



# The WILD Times

*Environmental / Conservation Education Newsletter*

## Knowing The Land

“The land is like a book.”

-Harry Simpson, Dogrib Elder-

Many thanks to the following people who helped bring this issue about: Marianne Bromley; Randy Freeman, Wendy Stephenson and Tom Andrews, Prince of Wales Northern Heritage Centre; Dave Taylor, NWT Centre for Remote Sensing; Ken Caine, Forest Development Services, RWED; and Henrietta Prosper, Thomas Simpson School.

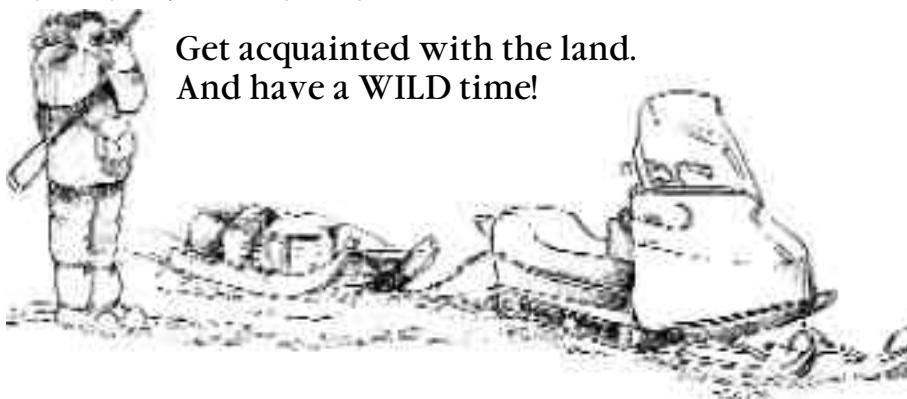
How well do you know the “land”: the earth and rocks, water and sky, plants and animals, the history and cultures of the generations of people who have lived in the place you call “home”? Do you really know this place where you live? What animals do you share it with? How old is the rock you walk on? Where does the water go? Can you eat any of the wild plants? Who has lived here before you and how did they live on the land? How did they find their way? What places were important to them?

Knowing the answers to these questions has always been critical to people who have depended directly on the land for their day-to-day survival. The lives of Dene and Inuit depended on their knowing the best places to hunt, fish, travel and camp at different seasons; on knowing how to read the land and the weather; and on knowing the habits of the plants and animals that provided for their needs.

We still depend on the land for our survival, but because our dependence is no longer so obvious or direct, many people have lost the knowledge and the skills that kept their ancestors alive. Yet, as decisions about the use and management of natural resources in the north become more complex, knowing the land becomes more essential. We need to know the land well if we are to make wise decisions about its future and our place in that future.

The theme of this issue of The WILD Times is an exploration of “place”—its natural and human history, its geography, culture and spirit. You will find background information, activities and resources that will help you and your class to “know the land”. It invites you to explore different ways of knowing, including traditional and western scientific knowledge. The mapping activities throughout this issue are used as an approach for integrating subjects and getting intimate with the land.

Get acquainted with the land.  
And have a WILD time!



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# Home Sweet Home Quiz

How well do you know your home? Find out by taking this quiz. You may want to try it with your class both before and after you do the activities suggested in this newsletter. You may need to research the answers ahead of time, or make it a class research project.

1. What primary geological event / process influenced the landforms in your area?
2. From where you're sitting now, point north.
3. From where you're sitting now, where is the closest permanent body of water? Are there fish in it?
4. Where does your drinking water come from? Can you trace it from its source to your school?
5. Where does your sewage go?
6. What local flower is consistently among the first to bloom in spring?
7. Name two local landmarks traditionally used by people to find their way when travelling.
8. Where are the calving grounds of the caribou that come nearest to your community?
9. Name five local plants traditionally used for food or medicine. Do you know where to find them?
10. Name five migratory birds in your area.
11. Where does your community's power come from?
12. What river is nearest to your community?
13. Where does your garbage go, and what happens to it when it gets there?
14. What is the traditional name of the people (tribal or cultural group) who lived in your area before your community was settled?
15. When is the next full moon (2-day grace period allowed!)?



Give one point for each correct (or reasonable) answer. Some questions will have more than one right answer. Remind students that the score is a measure of what they know now, and what they need to learn about their home.

Discuss the quiz. What is the range of scores in the class? What is the average score? Which questions were answered by the greatest number of students? The least number? How do students feel about their knowledge of home? What areas of knowledge need improvement? How can they learn more? Have students determine if the number of years living in a place has a direct correlation to the knowledge one has of a place. Graph the quiz scores by the number of years students have lived in the community. Discuss the results.

*(This quiz is inspired by and adapted from "Where You At? –A Bioregional Quiz", in HOME! A Bioregional Reader. See Resources, p.7)*

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# Mapping Your Curriculum Connections...

Mapping is a natural approach for integrating subject material and skills from several curricula. The activities suggested here can be adapted to teach several curriculum units including:

**Junior Secondary Social Studies :** Geography of the Circumpolar World

**Junior High Science:** Characteristics of Living Things, Interactions in our Environment, Diversity of Living Things, Forces that Shape our Earth, Movements in the Earth's Crust..

**Science 15:** Investigating Matter and Energy in the Environment.

**Dene Kede:** Geography and Land Use, Water and Rivers, Trees, Earth Medicine, Sun, Moon and Stars, Plants, units on various animals.

**Inuuqatigiit:** The entire section on Relationship to the Environment, especially Land, Water, Ice, Sky, Plants, and all the units on animals.

## The Wisdom of Maps

Mapmaking is not just for experts. Maps and mapping are great tools for learning and teaching about the land. More and more people are discovering that making their own maps—or “grassroots mapping”—can help them to identify what resources they have, what they value, what they want to retain, and how they want to live in a place given the lessons of all who have lived there before them. They have found that, through the process of mapping a place, they develop a thorough appreciation of its past and present, which helps them to act wisely for its future.

Teachers are finding that mapping can be used to integrate a wide range of subjects and skills in an activity that is locally relevant. “Grassroots” mapping does not require any special training or expertise. Technical maps can be studied and used as resources and starting points. But the maps made in your class do not need to be technically perfect. They need to communicate. The primary learning will take place in the exploration, discovery, identification, interpretation, and reflection involved in the process of making the maps. Maps are both end products and starting places.

Any area of any size can be mapped with any number of objectives. You might want to show where different wildlife species are found; where there are edible plants; which places are special to the students or the community; how old the rocks are; or how people have traditionally used the land for hunting, fishing, travelling or camping. You need to begin by making several decisions:

- What is the objective of the map? What do you want to show? You may want to make a map simply to learn and describe what's there, to identify and show what people value, to develop a sense of community, or to make a case for a decision about land use.
- Who do you want to show it to?
- How much detail do you want or need to show?
- Do you want to make a technical map with distances and locations drawn to scale, an artistic map, or something in between?
- Where will you get information for your map? From existing maps and references? From observations on the land? From interviews?
- Given all the answers above, how large an area do you want to map?

If all this inspires you to give mapping a try, the activities and resources that follow can help you get started.

### Creative Mapping

There can be as many unique representations of an area as there are people living in it. Grassroots mapping can be broadly defined. It can include the conventional lines and symbols on paper. It can also include stories, songs, tapestries, dance, carvings, the use of natural materials at hand, and the landscape itself. Many community groups have chosen to map their places in very artistic ways. Maps have been sewn, sculpted, moulded, out of many different materials. They have been made into huge murals or three-dimensional models. You may want to try different styles of map for different subjects. Or try showing one subject in different ways. What type(s) of map will best serve your purpose? How many different ways can you portray home?



## The World of Maps

Maps come in many varieties. These are some of the types of maps most commonly found:

**Topographic:** shows the three-dimensional shape of the land using contour lines.

**Planimetric:** shows natural and human features of a territory without contours.

**Administrative:** divides an area into regions for administrative purposes.

**Thematic:** shows geographical distributions by displaying specific sets of information on a map base.

**Remote Sensing:** air photos and satellite images showing the land from a distant, or remote, perspective.



# Perspectives On Place: Doing A Map Inventory

The fundamental function of maps is to make visible, to bring something into view. But, that view is always through some kind of lens. There may be hundreds of maps of an area, each portraying it in a different way, each focussing the view on a different aspect. Every map has a viewpoint, a purpose, and a message. In order to be effective, a map must be selective—it must show some features and not others, emphasize some aspects over others. Maps have the power to both reflect and influence perceptions of reality.

This activity is a research project intended to demonstrate the types of maps available, what can be learned from them, and how to “read” a map—not only for its information, but also for its message.

**Method:** Brainstorm with your class about all the types of maps that might show something about the land in your area, such as topographic maps, tourist maps, thematic maps of various kinds, land claim maps, land use maps, air photos, satellite imagery, geological maps, administrative maps, etc.

Have the class look through a good reference atlas of Canada, for example, [The National Atlas of Canada](#), to get an idea of the great variety of maps that exist and to appreciate the information that is available on maps.

Have students list all the possible sources of maps which would show the area where you live, for example, government agencies, Internet, libraries, atlases, tourist agencies, aboriginal organizations, community groups, museums, etc.

Divide the class into groups and assign each group the task of

finding and collecting as many maps as possible that show where you live. Encourage students to use a variety of research methods to find the maps, including library searches, computer searches, phone calls, personal contact, and letters. Remember to begin locally.

Gather all the collected maps and divide them up by type of map (see sidebar).

Compare the content and style of a number of different maps by focussing on various aspects, such as area covered, scale and its relation to detail, theme, natural and human features represented and the ways of representing them, types of symbols used, boundaries outlined.

Using a variety of examples, discuss the function and message of each map. What can you learn from it? What can't you learn from it? Who made it? Who is likely to use it? What is its purpose? What “story” does the map tell? From whose perspective?

Discuss how different maps get their message across. To be effective, maps must select, simplify, and generalize. What does each map show and what does it leave out? Why? How does the particular information selected serve the map's purpose? Which maps are most effective and why?

# Setting Up Base! (Maps, that is)

The first step in mapping is making a base map. Once you and your class have a base map of an area of interest, any number of maps can be created showing all kinds of information about that area. The following approaches can be used to create a base map with your class. Your goal is a fairly simple, uncluttered map. It should show the outline of the area, major geographic features and points of reference, with some reference to the surrounding area.

## **Freehand or "Mental" Map:**

Have students make a map of the area from memory by visualizing the main geographic features (rivers, lakes, hills, forest edges, familiar landmarks or other points of reference) and drawing them on paper. This is a great activity for involving elders or others who know the land well. The result of this approach is a more personalized and artistic map, but not necessarily true to scale.

## **Existing Maps:** Topographic maps

(1: 250,000 scale), or thematic maps for the area of your study provide accurate locations of geographic features and distances between points. Several maps may need to be taped together to cover the entire area. To outline the boundaries of the area of interest, have students lay a sheet of paper over the map and trace the major geographic features or other points of reference. If necessary, a photocopier can be used to get the scale you want.

**Air Photos:** Air photos can also be used to trace geographical features you want to show on the class base map. Draw a perimeter around the area of study and enlarge to the scale needed by using the photocopier.

**Survey Maps:** A good outdoor activity involving math skills, providing the area your class is mapping is not too large, is to survey the area and draw an original, scaled map from scratch.

## **What next?**

Once a base map is ready, the next step is to have the students select and find the information they want to add to it. Keep in mind that too much information on a map makes it difficult to read. To record spatial information of all kinds, advise students to use a series of maps, each with a particular theme. (See *The Complete Atlas of Home* on pages 6 - 11 for ideas.)

Here are some approaches for finding information to fill in a map.

- Up close and personal. Take the students out on the land to give them the opportunity to discover the various elements of their study area. Have them record observations and research results in a journal. Do surveys and transects. Cover a lot of ground, walk the entire area. Allow time for sitting and watching. Get students to look at their area from unusual perspectives, like lying on their back or looking at things upside down. Once back in the classroom, students can enter the data collected onto the map.
- Data from existing maps and references can be used. Lead students through the *Perspectives On Place* activity (page 4) to find out what's available for your area. Use a photocopier to enlarge or reduce maps that are not the same scale as the class base map. Field guides and reference books on local natural history or ecology are excellent resources for getting familiar with species that live in the area.
- Tap into human resources. Have students develop a list of questions about their area of interest and talk to people in the community. Invite elders into the classroom and ask them to share their knowledge. Interview hunters and trappers. Contact the Renewable Resource

Officer for more information. Or send teams of students to a community event or to the local store to survey residents on their knowledge of the land.

## Some Reminders About Scale

A map's scale shows the relative ratio between distance on the map and distance on the land. For example, a map with a 1:10,000 scale indicates that one unit of measurement on the map (e.g. one centimetre) is equivalent to 10,000 units of measurement on the land (100 metres).

A map with a large ratio (e.g. 1:1,000,000) is called a small scale map. A map with a small ratio (e.g. 1:10,000) is a large scale map. The larger the scale, the more detail a map can show over a given area.

## Photocopying Maps

If you use a photocopier to enlarge or reduce a map, remember that when you change the size of a map, you alter its scale. A 1:10,000 map doubled in size becomes a 1:5000 scale map. To calculate a new scale, remember that scales are fractions (1:10,000 is  $1/10,000$ ). So  $1/10,000 \times 2$  (doubled in size or 100% enlargement) =  $2/10,000$  or  $1/5000$ .

If the original map has a bar scale, it will remain accurate on the copied map as it is enlarged or reduced along with the rest of the map. You can use the bar scale for measuring distances without doing the calculations above.

## Finding Home

You and your class will need to define the area and boundaries of “home”. There is no right or wrong answer, and you can make an atlas for an area of any size. Grappling with this definition is part of the process of getting to know the land, and it can become a class research project in itself. If you have the opportunity, ask elders to help or invite other resource people in the community to be involved in this activity. The activities on the next page suggest two approaches for defining “home”.

Once the students have defined their “home territory” and established its boundaries, the next step is to fill in the details of that area. Have them make a base map, then make multiple copies of it. Now your class can begin the exciting task of exploring and describing the details of their “home territory” through images on maps. Break the class into small working groups and give each a base map. Each group’s role is to decide on what their map will communicate, for example all the places one can find water or traditional campsites. Remind the students that an atlas helps tell the story of the land that is their home from different perspectives. As well as the maps, the atlas can include artwork, photos, poems and stories, lists, tables, interviews...anything that contributes to knowing the land. There’s a lot of room for creativity.

To get you started on your atlas of “home”, we have provided ideas and resources for exploring several mapping themes on the following pages.

# The Complete Atlas Of “Home”

One way you and your class can get to know the land more intimately is by creating an atlas of “home”. This is a large project, for which you can choose to do all or only a few of the many activities. The entire school could be involved by assigning a section to each class. The project consists of creating a series of maps of the area you define as home, each one showing a different biophysical or cultural feature of the place. Together, these maps become an inventory of the knowledge, memories and values people have of an area, created with the intention of understanding the relationship with the land that comes from many generations living in one area.



Artist: Autumn Downey

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# There's No Place Like Home

In this activity, students draw individual maps of the place they call "home", then use them as a basis for discussion about the definition of "home". They finish by making one map of "home" that all agree on.

a) Ask students to draw their own map of "home". Explain that this is to be an individual, personal map of the place they call "home". There are no rules, no right and wrong. Each student defines the location, boundaries, and features of their "home", and each map will likely be different. Encourage creative expression in the drawing of the map. It does not need to be to scale or technical. The intent is to help students express their own sense of "home".

b) Have students post their maps around the classroom or on their desks. Then have each student role-play a tour guide to introduce the rest of class to their map of "home". Lead students through the tour of maps. At the end of the tour, discuss the activity. How easy was it to identify and picture "home" and its boundaries? How

does a person know "home"? What decisions had to be made in creating a map of "home"?

c) Place all the maps together on one wall. Ask students to note similarities and differences in the maps. Compare locations, boundaries and geographic scope of the area mapped, as well as features shown. Do the maps show more natural features or human features?

d) Tell your students that they now need to make a collective map of "home", one the whole class can agree on. Discuss and decide on a process for defining "home" that takes into consideration everyone's individual maps. On a large sheet of paper, students can sketch the boundaries, important landmarks and other physical features of the class map of "home".

## Home Territory Resources...

"Home territory" is adapted from the concept of "bioregionalism" and "bioregional mapping". These ideas originated with the recognition that humans must find more respectful and sustainable ways of living with the land. The perspectives and goals of bioregionalism are very similar to the approaches and goals of education from the aboriginal perspective, as described in [Dene Kede](#) and [Inuuqatigiit](#). If you want to investigate this concept further, the following references are excellent places to start:

[Perspectives in Bioregional Education](#). 1995. F. Traina and S. Darley-Hall (eds.). North American Association for Environmental Education (NAAEE), P.O. Box 400, Troy OH 45373. Or contact Acorn Naturalists, ph. (800) 422-8886, fax (800) 452-2802.

[HOME! A Bioregional Reader](#). 1990. V. Andruss, C. Plant, J. Plant and E. Wright (eds.). New Society Publishers, P.O. Box 189, GABRIOLA ISLAND BC V0R 1X0

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# Defining Your "Home Territory"

"Home Territory" can be defined as the land that has traditionally provided physical, cultural, and spiritual subsistence to the local community. It is some distinct area of land, with its associations of plants and animals, that provides life and meaning to a group of people. This area will include the community, but could extend well beyond it. It may even include other communities. It will likely include many ecosystems. Other expressions for "home territory" could be "life place", "life region", "bioregion", "home land", or a local aboriginal word that best denotes the concept. Although "home territory" is the expression used in this activity, you might prefer to

use one of the others, or one of your own.

Begin by explaining the concept of "home territory" to the class. Ask the class to work together on defining the boundaries of this area. Remember there is no one answer and no one way to do this. Here are some questions to post that can help guide the students' research:

- Is the local area defined by obvious geographic or natural features that could be boundaries, such as mountains, lakes, rivers, or coastline?
- What area has been and continues to be important to the

community, especially the elders?

- What area is known and familiar to local people? What area is considered somewhere else or not here?
  - Where is the traditional hunting and/or trapping territory of the local people?
  - In what area do local people most often travel and to what places?
  - Within that area are there places named by local people, or known by their aboriginal place names?
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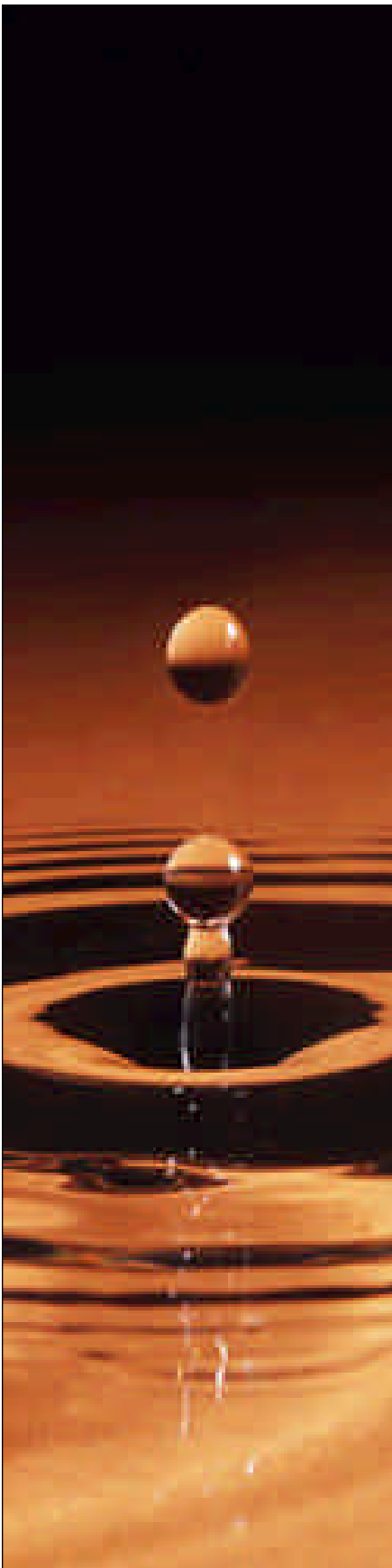
# The Complete Atlas of Home.....

## Knowing Watery Places

Begin mapping watery places by outlining all bodies of water on your base map, including major rivers and tributaries, lakes, coastlines, and muskeg/bog. Label the water bodies with their common names and traditional place names, where possible.

### *Wading further...*

- Research the kinds of plants and animals that live in the water and along the shore of different types of water bodies, e.g. rivers, large lakes, small lakes or ponds, ocean. Ask the students to design symbols and place them on their map with a key. Or have them map signs of animal activity, such as fish spawning areas, beaver lodges and dams, and nests of water birds.
- Research the watersheds in the area. Invite a water expert into the classroom to speak on watersheds and their importance. Often, bioregions or home territories end up coinciding with watersheds. Ask students to identify the drainage system(s) of the major river(s) in their "home territory" by drawing lines to enclose each major river and its tributaries. This represents the surface area drained by the river system. Trace the flow of water along the tributary which is closest to your community, from its source to the ocean.
- Do a series of seasonal travel maps for one or more rivers used by people in the community. Show such features as: changes in currents and channels; rapids; dangerous areas; travel routes; camping spots; fishing places at different times of the year.
- Map the route that the community drinking water takes from its source to the taps in the school. What are the possible threats to the drinking water, for example, potential sources of pollution, both local and nonlocal? Show the local ones on the map. Have students take action to help clean up or prevent water pollution, or educate others on this subject.
- Project WILD watery activities: "Alice in Waterland" (p. 381), "Watershed" (p. 376), "How Wet Is Our Planet?" (p. 50), "Water Wings" (p. 57).



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# The Complete Atlas of Home....

## Knowing Rocky Places

Have students dig under the surface of their “home” by finding maps that show the geology of the area. In particular, look for the geological province(s), the ages of the rocks, and the types of rocks, by origin and/or mineral type. Once this information is located have them transfer it on one or more base maps. They might also want to map known mineral, oil, and gas deposits in your home territory, as well as the locations of any existing mines and/or pipelines.

This information is available from:

Community Mineral Advisor, Minerals, Oil and Gas Division, Department of Resources, Wildlife, and Economic Development, GNWT, Box 1320 YELLOWKNIFE NT X1A 2L9, ph. 867-920-3347 or fax 867-873-0254.

Specific maps that they have available are: “Significant Mineral Deposits of the Northwest Territories”, and “Mineral Deposits and Petroleum Resources of the Northwest Territories”.

Manager of Resources Division, Minerals Directorate, DIAND, Box 1500, YELLOWKNIFE NT X1A 2I5, ph. 867-669-2566 or fax 867-669-2715.

## More geological sleuthing...

- Study how various rocks and minerals are formed, and how they are classified by geologists. Go on a field trip to collect rocks from the land, if possible, invite a geologist along. Make a display of the rocks found, labeling each rock with its name, age, origin, and any minerals associated with it.
- Study the geologic time scale. Where do the rocks in your area fit on that scale? How old is the land where you live? Write a story from the point of view of a rock found on the land. What has it seen in its life?
- Research the history of the land where you live. For rocks of different ages found locally, make a chart describing the land at the time each rock was formed. What animals were present then? Had people arrived on the scene? If so, which cultural groups? What evidence have archaeologists found of these ancestors’ presence and what do they know about how they lived? What was the climate of the time? What vegetation grew then? Did you know...Ellesmere Island was once a tropical environment and much of the land in the north was once under water. Make a large diorama or mural illustrating the changes through time in your home territory.



## Project Rocks...

...is a resource and information package for teachers intended to facilitate learning about geosciences, in particular mineral resources and their use. It consists of three volumes of information, activity suggestions, and references, along with supplementary materials. Project Rocks was distributed in the fall of 1995 to every school in the NWT. The supplementary ROCKS BOX and MINING MATTERS were distributed to the regional Board of Education Resource Centres. Other resource materials ( videos, CD-ROMS, slides, books, and activities) are available on loan from Minerals, Oil and Gas Division, Resources, Wildlife, and Economic Development, GNWT.

## Dig up these activities :

Project Rocks Vol. 2, “NWT Fossil and Event Record” (p. 41), “How Do Geologists Measure Time in the Earth’s History” (p. 23), Time Travels (p. 44), “Principal Mineral Deposits and Active Prospects of the NWT” (p. 325).

## Resources to get you rooted in northern plants...

**Project WILD**, "Water Plant Art" (p.62)

**A Naturalist's Guide to the Arctic**. 1994. E.C. Pielou. The University of Chicago Press, Chicago.  
ISBN # 0-226-66814-2.

**Barrenland Beauties: Showy Plants of the Arctic Coast**. 1991. Page Burt. Outcrop Ltd., Yellowknife.  
ISBN # 0-919315-25-9.

**Vascular Plants of Continental NWT**. 1980. A.E. Porsild & W.J. Cody. National Museums of Canada, Ottawa.  
ISBN #0-660-00119-5.

**Plants of the Western Boreal forest and Aspen Parkland**. 1995. D. Johnson, et al. Lone Pine Press, Edmonton.  
ISBN #1-55105-058-7.



Artist: Eva Melady

# The Complete Atlas of Home.... Knowing Green Things

To add life to the class' atlas, take your class on a number of field trips to different places within their home territory to observe the vegetation. On the base map, have students indicate through colour or symbols the locations where different types of plants grow. Depending on interest and abilities, the map could show general categories, such as mosses, lichens, grasses / sedges, flowering plants, shrubs, trees. Or students could identify and record individual species of flowers, shrubs and trees. For each category or species of plant, have students try to show the area it covers and its relative abundance by using a simple scale.

## Adding another layer to fertile ground...

- Make a spring flower book and map. In early spring, start watching for the first flower to bloom. Who will find it? Have the student who finds it draw a picture of it in the book, and note the date it was seen, the temperature, and other notes about the weather. On a map, mark the plant's location, its name, and the date it was first seen. Do this for each new plant that is found blooming throughout the spring. Try doing this for several years to see if there is a pattern. Does the same species always flower first? How close are the dates of first flowering? Does the weather make a difference?
- Choose several plants that grow in different habitats, e.g. dry, wet, rocky, exposed, protected, etc. Compare the structures and growth habits of the plants. How are they adapted to their habitats? Which adaptations are particularly suited for northern climates? How do the plants conserve heat, store solar energy, conserve water, over winter? Have students make models or drawings that show how different parts or growing habits of plants allow them to survive in the north.
- Make a list of all the possible uses of plants by people—for example food, shelter, fire and fuel, various domestic uses, medicine, ceremony. For each of these uses, make a list of the plants used traditionally by local people. Note on the base map(s) where each of the plants can be found. Take a trip on the land with elders and learn the proper way to collect and use some of the plants. Have students develop a photo essay, display or a book for the school or the community that shows plants traditionally important to local aboriginal people, how to recognize them, and how they are used.

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## The Complete Atlas of Home.....

# Knowing Wild Things

Time to explore the wild side of mapping. Brainstorm with your class about the kinds of animals that occur in your area. Make lists of all the mammals, birds, and fish the class can think of. Now list all the ways one can know where animals have been; for example, personal and other people's observations, local land use and harvest maps, evidence left by the animals. Have students start filling in the base map(s) with any information they have gathered from these sources.

Brainstorm about the types of evidence animals leave— dens, nests of squirrels and birds, holes in the ground or in trees, beaver lodges, muskrat “pushups”, tracks, trails, scats, etc. Divide the class into teams. Assign each team one or more animals. The students are to become animal “detectives”, and find as much evidence of their animal(s) as they can. Have each team mark their findings, including animal homes on a base map in class. Ask them if they notice any patterns in the way animals use the land? Have them include information on the map that shows where fish are found during different seasons. Indicate with a symbol for each species or type of fish. Where and when do they spawn? Do any of these species of animals migrate within the home territory? If so, where and when show on the map.

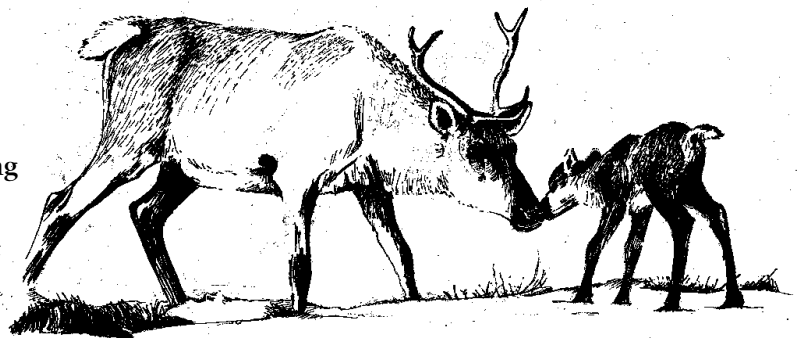
## Going wildly off in all directions...

- Study a map that shows the ranges of the different caribou herds in the north. Locate the calving grounds of each herd. Find out why caribou are defined by herds. Have students ask local elders if they traditionally recognized different groups of caribou? How did they distinguish between them? Learn about the annual cycle of the caribou and their migrations. Why are they continually on the move? What kinds of habitat do they need at different times of the year? Make a map that shows the annual cycle of the caribou that come closest to your community.
- Invite elders to share stories about their most memorable personal experiences with animals. Have them point out on a map the locations where the experiences happened, and put the elder's name and the animal at that place on the map. Ask the elders' permission to have students illustrate their stories and key them to the map.
- Learn how biologists find out where animals occur. Ask a biologist or Renewable Resource Officer to visit your class and demonstrate how telemetry is used for locating and tracking wildlife.

## *More wild wanderings...*

Project WILD, “Wildlife Is Everywhere” (p. 18), “Tracks!” (p. 53) “Environmental Barometer” (p. 98), “Graphanimal” (p. 125), “Fishy Who's Who” (p. 195).

Science Alive!, “Managing Wildlife”. 1988. Science Institute of the NWT. This includes activities that demonstrate how to conduct a plot census and a roadside census for wildlife. Check your school library or local resource centre or contact **The WILD Times** editors.



## Resources for branching out...

**NWT's Focus on Forests**, "Boreal Forests Around the World" (p. 147), "Why Don't Trees Grow on the Tundra" (p. 143).

**Mapping How We Use the Land: Using Participatory Action Research**, 1994. Canada-Alberta Partnership Agreement in Forestry.



# An Applied Case Seeing the Forests for the Trees: Forest Resource Inventories

-Ken Caine, Extension Forester, Hay River

Suppose you are given the responsibility of managing a community woodlot. Your first question would probably be "How much wood do we have in the forest?" To answer this and other questions, you would do a forest inventory. A forest inventory is a record of what the forest contains at a particular time.

What sort of information do inventory foresters collect? It all depends on what the information is to be used for. For example, to manage a community woodlot, the inventory would include: species of trees, tree diameter, height, age, disease and insect damage, and the species and abundance of other plants. Characteristics of the area such as slope, aspect (north, south, east, west), elevation, soil texture, moisture, and drainage would also be collected by inventory "cruisers". The area's history pertaining to disturbances such as fire and past harvesting would be investigated. Environmentally sensitive areas for soil, wildlife, watershed and fisheries; cultural and spiritual or traditional knowledge would also be recorded in the inventory. Doing an inventory can be like detective work as the information can reveal much about the ecological and environmental conditions of an area.

The information that is collected is best used when it is transferred onto maps. In fact, maps and air photos are the most often used tools for inventories. Using field base maps, compass, and distance measuring instruments, data can be accurately located and referenced on a map. Based on this information, general statements can be made about an area. For

example, a stand of trees of the same species could be identified on the base map. Or all the areas which consist of mostly willow and are wet, boggy and low-lying - good moose foraging habitat.

Computers, specifically Geographical Information Systems (GIS) are useful for producing maps that contain these types of attributes. If we needed a map of all the white spruce (*Picea glauca*) stands that are taller than 15 m and within 2 km of a river, this could be produced on the computer screen and then printed out. Unfortunately, not many communities are equipped to directly access such data either from a data base or a computer map.

A base map with different overlays of transparent film, each showing a particular set of data, can be used by those that don't have access to GIS. The base map could have information on the rivers, lakes, topographical features, and natural features of the area. Information collected by the inventory crews can then be grouped to make general statements about what can be found within the boundaries of the base map. All the stands of tree species may be on one overlay, with different codes for height and age. Another overlay may contain different soil types that exist over the landscape. Yet another overlay could show the areas inhabited by different species of animals. Information collected by trappers might indicate the plant communities occupied by fur bearers. Other important features that could be placed on other overlays include: traditional trails; gravesites; local place names; cabins and summer

## Seeing the Forests for the Trees: Forest Resource Inventories cont.

camp; and areas of importance for berries, medicinal plants or minerals.

Once all of these overlays are created, a person can ask for a map which includes only the attributes of interest to him/her. Those overlays can be projected and copied onto a base map, producing an individualized map.

How are these maps useful? Foresters use the inventory information to determine volumes and species of trees in a specific area; for insect and disease management and fire management planning. Biologists use the information for wildlife studies and thus, management of wildlife populations. These inventory maps can also be used by many others doing research or just wanting to get to know the area: for instance, people gathering information on traditional knowledge of the land; cultural educators; aboriginal political organizations developing land use plans; and recreation enthusiasts.

Therefore, inventory work is important as it creates a "snapshot in time" of what is found on the land. It helps with decisions making processes on wildlife, forests, human activities and to provide a record of what is out there. You might say, the maps are a way of sharing knowledge about a place with many different people or groups of people.

# What is a Forest?

We need trees to have a forest, but we also need a forest to have trees.

## *A forest is...*

...**an interconnected web** that focuses on sustaining the whole, not on producing any one part or commodity. The forest web consists of animals, plants, micro-organisms, light, water, soil and rocks arranged in infinite diversity across scales that range from soil fungi to the continents of the earth.

...**a pattern of independent ecosystems** across landscapes from small watersheds of 5,000 hectares to the largest watershed of all - the one we call Earth.

...**a continuum in time** from the ephemeral to the eternal. Living organisms and non-living structures support each other's existence and rely on each other's demise in endless cycles.

...**a change**, from the falling of a single leaf to landscape level fires. Change maintains and renews the composition and structures of the forest at all scales through time.

...**diversity** created by disturbance, protecting the whole.

...**living trees** that form part of the fundamental framework of the forest web. Large old trees are especially vital parts of this framework. Some insects and small mammals live out their life times within the canopies of large old trees. Crowns of large old trees regulate water movement through the forest and beyond.

...**dead trees** ("snags" and fallen trees) that form another part of the structural frame work for the forest. Generally speaking, the larger the dead tree, the more diverse and long lasting its functions. Snags are homes for cavity-nesting birds that eat insects that eat trees. Fallen trees are the foundation for future forest soil. Decayed wood is nature's water storage and filtration system.

**Source:**  
**Global Diversity**, Vol.7,  
No.2, Fall 1997 "Ecoforestry"



Artist: Autumn Downey

# People And Maps

There are many accounts of aboriginal people drawing very accurate maps of large areas for the benefit of early explorers and anthropologists. However, traditionally aboriginal people did not use maps drawn on large portable sheets of paper. Their maps were even more portable, they carried information about the land in their heads. Their “mind maps” had detailed knowledge of the lay of the land from their own travels or from information gathered from the travel of others. Maps were shared through place names or associated stories.

“All the lakes where you can find fish or caribou have names. That is the only way we can travel. The only way we can recognize lakes is by their names. All the larger mountains and hills, they have

names. Sometimes we name them on account of their size or because of their shape. The names of places, of camps and of lakes are all important to us, for this is the way we travel—with names. We could go anywhere, even to a strange place, simply because places are named. That would be how we would find our way. It is the way we can find how far we are from camp or from the next camp.”

-Dominique Tungilik, Pelly Bay (Inuit Land Use and Occupancy Project, Volume 1)-

To aboriginal people who have lived on the land for generations, the land is alive with names. Every geographic feature has a name, and named places have stories associated with them. The stories provide information on cultural identity, history and survival. In

this way, geographic features become a device for remembering a vast oral tradition. And the land itself becomes the map, remembered through names and stories, and shared through the oral tradition. In this way, landscape and culture become inseparable.

Groups of aboriginal people traditionally distinguished themselves by reference to the local environment in which they lived and travelled. The names they used show their connection to a particular place, as in the examples below from the eastern Arctic (Inuit Land Use and Occupancy Project, Volume 2). Do some research to find similar examples from other areas of the NWT. Or learn about one of these groups of people. How did they make their living from the land?

## People of the Eastern Arctic

**TUJJARMIUT:** people of the ground which is painful to walk on

**KUUGANAJURMIUT:** people of the fast and large river

**IKIRISANGMIUT:** people of the narrows

**ANALIRIALINGMIUT:** people of the fish-clubbing place

**TUNUNIARUSIRMIUT:** people of the secondary shared place

**AKULLIRMIUT:** people in the middle

**IKIRASARJURMIUT:** people of the small narrows

**AGURMIUT:** people where the wind comes from

**AMITURMIUT:** people of the small region

**ITIVINGMIUT:** people across the land

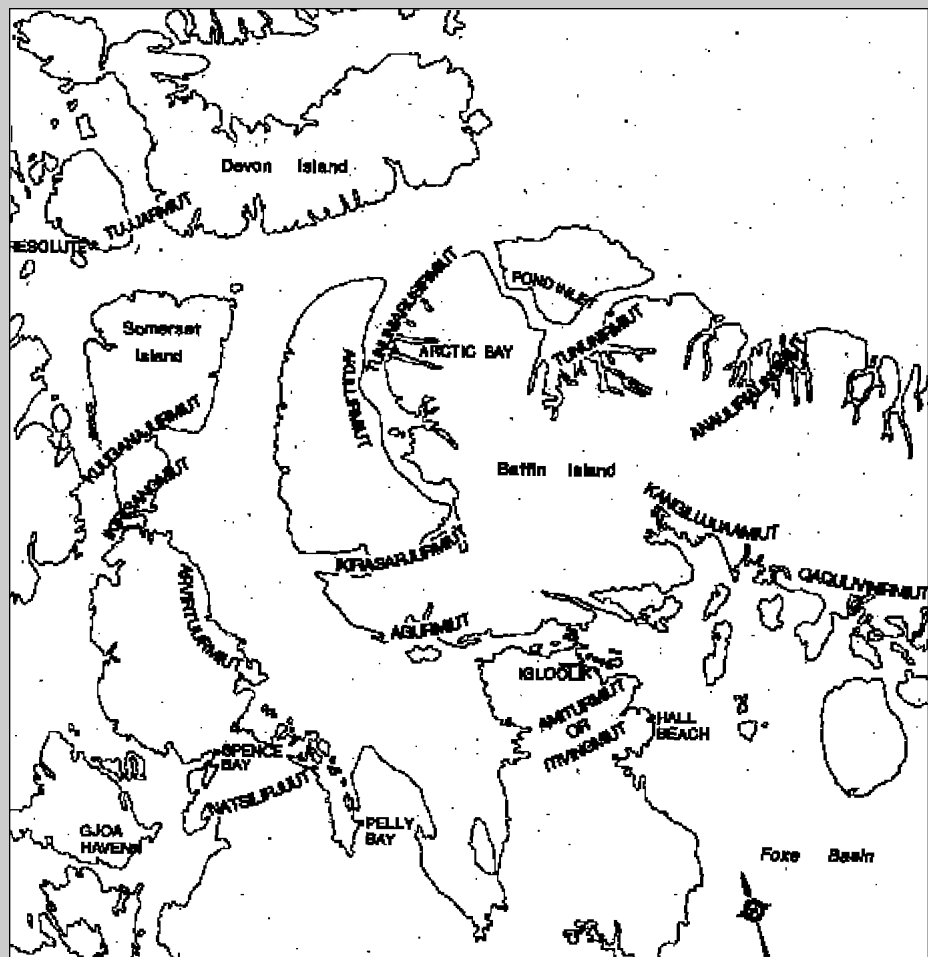
**TUNUNIRMIUT:** people of the shaded place

**KANGILUJUAAMIUT:** people of the large inlet

**ARVIRTUURMIUT:** baleen whale-eating people

**NATSLIRJUUT:** people where there are seals

**QAQLIVINIRMIUT:** snow goose remains place people



“Reproduced with the permission of the Minister of Public Works and Government Services Canada, 1998”

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# The İdaà Trail

In 1990, Dogrib elders and archaeologists from the Prince of Wales Northern Heritage Centre initiated the İdaà Heritage Resource Inventory Project. The purpose of the project was to complete an archaeological site inventory of the traditional trail linking Great Bear and Great Slave Lakes. Dogrib place names, traditional camping locations, sacred sites and resource harvesting locales were documented, and the oral narratives associated with each site were recorded. These taped interviews have been translated into English.

The project included a training program for Dogrib youth in archaeological methods and in the recording of oral traditions. An archaeologist and Dogrib elders and youth spent three summers on the trail travelling by canoe in the traditional way—living off the land as much as possible. Nearly 350 traditional Dogrib place names were documented and 282 archaeological sites were recorded.

“If we tell young people today the history of our ancestors, it seems they don’t believe us. We do not want to abandon the old ways of our ancestors. That is why we continue to work along their traditional routes. Through the oral tradition, I know of their choice fishing spots, places where they could obtain food, and their campsites...My elders used to tell me stories. I witnessed their work and now we are travelling and working along their trails.”

-Harry Simpson, June 1991 (İdaà Trail: Archaeology and the Dogrib Cultural Landscape, NWT)-

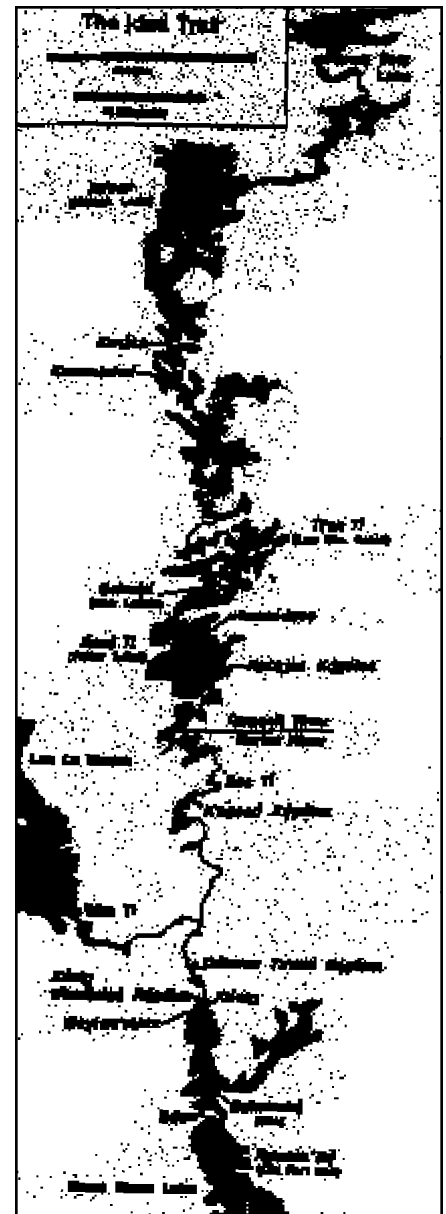
## A trail of resources...

“The İdaà Trail: Archaeology and the Dogrib Cultural Landscape, Northwest Territories, Canada”. 1997. Thomas D. Andrews and John B. Zoe. In At a Crossroads: Archaeology and First Peoples in Canada (G. P. Nicholas and T. D. Andrews, eds.).

The Prince of Wales Northern Heritage Centre has available for loan a small İdaà Trail display and education kit. The edu-kit includes a video, slide show, artifacts, a legend and teacher guide which cover Dene fishing technology, stone tool making, archaeology, and birchbark canoe making. Both the article and travelling display are available from the Prince of Wales Northern Heritage Centre at 867- 873-7551.

**Birchbark Canoe Project** (video). The 40-minute video documents the building of a birchbark canoe in June 1996 by Dogrib elders assisted by students. It can be obtained from: Jim Martin, Principal, Chief Jimmy Bruneau School, Bag 1, RAE/EDZO NT X0E 0Y0, ph. 867-371-4511. The cost is \$20, proceeds go towards school improvement and educational resources.

**Inuit Land Use and Occupancy Project**, Vol. 1-3. 1976. M. Freeman, ed. Indian and Northern Affairs Canada. This document has lots of maps and information on Inuit place names, travel routes and land use from prehistoric times through the early 1970’s. Volume 1 describes the land use; Volume 2 has some interesting supporting articles; Volume 3 is the atlas of land use maps. Available through the NWT Public Library System.



Source: Andrews and Zoe, "The İdaà Trail..."

## *Names All Over the Place*

**The Government of the Northwest Territories' Geographic Names Program** maintains a database with more than 21,000 names for geographic features and populated places in the NWT. Each name has associated data on its location and origin. Over half the names are official (i.e. given official status by the appropriate naming authority), while the remaining names are previously official, historic, or traditional names.

On April 1, 1998 all of the official names in the database were made available on the Internet at <http://pwnhc.learnnet.nt.ca/programs/databases.htm>. This site gives access to four different Prince of Wales Northern Heritage Centre databases. Additional information on each name in the database is currently being gathered and inputted. Also planned is the addition of all previously official names and the many thousands of traditional Dene, Metis, and Inuit names gathered during community-based field projects over the last 12 years.

You can obtain information not yet available on the Internet by contacting the Geographic Names Program at 867-920-8854.

# More on Landforms, Landmarks and Maps

Much of how we know the land and find our way from point A to point B deals with recognizing landforms. Mountains, hills, valleys, eskers, pingos, rock outcrops, tundra polygons are landforms that people use as guides or landmarks on their paper or "mind" maps of an area. Have students map the major landforms in their home territory. Go a step further by having them distinguish, on the map, between landforms created by water and ice (i.e. pingos and polygons), wind and weathering (i.e. dunes and hoodoos), or glaciation (i.e. eskers and outcrops).

Then have them research and map the locations of landforms with traditional names that are recognized by local people. Make a key that explains why they are important: as landmarks or as sacred places, camping places, or as associated with an historical or other special events.

## More landmark activities to explore...

- Have students look up the outlines and names of the broad physiographic regions, as classified by geographers, which are represented in the NWT. These regions are determined according to the physical features of the land as defined primarily by elevation and slope. For example, mountains, plateaux, uplands, lowlands, plains, and basins. They can be looked up in an atlas of Canada or other references on the geography of Canada. Ask them to determine which region is their community in? What are the characteristics of this region?
- Students can research the effects of glacial action on the land. What evidence of glaciers can you find on the land. Take a field trip to look for grooves and striations, whalebacks, glacial erratics, glacial till, eskers and other signs of glacial action. Make a map showing the evidence you found. Ask students if they can "read" the path of the glacier from this map?
- Discuss with your class the concept of the "mind maps". Discuss how lists of place names can serve the same functions as written maps. Compare "oral maps" with maps on paper. What are the advantages and disadvantages of each? Does one type carry more, or different kinds of, information or knowledge than the other?



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# Reading the Land

Aboriginal people have traditionally used physical features for direction finding. As well as named landforms, they relied on the wind, snow patterns, stars, sun and moon to show them the way, often in terrain that seemed “featureless” to those who didn’t know the land. Knowing and navigating on the land in this way requires and develops awareness of one’s surroundings using all the senses, constant memorization, the ability to mentally organize large amounts of information, and the ability to see spatial relationships.

## Reading the land with your class...

This activity can be enhanced if you are able to work with elders, or others who have a lot of experience travelling and finding their way on the land.

Brainstorm about the various physical features and other natural clues that people can use for finding their way on the land. Some examples are the location and alignment of landforms and lakes; the direction of rivers; patterns of snow and waves/ripples; snow drifts; ice cracks; glacial features; the direction, feel, and smell of wind; reflection of the land in the sky; the sun, moon, and stars. When students have finished brainstorming, ask elders to look at the list. Ask them to add to it if there are any navigational aids missed by the students.

Ask your students how many believe that navigational skills are innate (i.e. either you have it or you don’t). Explain that studies have shown that the ability to find one’s way is learned and taught, not innate. If one person is better than another it is because of better learning strategies. It may also depend on incentive. People whose survival depends on their ability to travel and live on the land will likely have better wayfinding skills than those whose lives do not depend on it!

Discuss the four steps in the mental process of finding our way around:

- 1) orientation—knowing where we are in relation to our surroundings;
- 2) choice of route—planning the best way to get from our current location to our destination; and
- 3) maintaining a course—monitoring our route and keeping on the right track;
- 4) recognizing the destination.

Have students refer back to the navigational aids listed in the activity above. Ask them to determine the aids/clues that could be used for each step of the process of wayfinding.

Choose several of the traditional navigational aids on the list, and if you have the opportunity, have students practice them on the land with elders over a period of time.

## Reading further...

Project Rocks, Volume 2, “Navigation in the North” (pp. 301-308). This section discusses the process of navigation, including positioning and orienteering, and describes how we can find our way with natural clues, compass, and Global Positioning Systems (GPS). Try some of the activities, especially “Environmental Clues”, “Sun Walk/Wind Walk”, “Star Game” and “Latitude by Night” (pp 309-310).

## Finding the Way on the Internet

### Environment Canada:

<http://www.doe.ca>

Source of information and maps on the ecozones and ecoregions of Canada.

### Canadian Centre for Inland Waters:

<http://www.cciw.ca>

More on ecozones, as well as information on monitoring environmental changes.

### Arctic Circle:

<http://www.lib.uconn.edu/articircle/s>

Circumpolar information and education resources with maps, GIS, photos and many aboriginal links.

### Geological Survey of Canada:

<http://sts.gsc.nrcan.gc.ca>

Looks at interesting landscapes and landmarks across northern Canada.

### Parks Canada:

<http://parkscanada.pch.gc.ca>

Parks home page with links to each park and its “Library”.

### Aboriginal Resources:

<http://www.cybersp.mb.ca/-fullmoon/aborig.html>

A huge list of helpful links to Canadian and global aboriginal resources, including maps and traditional knowledge.

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# From A Distance: Remote Sensing and Geographical Information Systems

## Maps, Maps and Maps -More Sources

**Archives Geologist**, NWT  
Geology Archives, DIAND, P.O.  
Box 1500, YELLOWKNIFE NT X1A  
2R3,  
ph. 867-669-2642.  
Source of geological (bedrock)  
maps for the NWT. Maps show  
rock types and layers.

**TGIT Geomatics Ltd.**, P.O. Box  
244, YELLOWKNIFE NT X1A 2N2,  
ph. 867-873-8438  
or fax 867-873-8439. A source of  
all kinds of maps including: NWT  
topographic maps, geology maps,  
air photos. Consultants for  
mapping and surveying.  
Computer mapping services.

**Canada Map Office**, 130 Bentley  
Ave., NEPEAN ON K1A 0E8,  
ph. 1-800-465-6277 or  
fax 1-800-661-6277.

**National Air Photo Library**,  
615 Booth Street, OTTAWA ON K1A  
0E9, ph. 613-995-4560.

Another way of knowing the land  
is through remote sensing: the  
process of obtaining information  
from a distance using satellites. Air  
photos and satellite images are  
examples of images produced with  
remote sensing technology. Remote  
sensing is especially useful when  
large amounts of information  
about the land need to be collected  
over vast areas—as in the north—  
and it has many applications in  
resource management.

Geographic Information Systems  
(GIS) are computer systems used to  
integrate remote sensing data with  
other types of spatial information.  
GIS is a powerful tool for using and  
comparing remote sensing data. GIS  
can produce many types of  
thematic maps by assimilating  
various databases and overlaying  
them on a base map. Such maps are  
used increasingly to help make  
land use decisions.

The NWT Centre for Remote  
Sensing is involved in numerous  
GIS and remote sensing projects  
related to resource management.  
Centre staff are available for school  
presentations, and small groups can  
tour the Centre in Yellowknife. For  
more information, contact NWT  
Centre for Remote Sensing;  
Department of Resources,  
Wildlife, and Economic  
Development, GNWT,  
ph. 867-920-3328 or  
fax 867-873-0221.

Nothing remote about  
these resources...

**Project Rocks**, Volume 2, Remote  
Sensing information and activities  
(pp. 277-298), GIS (p.360, 367).

**Remote Sensing: An  
Information Brochure for  
Teachers**. 1992. Department of  
Education. Lists curriculum links

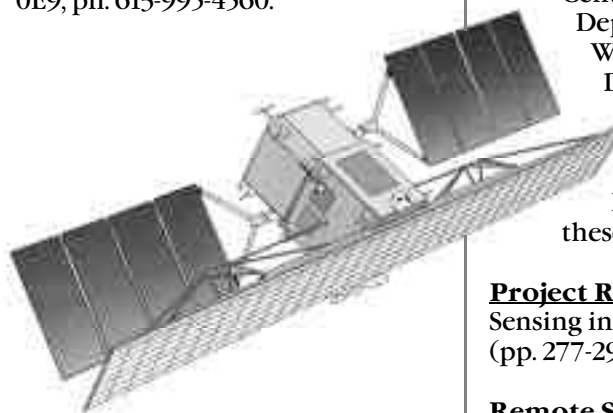
and resources for teaching.

**Remote Sensing Kit for NWT  
Schools**. A teaching kit designed  
specifically for junior high students  
in the NWT. A copy of the kit has  
been sent to each school library  
and regional resource centre.  
Contact: Science/Math Curriculum  
Coordinator; Department of  
Education, Culture and  
Employment, ph. 867-873-7675.

**Ground Truth Studies Teacher  
Handbook (British Columbia  
Edition)**. 1994. Aspen Global  
Change Institute, Aspen CO; Tel:  
303/925-7376, fax: 303/925-7097,  
email: agcimail@agci.org. This is a  
K-12, activity-based science  
education program that integrates  
local environmental issues with  
topics on global change through  
the use of remote sensing images.

Canadian Centre for Remote  
Sensing web site  
<http://www.ccrs.nrcan.gc.ca> has  
information on educational  
materials related to remote sensing  
including a tutorial. In cooperation  
with Geomatics International, the  
Centre has developed the Radar  
Distance Learning Program,  
available freely from  
<http://www.icsima.net/rdlp>.

**“Geographic Information  
Systems (GIS) as an EE Tool”**.  
Raymond W. Sims & Micheal H.  
Legg. Clearing -EE in the Pacific  
Northwest, Issue #97, April/May  
1997, pp.18-19. Information on  
introducing your class to GIS and  
using it as a tool to teach  
environmental education. Copies  
of this article are available from  
**The WILD Times** editors.



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# Knowing the Land Resources

## **Giving the Land a Voice: Mapping Our Home Places.** Sheila Harrington (ed.)

This book comes highly recommended. It provides good basic instructions for mapping both small and large areas with a whole chapter on methods for field surveys. Also included are wonderful examples of artistic maps. To order your copy, send \$16.00 (including postage) to Salt Spring Island Community Services, 268 Fulford-Ganges Rd., SALT SPRING ISLAND BC V8K 2K6. Or phone (250) 537-9971.

**Barefoot Mapping.** Briony Penn and Fran Sloan Sainas. North American Association for Environmental Education Conference Proceedings, August 1997. The proceedings from this workshop provides a step-by-step approach to the technical aspects of mapping ecosystems in small areas. Includes a good section on introducing basic mapping skills in the classroom, and creating a grid map. Lots of great science and math skills. For more information or to obtain a copy, contact us at The Wild Times.

**Project Rocks** Vol. 2, "Surveying and Mapping: Summaries of the Land" (pp. 315-337). "Principle Mineral Deposits & Active Prospects of the NWT" (pp. 325-328) and "Topographic Maps" (page 333). Lots of great mapping information and activities, with an emphasis on the North.

**Boundaries of Home: Mapping for Local Empowerment.** 1993. Doug Aberley (ed.) New Society Publishers, P.O. Box 189, GABRIOLA ISLAND BC V0R 1X0. A great collection of essays describing the mapping "movement", with reasons to map, instructions, and descriptions of examples. Includes a section called "How to Map Your Bioregion".

**Giving the Land a Voice.** 1993. Doug Aberley (ed.) New Society Publishers, P.O. Box 189, GABRIOLA ISLAND BC V0R 1X0. Chapter 5, "Community Mapping: Creating a Bioregional Map Atlas" gives step-by-step instructions, including technical details for making and copying base maps.

**Common Ground: A teaching package on knowing the land through creative, community-based mapping** (Draft). 1998. Marianne Bromley. Uses mapping as an approach for teaching about the land while integrating Inuuqatigiit and Dene Kede with Science, Social Studies, Language Arts, and Northern Studies curricula.

Focuses on making an atlas of your home territory, but includes many activities specifically designed to integrate several curricula. To view a copy of the draft contact the editors of The Wild Times.

**Northwest Territories Natural History Poster Series.** 1994. Cygnus Environmental Consulting. An excellent resource for getting to know the land in your home area. A series of 6 posters based on Environment Canada's "Terrestrial Ecozones of Canada". Each poster includes a painting illustrating and identifying landforms, wildlife, and plants associated with the ecozone; narrative descriptions of the important plants, wildlife and landforms; and a list of references for further reading. Reproduction of the text is encouraged for educational purposes. Copies were distributed to all schools in Fall 1994. For additional copies contact the Science/Math Curriculum Coordinator, Department of Education, Culture and Employment, 867-873-7675.

**Naturally North: The Natural Regions of the Northwest Territories.** 1997. Parks and Tourism Division, Department of Resources, Wildlife and Economic Development. Inspired in part by the natural history posters this glossy booklet gives a good overview of the natural history of each of the ecozones of the NWT (east and west). The Nunavut edition is available in Inuktitut, Inuinnaqtun, and English. To obtain copies for your class contact the Parks and Tourism Division at ph. 867-873-7903, or fax 867-873-0163.

**Shield Country: Life and Times of the Oldest Piece of the Planet.** 1994. Jamie Bastedo. The Arctic Institute of North America. ISBN # 0-919-039-79-9. An excellent and very readable guide to the taiga shield area. Lots of good information on geology and the making of the landscape, as well as chapters on climate, soils, plants, mammals, birds, insects, fire, and the varied habitats.

**Reaching North: A Celebration of the Subarctic.** 1998. Jamie Bastedo. Red Deer College Press. ISBN # 0-88995-170-5. Another well written and entertaining book on the North. The short stories and excerpts from CBC radio programs provide a glimpse into the lives of the many residents, two-footed or otherwise.

**"Stories of the Land"** (video). Canadian Parks and Wilderness Society (CPAWS), NWT Chapter. This video summarizes a workshop hosted by CPAWS NWT. The workshop brought together artists,

musicians, storytellers, elders, and the general public to tell stories about their special relationships with places on the land. Stories were shared through telling, through music, photography, writing, multi-media artwork, and painting. The video can be used to encourage reflection, stimulate discussion and develop new stories about individuals' personal relationships with the land. Information and copies are available from Karen Hamre, ph. 867-873-5412, fax 867-873-9894, email: avens@ssimicro.com.

**Nunavut Atlas.** 1992. R. Riewe, ed. Canadian Circumpolar Institute and Tungavik Federation of Nunavut. ISBN# 0-919058-80-9. A comprehensive reference on Inuit land use and areas important for wildlife. Includes maps of each community in Nunavut, showing the geographical extent of current land use in each community; maps of Inuit land use showing archaeological sites, campsites, fishing sites, outpost camps, major travel routes, and the intensity of land use; and wildlife maps showing caribou calving grounds, waterfowl nesting and staging areas, and the distribution, seasonal ranges, and migration routes of wildlife species important to the Inuit. Land use and wildlife maps are at a scale of 1:500,000. Research for the atlas was community-based and involved interviews with elders and hunters. Available from: Book Distribution, Canadian Circumpolar Institute, G-123 Biological Science Bldg., University of Alberta, EDMONTON AB T6G 2E9. Ph. 403-492-4512, Fax 403-492-1153. Also in NWT libraries.

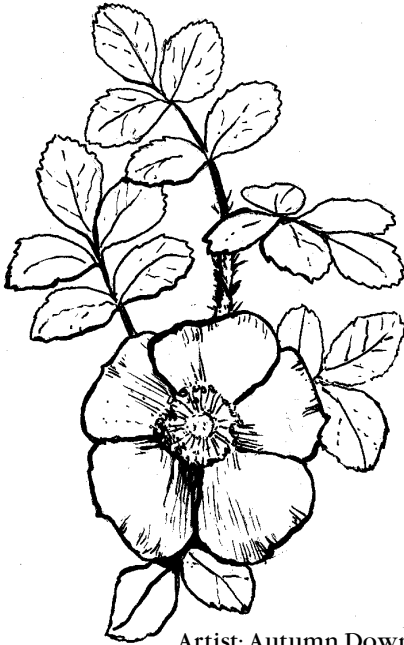
**Dene Mapping Project.** A series of maps developed in the mid-1970s with information from hunters and trappers in the Mackenzie Valley communities. The objective of the project was to determine the maximum extent of land use and occupancy from 1890 through the 1970s. Maps were computerized in 1981. Information includes hunting/trapping trails, fishing areas, wildlife species sought, cabins, camps, and important cultural sites. For more information, contact the Dene Cultural Institute, ph. 867-874-8480 or fax 867-874-3867.

**"Community Mapping: Creating a Sense of Place". Jane McRae. Green Teacher Magazine, Issue 55, Spring/Summer 1998. P. 27-39.** Tips and how to's of implementing mapping activities in the classroom. As well as, a list of resources to further mapping activities to be done with children.

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## School Feature

# Green up in Fort Simpson



Artist: Autumn Downey

Spring comes early to Thomas Simpson Secondary School thanks to the school's greenhouse project. By March, planting benches are covered with trays of sprouting seedlings and pots of bulbs as science students get first hand experience learning about botany.

The greenhouse began three years ago as the brain child of principal Robert Byatt and teacher Henrietta Prosper. Located behind the high school, the greenhouse uses recycled windows from a school renovation project and waste heat from the town's steam plant. Assisted by two grants from the Arctic Environment Strategy, CTS construction students were able to buy the required materials and

construct the building. Planting benches were built by the junior high industrial arts classes and CTS agriculture students began plant production in the Fall 96.

Last spring, science students germinated and tracked the growth of several varieties of seeds. The students also forced tulip and daffodil bulbs to sell as a fundraiser at Easter, planted flats of marigolds, petunias and impatiens for beautifying the school grounds and worked with the town on a "Communities in Bloom" project. More projects are planned to bring on an early spring this year.

## More Resources

### Great Music for the Classroom or Home

Think About the Planet A "Not For Kids Only" album of environment and conservation songs. Features lively, inspiring songs that emphasizes habitat, biodiversity, cycles, pollution, introduced species, respect for the land and wildlife. Remy Rodden, the musician, is the Yukon's Project WILD Coordinator.

CD or cassette tape available from Think About...Productions, Box 5451, Whitehorse, Yukon, Y1A 5H4. ph 867-668-7953.  
[www.yukon.net/thinkabout](http://www.yukon.net/thinkabout)

"What makes this collection exceptional is that Rodden very effectively incorporates natural science lessons into the songs without sacrificing musical quality. Although far from didactic, these educational tunes would be easily integrated into elementary and middle-school curricula."

-Green Teacher Magazine,  
Winter 97-98

## Extra, extra, extra...

Extra copies of the special printing of "Environmental Monitoring", Green Teacher Magazine, Issue #55, Spring/Summer 1998 are available for your classroom resource collection. Packed full with articles and activities on environmental monitoring and how to incorporate it into your curriculum. To obtain your copy, contact us at *The WILD Times*



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[brenda\\_hans@learnnet.nt.ca](mailto:brenda_hans@learnnet.nt.ca)



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