

# Common Carp Project



Image by DUC.

## General Learning Outcomes

**GLOB:** Science, Technology, Society and the Environment

**GLOC:** Scientific and technological skills and attitudes.

**GLOD:** Explore, understand, and use scientific knowledge in a variety of contexts.

## Specific Learning Outcomes

**SLO B1:** Identify and explore a current STSE issue.

**SLO B2:** Recognize that decisions reflect values and consider their own values and those of others when making a decision.

**SLO B3:** Evaluate implications of possible alternatives or positions related to an STSE.

**SLO B5:** Propose a course of action related to an STSE issue.

**SLO B6:** Reflect on the process used by themselves or others to arrive at an STSE decision.

**SLO C1:** Identify questions to investigate that arise from practical problems and issues.

**SLO C2:** Clarify problems and refine testable questions to facilitate investigation.

**SLO C3:** Design and conduct an investigation to answer a specific scientific question.

**SLO C5:** Select and use scientific equipment appropriately and safely.

**SLO D1:** Integrate knowledge, as necessary, from various science specialities in order to address an issue, engage in problem solving or conduct scientific inquiries.

## Summary

Students will have an in depth look at Common Carp and the decline of Delta Marsh. They will research one of several options to control them. They will need to consider the cost, effects on the wetland and its other inhabitants and its effectiveness.

## Materials

- *Projector and computer to present slideshow*
- *Student access to a library and the internet*
- *You may choose how students present their findings (written report, oral report, video, Power Point, Prezi, etc.)*

## Procedure

### *Warm Up*

Begin by reminding students of their recent visit to Oak Hammock Marsh, and ask them what kind of ecosystem it was. Present the included slideshow (Common Carp Project Power Point.pptx), which will provide an overview of the Common Carp problem at Delta Marsh.

**A wetland is** an area of land that holds shallow water, with a maximum depth of two metres. The water makes the soil very moist, so plants who need moist soils will grow in and around the water; this is why a wetland can not be deeper than two metres, because otherwise these kinds of plants drown and do not receive enough sunlight. The water moves slowly because there are so many plants that slow the water down, absorbing some of the water like a sponge and filtering it as it moves through.

**Invasive species** is an introduced species or organism that causes damage to biodiversity, agricultural production or human health. They have no natural enemies/predators and outcompete native species.

**Common Carp** is a large, robust, deep-bodied fish recognised by its small eyes, thick lips with two barbels at each corner of the mouth, large scales and strongly serrated spines on its fins. Colour is variable, but is often brassy yellow, olive green or silvery grey on its back, fading to silvery yellow on the belly. Adults can reach lengths of 30.5-63.5 cm (12-25") or more; large individuals may reach 9.1-27.2 kg (20-60 lbs). Carp have a very high growth rate and are considered an invasive species in Manitoba.

## *Activity*

The slideshow introduces students to the activity, in which they will research a potential solution to the Common Carp problem at Delta Marsh. You may choose to have students work individually or in small groups. This activity may take several classes of research time to complete, or could be assigned as homework.

Students will select one solution highlighted in the slideshow and research it.

They should answer the following questions:

- 1) Which solution did you select?
- 2) Why did you select it?
- 3) How would it control carp? What information would you need to collect? How would you collect it? What equipment would you use?
- 4) What are its effects on wetlands?
- 5) What are its effects on other wetland inhabitants? What could be some unintended consequences of this option of carp control?
- 6) How does science play a role? How does technology play a role?
- 7) What is the economic cost of your solution?

## *Wrap Up*

Students can present their findings - solution chosen, pros and cons of their solution, effects on carp and other wetland species to the class or in a research essay. Students should decide, based on their findings, whether or not their solution is a good one.

Conclude by presenting the Power Point on the solution that Ducks Unlimited Canada came up with (Common Carp - What Ducks Unlimited did.pptx). Discuss their solution's pros and cons.

## **Extensions:**

– Ducks Unlimited Canada runs two programs that encourages students to engage in wetland conservation: Wetland Centres of Excellence and Wetland Heroes. Check out their website: <https://www.ducks.ca/initiatives/>

–The Caring for our Watersheds program provides funding to turn environmental solutions into reality. For more information on how students can participate, or to book a free workshop in your classroom, see our website: <https://www.oakhammockmarsh.ca/learn/caring-for-our-watersheds/>