NORTH ATLANTIC SALMON CONSERVATION ORGANIZATION

ORGANISATION POUR LA CONSERVATION DU SAUMON DE L'ATLANTIQUE NORD

Agenda item 6.9

**Council**

**CNL(00)48**

***Predators: Effects on Atlantic Salmon***

***(Tabled by Canada)***

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## Predators: Effects on Atlantic Salmon

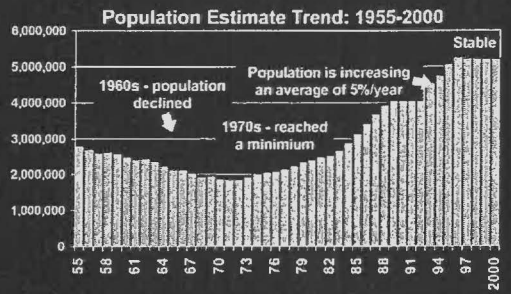
## Predators: Fish Consumption

- Need to understand consumption of fish
- Use model to estimate consumption
- Requires information on:
  - geographic distribution by season
  - total number in Canadian waters
  - energy requirement
  - diet - by age, location & season

## Predators: Salmon Consumption

- Biomass of NA post-smolts about 1600 t
- Consumption of all prey in Cdn waters about 2.4 million t (seabirds)and 3.8 million t (seals)
- If seabirds and seals consume all post-smolts, it would only be 0.04% of their diet
- Impracticality of directly estimating expl. rate on NW Atlantic scale
- Direction from ICES that focus should be on local sites and elements of predator ecology

## Potential Predator: Harp Seal




## Harp Seal: Total Consumption

- Total prey consumed in 1994 estimated at **6.9 million tonnes** (3.2 of this from Arctic waters )
- Atlantic cod formed 3% of seal diet in Nfld. and 5.6% in Gulf
- Majority of fish eaten are 10-20cm
- Only 2 salmon appeared in these diet studies

## Potential Predator: Grey Seal

*Population:*

- 144,000 in 1993 - has been increasing

*Diet:*

- Atlantic Cod, herring & capelin
- estimated 40,000t of cod consumed in 1994

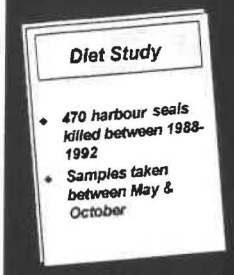
**Gulf of St. Lawrence Study**

- 87 food-containing stomachs examined
- 2 salmon found

*Conclusion:*

Grey seal may be a locally important predator but not at the population level

## Potential Predator: Harbour Seal




*Findings:*

- *only 250 of 470 stomachs contained prey remains*
- *Herring, cod, pollock & short-finned squid - 72%*
- *Only anadromous fish found were 3 Blueback herring and 1 salmon*

## Questionnaire - Salmon Fishery/ Labrador 1997

- *Interactions all along Labrador coast*
- *Harp and grey seals "problem" along coast*
- *Harbour and ringed seals more prevalent in rivers and river estuaries*

## River Observation Program: 1998-2000

- *Logbook program started in 1998 for personnel at counting fences and fishways to document seal, bird and land mammal (mink, etc.) predation*
- *Not all rivers have seal problems*
- *Where problems exist, different species of seals may be involved*

## Paradise River, Labrador: 1998-1999

- *Documentation of location and use of seal haul-out sites*
- *Monitor presence and behavior of seals in vicinity of salmon traps*
- *Biological sampling: 9 seals shot and recovered in 1999 (5 empty stomachs and contents of 4 remain to be analyzed)*

## Seal Predators:

- *Panel (3 scientists and former provincial deputy minister) to report in fall 2000.*
- *will assess the available scientific information on the diet of seals and the impact of seal predation.*
- *also advise on whether, and to what extent, seal exclusion zones or experimental culls would provide protection to local populations of fish.*
- *DFO working on regulatory amendments that would allow the killing of nuisance seals where they pose a threat to migrating and vulnerable fish stocks or to aquaculture facilities.*

## Campbellton River, Nfld: 1998-2000

- *Studies in 1998 and 1999 on cod consumption; both Rock cod and Atlantic cod preying on smolts near estuary; Rock cod higher rate*
- *Gulls, gannets and loons also observed feeding on salmon ; not quantified*
- *Harp seals (15) observed in 2000 feeding on adult salmon , incl tagged kelt from 1999*

## Gannets, Funk Islands, Nfld.

- *Gannet is largest seabird, can prey on post-smolts until mid-October*
- *post-smolts 0.3% of gannet <u>August</u> diet 1977-89 then 2.8% of diet 1990-1999*
- *gannets consumed about 3% of total NA post-smolt biomass in August only; other months unknown*
- *Funk Islands colony contains 1/8th of region's breeding gannets*

## *Predator Control Programs:*

- *Cormorant program (5 year) announced in May in Ontario to examine effects on fish and wildlife and sensitive vegetation*
- *Includes baseline monitoring, testing of harassment techniques and experimental control in spring 2001*
- *US Fish and Wildlife undertaking 2-year Environmental Impact Study on cormorants to develop National Cormorant Management Strategy*

## THE FUTURE

- *Workshop on Research Strategies (June 12-14)*
- *Report of Eminent Panel (Fall 2000)*
- *International Cooperation Needed*
  - *North Atlantic-wide issue*
  - *Shared approaches most efficient*
  - *As research results available, further discussion on management approaches*