Content:

Populations are dynamical systems and are affected by biological and environmental processes. They are affected by processes that take place within the species (death, birth, emigration, immigration etc.) and between species (predation, competition etc.)

Learning Objective:

Students will be able to model population dynamics in a predator-prey relationship for both the species and formulate plausible hypothesis to explain changes in population composition

Previous Knowledge:

Students should know the factors that affect population sizes – ie birth, death, immigration and emigration

Lesson plan:

1. **Introduction to the system – 2 min**
   Introduction to Isle Royale and the wolves and Moose study

2. **Activity 1 – Pair up! – 1 min**
   In pairs – graph out your prediction for population size for each of the populations

3. **Activity 2 – Rally Robbin – 1min**
   What other information do you need in order to make better predictions? Work with your partner to list some of them.

4. **Activity 3 - Pair share – come to a consensus – Formative Assessment – 2 min**
   Compare the graphs of the two pairs and based on that added information create a consensus graph.
   Discuss general trends that you would expect to see

5. **Activity 4 – Formulate hypothesis - Formative Assessment – 2min**
   Given a graph of the actual population graphs of these two species, formulate plausible hypotheses to explain crashes in the populations that you see.

6. **Summative assessment – 2 min**
   Consider the other species that are present on the island and construct a model to describe the species interactions.