

REPORT OF ICES ADVISORY COMMITTEE
ON
NORTH ATLANTIC SALMON STOCKS
TO
NORTH ATLANTIC SALMON
CONSERVATION ORGANIZATION
NAC Area
CNL(13)8

10.3 Advice generated by ICES in response to terms of reference from NASCO

With respect to Atlantic salmon in the North American Commission area:

- 1. Describe the key events of the 2012 fisheries (including the fishery at St Pierre & Miquelon);**
- 2. Update age-specific stock conservation limits based on new information as available;**
- 3. Describe the status of the stocks.**

N.B. No catch advice provided – West Greenland Framework of Indicators (applied January 2013) did not signal a significant change in stock status. Previous multi-year agreement continues and no reassessment required.

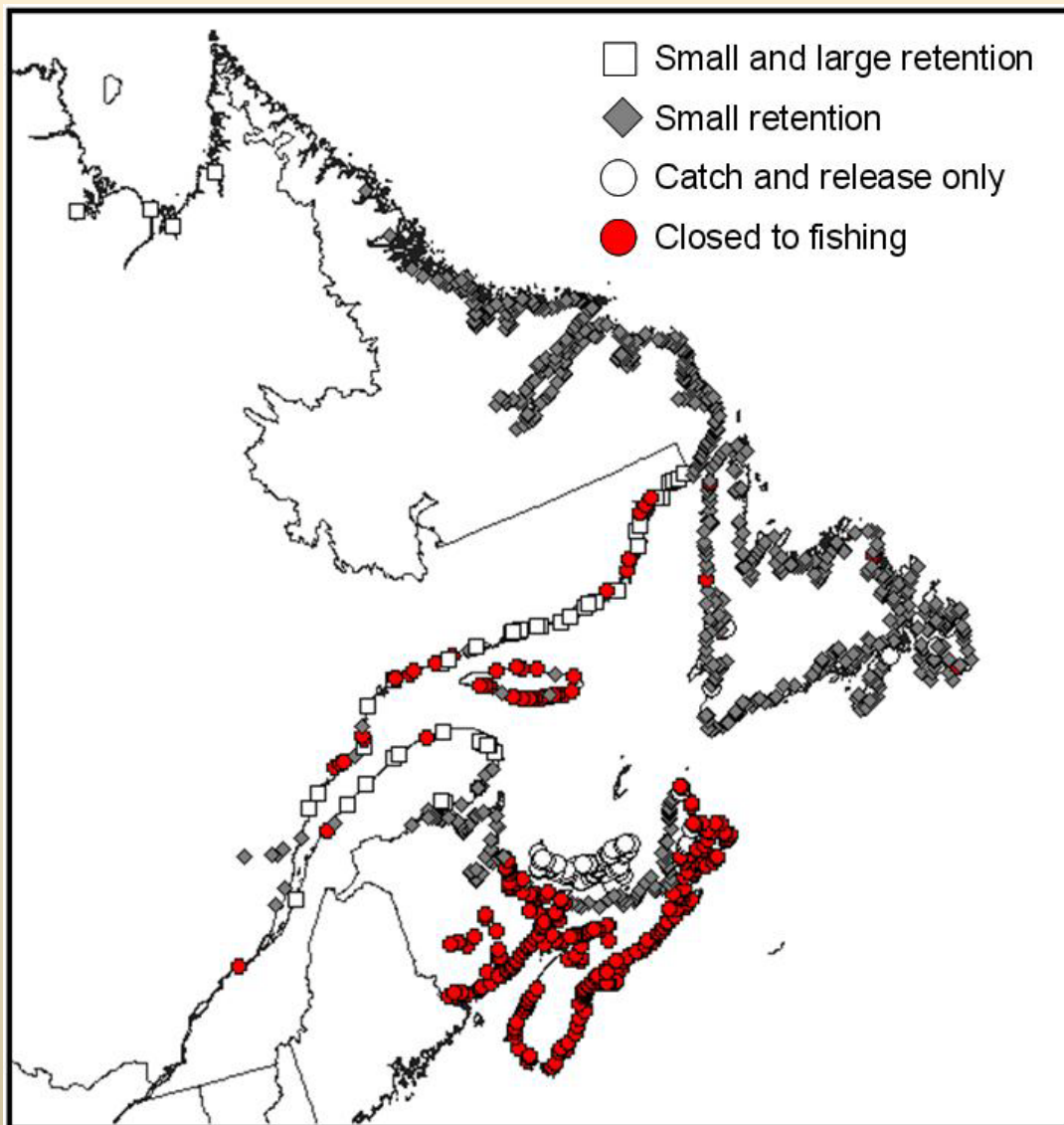
Key events of the 2012 fisheries

Gear and effort

- ☐ Three groups exploited salmon in Canada in 2012:
 - Aboriginal peoples;
 - Resident's subsistence fishery in Labrador; and
 - Recreational fishers.
- ☐ No commercial fisheries in Canada in 2012 (closed since 2000)
- ☐ No recreational or commercial fisheries for Atlantic salmon in USA in 2012
- ☐ France (Islands of St. Pierre & Miquelon)
 - Nine professional and 60 recreational gill net licences

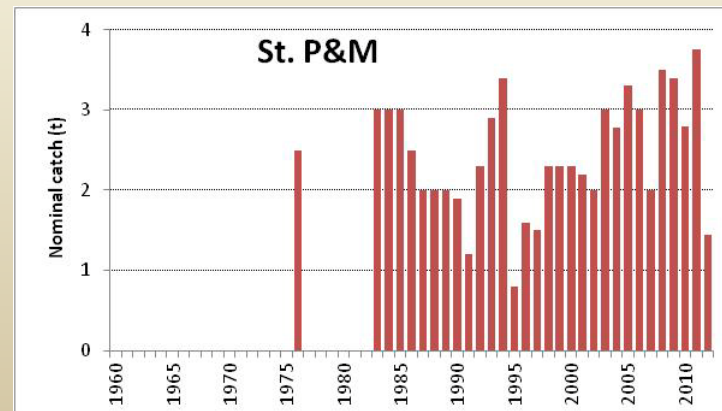
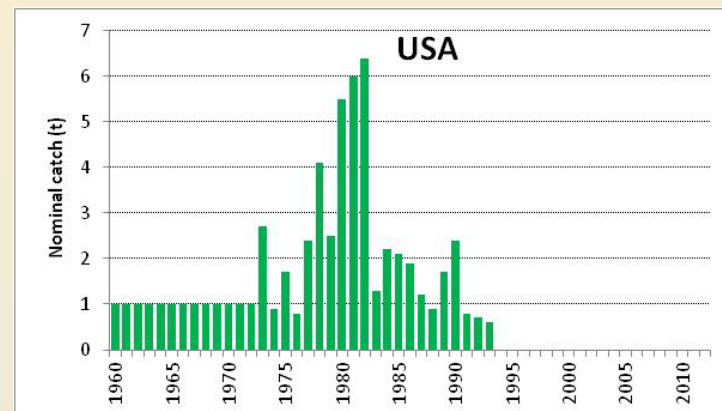
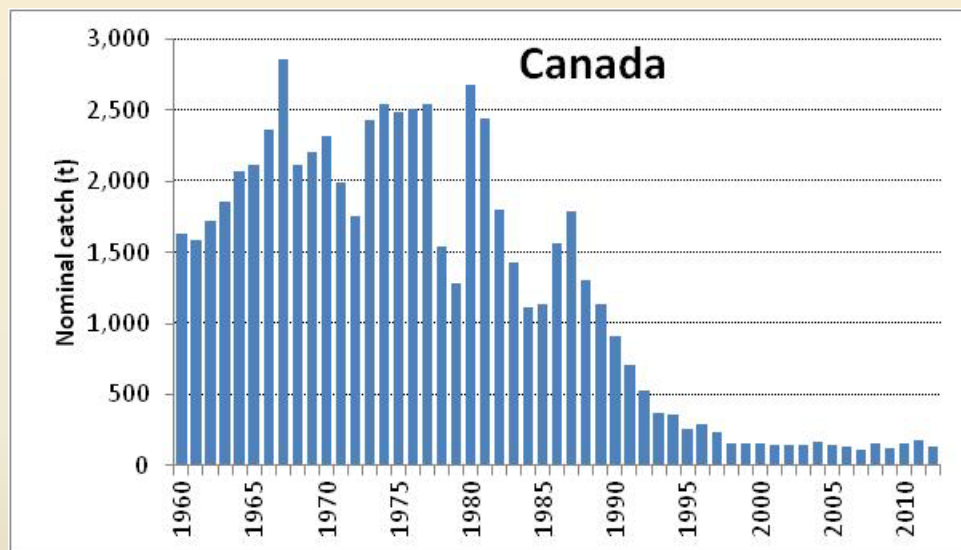
Gear and effort

Recreational fisheries – regulatory measures vary between areas and large portions of the south closed to all directed salmon fisheries



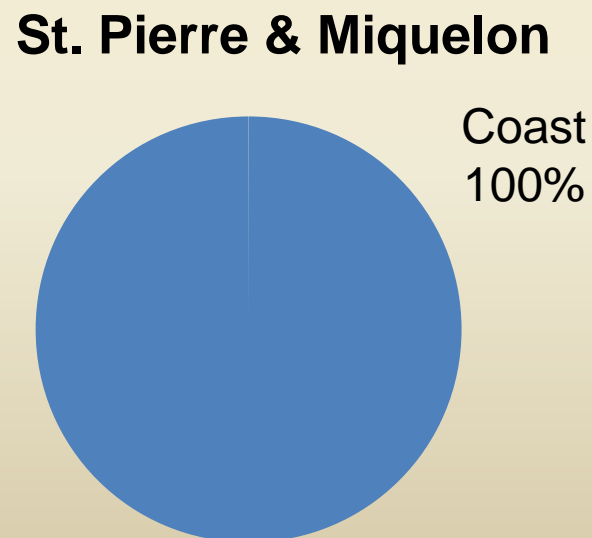
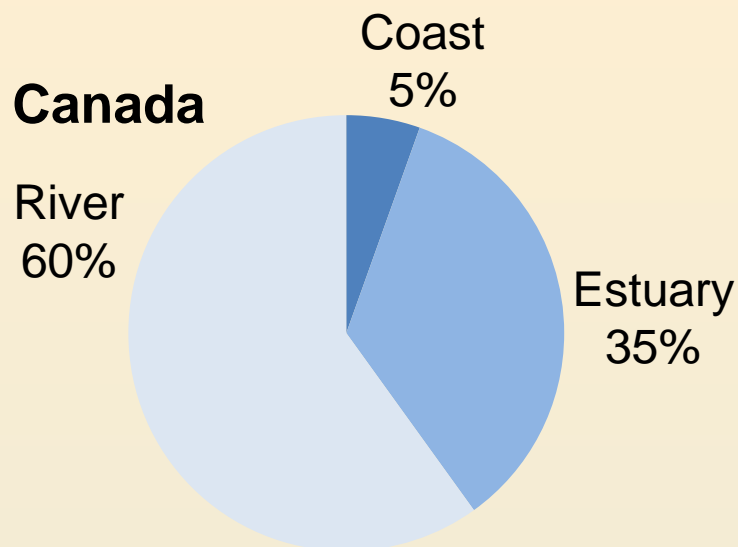
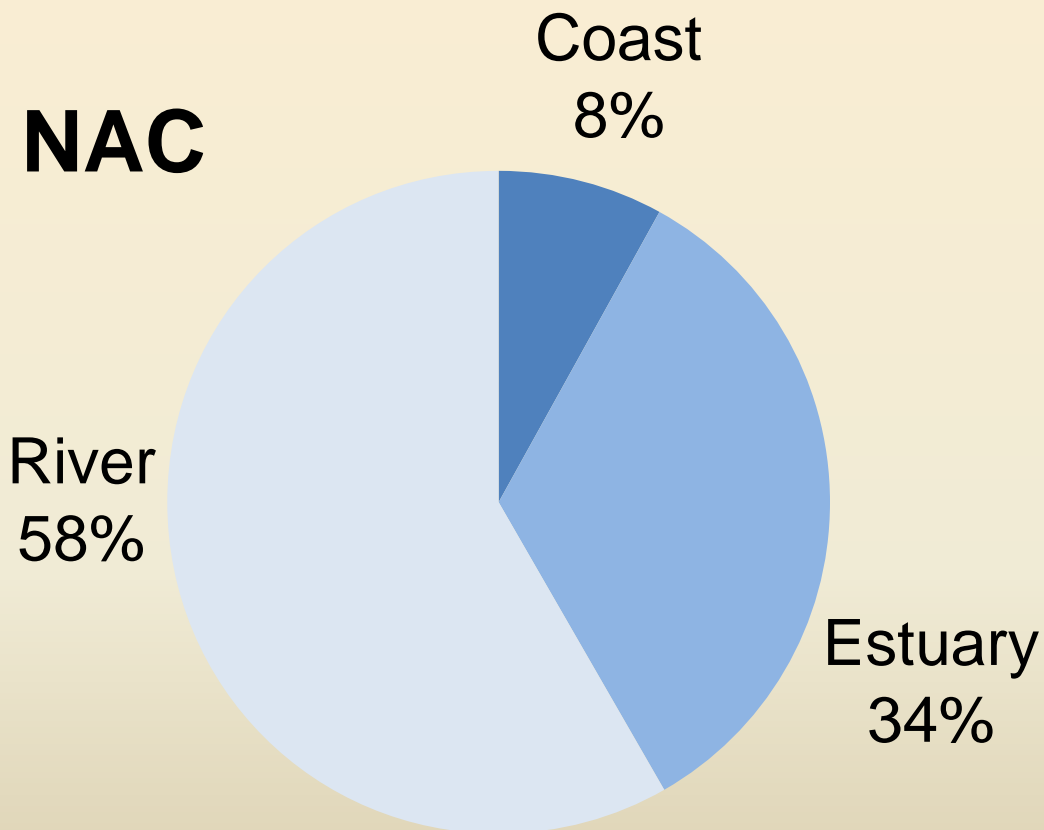
Catches

In 2012	Canada	USA	St. P&M
Catch (t)	135	0	1.5
Unreported (t)	30.5	0	n/a

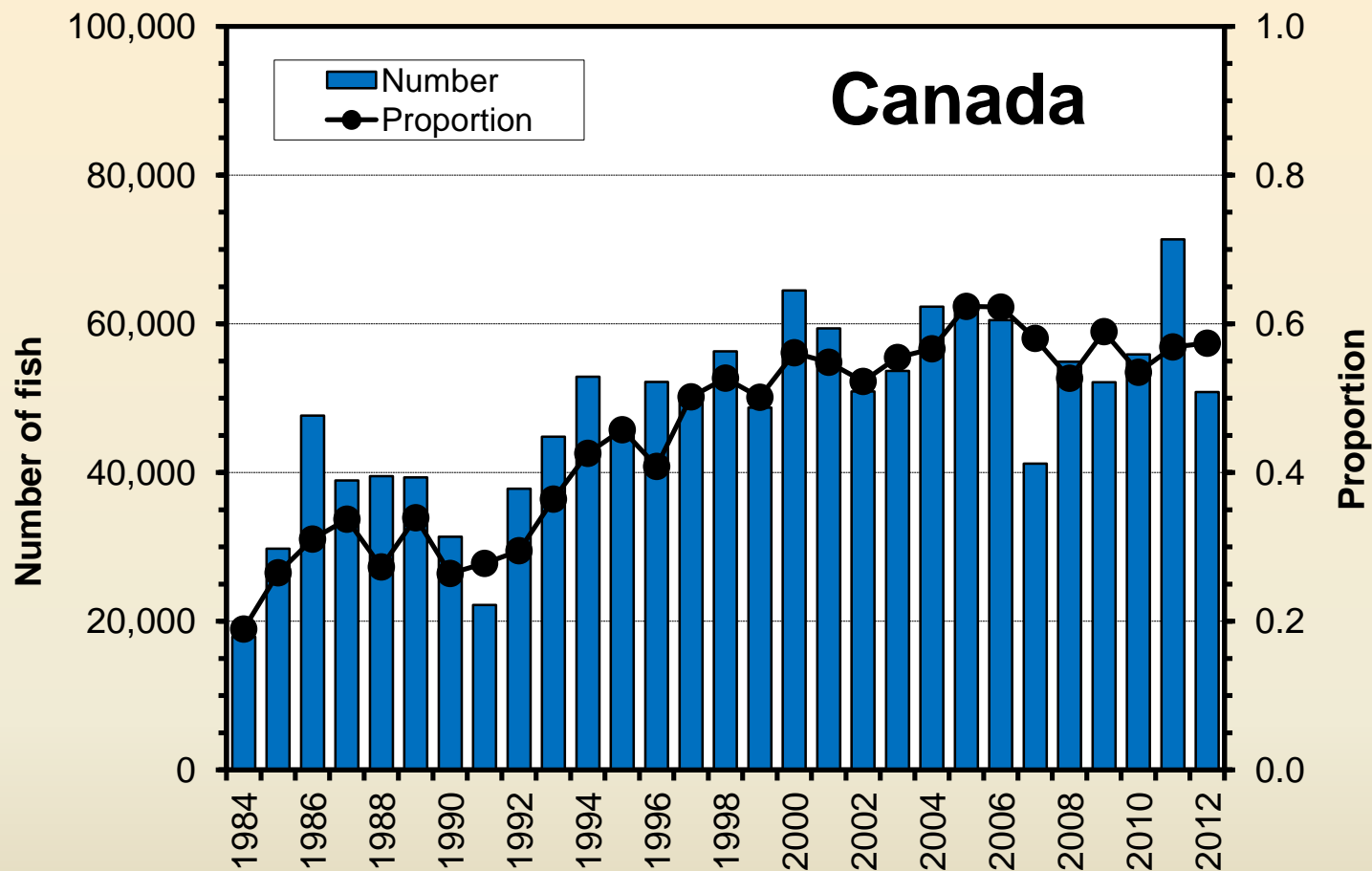


- ❑ Total NAC catch in 2012 (136 t) down 25% relative to 2011 (182 t)
- ❑ Large decline in catches since commercial fishery moratorium (1992 on)

Catch by fishing area - 2012



Catch & release in recreational fisheries



- ❑ Approx. 50,800 salmon (~32,500 small and 18,300 large) were reported caught and released in 2012 (57% of total)
- ❑ Proportion released > 50% since 1998

No salmon tagged in other areas of North America were reported from the Aboriginal Peoples' and resident food fisheries in Labrador, or the St. Pierre & Miquelon fisheries, in 2012.

Labrador subsistence food fisheries

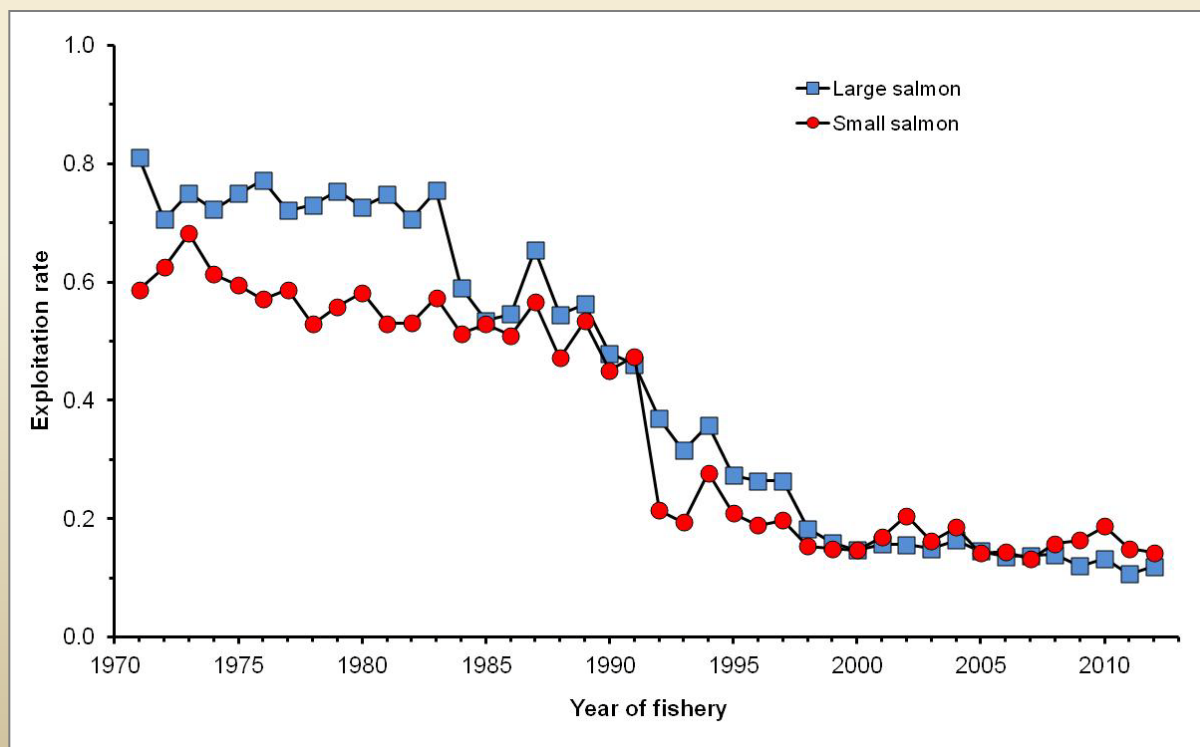
- Sampling programme continued in 2012, providing information on biological characteristics of the catch
- Genetic analyses recently completed and results will be evaluated against extended N. American genetic baseline. Report expected in 2013

St. Pierre & Miquelon fishery

- No sampling in 2012 (previous sampling / genetic stock identification carried out in 2010-11)

Trends in Exploitation Rates

- ❑ Exploitation of small salmon (mostly 1SW) declined with closure of Newfoundland commercial fishery in 1992
- ❑ Declines continued in the 1990s with additional management controls in all fisheries to reduce exploitation (e.g. non-retention of large salmon in angling fisheries and reductions in commercial fisheries)
- ❑ In the last few years, exploitation rates on small and large salmon have remained at the lowest in the time-series, at about 15%
- ❑ Exploitation rates are highly variable between regions within N. America



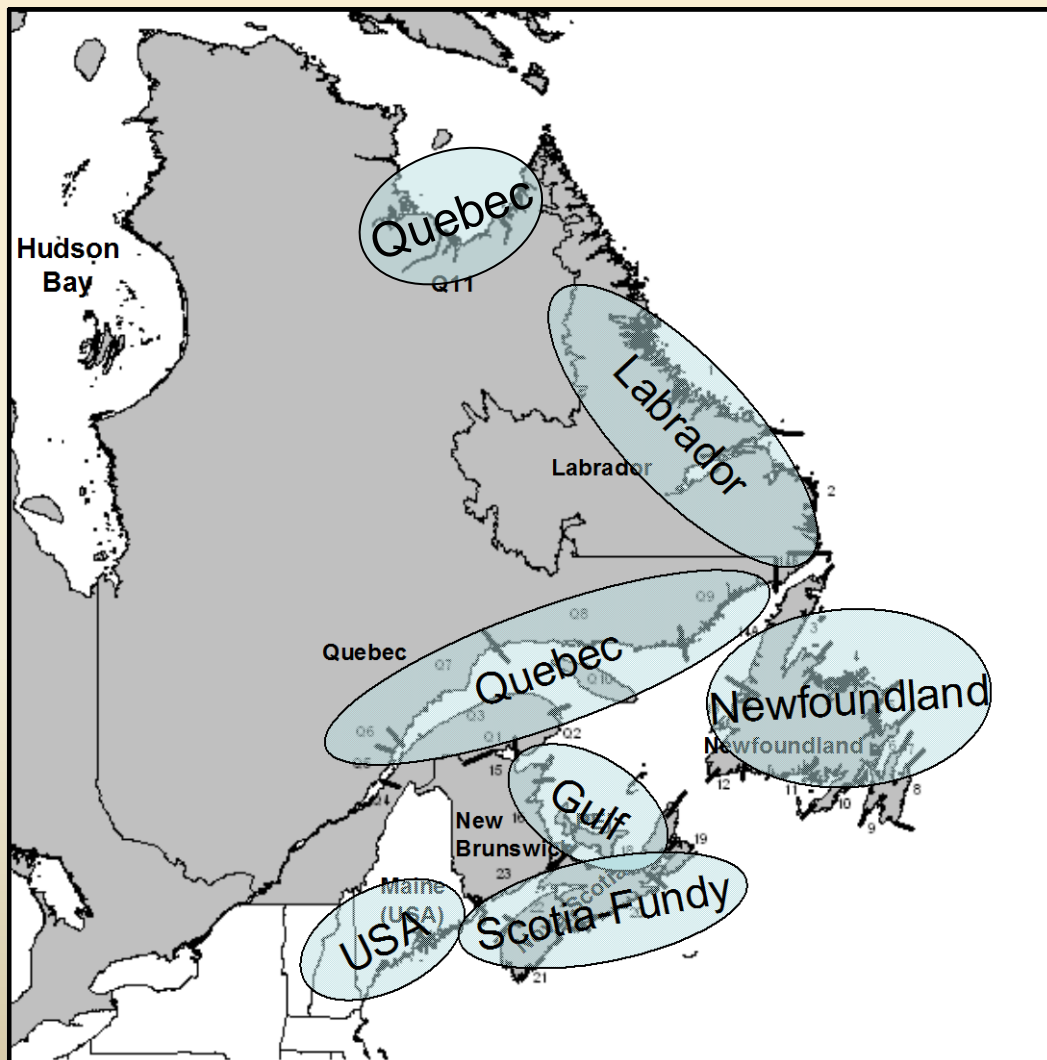
Update age-specific stock conservation limits

- ❑ No changes in the 2SW salmon CLs from those identified previously
- ❑ CLs for 2SW salmon: Canada = 123 349 ; USA = 29 199; NAC Total = 152 548

Stock area	2SW Conservation Limit
Labrador	34,746
Newfoundland	4,022
Gulf of St Lawrence	30,430
Quebec	29,446
Scotia-Fundy	24,705
Canada Total	123,349
USA	29,199

Describe the Status of the Stocks

Status of stocks is described for six regions in North America



Describe the Status of the Stocks

Smolt abundance – 11 rivers

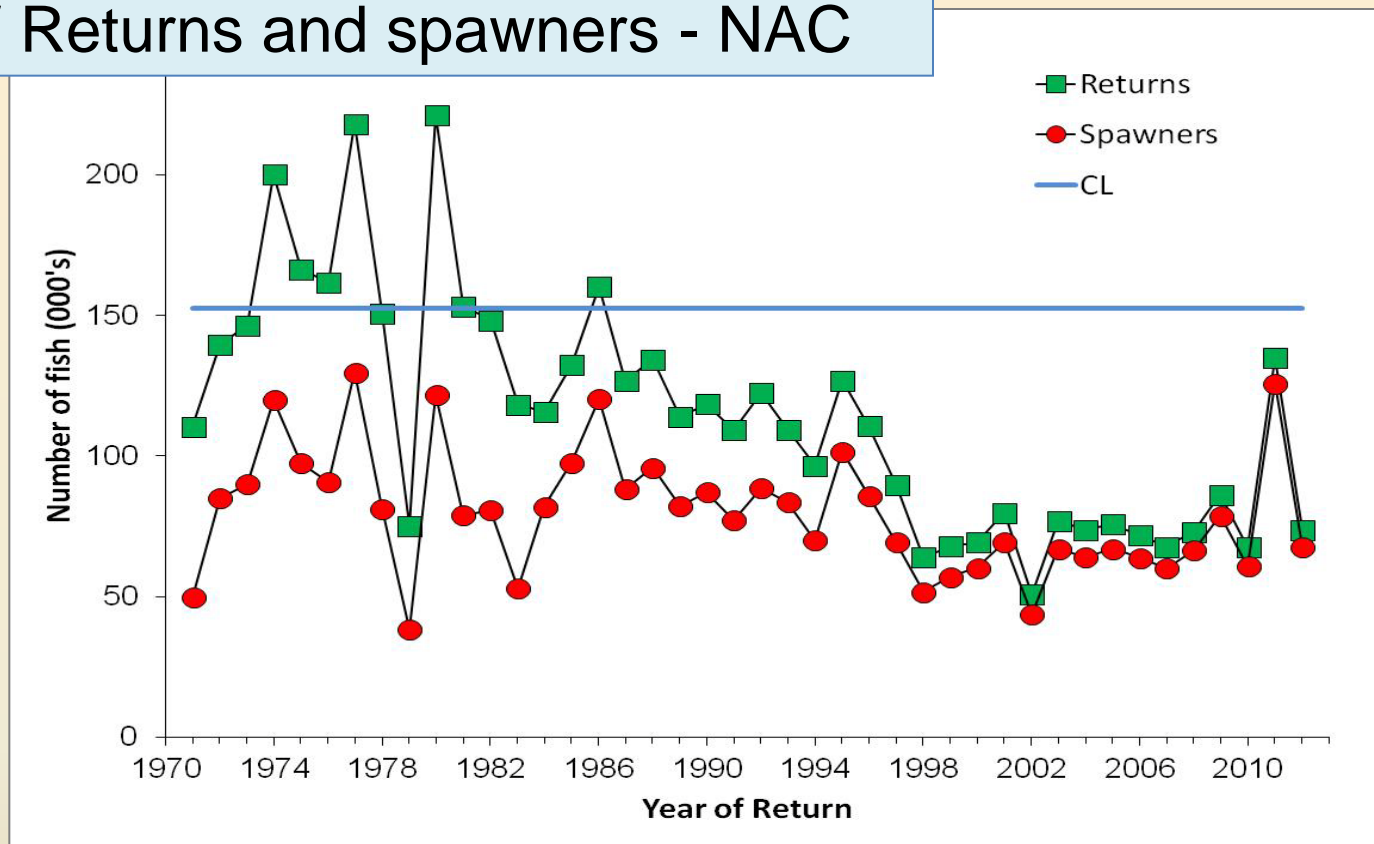
- Smolt production increased from 2011 in 3 rivers (range 19-95%), decreased in 3 rivers (range 34-44%) and remained unchanged in 4 rivers [No data for 1 river]
- For the majority of the rivers there is no trend in smolt production (declining trend in 3 rivers, and increasing trend in 1 river)

Abundance of adults

- Returns and spawners of small (1SW), large (MSW salmon) and 2SW salmon are derived for each region (run reconstruction)
- Variety of methods – counts at monitoring facilities; population estimates from M/R studies; catch and exploitation rates & measurements of freshwater habitats
- 2SW component of large returns derived from sea-age composition of indicator stocks

Describe the Status of the Stocks

2SW Returns and spawners - NAC



- 2SW returns in 2012 decreased from 2011 in all 6 regions
- Large declines (67-77%) in returns - levels among lowest in time series in 3 southern areas (USA, Scotia-Fundy & Gulf); declines 9-28% in other areas
- 2SW spawners similarly decreased

Describe the Status of the Stocks

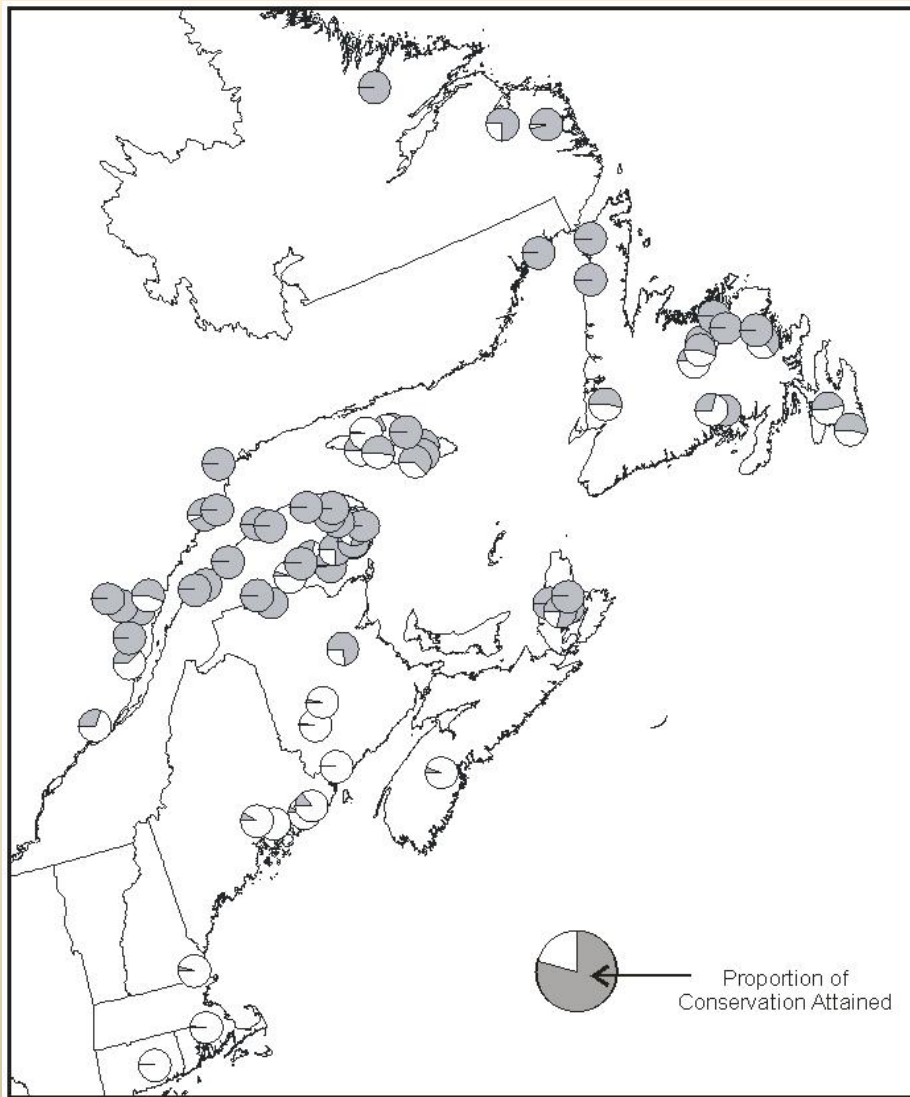
Returns of 1SW & 2SW salmon by geographic area in 2012

Region	Rank of 2012 returns in 1971 to 2012, (42=LOWEST)		Rank of 2012 returns in 2003 to 2012 (10=LOWEST)		Median estimate of 2SW spawners as percentage of Conservation Limit
	1SW	2SW	1SW	2SW	(%)
Labrador	7	4	6	3	63
Newfoundland	7	31	5	9	82
Quebec	29	39	7	8	68
Gulf	42	36	10	9	63
Scotia-Fundy	42	41	10	10	4
USA	40	38	10	10	7

- 2SW returns among lowest in time series in all areas except Labrador
- Returns of 1SW salmon declined sharply from 2011 in all areas, except Newfoundland
- 1SW returns at, are close to, the lowest in the time series for USA, Scotia-Fundy & Gulf
- **Region-specific 2SW spawners were below the 2SW CLs in all regions; poorest performance in the southern regions**

Describe the Status of the Stocks

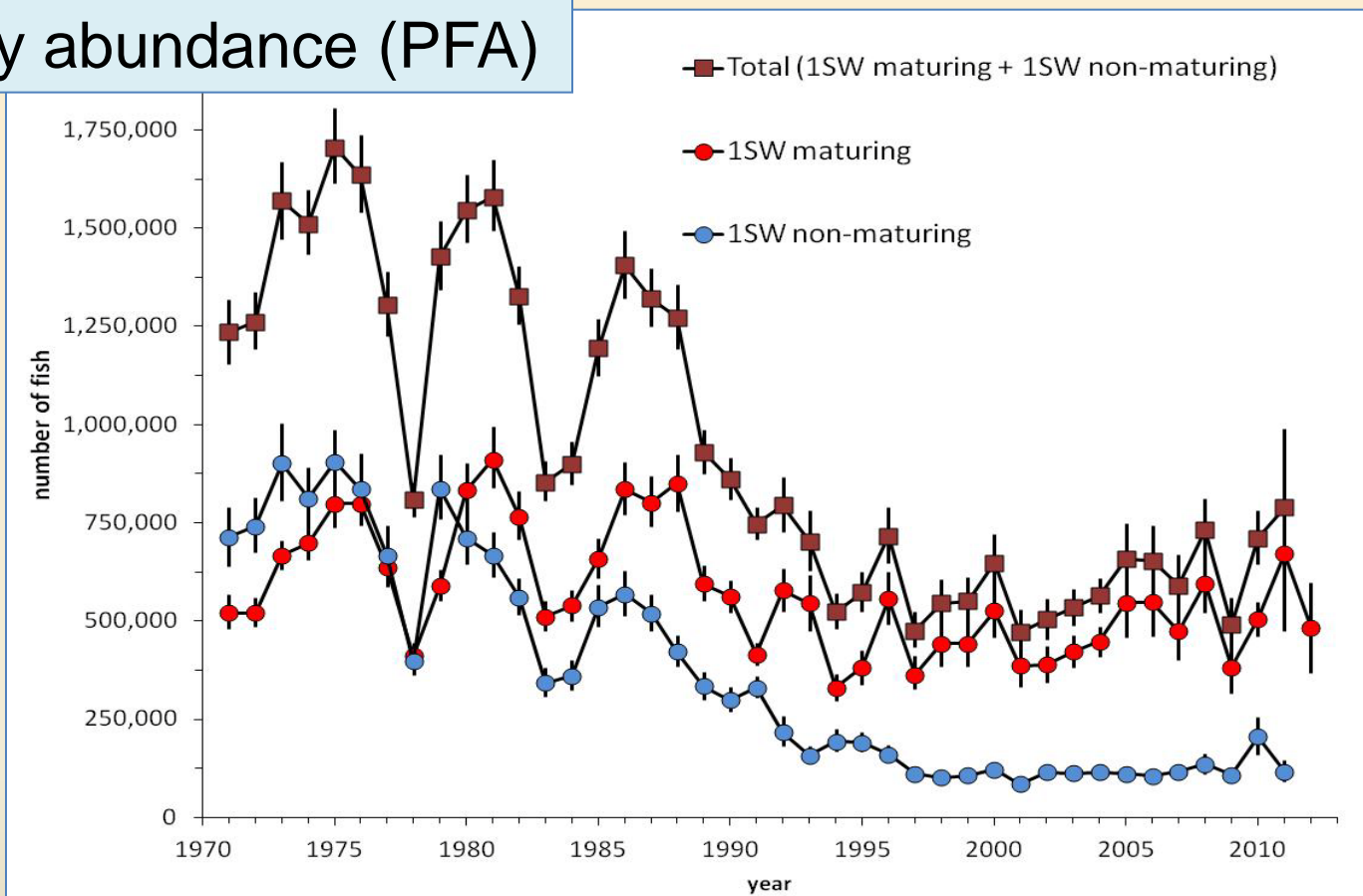
Egg depositions in rivers in 2012



- River specific CLs met in 31 of 74 rivers (42%); down from 61% in 2011
- Less than 50% of CLs achieved in 21 rivers (28%) up from 15 rivers in 2011
- Particularly large deficits in the southern areas of North America (USA, Scotia-Fundy)

Describe the Status of the Stocks

Pre-fishery abundance (PFA)



- Continued low abundance of North American adult salmon
- Total population of 1SW and 2SW Atlantic salmon shows generally declining trend since the 1970s with a period of persistent low abundance since the early 1990s
- Maturing 1SW salmon abundance in 2012 decreased 28% from 2011 (rank 29th of 42-year time series)
- Non-maturing 1SW salmon decreased by 43% from 2010 (rank 30th of 41 years)

Summary of Stock Status

- ❑ Large declines in returns of all sea ages noted in 2012 (from the higher abundances noted in 2011), reflecting an important mortality at sea on 1SW and 2SW salmon
- ❑ 2SW salmon stocks in all areas are suffering reduced reproductive capacity, with particularly large deficits in the southern areas (Scotia-Fundy and USA)
- ❑ Despite major changes in fisheries management around 20-25 years ago and increasingly more restrictive fisheries measures since then, returns remain near historical lows and many populations are currently threatened with extirpation
- ❑ Continued low abundance, despite significant fishery reductions and generally sustained smolt production, strengthens the view that factors acting on survival in the first and second years at sea are constraining abundance

Recommendations

See general recommendations – Section 10.1 of CNL(13)8

Specific to NAC

- ☐ ICES recommends that sampling of the Labrador and St. Pierre and Miquelon fisheries be continued and expanded (i.e. sample size, geographic coverage, tissue samples, seasonal distribution of the samples) in future years and analysed using the North American genetic baseline to improve the information on biological characteristics and stock origin of salmon harvested in these mixed stock fisheries.
- ☐ ICES recommends that additional data collection be considered in Labrador to better estimate salmon returns in that region.

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**Supporting information and details in the report of the
ICES Working Group on North Atlantic Salmon available at:**
http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2013/WGNAS/wgnas_2013.pdf

Acknowledgements

**Members (20) of participating countries (11) to the Working
Group on North Atlantic Salmon, 3 – 12 April, 2013**

NAC sub-group chair: Gerald Chaput (Canada)