

Vertical grid of 20 small squares for notes.

Ocean 11

Pollution 1

Vertical grid of 20 small squares for notes.

Sydney Tar Ponds

Vertical grid of 20 small squares for notes.



Vertical grid of 20 small squares for notes.



Vertical grid of 20 small squares for notes.



Vertical grid of 20 small squares for notes.



Vertical grid of 20 small squares for notes.

Video: Tar Ponds 1989

Vertical grid of 20 small squares for notes.



Vertical grid of 20 small squares for notes.

Tar Ponds

Empty rectangular box with a dotted border.



Empty rectangular box with a dotted border.



Empty rectangular box with a dotted border.



Empty rectangular box with a dotted border.



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Protests

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## Invasive Creatures



When zebra mussels were imported unintentionally to the Great Lakes their population suddenly exploded, colonizing and eventually choking the expensive plumbing of industrial plants. A species of jellyfish has recently invaded the Black Sea, displacing more than 80 per cent of the indigenous species in the process and ruining commercial fisheries. Some of these invasions have had a high media profile. The introduction of sea lampreys into the Great Lakes via the St Lawrence Seaway caused millions of dollars damage to valuable sports fish stocks and garnered public attention. And hybrid Africanized honeybees that escaped from a Brazilian lab 40 years ago were sensationalized as "killer bees" because they are more prone to sting aggressively. Their migration north from South America has been steady. By displacing more easily handled European bees as they advance, the Africanized bees threaten to add costs to North America's domestic honey industry.

## Land and Sea: Green Crabs



## The Green Crab



22 minutes

Larger vessels have been able to enter the Bras d'Or in recent years. These vessels have to load water as they unload their cargoes. In the case of the gypsum bulk carriers, this water is usually from some industrial port in the southern United States.

After their return to Cape Breton in ballast, this water ballast is dumped into the Bras d'Or, as gypsum is loaded for another trip south. A local pilot of these vessels recently confirmed this practice. The main concern is that the changes, described above, could be indicators of some of the affects of thousands of tonnes of ballast waters regularly inoculating this pristine sea. The Green Crab might be the best indicator, given that it was first introduced to southeastern U.S. in ballast of European vessels.

The green crab is a serious, clam enemy. In the last ten years it has worked its way up the coast of Maine and in 1951 it appeared in Canada. Now it occupies both the Nova Scotia and New Brunswick side of the Bay of Fundy and last year there was evidence from Wedgeport that it is rounding the southwestern tip of Nova Scotia and spreading eastward along the outer coast. It is increasing rapidly in this area and young molluscan shellfish are its favourite food. Wherever it has appeared it has attacked clam stocks and in some cases practically wiped them out. We know little about its food habits or what would happen if it pushed its way into other clam areas or into oyster areas like the Bras d'Or Lakes and the southern Gulf of St. Lawrence. While searching for some means of control the Fisheries Research Board is trying to keep up to date in knowing how far the animal has extended its range. We need all the information we can get about this new menace to our shellfish stocks.



The green crab usually measures two to three inches across the shell and on first sight it is often mistaken for one of the two species of rock crabs commonly seen along our shores and taken in lobster traps. The rock crabs ordinarily grow as large as five to six inches across the shell and their greater size alone may often distinguish them from green crabs. As the name suggests, green crabs are greenish in general appearance but many of them, especially older ones, are so mottled with black as to scarcely justify their name. Ordinarily, rock crabs are brown or reddish-brown and can thereby be distinguished from green crabs. Green Crab *Carcinus maenas* has five large, sharp, teeth on each side counting outward along the shell.



Fisheries and Oceans Canada

The habits of green and rock crabs differ, too. Green crabs live from high-water mark down to a few fathoms below low-water mark on rocky, sandy or muddy shores. They are quick walkers, able swimmers and expert burrowers in sand. When the tide is low, they stay on the beaches burying themselves in sand or hiding under weed or stones. If cornered, they fight fiercely.

By contrast, rock crabs tend to spend their time below water and except when small, are not common on beaches at low tide. They are clumsy walkers and cowardly. The surest and best basis for identification is a tooth-count of the shell edge. The green crab has five large, sharp, teeth like the teeth of a rip saw, on both sides, counting outward from the eye along the shell edge. In contrast, the two species of rock crabs, which resemble one another very closely, have nine or eleven such teeth, and many of them are small and rounded.

Scientists have discovered the green crab capable of learning and improving its prey handling techniques even while foraging. It is also quicker, more dexterous and has more ways of opening shells than other crustaceans, which is where the commercial threat lies. One green crab is capable of eating three oysters and up to three dozen mussels per day. It can dig out clams buried up to 15 centimetres deep in mud or sand. It is a prolific breeder.

There is also concern about the invader's potential impact upon the many migratory birds, which feed heavily on small crustaceans things worse. The habitat in which the green crab thrives most prolifically - protected coastal ponds, lagoons, embayments and estuaries - is prime habitat for both commercial shellfish production and for migrating shore birds.

**Green crab coming soon to a table near you**  
*WebPosted Oct 17 2002 02:19 PM CDT*

**CHARLOTTETOWN** - Researchers at the Food Technology Centre in Charlottetown are hoping to transform green crab from menace to menu item. It is about to test market food products made from the invasive species. Green crab is an invader whose population grows quickly, driving out native oysters, clams and other shellfish.

The centre is working with a Montreal company that has invented a machine which sucks the shell off crustaceans mechanically, leaving the raw meat of the palm-sized crustaceans exposed.

"We've been working with it in the form of crab bisque type products, crab soups, but also crab cakes," says Richard Ablett of the centre. The food tech centre will also do shelf stability trials, to see how long the raw crab meat stays fresh.

A number of fishermen have been given permits to catch green crab for the research.

The first crab cakes made from green crab are expected to be on sale in the southern United States this coming winter.

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