WATERSHED GUARDIANS

Full-Day Program

10:00 AM – 2:00 PM.

Modified for Specialist High Skills Major (SHSM) Electives.

Watershed Management: Students will learn about the different health indicators and how they inform how we manage our natural resources: surface water quality, forest conditions, and wetland conditions.

Geographic Information Systems: Students will learn what GIS is and how it is used to map all these watershed health indicators.

PROTECT. RESPECT. CONNECT.
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Program Description

Grey Sauble Conservation Authority (GSCA) will be offering this modified Watershed Guardians program adapted to meet the learning requirements of the high school Specialist High Skills Major program.

Through this program, we will communicate the importance of what we do as an organization, covering content as it relates to both watershed management and geographic information systems (GIS).

One of GSCA's key deliverables to our local communities is a 5-year watershed report card that offers insight into the health of our natural resources. This data is used for many purposes, such as to identify problems and target actions, and to support scientifically based decision-making for preserving or improving these ecosystems. Through this data collection, we can make informed decisions as to how we can best manage our watershed.

As such, this program intends to spread awareness and understanding of the role we play in our communities, and how we can improve the health of the ecosystems that surround us. Shedding light on the many ways we can help conserve, restore and protect our natural resources.

Program Outline

We will begin our day at the Grey Sauble Conservation Authority's Administration Center and Arboretum, located at 237897 Inglis Falls Road in Owen Sound, meeting at 10:00 AM. Here we will go over Geographical Information Systems and how it is used to map watershed health indicators.

GIS Overview
- GIS Fundamentals
  - Vector
    - Feature types
    - Attribute tables
  - Raster
  - Topography
- Creating watersheds using topography and surface water
- Wooded areas and wetlands dataset
- Calculating percent wooded, percent interior, and percent wooded riparian
- Compare grades
  - Factors affecting grades in GSCA watersheds

At 11:30 AM we will travel to Bognor Marsh Conservation Area, located at 104277 Grey County Rd 18 in Bognor. This Conservation Area is 15 minutes away from our Administrative Building.

Once we arrive, we will walk a short distance to the pavilion, where we can unload and eat lunch until 12:00 PM.

From 12:00 - 2:00 PM we will explore the different indicators available to us at this site, including surface water quality, forests, riparian areas, and wetland conditions.

By 2:15 PM, students should be on board the bus, ready to return to school for end of day.

In total, this program runs from 10 AM – 2:00 PM, breaking for a 30-minute lunch at 11:30 AM.

Areas of Focus

Within the Watershed Guardians program, there are **3 Courses/Areas of Focus.** Areas focused on in this modified program are indicated with an asterisk.

1. Focus Area: Surface Water Quality*
   a. Students will get a chance to explore the biodiversity of life in our water, observing different organism classifications, investigating what they need to survive.

2. Focus Area: Forest Conditions
   a. Students will learn the different types of forest ecosystems, why forests are so important, and how the size, location, and health of our forest relates to the quality of our water.

3. Focus Area: Wetland Conditions*
   a. Students will discover different types of wetland ecosystems, the habitats they create, and what species rely on them for survival.
   b. Why wetlands are important for watershed health.

- Mapping Component: Geographic Information Systems (GIS)*
   c. Students will learn what GIS is and how it is used to map all these watershed health indicators.

Key Concepts

- Watershed Health indicators, management, and report cards
- Importance of ecosystem health and biodiversity
- Data collection, monitoring, and reporting tools

Curriculum: Science and Technology Areas Covered

- Needs and Characteristics of Living Things	- Conservation of Energy and Resources
- Air and Water in the Environment	- Biodiversity
- Growth and Changes in Plants	- Interactions in the Environment
- Habitats and Communities	- Water Systems