

Nisga'a Fisheries: Marine Conservation Youth Stewardship Lesson Plan

Title:

A British Columbia Teacher Curriculum Guide for the Theme:
Marine Ecosystems, Habitat Protection & Conservation, and Abalone
Species at Risk.

Lesson # 4:

Field trip – Visit to the Ocean Tidal Beach Area, Local River,
and/or Local Fish Hatchery

By

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Nisga'a Fisheries: Marine Conservation Youth Stewardship Lesson Plan

Lesson: In this lesson, you will take your youth on a field trip to visit your ocean tidal seashore area, your local river, and/or your local fish hatchery! For our Nisga'a Youth Marine Stewardship Program, we were fortunate enough to have the ocean, river, and fish hatchery within ten minutes of each other in the seaside village of Gingolx (Kincolith), BC. It is important that you gain consent from parents/guardians for these field trips. We have given you a copy of our consent form, and have left some of our original information on it. Feel free to use it, and add or delete any information on it. Please see Consent Form document at <C:\Documents and Settings\Tracey\My Documents\NF Project.2009\NFAbalone2009\extra resources\Ocean Link Lesson # 4\Consent form.doc>.

For your purposes, you may need to divide this lesson into three separate field trip outings to accommodate for the time it will take to drive to each of these places. Use the supplemental resources such as "Once Upon a Seashore: A Curriculum for Grades K-6", and "Beach Explorations: A Curriculum for Grades 5-10 to add more activities.

Examples of activities for your field trip to the ocean tidal seashore area.

Scavenger "Low Tide Hunt"– Once you arrive at the beach and tidal seashore area, handout to your students a scavenger hunt such as the "Low Tide Hunt" to look for crabs, algae, bivalves, seaweed, snails etc. You can make up your scavenger hunt to include marine organisms that you would see at your local seashore tidal area. Show the students the habitat of an abalone, by pointing out the sub-tidal (below the water) area.

Bring a digital camera and/or video camera with a tripod to set up on the beach. When the students find items like seaweed, snails, clams, barnacles, and limpets, they can gently bring their "ocean treasure" up to the camera for you to take a picture. Feel free to help identify what the student is holding! Once the students show their marine organism on video, please instruct them how to gently put their organism gently back in the same habitat where they found it.

Give a brief discussion about the abalone and how it is now an endangered species. If the abalone population does not rebound, it could go to the next level of species at risk, which is considered 'extinct.' Encourage the youth to help protect the abalone on the Pacific Coast by observing, recording, and reporting. If they see any people illegally harvesting or selling abalone, they can write down the details and report it to DFO at 1-800-465-4336. See the link <http://oceanlink.island.net/Conservation/abalone/BHCAP/Nisga/ncw.html>.

Examples of activities for your field trip visiting your local fish hatchery and river.

Guided tour of the fish hatchery - Have the students gather around the guide at the fish hatchery to listen to the significance and importance of the hatchery for salmon enhancement. Have the students ask questions about how the fish hatchery promotes conservation and habitat protection in their local area.

Beach seining and minnow trapping on your local river – One option that your class can choose is to invite a guest biologist to the river that you visit. Have your youth bring their fishing rods, life jackets, change of clothes, and rubber boots so that they can fish (catch and release) and walk in the river if the river or creek is shallow enough.

For example, Richard Bussanich (rb), of LGL Limited Environmental Research Associates (<http://www.lgl.com/>), is a fisheries manager, senior fisheries biologist, and one of our Nisga'a Youth Program 2009 instructors. He had our youth throw out a beach seine net, and use minnow traps that are 'more selective and fish friendly'! Please see the Beach Seine pdf file.

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Lesson Summary: In this lesson, you will take your youth on a field trip to visit your ocean tidal seashore area, your local river, and/or your local fish hatchery. For our summer camp, we were fortunate enough to have the ocean, river, and fish hatchery within ten minutes of each other. For your purposes you may need to divide this lesson into three separate field trip outings to accommodate for the time it will take to drive to each of these places.

While at the seashore tidal area, the students will participate in a scavenger hunt looking for: seaweeds, clams, crabs, barnacles, limpets, and other marine organisms on the rocky shore of the tidal area. One of your volunteers will be able to video tape these excited youth as they identify what they are holding in their hands! The students can also use their underwater viewing chambers to look for marine organisms under the water! (Please see lesson at <C:\Users\user\Documents\Tracey's Documents\NFAbalone2009\extra resources\Nisga'a Fisheries Underwater Chamber Lesson 14Oct09 tb.doc>).

At the fish hatchery, the students will be given a guided tour of hundreds of thousands of salmon fry! They will learn about what types of fish and marine animals live in the river, and why is this river important? Have your students ask the fish hatchery guide how they can protect the river and the fish in the river.

For our Nisga'a Youth Stewardship Camp, we visited the Kincolith Hatchery at the mouth of the Nass River in the seaside village of Gingolx, BC. The ocean seashore was around 10 min. away from the river and fish hatchery! Here is some information that was important for our group to learn.



Kincolith Hatchery

<http://www.pac.dfo-mpo.gc.ca/sep-pmvs/projects-projets/cedp-pdec/kincolith-eng.htm>

Project Description

The Kincolith Hatchery, located at the mouth of the Nass River, is owned by the Nisga'a and operated by the Nisga'a Lisims Government. Initiated in 1978, intentions were to rebuild Kincolith chinook to historic levels, provide survival, migration and fishery contribution information on Kincolith coho for domestic and international management decisions, and provide increased production of Kincolith coho for the sport, commercial and Aboriginal fisheries.

A small hatchery is used to enhance chinook and chum for fishing opportunities and operates a weir. From 1980-1996, the hatchery produced a combination of coho and Chinook. Coho production was terminated in 1996 due to excess stock, which made chum the operation's second species. Chum was reared from 1991-1994 with the broodstock coming from the Stagoo River. The production of Chinook and chum was the focus of the project from 1996-2004. In 2005, the project reduced production of Chinook and incorporated a weir operation to assess fish production on the Kincolith River.

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Subject Area(s): Environment and Sustainability Across BC's K-12 Curricula: Science, Social Studies, and Career Development

Grade Level: Our summer camp chose to host students 6-12 years old in age. This unit is designed for teachers to adapt the unit for elementary, middle, and high school.

Standards: See Below

BC Ministry of Education Curriculum Prescribed Learning Outcomes:

Career Development:

- Identify types of work that interest them.

Science:

- Describe marine activities of Aboriginal peoples in BC in each seasonal cycle.
- Describe how marine animals are important in the lives of Aboriginal peoples in BC.
- Describe how marine salmon are harvested and used throughout the seasons.
- Demonstrate awareness of the Aboriginal concept of respect for the marine environment.
- Determine how personal choices and actions have environmental consequences.
- Identify methods of extracting or harvesting and processing BC's resources.
- Analyse how the Aboriginal concept of interconnectedness of the environment is reflected in responsibility for and caretaking of resources.
- Evaluate human impacts on local ecosystems.

Social Studies:

- Describe ways individuals contribute to their community.
- Describe Aboriginal people's relationship with the marine, land, and natural resources.
- Explain why marine conservation, sustainability, and habitat protection are important.

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Lesson Objectives: Students will:

- Practice environmental stewardship skills to care for the ocean and river ecosystem.
- Care for and identify marine organisms that live in the ocean tidal area.
- Learn about the salmon enhancement program and significance of their local fish hatchery.
- Practice using "fish friendly" selective gear to enhance fish populations.
- Demonstrate respectful and safe beach behaviour such as gentle treatment of all living organisms and returning creatures to their habitats.

Lesson Scope and Sequence: Our mission of this teacher guide and programs that we have developed "is to create a supportive learning environment in which youth reach their fullest potential as capable, competent, and caring eco-citizens, through restoration initiatives such as northern abalone recovery, and other marine species at risk, to a level that supports a community food fishery."

The purpose of this lesson is to take your youth on a field trip(s) to visit your local ocean seashore tidal area, local fish hatchery, and/or local river. This is an opportunity to see marine animals and marine biodiversity at it's finest! It also provides your youth with a special opportunity to practice using their stewardship skills for their newly formed stewardship group!

Invite a guest biologist or parks recreation guide to take your class to the ocean, and river. Ask your guest to provide their own activities for the students to encourage the themes that you have been studying in this unit ranging from marine conservation, species at risk, biodiversity, to community leadership!

We also encourage you to be creative by adding activities for your field trip to the seashore, fish hatchery, and river. Please visit the Supplemental Resources section on the link <C:\Documents and Settings\Tracey\My Documents\NF Project.2009\NFAbalone2009\extra resources\Ocean Link Lesson # 4\Nisga'a Fisheries Supplemental Resources 011Jan10 tb.doc>.

Here are some important tips:

- Teach the students about how to be an environmental steward that cares for live marine organisms at all times. Show the students how to gently hold live marine organisms in their hands, and how to bend down to place the marine organism back in its original habitat. Teach your students to never drop an organism from standing position. It would kill the organism, or severely injure it, thus, decreasing its chance for survival. Whether the organism is a plant or animal, it needs great respect and care.
- Have the students say out loud in unison the wonderful truths of the "Seven Paddles of Our Ocean Canoe": environmental stewardship, teamwork, self-confidence, gratitude, leadership, friendships, and taking action. "I care for the environment and organisms in the environment. I am part of a team. I am confident and self-assured. I am grateful. I am a leader. I am a friend and enjoy friendships. I am a youth that takes action today."

Here are some links about the ocean and rivers in the northern coastal area that our summer camp had the joy to experience!

<http://www.nisgaalisims.ca/?q=fisheries-and-wildlife>

<http://www.nisgaalisims.ca/?q=gingolx-seafood-capital-nass>

<http://www.gingolx.ca/home.html>

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Student Assessment:

- Observe your students while they are on the field trip. Are they caring for live marine organisms by being gentle to them? Are they placing marine organisms back in their original habitat by bending down to ground level? Do you have students that show character traits of leadership, teamwork, gratitude, self-confidence, friendships, and taking action while on your field trip(s)?
- Students can journal using the following prompts...Describe to me your experience at the river or ocean tidal area. How did you personally contribute to being a great environmental steward of the ocean and river ecosystem on your field trip? Have your students draw in their journal with their entry. Younger students may talk into a tape recorder to express their experiences and feelings.
- Include activities that allow for expression with multiple intelligences such as: music (making up a song about marine species that live in the tidal area), linguistics (designing a word search using vocabulary and learning from the field trip), and intra-personal and inter-personal (interviewing another student to describe their experience on the field trip(s)).

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| Lesson Implementation | | |
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| Instructional Strategies | Grouping Options | Scaffolds/ |
| <p>Introduce the lesson:</p> <p>Be creative and use teaching strategies that will best suit your classes' interests and needs!</p> | <p>Whole group, pairs, and/or individual.</p> | <p>Before you go on your field trip(s):</p> <ul style="list-style-type: none"> ▪ Teach the students about how to be an environmental steward that cares for live marine organisms at all times. ▪ Show the students how to gently hold live marine organisms in their hands, and how to bend down to place the marine organism back in its original habitat. ▪ Teach your students to never drop an organism from standing position. It would kill the organism, or severely injure it, thus, decreasing its chance for survival. Whether the organism is a plant or animal, it needs great respect and care. ▪ Discuss with your students the purpose of this lesson to take them on a field trip(s) to visit the ocean seashore tidal area, fish hatchery, and/or local river. They will have an opportunity to see and touch marine animals, while observing the animals in their natural habitat! It also provides your youth with a special opportunity to practice using their stewardship skills for their newly formed stewardship group! |
| <p>Practice:</p> | | <p>Before your students go on the field trip(s), let them have fun playing card games with the Ocean Animal Clue Cards and Pacific Coast Information Cards. For younger students, they can also enjoying playing and interacting with the 'Sea Life' Felt Set. This will help your students to identify the biodiversity in marine organisms that they will see on their field trip!</p> |
| <p>Homework Assignment:</p> | | <p>Have the youth ask their family and relatives what their favourite traditional seafood recipe is. Ask the youth to write out their recipe so that it can be shared!</p> |

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| Review: | | <ul style="list-style-type: none"> ▪ Students can journal using the following prompts...Describe to me your experience at the river, fish hatchery, or ocean tidal area. How did you personally contribute to being a great environmental steward of the ocean and river ecosystem on your field trip? Have your students draw in their journal with their entry. Younger students may talk into a tape recorder to express their experiences and feelings. ▪ Include activities that allow for expression with multiple intelligences such as: music (making up a song about marine species that live in the tidal area), linguistics (designing a word search using vocabulary and learning from the field trip), and intra-personal and inter-personal (interviewing another student to describe their experience on the field trip(s)). |
| Eco-friendly Action Project: | | <p>Our eco-friendly action project for our field trip was to:</p> <ul style="list-style-type: none"> ▪ Practice environmental stewardship skills to care for the ocean and river ecosystem. ▪ Care for and identify marine organisms that live in the ocean tidal area. ▪ Learn about the salmon enhancement program and significance of their local fish hatchery. ▪ Practice using "fish friendly" selective gear to enhance fish populations. ▪ Demonstrate respectful and safe beach behaviour such as gentle treatment of all living organisms and returning creatures to their habitats. |
| Application/Work time: | | <p>Allow for time to go on your field trip(s). In addition, allow scheduled time for your class to reflect in their journals. Once your class has completed their journals, allow time to share their journals and discuss/debrief all the exciting details about their field trip(s)!</p> |

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| <p>Self-Evaluation and Critique:</p> | | <p><u>Seashore ocean tidal area</u> – Our 6-12 year olds eagerly searched for a variety of marine organisms on their scavenger hunt list! They were curious as to ‘why the seaweed had bulbs of air that would crunch like popcorn’ as they stepped on the rocks covered in green and yellow seaweed. Our youth scattered along the whole shoreline! Some used their underwater viewing chambers to look for fish in the water. Others were lined up with excitement to show their marine species to Richard (rb), our guest biologist, so that he could video tape their discovery!</p> <p><u>Fish Hatchery</u> – Our fish hatchery guide asked us to please respect the small fish fry by being very quiet and not talking. Then our guide took our young stewardship group into the fish hatchery to see hundreds of thousands of small fish fry swimming in steel tanks! All of our youth displayed a deep respect, and quietly walked around the fish tanks studying the abundance of small fish fry.</p> <p><u>River field trip</u> - Our youth squealed with delight, as they walked into the cold, northern, shallow river! We could see large, spawning, pink salmon swimming near us! Our youth were determined to try and catch some of these spawning salmon with the beach seine net and minnow traps that Richard (rb) helped them throw out.</p> <p>Richard allowed our youth to interact with the salmon by catching the salmon with their bare hands, since these pink salmon were “near-spent” towards the end of their life cycle. Two students caught the salmon with their bare hands, and one student used an angling rod to catch a salmon. All three students gently placed the salmon they caught back into the river so that these important fish may finish off their life cycle.</p> <p><u>Nisga'a Youth favorite traditional seafood recipe</u> – We were impressed by the variety of seafood dishes that our youth liked. Our youth enjoy t'ibin (sea lion), clams, cockles, salmon, and halibut! We have shared these recipes with you, so please enjoy! (See the youth seafood recipe document).</p> |
| <p>Accommodation Options: See Below</p> | | |
| <p>ELL / IEP Students:</p> | <p>Assign the students in small groups, and give them the role of working as a ‘biologist stewardship’ team to look out for one another. They need to keep together when in the forest by the river. When biologists, such as their guest speaker, go out by the river and forest to gather observations and data...they always stick together in a group. At times they need to help each other if one person falls behind on the forest trail or falls into the river.</p> | |

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| Highly-Capable Students: | See above. |
| <p>Management/Organization Tips:</p> <ul style="list-style-type: none"> ▪ Before you go on your field trip send out the consent forms to the parents. ▪ Take time to research local rivers, fish hatcheries, and areas to visit the ocean tidal area. ▪ Invite a guest biologist, or parks recreation guide to attend on your field trip(s). Ask your guest to bring eco-activities that they think will be beneficial when visiting these areas. ▪ Remind your students to bring proper clothing; any needed medications, rubber boots, a life jacket, snacks and lunch, and a change of clothes if they go into the river and ocean. ▪ Bring a digital camera and a video camera. ▪ Bring your scavenger hunt photocopies, pens, and any other materials for your field trip(s). | |
| <p>Approximate Time Needed: From 8:30am – 3:00pm to allow for driving time and organizing the chaperones.</p> | |
| <p>Prerequisite Skills:</p> <ul style="list-style-type: none"> ▪ Teach the students about how to be an environmental steward that cares for live marine organisms at all times. Show the students how to gently hold live marine organisms in their hands, and how to bend down to place the marine organism back in its original habitat. Teach your students to never drop an organism from standing position. It would kill the organism, or severely injure it, thus, decreasing its chance for survival. Whether the organism is a plant or animal, it needs great respect and care. ▪ Have the students say out loud in unison the wonderful truths of the “Seven Paddles of Our Ocean Canoe”: environmental stewardship, teamwork, self-confidence, gratitude, leadership, friendships, and taking action. Say out loud with your students, “I care for the environment and organisms in the environment. I am part of a team. I am confident and self-assured. I am grateful. I am a leader. I am a friend and enjoy friendships. I am a youth that takes eco-action today.” | |

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Materials and Resources Required for Lesson:

See above. As well as:

- Underwater viewing chambers. See "Underwater Viewing Chamber Lesson" on how to make them.
- Scavenger hunt activity.
- Video camera with tripod and digital camera to bring to the ocean tidal area, river, and fish hatchery.

Adopted and other Audio/Visual: none

Supplemental Resources (including Internet resources):

- To help you and your students identify the different marine organisms the following book is ideal. "Exploring the Seashore in British Columbia, Washington and Oregon: A Guide to Shorebirds and Intertidal Plants and Animals. See the link at <C:\Documents and Settings\Tracey\My Documents\NF Project.2009\NF Abalone2009\extra resources\Ocean Link Lesson # 4\Nisga'a Fisheries Supplemental Resources 011Jan10 tb.doc>.
- The books "Once Upon a Seashore: A Curriculum for Grades K-6", and "Beach Explorations: A Curriculum for Grades 5-10" can be used. See above link.

Supplies: See Materials Above

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| Technology – Hardware (Click boxes of all equipment needed.) | | |
| <input type="checkbox"/> Computer(s) | <input type="checkbox"/> VCR | <input type="checkbox"/> Projection System |
| <input type="checkbox"/> Printer | X Video Camera | <input type="checkbox"/> Camera |
| X Digital Camera | <input type="checkbox"/> Scanner (optional) | <input type="checkbox"/> Video Conferencing |
| Technology – Software (Click boxes of all software needed.) | | |
| <ul style="list-style-type: none"> ▪ See above. | | |
| Optional Technology Extensions: | <p>Use the photos and video clips for a power point presentation for the rest of the class.</p> <p>Post the student's seafood recipe on a website along with some photos of the field trip(s).</p> | |