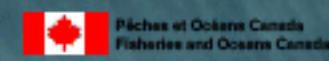


Biological traits of Arctic cod (*Boreogadus saida*) from Franklin Bay, winter 2004



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INTRODUCTION

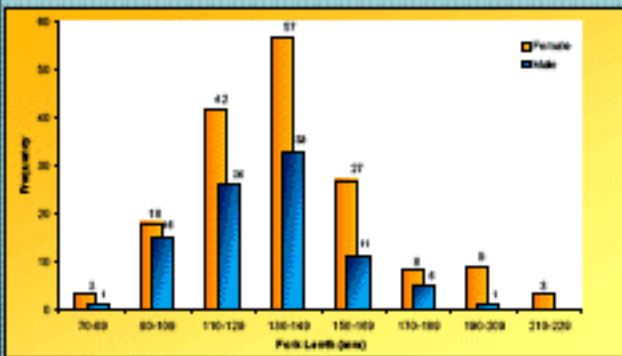
Arctic cod (*Boreogadus saida*) is a key species in Arctic marine ecosystems as it constitutes a major trophic link between zooplankton, marine birds and mammals, and ultimately man. Basic biological information is required to assess how this important pelagic forage fish is impacted by its changing environment.

MATERIAL

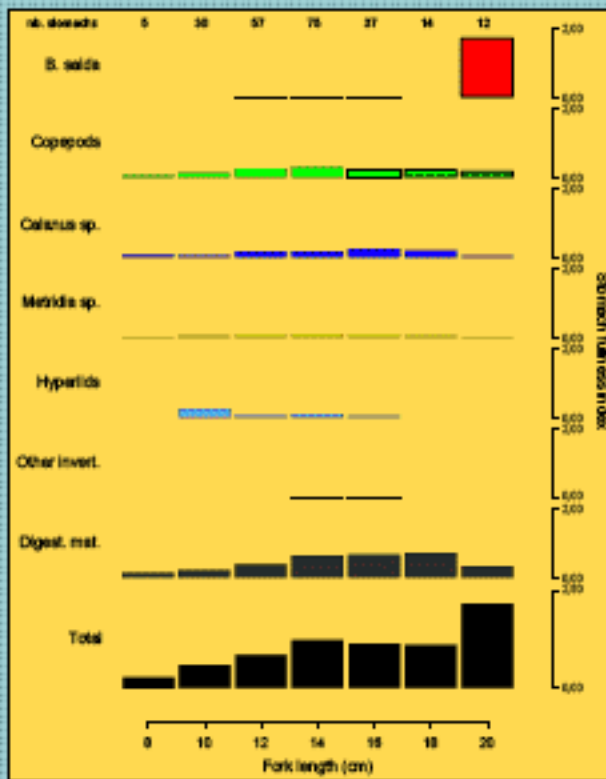
Arctic cod samples were collected between December 2003 and May 2004 at the CASES overwintering site in Franklin Bay.

RESULTS

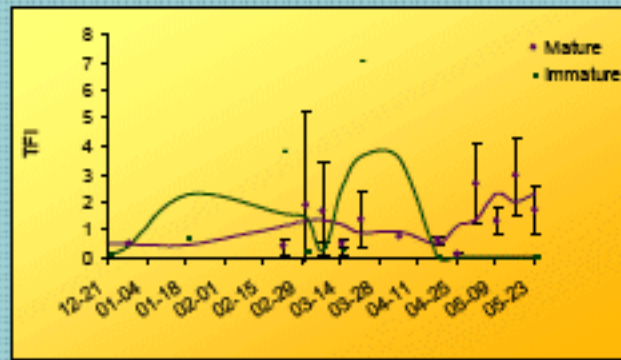
Length Frequencies



Arctic cod diet as a function of size

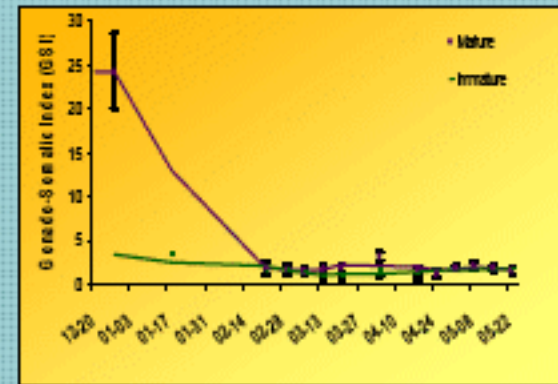


Temporal variation in stomach fullness



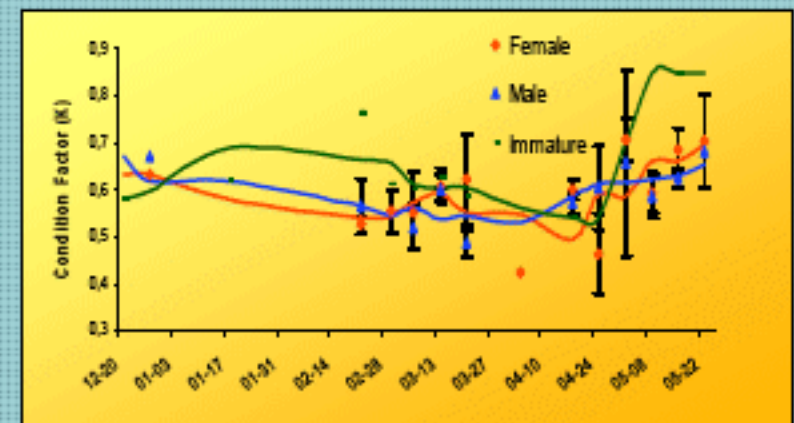
- ♦ Too few immatures to say anything.
- ♦ No difference between males and females.
- ♦ In adult fish, somewhat consistent with reduced feeding during the spawning period which ends in late February; variable afterwards and higher in May.

Temporal variation in the gonadosomatic index



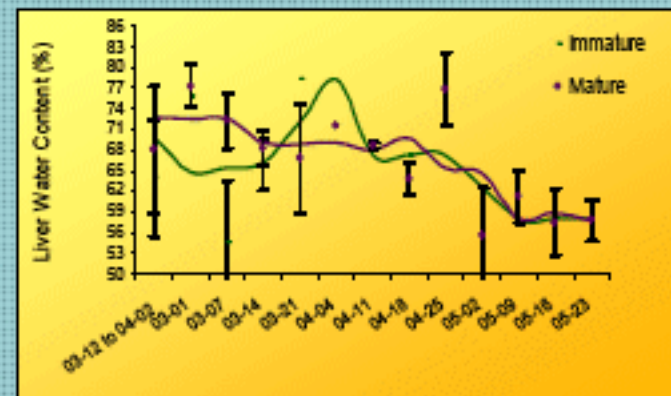
- ♦ No difference between sexes thus males and females presented together.
- ♦ Spawning over by the end of February

Temporal variation in the Fulton condition factor (K)

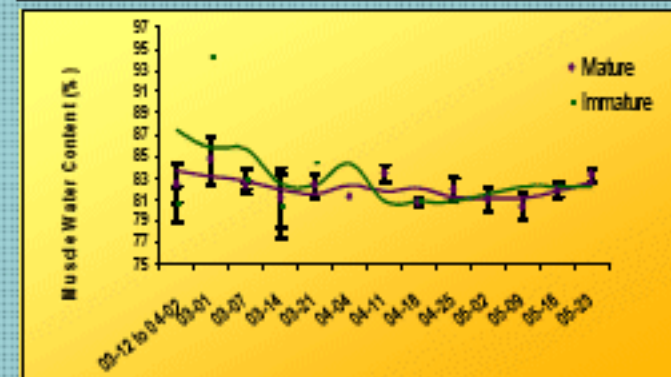


- ♦ Tends to decrease through the winter until the end of April and improves afterwards in all three groups.
- ♦ Contrary to most other gadoids, Arctic cod may not increase feeding immediately after spawning.

Temporal variation in liver and muscle tissue water content

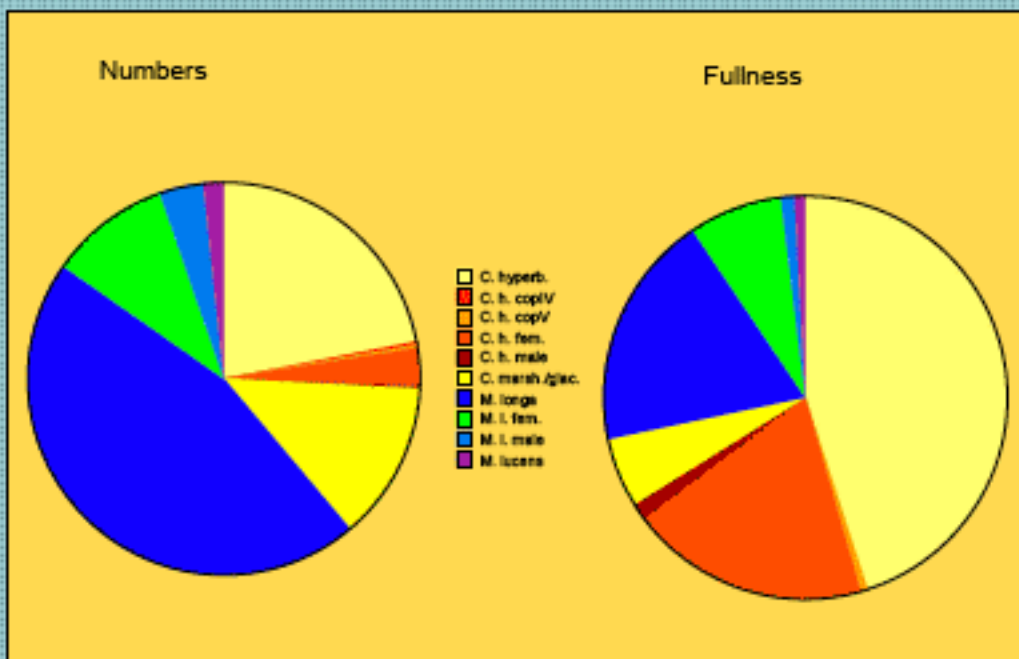


- ♦ In Atlantic cod, there is a strong negative correlation between liver and muscle energy content and water content.



- ♦ N for immature too low and results highly variables.
- ♦ Some indication that the energy content began to improve in May.

Relative contribution of most important copepods in the diet of *B. saida*



- ♦ The most abundant copepods in the stomachs of *saida* were the two largest species in the area (*C. hyperboreus* and *M. longa*). Furthermore, females, the largest individuals of each species, were also abundant.

- ♦ It is thus possible that *saida* select the largest planktonic prey available (better energy return).

- ♦ Comparisons with plankton samples are necessary to confirm prey selection.

CONCLUSION

During the 2003-2004 winter in Franklin Bay, spawning of *B. saida* was mostly completed by the end of February. Feeding intensity was low during spawning, resumed slowly afterwards and may have been higher in May. *B. saida* preyed mostly on copepods and *Calanus* sp. contributed most of the prey biomass. Condition and energy content tended to decrease until May and to improve with feeding intensity.

ACKNOWLEDGMENT

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