



CBU professor helping oysters shuck deadly MSX parasite

By **GREG McNEIL**
CAPE BRETON POST

SYDNEY — An unexpected discovery at a Cape Breton University lab has renewed hope in the revival of the local oyster harvesting industry that was dealt a serious blow by a parasite infestation more than 10 years ago.

Haplosporidium nelsoni, also known as MSX, caused massive mortality rates among oysters in the Bras d'Or Lake in 2002, damaging the annual production industry. The parasite, which is harmless to humans, was later found in Aspy Bay, too.

"I have a system in place that allows oysters to purge or remove this parasite using their own immune system. The next stage now is to find out if we can do this on a bigger scale," said Rod Beresford, assistant professor of integrative science at Cape Breton University.

"If we can do this on a much larger scale, we can prevent oysters from dying, to limit mortalities all of a sudden. The other thing is if we can take oysters from an area where this parasite is present, treat them and then move them to areas where you can grow oysters where there is no parasite."

Beresford's method of removing the parasite stems from an original experiment that looked at mortality rates of infected oysters and how temperatures affected the parasite that caused their deaths.

"My plan was set up at varying temperatures and as soon as I start to see the first oysters dying to take a sample and then look through all the samples."

However, after 12 weeks of investigation, none of the oysters he was studying had died. When he mentioned his frustration with the experiment to Bob Pelly from Innovacorp, Pelly pointed out that he might be onto something. The research was sent in a new direction from there.

"I knew when the oysters went into the tanks they were heavily infected, so I thought there is something wrong. Then I took the sample and couldn't see this parasite in the microscope anywhere."

Beresford believes he now has a fairly consistent, chemical-free laboratory model to remove the parasite.

To date, the method has involved 300-400 oysters tested at a time in small experiments at

CBU. The next step will begin this spring in an Innovacorp-sponsored study that will test the method on a commercial scale in larger tanks with thousands of oysters.

Before the larger experiment begins consultation is planned with all stakeholders from the Department of Fisheries and Oceans, First Nations communities and others who rely on the fishery.

"I want to put all the people in a room who have an interest in seeing this go forward because if we design this experiment right, we want to do it so there is something in it for everybody."

In the short term Beresford sees the experiment as a way to keep the industry where it is today. It could also be part of a long-term strategy for growth, which is the reason Louisbourg Seafoods is also supporting the study.

"In Cape Breton you are not allowed to harvest them, but we were involved and we will be back involved as soon as we can find the (solution) to it," said Danny Hansen of Louisbourg Seafoods. "We just bought a mussel farm and as soon as we find a solution to this MSX we wish to expand into oysters in a commercial way."

Fuel costs and other increasing industry expenses make harvesting new species the company's best option for expansion and Beresford's work has created an excitement over that possibility, he said.

"The oysters are a big industry and everybody had to shut it down — industry and government — because of the MSX, and now he's doing a project there and we are also involved with the Nova Scotia Aquaculture Organization and the First Nations and they are doing a big project on oyster research and what it means to try to heal this and get back at it."

The Department of Fisheries and Oceans is providing in-kind support where possible to the project. They are also offering insight and direction related to previous outbreaks of MSX and access to research that has been done in other parts of the world.

"I definitely think it's a worthwhile research initiative," said the DFO's Lorne Penny. "Of course, everyone involved in the oyster industry is hopeful that it



Cape Breton University professor Rod Beresford displays some oysters at his lab at the university. STEVE WADDEN - CAPE BRETON POST

will provide some further insight as to what can be done to manage around the effects of MSX."

In New Brunswick and on Prince Edward Island, the oyster industry is significantly larger than it is in Cape Breton. Though MSX has not been detected in those areas, Beresford said those provinces are interested in local findings.

"They want to develop a mitigation strategy should this thing arrive on their doorstep. If we can do the research here to find out ways to grow oysters and have an industry despite this parasite, we can share it with them."

A possible tradeoff for that information would be the sharing of better growing models, he said.

"I would say the Nova Scotia industry is 10 per cent of P.E.I. It is not absolute zero, but it is really small compared to what it was at one time. The real interest I think in a lot of people, especially regulators and the industry, is there is great potential here. The Bras d'Or is well known for spatfall and a nursery-type thing for oysters because there is all kinds of coves that cause lots of oysters to spawn. They used to move them all over the place to New Brunswick, to P.E.I., to places in Nova Scotia, but all that is at a standstill right now."

Beresford said there's also interest from the United States where MSX was first noticed in 1947 in the New England area before it slowly moved north and south over the following 45 years.

Representatives from the Virginia Institute of Marine Studies first visited Cape Breton in 2007



Cape Breton University professor Rod Beresford looks over an oyster sample for the parasite MSX. STEVE WADDEN - CAPE BRETON POST

and were also part of a recent oyster workshop in Wagmatcook in November.

"From their perspective there is a real research interest. More than 90 per cent of the research on this parasite has been done by them."

Still, there are many biological unknowns that remain about the virus, he added.

"I suspect other places will want to learn more about this as it progresses."

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Getting to Know...



AGE: 55 – STILL SEARCHING FOR FREEDOM
OCCUPATION: WRITER, INFORMATION AND CONTENT DEVELOPER, FENCING COACH, MATH TUTOR, CO-PROPRIETOR OF ESPLANADE EXECUTIVE SUITES

What was your first job? Working in the stockroom of the housewares department at Simpson's. I always liked retail after that.

What talent would you most like to have? The ability to write and perform love songs of enduring popularity.

Coffee or tea? Half-decaffeinated coffee. They call it arf'n'arf at the Bean Bank.

What is your favourite food? It's a toss-up between Cape Breton maple syrup and Cape Breton wildflower honey.

Favourite movie? "The Princess Bride." My sons and I were so enamoured of the sword-fighting scene between the Man in Black and Inigo Montoya, the world's greatest swordsman, that we started the YMCA Musketeers Fencing program here in Sydney.

Favourite book? I read a lot. I don't think I could choose a single favourite book. Science fiction would be my favourite genre.

Favourite music? These days I especially like the music of Don Crouse and Jean Robertson. They perform jazz and gospel duets around Cape Breton. They are amazing and inspirational.

How do you spend your leisure time? Athletics, espe-

Peter Ross

Peter arrived in Cape Breton as a CBC-Radio field reporter in

HOME: SYDNEY; BIRTHPLACE: LONDON, ONT.
FAMILY: PART OF A FAR-FLUNG EXTENDED CLAN OF ROSSES AND HONSBURGERS AND ADOPTED BY OTHERS HERE IN CAPE BRETON. I HAVE TWO CAPE BRETON SONS WHO CURRENTLY LIVE IN ONTARIO,

1993. He has since become a collector of Cape Breton treasures, stories and friends.

His latest acquisition is a storied Sydney mansion that he and partner Karen Crouse have turned

into Esplanade Executive Suites, a boutique hotel for extended-stay travellers.

Peter is an information and content developer at Sydney's MediaSpark Inc.

AND I AM RECENTLY BETROTHED TO KAREN CROUSE, MY SOULMATE AND NEXT OF KIN.
PETS: I GREW UP WITH BIG DOGS. THESE DAYS I HAVE A SNOW GLOBE WITH SYDNEY HARBOUR PLANKTON IN IT. DOES THAT COUNT?

cially fencing, skiing and mountain biking. Otherwise, you can probably find me puttering in the yard.

What is your pet peeve? Litter. I just don't get it.

What trait in people do you most admire? Other people's patience and good humour have saved my bacon a lot of times. I am thankful for those. I like to cultivate listening skills and determination for myself.

What is your motto or favourite saying? My mom used to say 10 short words: If it is to be it is up to me. My dad used to say: It's a great life, if you don't weaken!

What is your favourite thing about Cape Breton? The climate! Ha, just kidding! The people of Cape Breton are wonderful. I love the close proximity of nature. I love talking to people from away. I love Cape Breton's music tradition. I love roads that end at the sea. I love the success of Cape Breton's Mi'kmaq communities. I love ballroom dancing at Doris MacDonald's class on Friday nights. I love the sound of steel-on-steel in fencing class. I love this fixer-upper mansion that I own with Karen, and our view of Wentworth Park.

What is your favourite place to travel? I like ski holidays. My beloved likes beaches. We are actively searching for a place that has a ski hill within a one-hour drive of a beach. We have heard that there is sometimes snow on the mountaintops of Hawaii. That might work.