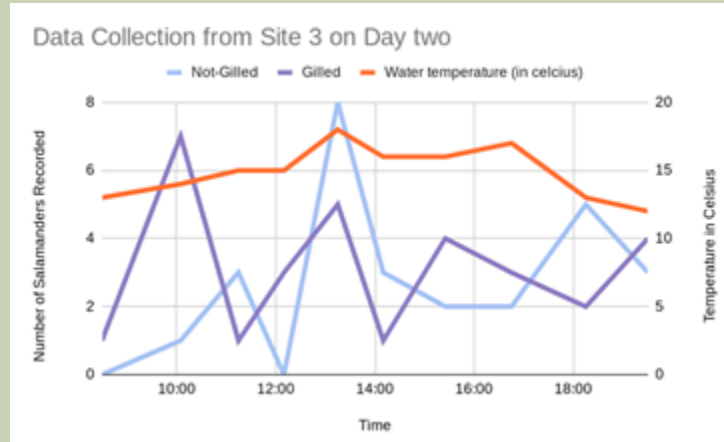
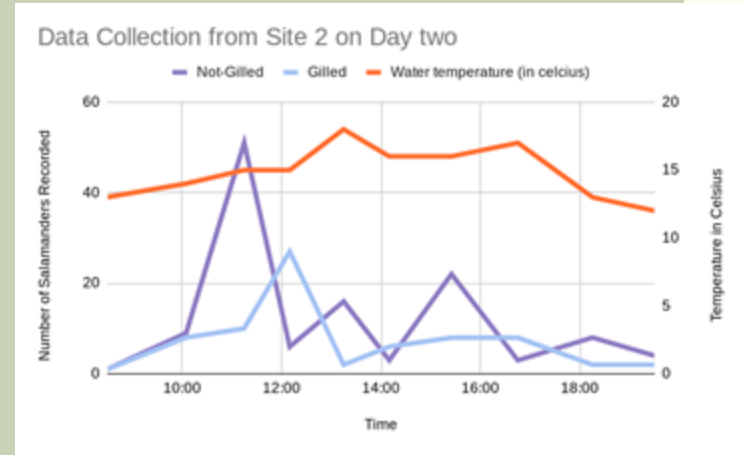
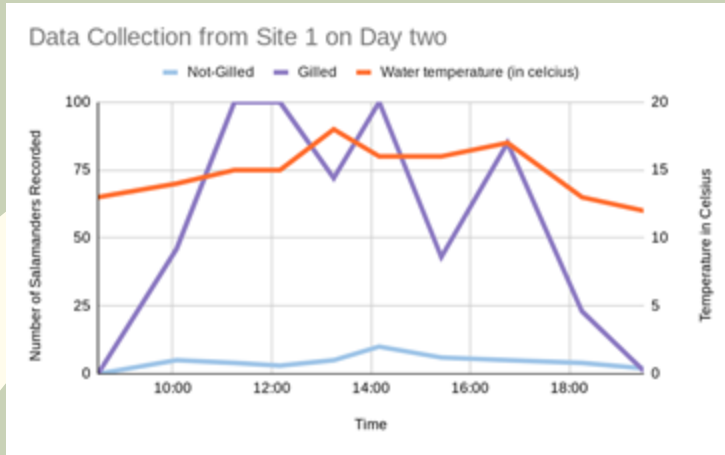
Data Collection from Site 2 on Day one



Data Collection from Site 3 on Day one



Data Distribution on Day 2:



Barred Tiger Salamander Animal Behavior:

- Higher levels of gilled at plot one
- Higher level of non-gilled at plot two
- Cluster around grassy areas in water
- Coming up for air and eating insects
- No other animals observed in lake besides insects

Conclusion:

- Our hypothesis was correct, but the results were more complex than expected
- Relative fish population turned out to be irrelevant

Future Research:

- Originally thought that physical characteristics were directly related to sexual maturity
- Pedomorphism vs metamorphism
- Can occur in isolated areas
- Might explain the disparities in size
- Experiment was limited by time in the field
- Further questions proposed
 - Water quality
 - Food Chain
 - Overall lake health comparatively



Any Questions?

