Harvesting & Sustainable Fraser Sockeye

Photo J. McIsaac

Presentation to

The Cohen Commission

By Jim McIsaac

September 16, 2010

Photo S. Griffin

TBuck Suzuki ENVIRONMENTAL FOUNDATION

Photo S. Griffin

Habitat Protection

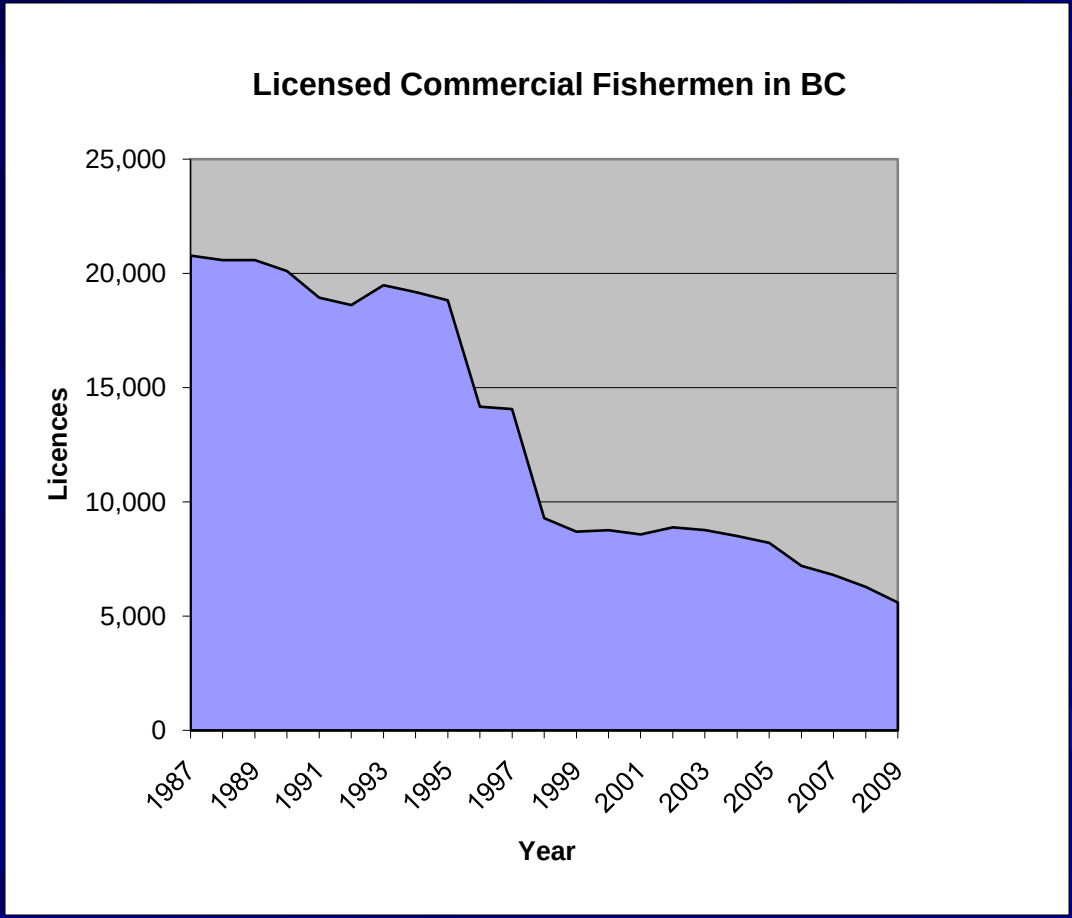
Pollution Prevention

Promoting
Sustainable Fisheries

Fisheries
Conservation Stamp

David Suzuki Environmental Foundation

Commercial Fishermen in BC



Source: DFO 2010

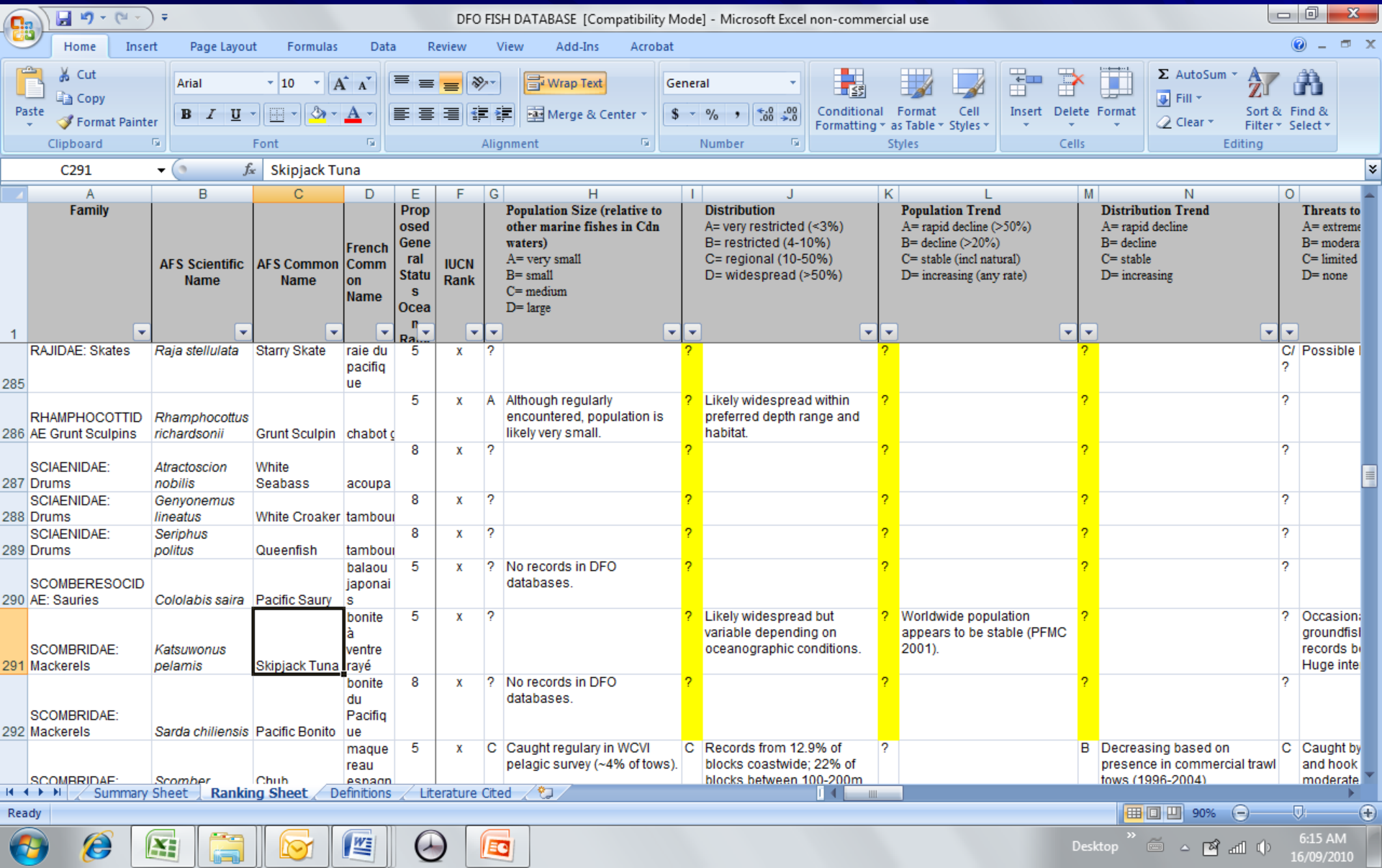
Restoration

Photo M. Tester

Assessment

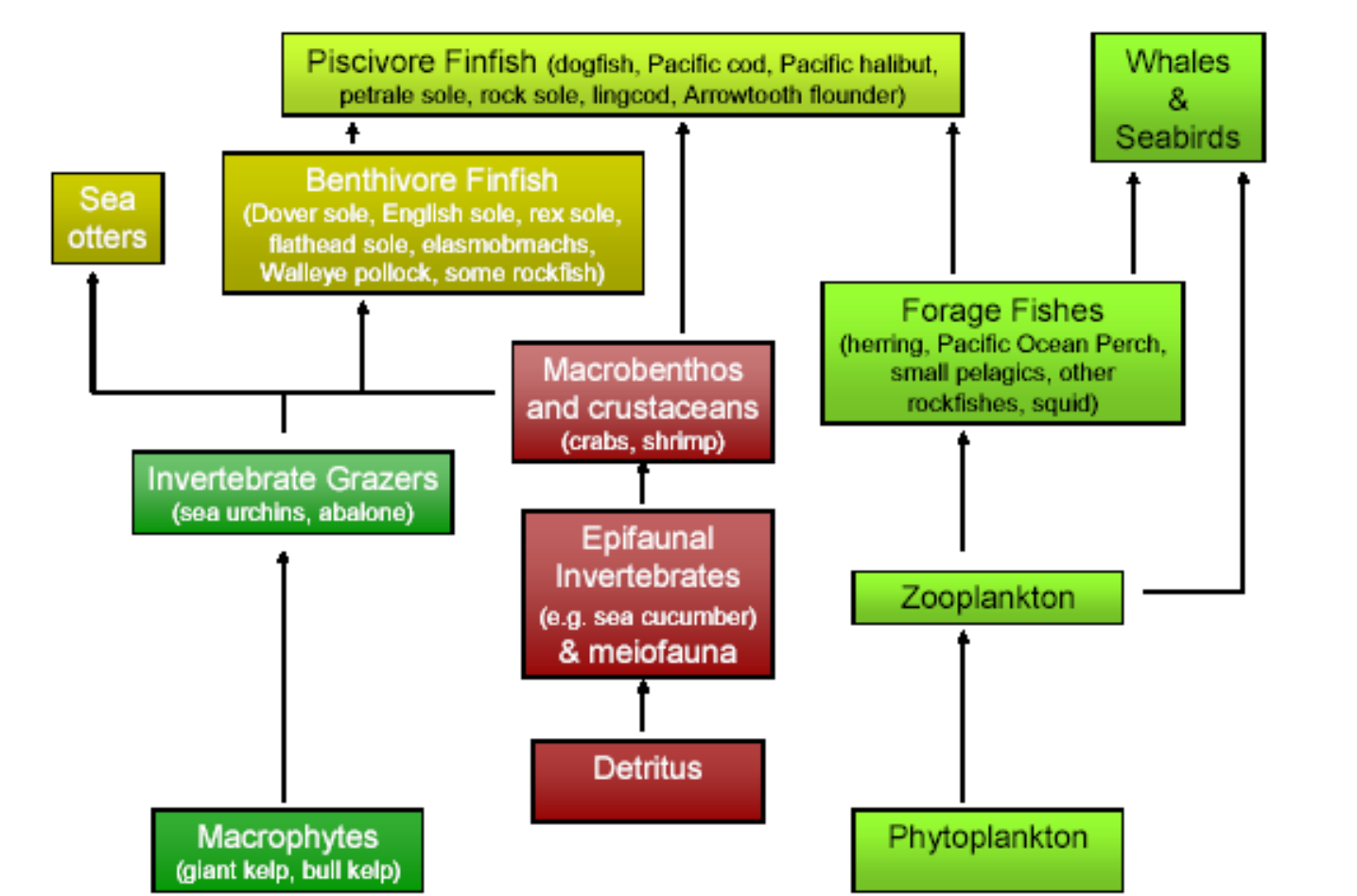
Photo M. Tester

Data gaps



	A Family	B AFS Scientific Name	C AFS Common Name	D French Common Name	E Proposed General Status Ocean Ra...	F IUCN Rank	G	H Population Size (relative to other marine fishes in Cdn waters) A= very small B= small C= medium D= large	I	J Distribution A= very restricted (<3%) B= restricted (4-10%) C= regional (10-50%) D= widespread (>50%)	K	L Population Trend A= rapid decline (>50%) B= decline (>20%) C= stable (incl natural) D= increasing (any rate)	M	N Distribution Trend A= rapid decline B= decline C= stable D= increasing	O	Threats to A= extreme B= modera C= limited D= none
285	RAJIDAE: Skates	*Raja stellulata*	Starry Skate	raie du pacifique	5	x	?		?		?		?		C/?	Possible
286	RHAMPHOCOTTIDAE Grunt Sculpins	*Rhamphocottus richardsonii*	Grunt Sculpin	chabot g	5	x	A	Although regularly encountered, population is likely very small.	?	Likely widespread within preferred depth range and habitat.	?		?		?	
287	SCIAENIDAE: Drums	*Atractoscion nobilis*	White Seabass	acoupa	8	x	?		?		?		?		?	
288	SCIAENIDAE: Drums	*Genyonemus lineatus*	White Croaker	tambour	8	x	?		?		?		?		?	
289	SCIAENIDAE: Drums	*Seriphus politus*	Queenfish	tambour	8	x	?		?		?		?		?	
290	SCOMBERESOCIDAE: Sauries	*Cololabis saira*	Pacific Saury	balaou japonais	5	x	?	No records in DFO databases.	?		?		?		?	
291	SCOMBRIDAE: Mackerels	*Katsuwonus pelamis*	Skipjack Tuna	bonite à ventre rayé	5	x	?		?	Likely widespread but variable depending on oceanographic conditions.	?	Worldwide population appears to be stable (PFMC 2001).	?		?	Occasion groundfis records b Huge inte
292	SCOMBRIDAE: Mackerels	*Sarda chiliensis*	Pacific Bonito	bonite du Pacifique	8	x	?	No records in DFO databases.	?		?		?		?	
	SCOMBRIDAE:	*Scomber*	Chub	maquereau espagn	5	x	C	Caught regulary in WCVI pelagic survey (~4% of tows).	C	Records from 12.9% of blocks coastwide; 22% of blocks between 100-200m	?		B	Decreasing based on presence in commercial trawl tows (1996-2004)	C	Caught by and hook moderate

Marine Food Web



DFO PNCIMA 2009

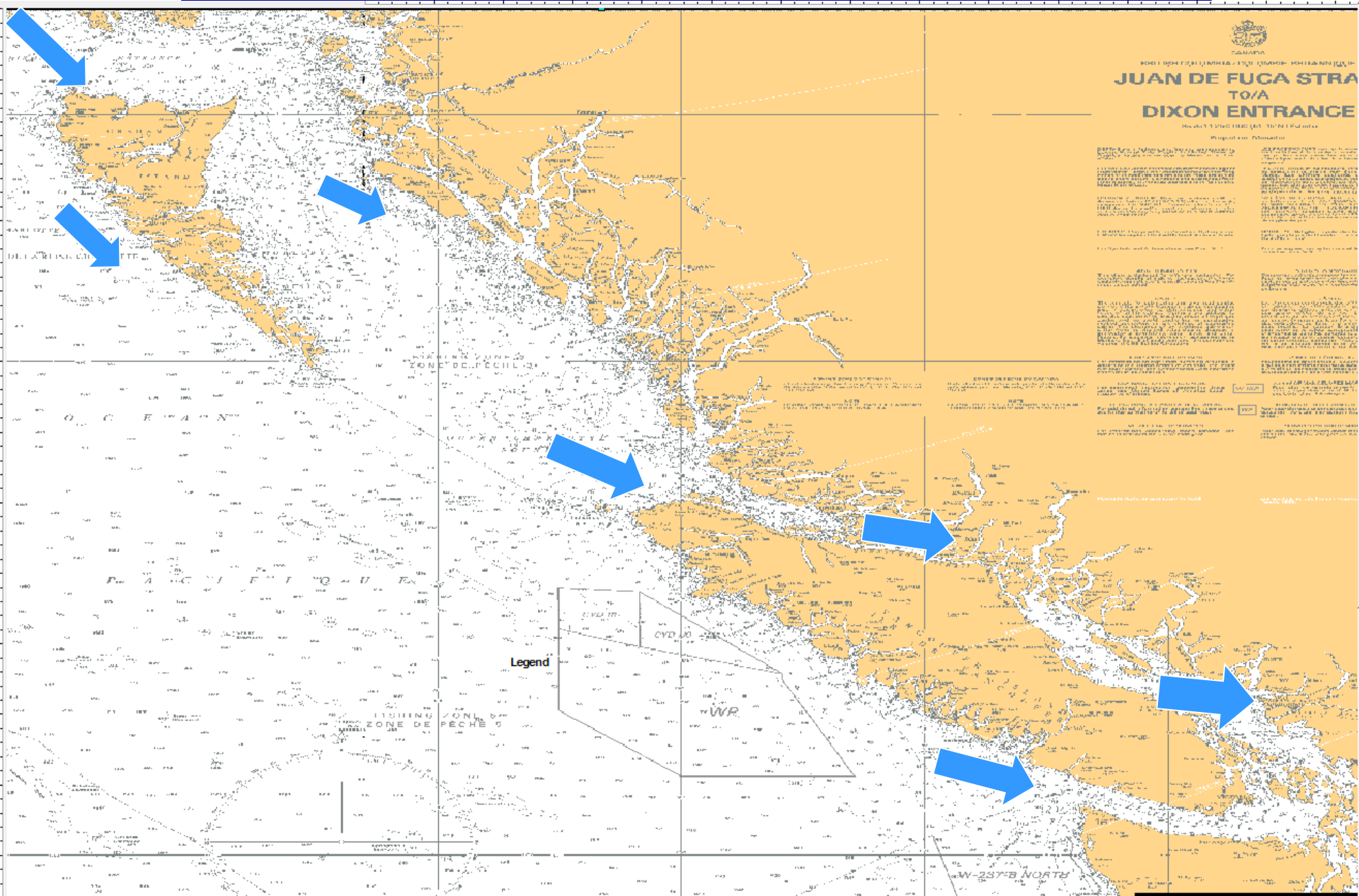
Predators Species

Humbolt Squid

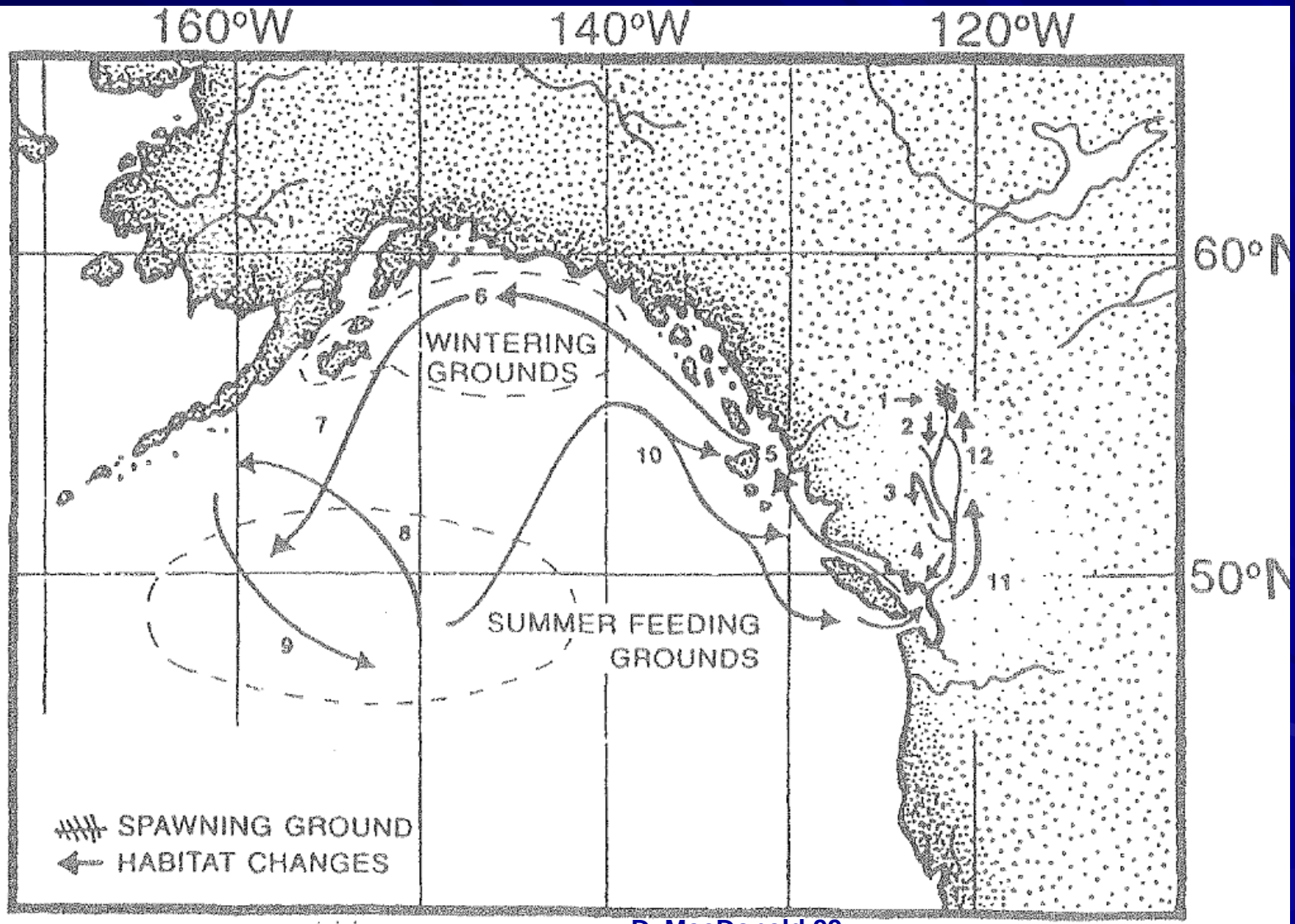
Seals & Sea lions

Mackerel

Sockeye Approaches



High sea fisheries



D. MacDonald 99

Pacific Salmon Treaty

With international push to get anadromous rights, CDN & US had to be seen as working jointly to resolve conflict on harvesting each other's stocks.

1. Conservation - prevent overfishing and provide for optimum production, and

2. Equity - each Party to receive benefits equivalent to their production

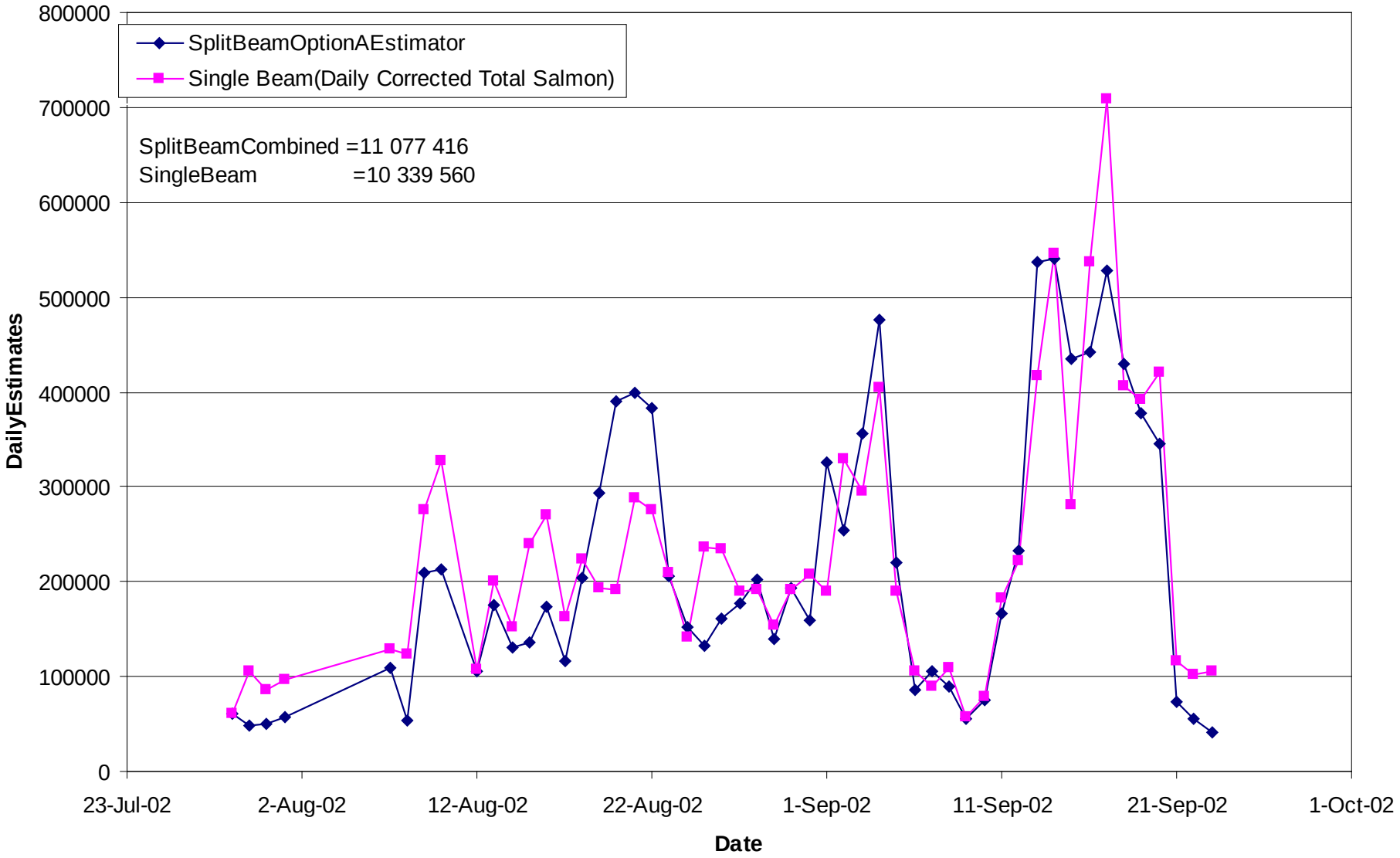
Pacific Salmon Treaty

Estimated differences over 6 years

- 98 - $69+M
- 97 - $76M << Alaska ferry Blockade
- 96 - $65M
- 95 - $61M
- 94 - $67M
- 93 - $62M (Caldwell 1999)

Over $400 million wholesale value over 6 years all in favour of the US.

2002 Daily Estimates of Salmon Abundance by two Hydroacoustic Estimators at Mission, B.C.

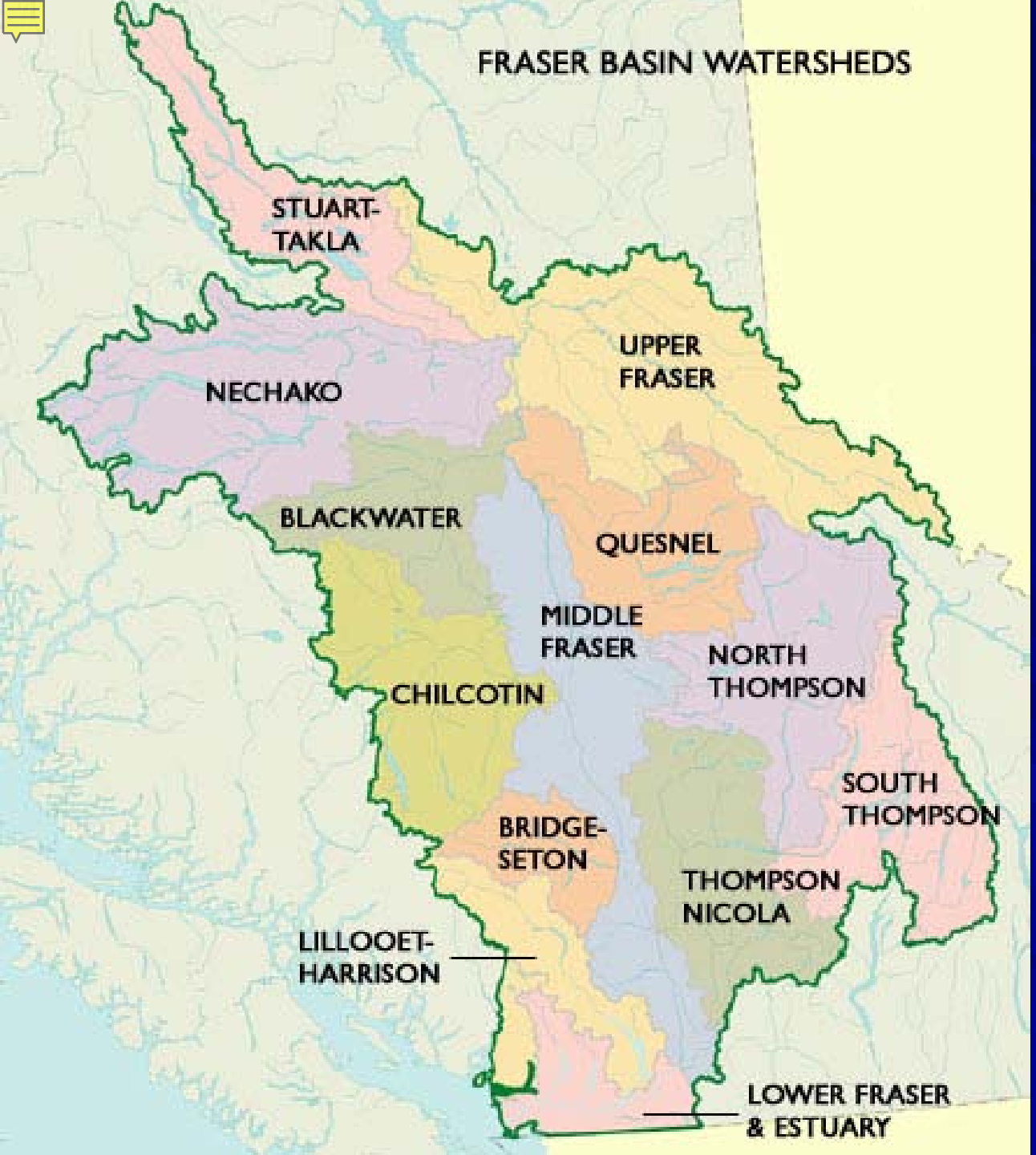


What We Manage For

- biomass
- then for maximum sustainable yield
- then to reduce bycatch
- then for priority allocation
- then for genetic diversity
- now try for ecosystem management

Privileges Diminish

- A license could fish everything
- Privilege have been broken into distinct fishery
- Further break salmon A license into areas
- Small fishermen can’t fish whole coast without multiple licenses, can’t fish other species without another license



Pesticides

Apply between 5,000 & 10,000 metric tonnes in BC every year

(source EC, MOE 2005)

Most end up in aquatic environment

Sub-lethal impacts

(See Diminishing Returns Salmon and Pesticides)

Graphic Fraser Basin Council

Environmental Issues

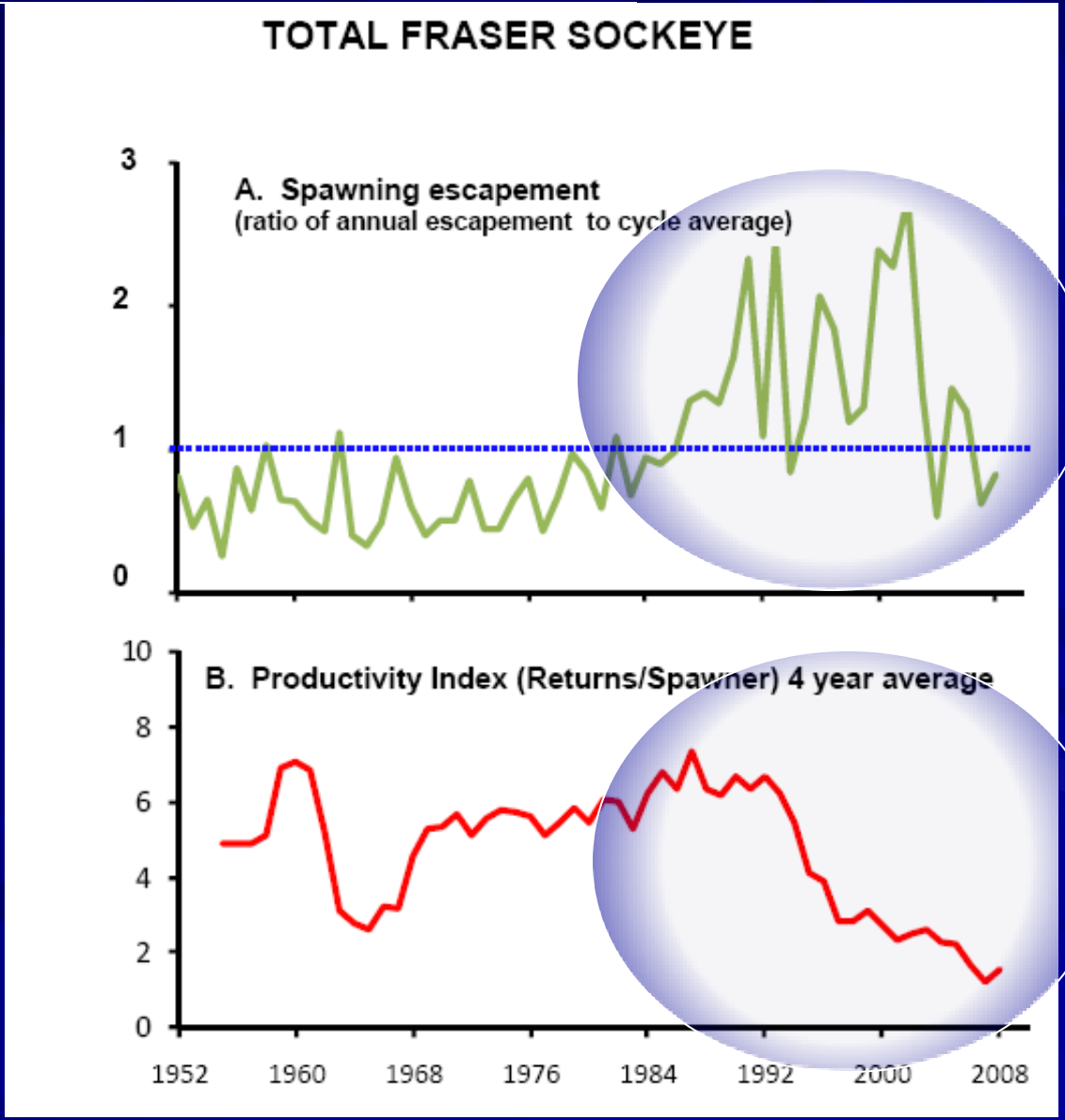
- High in-river mortality for late-run stocks.
- Low water flows,
- High water temperatures.
- High water flows.
- Poor ocean conditions.
- Habitat degradation.

Management Issues

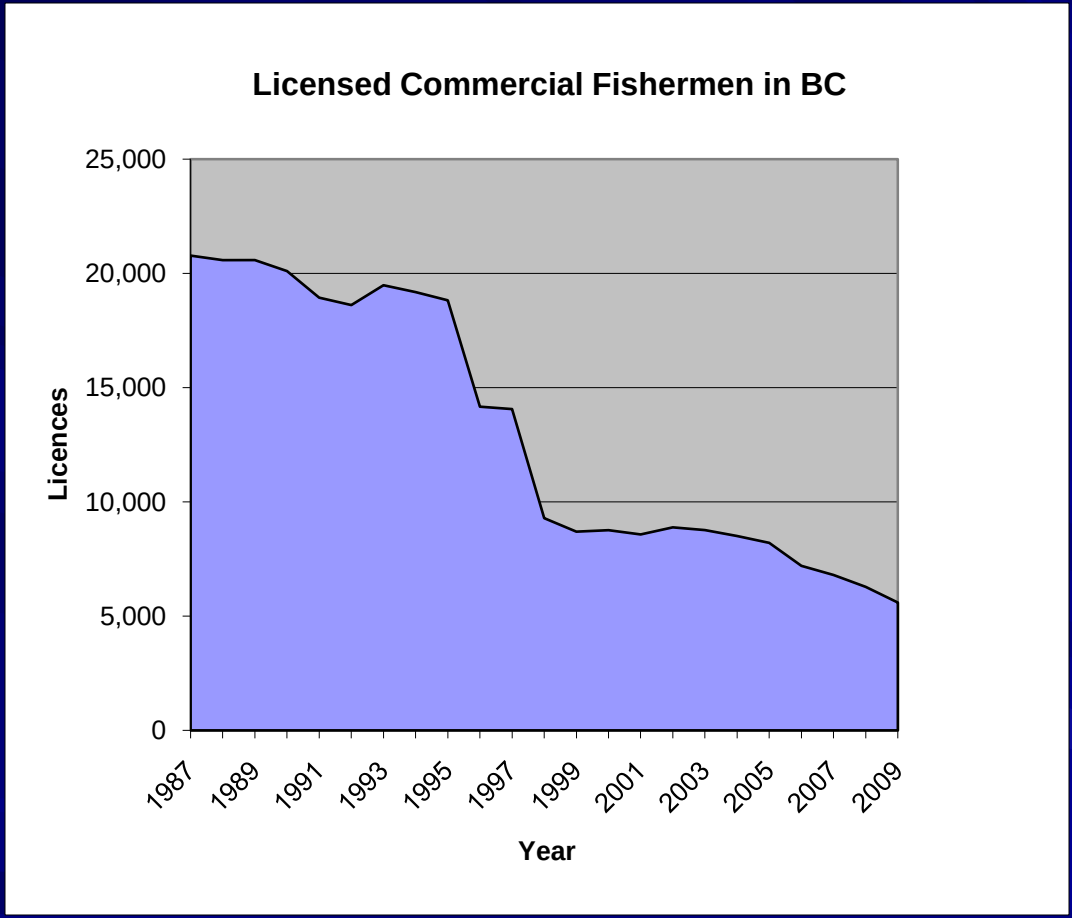
- Shifting fishery management philosophy and practice (precautionary management, increasing escapement targets).
- Need to conserve stocks of concern (e.g. Cultus & Sakinaw sockeye, Interior Fraser coho).
- Illegal fishing.
- Requirement to adhere to Species at Risk Act.
- Allocation priorities for First Nations.

Response: Send more fish to the river

DFO 2010, Pre-season run size forecasts for Fraser River Sockeye salmon in 2010



Commercial Fishermen in BC



Source: DFO 2010

DFO 2010, Pre-season **run size forecasts** for Fraser River Sockeye salmon in 2010

High Run Timing Group

	10%	50%	90%
Early Stuart	55,000	135,000	315,000
Early Summer	387,000	1,518,000	7,993,000
Summer	1,434,000	3,972,000	11,875,000
Late	3,484,000	8,364,000	20,741,000
TOTAL	5,360,000	13,989,000	40,924,000

Low Run Timing Group

	10%	50%	90%
Early Stuart	12,000	29,000	70,000
Early Summer	68,700	314,000	1,430,000
Summer	94,000	290,000	1,029,000
Late	645,000	2,842,000	14,068,000
TOTAL	819,700	3,475,000	16,597,000

We had no idea what was coming, again!

Recommendations

Change our management framework at the Fisheries Act level to include a Ministers Advisory Council that advises the Minister on fisheries matters.

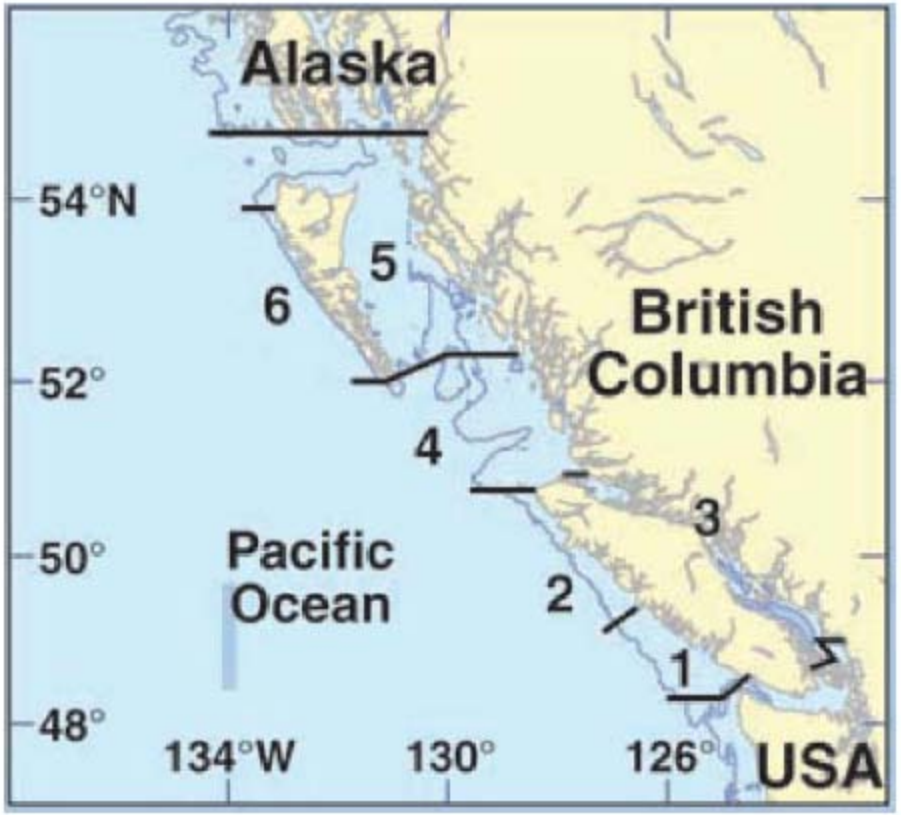
Use DFO as the science and enforcement tool.

Vision Sustainable Fraser Sockeye

Includes vibrant commercial fishery
Work together
Protect entire ecosystem
Enhance sustainable harvests
Develop local & global markets
Safe & green vessels
Green our harbour facilities
Thriving coastal communities
Enhance small vessel access


Thank you for listening to me!
I wish you well with your deliberations.

Productivity == Phytoplankton



Region	Surface area (km^2)	Chl-*a* ($mg\ m^{-3}$)	Resident fish yield ($t\ km^{-2}$)
Conception	60,046	1.38 (0.57)	0.06
Monterey	41,613	2.29 (0.54)	0.45
Eureka	18,692	2.20 (0.86)	0.66
Columbia	36,573	3.24 (0.68)	0.88
Vancouver	34,688	5.15 (0.66)	1.97
Charlotte	82,769	2.16 (0.69)	0.79
Southeast Alaska	43,342	2.79 (0.80)	0.60
Yakutat	76,430	1.57 (0.63)	0.27
British Columbia			
S. Vancouver Island (1)	11,312	4.25 (0.70)	2.39
N. Vancouver Island (2)	10,099	3.30 (0.71)	0.85
Strait of Georgia (3)	8,803	6.92 (0.57)	3.19
Q.C. Sound (4)	31, 408	2.00 (0.71)	0.92
Hecate Strait (5)	44,158	2.41 (0.68)	0.80
West coast Q.C. Islands (6)	7,203	1.10 (0.69)	1.03

biomass. Therefore, the (partial) answer to the question "What regulates the biological productivity of this region" is phytoplankton production and retention, so that any sustained process or event which changes phytoplankton production substantially will eventually have measurable effects on fish production in these systems. The obvious

Currents & Rainfall

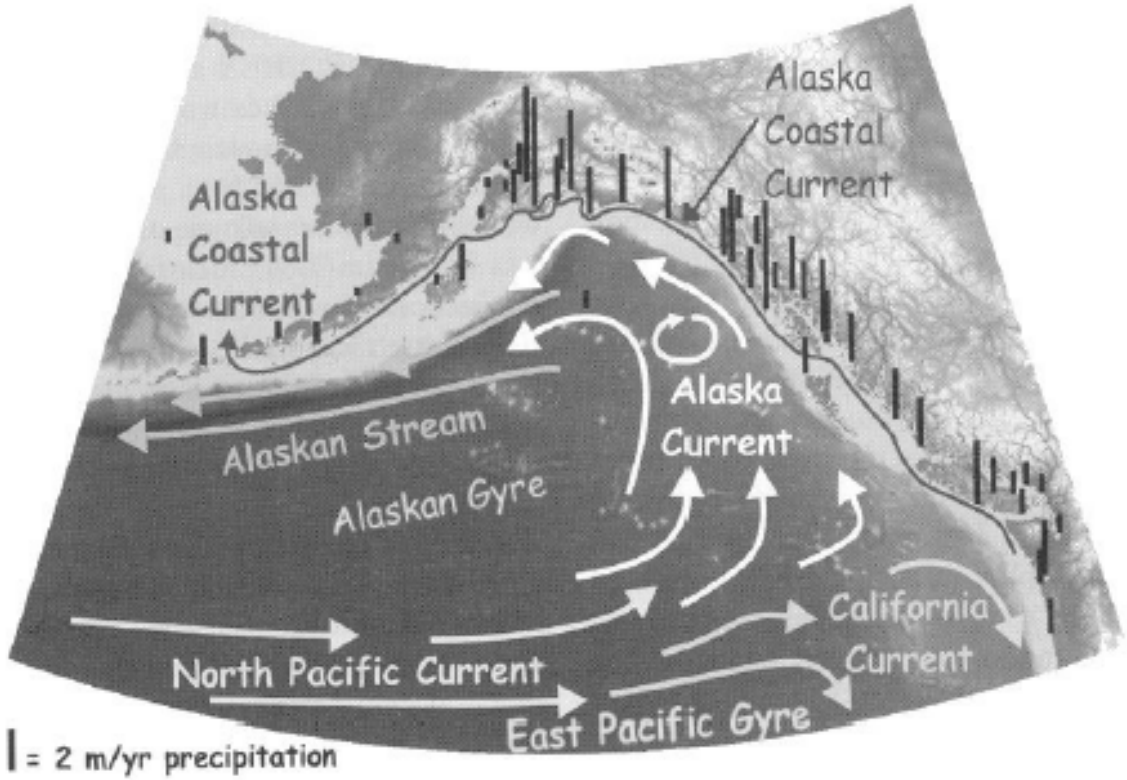


Figure 1.1 Surface circulation fields in the Gulf of Alaska (arrows) and average annual precipitation totals from coastal stations and the central gulf (black vertical bars) (adapted from Mundy and Olsson 2005 after; Baumgartner and Reichel 1975).

North Pacific Temperature Anomalies