Integrated Land Management Lesson Kit
Teacher Introduction

Background

As the population of Alberta increases, the boreal forest is under increasing pressure to meet all the needs of the local residents and industry. Every day forestry professionals are working to develop forest management plans that balance the needs of society, the environment, and the local economy for those areas. To help meet these challenges, the Alberta Government has developed a process to encourage integrated land management called the Alberta land use framework. This lesson will discuss the role of Integrated Land Management, the role we play in land use and how we can affect it.

Learning Objectives

After this lesson, students will be able:

- Describe the land use responsibilities as an individual as well as being a part of a community. Which is more important?
- Identify some conflicts that can occur between different user groups on the landscape.
- Learn how the decisions they make have consequences to them and others through an interactive activity.
- Describe some of the challenges being experienced on the landscape, and understand that there is a method to assist the process. Explain how this process works.

Lesson Introduction

Integrated Land Management (ILM) is managing our use of natural resources on public land while recognizing the needs of many stakeholders. ILM is the planned approach to managing and reducing the human-caused impact on the land.

To get the most out of this lesson, there are some definitions that you will need to know:

- **Public land** is land that is owned by the Alberta Government and is accessible to all Albertans.
- Our **footprint** is our personal impact on the land and environment around us. Managing our footprint means managing the impact of our use of land and resources for broader landscape values.
- **Landscape values** are the different resources or activities that are valued in an area that is being managed. Those values can be divided into three broad categories.

    1. **Economic** - Economic values relate to the wealth of an individual, community or nation. An example is deriving value from industrial or commercial activity on or from the land.
    2. **Social** – Social values relate to values of a society, including living in organized communities and related factors such as culture, health and well-being and safety. Examples include cultural, recreational, natural aesthetics, and Aboriginal traditional use values.
    3. **Environmental** – Environmental values relate to the components of the earth including the water, land, air, all wildlife, plants and living organisms, and all of their interacting natural systems. (Alberta Land-use Framework 2008)

ILM is not just a plan or a process; it is a way of thinking and doing business. By sharing the land and working together the goal is that land users can reduce their impact on the land. Protecting the environment is everyone's responsibility.

This lesson explores what ILM means and how it impacts people's lives.

Curriculum Connections

ILM is about perspectives and relationships with the land. We all use the land for different reasons and in many different ways. People use the land (environment) for individual and collective interests. Is one more important than the other in land management.

Grade 7 Science Unit A: Interactions and Ecosystems (Social and Environmental Emphasis)

Focusing Questions: How do human activities affect ecosystems? What methods can we use to observe and monitor changes in ecosystems, and assess the impacts of our actions?

Students will:

1. Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions

    - illustrate how life-supporting environments meet the needs of living things for nutrients, energy sources, moisture, suitable habitat, and exchange of gases

    - describe examples of interaction and interdependency within an ecosystem (e.g., identify examples of dependency between species, and describe adaptations involved; identify changing relationships between humans and their environments, over time and in different cultures—as, for example, in aboriginal cultures)

    - identify examples of human impacts on ecosystems, and investigate and analyze the link between these impacts and the human wants and needs that give rise to them (e.g., identify impacts of the use of plants and animals as sources of food, fibre and other materials; identify potential impacts of waste products on environments)

    - analyze personal and public decisions that involve consideration of environmental impacts, and identify needs for scientific knowledge that can inform those decisions

4. Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments

    - identify intended and unintended consequences of human activities within local and global environments (e.g., changes resulting from habitat loss, pest control or from introduction of new species; changes leading to species extinction)

    - describe and interpret examples of scientific investigations that serve to inform environmental decision making

    - illustrate, through examples, the limits of scientific and technological knowledge in making decisions about life-supporting environments (e.g., identify limits in scientific knowledge of the impact of changing land use on individual species; describe examples in which aboriginal knowledge—based on long-term observation—provides an alternative source of understanding)

    - analyze a local environmental issue or problem based on evidence from a variety of sources, and identify possible actions and consequences (e.g., analyze a local issue on the control of the beaver population in a nearby wetland, and identify possible consequences)

Lesson Details

Time required: The estimated time required is 40-60 minutes.

Format: This lesson can be completed individually, in small groups or as a class. If completing individually, it is beneficial to have a class discussion after the "What is ILM" section and at the end to reinforce the topics.

Resource requirements:

- Smart board, tablet or computer
- Internet access to use the ILM experience. Go to https://my.intuiface.com/share/57f34e1c-a08e-4633-afa0-5747daea857d to access the interactive experience.
- Speakers (built in or external) are necessary to hear the lesson sound.
- The additional print material can be downloaded and printed as reference material.

You can download and print the kit components separately from The LSFES (www.lsfes.org) and the LSLBO (www.lslbo.org) website.

The Lesson

Digital ILM App - Interactive Presentation – 40-60 minutes
Note: It is recommended that you download the ILM App prior to the class lesson in case of download or network delays.

Select and open the ILM APP on your tablet, computer or smart board. The lesson will automatically start upon loading.

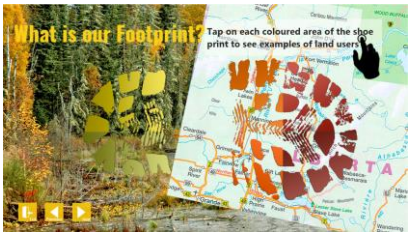
Intro.

Lesson Introduction. This is a musical opening scene that introduces the title of the lesson.

Scene 1.

Boreal Man Introduction. We introduce the topic of Integrated Land Management and our spokesperson Boreal Man in the opening scene. The call to action question is posed "How can you help make a difference to the environment?"

Scene 2.



Who are the users on the land? Introduce the topic of ILM with the 6 piece digital **interactive puzzle** page. Click on or touch each of the coloured shoeprint puzzle pieces for examples of common land users. Once the entire puzzle is flipped over move on to the next page in the presentation. The images can be moved and manipulated in size with touch gestures. They can also be turned on and off

Scene 3.

What are some uses of the land in your area? This brainstorming exercise can be completed individually but we suggest reviewing the answers with the class. The students are to brainstorm how the land is used in their area, both individually and by society as a whole. Enter each "use" into the boxes under the category heading (environment, social or economic) you feel they fit under. This demonstrates the different ways we use the land and their value to us. A "use" can fit under more than one heading. For definitions of the value headings press the "i". The value headings are: Social, Environmental and Economic.

Possible land users are:

- Recreational (fishing, hiking, etc.)
- Aesthetics (intrinsic values, scenery)

- Commercial (horseback riding, tourism)
- Industrial (forestry, oil & gas, mining)
- Government (parks, roads)
- Research and education
- Trappers, hunters or gatherers
- Aboriginal Traditional Uses (animals, plants etc.)
- Cultural Use
- Farming/ ranching

The land users can then be further grouped into individual versus society values depending on the focus of your lesson

Discussion:
Which value is more important? Have the class prioritize their economic social and environmental values.
Which values should have a greater influence in how the land should be used or managed?

Scene 4.

ILM Video. In this segment watch the short 4-minute video: *It's Our Forest – Part 2*. This video was created by Inside Education as part of a series of videos developed for the Work Wild program. The entire video series can be found at http://workwild.ca/forestry-resources/videos/ .The video outlines land users on the Boreal forest.

Discussion:
What is the difference between private and public land (crown land)? Public land is owned by the government and therefore is collectively owned or governed by the citizens of Alberta. Private land is owned by an individual. Ownership gives an individual certain privileges regarding the management or development of their land

Scene 5.

What is Integrated Land Management? Now that we understand the different users of the land we can begin to look at how they are managed. This page defines ILM. You can begin the discussion about managing our impacts individually and collectively.
Define ILM – Integrated land management is the process to promote the efficient use of the land to reduce our footprint of human activities on our landscape (land, air and water). ILM is a management strategy to increase the information and knowledge about our cumulative effects and collectively reduce our impact.

Scene 6.

What is our *footprint* on the land? Our landuse footprint is how we individually and collectively impact the environment that we use. This slide is an interactive map that is based on actual data for a region in northern Alberta. This exercise is the visual representation of our footprint on the land. It allows you to add or remove various landuse layers on the same piece of land. Each layer is placed on top of one another to see the cumulative effects (footprint) of humans on a select piece of land. Each of these uses is important but they need to be managed in a way that reduces impact and balances different interests and values.

Discussion:
What are some conflicts between users? Conflicts often occur when there are overlapping interests or users on one piece of land. Some examples of conflicts are:

- *Limited access to land via a trail or road because of gates and use of road use agreements.*
- *Destruction of a road or trail from unauthorized users*
- *Multiple users of an area or resource (OHVs and bird watchers, fisherman and boaters, oil and gas and forestry)*
- *Farmers allowing cattle in streams for watering purposes, this can degrade water quality for downstream users.*
- *Oil and gas development opens up access to predators in a caribou calving area.*

- *Logging on aboriginal traditional lands will change the landscape for some time for local berry picking.*

Scene 7.

How does the land change over time? This scene uses images from a flood that happened in the town of Slave Lake in the 1930's.
This example shows how the landscape can change dramatically over time. This means that the way we mange the land also has to change and adapt. After this flood, the whole town actually had to be relocated 5 km away from the original site. With increasing human population and climate change there will be lots of changes happening in the boreal forest landscape.

Discussion:
With increasing population and climate change there will be many changes on the boreal forest landscape.

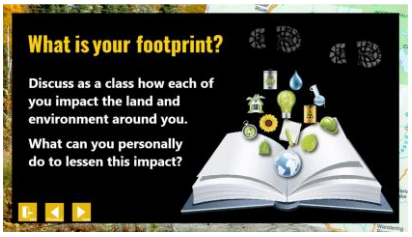
- *How can we change the way we manage to forest to adapt to those changes?*
- *What are some things you can do personally to reduce your impact on the land?*

Scene 8.

Class Activity – "What would you do?"
Every choice you make has a consequence on the landscape. This activity is a digital decision/ consequence exercise called "what would you do". The student/s chooses to be a forest manager or a recreational ATV (all-terrain vehicle) going fishing on the landscape. Each exercise has a series of 3 questions with two choices per question. The student(s) decisions will result in an outcome based on how they handle an obstacle. It reinforces that every decision and action that they make has a consequence individually and possibly collectively to society.
Note to teachers: We suggest that "The Fishing Hole" exercise is completed first as the forest manager exercise has a more complicated decision-making process.

Discussion:
The Forest Manger activity is a simplistic look into the issues that forest managers need to incorporate into their harvesting plans. Others management considerations include: road conditions, wood volume, recreation areas, trapper consultations, aboriginal traditional use areas, stream crossings, other wildlife concerns, aesthetic values for community
At the end of the two decision scenarios (Forest harvesting and The Fishing Hole) review how each decision you make has a consequence individually, socially and environmentally.

Scene 9.



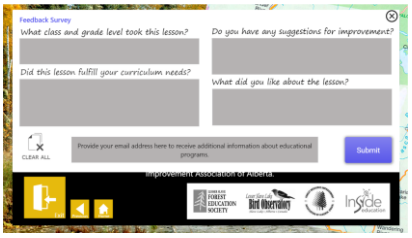
What is your footprint? This section brings the question of how we each create our own footprint on the land to the students. Discuss the concept of ILM and further reinforce each individual's impact on the land where we live. Integrated land management is a complicated process and it can be difficult to make decisions when you are working with so many users on the landscape. How can we have positive impacts on the environment? All land users are responsible for integrated land management.

By working together, we can reduce our impact on the land by:

- Sharing the land
- Planning the use of our land together
- Building understanding though shared knowledge
- Respecting the environment and recognizing that everyone has to right to enjoy it
- Practicing good forest stewardship whereby citizens, industry, communities and governments work together to responsibly care for and manage natural resources and environment.

Discussion:
Explore the positives and negatives of industry, environment and regulations. How do they impact society?
How do your actions impact the land?
Are there things that you can do to help lessen our impact on the environment?

Final scene



Feedback Survey. This is the final scene that reinforces the ILM message and our interactions with the environment and others. There is a quick feedback survey that can be completed so we can improve this lesson.

Further Topics to Explore

- What is the ILM Process? *This process is when stakeholders work together to lessen their impacts on the land collectively.* The Alberta Government has a Land-use framework for Integrated Land Management.
- How do we assess our impact on the environment?
- What are temporary impacts (i.e. forestry) vs permanent impacts (i.e. oil extraction)?
- How do we as a society determine the amount and type of land use that is acceptable?
- What are challenges to ILM? *Cost, economic development, differing opinions, prioritizing the values.*
- We all use public land that is managed collectively for the citizens of Canada. Should there be restrictions on the use of private land?
- How does globalization affect our decisions?

Additional Resources

- http://esrd.alberta.ca/lands-forests/integrated-land-management/default.aspx
- http://www.insideeducation.ca/
- http://workwild.ca/forestry-resources/videos/
- http://www.lslbo.org/
- http://lsfes.org/
- http://friaa.ab.ca/