

Ecoregion Unit Lesson Plan

Activity Information

Grade Level:	Intermediate/ High
Subject Area:	Geography, Science, Language Arts
Duration:	215 - 340 mins (6 – 10 classes)
Group Size:	Small groups and Individual
Purpose:	To make students aware of the ecological diversity across the province. Each student will have the chance to explore a different ecoregion and present their findings to the class.

Teacher's Notes: This activity uses the *Ecoregion Brochure kit including the corresponding activity sheets*. There are two suggested approaches to exploring the ecoregions of Newfoundland and Labrador.

Lesson A is an individual research project on one ecoregion. Students will complete the Activity Sheet and choose a multi-disciplinary activity to further explore one of the topics explored in their Ecoregion brochure.

Lesson B is a group exploration of the details of an ecoregion and followed by developing a panel board to display the unique features of that region.

There is a unit test that can accompany either lesson option.

MATERIALS REQUIRED:

- Introductory Ecoregion Brochure (one per student)
- Ecoregion Set – distribute or copy one ecoregion per student as per the lesson plan you will be following.
- ERB Activity Sheets (one per student of the introductory sheet and the sheet corresponding to their ERB)
- Access to the internet and/or library
- Writing materials
- Materials for making display

LEARNING OUTCOMES:

At the end of this lesson, students will be able to:

- Appreciate the need that humans have for natural areas
- Relate human special places to animal habitat
- Explain why animals need special places
- Explain what happens when habitat is lost
- Distinguish between endangered, threatened, special concern and extinct.

PROCEDURE:

Part I (Discuss) 15 minutes:

To begin, discuss the basic terms in the Ecoregion Brochures (ERBs) and how they are laid out.

An **ecoregion** is a distinctive natural region identified through scientific markers such as plant and animal species, local climates, elevations, soils and bedrocks. Some of the regions are divided into **subregions**, when the distinctive variations are on a smaller scale than would be found between *ecoregions* but significant enough to require separate consideration of the habitat's unique features and the need for protection.

There are 35 of these natural regions in Newfoundland and Labrador and they are all often referred to simply as ecoregions since each is just as important as the next.

When reading the brochures you will notice that subregions of a particular ecoregion will have similar general notes about the larger region, but the distinctive features of the subregion are highlighted later in the text.

By identifying each of these regions and their unique features, we can then aim to ensure that there are protected areas within each ecoregion to protect that diversity from industry, development, and mismanagement.

The ERB Kit includes an introduction brochure, *Newfoundland and Labrador's Ecoregions*, and brochures for each of the 35 distinct regions of the province. Each brochure includes a physical description of the area, description of soil and geology of the region, *Vegetation and Wildlife Profiles*, various *In Focus* sections highlighting items of interest in the area and a *Protected Areas Profile*.

The key point of these brochures is to highlight our province's natural diversity and where we are in protecting that natural heritage.

What is the importance of protected areas? Have students brainstorm for a list of reasons we would want to protect a sample of each ecoregion across the province.

Ask students what protected areas they know of in the province. Use page four in the ERBs to identify what ecoregion

these protected areas are representing. Does the protected area provide adequate representation of the unique features of the region? If not, why not?

Part II (Reading) 20 – 35 minutes:

Provide each student with an introductory brochure to read in class and use in the next section. Assign the eight *Analysis* questions from the ERB Activity Sheets for that brochure. Reviewing this brochure will provide a context for the student's review of a specific ecoregion.

Correct the answers as a class and discuss protected areas with respect to the information learned and the ideas the class came up with during the initial discussion in Part I.

Part III (Activity) 120 – 180 minutes:

Choose Lesson A or Lesson B with the suggested directions below.

Students will do a research project based on a single ecoregion that they can choose or that the teacher assigns. Lesson B has students working in groups based on the ecoregions they choose. You may wish to take this into consideration when assigning the ecoregions.

Each student will take their ERB to read and complete the Analysis and Vocabulary from the corresponding Activity Sheet.

Lesson A (Individual Project):

Students can then choose an "Activity for Further Exploration" to complete, though assure the students that the 'easy' ones will not fulfill the requirements of the assignment by themselves. Each ERB Activity Sheet has a variety of these activities. Students can choose an activity based on their own interests or perhaps propose a similar activity that they have seen on someone else's sheet or make up their own exploration into the region.

The teacher can request that the students write a proposal for the research they wish to do. Such a proposal would include:

- The issue or topic they wish to address.
- The question(s) they will attempt to answer or the audience they aim to educate.
- Their method of research.
- Their method of presentation, be it an activity, visual display or 4-6 page paper.

The teacher can grade this presentation not



only on the students' information, but on their presentation and use of resources.

Guidelines for the project:

- Must be directly related to some aspect of the ecoregion assigned.
- Will require additional research outside of the ERB kit through any of the library, internet and/or personal interviews.
- At least 3 sources must be cited.
- The final product will be a research paper, an educational activity, or a display.

Lesson B (Group Project):

As mentioned earlier, some of the formal ecoregions are divided into subregions. There subregions show the smaller but still significant differences within a region or highlight outliers that are similar to an ecoregion but are separated from the main body of that ecoregion.

At this point each student has an Ecoregion Brochure. Now, group the class according to the brochure the students have been studying according to the list below. Groups will have different numbers of students, however each student will still have one brochure each that they are the expert on.

Group A (6 students)

1a, 1b, 1c, 1d, 1e, 1f

Group B (4 students)

2a, 2b, 2c, 2d

Group C (4 students)

4a, 4b, 4c, 4d

Group D (4 students)

6a, 6b, 6c, 6d

Group E (3 students)

8a, 8b, 8c

Group F (4 students)

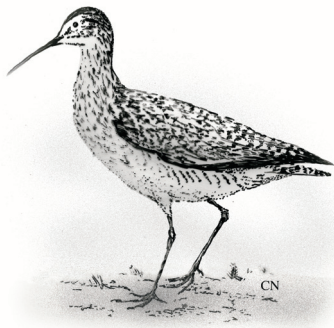
3, 5, 7, 9

Group G (5 students)

L1, L2, L3, L4, L5

Group H (5 students)

L6, L7, L8, L9, L10



The objective of the group project is to show how the regions in their group are each unique by describing the landscape, vegetation, wildlife, protected areas and special focus items.

What makes each region distinct? What special features and species need to be protected? What is being done to ensure that each of the ecoregions (or subregions) have representative protection?

As a group chose one protected area featured in your group of ecoregions and find out what it is protecting. Research what needs to be done in another important

area within your group. Visit the provincial Parks and Natural Areas website to find out more about how they protect areas: www.env.gov.nl.ca/parks/ Visit Protected Areas Association website for more details on current issues concerning protected areas: www.paanl.org

Students will work as a team to compare and contrast the regions they have been given and will design a display to educate the school or the community about the wonderful diversity in our province.

Guidelines for the project:

- Will require additional research outside of the ERB kit through any of the library, internet and/or personal interviews with people working with parks or protected areas.
- Show the regional elements that are shared among the regions and what makes each area distinct from all the others. Try to identify exactly what unique features need to be protected in each ecoregion (or subregion).

- The final product will be a 3 panel display describing the landscape, vegetation, wildlife, protected areas and special focus items of the ecoregions.
- Students may wish to accomplish this through any of a variety of methods including maps, charts, models, pictures, diagrams and crucial text.

Part IV (Present and Review) 50 – 100 minutes

For either Lesson A or B students will prepare a presentation. Depending on the project, an activity will be explored, a paper be presented or a display be explained.

The purpose of this presentation is to allow a peer review. At this point the students are all familiar with the type of research each other has done and they are all well versed in the idea of ecoregions and the importance of protected areas.

In the world of science and research, a researcher will have a group of fellow researchers look at their work, notice gaps and suggest improvements (and in some cases retest your theories), so they have the best opportunity to present the most accurate information to the public.

Discuss the importance of peer review in the development of scientific knowledge. This same concept is true for scientific experimentation and research of all sorts. By sharing ideas, experiences and testing theories a research scientist can become better in tune with their subject matter and recognise gaps in their research or simply details that they hadn't expressed properly for others to get the whole picture.

Have each student actively listen to the presentations or review the projects. Students should make notes about questions unanswered, areas for improvement, particularly interesting information that was highlighted, or concepts that were well presented.

At this point the teacher may wish to collect and grade both the projects and the peer review reports as seen fit.

Part V (Evaluate) 10 minutes:

How did your research go? What difficulties did you run into? What was some of the most interesting things you learned from working on this project?

Of all the areas studied, what ecoregion(s) does the class feel is in the most immediate threat of not receiving protection before it is too late?

Part VI (Unit Test):

A unit test has been compiled and is available from Protected Areas Association of Newfoundland and Labrador. We have not included the test in this package since it is a publicly available document.

The unit test involves objective questions based on the Introductory Brochure with an essay question based on the individual ecoregions that students studied.

Request the test through contact information on our website: www.paanl.org

Extension Activities:

1. After receiving feedback from their peers, i.e. their fellow researchers, give students back their projects and the reviews. Have students write a 1 – 2 page report about how they would use these peer recommendations to improve their project.

2. Complete the *Let's Take Action* lesson plan, or use the *Letter to the Premier Template* in that lesson to express your thoughts and concerns about protected areas to the Provincial Minister of Environment and Conservation or the Premier.

