REPORT OF ICES ADVISORY COMMITTEE

ON

NORTH ATLANTIC SALMON STOCKS

TO

NORTH ATLANTIC SALMON CONSERVATION ORGANIZATION

NAC Area

CNL(14)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 2013 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 new catch advice provided – West Greenland Framework of Indicators (applied January 2014) did not signal a significant change in stock status. Previous multi-year agreement continues and no reassessment required.

Key events of the 2013 fisheries

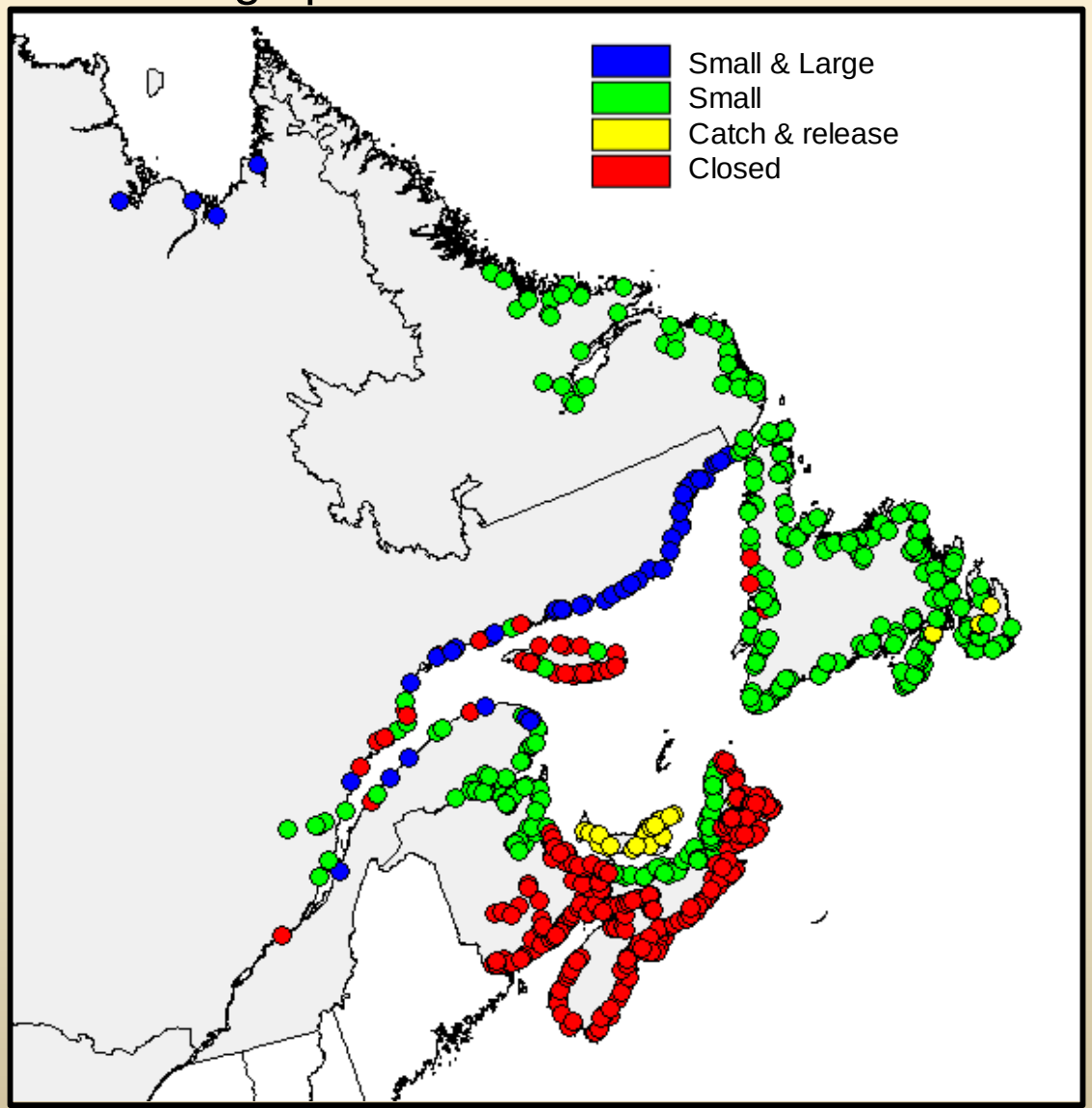
Gear and effort

- Three groups exploited salmon in Canada in 2013:
  - Aboriginal peoples;
  - Resident's subsistence fishery in Labrador; and
  - Recreational fishers.

- No commercial fisheries in Canada in 2013 (closed since 2000)
- No recreational or commercial fisheries for Atlantic salmon in USA in 2013
- France (Islands of St. Pierre & Miquelon)
  - 9 professional (max 3 nets) and 64 recreational (1 net) gill net licences issued

Gear and effort

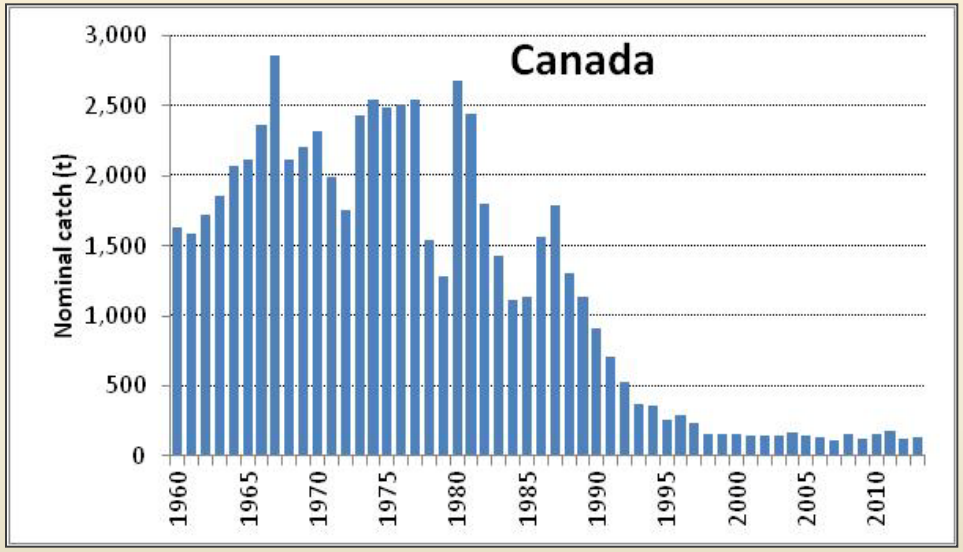
Recreational fisheries in Canada – regulatory measures vary between areas and large portions of the south closed to all directed salmon fisheries

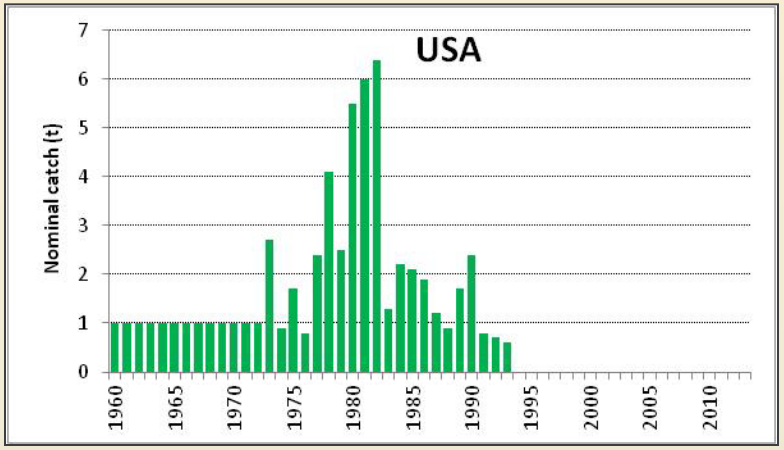


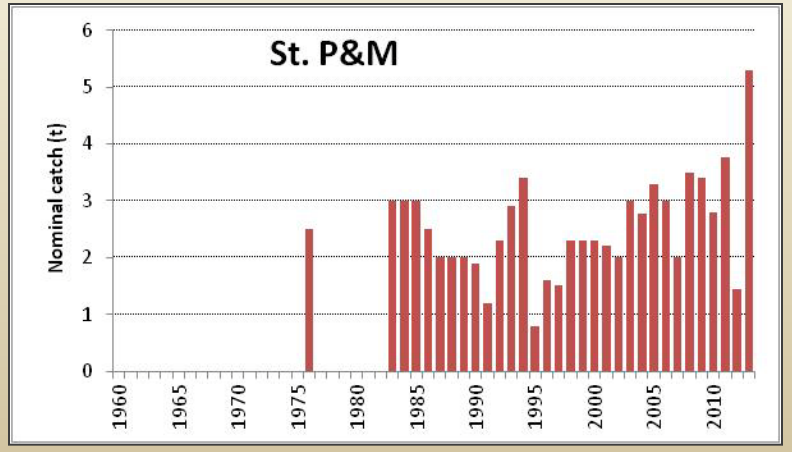
- Small salmon < 63cm FL
- Large salmon ≥ 63cm FL

Nominal catch (excl. C&R)

In 2013	Canada	USA	St. P&M
Catch (t)	136.2	0	5.3
Unreported (t)	23.9	0	n/a

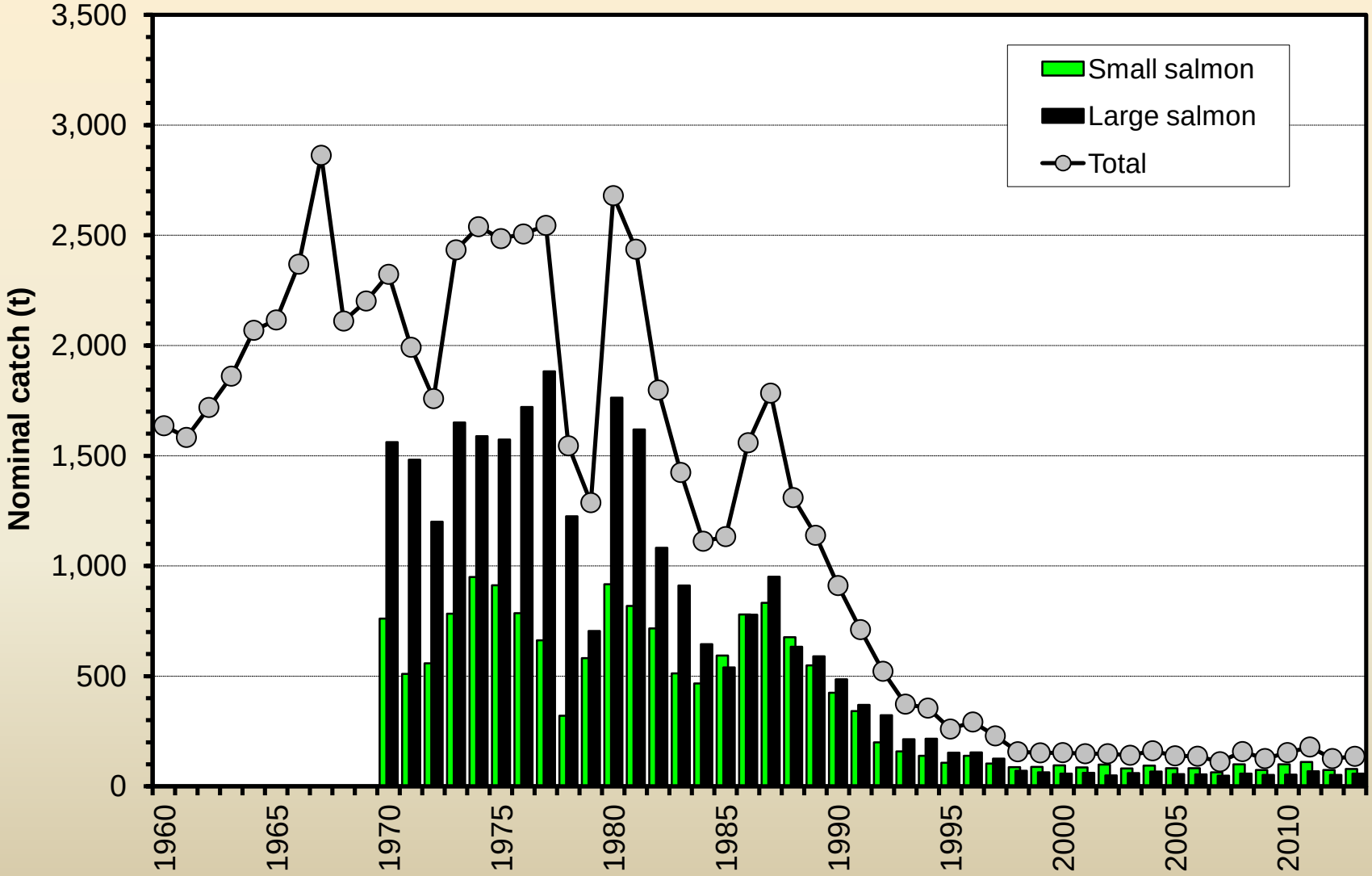






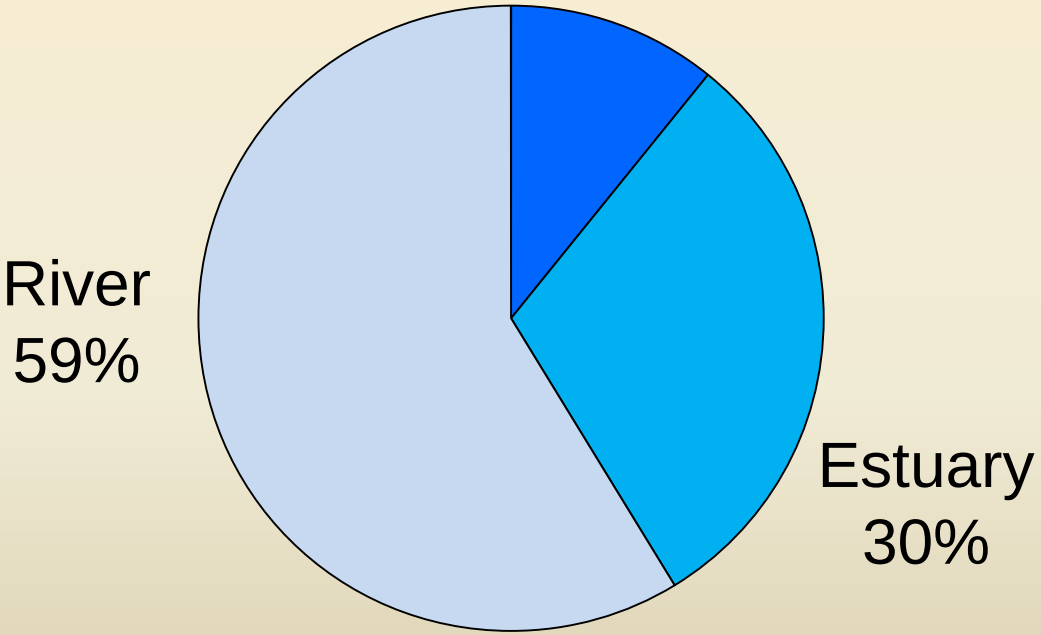
- Large decline in Canadian catches since commercial fishery moratorium (1992 on)
- Total NAC catch in 2013 (142 t) up slightly on 2012 (128 t)

Canadian catch (numbers of fish)

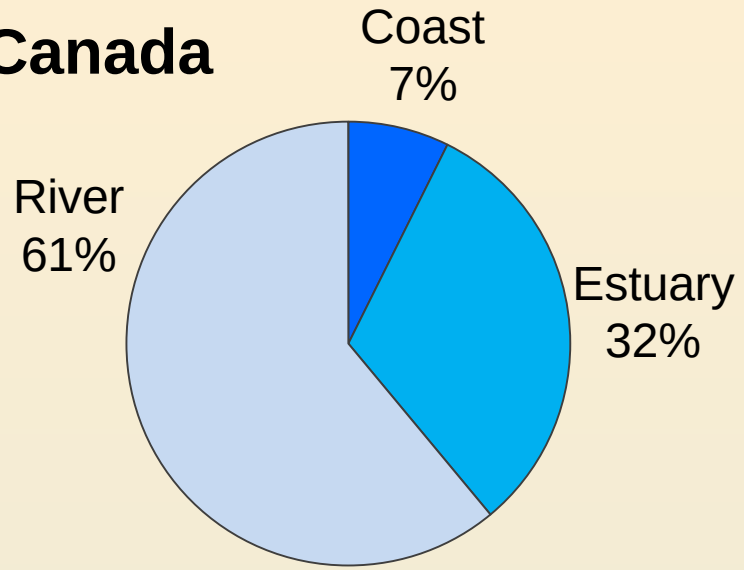


Catch by fishing area - 2013

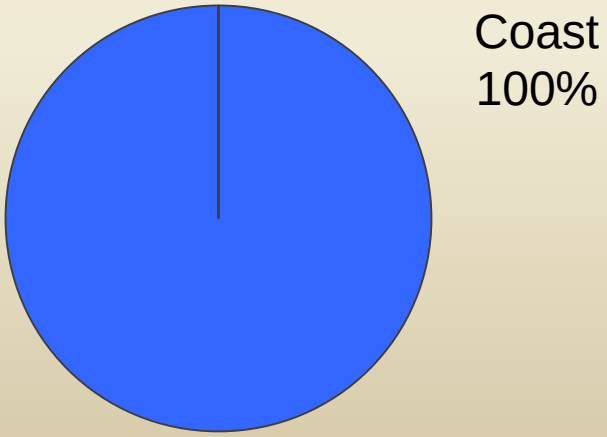
NAC



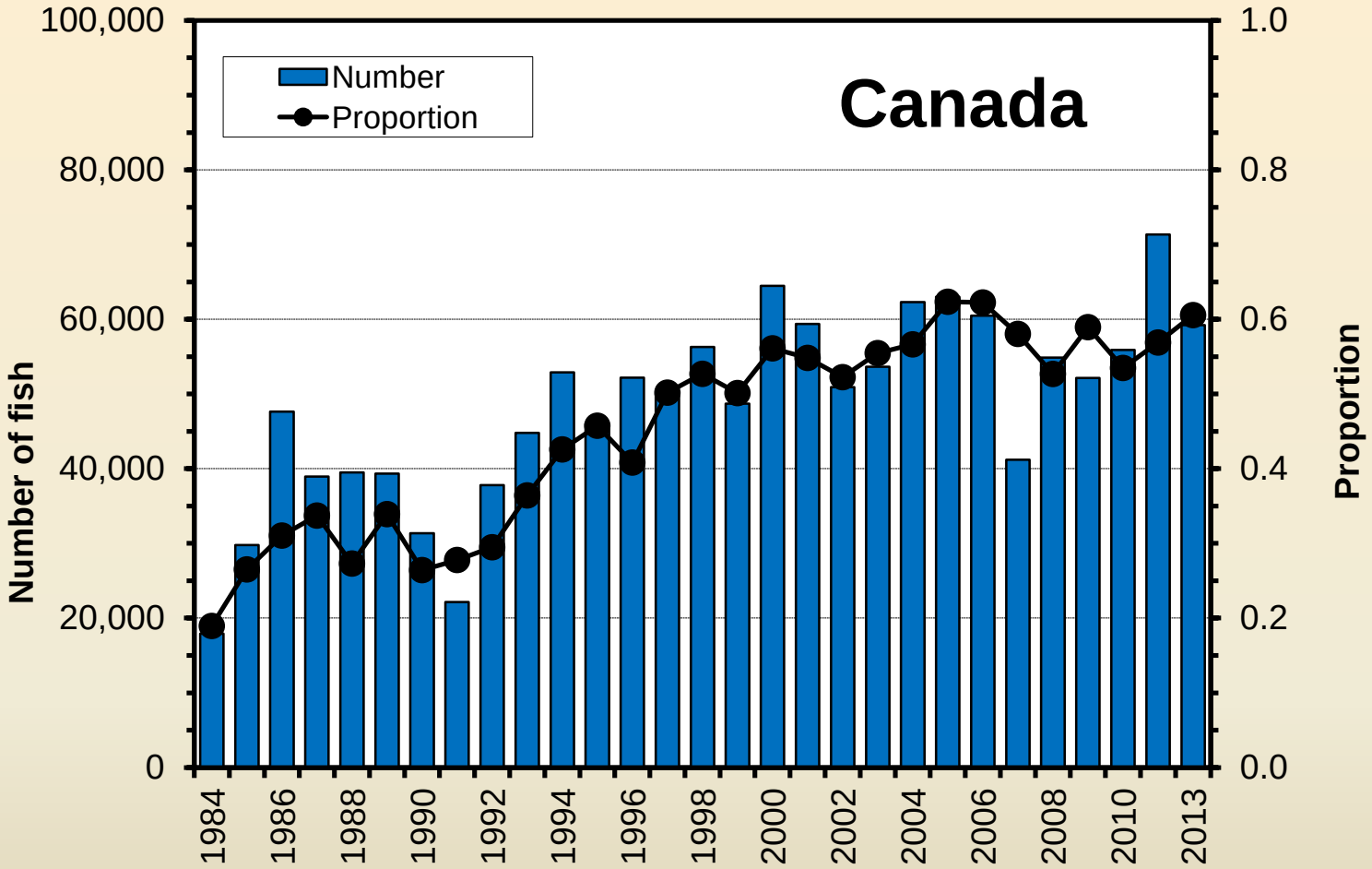
Canada



St. Pierre & Miquelon



Catch & release in recreational fisheries



- Approx. 59,200 salmon (~33,500 small and 25,700 large) were reported caught and released in 2013 (61% of total)
- Proportion released > 50% since 1998

Origin and composition of catch

Tag recoveries

- No tagged salmon from other areas of North America reported from the Aboriginal Peoples' and resident food fisheries in Labrador – 2009 to 2013
- No tags from St. P&M or US-origin tags in Canadian fisheries in 2013

Sampling in Labrador subsistence food fisheries

- Sampling programme continued in 2013 – 544 samples collected from Labrador subsistence fisheries:

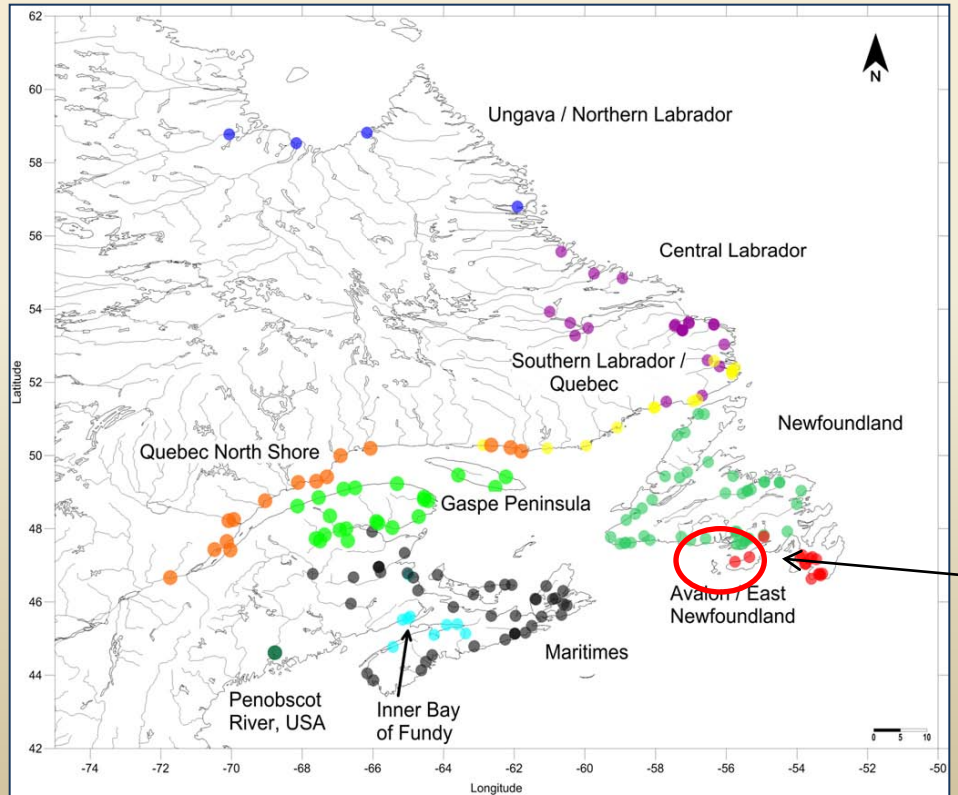
  - 160 Northern Labrador; 84 Lake Melville; 300 Southern Labrador

- 79% 1SW salmon; 16% 2SW; 5% previous spawners
- 99% river age 3-6, so very few salmon from southern N. American stocks (US / Scotia-Fundy) which are typically river age 1-2
- First genetic results available (evaluated against NA genetic baseline)
- ~1800 samples from 2006-2011 indicated 85-98% of fish from different areas were of Labrador origin; small %'s from all other areas (incl. USA) – these mainly from S. Labrador. Samples for 2012-2013 being processed.

Origin and composition of catch

St. Pierre & Miquelon fishery

- Sampling of catches 17 May – 17 June 2013 (first samples assessed against NA baseline)
- 79 fish sampled (74 used for ageing; 71 for genetic analysis)
- Predominantly (~65%) 2SW salmon; fewer 1SW & PS

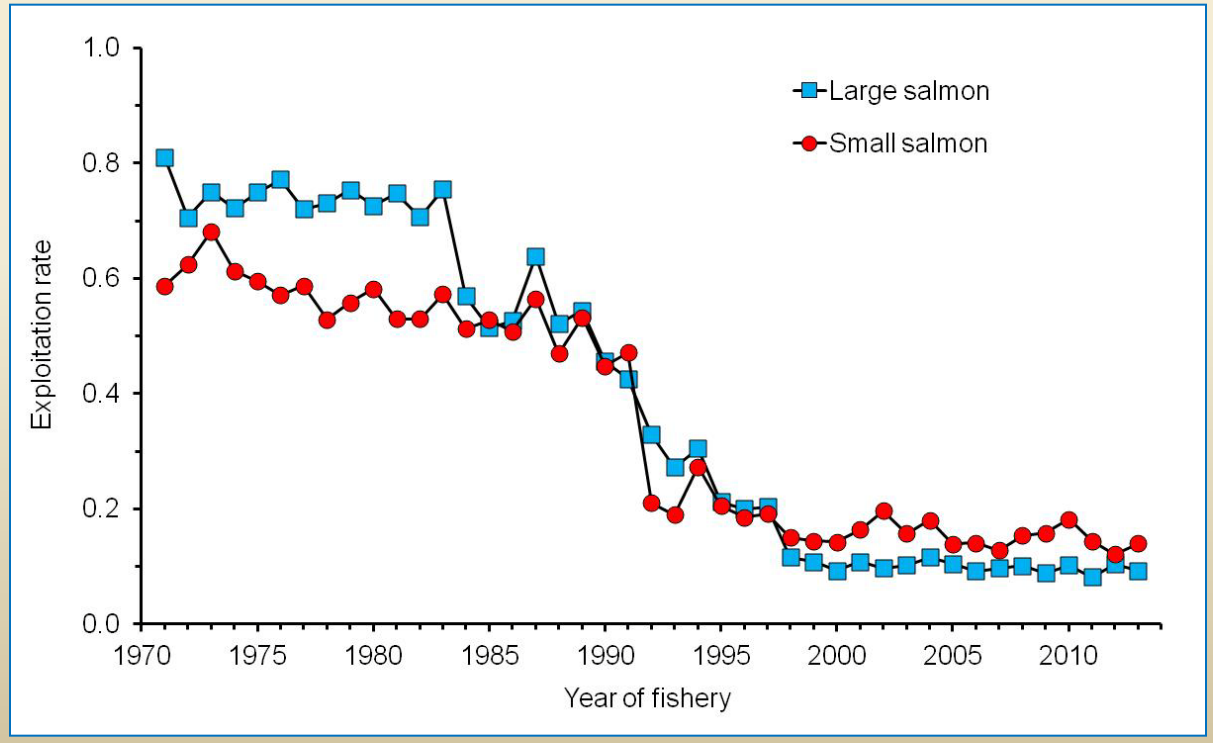


Genetic assignment:	
Gaspé	37%
Newfoundland	34%
Maritimes	22%
North Shore Québec	7%
Others	<1%

SPM

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% (slightly higher for small)
- Exploitation rates are highly variable between regions within N. America



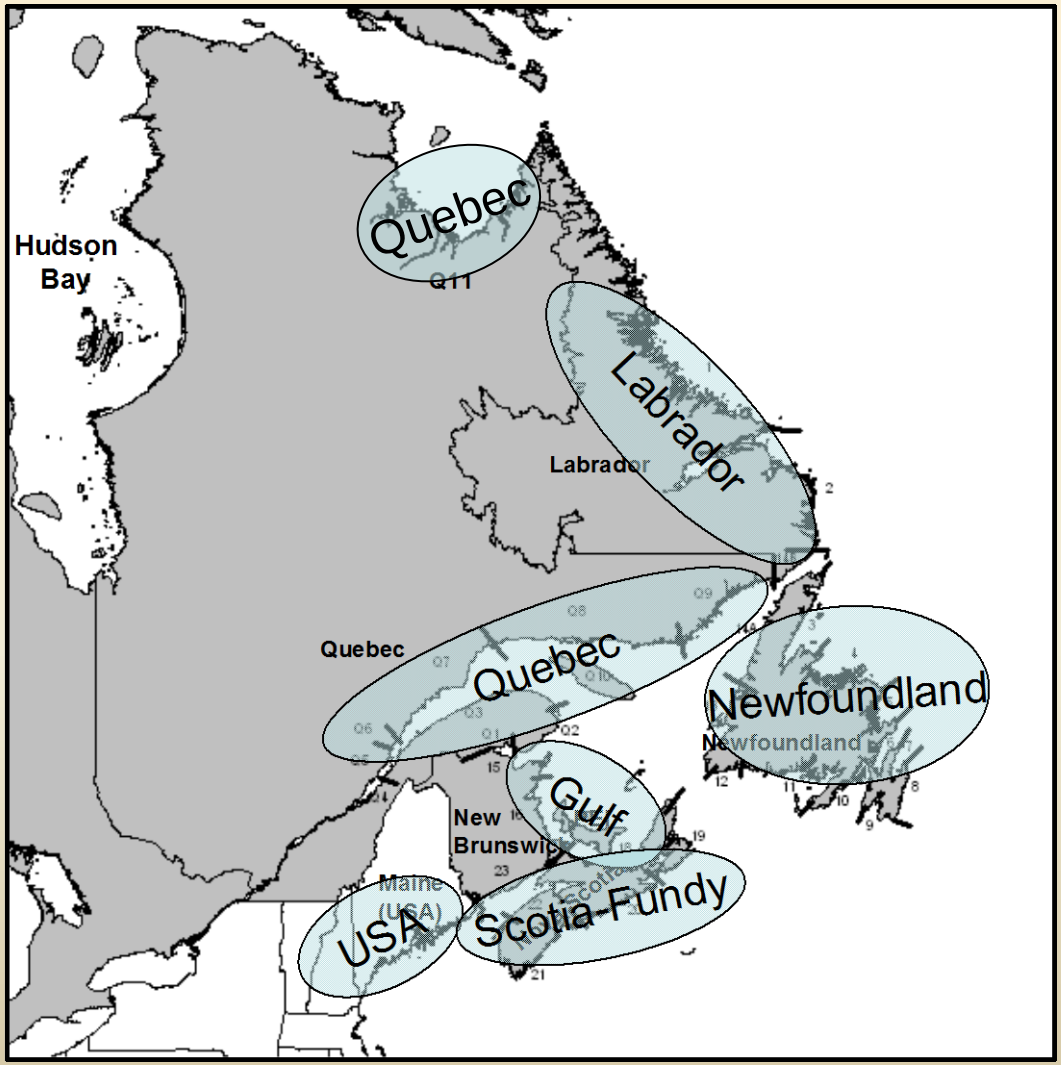
Update age-specific stock conservation limits

- No changes in the 2SW salmon CLs from those identified previously

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
NAC Total	**152,548**

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 – 12 rivers

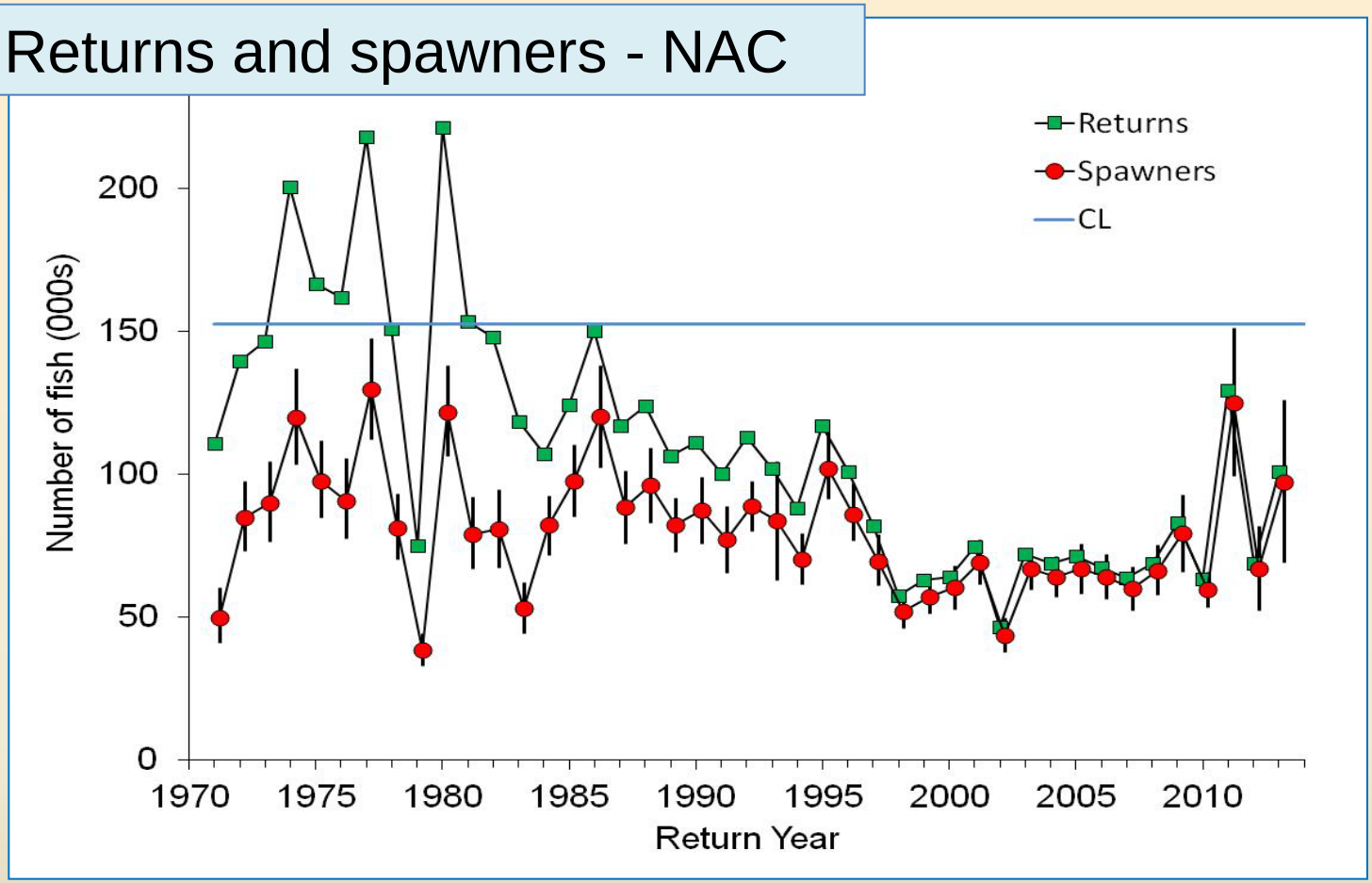
- Smolt production increased from 2012 in 4 rivers (range 23-45%); decreased in 3 rivers (range 34-67%); unchanged in 4 rivers (+/- 10%) [1 new estimate]
- For the majority of the rivers there is no trend in smolt production (sig. declining trend in 3 rivers, and increasing trend in 1 river)

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 2013 up on 2012 in all areas except US (range 10-188%); down by 40% in US
- 2SW spawners still below CLs in 5 of the 6 regions (and overall for NAC)
- 2SW spawners in Labrador exceeded the CL for the first time in the time series (based on small number of monitoring sites)

Describe the Status of the Stocks

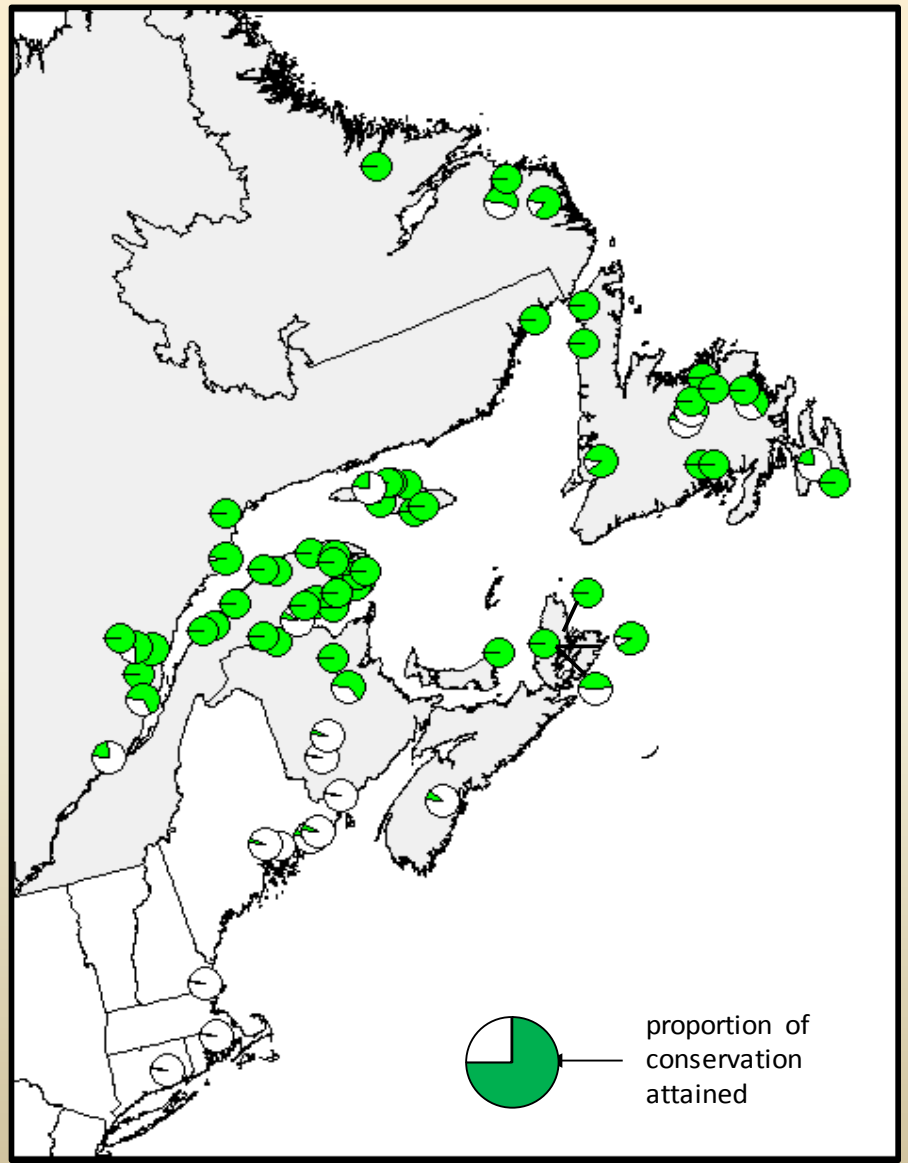
Returns of 1SW & 2SW salmon by geographic area in 2013

Region	Rank of 2013 returns in 1971 - 2013 (43 = lowest)		Rank of 2013 returns in 2004 - 2013 (10 = lowest)		2SW spawners as % of CL (% of mgmt objective)
	1SW	2SW	1SW	2SW	(%)
Labrador	6	1	6	1	127
Newfoundland	14	28	7	8	85
Québec	38	31	8	3	76
Gulf	42	31	9	5	80
Scotia-Fundy	42	33	9	3	12 (27)
USA	37	42	9	10	2 (12)

- 1SW returns among lowest in time series in most areas – not Labrador & Nfl'd
- 2SW returns close to lowest in time series for US and relatively poor in most regions, but highest in the time series for Labrador
- **Region-specific 2SW spawners were below the 2SW CLs in all regions except Labrador; poorest performance in the southern regions**

Describe the Status of the Stocks

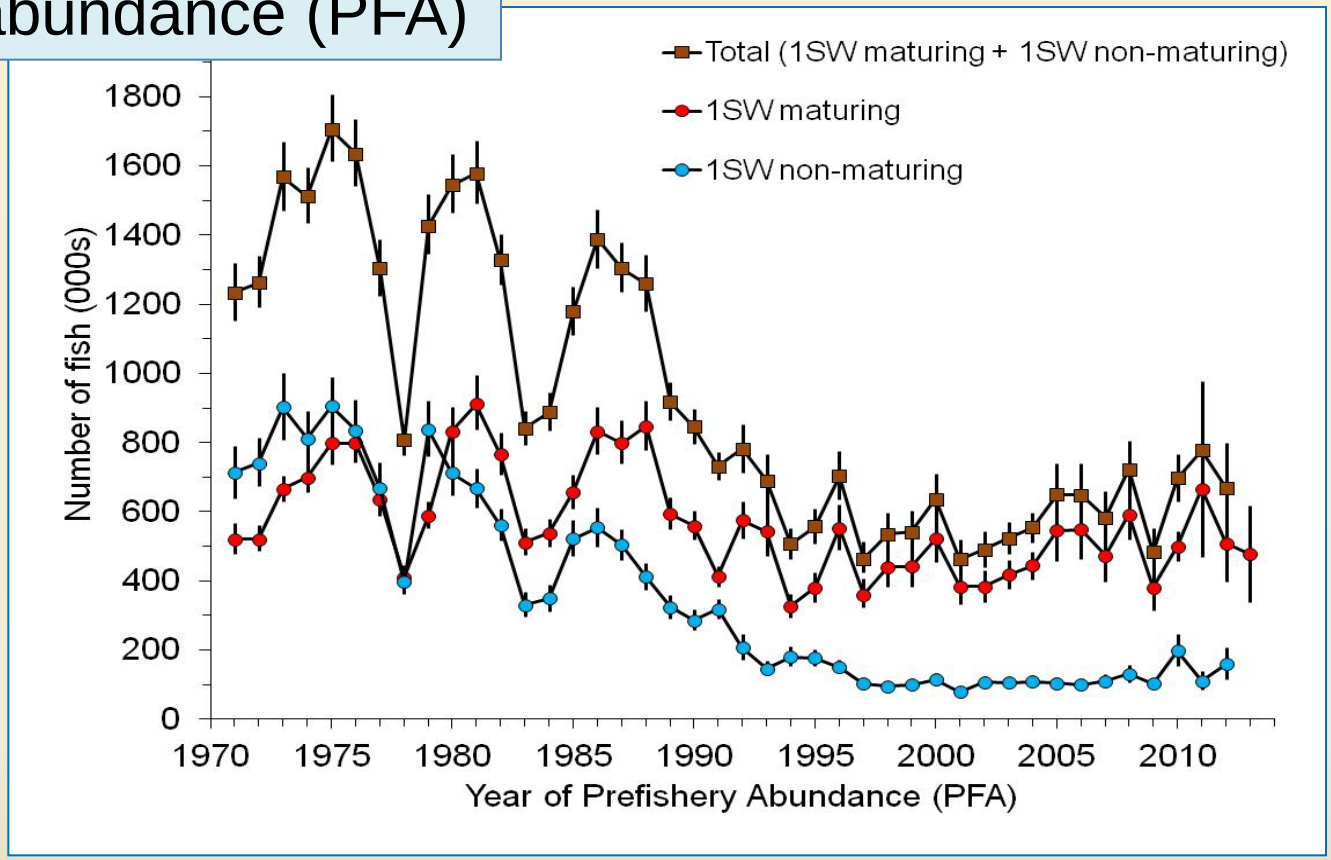
Egg depositions in rivers in 2013



- River specific CLs met in 44 of 73 rivers (60%); up from 42% in 2012
- 16 rivers (22%) achieved less than 50% of CL
- 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
- PFA of maturing 1SW salmon in 2013 decreased 6% from 2012
- PFA of non-maturing 1SW salmon (for 2012) increased by 43% from 2011

Summary of Stock Status

- 2SW salmon stocks in five of the six areas are suffering reduced reproductive capacity, with particularly large deficits in the southern areas (Scotia-Fundy and USA)
- For Labrador, for the first time in the time series, the midpoint of the estimated 2SW spawners exceeded the 2SW CL
- 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

- ICES recommends that sampling and supporting descriptions of the Labrador and St. Pierre et 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.

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

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/2014/WGNAS/wgnas_2014.pdf?guardian-download=1400083057,8082,0,986c554d2c9792b5dd78cd8b24b3e0f4bbd3fbe4

Acknowledgements

Members (21) of participating countries (12) to the Working Group on North Atlantic Salmon, 19-28 March 2014

NAC sub-group chair: Gerald Chaput (Canada)