



# Gone crabbin' at Kejimkujik seaside

Bringing an invasive species under control

Story and photography by Sandra Phinney

Parks Canada resource conservation officer Wade Richard releases a trap into St. Catherine's River Estuary. Insert: Markings indicate sex of crabs. Squat and beehive-like: female. Taller, lighthouse-like: male.



**T**here's nothing like getting up close and personal with a green crab. Even better is to exterminate them. Not that I am bloodthirsty, but when something has a devastating effect on the environment (and continues to pose a threat) it's a great feeling to be part of the solution.

First, some background. In the 1950s and again in the 1980s the coastline of Atlantic Canada was invaded by the European green crab (*Carcinus maenas*) which likely came to our shores as hitchhikers via ballasts on ships. As these predators have a special liking for soft-shelled clams, they took up residence in the two salt water estuaries at Kejimkujik Seaside—a unique coastal parcel of land on the south shore of Nova Scotia. Keji Seaside, as most call it, is an adjunct to Kejimkujik National Park and National Historic Site, 75 km inland.

Disaster ensued. Why? Green crabs have a voracious appetite for shellfish; they can tolerate just about any coastal conditions; they are smarter (and faster) than native species when it comes to finding food; and the females release upwards of 185,000 eggs—sometimes twice a year. When Parks Canada biologists studied the health of the two estuaries at Seaside, the damage resulting from the green crab takeover was obvious.

Resource conservation officer Wade Richard was one of the first Parks Canada staff to investigate in 2010. Lucky for me, Wade was also the person who accompanied me on the "Gone Crabbin" expedition. Recounting the first time he laid eyes on these creatures, he said, "I was in a canoe at the Little Port Joli Estuary site. As soon as we stopped and looked down, all we could see were these green crabs. The bottom was crawling with them. We should've filmed it!"

As green crabs are known to rip out entire patches of eelgrass by the root in search of soft-shelled clams, some areas of the estuary were bald. Wade explained that without healthy stands of eelgrass, the protective habitat for clams and other species of salt water life disappeared; a domino effect ensued. Thousands of waterfowl and migrating shore birds stopped

coming to the region as their source of food (clams) had dwindled. As well, without the bivalves, the substrate of the Seaside estuaries were no longer being aerated and large sections became sterile—void of life.

Parks Canada went into high gear and set up pilot projects to deal with the problem. The challenge was two-fold: reduce the green crab population, and regenerate the eelgrass beds—pronto.

As luck would have it, Russell Nickerson, a local fisherman, had already designed and made a trap. "He was one of the first in Nova Scotia to start banging his fists about the green crab," says Gabrielle Beaulieu, the project manager with Coastal Restoration. "He started trapping them out of Port L'Hebert—and Port L'Hebert still has eel grass because of his efforts."

Nickerson's trap was so efficient, it caught over 1000 green crabs the first time it was used by Parks Canada staff, and became the prototype for building more traps.

Since 2010, over two million green crabs have been caught at Seaside and today, most of the traps that are hauled up at Little Port Joli Estuary have very few green crabs. Rather, they usually have several native marine species including various fishes, lobster, eels, and native rock crabs.

Refurbishing the eelgrass was also successful. With the help of many volunteers using various techniques, eelgrass was transplanted at five sites. Gabrielle added, "The 'steel washer' method was the most successful. By tying donor shoots with a paper twist tie to a steel washer, it anchors the shoot." As a result, the overall cover of eelgrass increased from 2 percent to 38 percent in the first two years.

Are the green crabs totally obliterated in the Little Port Joli Estuary? Gabrielle shakes her head. "The crabs are still there—in small numbers. They are still going to have an effect, but they are not going to result in complete desolation. We humans are acting as the predator right now."

In spite of these successful endeavours, Parks Canada is not resting on its laurels. Rather, it started the Gone Crabbin' program whereby visitors



Coastal Restoration project manager Gabrielle Beaulieu and interpretation officer Colleen Anderson help park visitors measure a crab.

can join Seaside's Coastal Restoration Team to continue important work in another location—the St. Catherine's River Estuary.

If you're curious as I am, you'll love this program. As mentioned earlier, I was able to join Wade Richard for the excursion. After gearing up in overhauls and waterproof jacket provided by park staff at the kiosk, I hopped aboard a side-by-side off-highway vehicle with Wade, and we set out along the 3.5 km trail to the shore.

Although it was a bumpy ride in places, en route I saw scads of wildflowers and bushes including mountain holly, wild roses and witherod, or wild raisin—the latter formerly used to make baskets and eel weirs. The landscape had a 3-D quality; even scrubby spruce trees had a majestic

presence. At one point Wade said, "Coming up on your right is the largest garden of wild roses you'll ever see." Indeed—a sight to behold.

At the shore, we climbed aboard a 14-ft rowboat and rowed into the estuary to haul traps. Wade taught me where and how to drop anchor, and how to collect and record data, which includes everything from the crab's sex and size, to notes about water temperature and by-catch (other species caught in the trap such as fish, lobster, and eels).

I'm now an expert on sexing green crabs. Simply turn them over and look at their bellies. Male markings are tall and thin, like a lighthouse; female markings are short and plump, like beehives depicted on jars of honey.

What happens to the crabs? Wade explained that originally they were put in commercial freezers but it took a long time to euthanize them; being tough little critters, they didn't always die. Now (on the advice of Richard Nickerson, the fisherman who invented the trap), the crabs are placed in a fresh water tank for a few hours. End of story.

Well, not quite. The crabs are then brought to a local haskap berry farmer with the agreement that anyone who wants crabs for compost can get whatever they want for free. Research is also taking place to see if chitin can be extracted for the shells and used in biomedical applications. As well, local chefs in the province have been challenged to find ways and means to use them in the culinary world; one chef uses crushed green crabs to enhance the flavour of his seafood chowders.

And that, dear reader, is what Gone Crabbin' at Kejimikujik Seaside is all about. Bonus: being part of citizen science program, and knowing that the research we are conducting with Parks Canada staff is important, is hugely rewarding. It's also hands-on at every level—including rowing the boat to and fro. If you don't know how to do that, you'll soon learn. 🦀



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