

Supercomputing Proposal

Subject: Rattlesnake Hunting Regulations Using Big Data

School: Los Lunas High School

Area of Science: Environmental

Title: Rattlesnake Hunting Regulation

Problem Definition:

Rattlesnake hunting can negatively affect the environment of rattlesnakes and its population if not done with caution. If rattlesnake hunters keep all the snakes they capture, it poses a problem. If they capture them too early (when they have not yet had a chance to reproduce—which should be around a certain age—that then correlates to their length), they will not have the chance to reproduce, creating an unstable population and environment. Our problem is to then find which length is the best length for hunters to keep the snakes that they capture.

Importance:

This project has potential societal and environmental impact, specifically for New Mexico. The environmental impact is that we might be able to keep the population of the species stable. With the snake population stable, the amount of snakes which could be used for commercial purposes would be steady, providing a positive potential impact for the economy.

Plan of Action:

We will be creating a NetLogo model simulating a snake environment. Research about snakes and their environment will be conducted to make the program as accurate as possible. We will also look at data previously collected by the late state herpetologist Charles W. Painter and review it for any significant correlations we could input into our model. Once the snake environment is created, we will be creating a 'Hunter Variable' to interact with the environment and observe how it responds.

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