



**Science Unit: *Marine Critters and Communities***  
**Lesson 10: *Intertidal Field Trip to Jericho Beach***

School Year:	2011/2012
Developed for:	Tecumseh Elementary School, Vancouver School District
Developed by:	Kathy Heise (scientist); Teresa Harris, Stephanie Pearce, and Chuck McNicholl (teachers)
Grade level:	Presented to grade 7; appropriate for grades 4 – 7 with age appropriate modifications
Duration of lesson:	All day field trip (follow up Extension Lesson on comparing Jericho Beach with Stanley Park to be done during a science class at school)
Notes:	<p>This lesson is similar to Lesson 4, Intertidal Field Trip, in the Biodiversity and Extreme Environments science unit, Scientist in Residence Program. <a href="http://scientistinresidence.ca/science-lesson-plans/biodiversity-and-extreme-environments/">http://scientistinresidence.ca/science-lesson-plans/biodiversity-and-extreme-environments/</a> It is also linked with Lesson 11 Intertidal Field Trip to Stanley Park, in the Marine Critters and Communities science unit, Scientist in Residence Program. <a href="http://scientistinresidence.ca/science-lesson-plans/marine-critters-communities/">http://scientistinresidence.ca/science-lesson-plans/marine-critters-communities/</a></p> <p>Data collected from both field trips will be compared as a Lesson Extension Exercise.</p> <p>This lesson uses circular plots of 1 m<sup>2</sup> area.</p> <p>Waterproof paper for the worksheets can be purchased at Western Technical Supply in North Vancouver. Other sources can be found at <a href="http://www.riteintherain.com">www.riteintherain.com</a>. When it is raining, pencils must be used to write on waterproof paper.</p> <p>Staples is a source of plastic sleeves that can be used to enclose the Spring Beach Walk field guide pages. These sleeves have a flap at the top that keep the pages inside and do not allow rain to enter. The pages of each copy of the field guide can be secured together using paper clips.</p> <p>The location of the survey is near the rehabilitated salmon stream at Spanish Bank Creek.</p> <p>The 1 m<sup>2</sup> study circle-plots are made of ½ inch poly line and the ends are secured with zap straps- supplies that are readily available at most hardware stores.</p>

**Objectives**

1. Explore a real intertidal zone.
2. Replicate how ecologists collect ecological data in the field.
3. Practice species identification of intertidal organisms.



## Background Information

The field trips should be timed to take advantage of the lowest part of the tidal cycles in the spring. On site, students will work in groups of 3-4 students to apply what they learned in lessons 9 and 10 to collect ecological data that will help them to appreciate the differences between two different intertidal areas in the Vancouver area: Jericho Beach and Stanley Park. Ideally there will be at least one adult per two groups. At Tecumseh Elementary School, this trip coincided with a school-wide trip where students were able to release salmon smolts to the rehabilitated Spanish Bank Creek.

## Materials

- Study plots (1 per group of 3-4 students)
- Field Guide: 'Explore the Rocky Shore at Stanley Park' (1 per group)
- Field Guide: Spring Beach Walks- Quick Reference Identification Guide
- Clipboards (2 per group)
- Worksheets- Intertidal Data Collection Sheets (2 pages, 1 per group) printed on waterproof paper
- Magnifying glasses
- Buckets to put specimens in, to share with the class
- Garbage bags for beach clean-up if necessary

## In the Field

Before the students begin, once again review intertidal etiquette.

- Leave animals where you found them.
- Carefully return rocks to their original position.
- Avoid walking on animals and plants whenever possible.
- Leave the beach cleaner than you found it.
- **Safety Concern: Step carefully and don't run. Barnacles are sharp!**

Each group of 3-4 should have 1-1m<sup>2</sup> study plot rope, one Stanley Park field guide, one Spring Beach Walk field guide, two clipboards, a magnifying glass, copies of the 2 page intertidal data collection sheets (printed one side only), 1 copy per person of the Observational Skills worksheet.

Allow the students to choose their study plot. Suggest that they move low enough down the intertidal to observe as many different creatures as possible, but high enough that their plot won't be covered by a rising tide. Estimate the distance from shore in meters. Ask one student to sketch the study plot while the other students are making species observations.

## Closure Discussion

1. Were you surprised at the number of species you saw today?
2. What intertidal predators did you observe?
3. What was the most interesting thing you saw today?
4. Do you think we left the area better or worse than we found it?



### Extension of Lesson Plan

1. In class, take up the results of the study plots as a group, using the Excel spreadsheet 'Recording our Results'. These results will later be compared with the results from those obtained from Lesson 11, Intertidal Field trip to Stanley Park, in the Marine Critters and Communities science unit.

### References.

1. Sheldon, Ian. 1998. Seashore life of British Columbia. Lone Pine Publishing.
2. Sept, Duane J. 1999. The Beachcomber's Guide to Seashore Life in the Pacific Northwest. Harbour Publishing.
3. <[http://naturevancouver.ca/sites/naturevancouver.ca/VNHS%20files/4/Nature\\_Vancouver\\_Intertidal\\_Pamphlet.pdf](http://naturevancouver.ca/sites/naturevancouver.ca/VNHS%20files/4/Nature_Vancouver_Intertidal_Pamphlet.pdf)> Explore the Rocky Shore at Stanley Park. Nature Vancouver. Accessed May 30 2012.
4. Harbo, R. 2011. Whelks to Whales: Coastal Marine Life of the Pacific Northwest. Harbour Publishing.
5. Harbo, R. 1988. Guide to the Western Seashore: Introductory Marinelife Guide to the Pacific Coast. Harbour Publishing.



### Intertidal Data Collection Sheet

Students: \_\_\_\_\_

Location: \_\_\_\_\_ Date: \_\_\_\_\_

Survey Start Time: \_\_\_\_\_ Tides for the day: \_\_\_m @ \_\_\_\_\_ \_\_\_m @ \_\_\_\_\_ \_\_\_m @ \_\_\_\_\_

Weather: \_\_\_\_\_

Study Plot Location: (Distance to shore) \_\_\_\_\_

Study Plot Description: Sketch your study plot, including any big rocks, and major clumps of animals and plants below. Please label them neatly.



ANIMALS

Species name	Number of individuals (estimate if necessary)

PLANTS

Seaweed type	% cover (estimate)

NON-LIVING SUBSTRATE

Substrate type (solid rock, cobble, sand, mud, etc.)	% cover (estimate)

Other observations:

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