

## Nova Scotia lobster industry on the upswing

The lobster is making a comeback along the Atlantic coast of Nova Scotia after a serious threat to its survival, writes Lyndon Watkins in the *Globe and Mail*. But scientists think it may be necessary to restock lobsters if the industry is to regain its former importance.

Other areas of the Atlantic region contribute to landings of about \$100 million annually. So most Canadians were not aware that along the Atlantic coast of Nova Scotia from Cape Breton to Cape Sable, the succulent lobster was involved in a battle for its existence against man and nature.

From a traditional yield of about 3 500 tonnes a year, the catch along the eastern and southern shores of the province had declined in the past 20 years to between 350 and 700 tonnes. Other areas, notably Newfoundland and the Gulf of St. Lawrence, maintained a fairly constant level of production.

### Contentious issue

The decline, and in some cases the almost total disappearance of lobsters along the exposed Atlantic coast of Nova Scotia, is a scientifically contentious issue. But Kenneth Mann, director of the Marine Ecology Laboratory of the federal Department of Fisheries and Oceans, believes the decline resulted from a combination of factors in which man played a significant part.

Based on his own research and that of other scientists, he thinks the trouble began with the completion in 1955 of the Canso Causeway between Cape Breton and mainland Nova Scotia. The causeway restricted the flow of warmer water along the Atlantic coast, as well as the natural migration of millions of tiny lobster larvae from the gulf.

That might not have led to a depopulation of the lobsters had fishing been reduced. But it was not — at least not soon enough. And because it takes nine years for a lobster to reach market size, no one realized what was happening until much of the damage was done.

In the colder Atlantic waters, locally produced larvae have a lesser chance of survival. So without the former influx of larvae from the gulf, the lobster population steadily declined with continued fishing.

### Sea urchins

The stocks might have been less reduced had the lobster not suffered another



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*After a threat to its survival, the lobster is coming back into its own along the Atlantic coast of Nova Scotia.*

setback — the invasion of its habitat by a huge number of sea urchins.

These spherical echinoderms — neither fish nor crustacean — are usually the prey of lobster. But with the number of lobsters reduced, sea urchins took over their preserve, eating the heavy beds of kelp in which the young lobster hide.

Once the kelp beds had been reduced to barren rock, the lobster crisis intensified. With landings by this time seriously in decline, the federal Fisheries Department tried to reduce catches by buying back the licences of fishermen no longer able to make a living from lobstering.

Some scientists thought the fishing should have been more severely reduced to safeguard the remaining resource. This was not done, however, largely because there was still no conclusive proof of the reason for the stock decline.

### Urchins attacked

Mr. Mann thinks the lobster might have continued to decline if not for another quirk of nature. Three recent years of slightly warmer summers allowed a fungus-like organism, *labyrinthomixa*, to establish itself.

The *labyrinthomixa* attacked the sea urchins. Their numbers have been substantially reduced, the kelp on which they feed is growing again, and the lobsters have come back.

But that is not the end of the story. The Canso Causeway is still preventing

the migration of warm-water lobster larvae from the Gulf of St. Lawrence. Mr. Mann thinks that if lobster landings along the Atlantic coast are to be restored, it may be necessary to raise larvae in captivity and release them in much the same way that salmon rivers are stocked.

The economics of doing this are not attractive. It might cost several dollars to seed enough larvae to produce one surviving lobster. "That is unrealistic. But if the cost could be brought down to less than a dollar, it might begin to be attractive," he said.

The \$100-million primary lobster fishery has a value-added effect of 10 to 20 times the primary value, through processing, retailing and food service sales. So anything that could restore the productivity of the Atlantic Nova Scotia industry might be worthwhile. It now contributes only about 10 per cent of the regional catch, compared with 25 per cent before the decline began.

Mr. Mann's update on the disappearing lobster came at an open house for Nova Scotia businessmen at the Bedford Institute of Oceanography, where his laboratory is located.

## Fossil glow points to oil

A technique used in diagnosing cancer is being put to use by Canadian geologists to help locate oil-bearing deposits off Canada's east coast.

Fluorescence is luminescence from a material which has absorbed energy from radiation. Scientists at the Geoscience Centre of the Ministry of Energy, Mines and Resources, located at the Bedford Institute of Oceanography, are using this fluorescence to date samples of rock and examine how likely they are to be near oil formations.

Because oil is an organic material, scientists look for evidence of organisms to point to rock that may be oil-bearing. Tiny fossils that are most likely indicators of oil gain the ability to fluoresce under ultraviolet light as they undergo changes that form oil. Finding the proper fluorescence can help oil firms target their drilling at the most likely sites.

The formation must also be mature enough for oil to have formed from the organic material. Formations laid down in the most recent eras show a range of colours, but rocks about 10-million-years-old lack blue in their spectrum. Material older than 100-million-years shows only dull red.