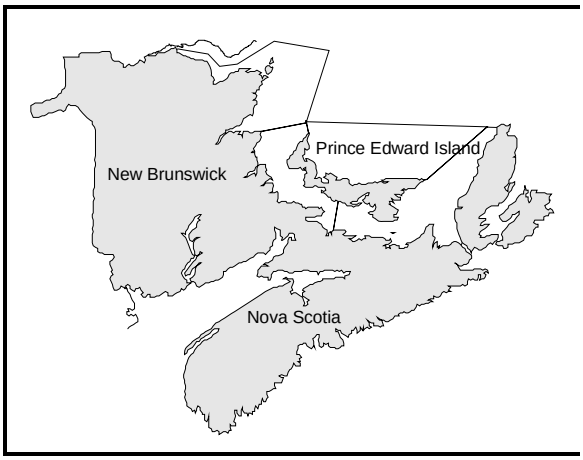

Southern Gulf Northern Quahaug

Background

Northern quahaugs (Mercenaria mercenaria) are bivalve molluscs found in the intertidal to subtidal zones of shallow, protected coastal embayments from the southern Gulf of St. Lawrence to the Gulf of Mexico. Their distribution is limited to areas with water temperatures > 20^0C and thus their most northern occurrence is in the southern portion of the Gulf. They are not found naturally occurring north of the Miramichi estuary. Their distribution often overlaps with that of American oysters. Recruitment success in the Gulf of St. Lawrence populations is sporadic from year to year. Sexual maturity is reached at a size of 33 mm, however, quahaugs are protandric (change sex from male to female with age) and the sex ratio of the population changes with the age distribution.

The northern quahaug fishery complements the oyster fishery. For example, there is a concurrent oyster and quahaug spring relay fishery in PEI. The main commercial beds are located in the Miramichi and Cocagne areas in NB, Hillsborough Bay area in PEI and Pugwash/Wallace area in NS.

The fishery consists of open and closed commercial* components and a recreational one. Fishing gear is restricted to hand tools and diving is usually prohibited. There are presently no mechanical harvesting or dragging activities in this fishery. There are over 300 harvesting licenses issued in the southern Gulf with an additional 34 relay licenses in PEI.. Commercial licenses have been mandatory since 1994.*

All fishing activity is regulated by a minimum legal size and the recreational fishing is also restricted to a personal daily bag limit.

The main conservation measure for the quahaug resource is the enforcement of the minimum legal size. Fisheries managers do not presently attempt to control fishing effort through TACs or restricted fishing seasons. License renewal is not dependent upon previous year's activity.

The Fishery

Management: The quahaug fishery is composed of three major components: i) open water commercial*, ii) closed areas (bacterially contaminated)* and conditionally approved commercial* and iii) recreational. All three adhere to a minimum legal size regulation which is 50mm in NB and 38mm elsewhere. The recreational component has been controlled by a daily bag limit since 1994 (300 NB and PEI, 100 NS, total mix of all clam species). Harvesting activity in areas closed due to bacterial contamination has increased the relay fishery mainly in PEI and NS.

Landings: Commercial quahaug landings in the southern Gulf have declined steadily over the past five years. The 1995 landings are 50% less than observed in 1990. The high landings observed in the early 1990s may be attributed to a high catches from fishing new resources in previously closed areas. The landing statistics do not capture any data from the recreational fishery which is substantial in many areas.

Summary of quahaug landings (mt) for the southern Gulf areas of NB, PEI and NS.

Area	85-89 Avg	1990	1991	1992	1993	1994	1995*
NB	209	178	400	201	190	118	66*
PEI	426	765	554	559	521	463	368*
NS	30	28	89	99	89	58	50*
Total	665	971	1043	859	800	639	484*

* Preliminary data

Available from: Maritimes Regional Advisory Process, Department of Fisheries and Oceans, P.O. Box 1006, Stn B105, Dartmouth, Nova Scotia, Canada B2Y 4A2. Telephone: 902-426-8487. E-mail: d_geddes@bionet.bio.dfo.ca

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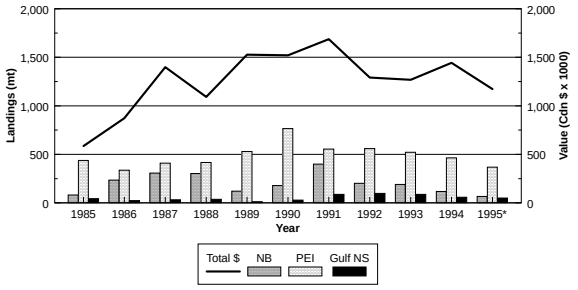
Northern quahaug landings for the southern Gulf from 1985-1995 showing the landings (bars) and landed value (line). Data for 1995 are preliminary.



Management considerations:

Is the current size limit appropriate to provide adequate spawning? The present minimal size limit is set at 50 mm in N.B. and 38 mm in P.E.I. and N.S. The only reference to size at sexual maturity for quahaug is reported to be at 33 mm (Eversole et al. 1980). Quahaugs , however, switch sexes with most starting as males. Since females produce fewer gametes then males, it would be preferable to have a larger minimum size limit to ensure a greater proportion of females in the reproductive stock of a quahaug bed.

The market demand (highest prices paid fishers) is for "little necks" which are between 50-63 mm in length. In light of the increased effort that may result because of the market demand for the smaller size classes, (little neck) size classes, the incidental fishing mortality on all size classes may also increase. It is suggested for further discussion that the larger part of the adult population be maintained for broodstock as a basic conservation method. One option, therefore, would be to implement a maximum size limit of 63mm (2.5") to protect the larger animals, thus maintaining the larger size range (older age classes) in the population for breeding, assuming there is no senescence.

Opening new areas. In addition, the overfishing may be more serious because the harvest in previously closed areas may be impacting the previously protected broodstock.

For More Information

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Glossary of Mollusc Fisheries

Public Relay Fishery: The commercial fishery that usually occurs in the spring of the year with licences issued under the Maritimes Region Contaminated Fishing Regulations where shellfish are harvested from marginally contaminated areas and relayed to clean (open) water leases for cleansing. There are no direct sales for human consumption but all product is cleansed (depurated) and processed through federally registered fish processing facilities under the Canadian Shellfish Sanitation Program (National Shellfish Sanitation Program in the USA).

Leasehold Fishery: The commercial harvesting of shellfish (usually oysters) that occurs only on open water registered leases by lease holders for direct market sales. This activity usually precedes one month before (Sept. 1)the open water commercial fall fishery (Oct. 1).

Contaminated Relay Fishery: The commercial harvesting of shellfish in marginally bacterially contaminated areas (as defined by Environment Canada under the Shellfish Harvesting Area Water Classification Program as part of the Canadian Shellfish Sanitation Program) that allows the product to be moved only to designated clean water areas (leases) or registered depuration facilities for cleansing (depuration) prior to marketing for human consumption.

Open Area (Water) Fishery: The commercial harvesting of shellfish in clean water areas that are not contaminated with bacteria (i.e. clean open water) as defined by Environment Canada under the Shellfish Harvesting Area Water Classification Program as part of the Canadian Shellfish Sanitation Program.

Conditionally Approved Area (Water) Fishery: The commercial harvesting of shellfish in areas that are approved on certain environmental conditions being met for access to the area as defined by Environment Canada under the Shellfish Harvesting Area Water Classification Program as part of the Canadian Shellfish Sanitation Program. These areas can be closed at certain times of the year because of bacterial contamination brought on by heavy rainfall, spring runoff or the malfunctioning of a sewage pumping control station. A strictly defined overlay water sampling program must be conducted with the results analyzed by a certified laboratory and reviewed by Environment Canada and DFO Inspection to ascertain that clean water conditions have returned to normal before the area can be re-opened to commercial fishing activities.

Closed Area (Water) Fishery: The harvesting of shellfish under special licence issued under the Maritimes Region Contaminated Fishing Regulations in areas that are closed to all other commercial fishing year-round because of continual bacterial contamination. Contamination originates from both defined and non-point sources. All shellfish are moved in sealed containers from the harvesting site directly to registered depuration facilities for cleansing and health safety inspection prior to marketing for human consumption.

Reference

Eversole, A.G., W.K. Michener and P.J. Eldridge. 1980. Reproductive cycle of *Mercenaria mercenaria* in a south Carolina estuary. Proc. Natl. Shellfish Assoc. 70: 22-30.