

**Biology**

University Preparation

(SBI4U)

# A Report on Invading Species

## The Task

Students were presented with the following scenario:

New species (including viruses) are introduced into our environment on an ongoing basis. These species have the potential to change our environment and to make an impact on the way we live in Ontario.

You are a laboratory technician working for the Ministry of the Environment or Ministry of Health. A specific invading species is of concern to the ministry. As a laboratory technician, your role is to analyse the situation and write a report to the ministry. You will need to research background information on the species and the extent and effect of the invasion. Your report will include a recommendation for a course of action to deal with the invasion.

## Final Product

Each student was to submit a report on an invading species to the Ministry of the Environment or the Ministry of Health. The report was to contain the following:

- a clear explanation of the actual or potential problem
- a scientific analysis of the actual or potential problem
- a prediction of the future impact of the problem on the environment and/or the human population in Ontario
- originally developed charts, tables, and/or graphs to support the prediction

- a recommendation and justification for a course of action
- a bibliography listing all sources used

*Note:* Although students were required to submit a bibliography, it was not assessed as part of the exemplar task.

## Expectations Addressed in the Exemplar Task

This task gave students the opportunity to demonstrate achievement of all or part of each of the expectations listed below. Expectations 1, 3, and 6 are from the Evolution strand of the course. Expectations 2 and 4 are from the Population Dynamics strand of the course. Expectation 5 is from the list of expectations that precedes the strands of the course in the curriculum document and that applies to all strands of the course.

*Students will:*

1. explain, using examples, the process of adaptation of individual organisms to their environment;
2. compare and explain the fluctuation of a population of a species of plant, wild animal, and micro-organism, with an emphasis on such factors as carrying capacity, fecundity, and predation;
3. analyse evolutionary mechanisms and their effects on biodiversity and extinction;
4. use conceptual and mathematical models to determine the growth of populations of various species in an ecosystem;

5. communicate the procedures and results of investigations and research for specific purposes using data tables and laboratory reports;
6. analyse how the science of evolution can be related to current areas of biological study, and how technological development has extended or modified knowledge in the field of evolution.

*For information on the process used to prepare students for the task and on the materials and resources required, see the Teacher Package reproduced on pages 80–84 of this document.*