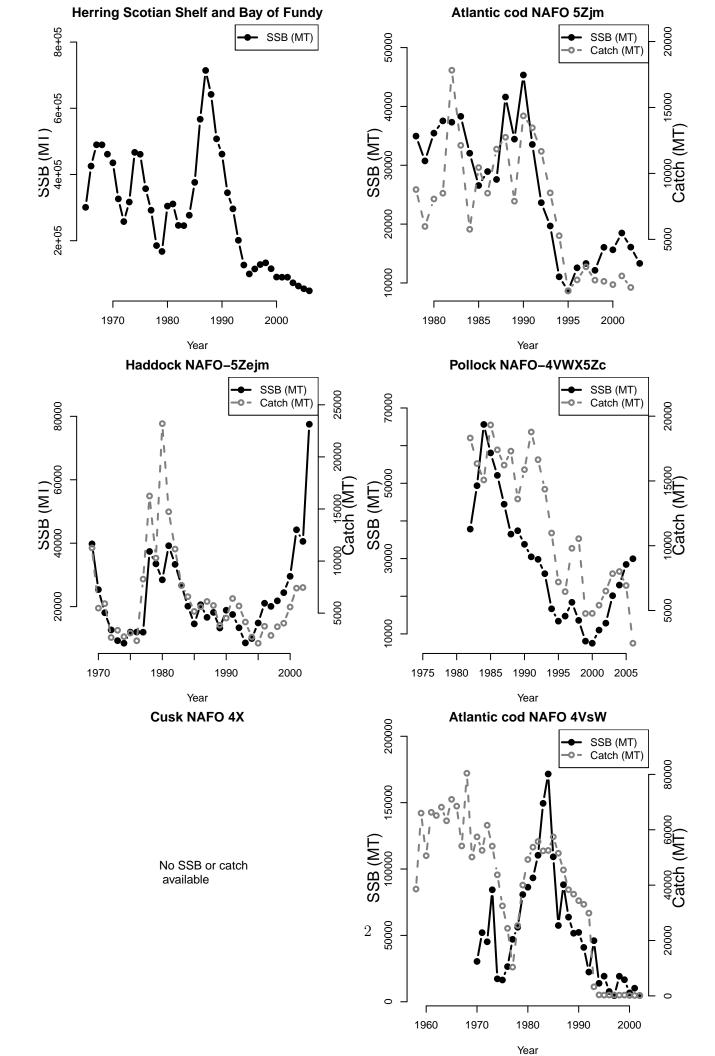
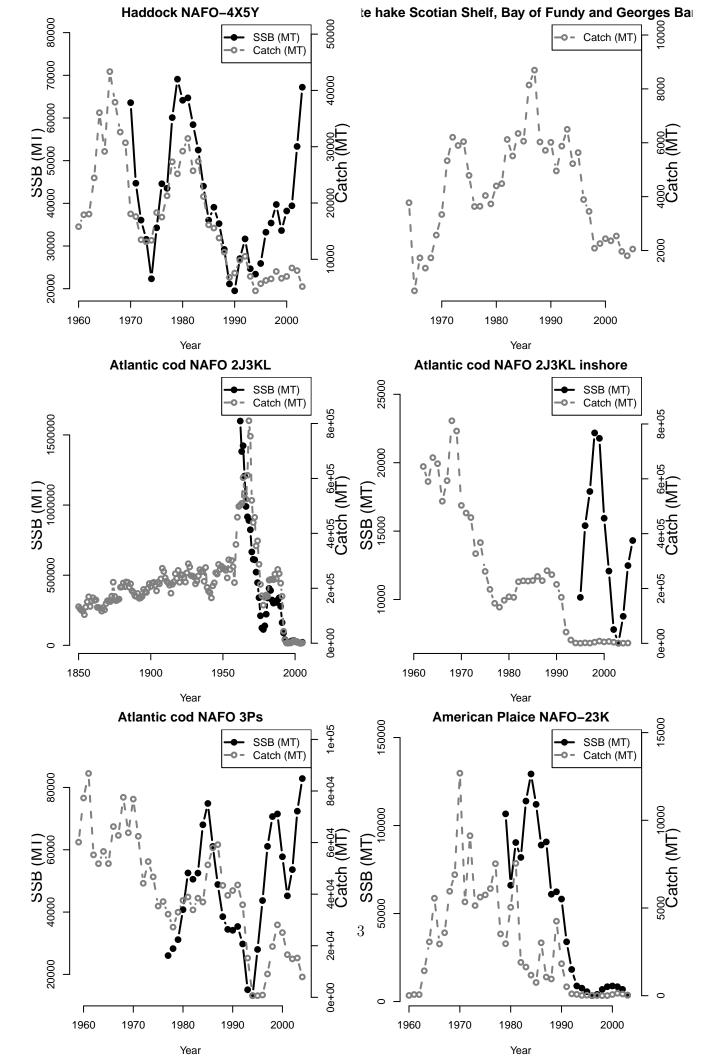
# Stocks of Canadian interest (for the Royal Society of Canada - Expert Panel on Oceans Health and Biodiversity)

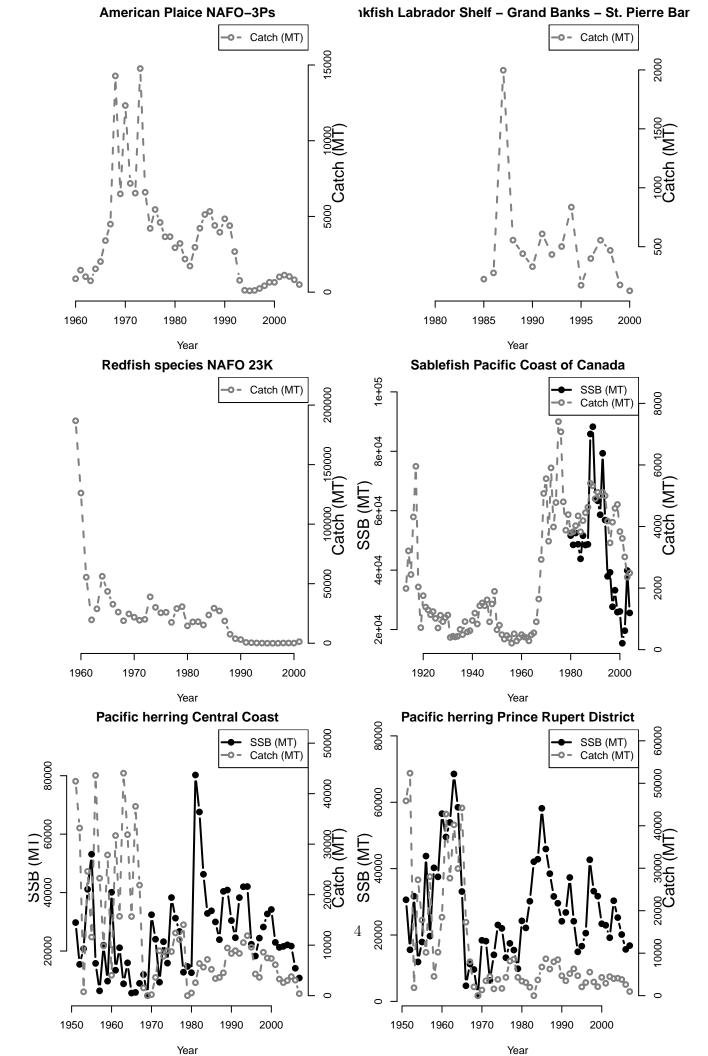
Jeffrey Hutchings \* Daniel Ricard March 10, 2011

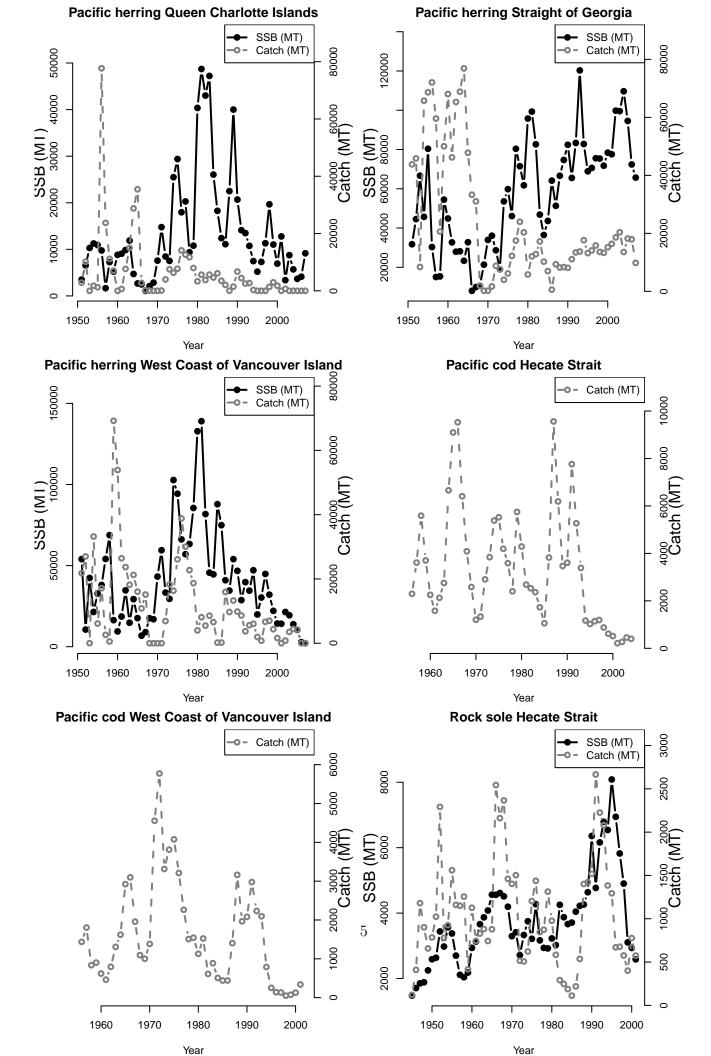
## 1 Summary plots

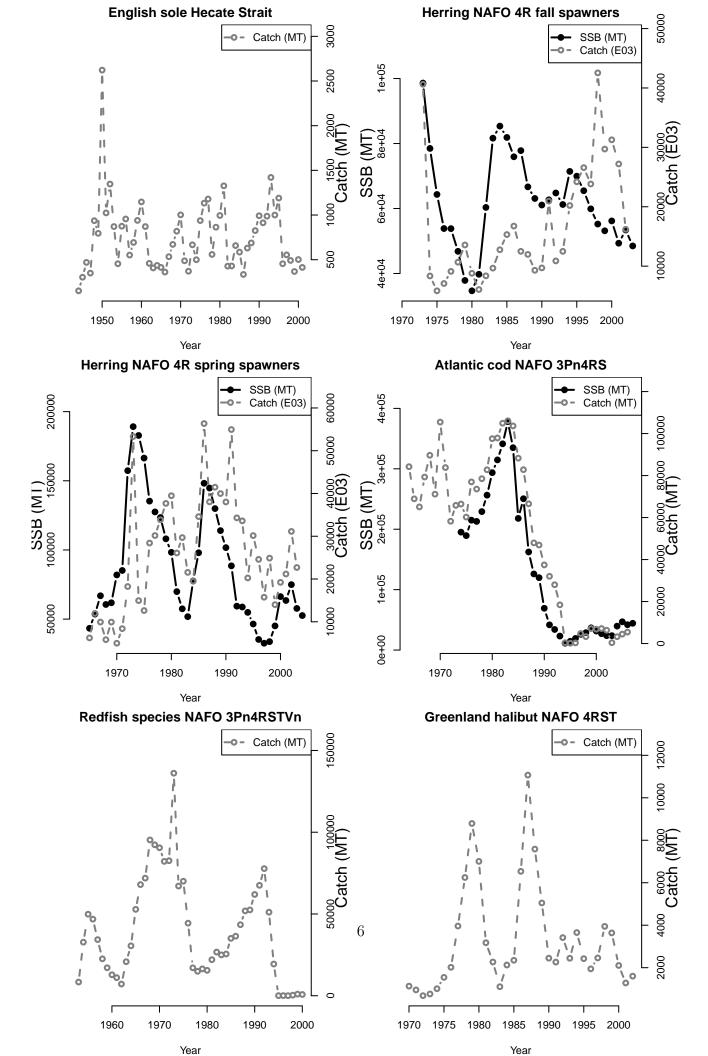
<sup>\*</sup>Dalhousie University, Halifax, NS, Canada

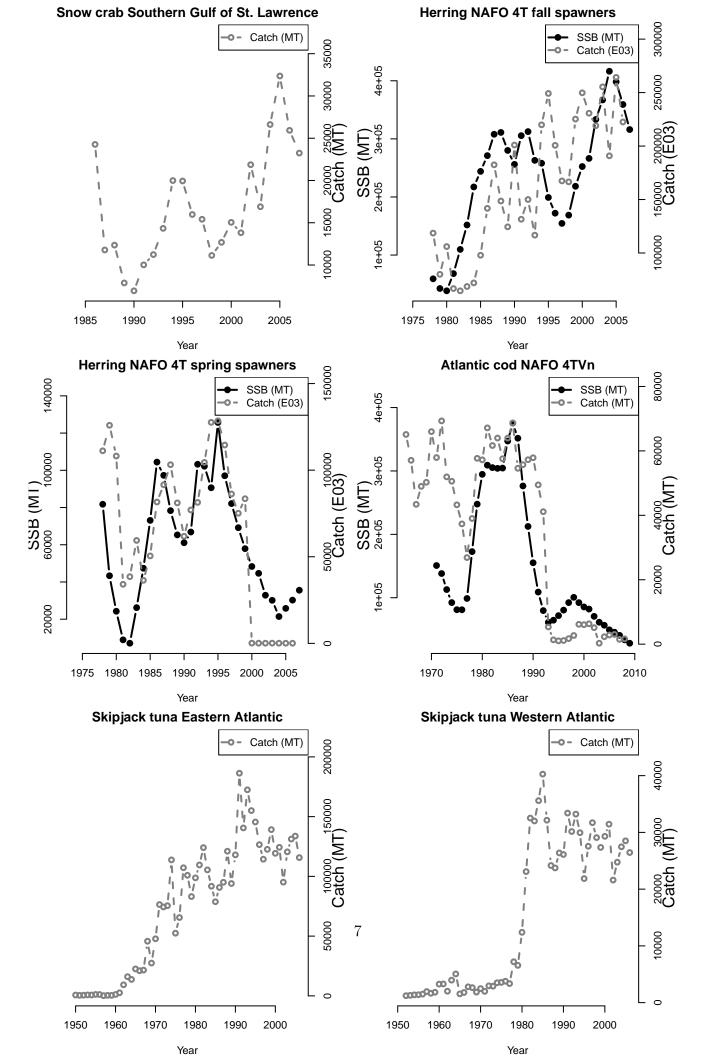


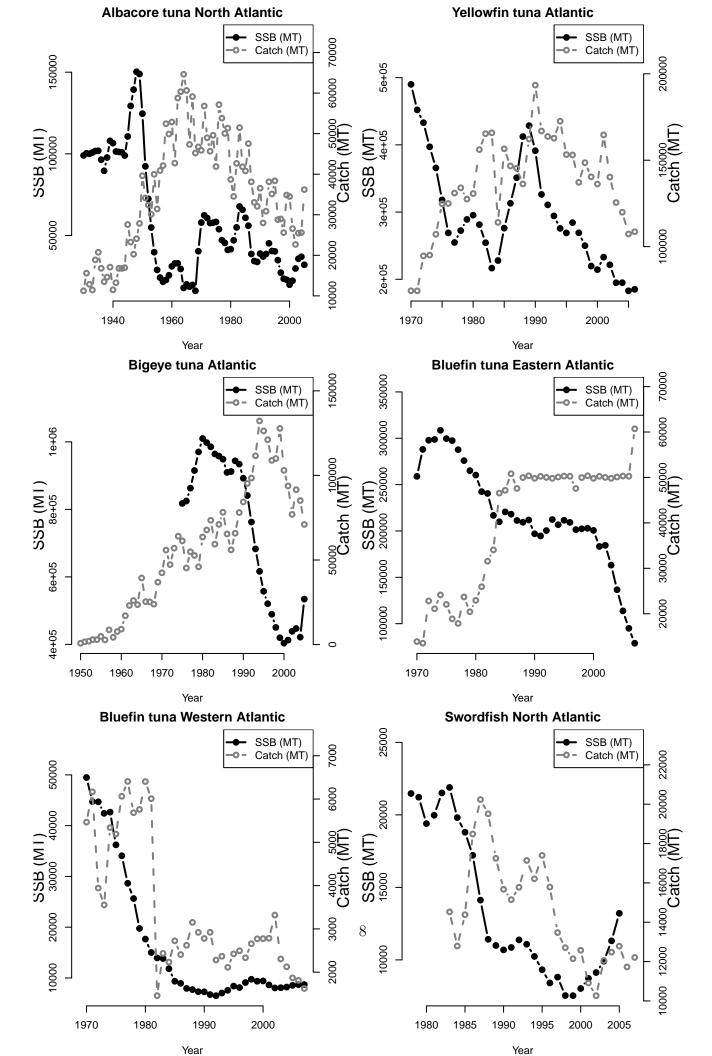


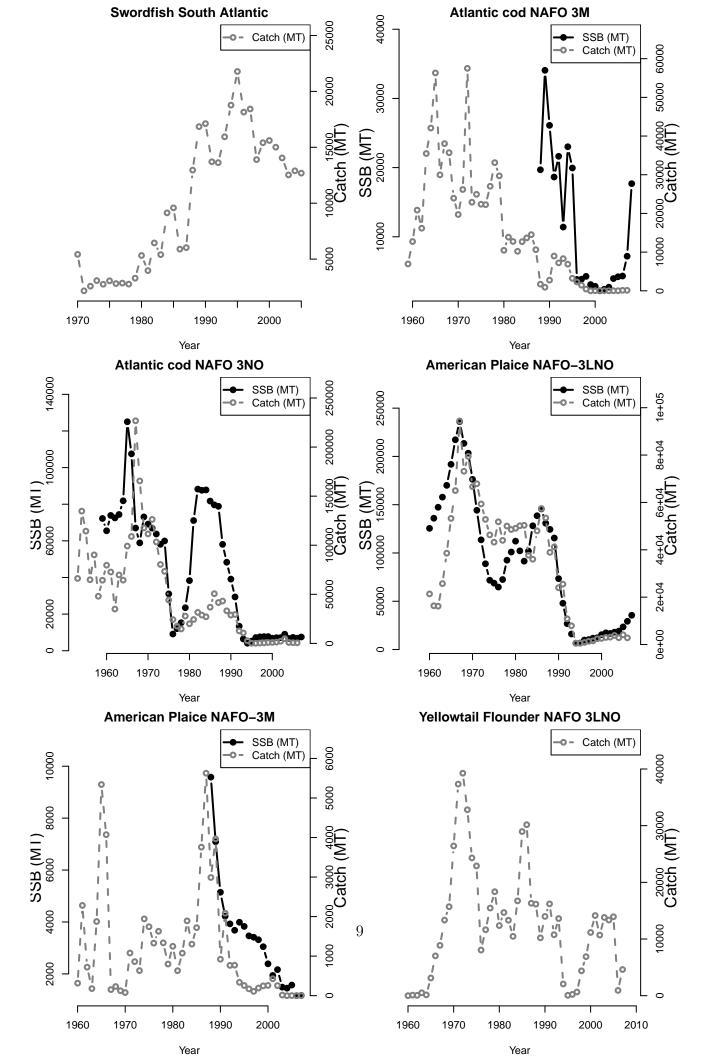


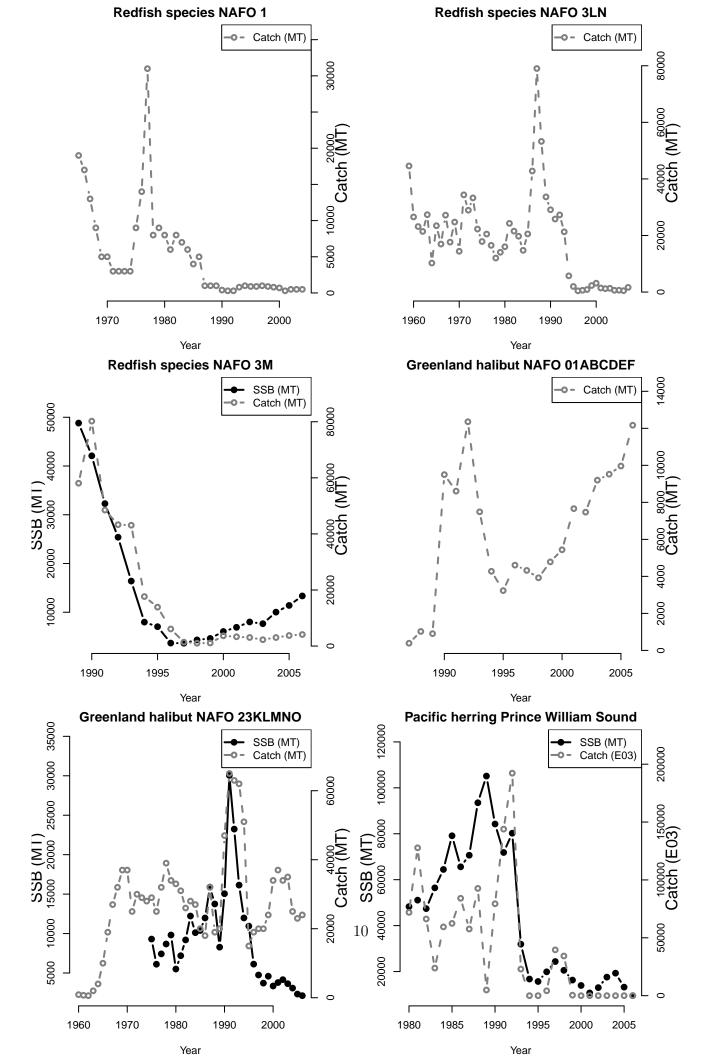


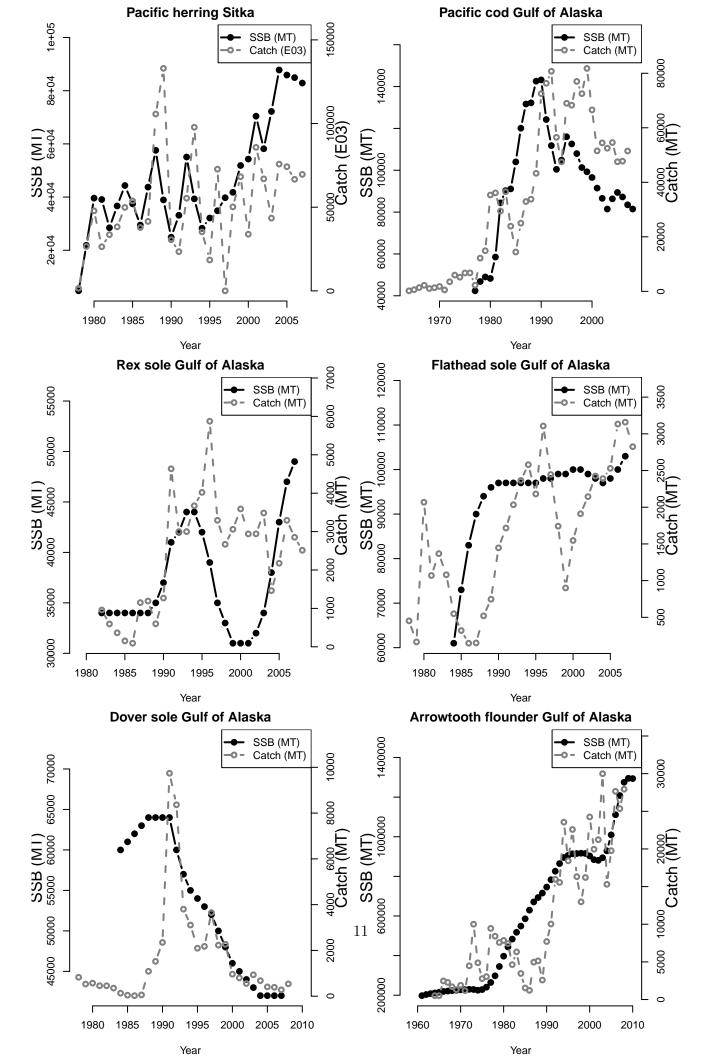


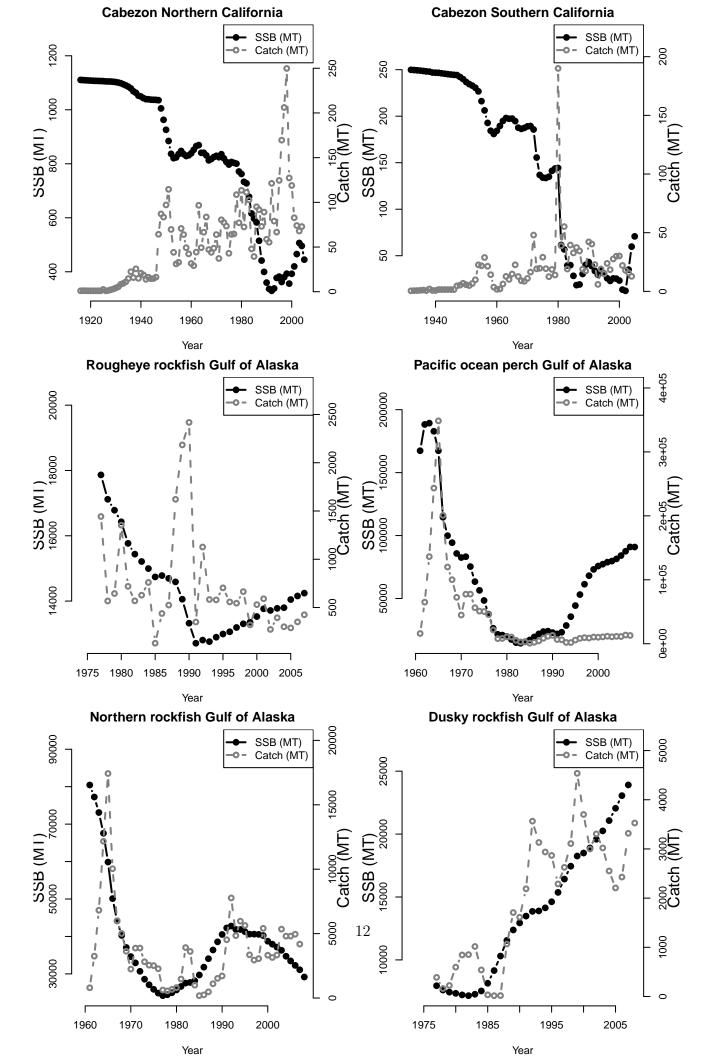


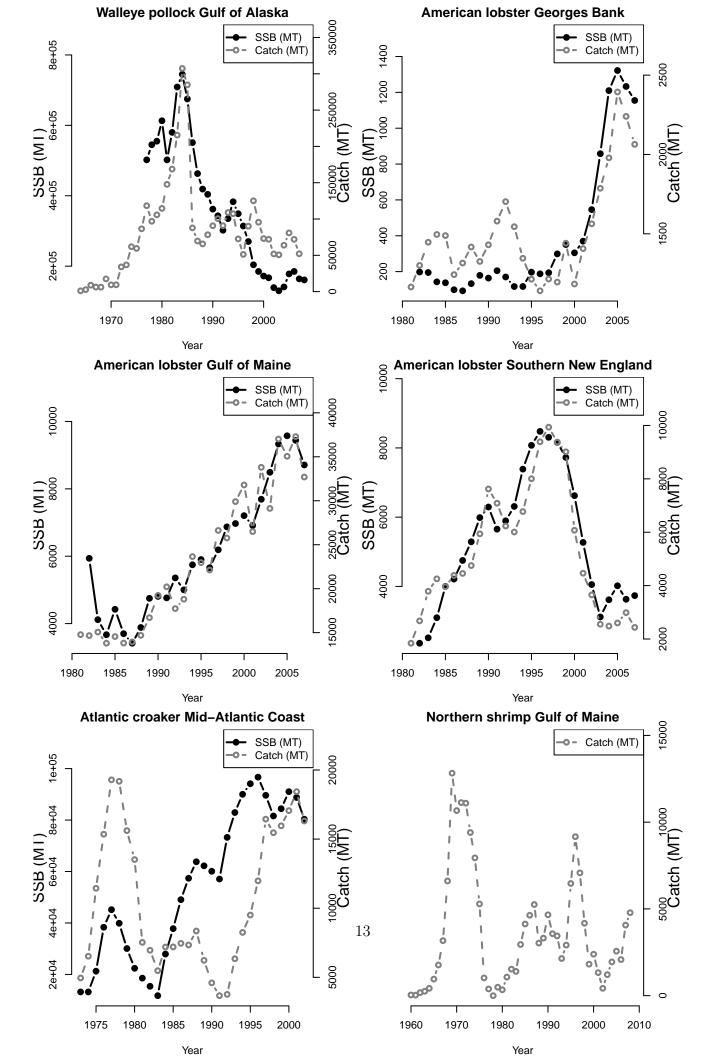






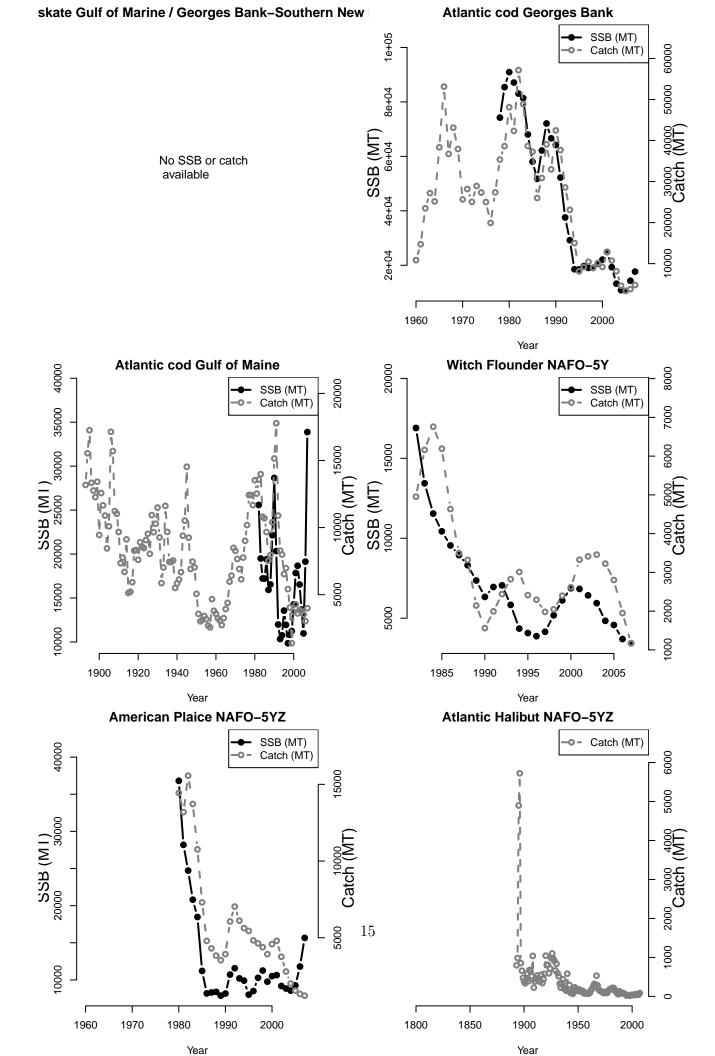






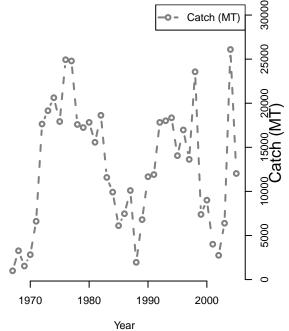
Year

Year



#### lorthern shortfin squid Northwestern Atlantic Coast

#### Little skate Gulf of Maine / Cape Hatteras



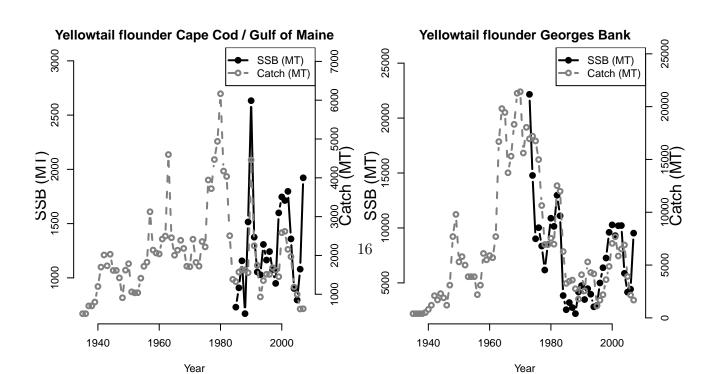
No SSB or catch available

**Rosette skate Mid-Atlantic Coast** 

Winter skate Gulf of Maine / Cape Hatteras

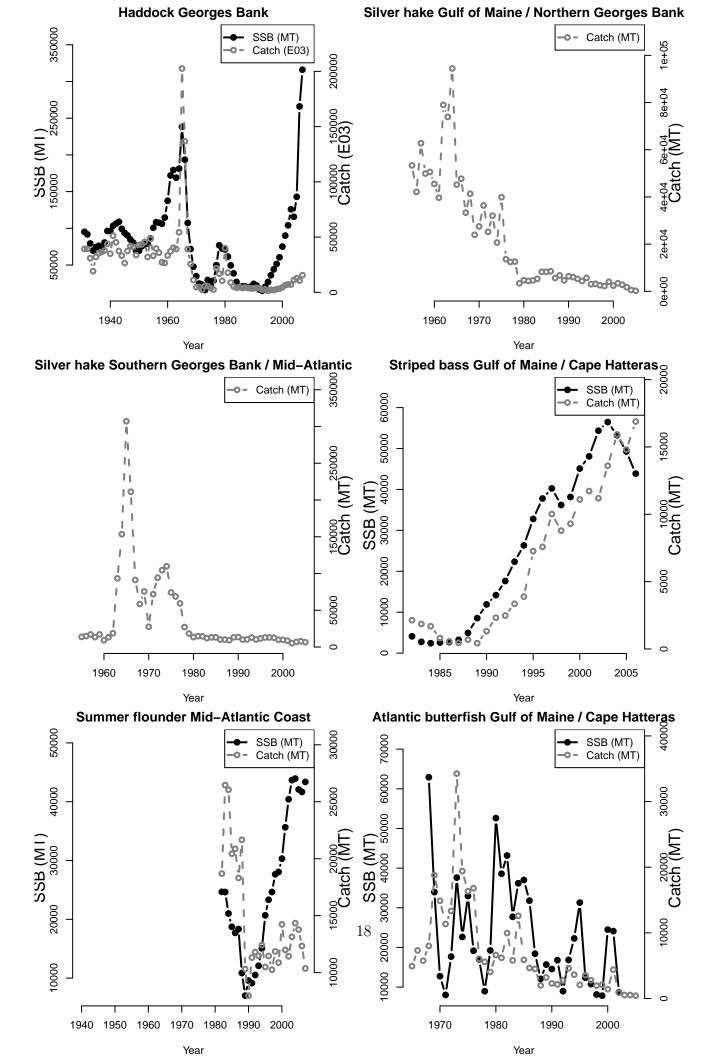
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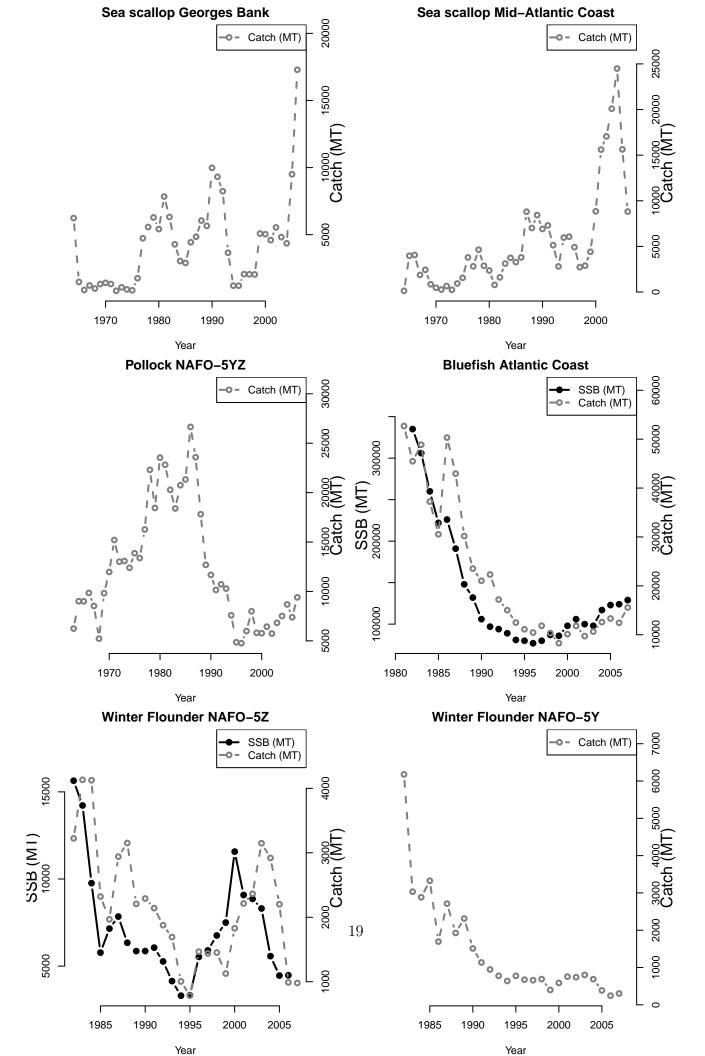
No SSB or catch available



### Iowtail Flounder Southern New England-Mid Atlanti Monkfish Gulf of Maine / Northern Georges Bank SSB (MT) Catch (MT) Catch (MT) 25000 30000 SSB (MI) 5000 10000 15000 20000 Year Year Monkfish Southern Georges Bank / Mid-Atlantic Tilefish Mid-Atlantic Coast Catch (MT) Catch (MT) Year Year kate Gulf of Marine / Georges Bank-Southern New E Haddock NAFO-5Y SSB (MT) - Catch (MT) SSB (MT) No SSB or catch available

Year





### /inter Flounder Southern New England-Mid Atlantic Clearnose skate Mid-Atlantic Coast SSB (MT) Catch (MT) 15000 15000 SSB (MT) 10000 No SSB or catch available 5000 1980 1990 2000 1940 1950 1960 1970 Year Atlantic mackerel Gulf of Maine / Cape Hatteras 'indowpane flounder - Gulf of Maine / Georges Bank SSB (MT) Catch (MT) 4000 SSB (MI) 500000 1000000 1500000 2000000 2500000 Catch (MT) 4e+05 1000 1e+05 0e+00 1960 1970 1980 1990 2000 1975 1980 1985 1990 1995 2000 Year Year Windowpane Southern New England-Mid Atlantic Acadian redfish Gulf of Maine / Georges Bank Catch (MT) SSB (MT) 00009 Catch (MT) 6e+05 20000 10000 20000 30000 40000 Catch (MT) <sup>2000</sup> 3000 4000 Catch (MT) SSB (MT) 2e+05

20

0e+00

1920

1940

1960

Year

1980

2000

1000

0000

2005

1975

1980

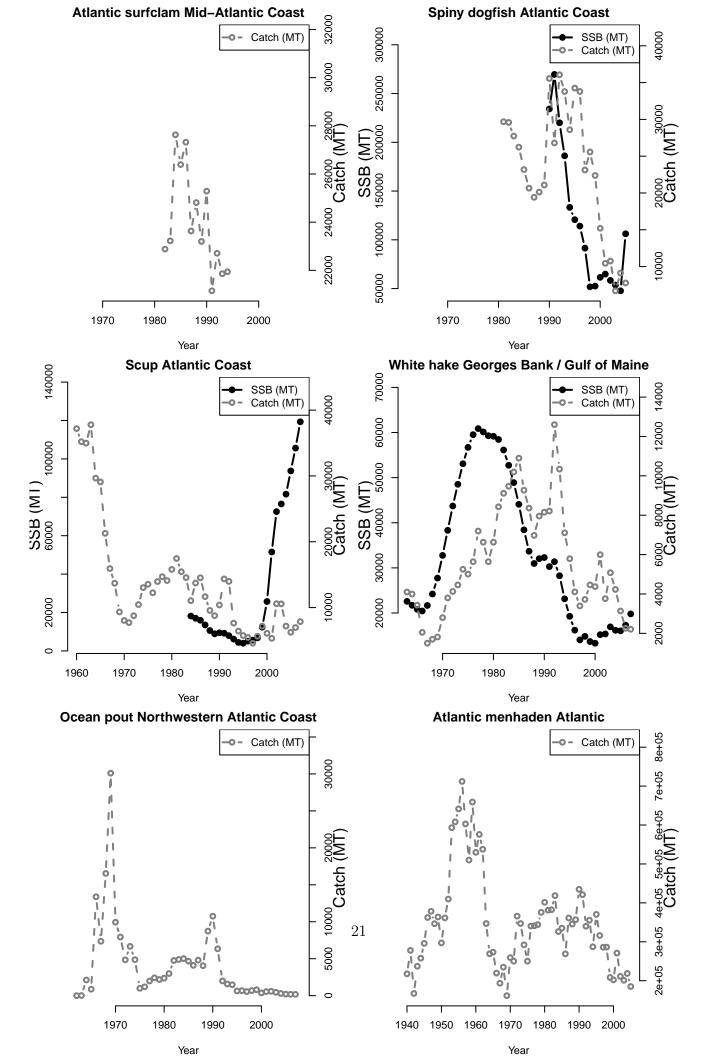
1985

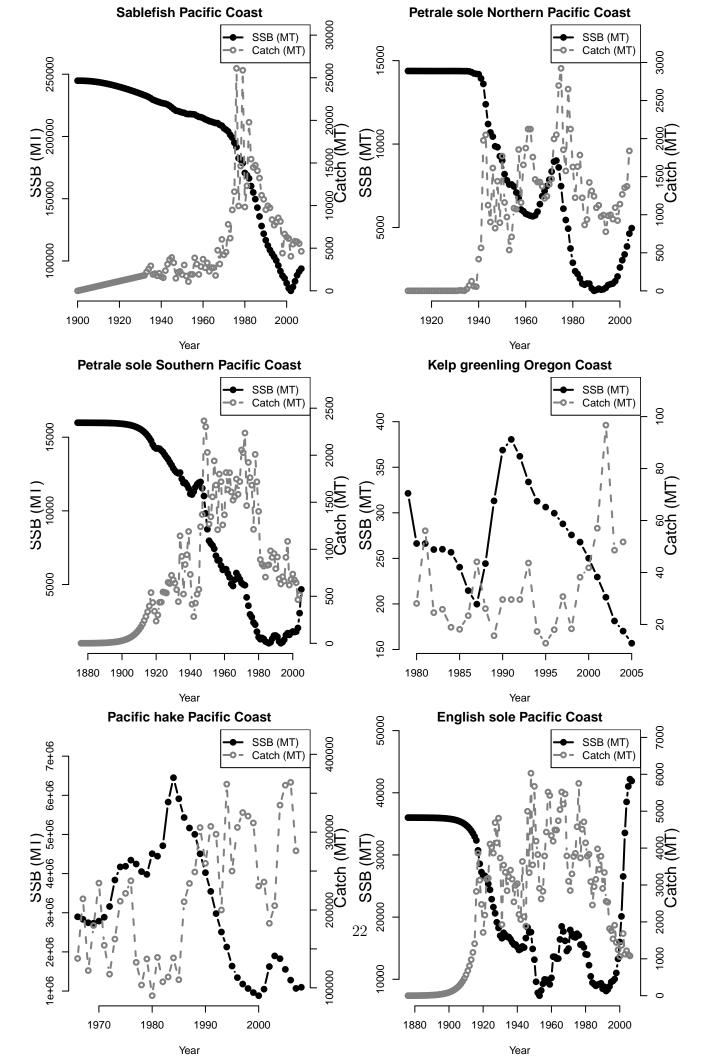
1990

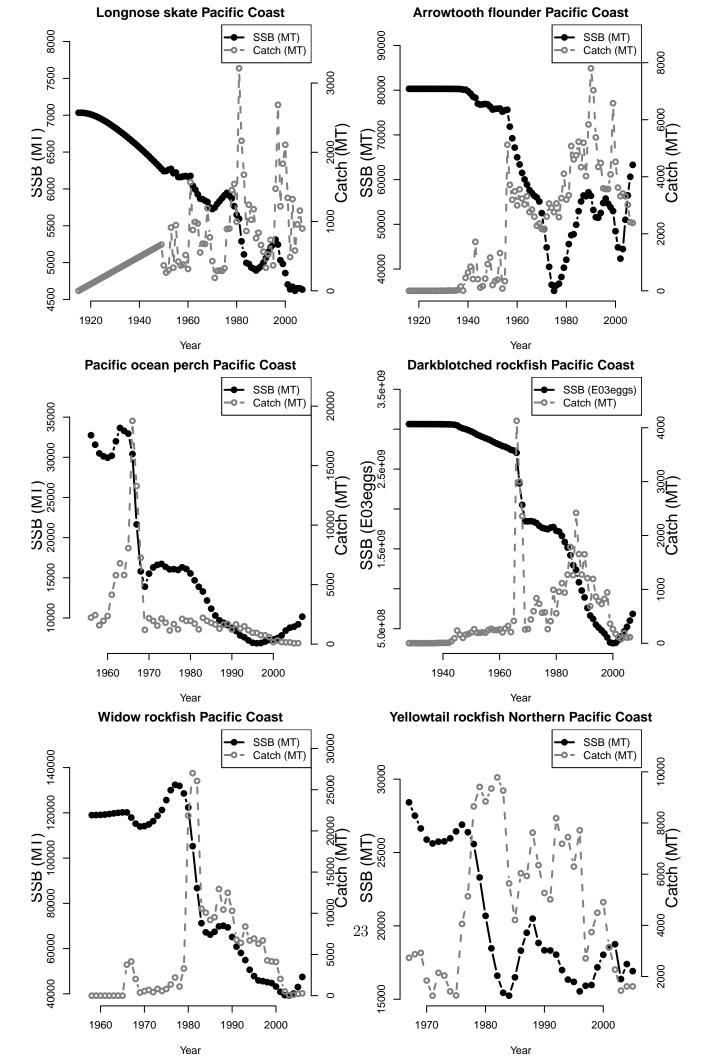
Year

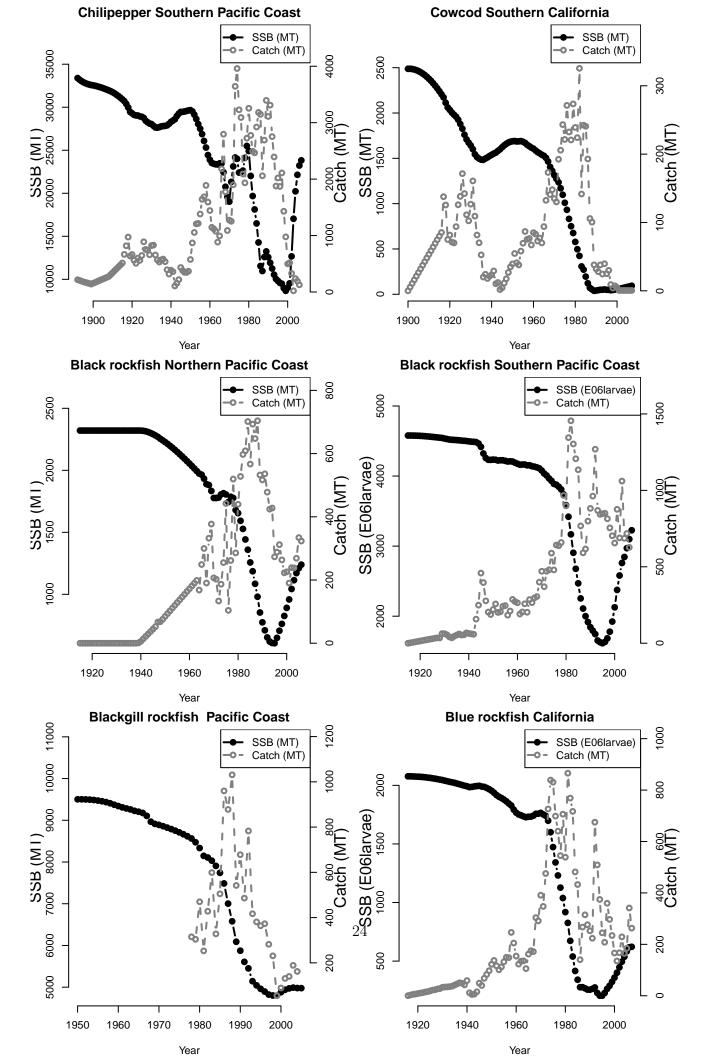
1995

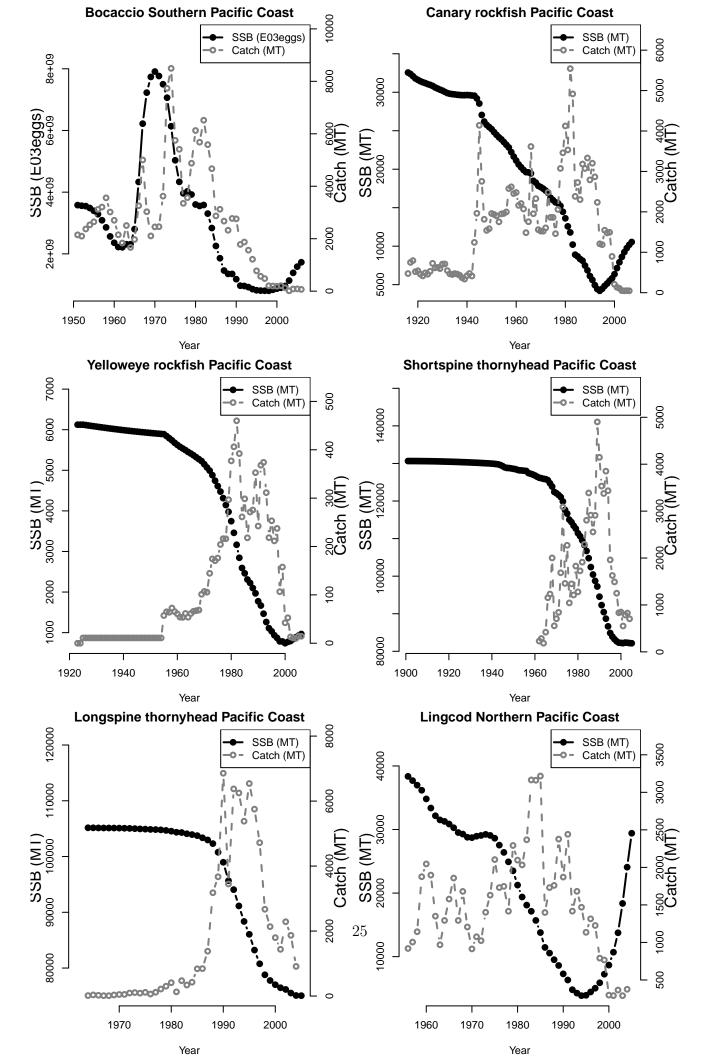
2000

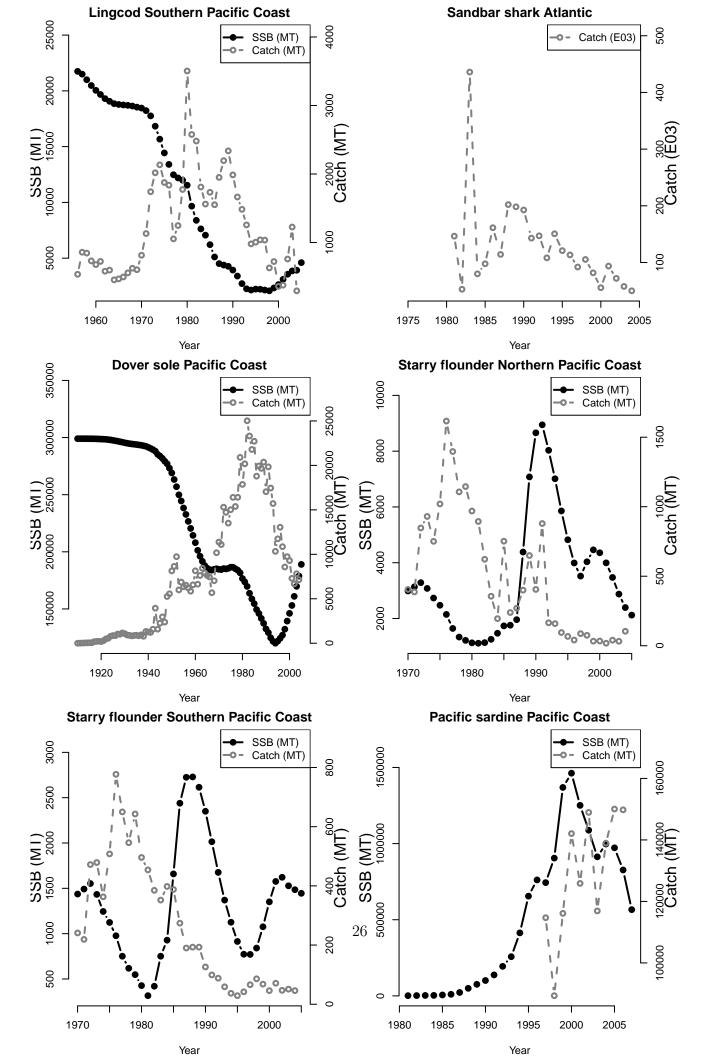


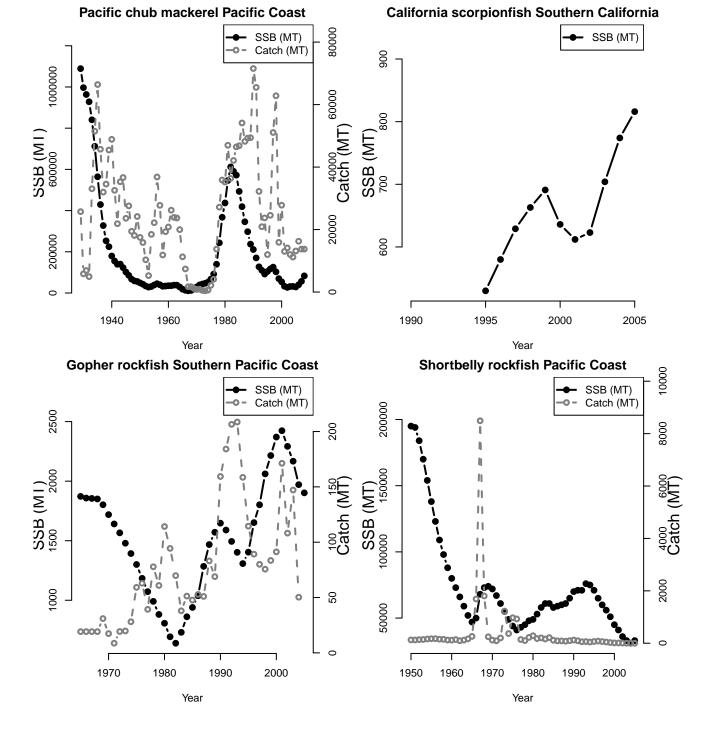


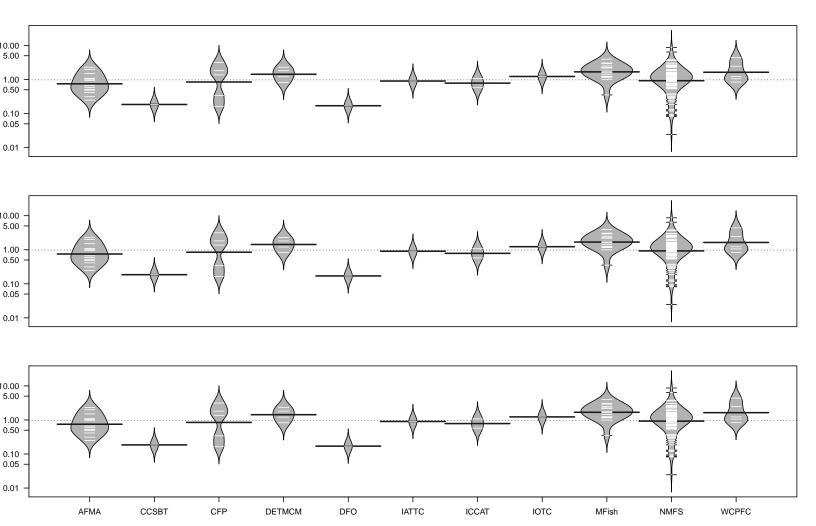












# 2 List of stocks

	Pollock	NAFO-	Pollachius virens	DFO	1974-2007		J.S. Continental
	4VWX5Zc					Shelf	
	Cusk NAFO	4X	Brosme brosme	DFO	1970-2007	Northeast U	J.S. Continental
						Shelf	
	Atlantic cod	NAFO	Gadus morhua	DFO	1958-2002	Scotian Shelf	• [
30	4VsW						
	Haddock	NAFO-	Melanogrammus	DFO	1960-2003	Northeast U	U.S. Continental
	4X5Y		aeglefinus			Shelf	
	White hake	Scotian	Urophycis tenuis	DFO	1964-2005	Scotian Shelf	Î
	Shelf, Bay o	f Fundy					
	and Georges 1	Bank					
	Atlantic cod	NAFO	Gadus morhua	DFO	1850-2005	Newfoundlan	d-Labrador Shelf
	2J3KL						
	Atlantic cod	NAFO	Gadus morhua	DFO	1959-2006	Newfoundlan	d-Labrador Shelf

mgmt

DFO

DFO

DFO

DFO

DFO

LME

Shelf

Shelf

Northeast

Scotian Shelf

Northeast U.S.

Continental

U.S. Continental

Newfoundland-Labrador Shelf

1960-2004 Newfoundland-Labrador Shelf

years

1965-2006

1978-2003

1968-2003

1959-2004

species

Clupea harengus

Gadus morhua

Melanogrammus

Hippoglossoides

platessoides

aeglefinus

stock

5Zjm

5Zejm

Haddock

2J3KL inshore

3Ps

American

NAFO-23K

Herring Scotian Shelf

NAFO-

Atlantic cod NAFO Gadus morhua

Plaice

and Bay of Fundy Atlantic cod NAFO

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American Plaice NAFO-3Ps	Hippoglossoides platessoides	DFO	1960-2005	Newfoundland-Labrador Shelf
Monkfish Labrador Shelf - Grand Banks - St. Pierre Bank	Lophius americanus	DFO	1977-2000	Newfoundland-Labrador Shelf
Redfish species NAFO 23K	Redfish species	DFO	1959-2001	Newfoundland-Labrador Shelf
Sablefish Pacific Coast of Canada	Anoplopoma fim- bria	DFO	1913-2004	Gulf of Alaska
Pacific herring Central Coast	Clupea pallasii	DFO	1951-2007	Gulf of Alaska
Pacific herring Prince Rupert District	Clupea pallasii	DFO	1951-2007	Gulf of Alaska
Pacific herring Queen Charlotte Islands	Clupea pallasii	DFO	1951-2007	Gulf of Alaska
Pacific herring Straight of Geor-	Clupea pallasii	DFO	1951-2007	Gulf of Alaska
gia Pacific herring West Coast of Vancouver Is-	Clupea pallasii	DFO	1951-2007	Gulf of Alaska
land Pacific cod Hecate Strait	Gadus macro- cephalus	DFO	1956-2005	Gulf of Alaska
Pacific cod West Coast of Vancouver Island	Gadus macro- cephalus	DFO	1956-2002	Gulf of Alaska

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	Rock sole Hecate Strait	Lepidopsetta bilineata	DFO	1945-2001	Gulf of Alaska
	English sole Hecate Strait	Parophrys vetulus	DFO	1944-2001	Gulf of Alaska
	Herring NAFO 4R fall spawners	Clupea harengus	DFO	1971-2003	Newfoundland-Labrador Shelf
	Herring NAFO 4R spring spawners	Clupea harengus	DFO	1963-2004	Newfoundland-Labrador Shelf
	Atlantic cod NAFO 3Pn4RS	Gadus morhua	DFO	1964-2007	Newfoundland-Labrador Shelf
	Redfish species NAFO 3Pn4RSTVn	Redfish species	DFO	1953-2000	Newfoundland-Labrador Shelf
32	Greenland halibut NAFO 4RST	Reinhardtius hip- poglossoides	DFO	1970-2002	Newfoundland-Labrador Shelf
	Snow crab Southern Gulf of St. Lawrence	Chionoecetes opilio	DFO	1984-2007	Scotian Shelf
	Herring NAFO 4T fall spawners	Clupea harengus	DFO	1974-2007	Scotian Shelf
	Herring NAFO 4T spring spawners	Clupea harengus	DFO	1974-2007	Scotian Shelf
	Atlantic cod NAFO 4TVn	Gadus morhua	DFO	1965-2009	Scotian Shelf
	Skipjack tuna Eastern Atlantic	Katsuwonus pelamis	ICCAT	1950-2006	Atlantic High Seas
	Skipjack tuna West- ern Atlantic	Katsuwonus pelamis	ICCAT	1952-2006	Atlantic High Seas

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Albacore tuna North	Thunnus alalunga	ICCAT	1929-2005	Atlantic High Seas
Atlantic				
Yellowfin tuna At-	Thunnus albacares	ICCAT	1970-2006	Atlantic High Seas
lantic	TT1 1	ICCAE	1050 2005	All of Tr. L. C
Bigeye tuna Atlantic	Thunnus obesus	ICCAT	1950-2005	Atlantic High Seas
Bluefin tuna Eastern	Thunnus thynnus	ICCAT	1969-2007	Atlantic High Seas
Atlantic	(T)	ICCAT	1000 2007	Adlant's III I Com
Bluefin tuna Western	Thunnus thynnus	ICCAT	1969-2007	Atlantic High Seas
Atlantic	Vinhiag glading	ICCAT	1978-2007	Atlantia High Cook
Swordfish North Atlantic	Xiphias gladius	ICCAI	1976-2007	Atlantic High Seas
Swordfish South At-	Xiphias gladius	ICCAT	1970-2005	Atlantic High Seas
lantic	Aipinas giadrus	100/11	1370-2003	Milantic High Seas
Atlantic cod NAFO	Gadus morhua	NAFO	1959-2008	Newfoundland-Labrador Shelf
3M		11111	1000 2000	Trownsumarana Eastador Shori
Atlantic cod NAFO	Gadus morhua	NAFO	1953-2007	Newfoundland-Labrador Shelf
3NO				
American Plaice	Hippoglossoides	NAFO	1955-2007	Newfoundland-Labrador Shelf
NAFO-3LNO	platessoides			
American Plaice	Hippoglossoides	NAFO	1960-2007	Newfoundland-Labrador Shelf
NAFO-3M	platessoides			
Yellowtail Flounder	Limanda ferruginea	NAFO	1960-2009	Northeast U.S. Continental
NAFO 3LNO				Shelf
Redfish species NAFO	Redfish species	NAFO	1965-2004	West Greenland Shelf
1				
Redfish species NAFO	Redfish species	NAFO	1959-2008	Newfoundland-Labrador Shelf
3LN				

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Redfish species NAFO 3M	Redfish species	NAFO	1989-2006	Newfoundland-Labrador Shelf
Greenland halibut NAFO 01ABCDEF	Reinhardtius hip- poglossoides	NAFO	1987-2006	West Greenland Shelf
Greenland halibut NAFO 23KLMNO	Reinhardtius hip- poglossoides	NAFO	1960-2006	Newfoundland-Labrador Shelf
Pacific herring Prince William Sound	Clupea pallasii	NMFS	1980-2006	Gulf of Alaska
Pacific herring Sitka	Clupea pallasii	NMFS	1978-2007	Gulf of Alaska
Pacific cod Gulf of	Gadus macro-	NMFS	1964-2008	Gulf of Alaska
Alaska	cephalus	NIME	1050 2000	
Rex sole Gulf of	Glyptocephalus	NMFS	1979-2008	Gulf of Alaska
Alaska	zachirus	NI IEC	40=00000	
Flathead sole Gulf of	Hippoglossoides	NMFS	1978-2008	Gulf of Alaska
Alaska	elassodon		40-0 0040	
Dover sole Gulf of	Microstomus pacifi-	NMFS	1978-2010	Gulf of Alaska
Alaska	cus			
Arrowtooth flounder	Reinhardtius sto-	NMFS	1958-2010	Gulf of Alaska
Gulf of Alaska	mias			
Cabezon Northern	Scorpaenichthys	NMFS	1916-2005	California Current
California	marmoratus			
Cabezon Southern	Scorpaenichthys	NMFS	1932-2005	California Current
California	marmoratus			
Rougheye rockfish	Sebastes aleutianus	NMFS	1974-2007	Gulf of Alaska
Gulf of Alaska				
Pacific ocean perch	Sebastes alutus	NMFS	1959-2008	Gulf of Alaska
Gulf of Alaska				

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Northern	rockfish	Sebastes polyspinis	NMFS	1959-2008	Gulf of Ala	ska	
Gulf of Alaska	a						
Dusky rockfis	h Gulf of	Sebastes variabilis	NMFS	1973 - 2008	Gulf of Ala	ska	
Alaska							
Walleye pollo	ock Gulf	Theragra	NMFS	1964-2008	Gulf of Ala	ska	
of Alaska		chalcogramma					
American	lobster	Homarus ameri-	NMFS	1981-2007	Northeast	U.S.	Continental
Georges Bank		canus			Shelf		
American lob	ster Gulf	Homarus ameri-	NMFS	1981-2007	Northeast	U.S.	Continental
of Maine		canus			Shelf		
American	lobster	Homarus ameri-	NMFS	1981-2007	Northeast	U.S.	Continental
Southern Ne	ew Eng-	canus			Shelf		
land							
Atlantic croal	ker Mid-	Micropogonias un-	NMFS	1973 - 2002	Northeast	U.S.	Continental
Atlantic Coas	t	dulatus			Shelf		
Northern shri	mp Gulf	Pandalus borealis	NMFS	1960-2009	Northeast	U.S.	Continental
of Maine					Shelf		
Thorny skat	te Gulf	Amblyraja radiata	NMFS	1963-2005	Northeast	U.S.	Continental
of Marine /	Georges				Shelf		
Bank-Souther	n New						
England							
Ocean quah	og At-	Arctica islandica	NMFS	1978-2008	Northeast	U.S.	Continental
lantic Coast					Shelf		
Black sea ba	ass Mid-	Centropristis stri-	NMFS	1968-2007	Northeast	U.S.	Continental
Atlantic Coas	t	ata			Shelf		
Red deepse	a crab	Chaceon quinque-	NMFS	1982-2008	Northeast	U.S.	Continental
Northwestern	Atlantic	dens			Shelf		

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Atlantic herring Northwestern Atlantic	Clupea harengus	NMFS	1960-2005	Northeast Shelf	U.S.	Continental
Coast						
Weakfish Atlantic	Cynoscion regalis	NMFS	1981-2008	Northeast	U.S.	Continental
Coast	c) 110001011 1080110	111112	1001 2000	Shelf	0.0.	0 0110111011001
Barndoor skate Gulf	Dipturus laevis	NMFS	1963-2005	Northeast	U.S.	Continental
of Marine / Georges	•			Shelf		
Bank-Southern New						
England						
Atlantic cod Georges	Gadus morhua	NMFS	1960-2008	Northeast	U.S.	Continental
Bank				Shelf		
Atlantic cod Gulf of	Gadus morhua	NMFS	1893-2008	Northeast	U.S.	Continental
Maine				Shelf		
Witch Flounder	Glyptocephalus	NMFS	1982-2008	Northeast	U.S.	Continental
NAFO-5Y	cynoglossus			Shelf		
American Plaice	Hippoglossoides	NMFS	1960-2008	Northeast	U.S.	Continental
NAFO-5YZ	platessoides			Shelf		
Atlantic Halibut	Hippoglossus hip-	NMFS	1800-2007	Northeast	U.S.	Continental
NAFO-5YZ	poglossus			Shelf		
Northern shortfin	Illex illecebrosus	NMFS	1967 - 2005	Northeast	U.S.	Continental
squid Northwestern				Shelf		
Atlantic Coast						
Little skate Gulf of	Leucoraja erinacea	NMFS	1968-2006	Northeast	U.S.	Continental
Maine / Cape Hat-				Shelf		
teras						
Rosette skate Mid-	Leucoraja garmani	NMFS	1967-2005	Northeast	U.S.	Continental
Atlantic Coast				Shelf		

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	Winter skate Gulf of Maine / Cape Hat-	Leucoraja ocellata	NMFS	1967-2005	Northeast Shelf	U.S.	Continental
	teras Yellowtail flounder Cape Cod / Gulf of Maine	Limanda ferruginea	NMFS	1935-2008	Northeast Shelf	U.S.	Continental
		Limanda ferruginea	NMFS	1935-2008	Northeast Shelf	U.S.	Continental
	Yellowtail Floun- der Southern New	Limanda ferruginea	NMFS	1935-2008	Northeast Shelf	U.S.	Continental
<b>2</b>	England-Mid Atlantic Monkfish Gulf of Maine / Northern Georges Bank	Lophius americanus	NMFS	1964-2006	Northeast Shelf	U.S.	Continental
4	Monkfish Southern Georges Bank / Mid-Atlantic	Lophius americanus	NMFS	1964-2006	Northeast Shelf	U.S.	Continental
	Tilefish Mid-Atlantic Coast	Lopholatilus chamaeleonticeps	NMFS	1973-2008	Northeast Shelf	U.S.	Continental
	Smooth skate Gulf of Marine / Georges Bank-Southern New England	Malacoraja senta	NMFS	1963-2005	Northeast Shelf	U.S.	Continental
	Haddock NAFO-5Y	Melanogrammus aeglefinus	NMFS	1956-2008	Northeast Shelf	U.S.	Continental
	Haddock Georges Bank	Melanogrammus aeglefinus	NMFS	1930-2008	Northeast Shelf	U.S.	Continental

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	Silver hake Maine / Georges Bar	Northern	Merluccius earis	bilin-	NMFS	1955-2005	Northeast Shelf	U.S.	Continental
	Silver hake Georges Bar Atlantic	Southern	Merluccius earis	bilin-	NMFS	1955-2005	Northeast Shelf	U.S.	Continental
	Striped bas Maine / C teras		Morone saxa	tilis	NMFS	1982-2006	Northeast Shelf	U.S.	Continental
	Summer Mid-Atlantic		Paralichthys tus	denta-	NMFS	1940-2007	Northeast Shelf	U.S.	Continental
<b>3</b> ⊗		butterfish		riacan-	NMFS	1965-2005		U.S.	Continental
	Sea scallop Bank	Georges	Placopecten lanicus	magel-	NMFS	1964-2006	Northeast Shelf	U.S.	Continental
	Sea scalle Atlantic Coa	-	Placopecten lanicus	magel-	NMFS	1964-2006	Northeast Shelf	U.S.	Continental
	Pollock NAI	FO-5YZ	Pollachius vi	rens	NMFS	1963-2007	Northeast Shelf	U.S.	Continental
	Bluefish Coast	Atlantic	Pomatomus trix	salta-	NMFS	1981-2007	Northeast Shelf	U.S.	Continental
	Winter NAFO-5Z	Flounder	Pseudopleuro americanus	onectes	NMFS	1982-2007	Northeast Shelf	U.S.	Continental
	Winter NAFO-5Y	Flounder	Pseudopleuro americanus	onectes	NMFS	1982-2008	Northeast Shelf	U.S.	Continental

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Winter Floun- der Southern New England-Mid Atlantic	Pseudopleuronectes americanus	NMFS	1940-2007	Northeast Shelf	U.S.	Continental
Clearnose skate Mid- Atlantic Coast	Raja eglanteria	NMFS	1975-2005	Northeast Shelf	U.S.	Continental
Atlantic mackerel Gulf of Maine / Cape Hatteras	Scomber scombrus	NMFS	1960-2005	Northeast Shelf	U.S.	Continental
Windowpane flounder - Gulf of Maine / Georges Bank	Scophthalmus aquosus	NMFS	1975-2007	Northeast Shelf	U.S.	Continental
Windowpane Southern New England-Mid	Scophthalmus aquosus	NMFS	1975-2007	Northeast Shelf	U.S.	Continental
Acadian redfish Gulf of Maine / Georges Bank	Sebastes fasciatus	NMFS	1913-2007	Northeast Shelf	U.S.	Continental
Atlantic surfclam Mid-Atlantic Coast	Spisula solidissima	NMFS	1965-2008	Northeast Shelf	U.S.	Continental
Spiny dogfish Atlantic Coast	Squalus acanthias	NMFS	1962-2006	Northeast Shelf	U.S.	Continental
Scup Atlantic Coast	Stenotomus chrysops	NMFS	1960-2007	Northeast Shelf	U.S.	Continental
White hake Georges Bank / Gulf of Maine	Urophycis tenuis	NMFS	1963-2007	Northeast Shelf	U.S.	Continental

Ocean pout Northwestern Atlantic	Zoarces americanus	NMFS	1962-2008	Northeast U.S. Continental Shelf
Coast				
Atlantic menhaden	Brevoortia tyran-	NMFS	1940-2005	Northeast U.S. Continental
Atlantic	nus			Shelf
Sablefish Pacific Coast	Anoplopoma fim-	NMFS	1900-2007	California Current
	bria			
Petrale sole Northern	Eopsetta jordani	NMFS	1910-2005	California Current
Pacific Coast				
Petrale sole Southern	Eopsetta jordani	NMFS	1874 - 2005	California Current
Pacific Coast				
Kelp greenling Oregon	Hexagrammos	NMFS	1979 - 2005	California Current
Coast	decagrammus			
Pacific hake Pacific	Merluccius produc-	NMFS	1966-2008	California Current
Coast	tus			
English sole Pacific	Parophrys vetulus	NMFS	1876-2007	California Current
Coast				
Longnose skate Pacific	Raja rhina	NMFS	1915-2007	California Current
Coast				
Arrowtooth flounder	Reinhardtius sto-	NMFS	1916-2007	California Current
Pacific Coast	mias			
Pacific ocean perch	Sebastes alutus	NMFS	1953 - 2007	California Current
Pacific Coast				
Darkblotched rockfish	Sebastes crameri	NMFS	1928-2007	California Current
Pacific Coast				
Widow rockfish Pa-	Sebastes entomelas	NMFS	1955 - 2006	California Current
cific Coast				

Yellowtail Northern	rockfish Pacific	Sebastes flavidus	NMFS	1967-2005	California Current
Coast	1 001110				
Chilipepper		Sebastes goodei	NMFS	1892-2007	California Current
Pacific Coast Cowcod Sout		Sebastes levis	NMFS	1900-2007	California Current
ifornia	nem Car-	Sebastes levis	MMIN	1900-2007	Camorina Current
Black rockfis	sh North-	Sebastes melanops	NMFS	1914-2006	California Current
ern Pacific C	oast				
Black rockfis		Sebastes melanops	NMFS	1915-2007	California Current
ern Pacific C					
Blackgill roc	kfish Pa-	Sebastes melanos-	NMFS	1950-2005	California Current
cific Coast		tomus			
Blue rockfish	n Califor-	Sebastes mystinus	NMFS	1916-2007	California Current
nia					
	Southern	Sebastes paucispi-	NMFS	1951-2006	California Current
Pacific Coast		nis			
Canary rock	kfish Pa-	Sebastes pinniger	NMFS	1916-2007	California Current
cific Coast					
Yelloweye roo	ckfish Pa-	Sebastes ruber-	NMFS	1923-2006	California Current
cific Coast		rimus			
Shortspine	thorny-	Sebastolobus alas-	NMFS	1901-2005	California Current
head Pacific		canus			
Longspine th		Sebastolobus al-	NMFS	1962-2005	California Current
Pacific Coast	;	tivelis			
Lingcod Nort	thern Pa-	Ophiodon elonga-	NMFS	1956-2005	California Current
cific Coast		tus			

Lingcod Southern Pa-	Ophiodon elonga-	NMFS	1956-2005	California Current
cific Coast Sandbar shark At-	tus Carcharhinus	NMFS	1975-2004	Scotian Shelf
lantic	plumbeus	111112	10.0 2001	
Dover sole Pacific	Microstomus pacifi-	NMFS	1910-2005	California Current
Coast	cus			
Starry flounder North-	Platichthys stella-	NMFS	1970 - 2005	California Current
ern Pacific Coast	tus			
Starry flounder South-	Platichthys stella-	NMFS	1970 - 2005	California Current
ern Pacific Coast	tus			
Pacific sardine Pacific	Sardinops sagax	NMFS	1981-2007	California Current
Coast				
Pacific chub mackerel	Scomber japonicus	NMFS	1929-2008	California Current
Pacific Coast				
California scorpionfish	Scorpaena guttata	NMFS	1990-2005	California Current
Southern California				
Gopher rockfish	Sebastes carnatus	NMFS	1965 - 2005	California Current
Southern Pacific				
Coast				
Shortbelly rockfish	Sebastes jordani	NMFS	1950-2005	California Current
Pacific Coast				

Table 1: Stocks present in the RAM Legacy database that inhabit Canadian waters and are of national relevance.