

Coastal Chronicle

Bluenose Coastal Action Foundation Quarterly Newsletter



Issue 2 / Spring 2016

Welcome Back Spring Jennifer McKinnon, Editor

Greetings, readers - and welcome to our second issue of *Coastal Chronicle*! We hope you enjoyed our inaugural issue (if you missed it you can simply download a copy at www.coastalaction.org).

In this issue we highlight a fascinating aspect of our American eel project: dissections! Coastal Action staffer Danielle Pernette (our American eel project coordinator) takes you on a trip through the innards of local eel populations - and the surprising number of parasites found within them. Be prepared for some illuminating photographs of both the reproductive organs of eels and the parasites who live within their

swim bladders - a new discovery regarding our East River, Chester eels.

Other highlights include a climate change-themed photography workshop at Westhaver Beach; crowdfunding to build rain gardens that help reduce bank erosion and slow stormwater flow; our March Break foray to White Point Beach Resort; and we introduce you to one of our amazing volunteers with a knack for geomatics and spatial analysis work.

Here at Coastal Action, we're already preparing for the upcoming field season. Enjoy 'springing' right into this issue! 🌊

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Coastal Action staff out for a hike at Indian Path Common in February.

Bluenose Coastal Action Foundation, established in December 1993, is a charitable organization that addresses environmental concerns in the South Shore region of Nova Scotia. Our goal at Coastal Action is to promote the restoration, enhancement, and conservation of our ecosystem through research, education, and action. Our vision is a healthy environment supporting thriving South Shore communities.

Elver season will soon be upon us! Stay tuned on Coastal Action's Facebook and Twitter pages for updates on their progress. The elvers (baby eels) are already starting to trickle in from the ocean to their summer homes: lakes and streams of Nova Scotia.



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Small Change Fund

Amy Buckland-Nicks, Coastal Action staff



Amy at Generations Active Park, a proposed stormwater management site.

Coastal Action and the Town of Bridgewater raised \$3,222 through the Small Change Fund in February to build a rain garden and plant vegetation in Generations Active Park. The rain garden and vegetation planting will help to reduce bank erosion and slow stormwater that flows from private land adjacent to the park across to the HB Studios Sports Centre parking lot. The Bridgewater and

Area Lions Club donated \$500 and will be partnering with the planting efforts this spring and summer.

The rain garden is part of a network of stormwater management best practices planned for the park that will help reduce the amount of stormwater that contributes pollutants to the LaHave River. 🐦

March Break at White Point

Danielle Pernette, Coastal Action staff



Danielle holding a rare yellow lobster.

On March 17th, Coastal Action celebrated St. Patrick's Day at White Point, teaching kids and their parents about our oceans and keeping them "green". Coastal Action staffers brought along our touch tank and some critters, for a hands-on experience learning about some species found in the Atlantic Ocean. Special guests included whelks, limpets, periwinkles, three species of

starfish, a rock crab, and lobsters. The lobsters were very unique – one of them had an extra claw, while the other was yellow! Some lobsters can be yellow or blue, as a result of a genetic mutation. An estimated 1 in 2 million lobster are blue, while yellow lobster are estimated at about 1 in 30 million, making them a pretty rare touch tank visitor! 🐦

Climate Change Education

Amy Buckland-Nicks, Coastal Action staff



Workshop participants and organizers taking pictures at Westhaver Beach.

Coastal Action organized a "Shoreline Views: Photography and Adaptation Workshop" in partnership with South Shore Chapter of the Council of Canadians and Sierra Club Atlantic Chapter in March. The free workshop (funded by Nova Scotia Environment), held at the Mahone Bay Centre, aimed to raise awareness about coastal erosion

and climate change among South Shore residents. Over 40 people gathered to learn about shoreline erosion processes and mitigation strategies from Robin Tress (Ecology Action Centre) and waterscape photography from Kas Stone. The group then gathered ideas for coastal adaptation and practiced photography at Westhaver Beach. 🐦

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Eel Dissections: Gonads and Parasites

Danielle Pernette, Coastal Action staff

Throughout the 2015 American silver eel migration, from late August to early November, at the East River, Chester, over 1,300 eels were captured. One of the main goals of the study was to sacrifice and collect a number of silver (sexually mature) eel for biological sampling purposes.

A total of 75 silver eels were collected of varying length increments between 20 - 100 cm. The total length of each eel was measured, along with weight, eye diameter, and head and fin length. Each eel was dissected and the gonads were examined to determine whether the eel was male or female.

Typically, female eel range from 40 cm to over 100 cm, while male eel are much smaller, with a maximum length of less than 40 cm. Female eel have easily identifiable gonads as they are large and frilled in appearance, on either side of the body cavity. Male eel gonads are a bit more difficult to find, as male eel are smaller, and the gonads are smaller, with a stringy, scalloped appearance. American eel only reach sexual maturation once they become silver eel.


All of the sacrificed eel were silver, so as expected, it was possible to differentiate between male and female eel with certainty by examining the gonads. More than half of the sacrificed eel were confirmed as female, and 31 were confirmed male.

According to some research, female eels can carry anywhere between 400,000 eggs (from the smallest females), to 20 million eggs (from the largest females). The most capacious female sacrificed was over 80 cm long, and the gonads weighed in at 41.21 g – that’s a lot of eggs! In comparison, a male that was 36 cm long had gonads weighing only 0.185 g. In addition, the swim bladder of each eel were examined for presence of an exotic nematode parasite, *Anguillicoloides crassus*, that lives in the swim bladder of *Anguilla* sp. of eel.

Seven of the eels from East River, Chester were found to have the



Male American eel gonads.

parasite, which is the first time the presence of the parasite has been noted in the East River. The parasite can affect the eel in many ways, such as reduced swimming ability, foraging, and lower energy, which could potentially affect their spawning grounds in the Sargasso Sea. 



Various parasites found in the swim bladders of American silver eels.



Female American eel gonads.

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Profile: Chelsea Fougère Emma Kinley, Coastal Action staff

Chelsea volunteered with us in the spring and summer of 2015 as a Geographic Information System (GIS) technician. She was first introduced to geomatics and spatial analysis during her undergraduate research (Distribution and competitive capacity of *Rosa rugosa* on Brier Island). Chelsea pursued GIS at the Centre of Geographic Sciences (COGS) at NSCC in 2014.

Chelsea started working with Coastal Action in the spring; upon graduating from COGS, she came back to continue her work with Coastal Action in her free time! Chelsea created an Environmental Systems Research Institute (Esri)

web map of water quality data collected by Coastal Action and also prepared a database to house and process our culvert assessment data. Chelsea's work paved the way for developing improved watershed maps for Coastal Action watershed projects.

On top of the mapping, Chelsea also took the time to help educate Coastal Action staff on GIS programming, organize our existing GIS data, and source out new data useful for our future GIS mapping. Chelsea is currently working in the Flux Lab (St. Francis Xavier University in Antigonish, NS) as a data technician. Although Chelsea has been enjoying her time in

Antigonish, she says much of her heart remains in Petite Rivière. Coastal Action loves our volunteers! 



Want to hear more about topics covered in this issue?

If you'd like to read further, in-depth information regarding the stories highlighted in this issue, please visit our website (www.coastalaction.org) where we post more detailed updates on all of our projects. We have lots on the go here at Coastal Action: research, education and outreach, public engagement activities, and volunteer opportunities. If you'd like to see a report on one of our projects or events in the *Coastal Chronicle*, send us an email at editor@coastalaction.org.




Our home: Captain Angus Walters House in Lunenburg.

Coastal Action is a not-for-profit conservation organization. By donating financially to any of our projects, we will provide charitable donation tax receipts. We also sell various articles of clothing, accessories, and maps; all proceeds go to Coastal Action!



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