

# The Effect of Biodiversity Loss and Climate Change on Tick-borne Disease

CARINA MOTTA  
PRE-BIO MAJOR

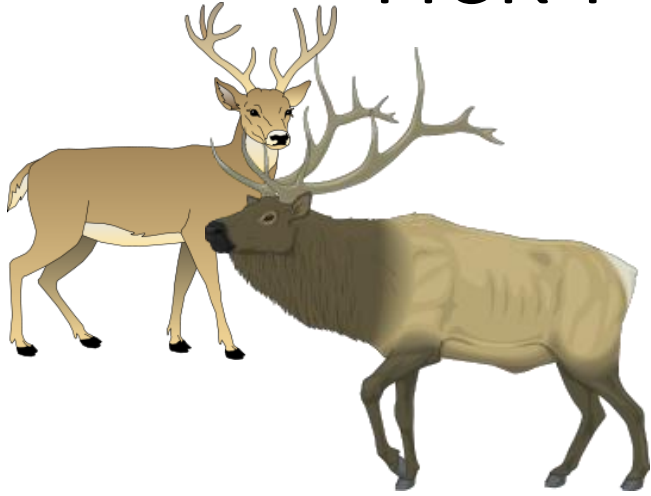
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MENTOR: DEVYN ORR  
PI: HILLARY YOUNG

DEPARTMENT OF ECOLOGY, EVOLUTION, AND MARINE BIOLOGY  
UNIVERSITY OF CALIFORNIA, SANTA BARBARA



# Potential Relationship Between Tick Population and Human Health



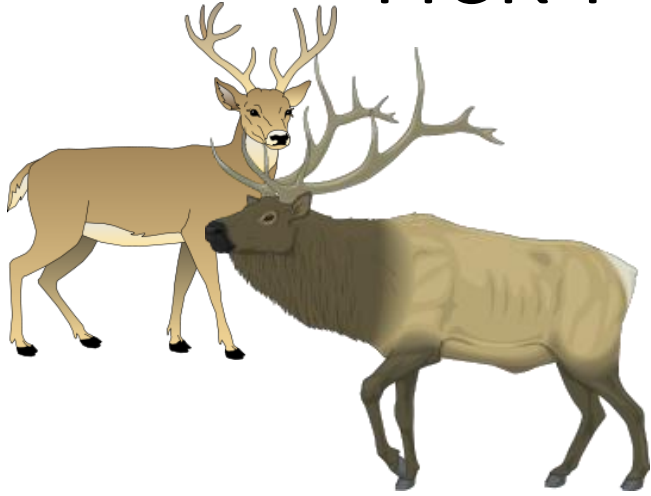
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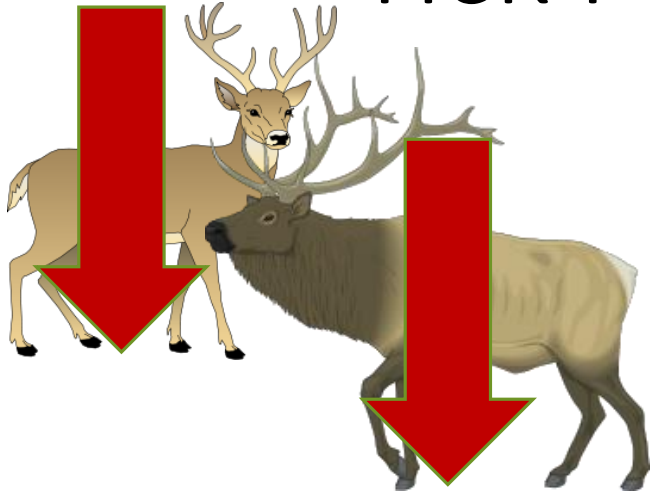
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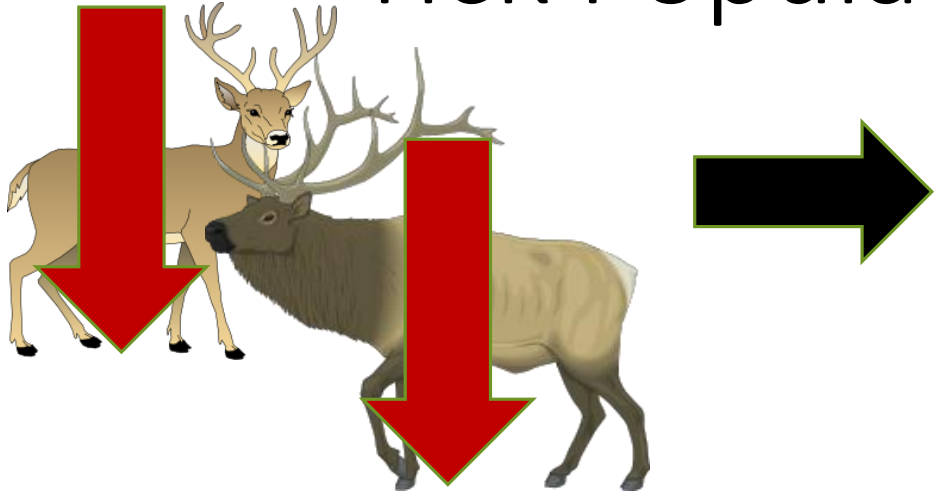
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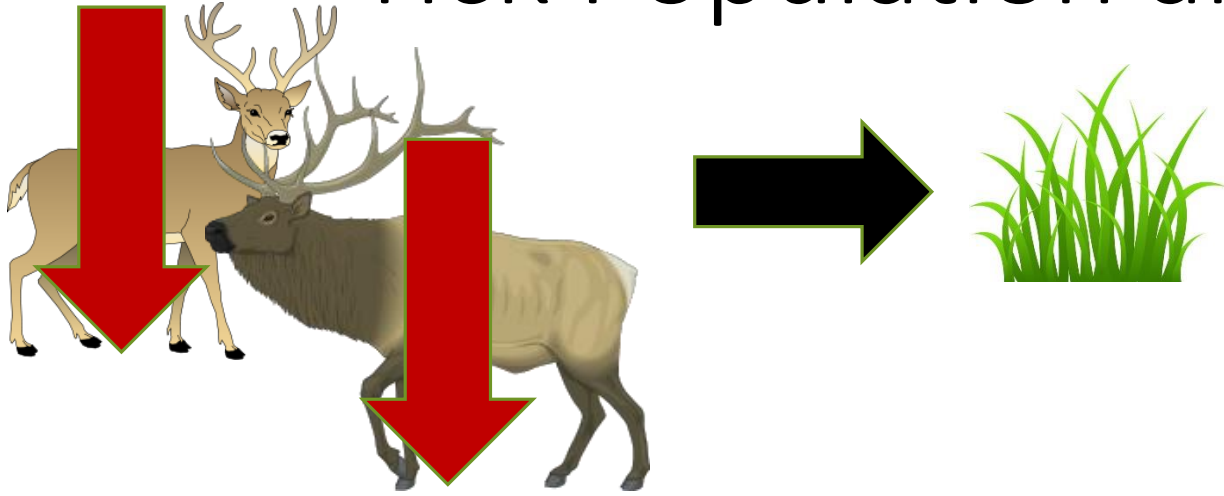
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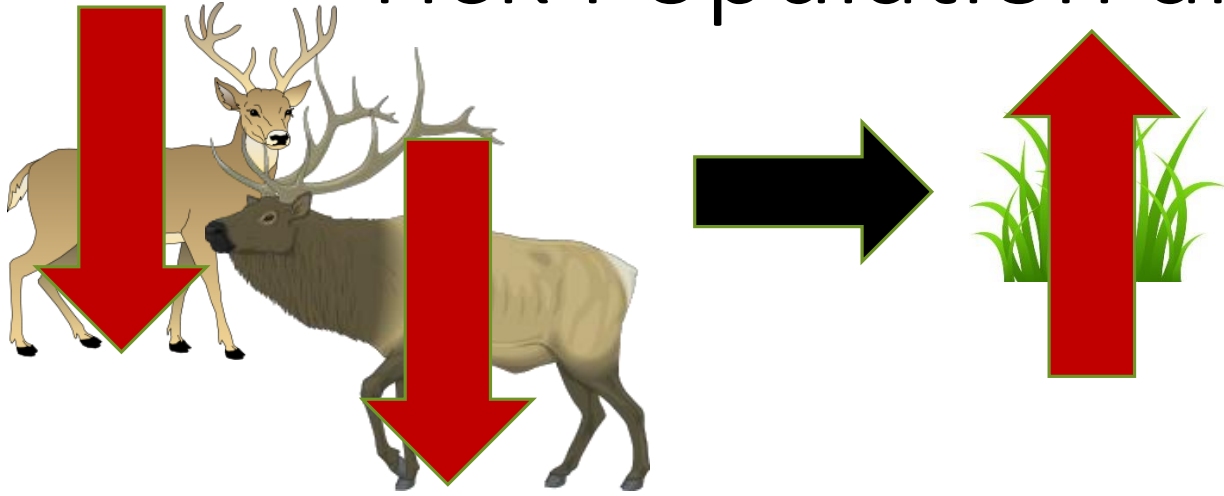


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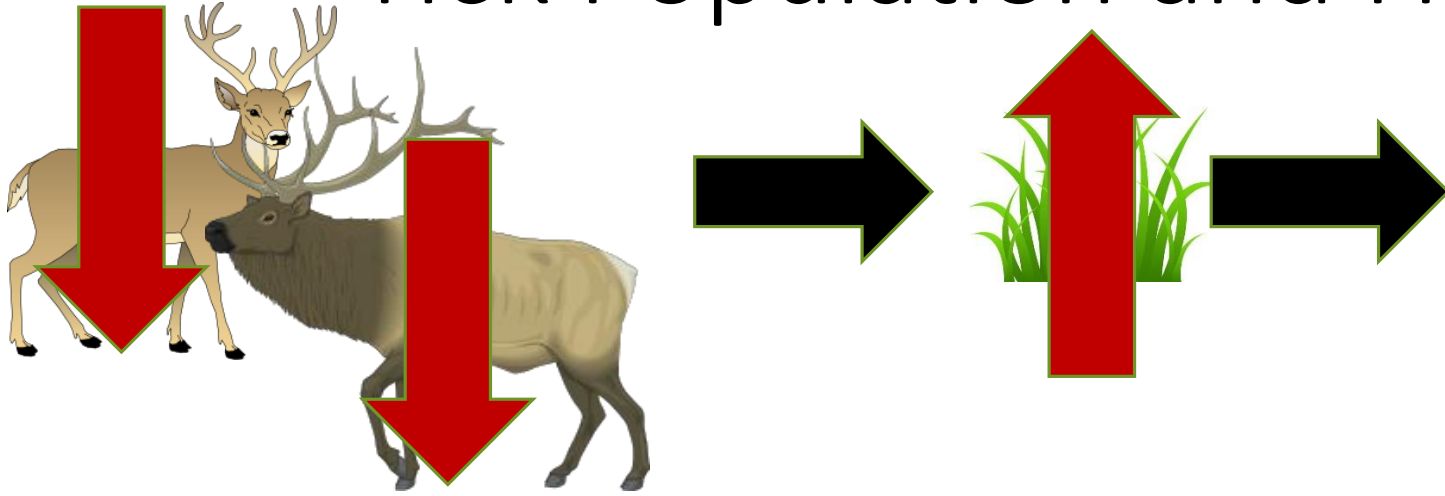




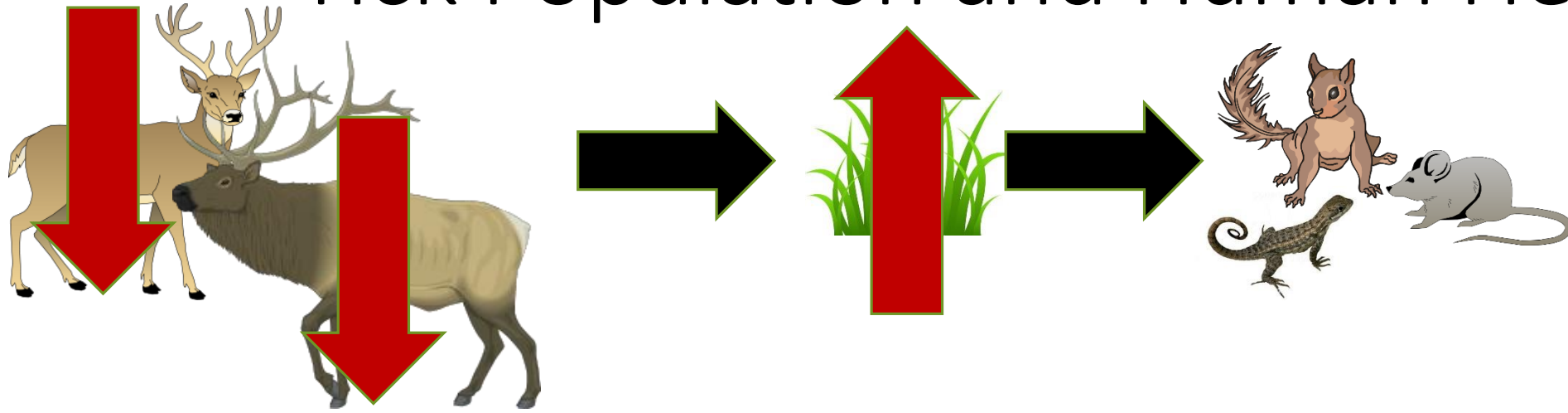
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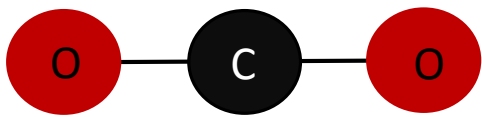
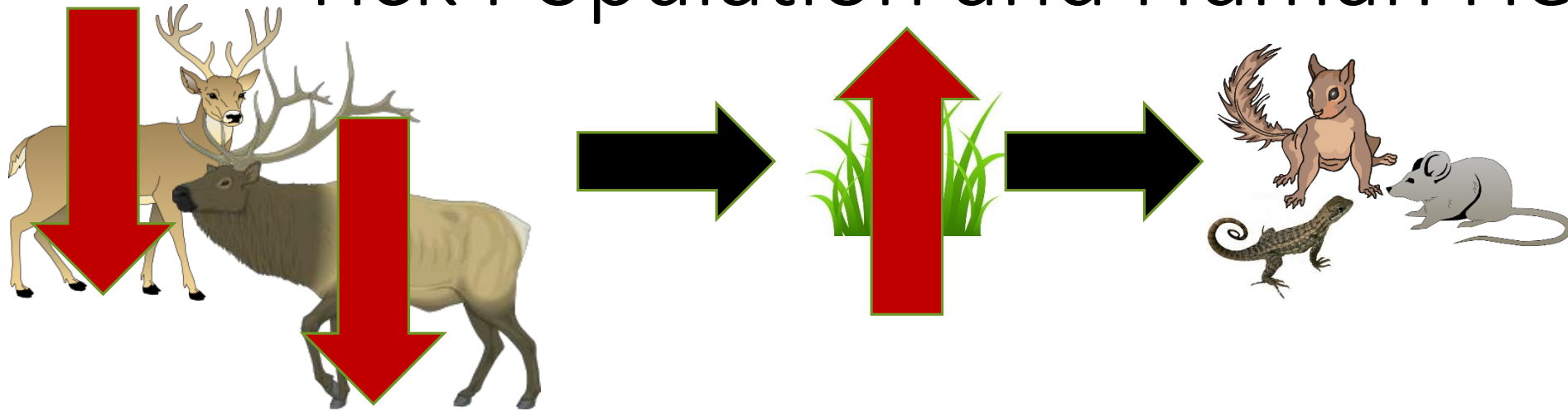
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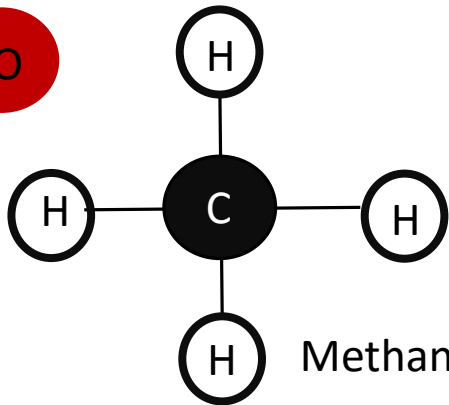
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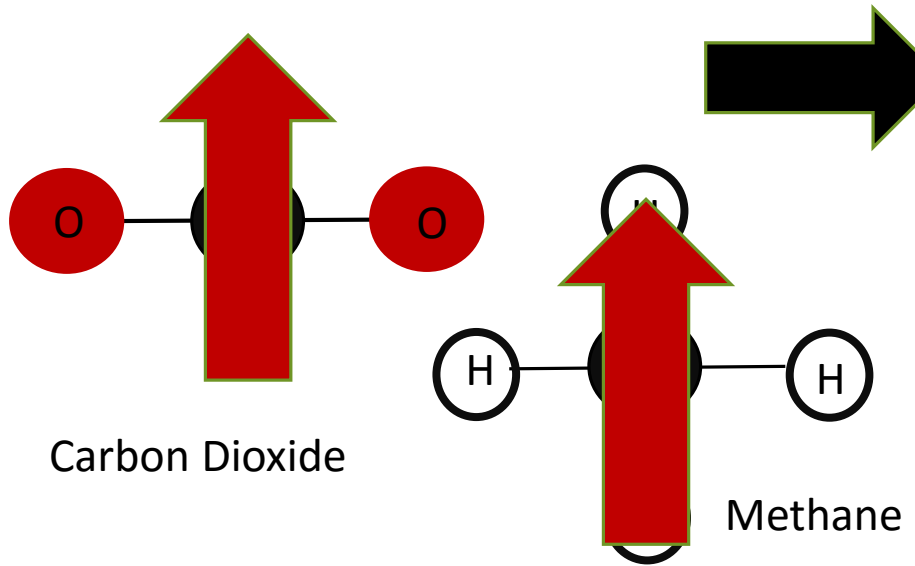
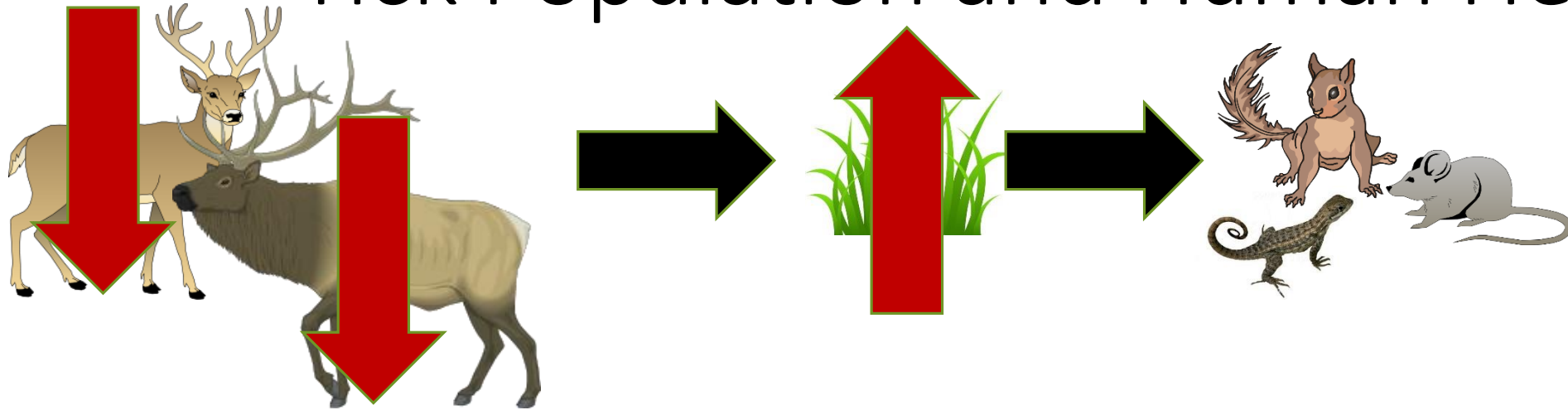


Carbon Dioxide

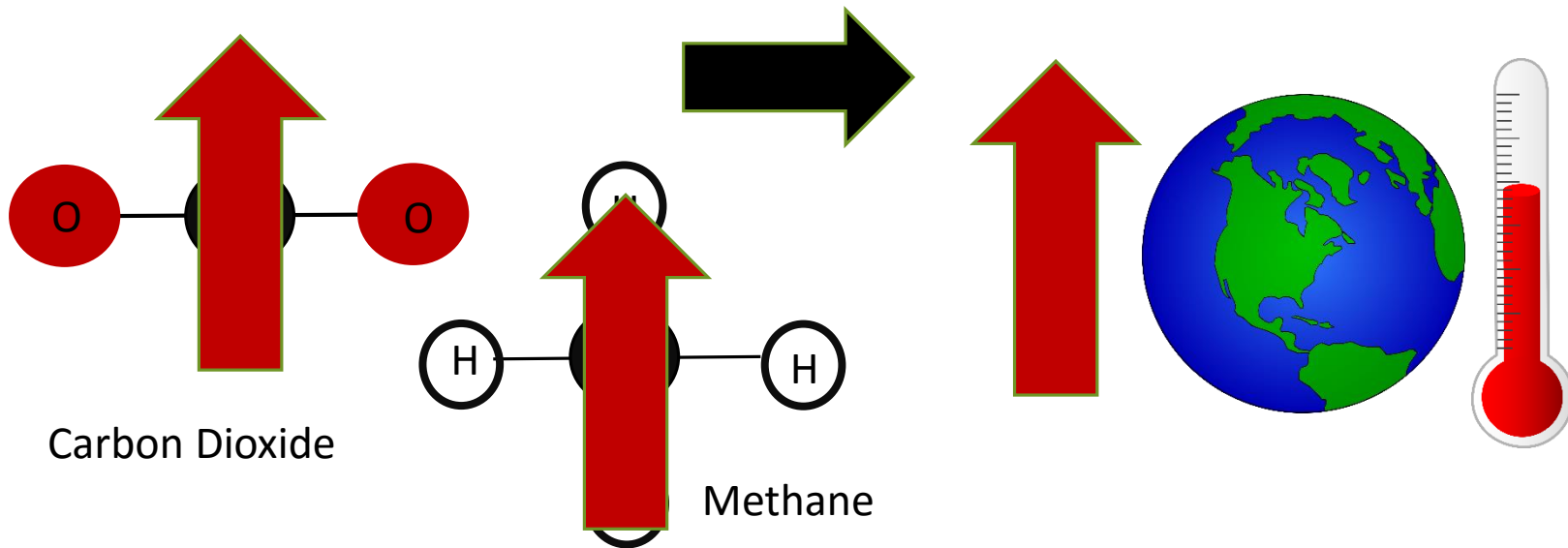
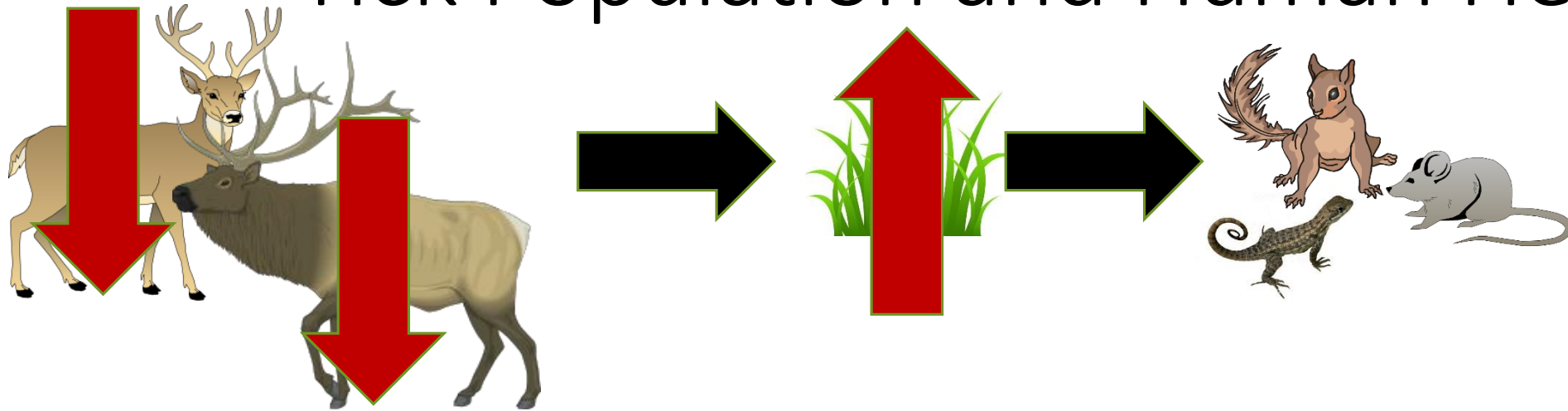


Methane

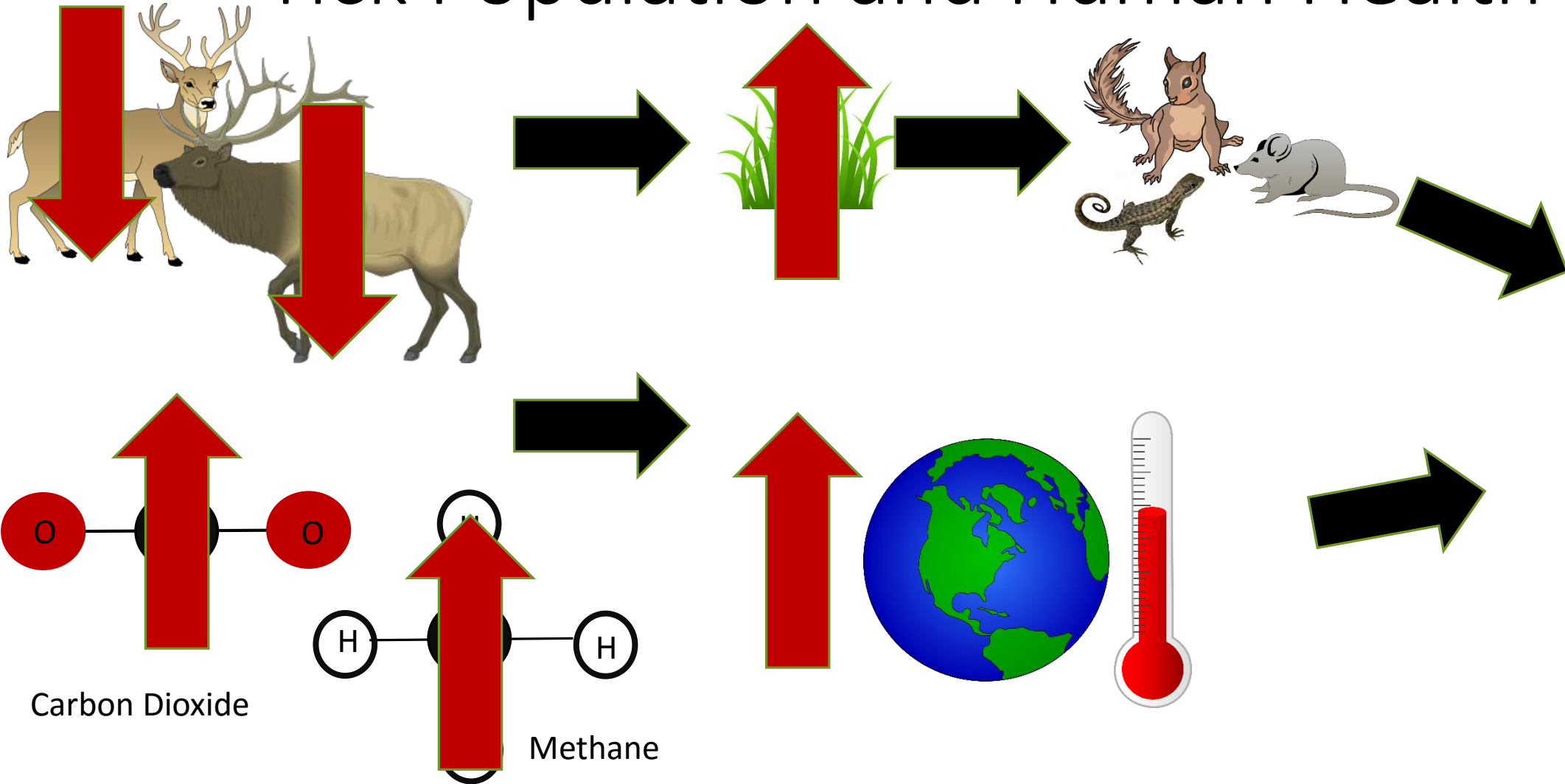
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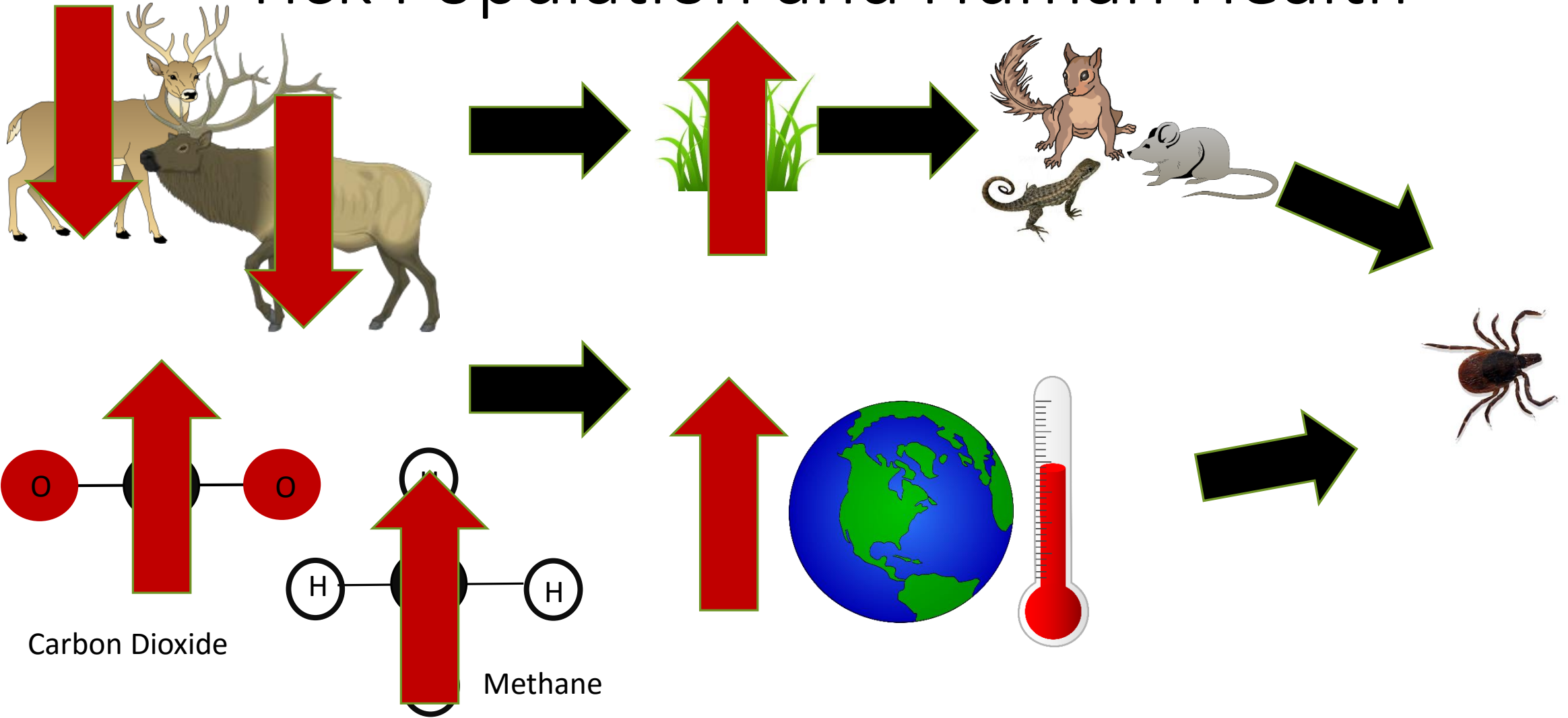
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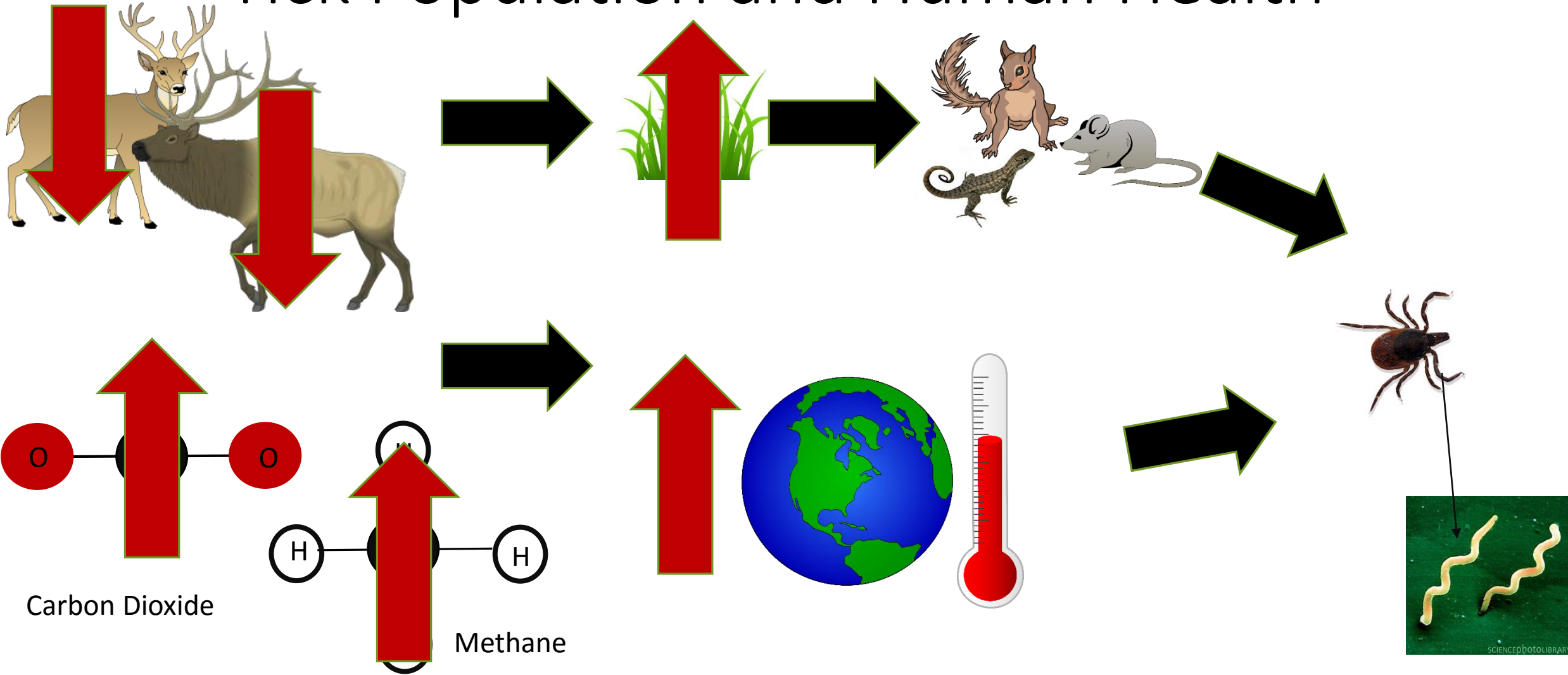


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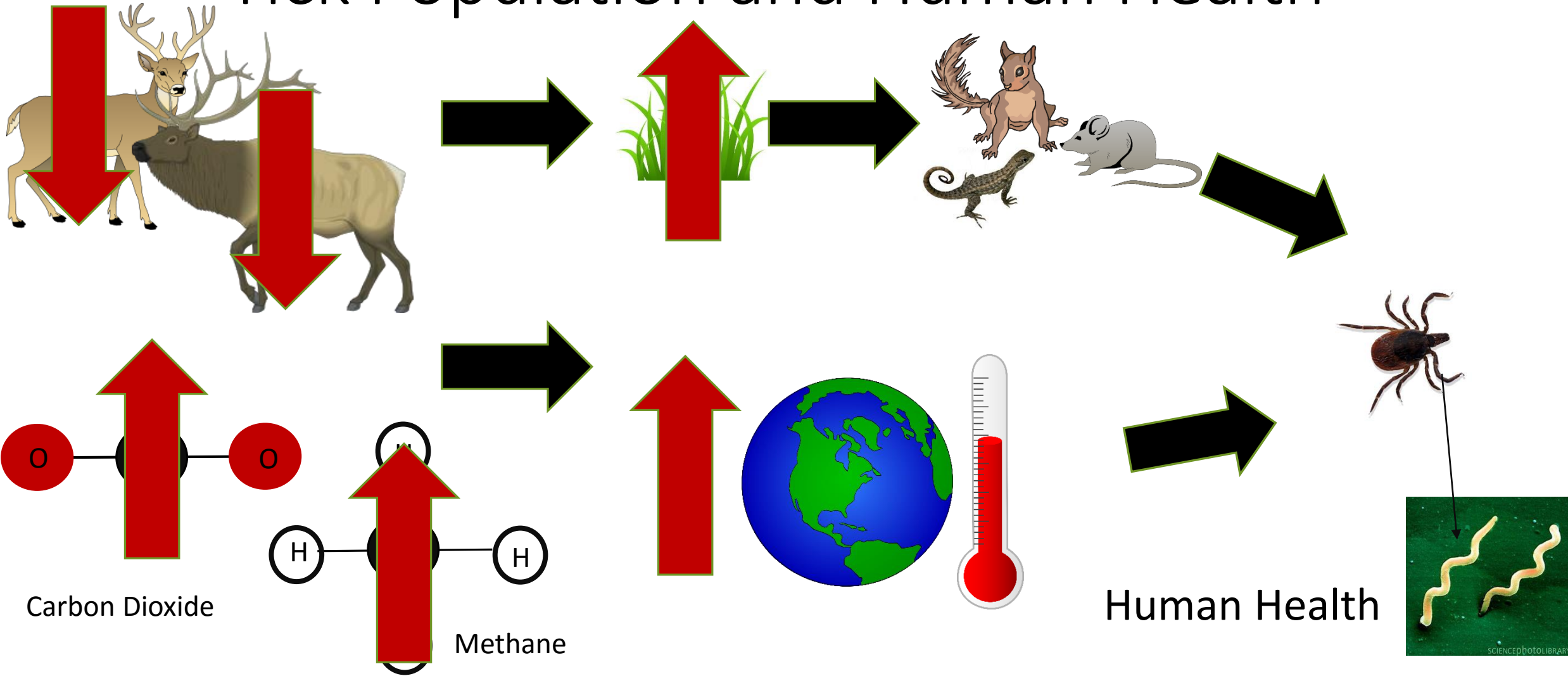




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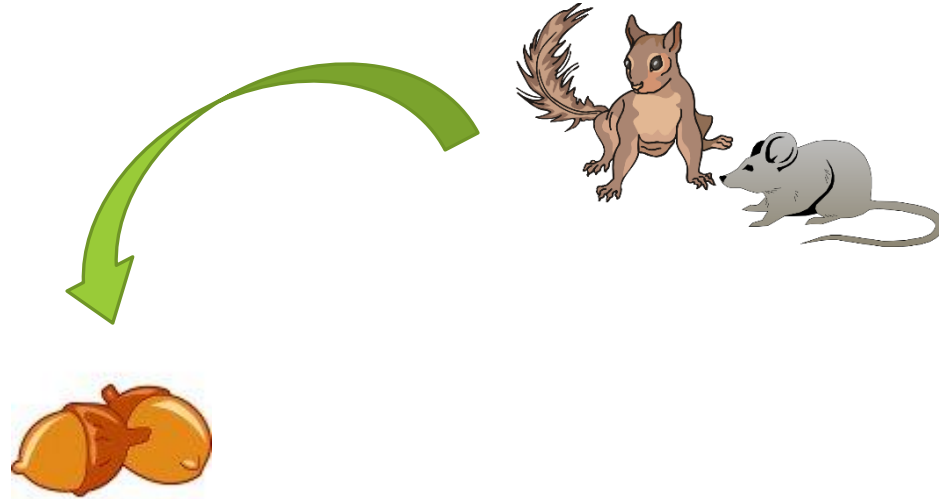
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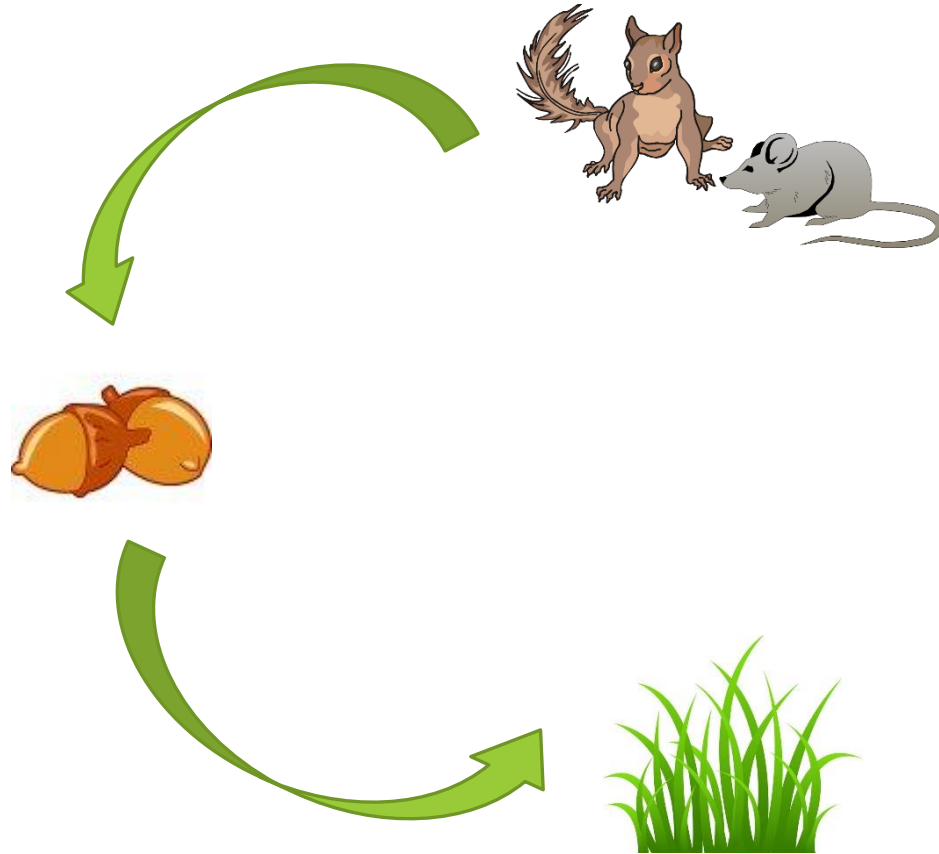
# Evaluating Herbivory Rates and Prevalence of Zoonotic Diseases



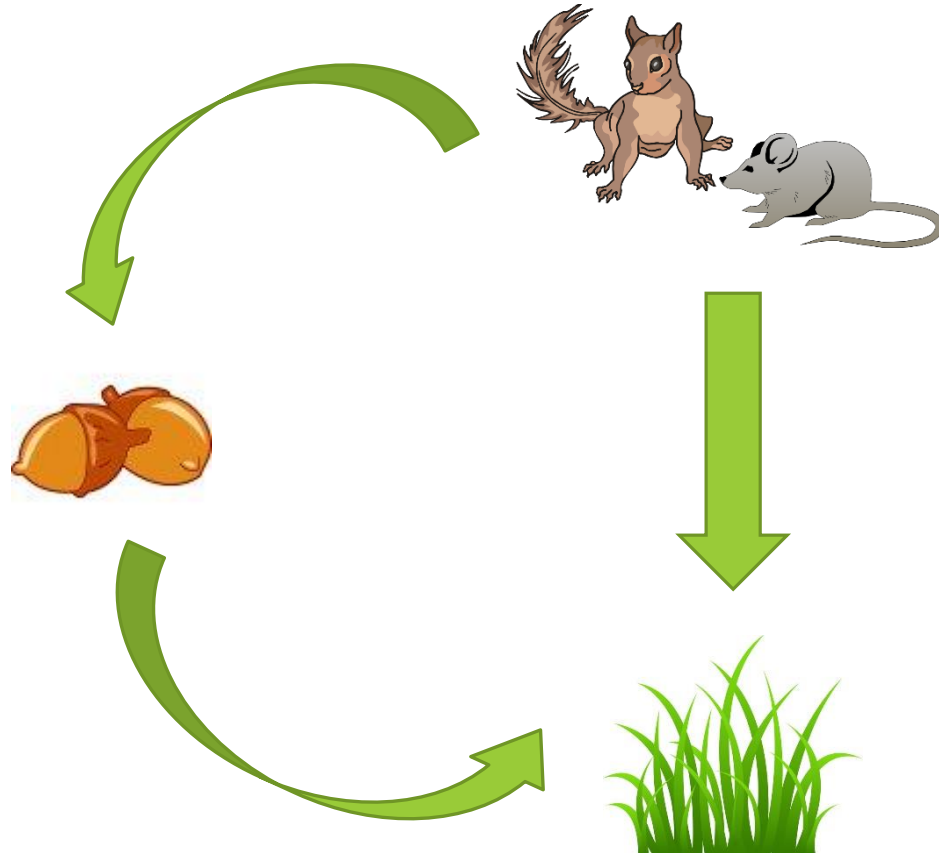
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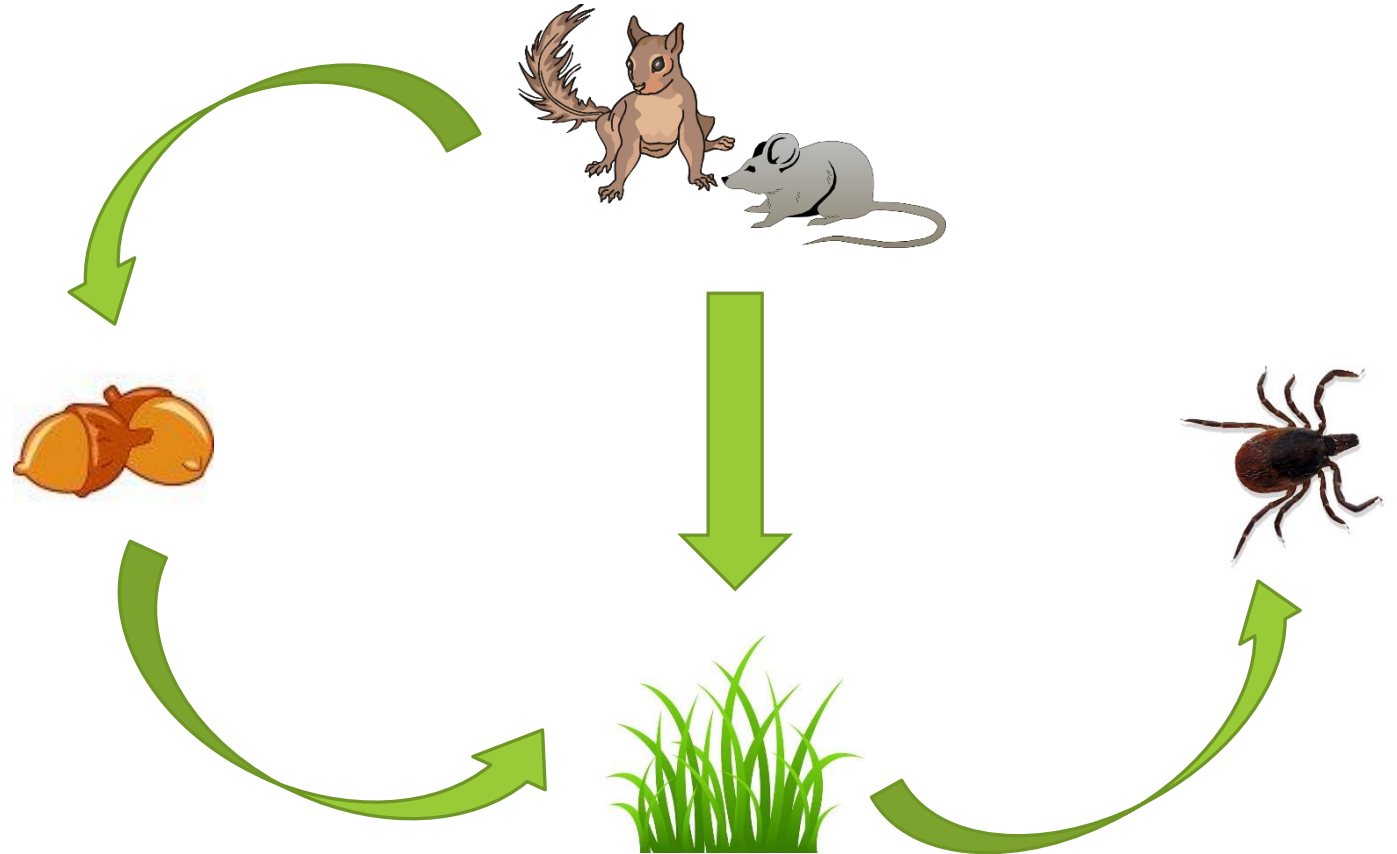
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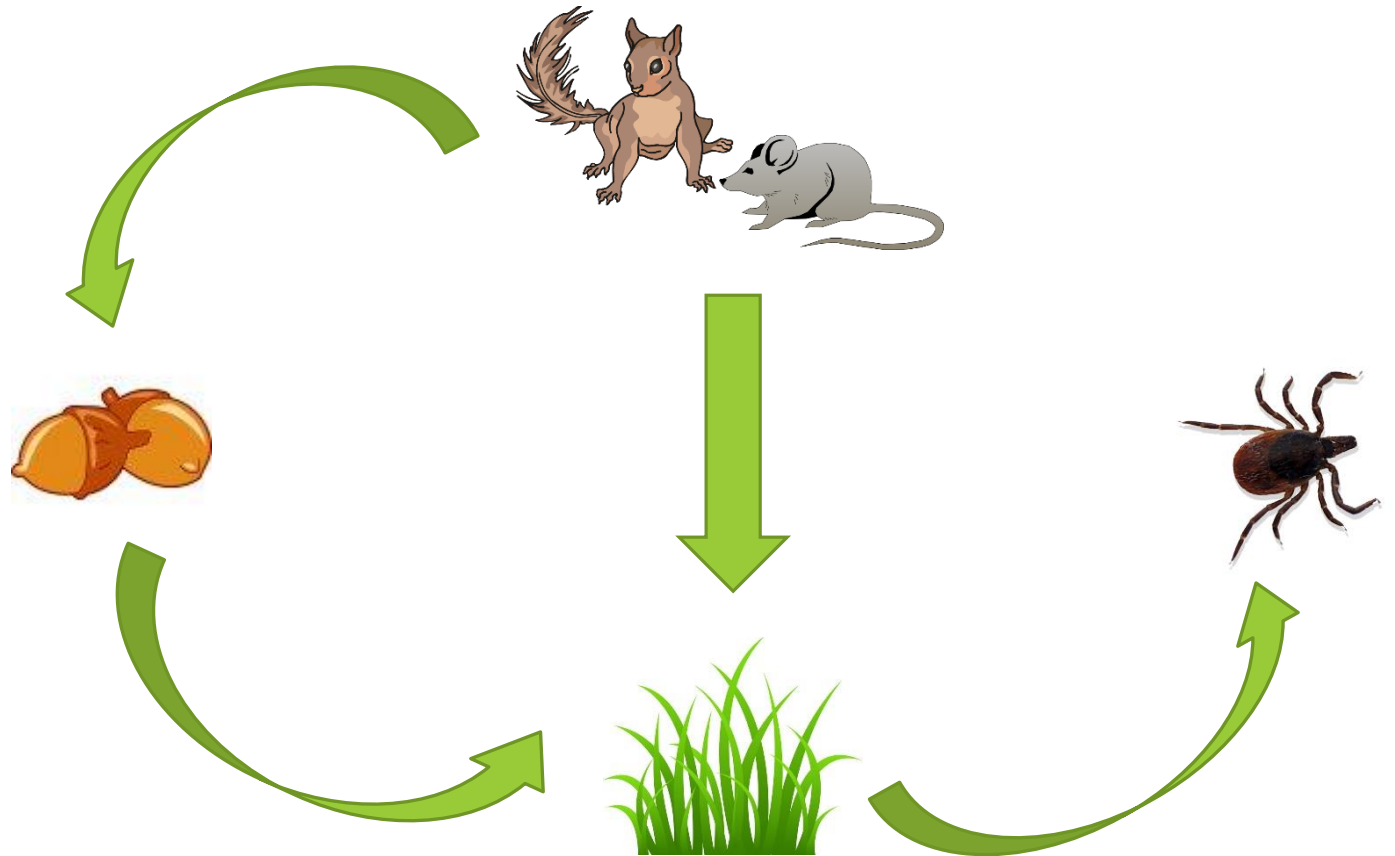


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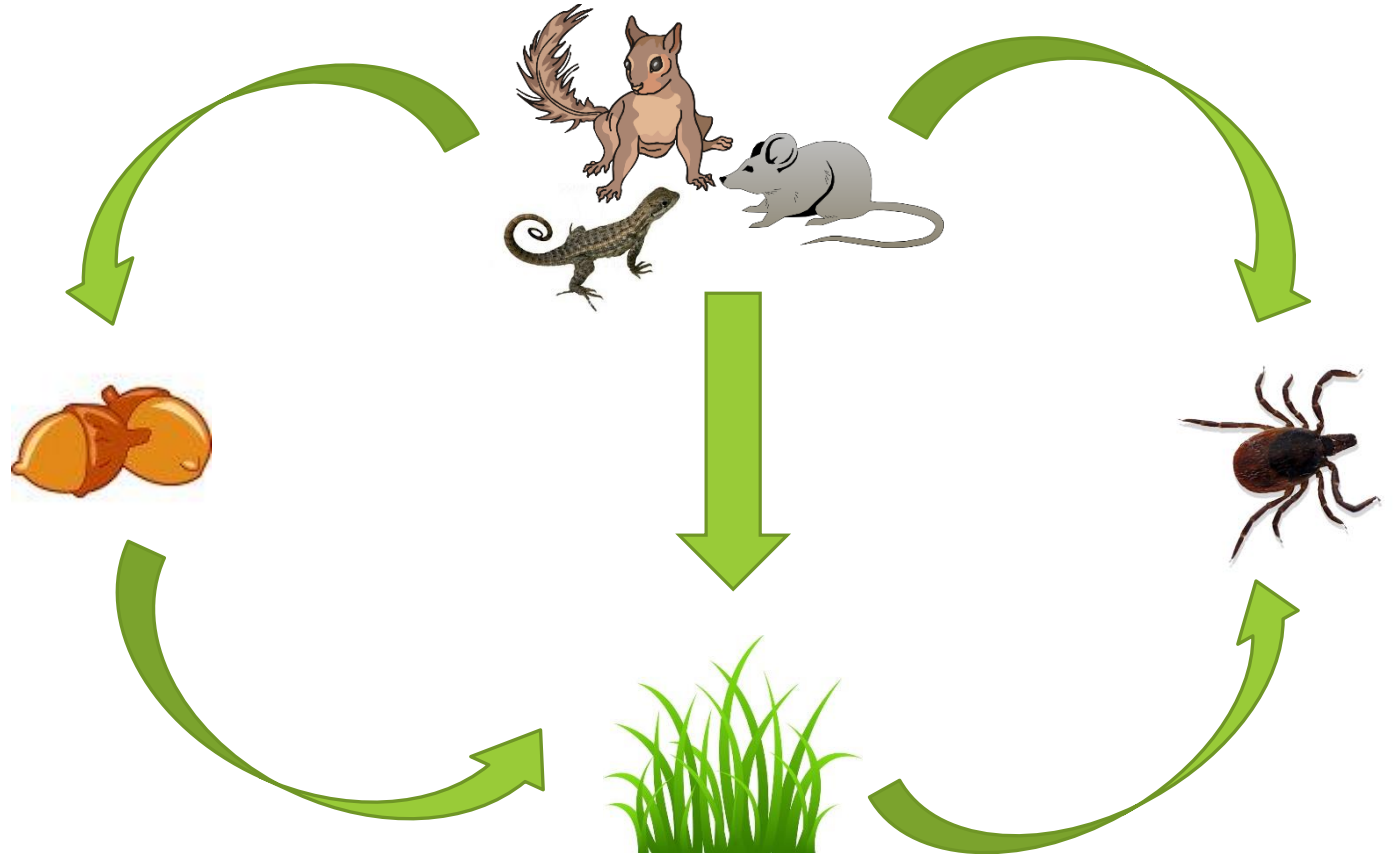
1. Impact small land mammals are having on the vegetation in the ecosystem





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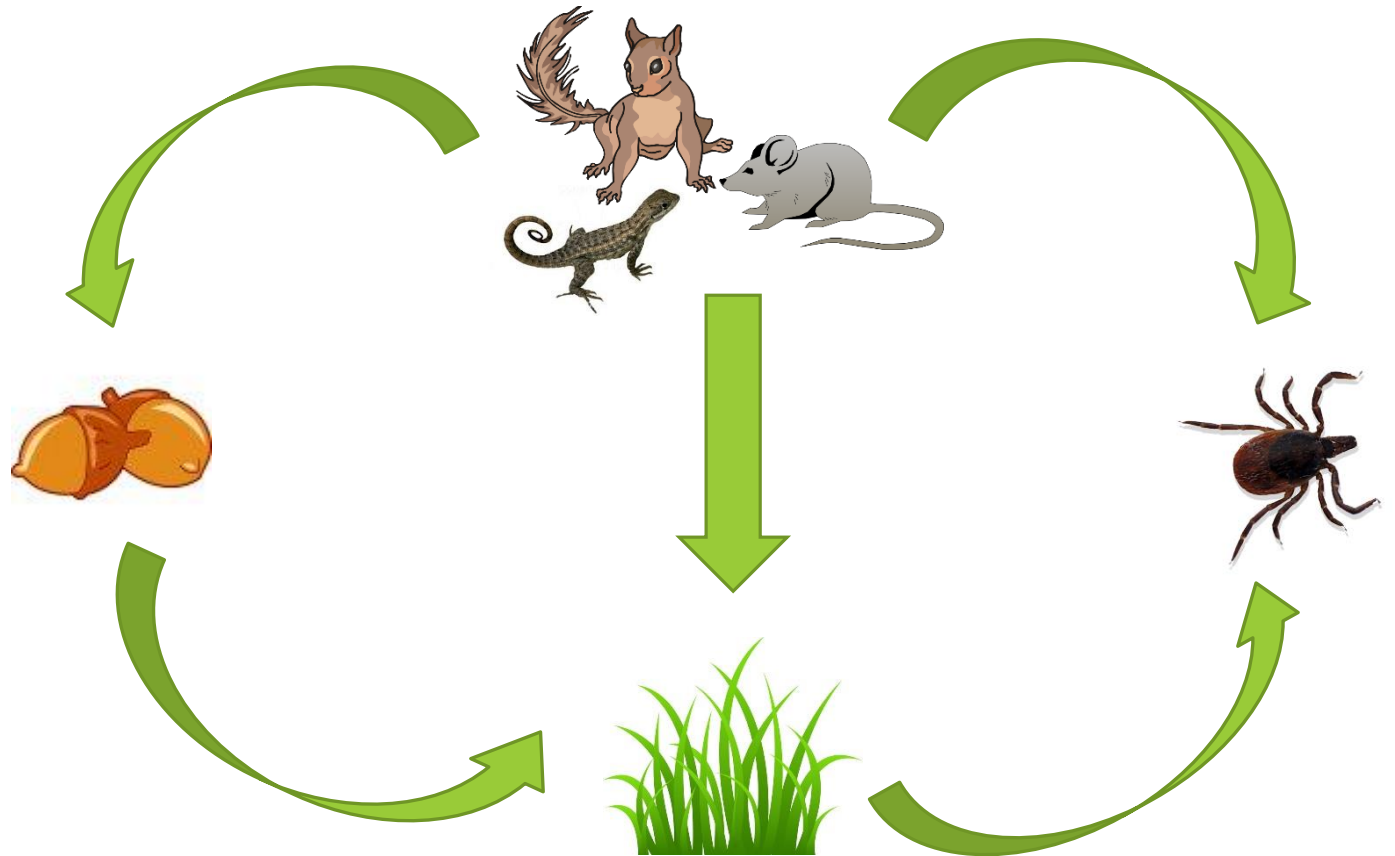
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1. Impact small land mammals are having on the vegetation in the ecosystem

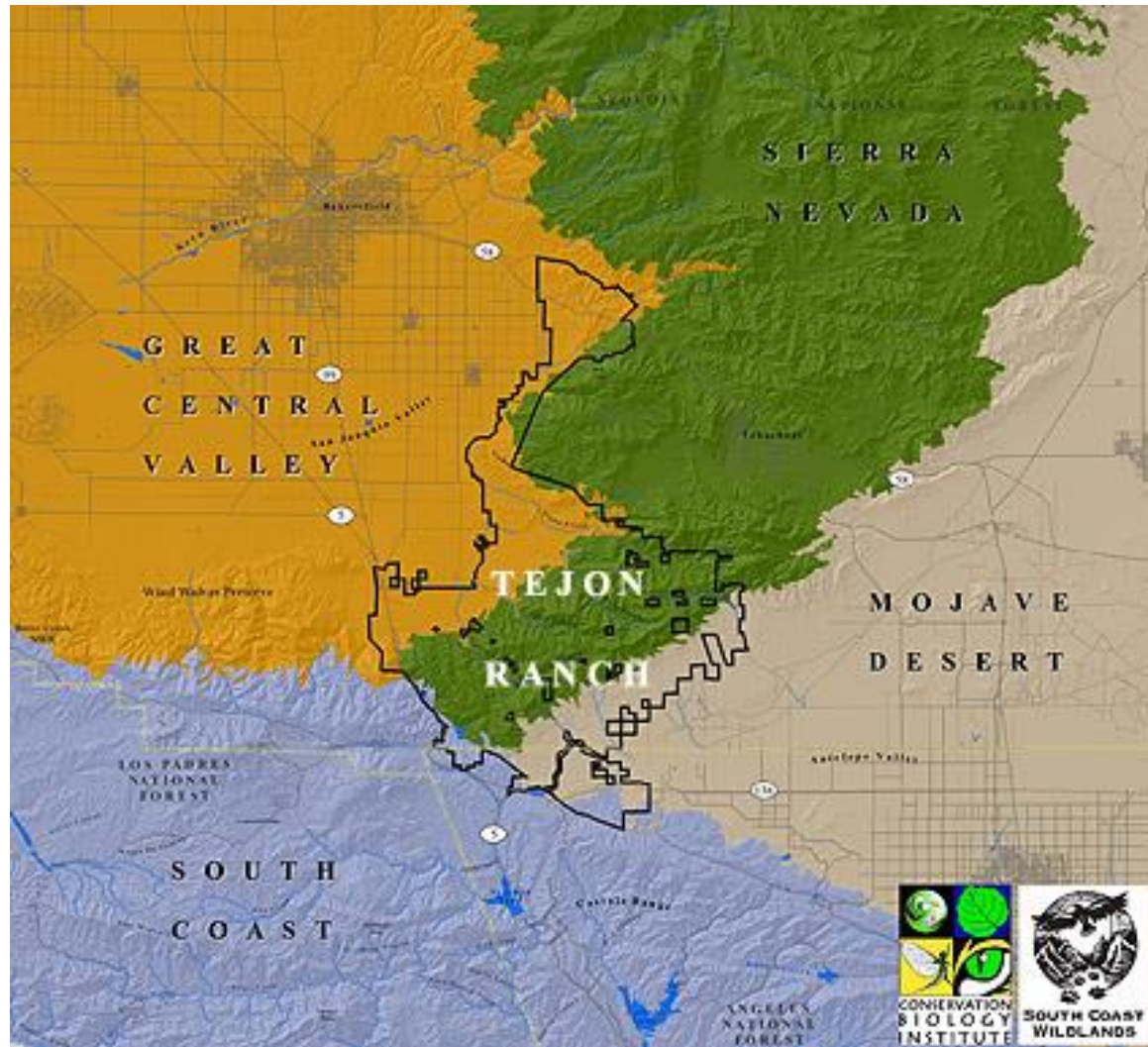
2. Abundance of ticks as well as the zoonotic diseases they carry



# Tejon Ranch Exclosure Experiment



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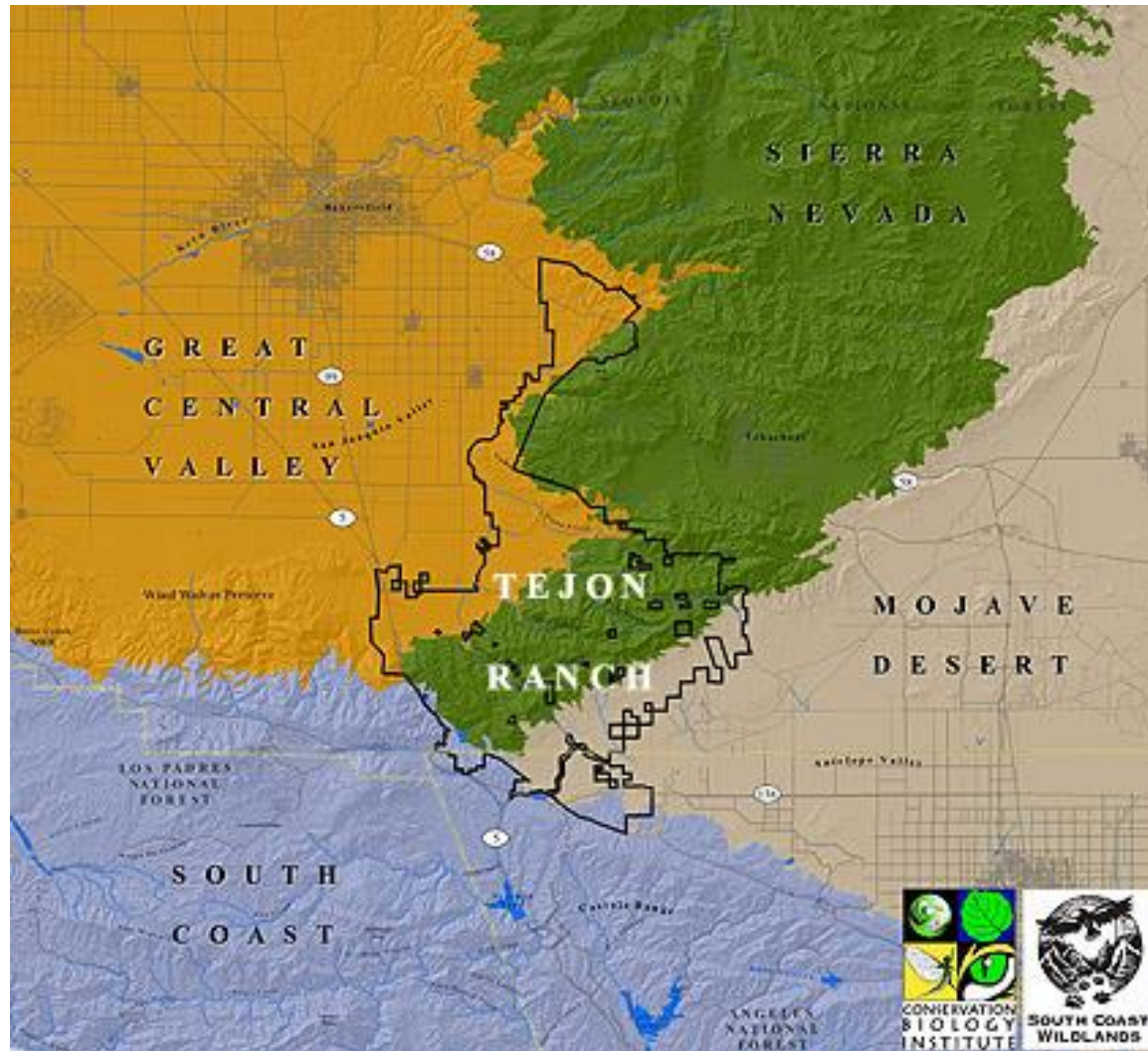


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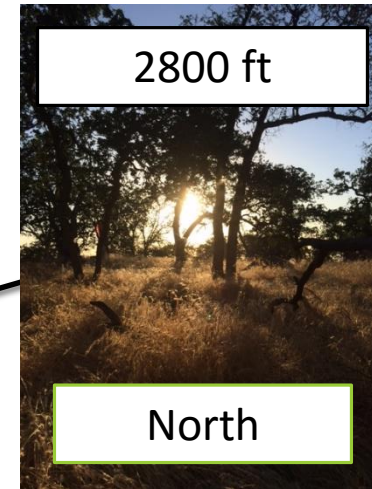
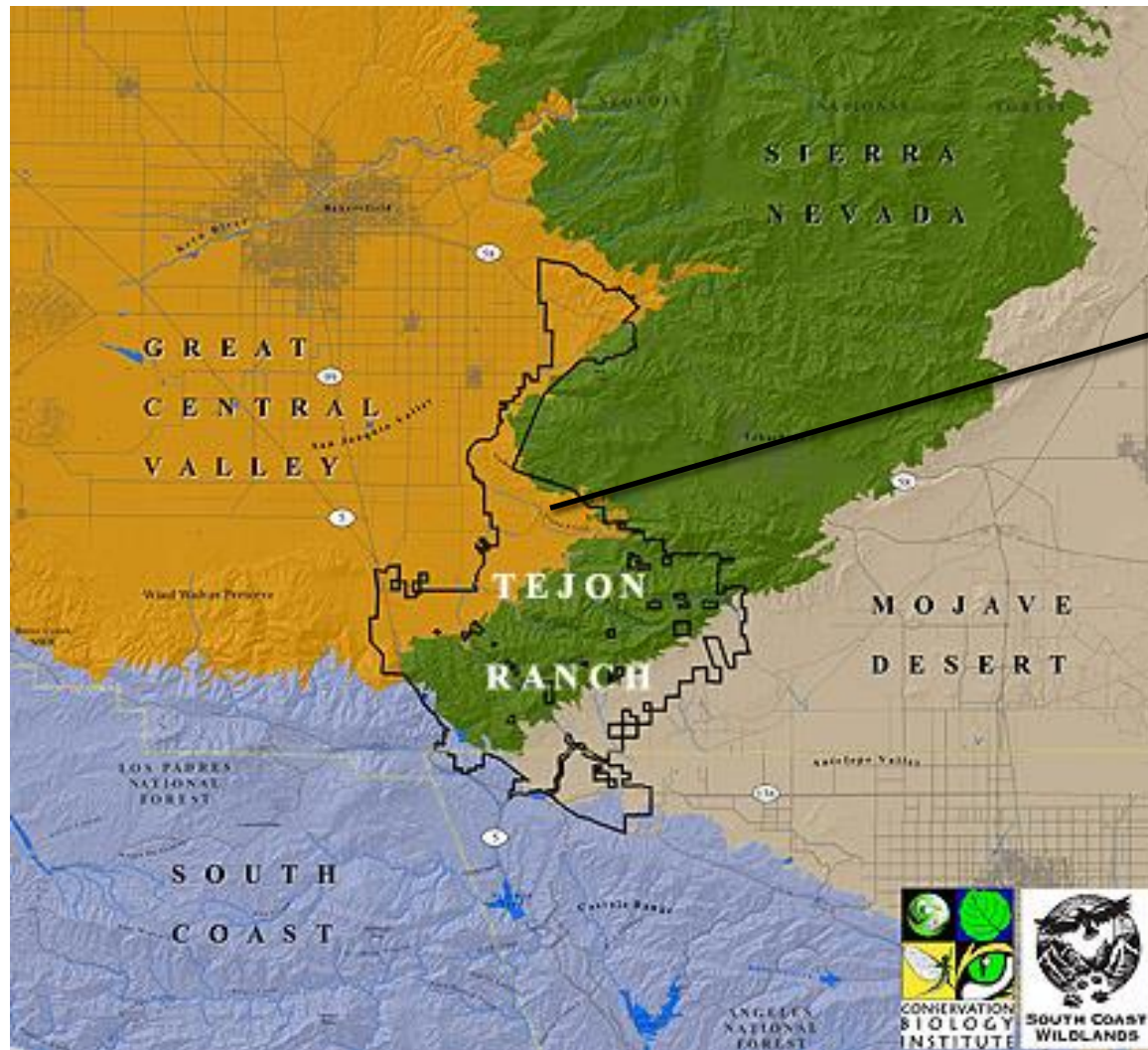
- 33-178 cm/year rainfall

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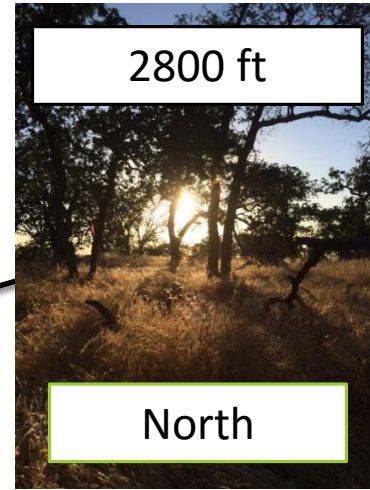
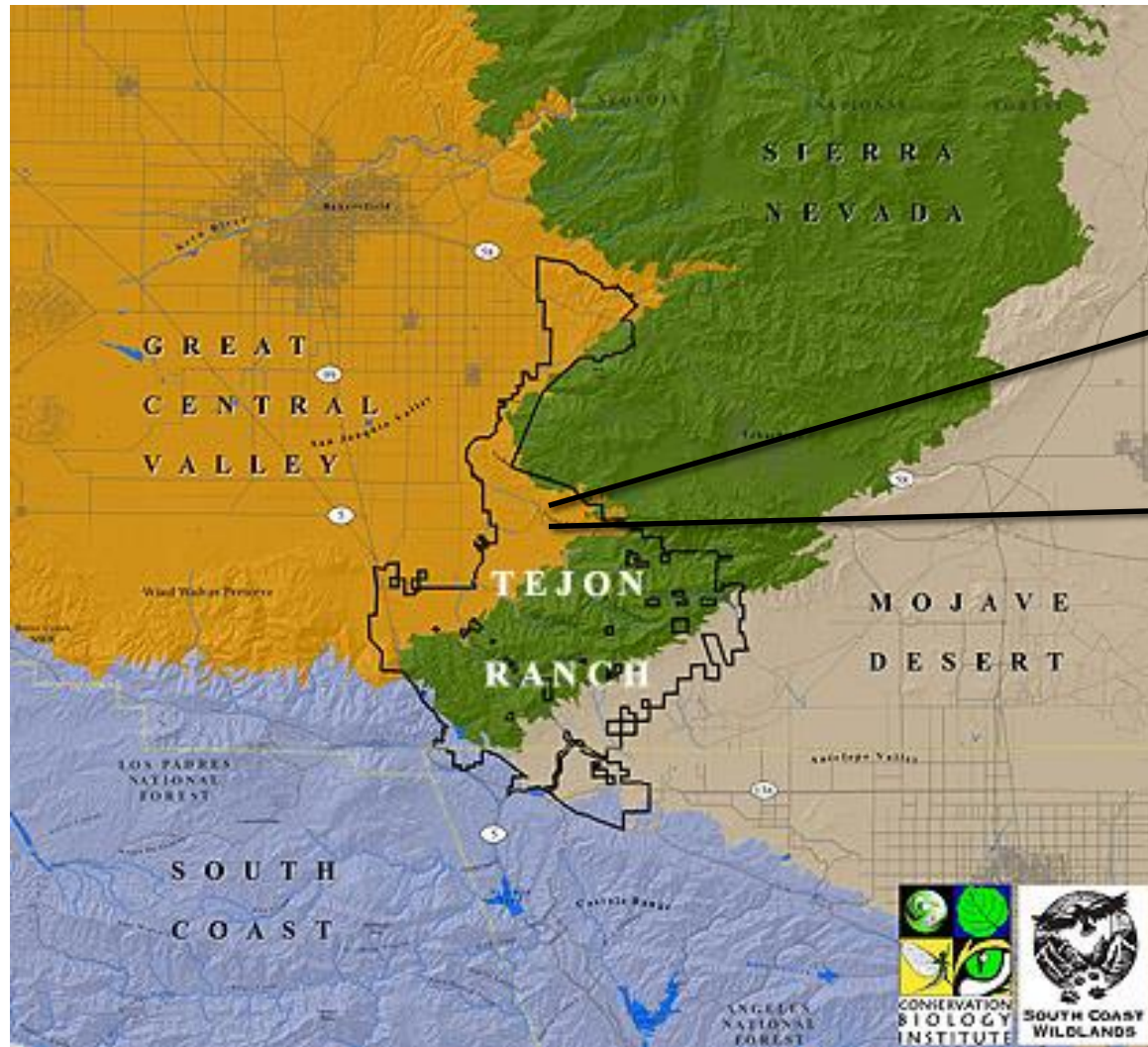


- 33-178 cm/year rainfall
- 120-2020 meter altitude gradient

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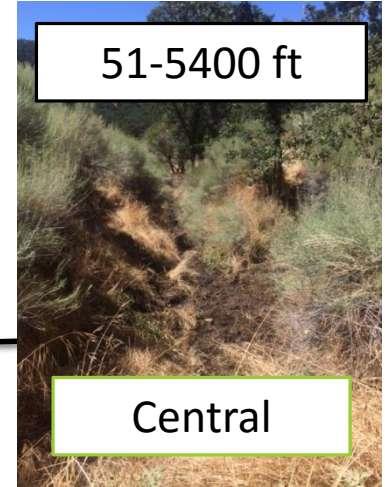
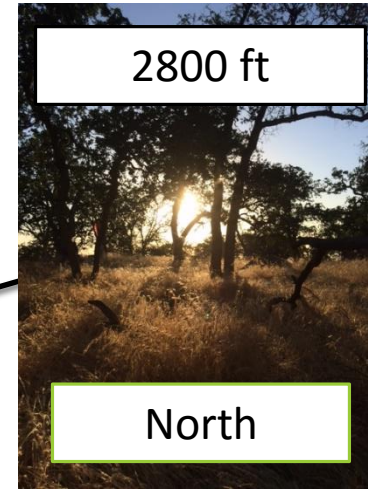
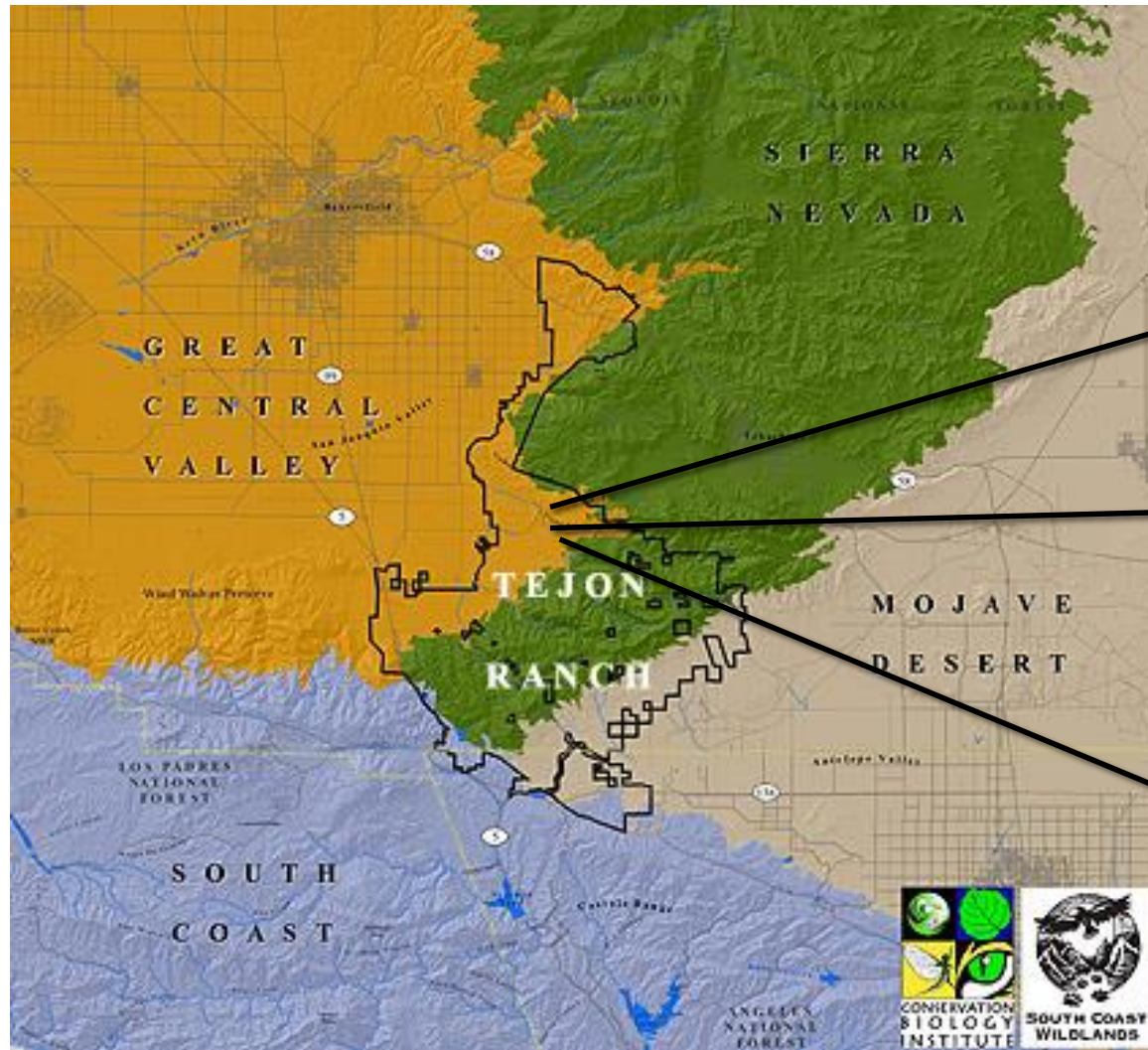


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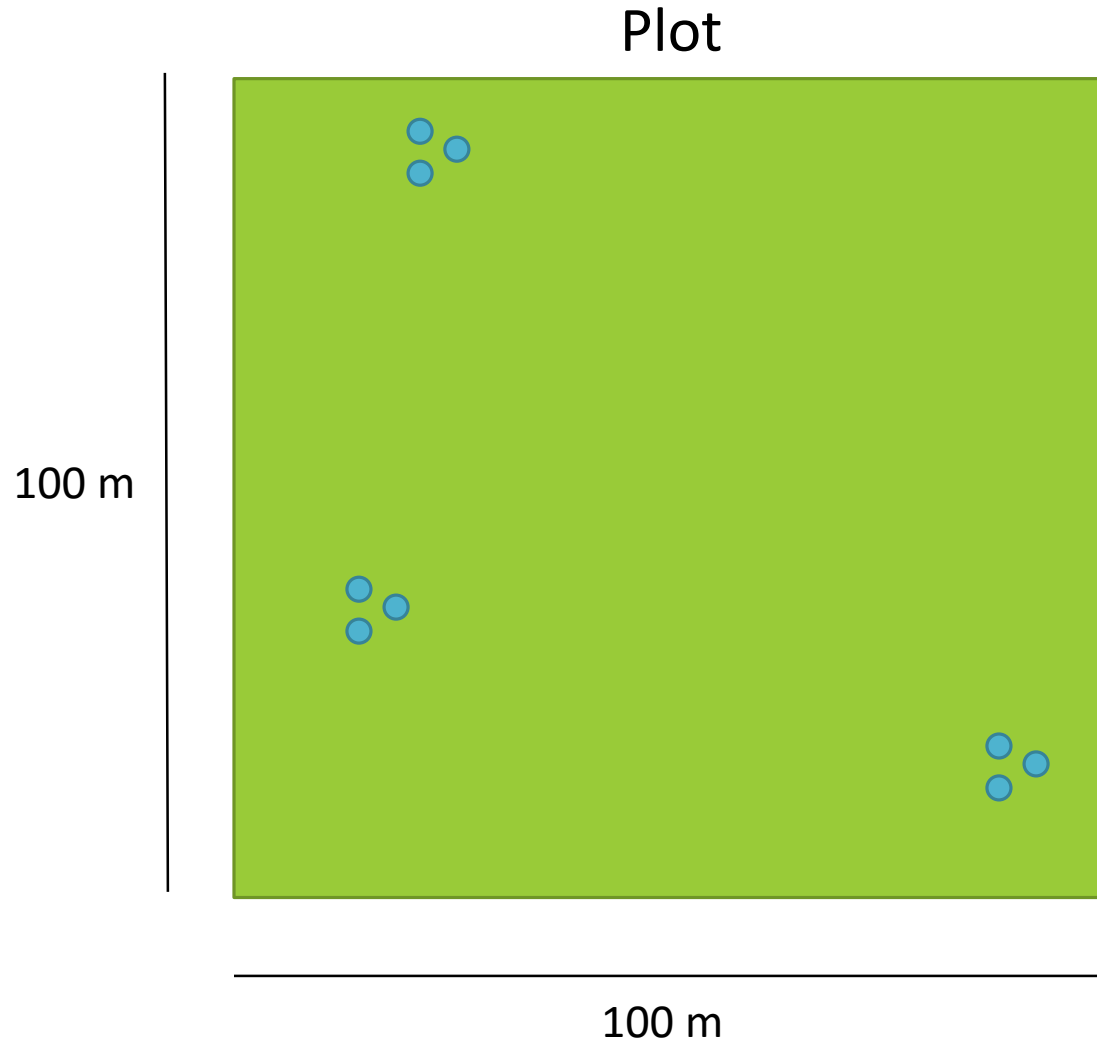




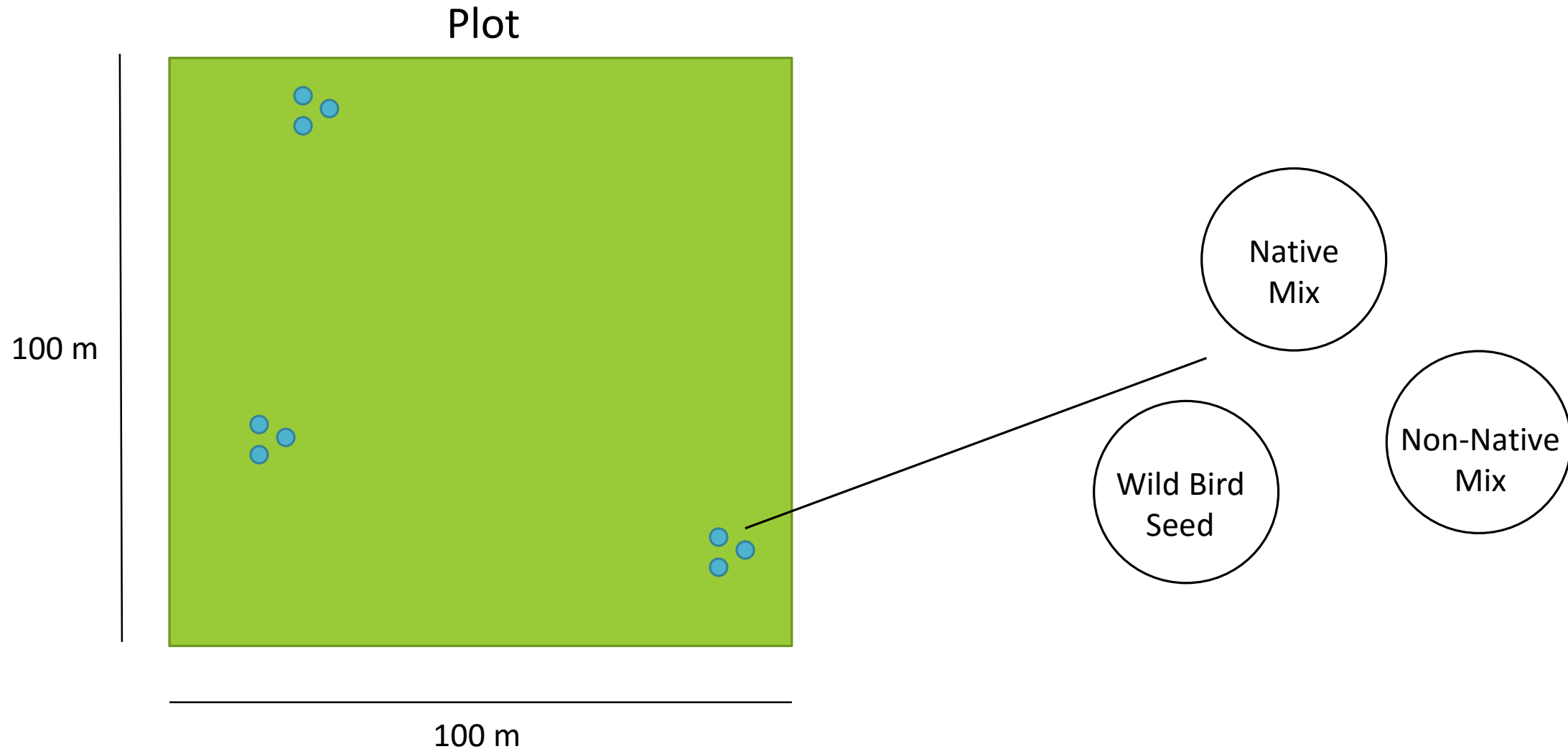
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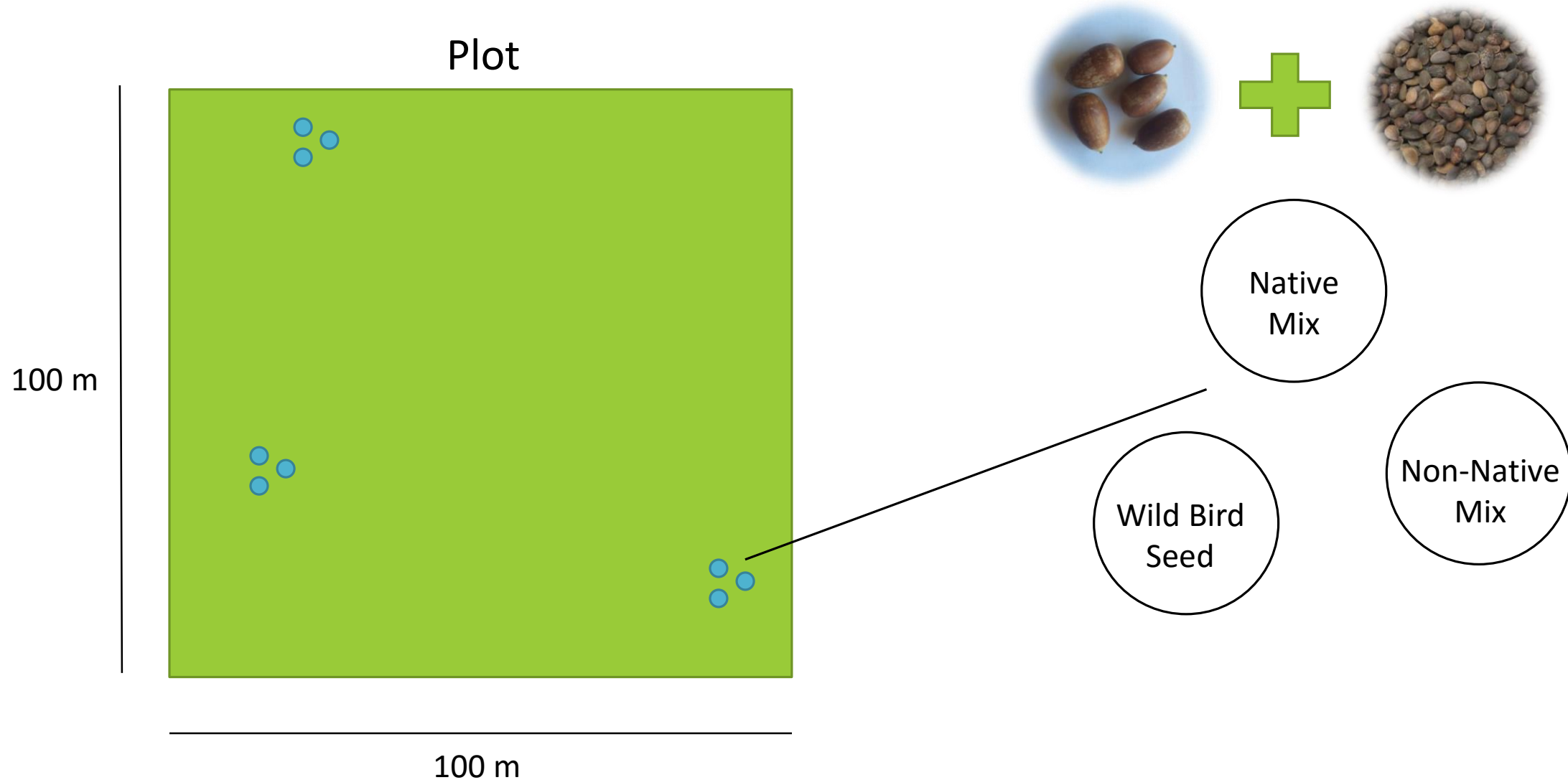
# Cafeteria Trials and Small Vertebrate Trapping



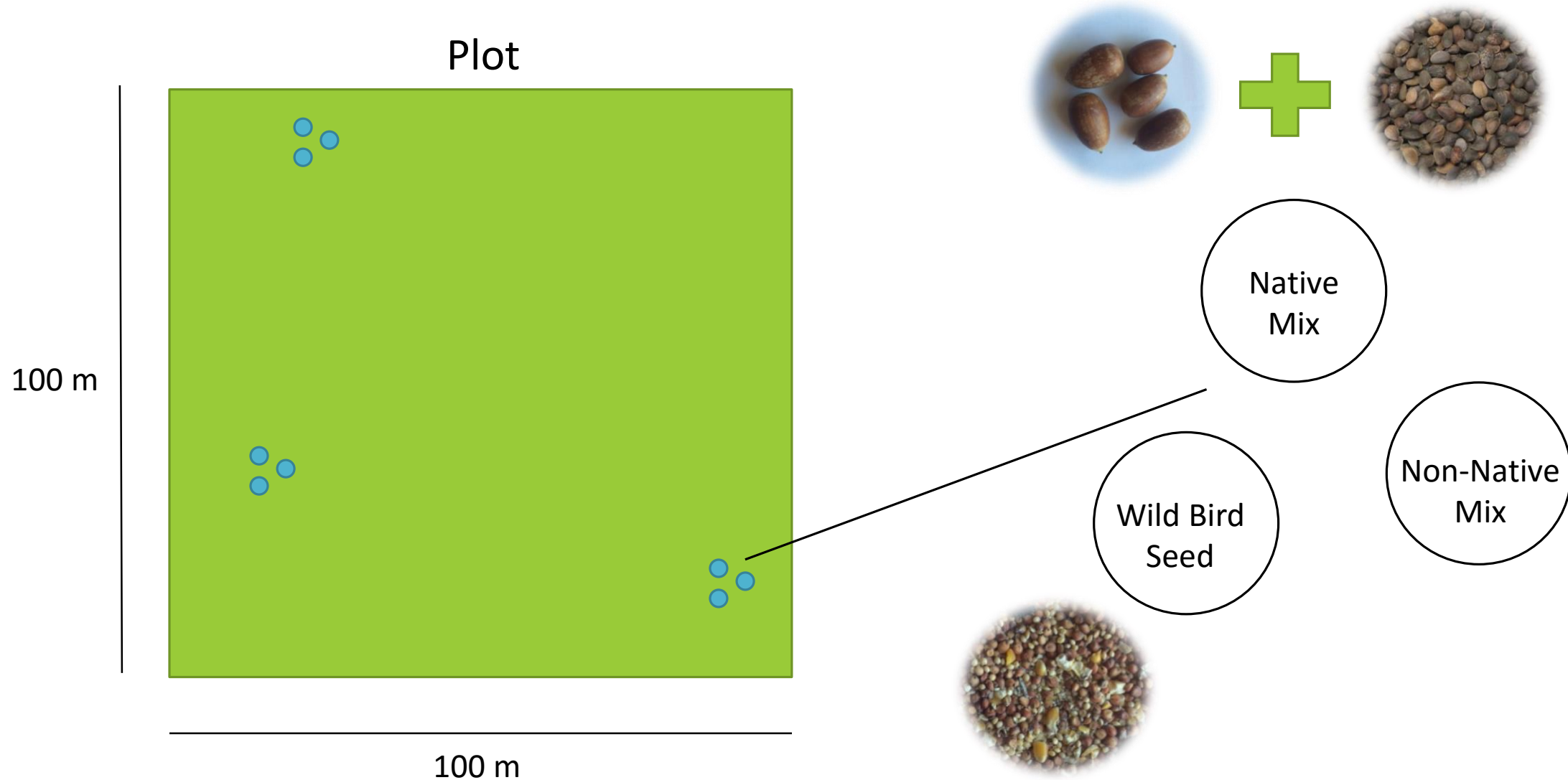
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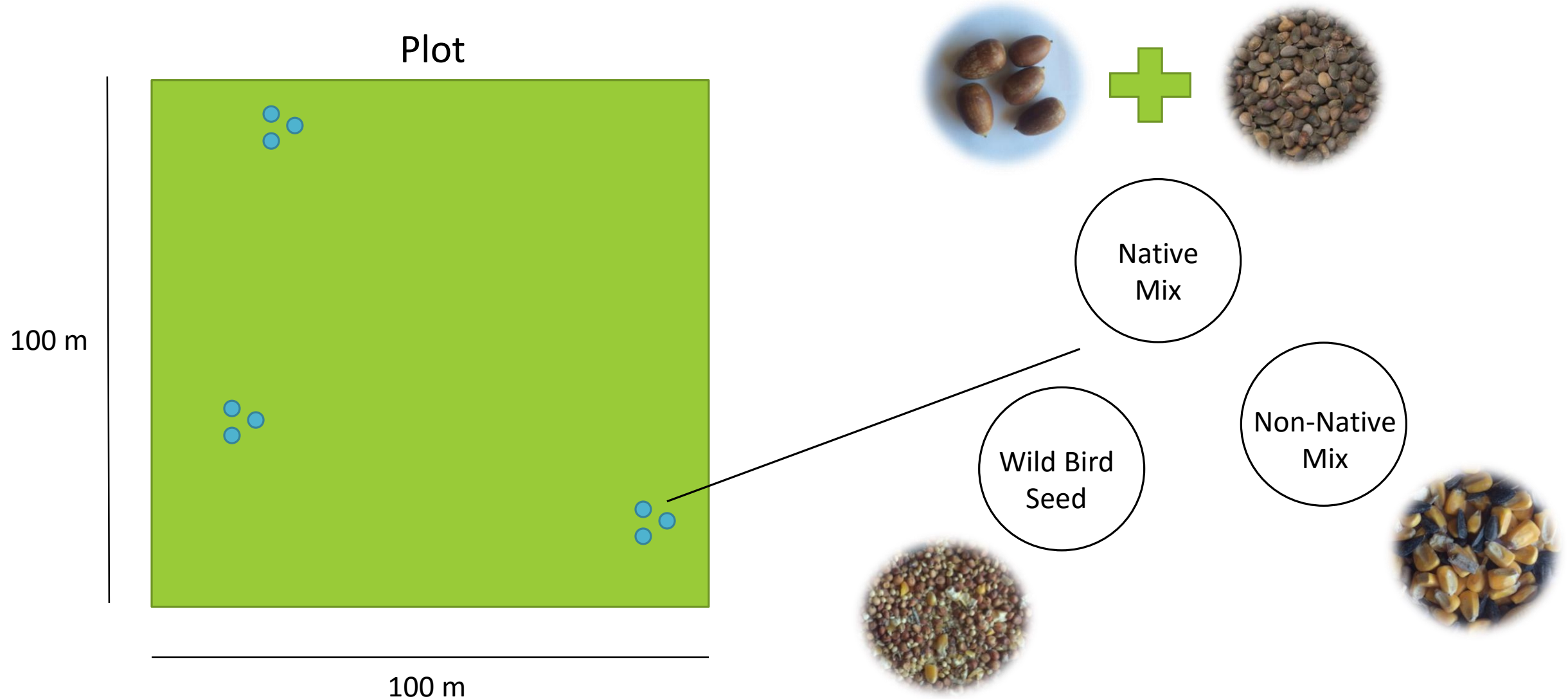
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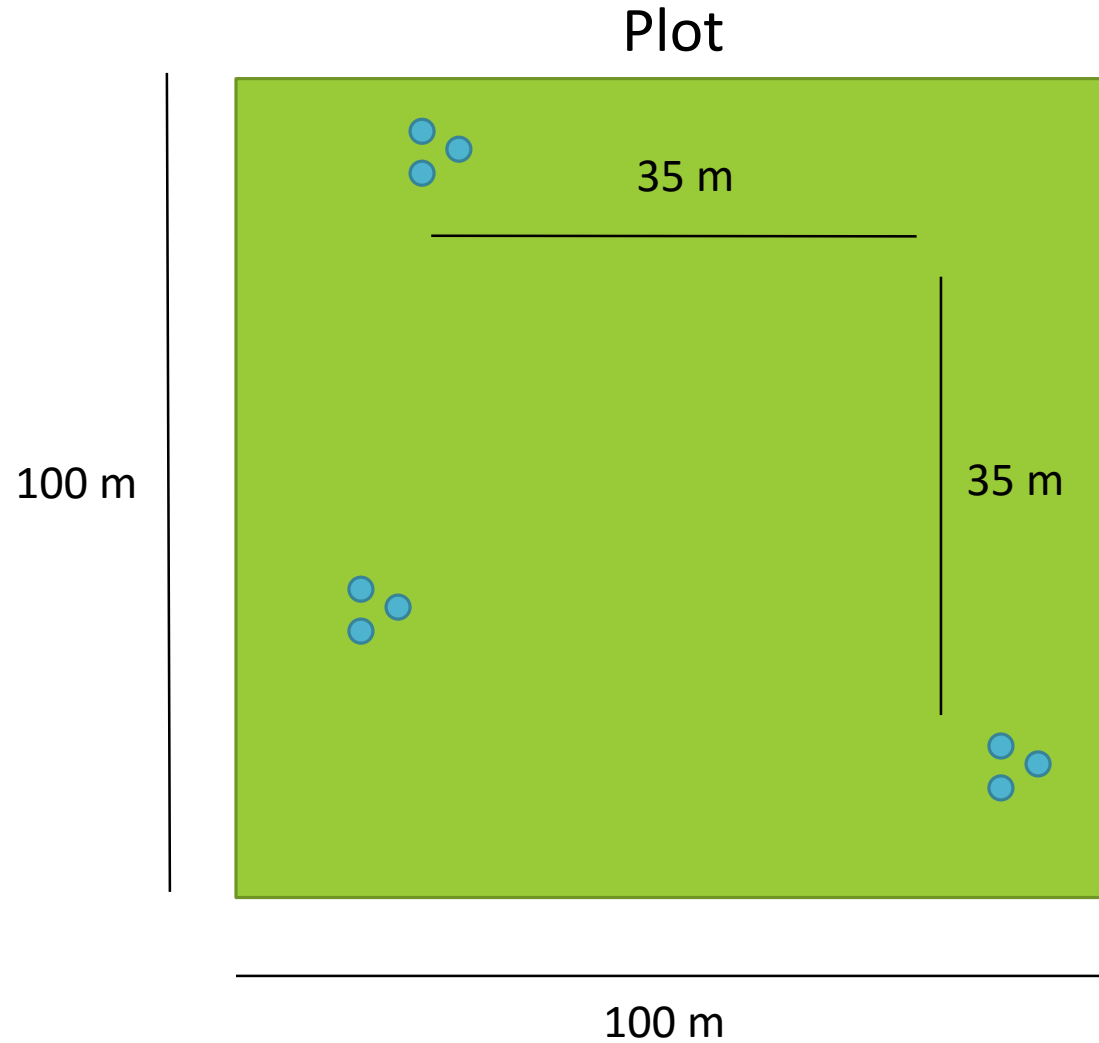
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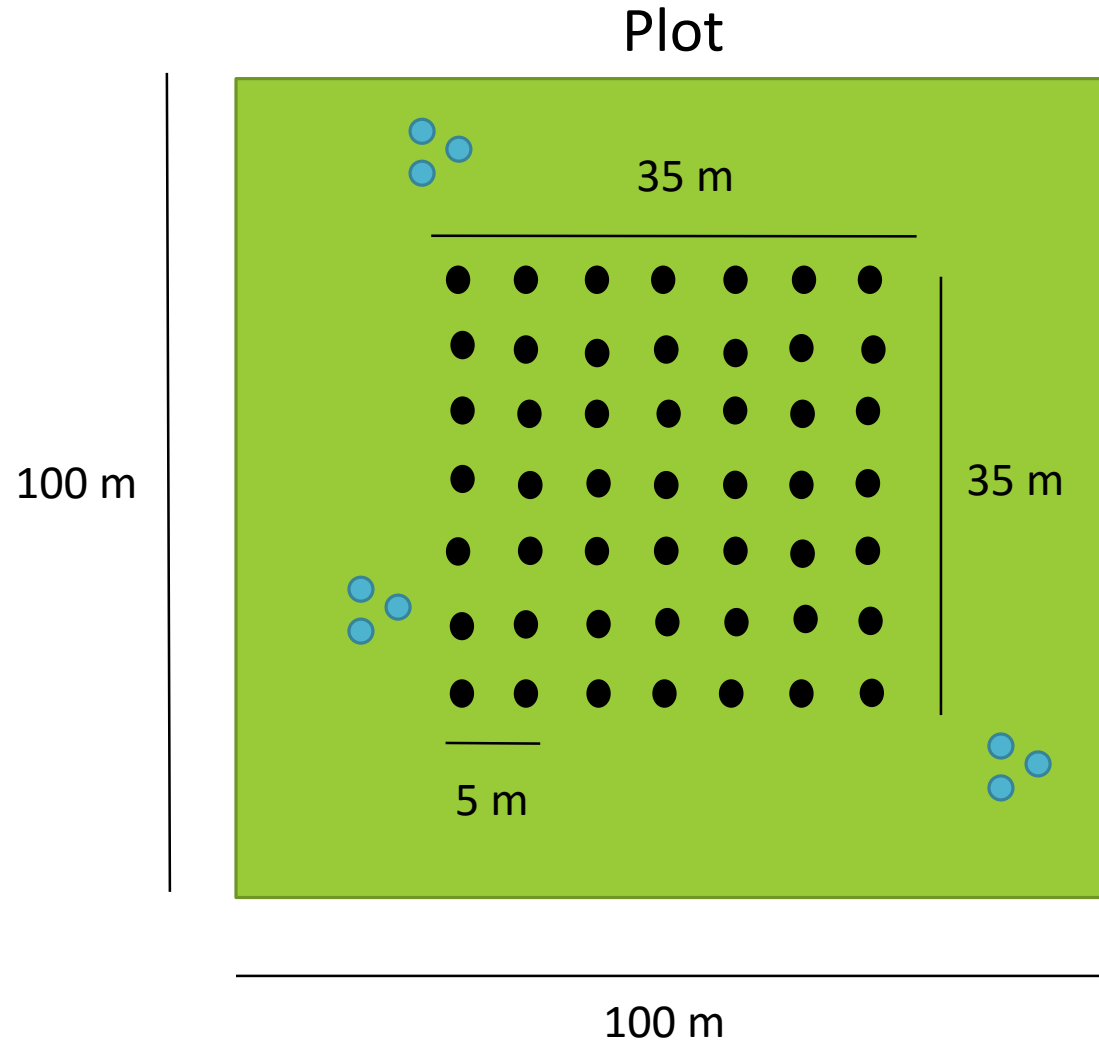
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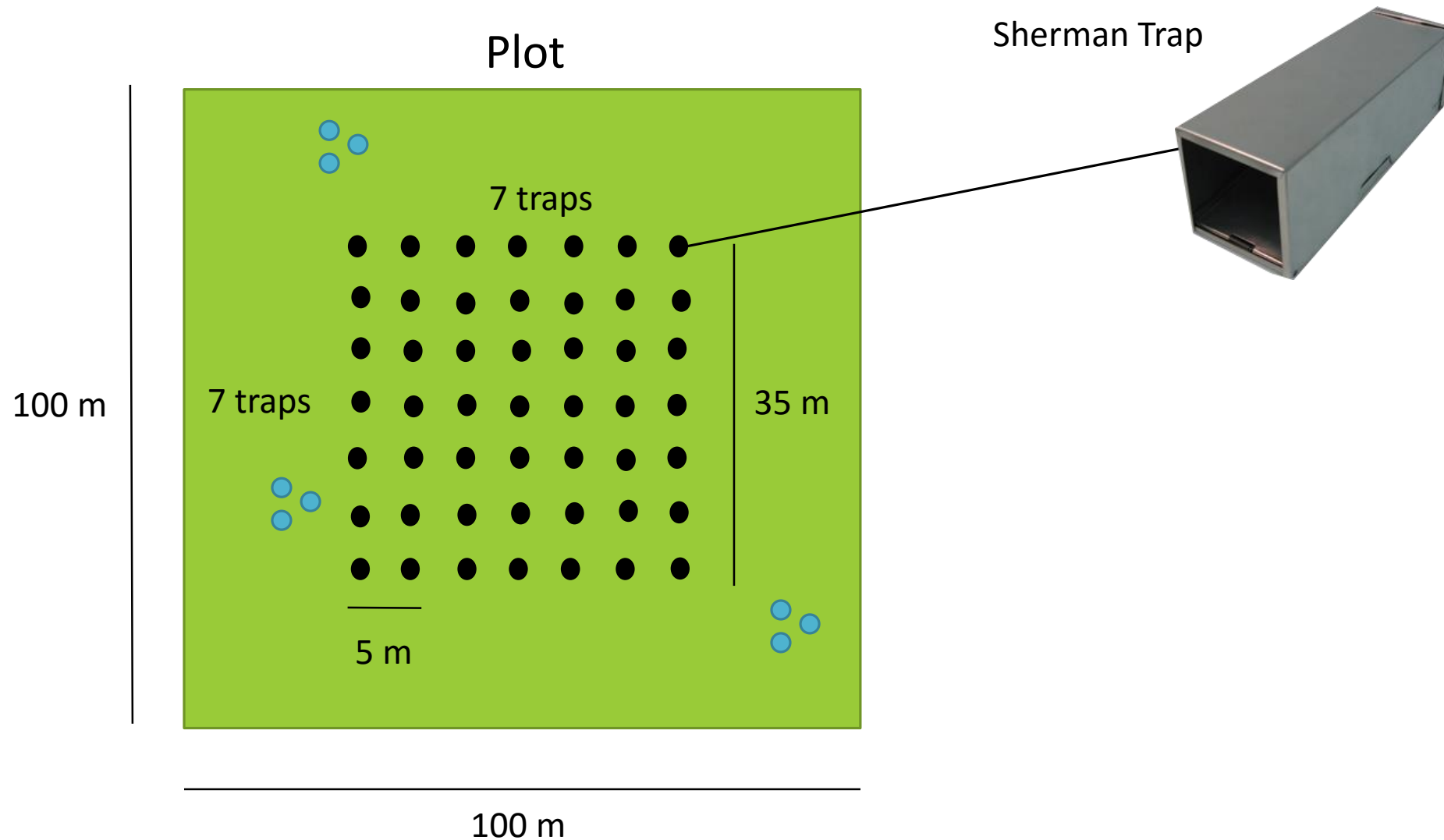


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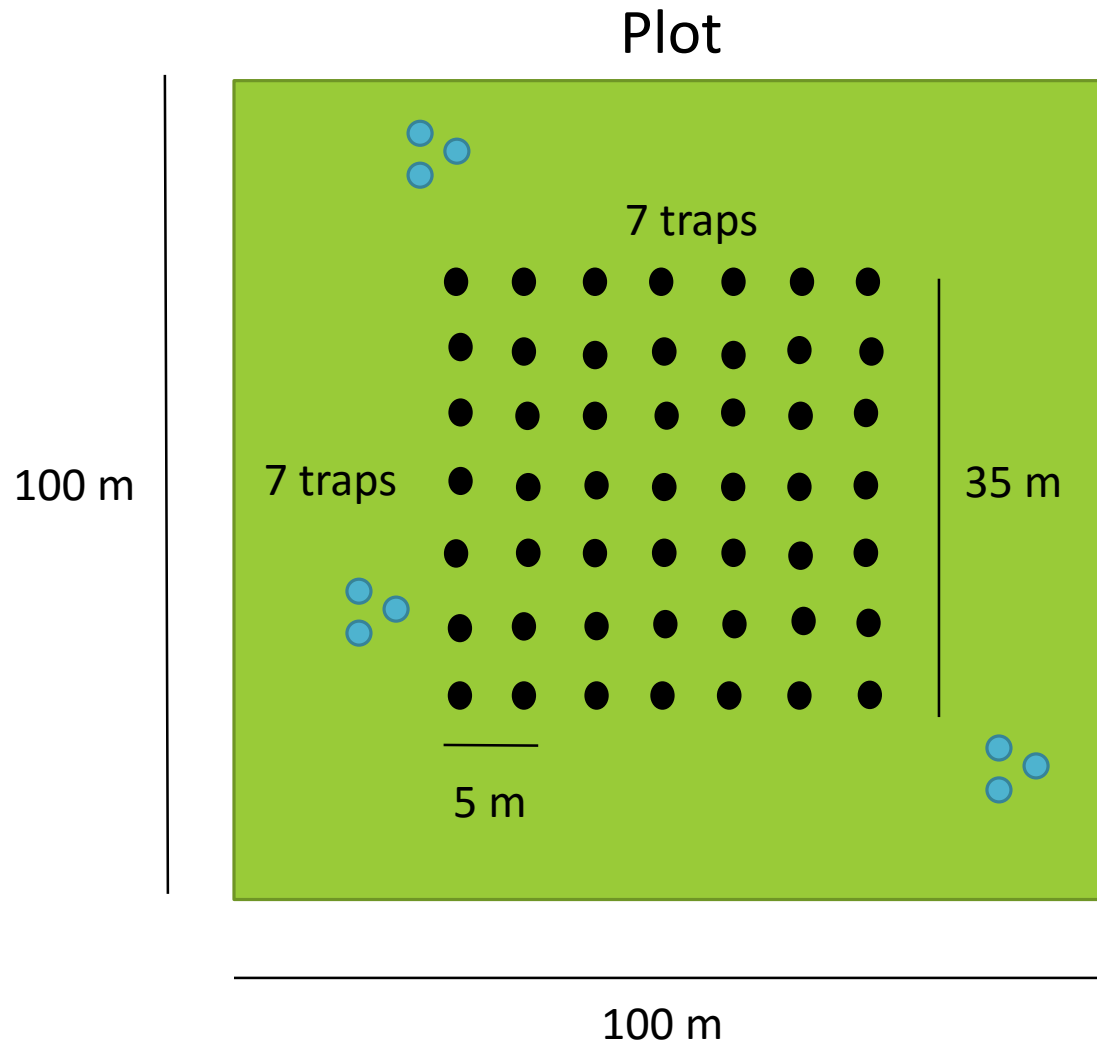




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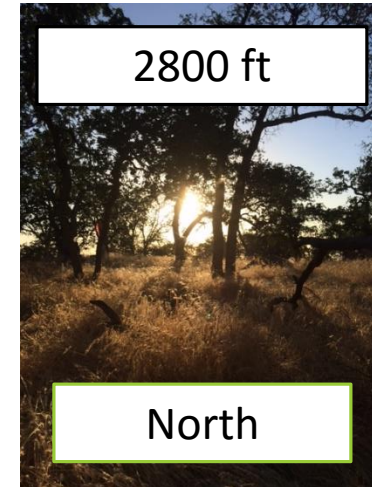
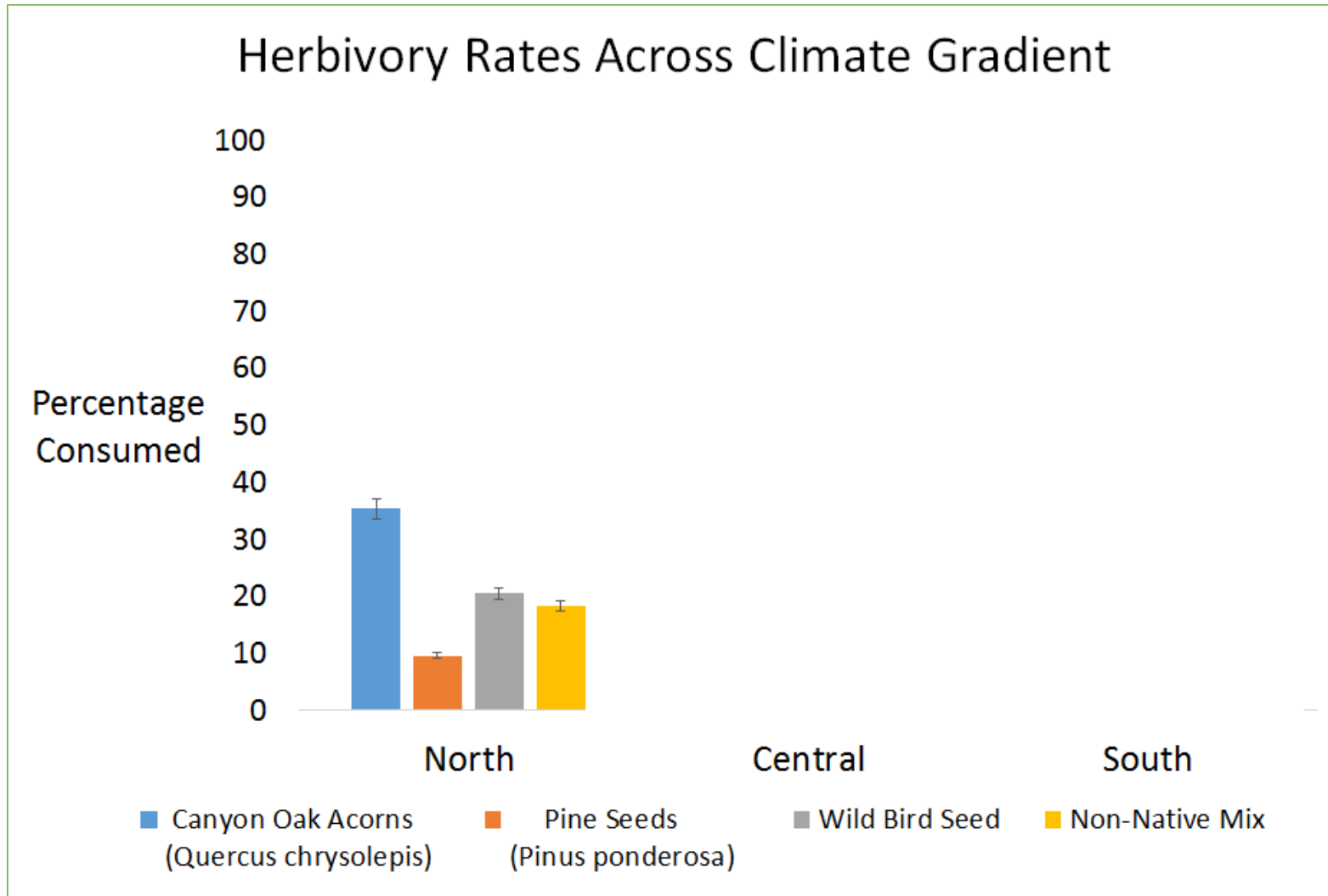


Sherman Trap

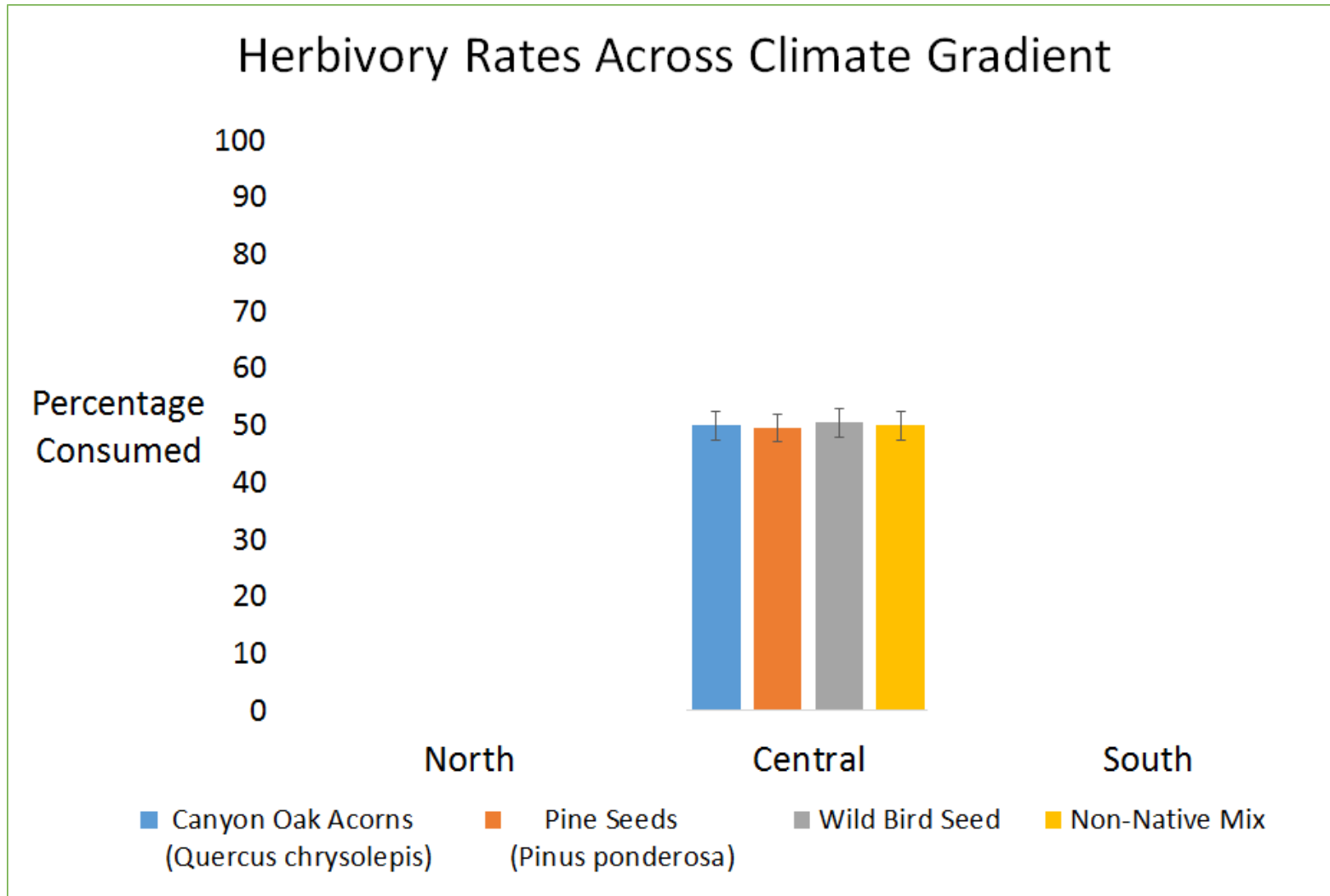


Hand-caught Western Fence Lizard

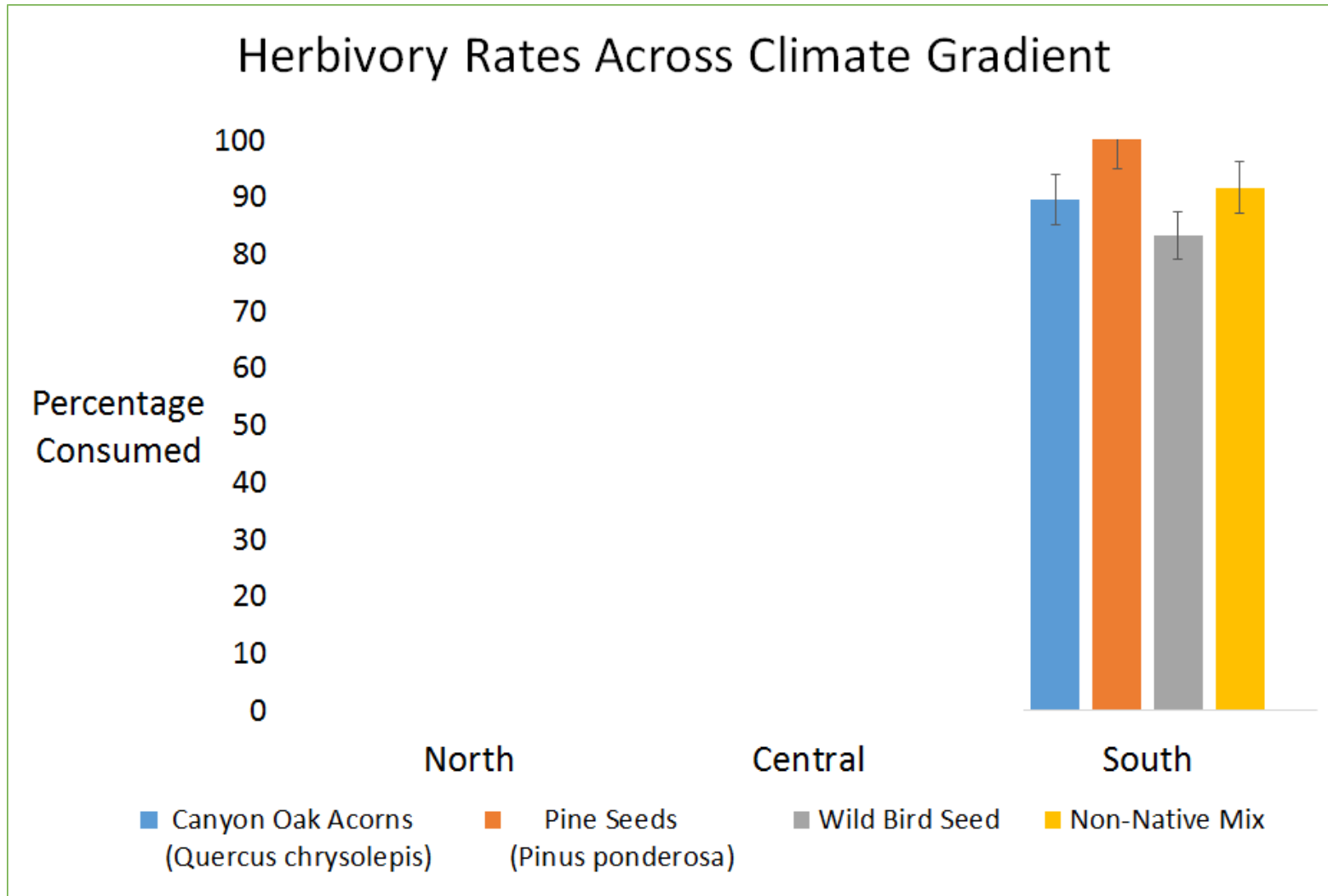
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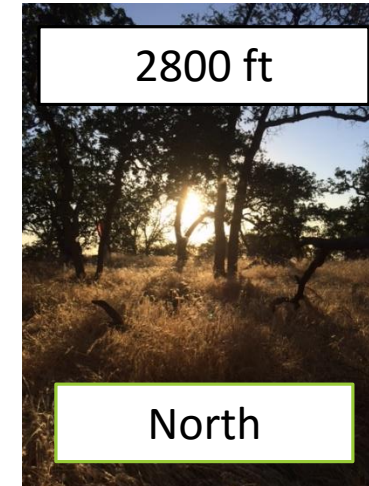
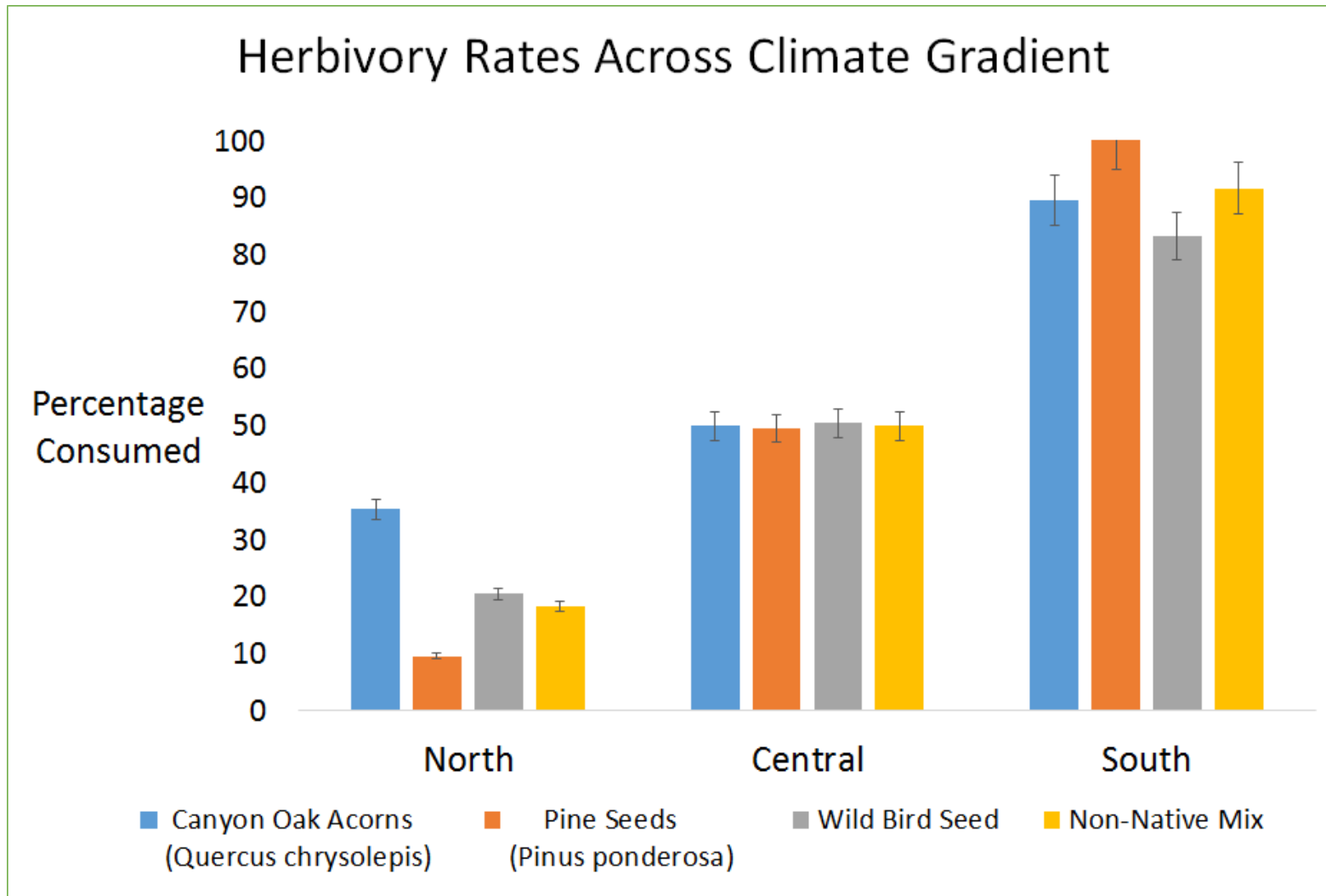
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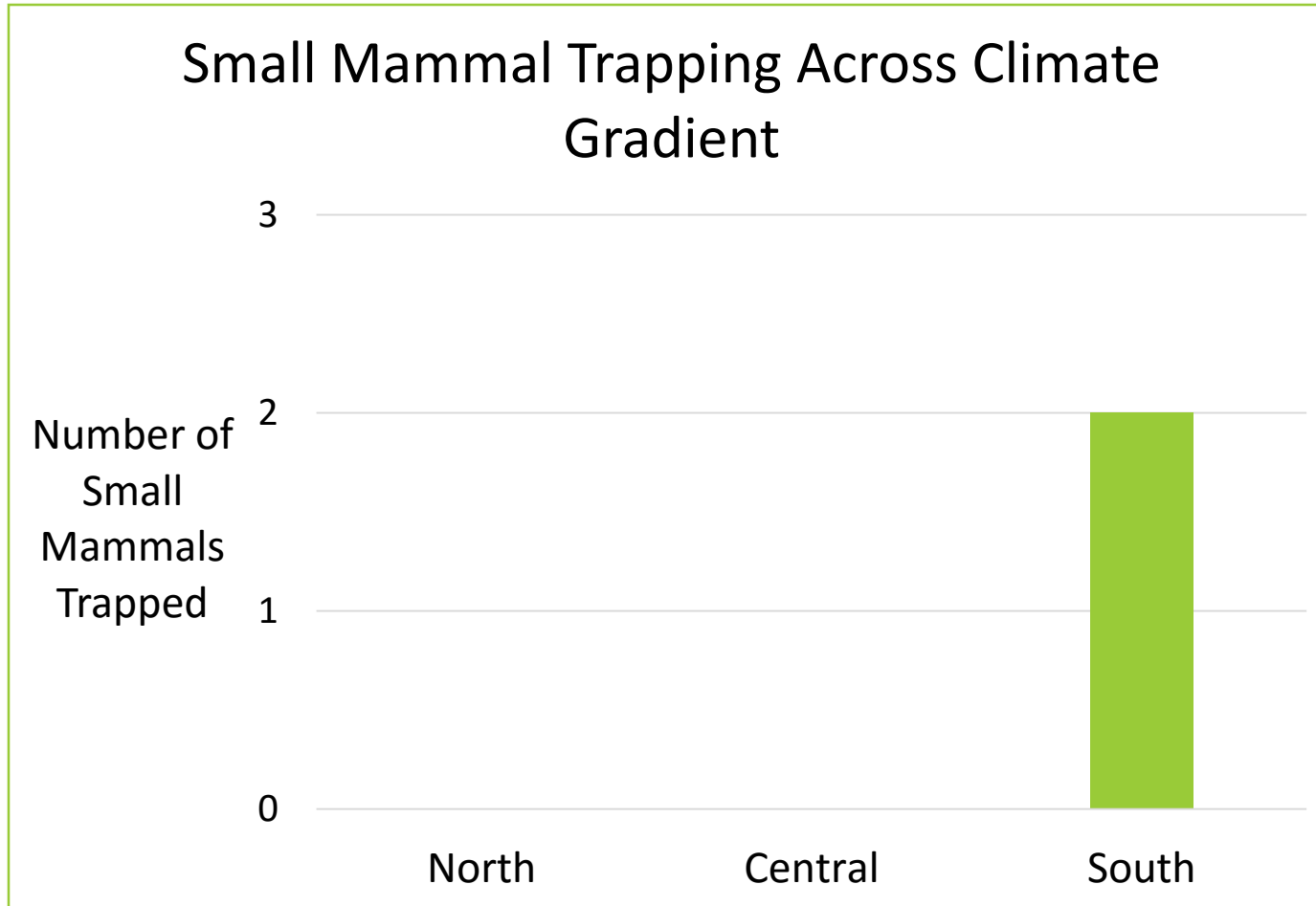
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# Low Success Rate of Small Mammal Trapping



Deer mouse (*Peromyscus maniculatus*) being weighed after capture

# Tick Abundance on Western Fence Lizards

	Location Captured	Number of Ticks
Lizard 1	Central	0
Lizard 2	Central	0
Lizard 3	Central	2
Lizard 4	Central	0
Lizard 5	Central	7
Lizard 6	Central	3



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PCR



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PCR



SCIENCEPHOTOLIBRARY

# Small Land Mammal Exclosure Plot and Continued Research

Plot

100 m

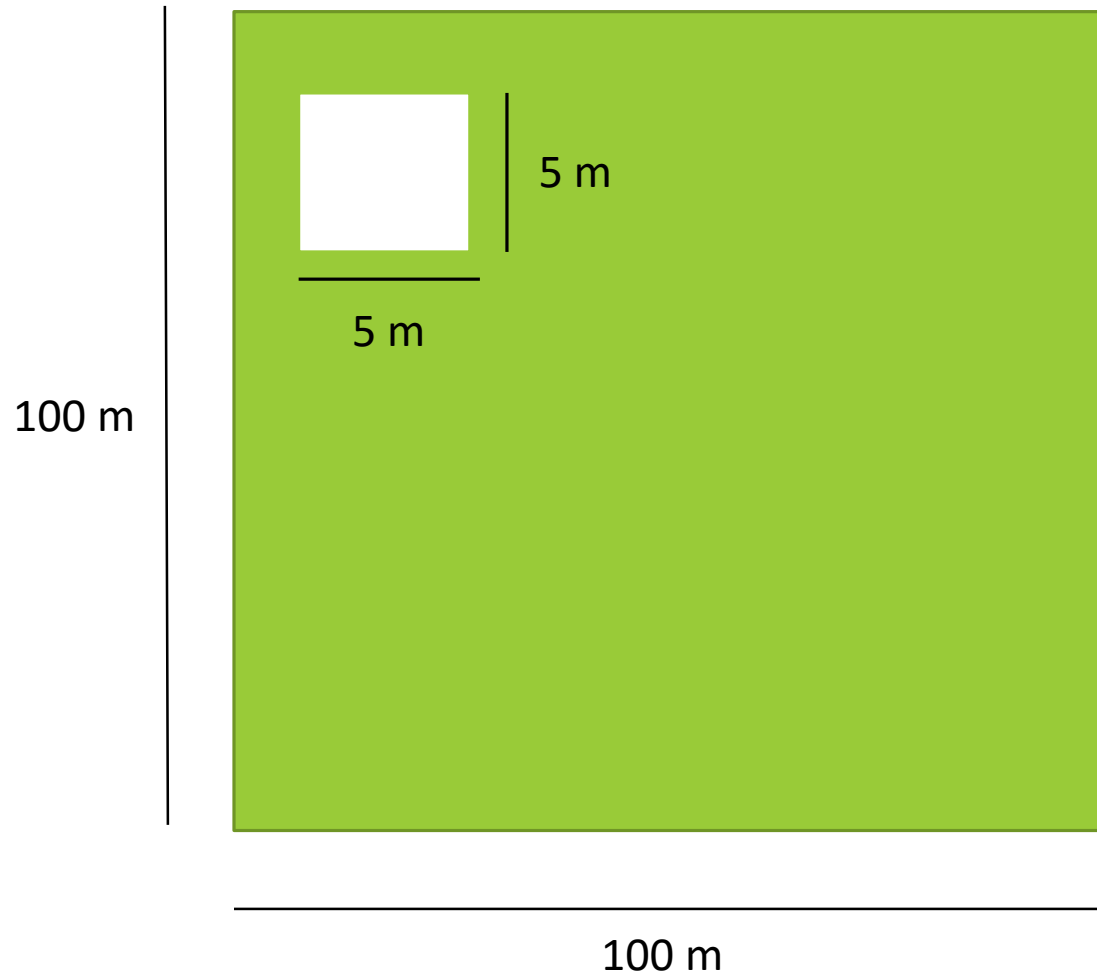


100 m

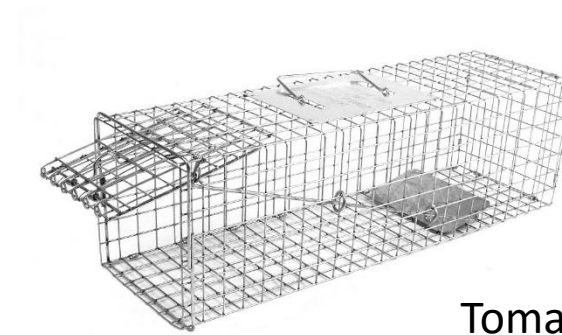
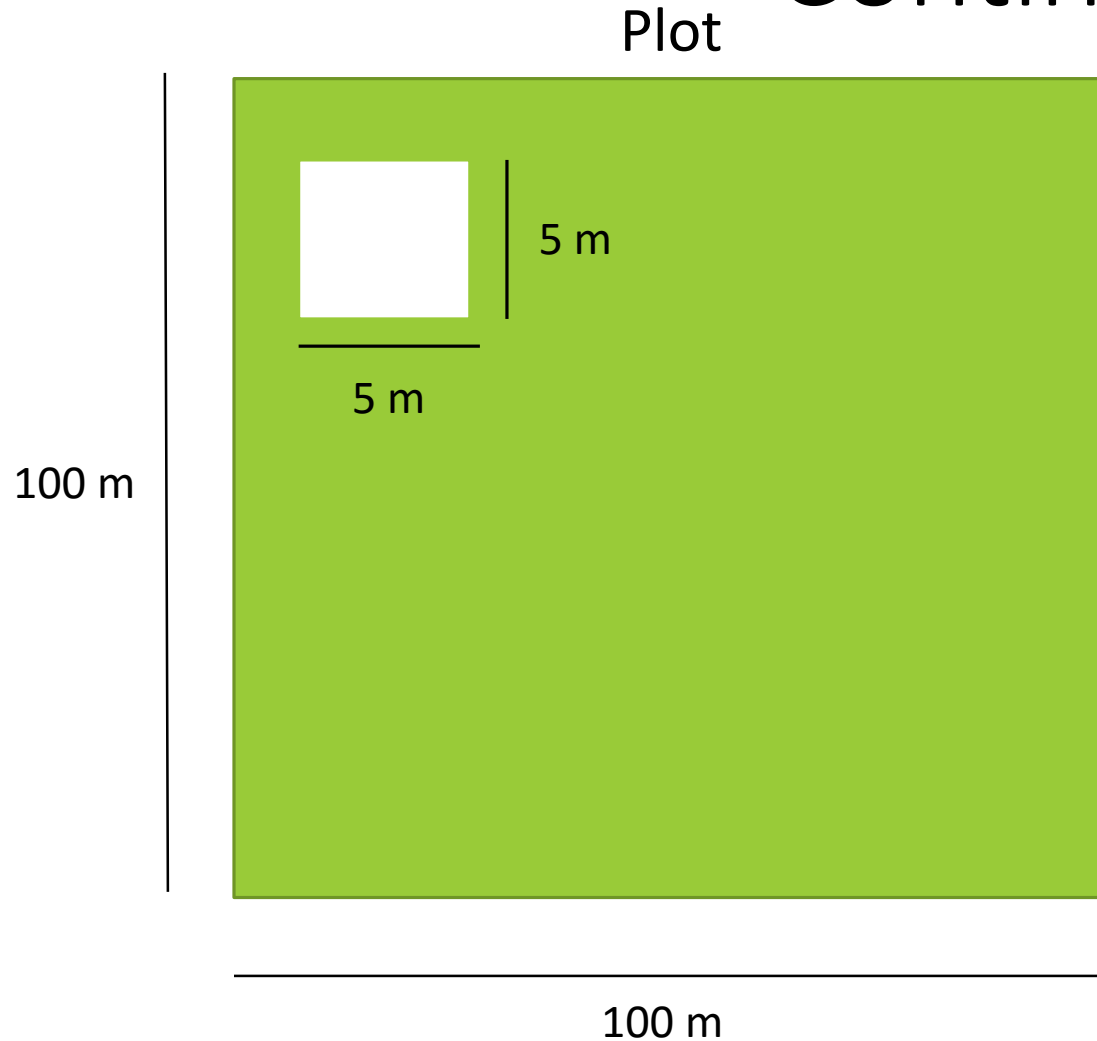


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Tomahawk Trap

EEMB

UCSB



CSEP



Hillary Young

