32 Years of Collaboration: Sea Stars, Plankton & Late Nights

Debbie Garland is a retired teacher who taught at Saint John High for 27 years. She wrote this article for the Saint John High School Alumni News.

It was in 1986 that the first group of Saint John High School Grade 12 Biology students ventured to the Huntsman Marine Science Centre. That trip was the beginning of an ongoing relationship that has lasted 32 years. Over the years many aspects of Huntsman have changed: Anderson House, once a student residence has been renovated and a new student residence, Needler Hall constructed, the aquarium was replaced in 2011 and there have been renovations to student laboratories. Many alumni would remember the metal bunk beds, which on one occasion collapsed, the cold basement showers and the subterranean labs as well as late night adventures on the golf course.

“...a hands-on experience that would be the envy of inland students.”
- Bob Perry, retired SJHS teacher

The Grade 12 Biology field trip often began with running the Brandy Cove shore transect, in which students would spend three hours counting intertidal invertebrate species and percentage seaweed coverage. Students had to be mindful of the tides to prevent being stranded, many times working into the early evening and needing flashlights to return to the lab. What student did not love the late night work constructing Kite graphs? A student from 2001 remembers, “No organism was left unturned. Writing up labs and drawing graphs, not to mention doing math at one in the morning while sleep deprived = Biological Bliss”.

Over the years, the relationship expanded to include a one day Grade 11 Biology field trip. Working on the boat in Passamaquoddy Bay students would collect plankton and benthic invertebrates as well as salinity and temperature readings. The collected animals would be used in the lab; a wonderful introduction to the marine environment.

The Huntsman also organized overnight trips to Grand Manan Island. The highlight was whale watching with Peter Wilcox from Seal Cove. Hard to imagine that on many of these trips we were completely surrounded by endangered North Atlantic Right Whales, a rare occurrence now. Many of the experiences no longer exist on Grand Manan. The acts of salting fish and smoking fish in Ingersoll’s smokehouses are gone.

Over the years many teachers were able to be a part of these trips to the Huntsman. I quote from a letter written to the alumni by retired SJHS biology teacher, Bob Perry, “Biology students have been making use of this outstanding local resource (Huntsman) for decades now and these excursions have given hands-on opportunities to investigate the Bay of Fundy we are so fortunate to reside beside. While there students gain great insights into this marine environment, including excellent instructors and get a hands-on experience that would be the envy of inland students”.

In the thirty-two years that the biology classes have been working with the Huntsman over 3200 students have benefitted from this unique educational partnership.

As the Huntsman looks to celebrate their 50th anniversary in 2019 I hope that Saint John High School continues its relationship with this great organization for many years to come.
2018 Summer Programs at the Huntsman Marine Science Centre

Introduction to Marine Biology

A hands-on experience in field biology. Discover the diversity of invertebrates, fish, seabirds and mammals living in and around the Bay of Fundy. Open to students 15 to 18 years old July 9th to 13th, 2018

Intro to Marine Mammals & Seabirds

Discover the diversity of whales, porpoise, seals and seabirds that live in and around the Bay of Fundy. Open to students 15 to 18 years old July 23rd to 27th, 2018

All Things Marine

A hands-on introduction to marine biology, with a little bit of maritime history. Open to families & friends, 10 years old and over May 29th to June 1st or August 7th to 10th, 2018

Booking, price and early-bird discount information available at www.huntsmanmarine.ca or (506) 529-1245.

About the Huntsman...

The Huntsman Marine Science Centre is a not-for-profit facility in St. Andrews, N.B., dedicated to education, research and applied science. Thousands of students come to our campus each year, from elementary school to university level. We publish this newsletter specifically for teachers twice a year. If you have any marine biology questions, feature ideas, or things you’d like to see us cover, contact us at:

Huntsman Marine Science Centre
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506.529-1200 huntsman@huntsmanmarine.ca
Visit us online at www.huntsmanmarine.ca

Young Explorer Days for ages 5 to 11 are Wednesdays in July & August. Programs run 9:30am to 3pm.

July 11 - Lobster Day
July 18 - Microscopic Life Day
July 25 - Shark Day
August 1 - Sea Star Day
August 8 - Seal Day
August 15 - Whale Day
August 22 - Seabird Day

Young Explorer Marine Biology Week for ages 5 to 11. Program runs 9:30am to 3pm daily.

July 30 to August 3 - Marine Biology Week

Advanced Explorer Days for ages 11 to 15 are Thursdays in August. Programs run 9:30am to 3pm.

August 2 - Sea Star Day
August 9 - Seal Day
August 16 - Whale Day
August 23 - Seabird Day

NOUVEAU - Les après-midi des jeunes explorateurs pour les jeunes âgés de 5 à 11 ans sont donnés les mardis 7 et 21 août, de 13h à 15h. Ce programme sera donné en français par un instructeur bilingue.

Mardi le 7 août - Les phoques
Mardi le 21 août - Les oiseaux marins

This program will be taught in French by a bilingual instructor.

Please register in advance for all programs by calling the Huntsman main desk (506) 529-1245 or emailing huntsman@huntsmanmarine.ca.
A New Addition

In March the Huntsman Education Department added a new staff member, Michael Friesen. Here he tells us a bit about himself.

For as long as I can remember, I had a passion for nature. I was born in Montreal and I would always look forward to leaving the island to see nature with scouts, friends or family. By the age of eight I knew I wanted to be a biologist so I could spend everyday staring at and playing with animals (at least that’s what I thought the job was at that age).

As I grew older I started swimming in competitions and eventually started scuba diving. My father and I would go diving in the St. Lawrence River. Now I was able to see the most interesting animals in the world with my own eyes, they weren’t stuck behind a TV screen in a documentary. I was hooked!

I started my post-secondary education in a bioecology program. During this program we spent 8 months at a field station north of Montreal doing field work such as bird banding, electrofishing and forestry. I decided to further my studies with a degree in Marine Biology from the Université du Québec à Rimouski. While in university I spent the summers working as a marine interpreter and a scientific diver for Parks Canada in the Saguenay - St. Lawrence Marine Park. I loved my time there, sharing my passion for marine life.

Now my girlfriend and I have moved to St Andrews so that I can teach about the creatures I love. We look forward to making a life by the sea.

Alumni Corner

Where are they now?

Stephanie assisted with a study on horseshoe crabs while completing her master’s degree at Columbia University in New York.

Who?

Stephanie Sardelis works for the Department of Fisheries and Oceans as a National Aquatic Invasive Species Advisor in Ottawa. She helps coordinate national aquatic invasive species prevention and control initiatives and works with scientists across Canada.

What brought you to the Huntsman?

I first visited Huntsman as a high school student in 2008 with Ashbury College. It was my first real marine biology field experience: we sampled from the intertidal and went whale watching from Grand Manan to see north Atlantic right whales. I returned to Huntsman twice in 2012 – first as a university student studying marine mammals and sea birds, where I completed my first independent research project. Then, I returned as a chaperone for high school students taking the same program I did. It was very rewarding to help inspire others in the same way I was.

Did your time at the Huntsman influence your career choice?

Absolutely. I studied marine and aquatic biology throughout university and completed a Master’s in Conservation Biology at Columbia University studying marine mammal acoustics in the Arctic. Ever since I was a child, I knew I wanted to be a marine biologist – Huntsman helped make my ambition a reality at a young and influential stage in my career.

What did you enjoy most about your time at the Huntsman?

When I think of Huntsman, I think of being out on the water on a beautiful sunny day. During the marine mammals and seabirds course, we were out on boats daily and sometimes twice per day surveying for animals. From minke whales breaching to bald eagles chasing kittiwakes, we saw and experienced everything the Bay of Fundy had to offer.

Advice for students pursuing marine biology as a career?

If you want to be a marine biologist, do it. Never stop; never let anyone tell you that you can't; push yourself to get as much experience as possible in as wide a range of disciplines as you can. Marine biology can be a highly competitive field, but perseverance and dedication will help you build an adventurous and fulfilling career.

NEW - Artventure on the Seashore

Who: youth aged 10+
What: Take a trip on the Huntsman research boat, explore the shore, tour the aquarium, collect natural materials, and create individual and group mosaics.
When: July 17-20, 9:30am – 3:30pm
Where: Aquarium & Sunbury Shores Arts & Nature Centre

Sunbury Shores Arts and Nature Centre
Sea Creature Facts: Deep-Sea Scallop

Scallops are an edible, saltwater mollusc, related to clams, mussels and periwinkles.

Insights

- A filter feeder that consumes plankton and detritus.
- Predators include sea stars, crabs, lobsters and fish.
- Swim erratically, by opening and closing the two valves of the shell, creating jet propulsion. Out of water this makes the scallop appear to be spitting.
- Embedded in the mantle along the top and bottom of the shell are rows of simple eyes.
- The mantle secretes the shell and protects the scallop from irritants by creating pearls.
- The sexes are separate, as can be seen by the gonad colour: females are orange, males are white.
- Fertilization occurs externally through broadcast spawning, when eggs and sperm are released into the water at the same time.
- Fished by towing a metal drag along the bottom through the scallop beds.
- Prized for their tasty adductor muscle, but other parts such as the gonad and mantle can also be consumed.

Activity: Mollusc Dichotomous Key

Grade level:
Middle school and up

Purpose:
To increase observation skills while investigating the diversity of hard shelled molluscs.

Background:
A mollusc is an invertebrate with a soft body; many have a hard, calcareous shell.

A dichotomous key is a tool used in biology to identify an organism. Keys are made up of a series of steps, with two choices at each step. Each time a choice is made, a number of organisms are eliminated. Eventually, there is only one choice left and that is the identity of the organism.

Materials:
- variety of shells
- paper
- pencil
- examples of different dichotomous keys

Procedure:
1. Prior to the activity take students to a local beach to collect a variety of shells. You can also use a mix of shells purchased from a craft store or photos of shells.
2. Show the students examples of different keys, some that use questions and others that use a flowchart.
3. Give each pair of students a selection of different shells. At least five shells per pair.
4. Have the students give each shell a name based on its characteristics.
5. Have the students observe and describe each shell. Descriptions could include shape, colour, size, texture, thickness. It is also good to note how many shells the animal has when alive, one or two.
6. Students could include a drawing of each shell with the descriptions.
7. Have the students create a dichotomous key.
8. Get the students to test each other’s keys.
9. Extension: If the shells are local have the students use a field guide, such as the Peterson Atlantic Seashore to look up the name of each shell.

Example key:
Key to invertibrates in the Fundy Discovery Aquarium touch tank:

1. a) has claws ... rock crab
   b) does not have claws ... go to step 2

2. a) has a shell made of two parts ... scallop
   b) does not have a shell ... go to step 3

3. a) has a soft body ... orange-footed sea cucumber
   b) does not have a soft body ... go to step 4

4. a) has five arms covered in spines ... common sea star
   b) has a round body covered in spines ... green sea urchin