BIODIVERSITY UNDER SIEGE:

Teaching Okanagan Students about Invasive Species

TEACHER'S GUIDE

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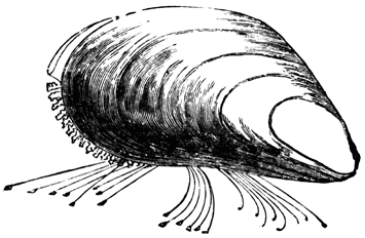
oasiss
Okanagan and Similkameen Invasive Species Society

SOUTH OKANAGAN CONSERVATION FUND

REGIONAL DISTRICT RDOS OKANAGAN-SIMILKAMEEN

SD67 Okanagan Skaha

Why this project?



This project combines the knowledge of local biologists, indigenous knowledge keepers and classroom teachers to provide a resource specific to the Okanagan. It is tailored to the middle school experience. This lesson series:

- is informative, engaging and fun for you and your students;
- meets curricular goals; and
- will deepen connections with the local environment.

Intro to Invasive Species - What are they? Why care?

Native vs Non-Native vs Invasive

- **Native:** Occurs naturally in the environment, has lived and evolved there for a long time, and has a unique role to play (examples: *e.g. ponderosa pine, Saskatoon, rattlesnake*)
- **Non-Native:** Introduced species that do not hinder or prevent survival of others within the ecosystem, and may be helpful (examples: tomatoes, tulips, wheat)
- **Invasive:** Species that do not occur naturally in an area and cause harm to the environment, economy, or human, animal or plant health. (examples: European starling, American bullfrog, burdock, zebra mussel) They often display the following characteristics:
    - Have few (or no) natural enemies or predators
    - Reproduce quickly and often
    - Adapt to many conditions
    - Out-compete native species for food and habitat

IUCN lists invasive species as the 2nd biggest threat to biodiversity after habitat loss

- BC has ¾ of Canada's bird species and ¾ of Canada's mammals, including many not found anywhere else
- Invasive species outcompete these native species, disrupting entire ecosystems

Why teach about invasive species?

- This is a timely topic. The issue of invasive species is intricately intertwined with issues of biodiversity, climate change, and indigenous cultures and ways of knowing

- Invasive species impact everyone. They can even be found at our schools or in our own backyards.
- A place-based, hands-on approach helps students grasp challenging concepts like climate change, and the stewardship component helps students see the difference they can make in their community.
- It connects to the BC Curriculum in many ways.

Curriculum Alignment & Overview – BC Grade 6-8 Curriculum

Below is a general overview of the curricular alignment of the lesson series. Specific curricular goals will also be outlined within each individual lesson plan. While the focus for this lesson series is grades 6 through 8, it covers curricular competencies in all grade levels and can be adapted as needed for other grades.

Core Competencies

This lesson series touches on aspects of all three of the core competencies – Thinking, Communication, and Personal and Social. Of particular focus in this lesson series is the Social Awareness and Responsibility sub-competency; this competency involves "the awareness, understanding and appreciation of connections among people, including between people and the natural environment. Social Awareness and Responsibility focuses on interacting with others and the natural world in respectful and caring ways" (BC Curriculum, https://curriculum.gov.bc.ca/competencies/personal-and-social).

Curricular Competencies

In general, the curricular competencies for Science 6-8 are very similar and simply increase in complexity. Curricular competencies covered in this unit include (Sci 7):

- Questioning and predicting
    - Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest
    - Make observations aimed at identifying their own questions about the natural world
- Planning and conducting
    - Observe, measure and record data, using equipment, including digital technologies, with accuracy and precision
    - Ensure that safety and ethical guidelines are followed in their investigations
- Processing and analyzing data and information

    - Experience and interpret the local environment
    - Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information
- Evaluating
    - Consider social, ethical, and environmental implications of the findings from their own and others' investigations
- Applying and innovating
    - Contribute to care for self, others, community, and world through personal or collaborative approaches
    - Transfer and apply learning to new situations
- Communicating
    - Express and reflect on a variety of experiences and perspectives of place

Big Ideas & Content

This unit aligns best with the BC Science 7 Curriculum in terms of content. However, it can be used at any grade level to meet curricular and core competency goals.

Science 7 Big Ideas covered:

- Evolution by natural selection provides an explanation for the diversity and survival of living things.
- Earth and its climate have changed over geological time.

Science 7 Content covered:

- survival needs
    - all organisms need space, food, water, and access to resources in order to survive
- natural selection
    - the natural process by which certain traits that have a greater fitness for their environment lead to a reproductive advantage; this process happens within a population over time because of genetic variation
- First Peoples knowledge of changes in biodiversity over time
- evidence of climate change over geological time and the recent impacts of humans:
    - local First Peoples knowledge of climate change

For more information on OASISS or local invasive species, or to report an invasive species, please visit www.oasiss.ca or www.oiso.ca