

## Application: Snow Crab Research in Canada (Dr. Mikio Moriyasu, Head/Snow Crab Section)



Federal Dept. of Fisheries & Oceans, New Brunswick, Canada

The main objective of the Snow Crab Section is to evaluate the numbers and stock condition of the snow crab population on a yearly basis for the southern Gulf of St. Lawrence and eastern Nova Scotia. In 2000, the total landings of snow crab were over 19,000 tonnes in the Gulf Region, and 9,800 tonnes in eastern Nova Scotia.

The snow crab team has been conducting a unique large-scale trawl survey since 1988, for the Southern Gulf and since 1997, for eastern Nova Scotia.



In addition, biological research is conducted on various aspects of the snow crab life cycle, such as growth, reproduction, diseases and movement. This research helps provide a better understanding of the population dynamics of the species.

The majority of these activities are financed by a DFO/Industry partnership. The snow crab team keeps in close contact with the fishing industry through frequent informal and advisory meetings; for example, 60 meetings were attended in 2000/2001. A publication of the section's newsletter called Crabwise is also distributed to all industry members once or twice a year.



Leica ST4040 linear stainer and Leica TP1020 semi-enclosed tissue processor

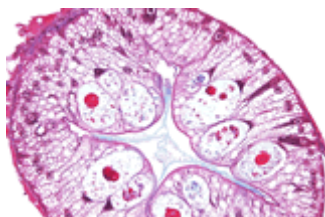
**Primary activities:**

- Estimate the exploitable snow crab biomass in the southern Gulf, Cape Breton and Nova Scotia.
- Develop a framework for the assessment of snow crab population parameters.
- Study the key events in the snow crab life cycle.
- Describe crab movements between various management areas.
- Continue tagging studies off the coast of Cape Breton.
- Study the performance of various types of traps.
- Continue to develop a target exploitation rate and biological reference points.
- Study the biology of males after moulting and examine the strategy to protect recruitment to the fishery.
- Study the long term population biology in the main fishing ground in the southern gulf
- Study population biology and life cycle of other crab species such as northern stone crab, lady crab, green crab.



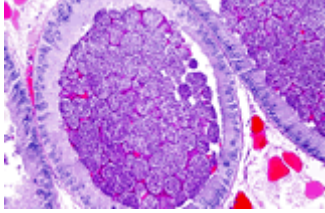
Leica MZ 6 microscope with DC300, Leica RM2155 rotary microtome

**Application images:**



Cross section of hepatopancreas of snow crab (*Chionoecetes opilio*) sectioned at 5 microns and stained with Masson's Trichrome.

For more details: Benhalima, K. and Moriyasu, M. 2000. Structure and function of the posterior vas deferens of the snow crab *Chionoecetes opilio* (Brachyura, Majidae). *Journal of Invertebrate Reproduction and Development*, 37: 11-23.



Cross section of vas deferens of Jonah crab (*Cancer borealis*) sectioned at 5 microns and stained with Masson's Trichrome.

For more details: Moriyasu, M., Benhalima, K, Duggan, D., Lawton, P. and Robichaud, D., 2002. Reproductive biology of male Jonah crab, *Cancer borealis* Stimpson, 1859 (Decapoda, Cancridae) on the Scotian Shelf, Northwestern Atlantic. *Crustaceana* 75(7): 891-913.