

## **Knowledge-based Learning Outcomes**

Upon completion of *Isle Royale*, students should be able to:

1. Describe why the growth of populations is limited by resources; giving examples of limiting factors.
2. Differentiate between the exponential and logistic population growth models.
3. Explain why predator and prey populations cycle.
4. Explain how predators can indirectly improve the overall health of a prey species.
5. Explain the "paradox of enrichment."
6. Understand the roles of both the null and alternative hypotheses. (Extension Activity)

## **Skills-based Learning Outcomes**

Upon completion of *Isle Royale*, students should be able to:

1. Graph qualitatively how populations grow, absent factors limiting their growth.
2. Evaluate whether a population is experiencing exponential or logistic growth based on a graph of the population's growth rate.
3. Identify the carrying capacity for a population based on a graph of population size versus time.
4. Predict qualitatively what will happen to a population's carrying capacity as a limiting resource either increases or decreases in availability.
5. Predict how a population already at its carrying capacity will respond if its carrying capacity is either artificially increased or decreased.
6. Evaluate the most informative way to graphically present experimental data.
7. Determine whether there is a statistically significant difference between two means using a t-test. (Extension Activity)