Living & Working for a Sustainable Future

Module: Biodiversity, Me & My Work

Learner Study Guide

nscc
School of Trades and Technology

Learning Outcomes

Upon successful completion of this unit, you will be able to:

1. Analyze the interconnection with marine and terrestrial ecosystems and how they relate to healthy biodiversity.

Learning Activities

To complete this unit, students should:

- ✓ Complete the activities outlined in step 1: Looking Back
- ✓ Complete the activities outlined in step 2: Looking Within
- ✓ Complete the activities outlined in step 3: Looking Forward
- ✓ Submit the required assessment components to your facilitator

	**Looking Back: INFORMATION & EXPERIENCE**

NSCC's mission, vision and strategic plan are fundamentally aligned with the principles of sustainability. The College is committed to taking a leadership role in the journey toward sustainability for the benefit of all Nova Scotians. NSCC programs help learners to be able to apply sustainable practices that support economic, social, cultural and environmental stewardship.

This module relates to the interconnection with marine and terrestrial ecosystems and how they relate to healthy biodiversity. Looking at the root of these terms, ecosystems are literally systems of interconnected organisms and biodiversity relates to the diversity of these organisms. Marine relates to water, particularly the ocean, whereas terrestrial relates to the land.

Think about what you know about ecosystems on land and in the water. Think about how you interact with ecosystems on the land and in the water.

Think about our place in the world.

Think about how our world, country, and province were shaped by glacier activity and geological activity.

Think about what we are, how we are shaped in terms of community or a society, and then think about specific habitat and ecological areas.

One of the main purposes behind this module is to be able to look at ecosystems differently, to appreciate the diversity of the different ecosystems around us as well as the beneficial and detrimental influences on these ecosystems.

Internet Research Activity: An Online Scavenger Hunt

Take action to go online and use the Internet to uncover answers to the following questions. Be sure to keep track of your references and sources of the information. It is important to know where the information is coming from to ensure it is a credible source.

Question one:
Provide definitions for the following terms:

a) ecosystem
b) habitat
c) terrestrial
d) marine
e) terrestrial ecosystem
f) marine ecosystem
g) biodiversity
h) biodiversity sustainability criteria
i) biodiversity sustainability indicators
j) invasive species
k) alien species
l) natural site
m) disturbed site
n) site analysis

Your next step is to get out there and explore ecosystems in different ways.

The first way will be to take a virtual field trip.

Learning Activity: Take a Virtual Field Trip

Take Action in order to gain a broader perspective of our province, by taking a virtual field trip around the province. This will help you to gain an appreciation of other geological features and influences in our own province.

The province of Nova Scotia has created a scenic virtual flight around Nova Scotia in order to learn about some spectacular vistas from the air and occasionally land, to look at the geology up close and personal.

Stop 1. Halifax and surrounding areas. We are leaving from the Halifax waterfront.

http://www.gov.ns.ca/natr/meb/field/start.asp

While on the flight you can browse through a series of brochures and maps outlining the glacial and surficial geology of Nova Scotia.

Reflect on this field trip. What geological outcroppings or formations struck you and why?

How does taking this field trip help you to appreciate the diversity of Nova Scotia's habitats?

Find out more about YOUR community

Your next step is to get out there and explore your community in a different type of way and find out more about YOUR community.

What are some sources you could consult to find out more about temperature, land use, population, land mass, frost free days, average precipitation, the list goes on …

There is a lot of interesting information available that can help you in understanding the way organisms live.

	**Looking Within: REFLECT & SHARE**

You have started out with some information and some experiential field trips, now you will be taking the time to reflect on what that means.

Take action to do research relating to some of the codes of practice relating to ecosystem management relating to YOUR particular areas of interest.

For example, you might want to look into LEED Certification and how that relates to ecosystem management.

You may want to look at the codes of practice relating to a particular sector or industry. For example, Nova Scotia's Code of Forest Practice: A Framework for the Implementation of Sustainable Forest Management

http://www.gov.ns.ca/natr/forestry/reports/NScodeofprac.pdf

This resource provides an excellent framework for the management of terrestrial biodiversity.

Air, soil and water experience and suffer from many human intrusions that could ultimately affect the quality of our own lives and that of our forest environment. Forests can influence and mitigate these effects to some degree if maintained in a diverse and healthy growing condition.

To prevent adverse effects on air, soil and water by human intervention, forest practices must be designed in accordance with the following principles that commit to conserving and protecting these critical elements of our forests.

- Forest management practices will be designed and conducted to conserve and enhance the health and natural diversity of Nova Scotia's forest ecosystems.

- Forest management practices will be planned and conducted according to the Ecological Land Classification (ELC) system for Nova Scotia (NSDNR, 2003).
- Forest management practices will be designed and conducted to conserve and enhance habitat for Nova Scotia's wildlife species.
- Forest management practices will be planned and conducted to protect habitat for species at risk.

Although this specific reference relates to forestry, the principles behind these practices are appropriate across ecosystems and provides a **framework for ecosystem management.**

REVIEW a related VIDEO resource

There are all kinds of amazing resources relating to ecosystems and biodiversity.

We would like you to take action to review a video resource and evaluate it to see how it relates to ecosystems and biodiversity. You have the option of reviewing a suggested video or finding another video related to ecosystems and biodiversity and reviewing that video.

Suggested Video Information:
Video Title: "**Crusader fights against anti-beetle logging**" Video Description: As logging crews double cutting efforts to stop the pine beetle, Judy Stratton devotes her life to stopping the chainsaws.
Information for How to Access Video:
Video located on the CBC Digital Archives http://archives.cbc.ca/ Broadcast Date: Nov. 10, 2002 http://archives.cbc.ca/environment/natural_disasters/clips/7137/
How does this video relate to ecosystems and biodiversity?

Specific Questions to Address:
What were the main points being made by Judy Stratton? What were the main points being made by the Government officials? Which side of this debate would you choose to be on and what additional information might you need before making this decision?

Optional Selection Video Information:
Video Title: Video Description:
Information for How to Access Video:
Video accessed from: (provide full URL location if online or library location, ISBN and reference number) Broadcast /Publication Date:
How does this video relate to ecosystems and biodiversity?
Specific Questions to Address:
What were the main messages of the video?

What did you learn from this video?

Why did you select this particular video?

Share your video resource review with someone else and discuss your responses.

Take advantage of opportunities to engage in further dialogue with your co-learners and your facilitator about what you have been reading and discovering in the course to date.

Looking Forward: APPLICATION & ACTION

Here you will be considering action possibilities through the work of related, existing groups and organizations.

Research the different types of conservancy groups that exist in relation to your particular areas of interest. There are international level organizations such as the Audobon Society and World Wildlife Fund, there are also national level organizations such as the Canadian Council on Ecological Areas and the Canadian Ecology Centre, at a provincial level there are organizations like the Nova Scotia Nature Trust and the Ecology Action Centre and at a local level there are specific focused organizations to protect existing shorelines, the list goes on.

Take Action by selecting one of the conservancy groups that that relates to your particular areas of interest and connect with this organization. Make arrangements to attend a meeting or meet face-to-face with a representative from the

organization. If a face-to-face meeting is not possible, make arrangements for a phone call conversation with a representative where you interview the person about their organization.

Your submitted portfolio learning evidence for this module will include a reflection about the group that you selected.

A real life field trip

Consider the action steps you envision taking (or are already taking) relating to ecosystems and biodiversity.

There is an entire continuum of how a site analysis could be conducted.

A site analysis is a fact finding mission where you inventory existing conditions.

Think of a site you would like to analyse. It could be a nearby park or where you walk the dog. Pick a location to conduct your own site analysis. Use all of your senses to conduct a small scale site analysis.

You will not be paying for expensive soil or water testing but instead using your senses to analyze the site.

You are coming up with the checklist rubric of how you are analysing the site.

It will be interesting to compare how different people analyze their sites.

Some guidelines to consider in your site analysis might include: Existing plant material, orientation of the sun, prevailing wind, microclimate, etc.

You will be asked to really look at this ecosystem through a portfolio learning approach. This involves looking back, looking within and looking forward.

Think about how this ecosystem might have been different 100 years ago

Think about how this ecosystem might be different 100 years from now.

Think about how the changes in this ecosystem are linked to the sociological and economic changes that have happened and are happening in the world.

Think about how regulations impact and relate to ecosystems.

Think about the impact of new initiatives like LEED Certification on ecosystems.

Think about how sites are developed, how buildings are built and how this relates to the preservation of ecosystems rather than the destruction of ecosystems. Sites are a part of ecosystems. The built environments are a part of ecosystems. We need to work on finding the ways to discover and create harmony and balance between the natural and built environments.

You will be asked to share and discuss your experiences relating to this site analysis with your co-learners and facilitator.

- **In addition to what you submit to your facilitator, you are also encouraged to participate in formal and informal dialogue opportunities with co-learners. Discuss the following question: How did this module impact YOU?**

Assessment

In order to receive credit for this module, you are required to submit to your facilitator your completed site analysis learning artifact as well as a single page learning reflection. This reflection must include the components outlined below and fit on one single letter size page with a minimum 10 point type font.

- **Module Name:**
- **Learner Name:**
- **How did this module INFORM?** Based on your module readings, reflections and collaboration with others, provide a one paragraph summary of how the content from this module has informed you relating to the importance of sustainability action. What is the single most important thing you learned from this module?
- **How did this module INFLUENCE?** Knowledge is one thing, but learning takes on deeper meaning when it is reflected upon and shared. Throughout this module you have been encouraged to discuss, reflect, share and collaborate with other learners in your journey through the content and activities. Provide one paragraph of reflection evidence indicating how others helped to evolve your attitudes and /or how you have helped to change the attitudes of others.
- **How did this module INSPIRE?** Knowledge and attitudes are important but actions and behaviours are where change often most noticeably happens. Really think about the things you can do (and are already doing). Sum up the personal action steps you are currently completing and/or plan on taking based on this module.
- **Your learning is documented in many forms. Your submitted reflection pieces and the different pieces of evidence from the learning activities you completed are all important artifacts of your learning – they are representations of what and how you have learned.**
- **Your lifelong learning and action to help create a more sustainable future continues on from here…**