

Oh Deer! Population Dynamics

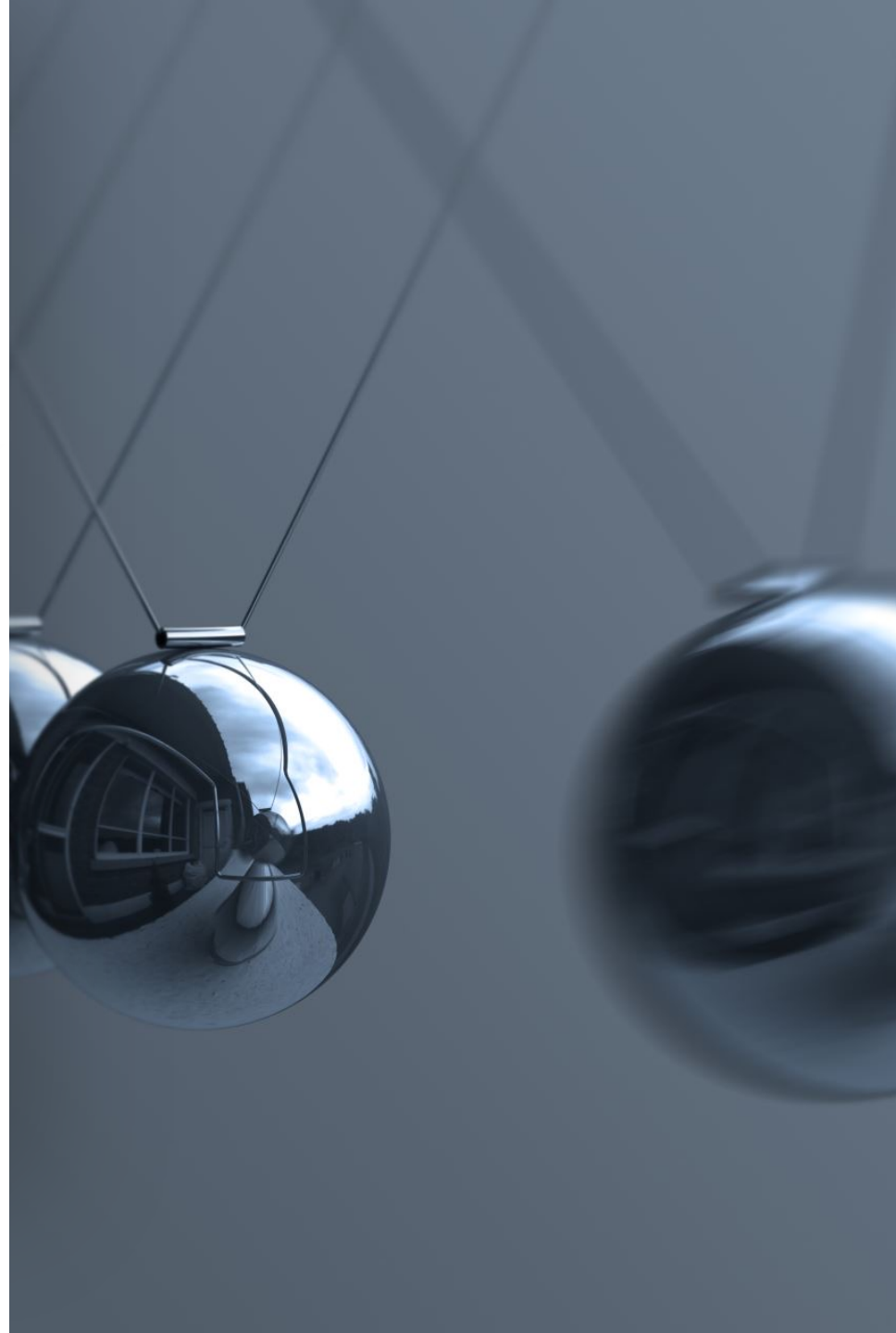
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Education and the Western Association of Fish and Wildlife Agencies



Concepts

- Systems
- Cycles
- Interdependency



Enduring Understandings




- All changes happen in cycles.
- All populations are dynamic due to changes in the environment.
- Every habitat has the capacity to support a limited number of individuals.
- Changes in those habitats can be natural or man made.
- There is an interdependent relationship between all organisms and their environment.
- Organisms will adapt or perish due to these changes.



Essential Questions

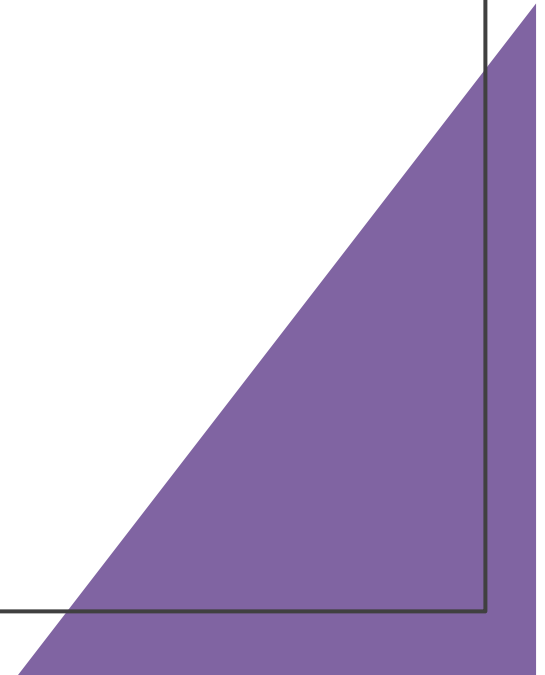
- Should people alter natural occurring events?
- To what effect should humans alter natural occurring events?
- How does diversity play a role sustaining an environment?
- Which features affect environmental conditions?

Content Knowledge

- *Key knowledge will students acquire as a result of this unit? Students will know..*
 - Components of habitat
 - Example and non-examples of what makes a good habitat
 - Predator and prey relationship
 - Limiting factors on a population
 - Carrying capacity
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Oh Deer

- Type I or Entry point activities
- Type II What skills will you focus on
 - Data analysis
 - Communication skills
 - Prediction
- Type III or Projects



Dual Differentiation in Action





Annual Record

Year	1	2	3	4	5	6	7	8	9
Deer	4	8	16	18	33	39	28	40	15
Habitat	54	50	42	30	19	19	23	5	27
Predator//limiting factors				6	8	9	7	10	12

Content Differentiation: Vary resources and topics

- Books

- Silent Spring
- Ishi-Native American Perspective
- Michael Crichton-*The State of Fear: Why Politicized Science is Dangerous*

- Videos

- An Inconvenient Truth-Al Gore
- The Lion King

- **Articles**

- **Websites**

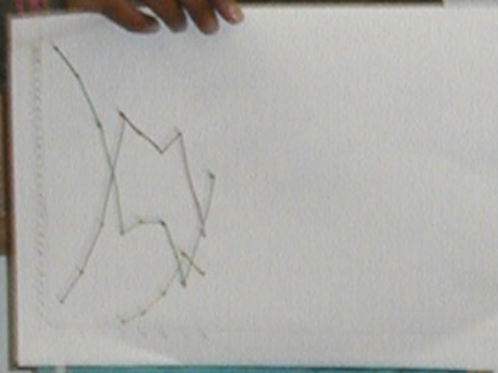
- **Other**

Statisticians:

You are working for the Bureau of Environmental Studies and are in charge of documenting the statistics of the deer population for the county. Use the data in the chart to create line and bar graphs to explain population dynamics, carrying capacity, and limiting factors including features of the habitat over the past 10 years.







Social Activists

You have heard that the town is planning to sell the forestland on the edge of town to developers who are planning to use the land to build a huge shopping mall. Stage a protest using posters and speeches explaining the issue for the deer population. Include information about population dynamics and limiting factors.



Filmmakers

You are working for Disney Films and have been asked to design a documentary film on animal life. You are to create a storyboard depicting the deer population dynamics during the last 10 years using the data on the class chart. Make sure your documentary includes information about population dynamics, carrying capacity, and limiting factors including features of the habitat.

- 1 Graphologist
 - 2 Social Activist
 - 3 Film Maker
- Reporter
Researcher

Habitat
Environment



Stack of books with the name "Simone" written on the bottom book.

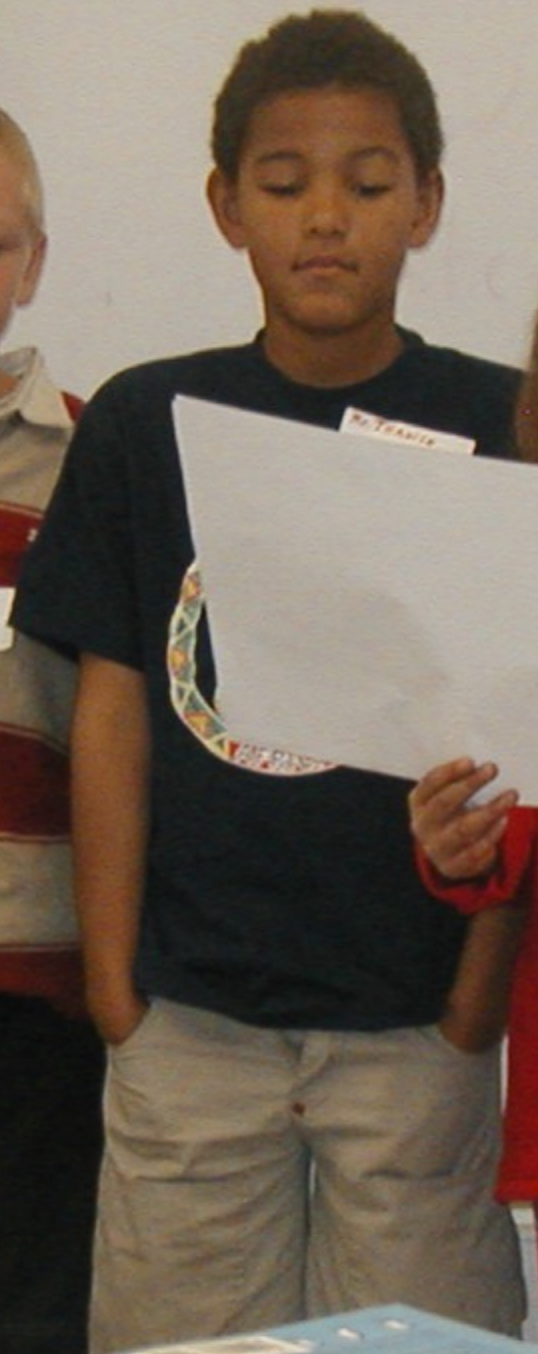
Reporters:

You are working for the Sierra Club and need to write an article for their newsletter about the growing deer population, and the problems it is causing. Trace the growth from the data in the chart during the years where the population was at its maximum and discuss the issues.

Film Maker

Report

Re



Science researchers:

- ◆ You are working for the state environmental agency and need to find out about the deer population in your state. Explore the websites bookmarked for you on our computers and design a fact sheet with the following information:
 - ◆ Number of deer in state
 - ◆ Problems
 - ◆ Laws that protect or limit the deer population.



Product Assessment Rubric

Rating	Acceptable	Good	Superior
Quality of product	Neat, clear, shows organization	Attractive, easy to read, and understand	Shows extra effort and passion
Evidence of limiting factors	Includes habitat, food, shelter, predators (FWSP)	Demonstrates relationship between c	Predicts future relationship of FWSP
Evidence of population dynamics	Shows understanding of PD	Demonstrates fluidity of PD	Predicts future of PD for a population other than deer.
Evidence of Application of knowledge and Synthesis	Demonstrates understanding of relationship of (FWSP) Population	Shows relationship of FWSP to People	Predicts future of FWSP relationship to future of people

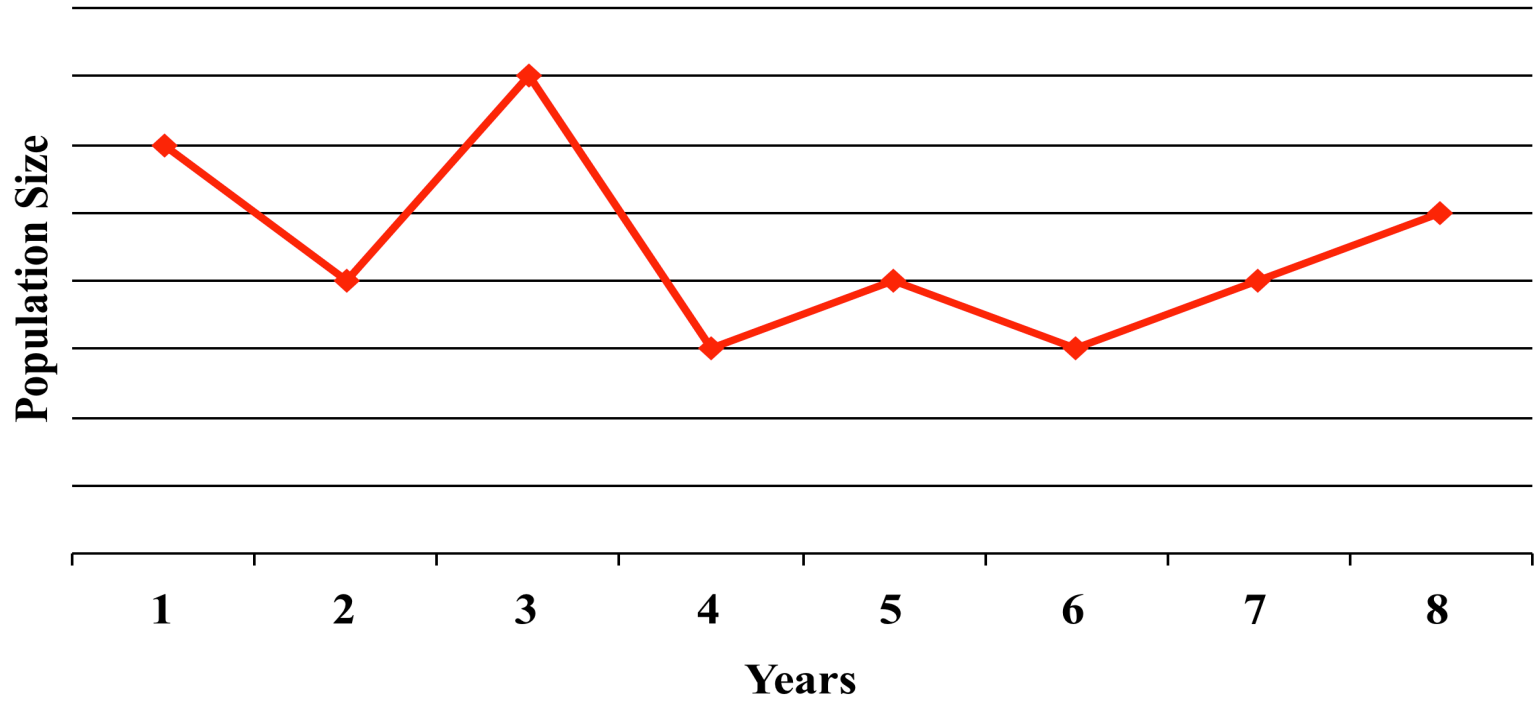
Evaluation

1. Name three essential components of habitat.
2. Define “Limiting factors”. Give three examples.

Evaluation

3. Examine the following graph. What factors may have caused the following population changes.
- a) Between years 1 & 2 ?
 - b) Between years 3 & 4 ?
 - c) Between years 5 & 6 ?
 - d) Between years 7 & 8 ?

Evaluation



Evaluation

Which of the following graphs represents the more typically balanced population?

Chart A

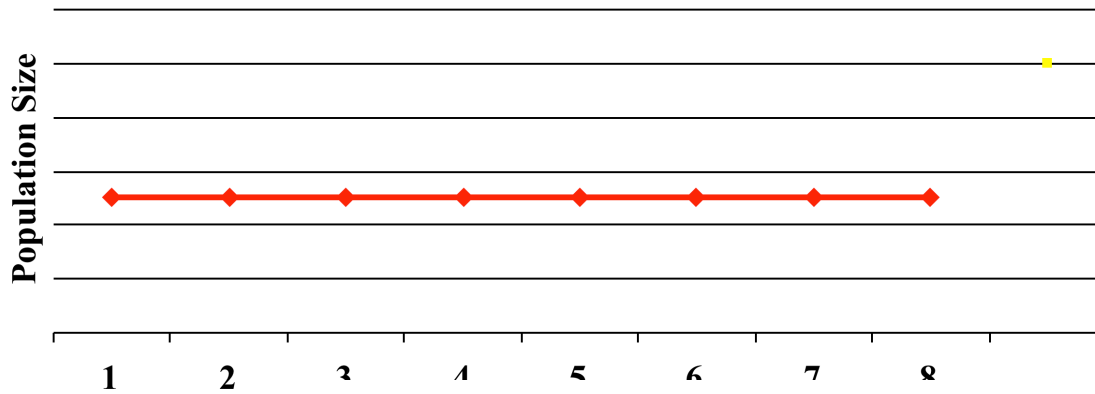


Chart B

