

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

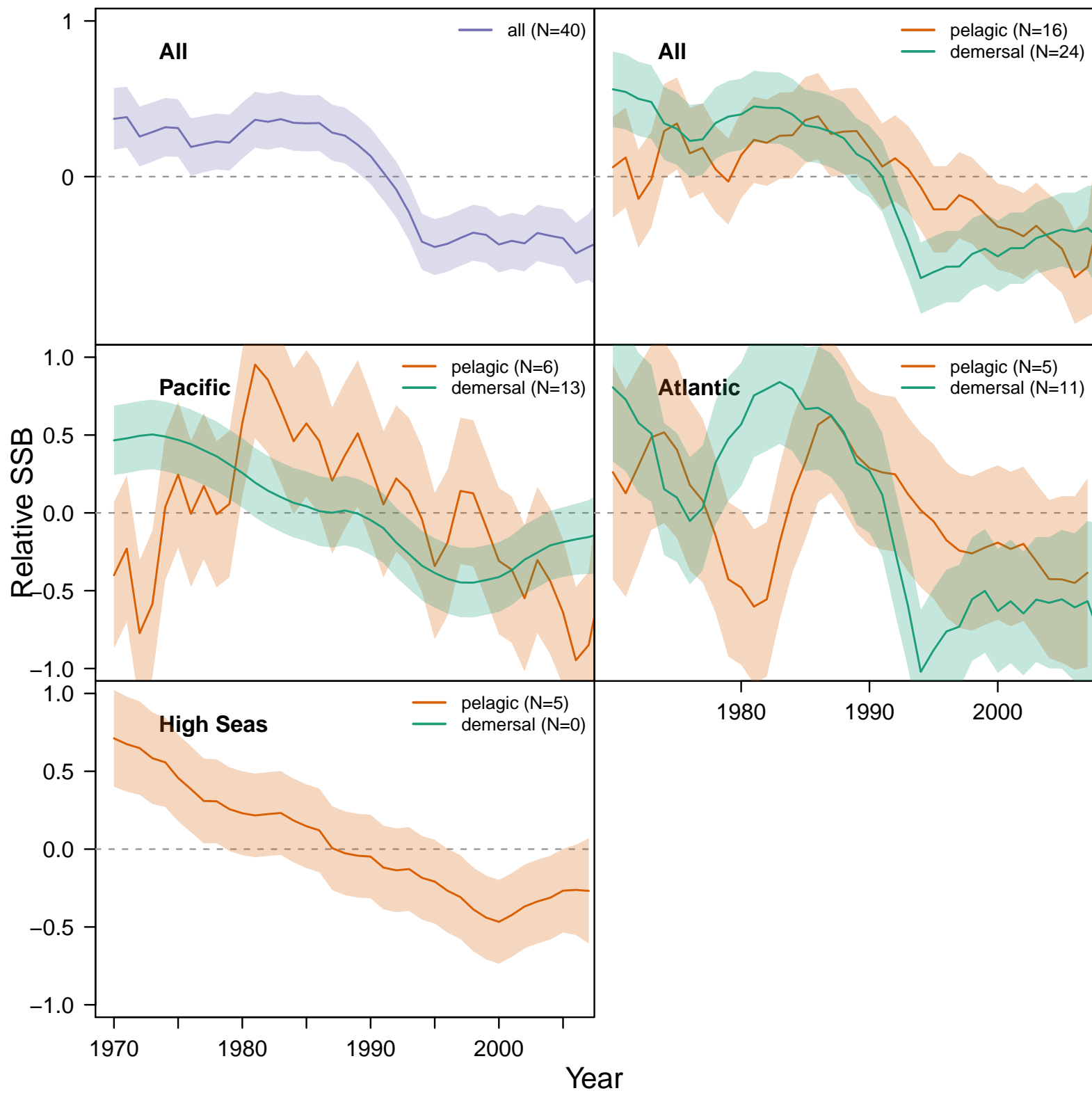
Jeffrey Hutchings \*      Daniel Ricard

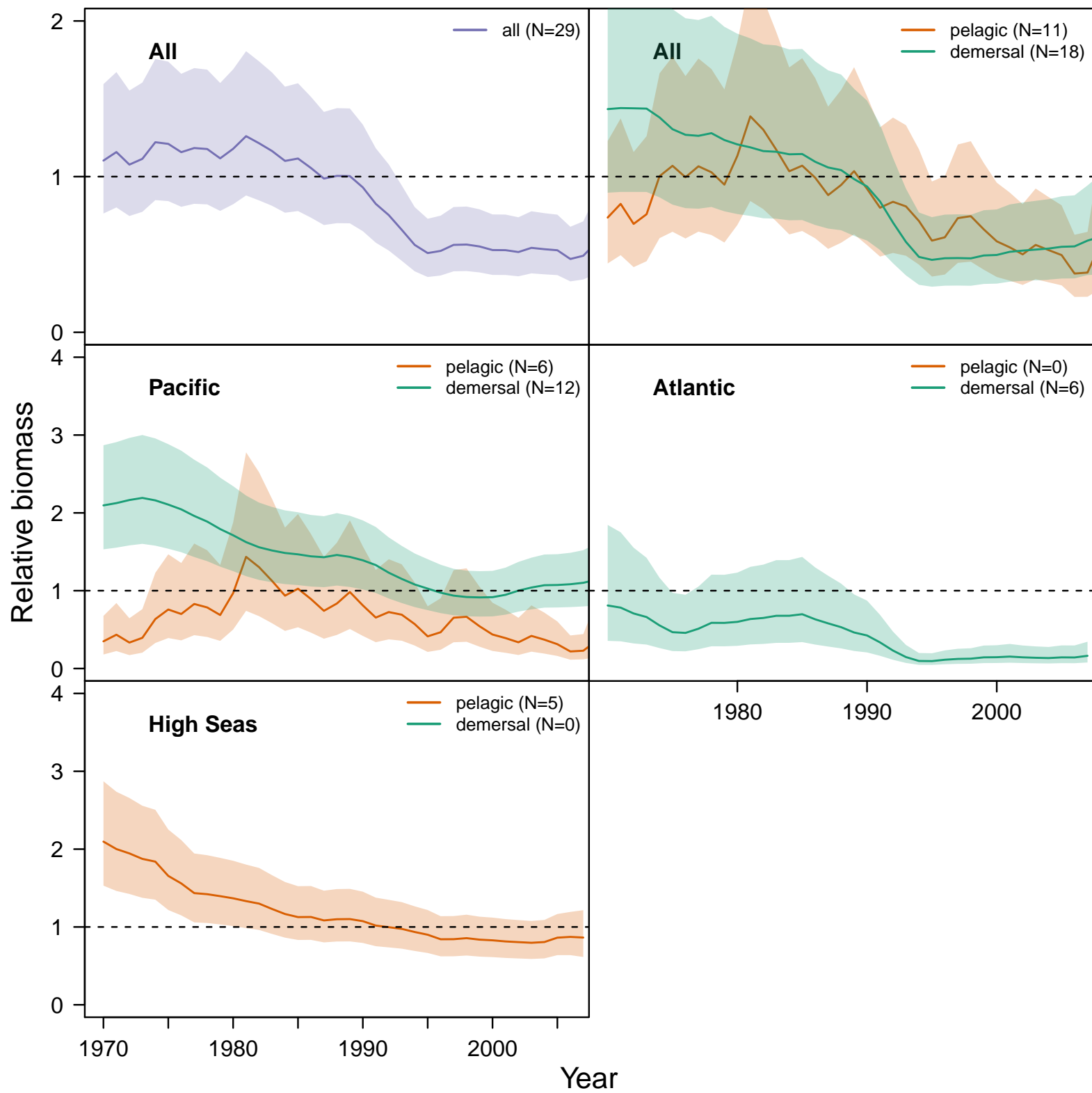
April 12, 2011

## **1 Summary plots**

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\*Dalhousie University, Halifax, NS, Canada





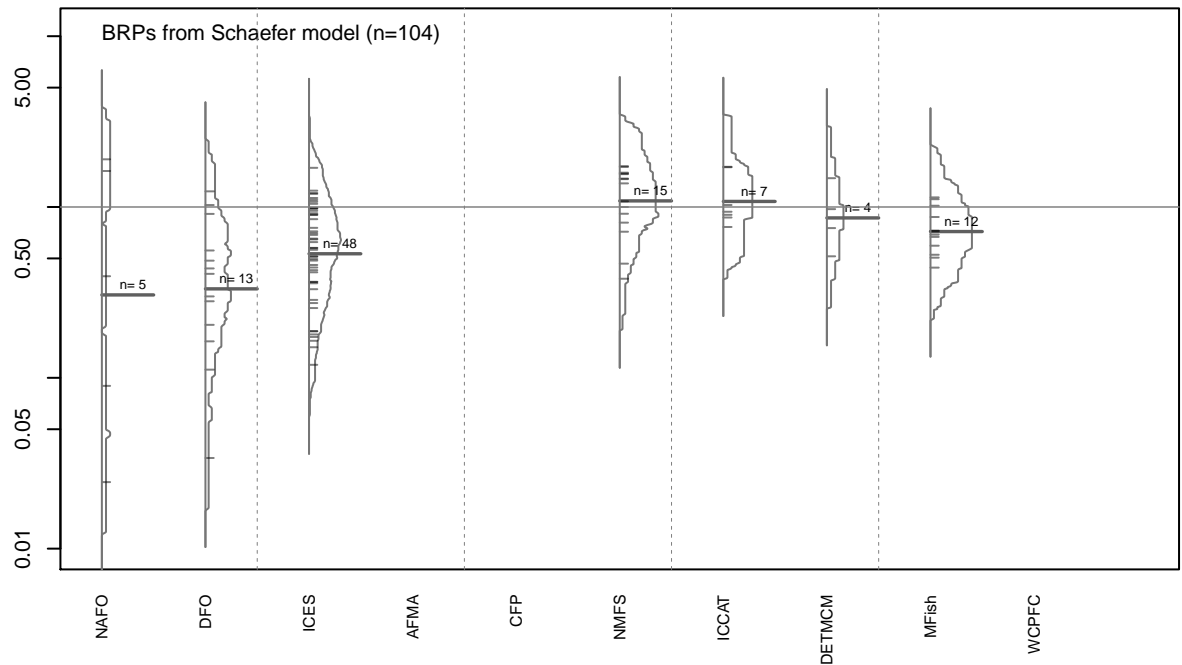
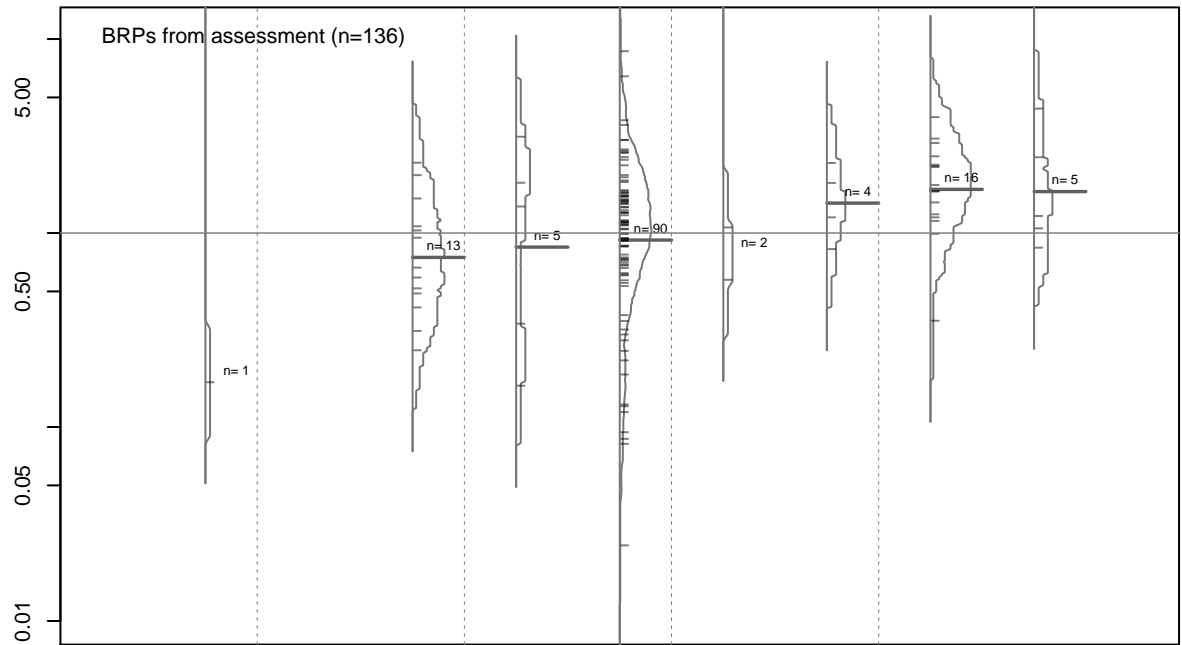
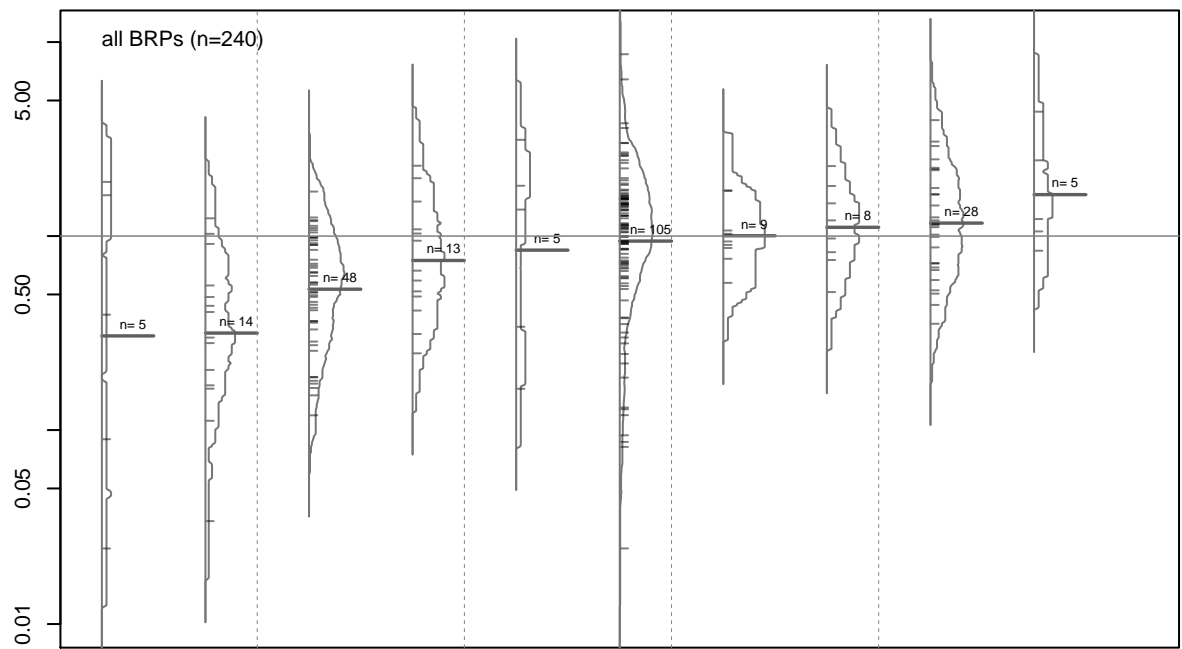
region	category	n	index.start	index.end	percent.decline
All	All	40	1.38	0.66	52.25
All	Pelagic	16	1.08	0.62	42.06
All	Demersal	24	1.63	0.7	57.06
NWAtl	Pelagic	5	1.42	0.67	52.64
NWAtl	Demersal	11	1.78	0.56	68.4
NEPac	Pelagic	6	0.7	0.55	22.6
NEPac	Demersal	13	1.63	0.82	49.41
HighSeas	Pelagic	5	1.89	0.75	60.37
HighSeas	Demersal	0			

Table 1: Percent changes for SSB relative to mean SSB index

region	category	n	index.start	index.end	percent.decline
All	All	29	1.13	0.51	54.77
All	Pelagic	11	0.8	0.47	41.63
All	Demersal	18	1.43	0.55	61.3
NWAtl	Pelagic	0			
NWAtl	Demersal	6	0.7	0.14	79.45
NEPac	Pelagic	6	0.43	0.31	27.78
NEPac	Demersal	12	2.15	1.07	50
HighSeas	Pelagic	5	1.95	0.84	56.93
HighSeas	Demersal	0			

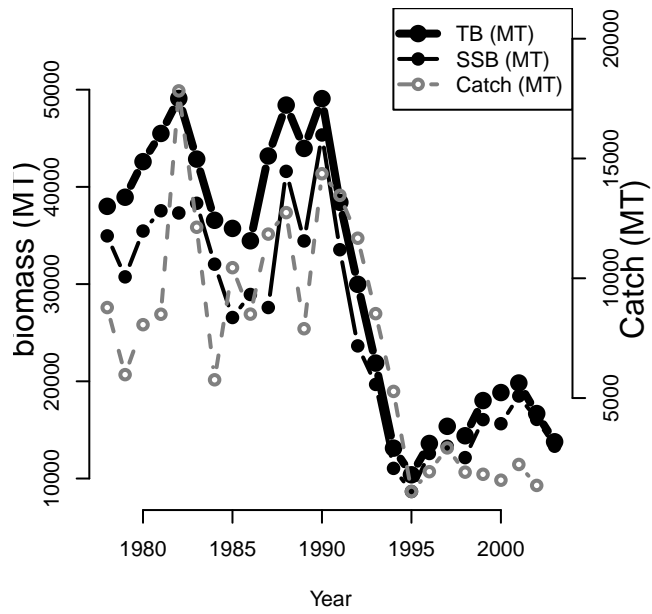
Table 2: Percent changes for SSB/SSBmsy index

B/B<sub>msy</sub>

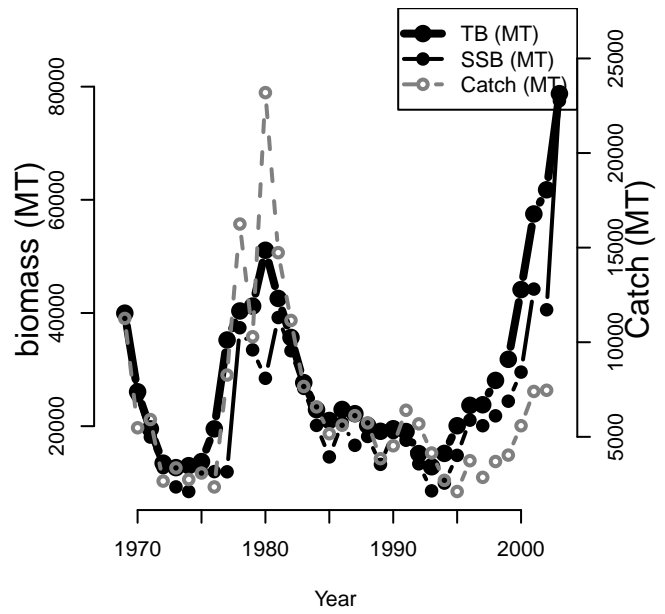


Management body

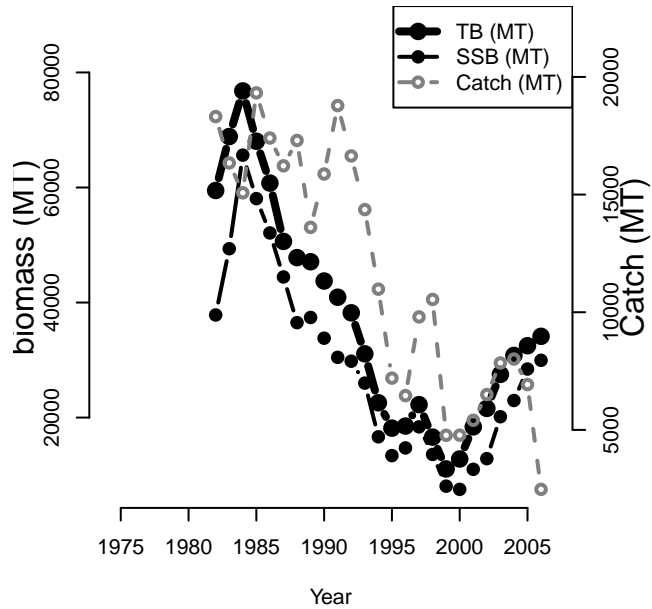
**Atlantic cod  
Georges Bank**



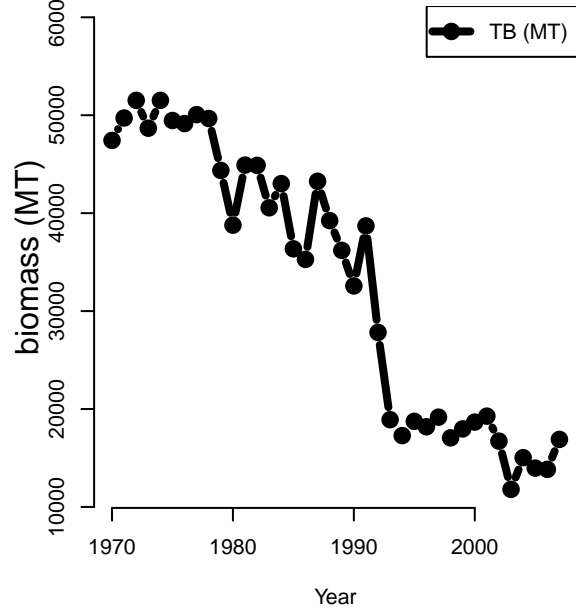
**Haddock  
Georges Bank**



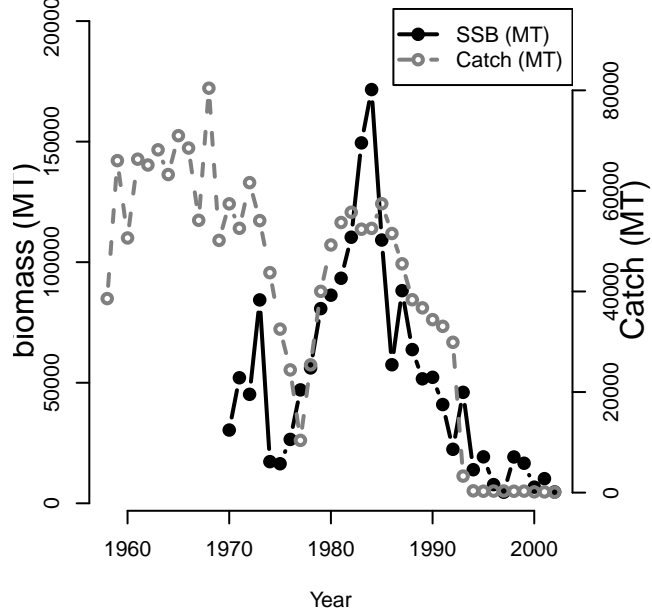
**Pollock  
Scotian Shelf, Bay of Fundy and Georges Bank**



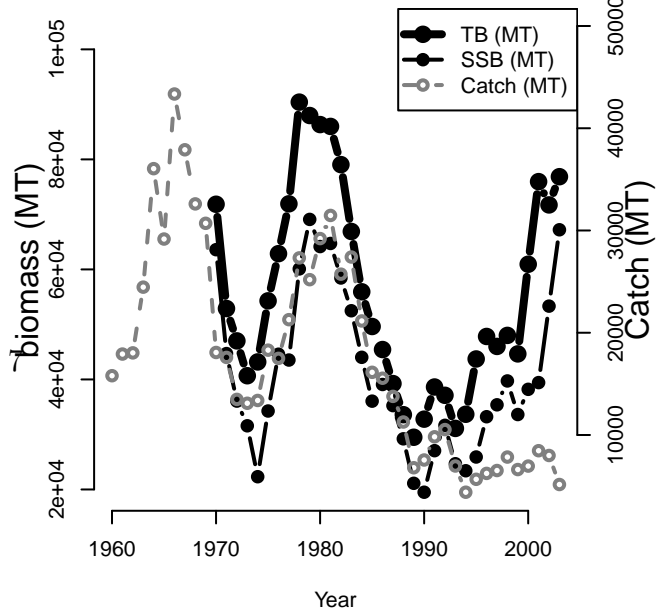
**Cusk  
Western Scotian Shelf**



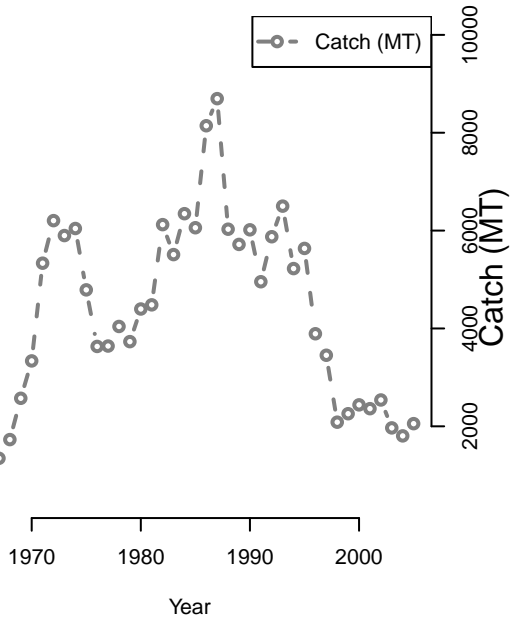
**Atlantic cod  
Eastern Scotian Shelf**



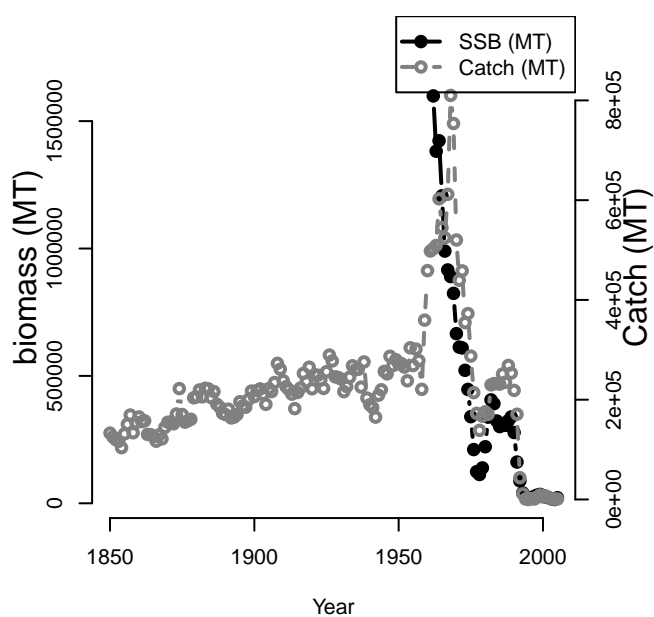
**Haddock  
Eastern Scotian Shelf, Bay of Fundy and Gulf of Maine**



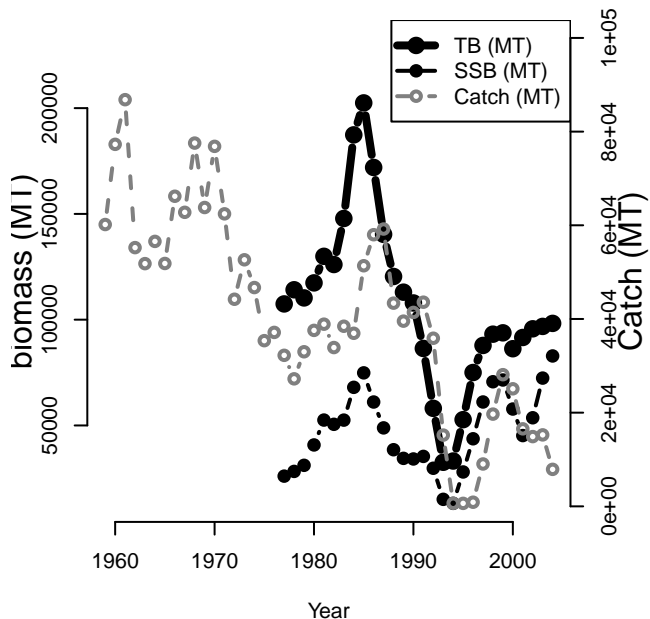
**White hake**  
**Scotian Shelf, Bay of Fundy and Georges Bank**



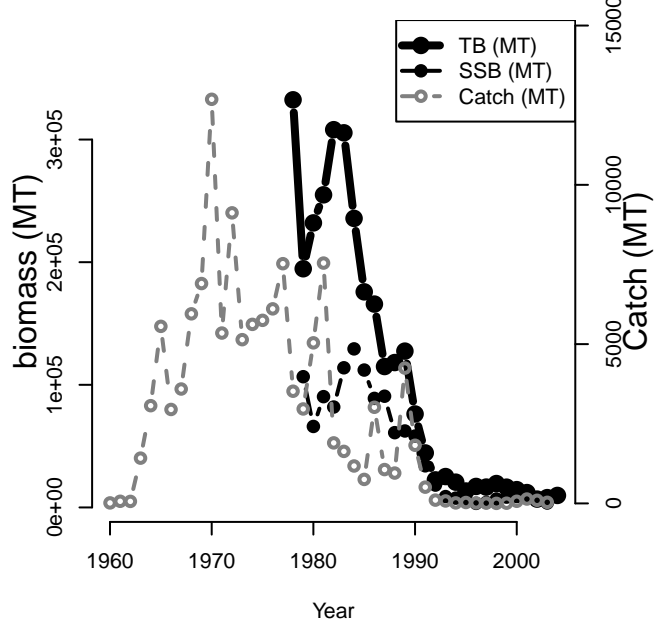
**Atlantic cod**  
**Southern Labrador–Eastern Newfoundland**



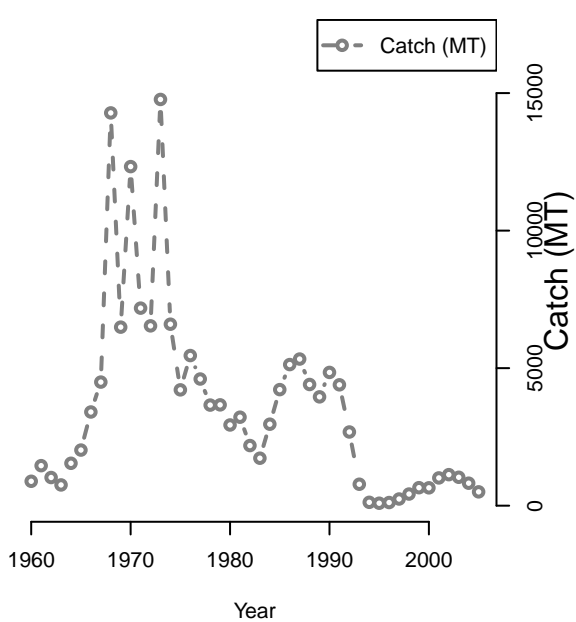
**Atlantic cod**  
**St. Pierre Bank**



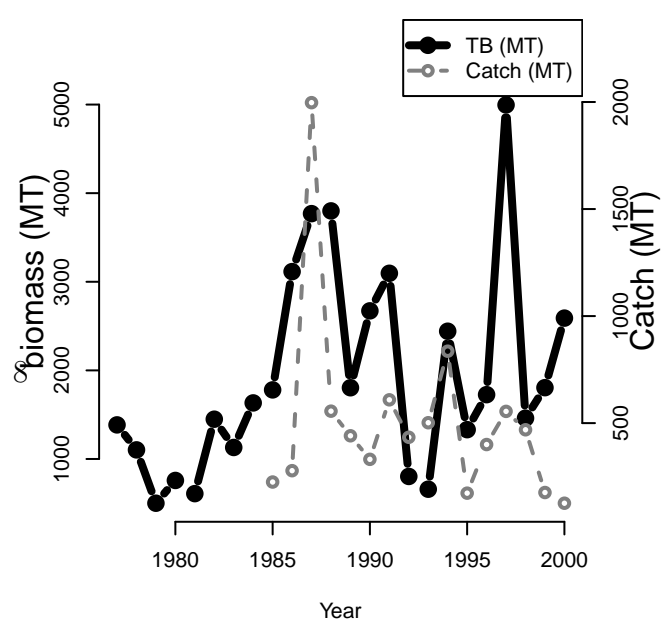
**American plaice**  
**Labrador – NE Newfoundland**



**American plaice**  
**St. Pierre Bank**

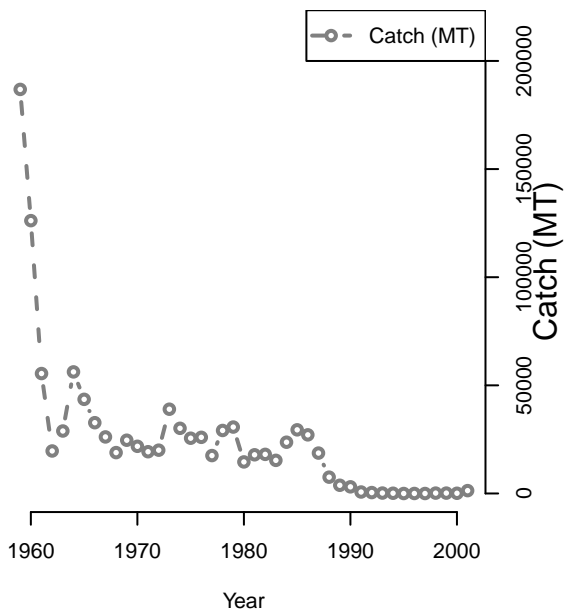


**Monkfish**  
**Labrador Shelf–Grand Banks–S. Pierre Bank**

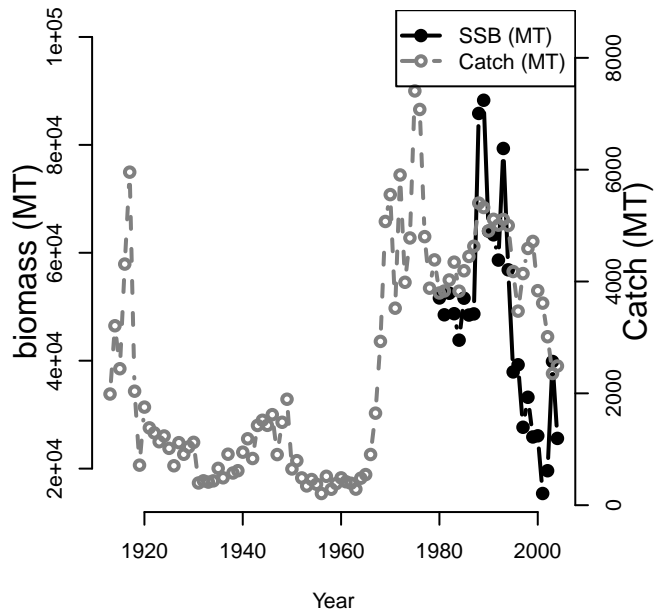




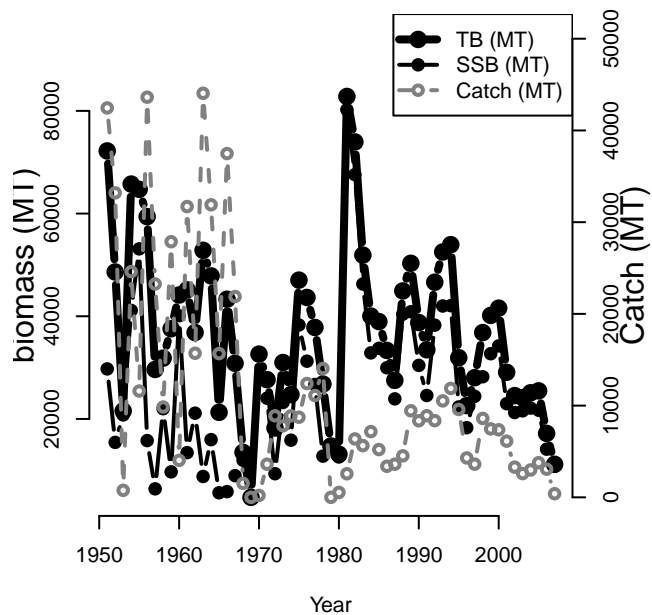
**Redfish species**  
**Labrador – NE Newfoundland**



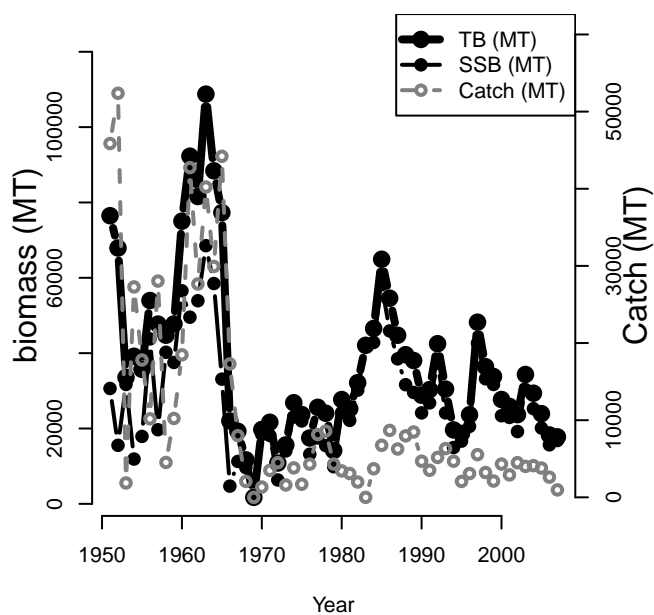
**Sablefish**  
**Pacific Coast of Canada**



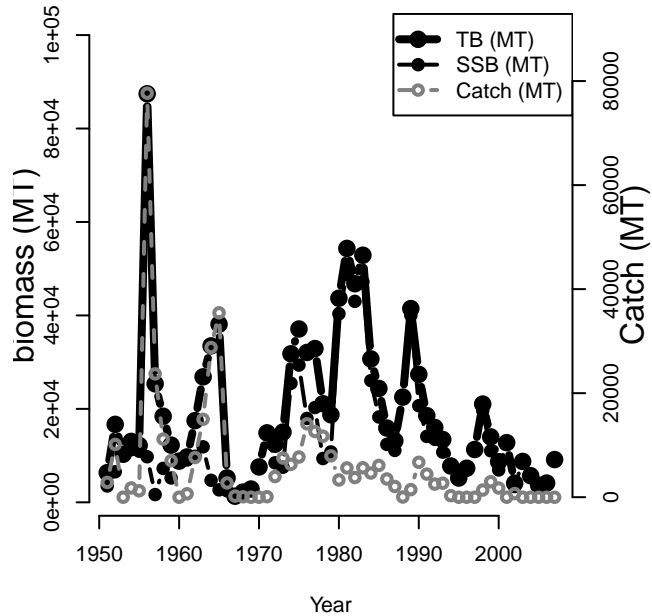
**Pacific herring**  
**Central Coast**



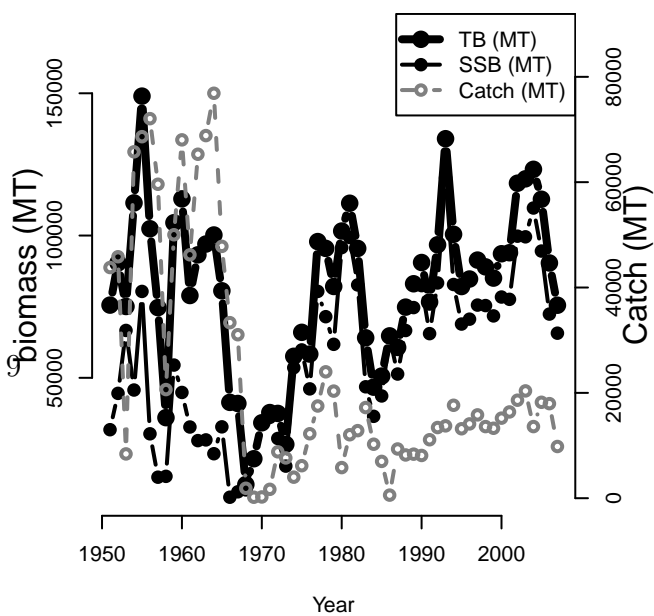
**Pacific herring**  
**Prince Rupert District**



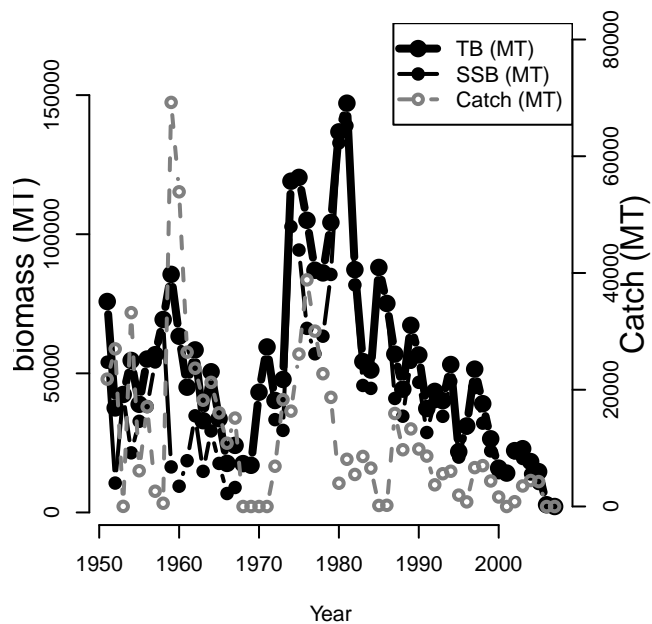
**Pacific herring**  
**Queen Charlotte Islands**



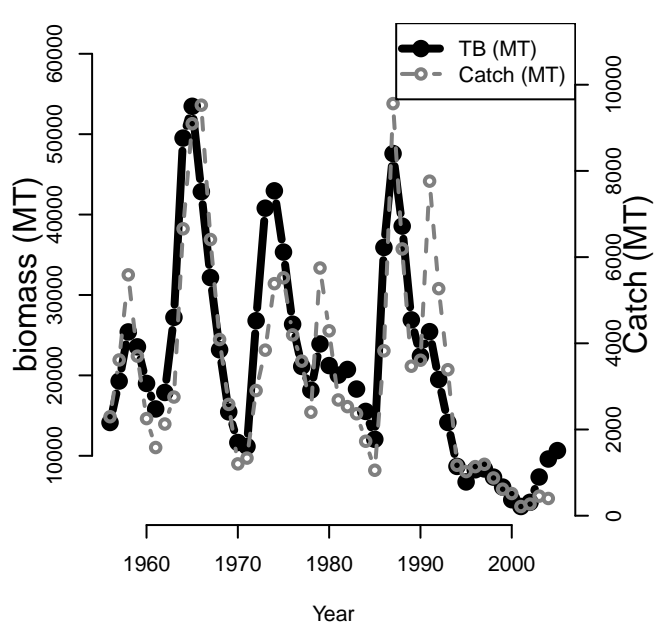
**Pacific herring**  
**Straight of Georgia**



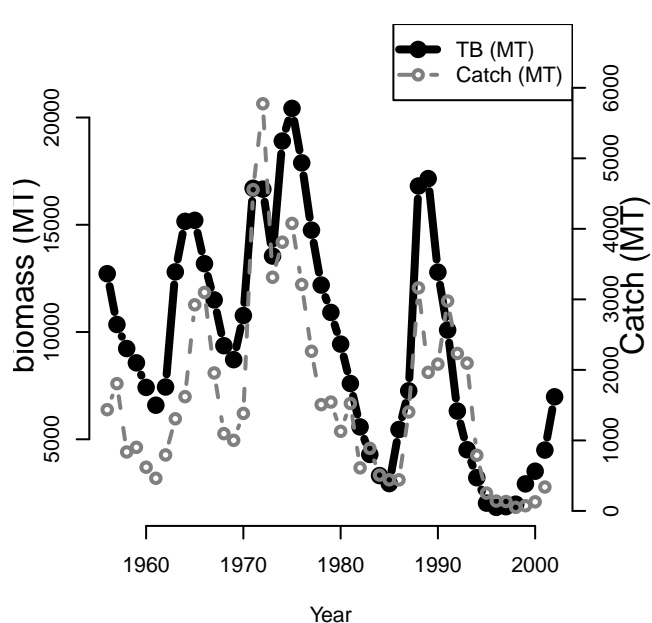
**Pacific herring**  
**West Coast of Vancouver Island**



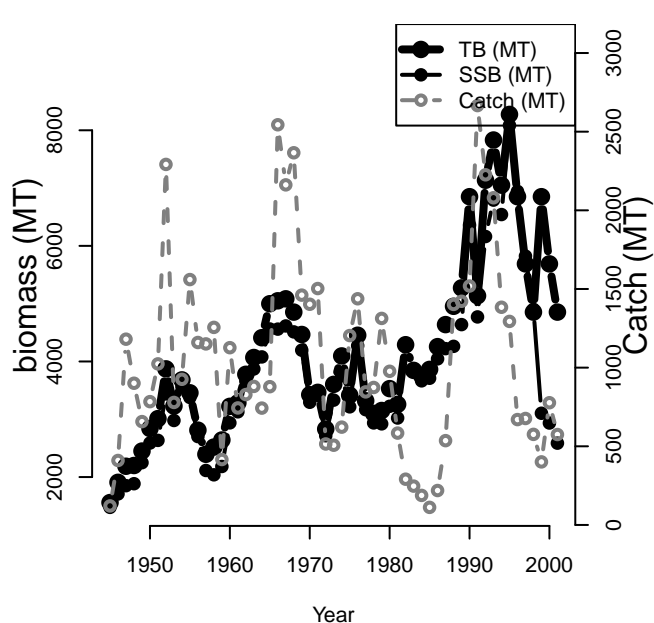
**Pacific cod**  
**Hecate Strait**



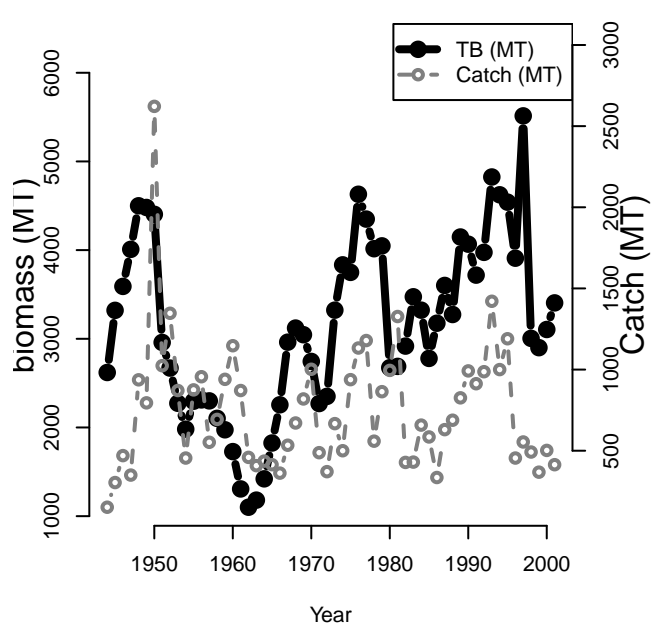
**Pacific cod**  
**West Coast of Vancouver Island**



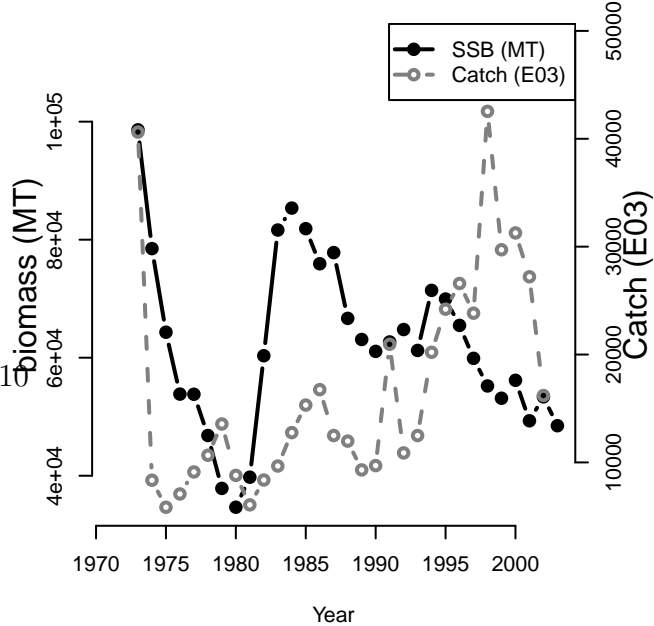
**Rock sole**  
**Hecate Strait**



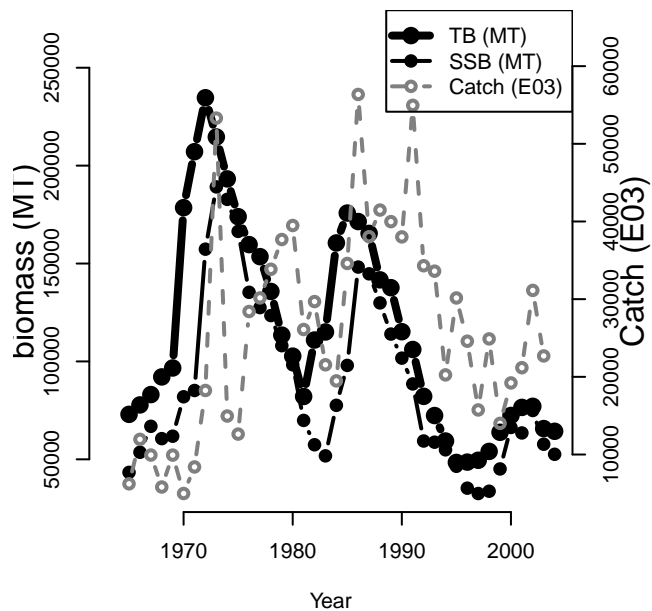
**English sole**  
**Hecate Strait**



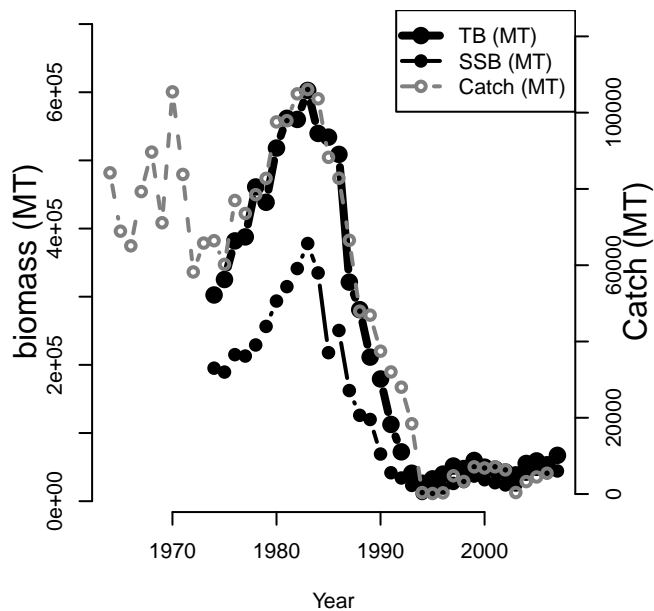
**Herring**  
**NAFO 4R**



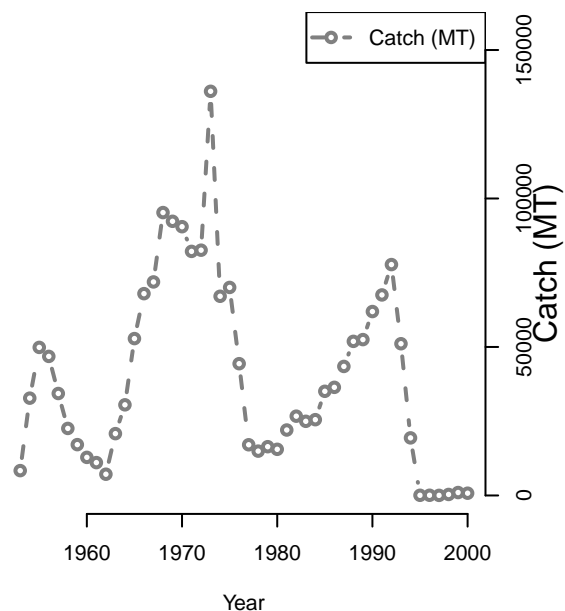
**Herring**  
**NAFO 4R**



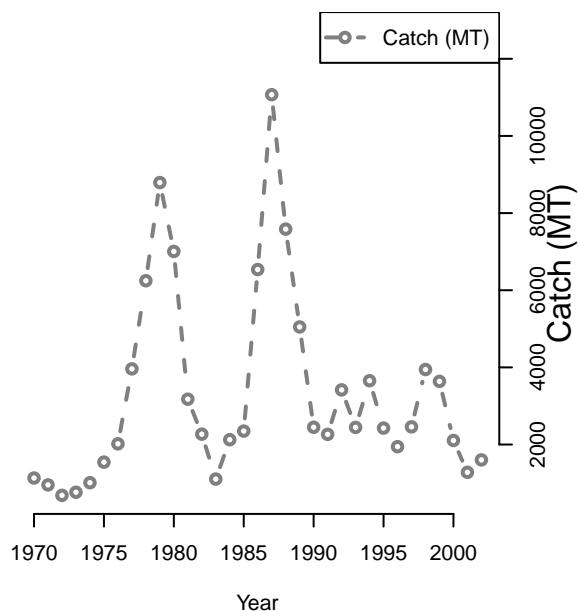
**Atlantic cod**  
**Northern Gulf of St. Lawrence**



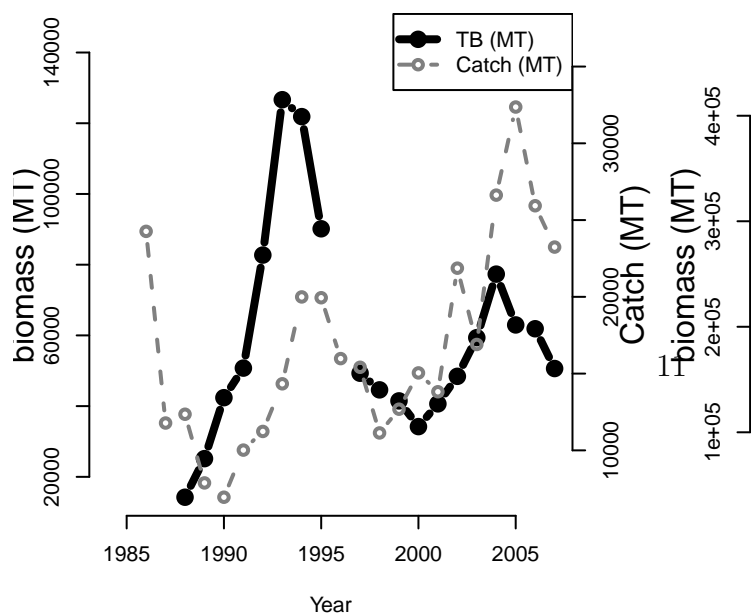
**Redfish species**  
**Gulf of St. Lawrence and Cabot Strait**



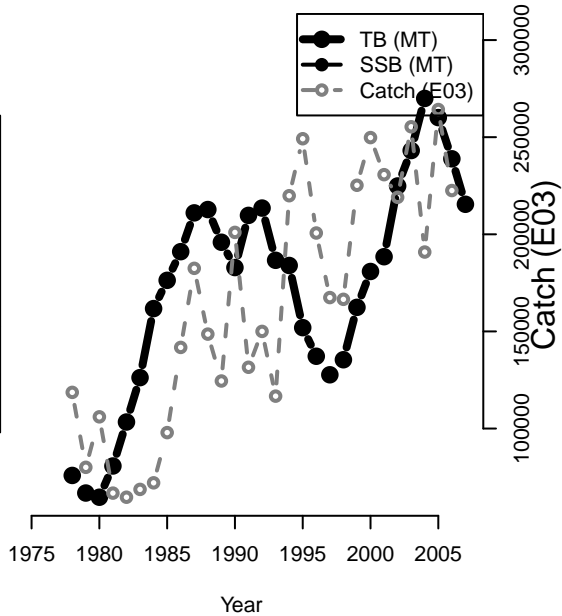
**Greenland halibut**  
**Gulf of St. Lawrence**



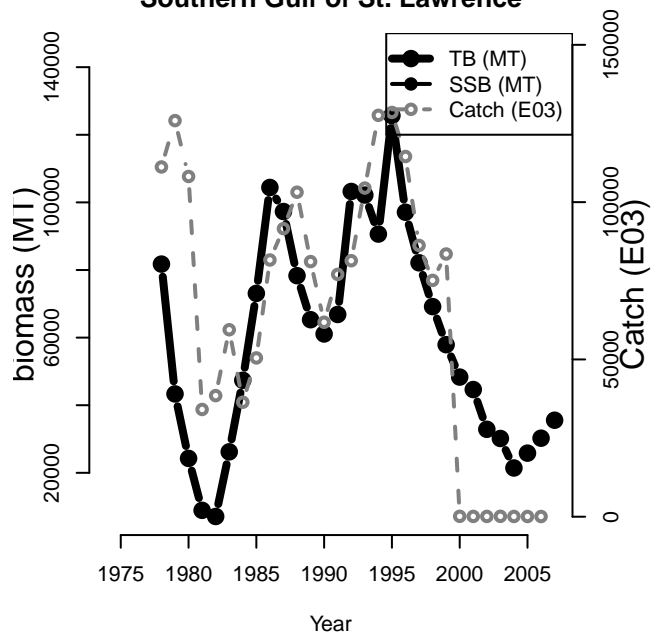
**Snow crab**  
**Southern Gulf of St. Lawrence**



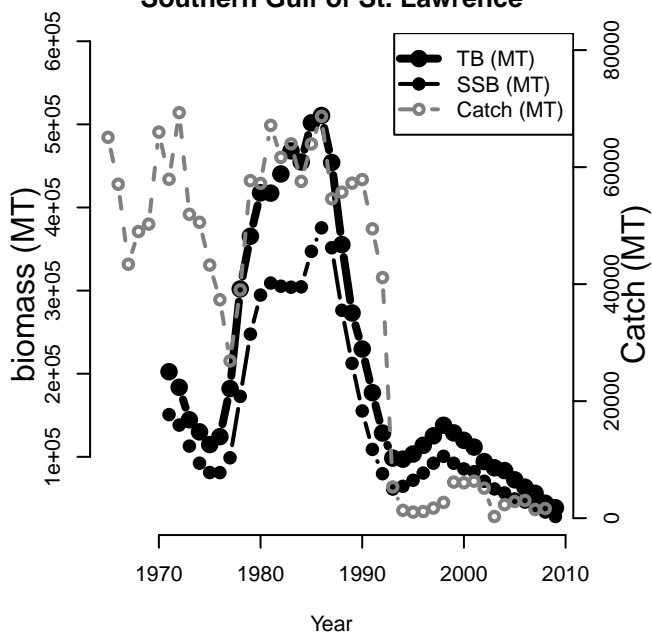
**Herring**  
**Southern Gulf of St. Lawrence**



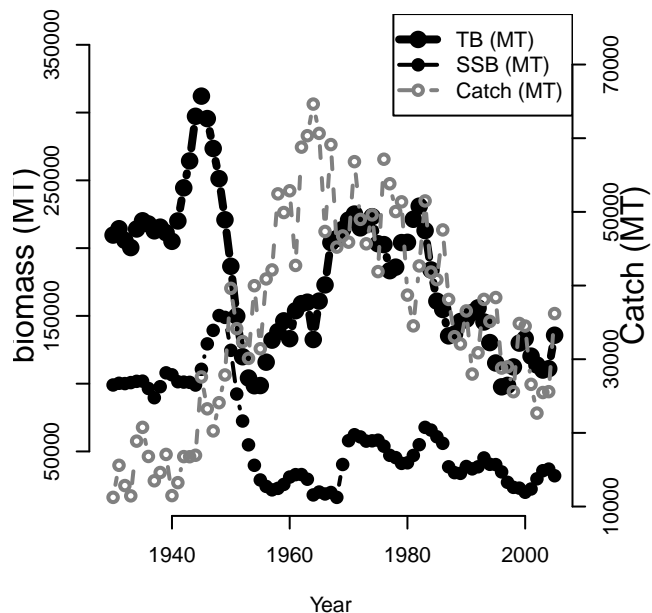
**Herring**  
**Southern Gulf of St. Lawrence**



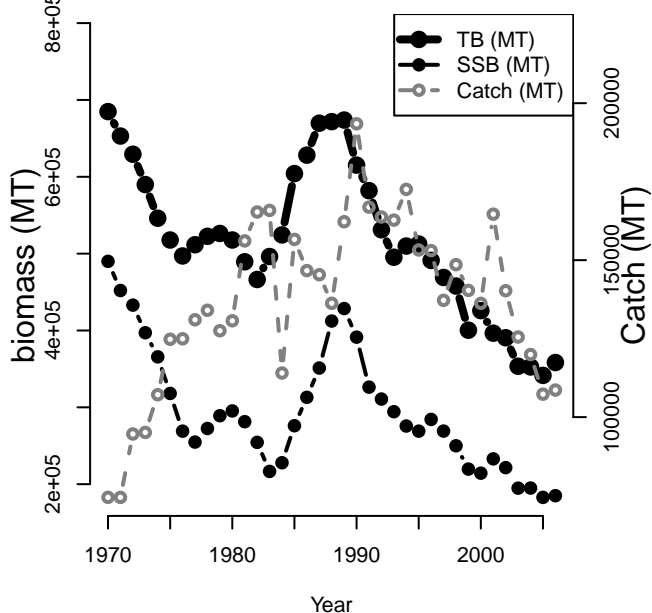
**Atlantic cod**  
**Southern Gulf of St. Lawrence**



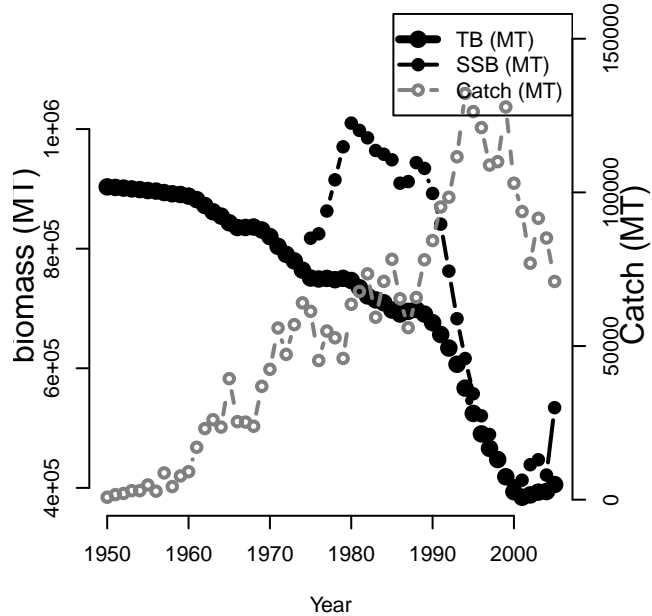
**Albacore tuna**  
**Northern Atlantic**



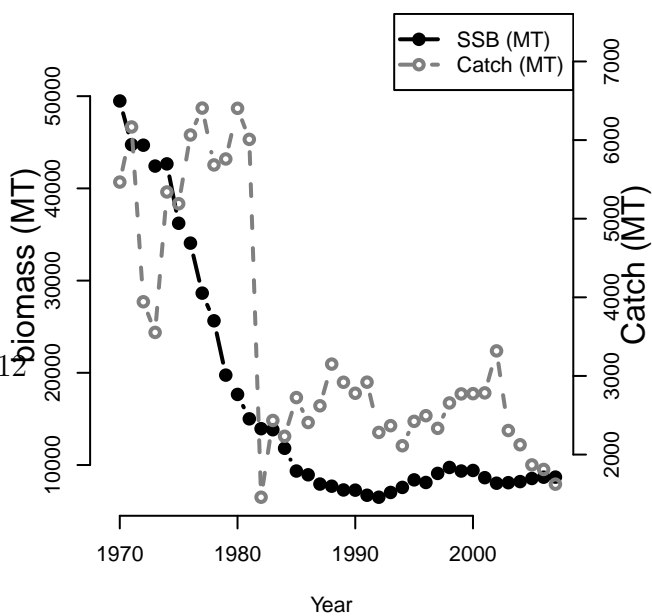
**Yellowfin tuna**  
**Atlantic**



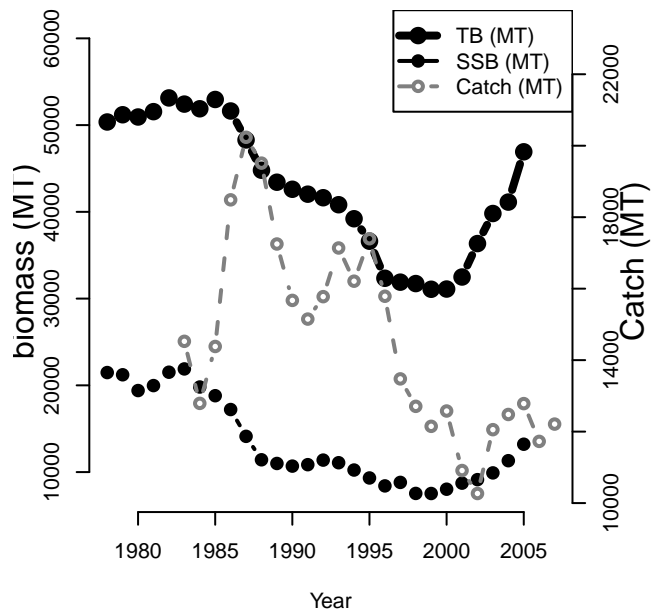
**Bigeye tuna**  
**Atlantic**



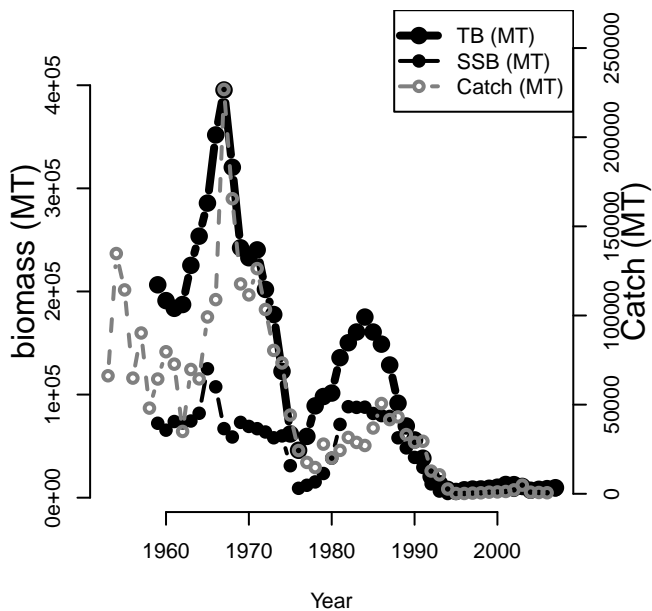
**Atlantic bluefin tuna**  
**Western Atlantic**



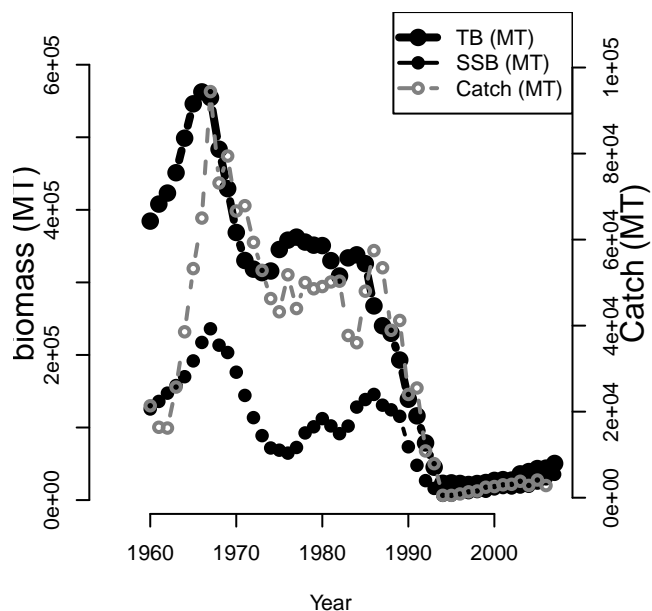
**Swordfish**  
**Northern Atlantic**



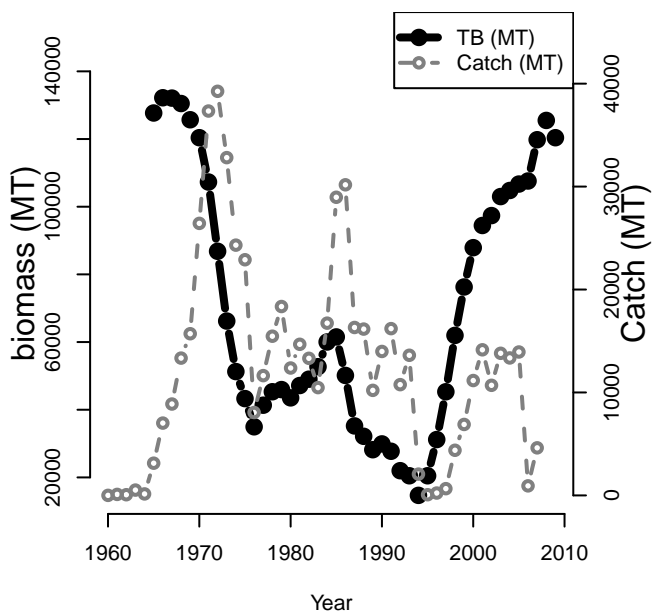
**Atlantic cod**  
**Southern Grand Banks**



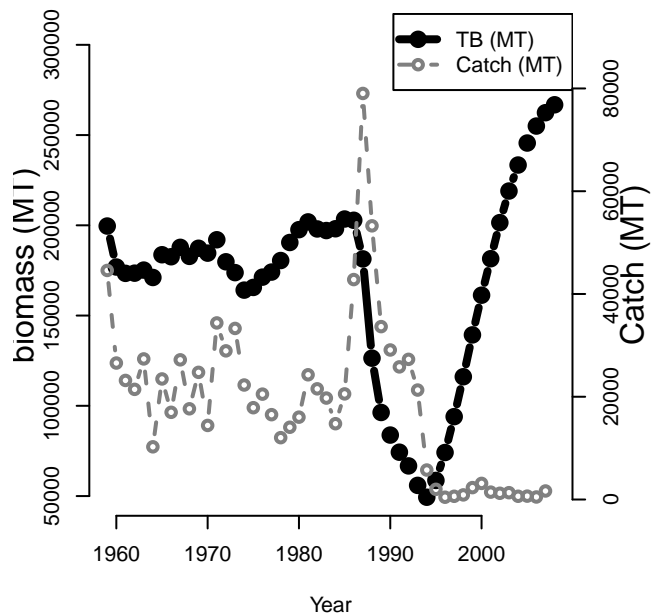
**American plaice**  
**Grand Banks**



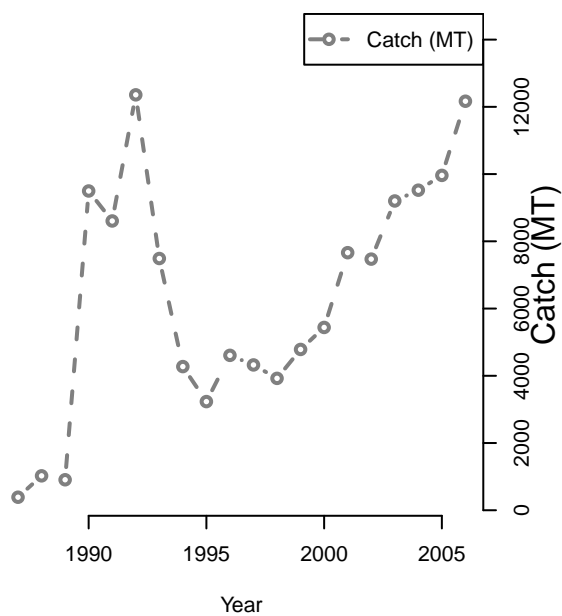
**Yellowtail flounder**  
**Grand Banks**



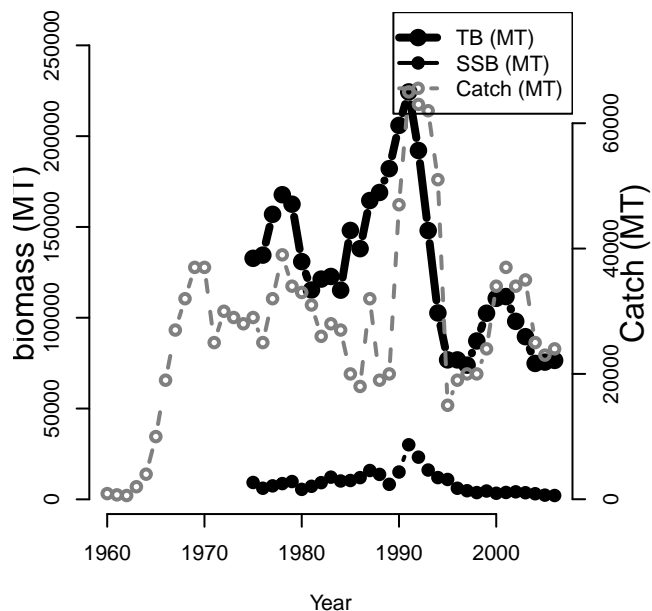
**Redfish species**  
**N and SW Grand Banks**



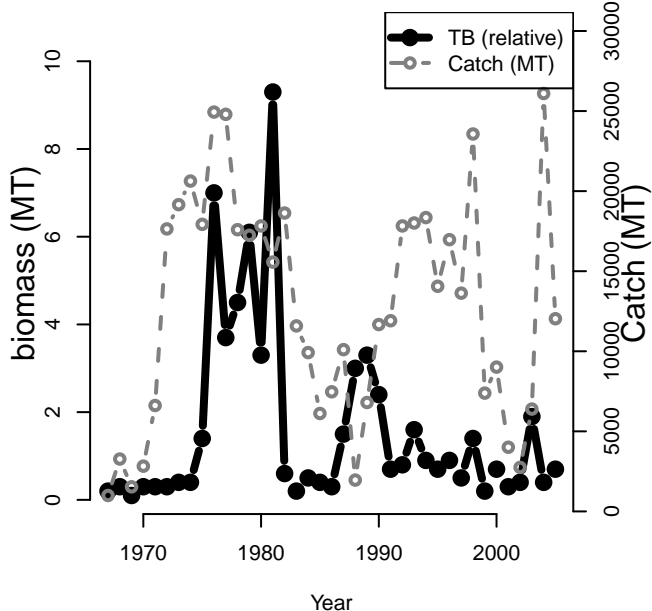
**Greenland halibut**  
**NAFO 01ABCDEF**



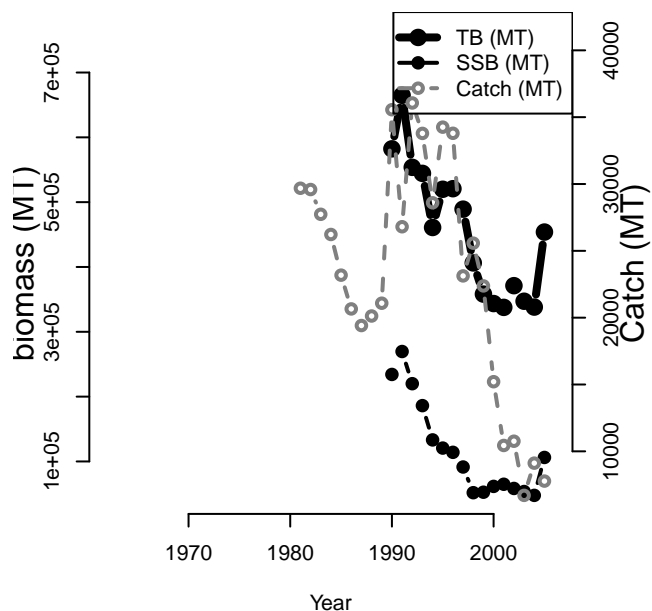
**Greenland halibut**  
Labrador Shelf – Grand Banks



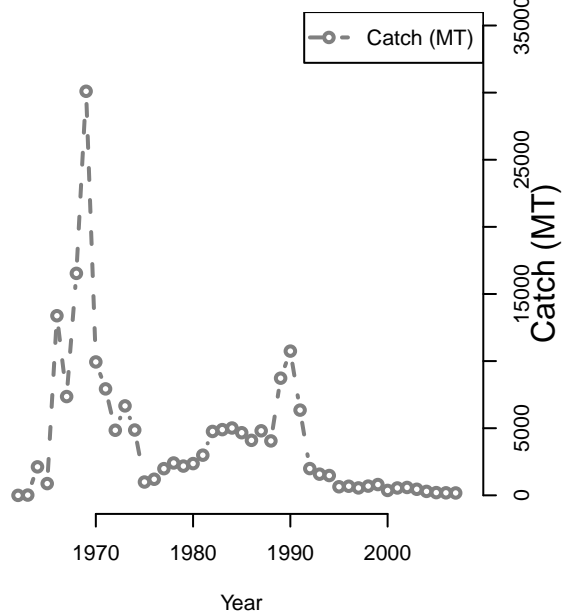
**Northern shortfin squid**  
Northwestern Atlantic Coast



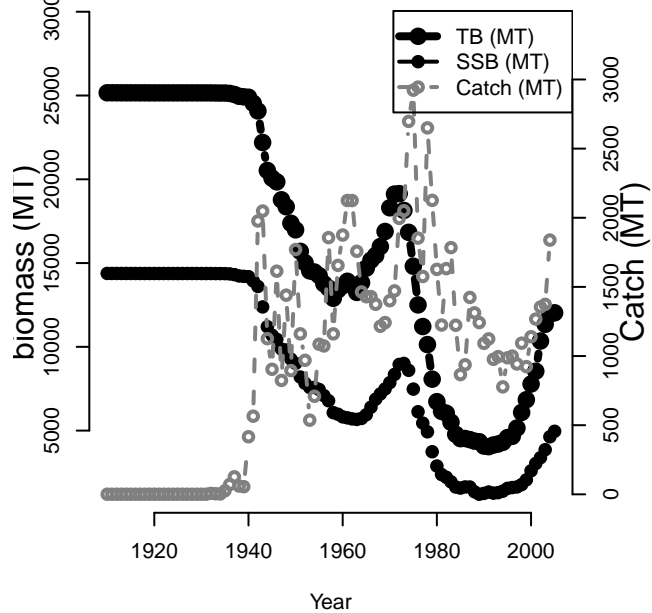
**Spiny dogfish**  
Atlantic Coast



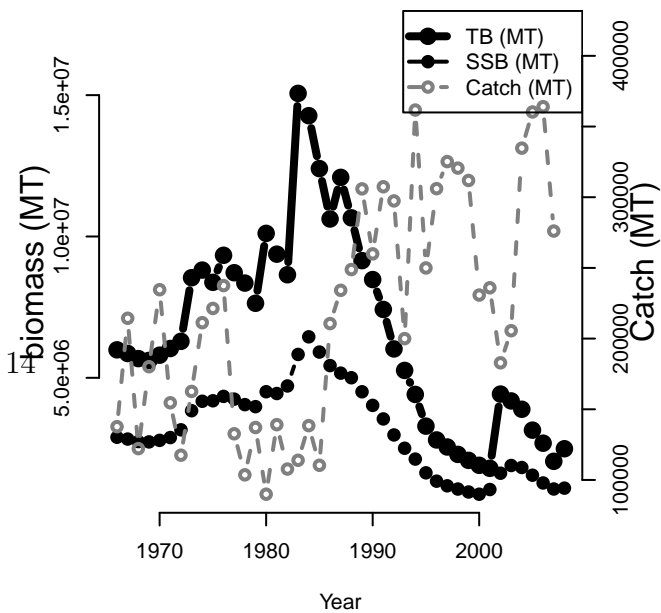
**Ocean pout**  
Northwestern Atlantic Coast



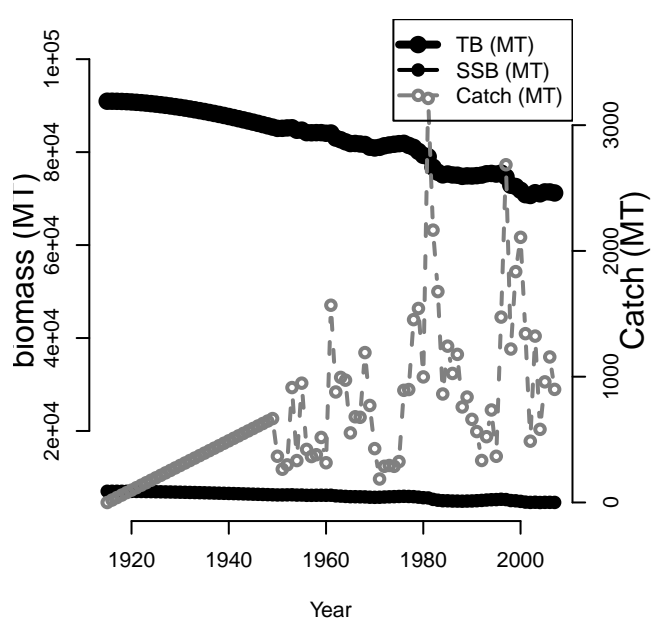
**Petrale sole**  
Northern Pacific Coast



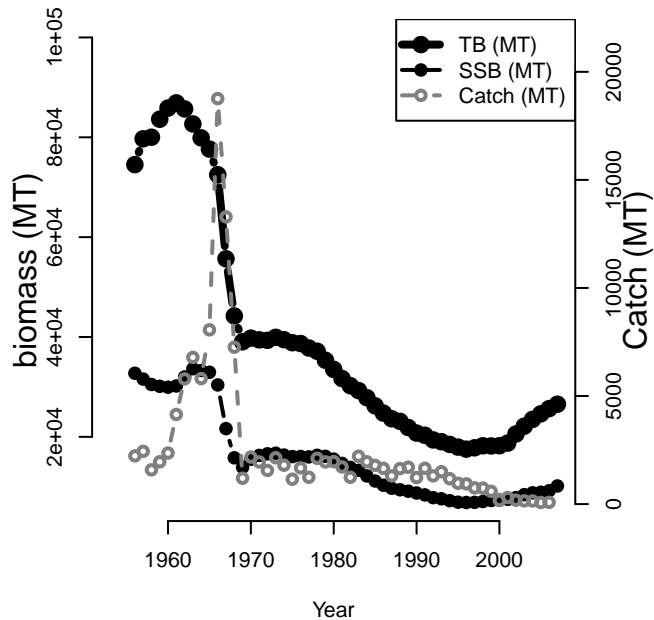
**Pacific hake**  
Pacific Coast



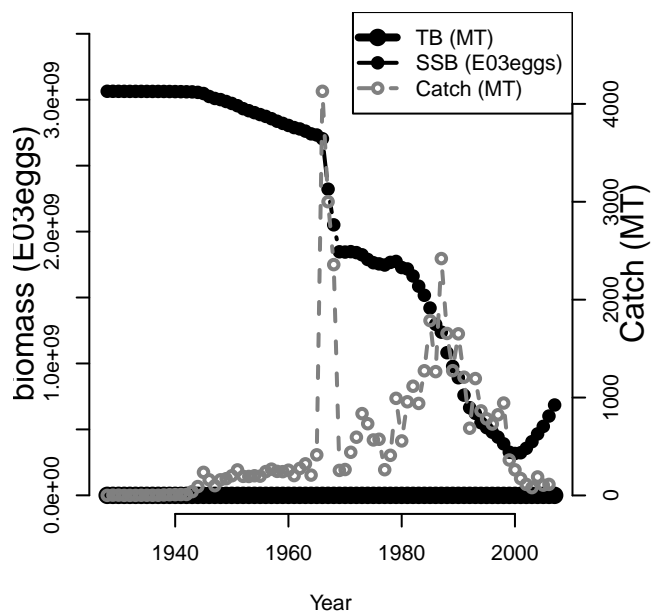
**Longnose skate  
Pacific Coast**



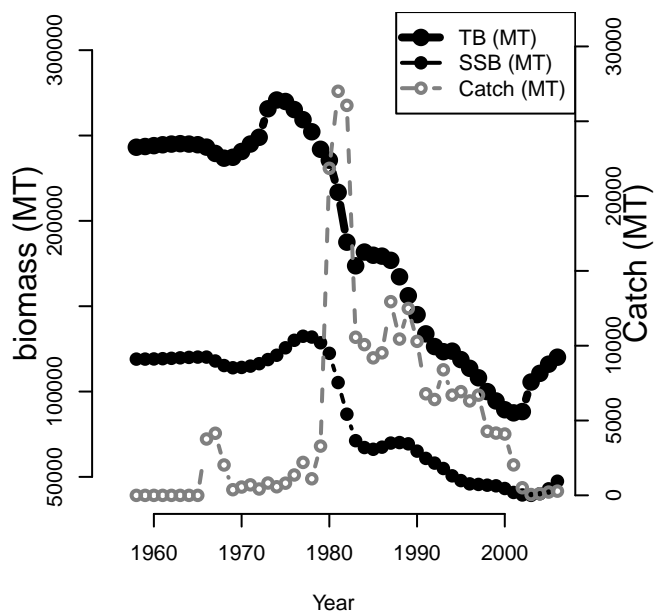
**Pacific ocean perch  
Pacific Coast**



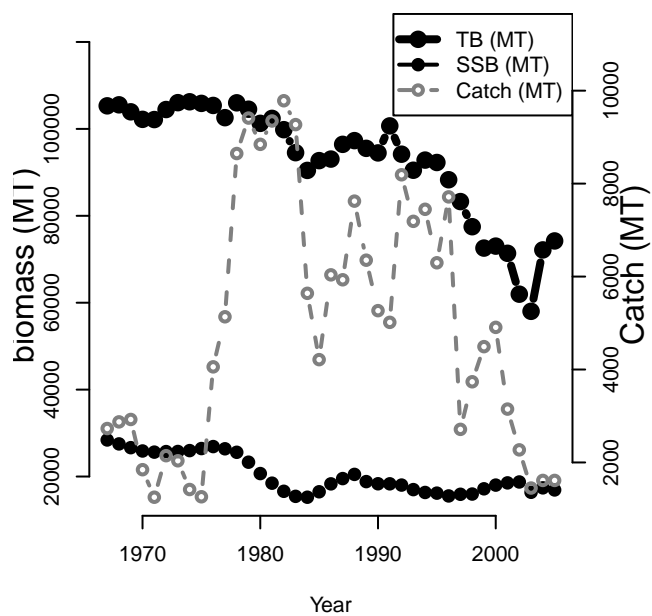
**Darkblotched rockfish  
Pacific Coast**



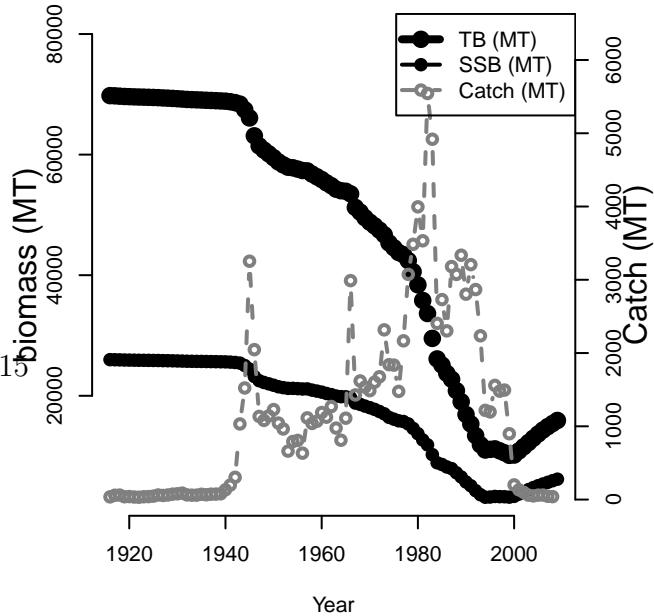
**Widow rockfish  
Pacific Coast**



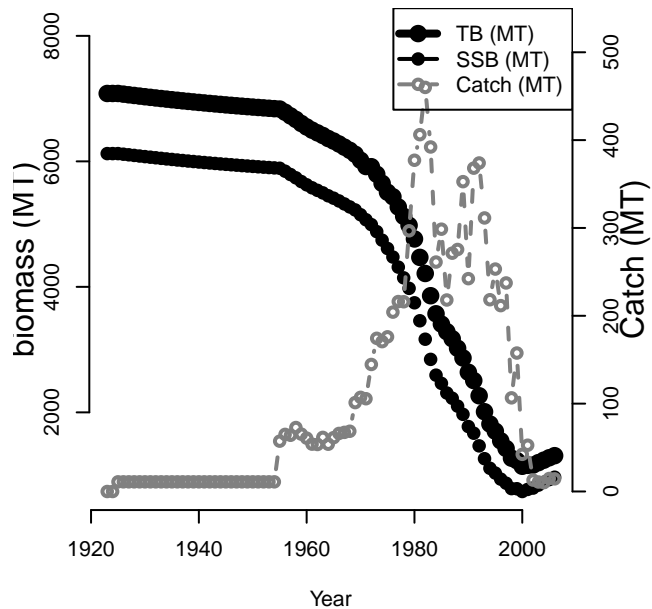
**Yellowtail rockfish  
Northern Pacific Coast**



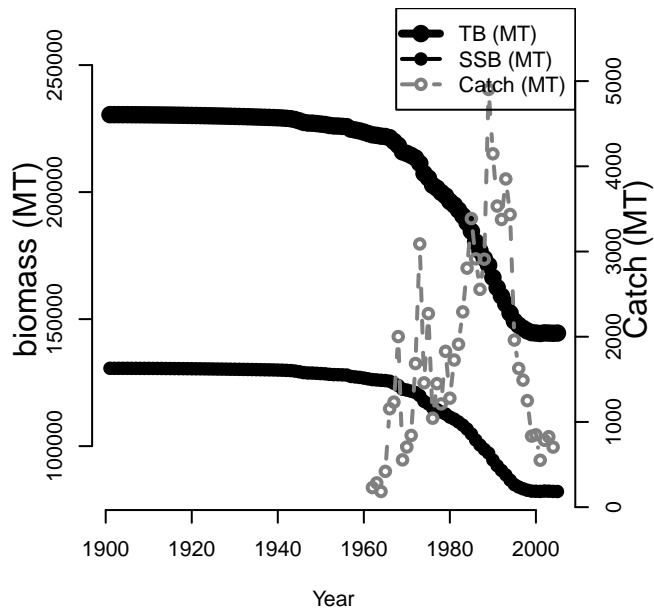
**Canary rockfish  
Pacific Coast**



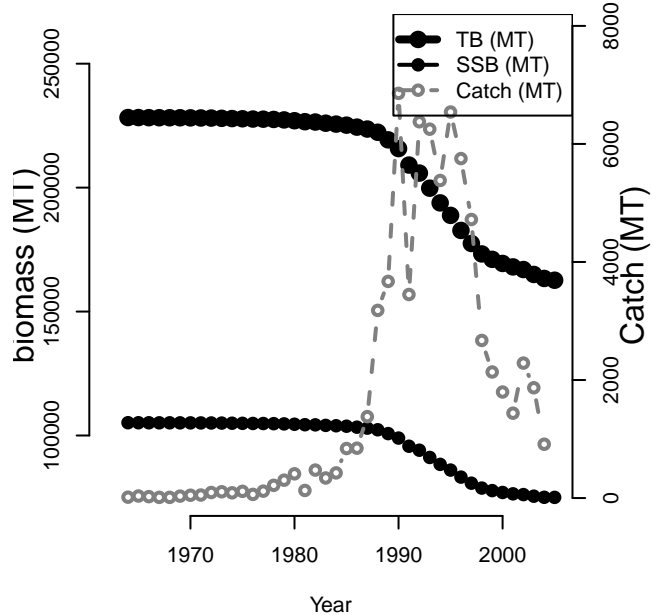
**Yelloweye rockfish**  
**Pacific Coast**



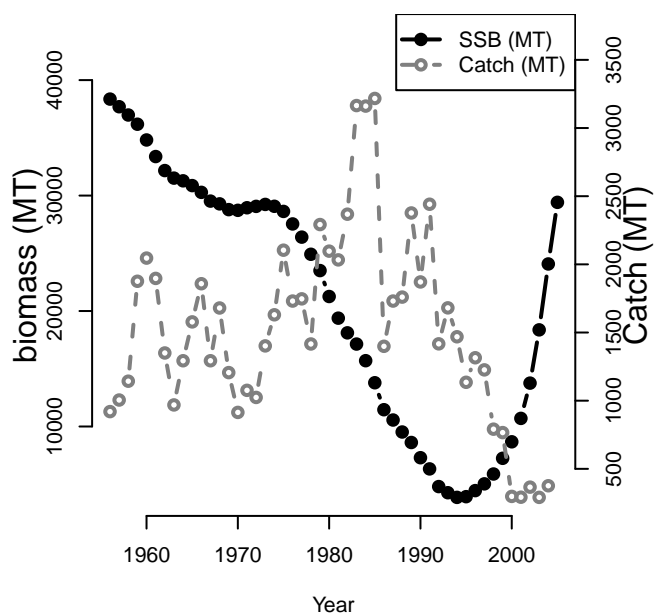
**Shortspine thornyhead**  
**Pacific Coast**



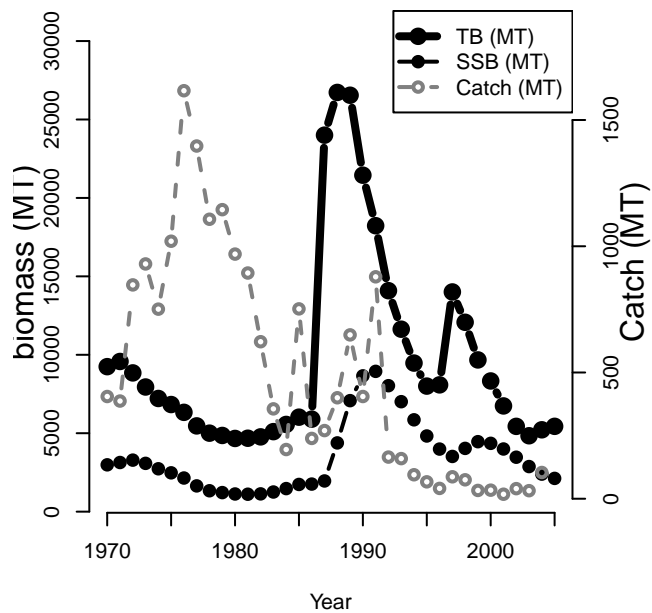
**Longspine thornyhead**  
**Pacific Coast**



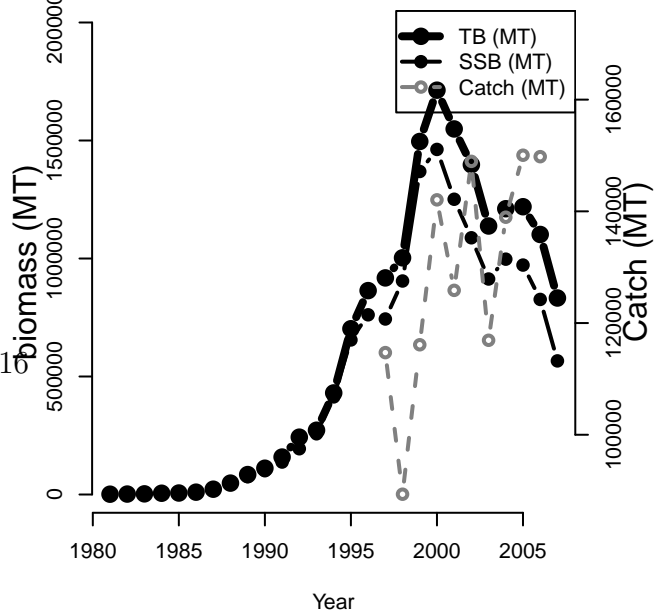
**Lingcod**  
**Northern Pacific Coast**



**Starry flounder**  
**Northern Pacific Coast**

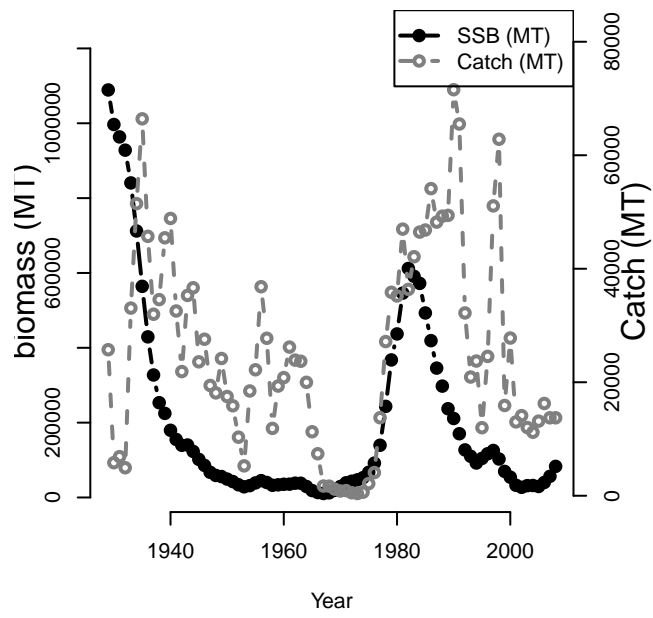


**Sardine**  
**Pacific Coast**





# Chub mackerel Pacific Coast



## 2 List of stocks

stock		species	mgmt	years	LME			
Herring	Scotian Shelf and Bay of Fundy	Clupea harengus	DFO	1965-2006	Scotian Shelf			
Atlantic cod	NAFO 5Zjm	Gadus morhua	DFO	1978-2003	Northeast Shelf	U.S.	Continental	
Haddock	NAFO-5Zejm	Melanogrammus aeglefinus	DFO	1968-2003	Northeast Shelf	U.S.	Continental	
Pollock	NAFO-4VWX5Zc	Pollachius virens	DFO	1974-2007	Northeast Shelf	U.S.	Continental	
Cusk	NAFO 4X	Brosme brosme	DFO	1970-2007	Northeast Shelf	U.S.	Continental	
Atlantic cod	NAFO 4VsW	Gadus morhua	DFO	1958-2002	Scotian Shelf			
Haddock	NAFO-4X5Y	Melanogrammus aeglefinus	DFO	1960-2003	Northeast Shelf	U.S.	Continental	
White hake	Scotian Shelf, Bay of Fundy and Georges Bank	Urophycis tenuis	DFO	1964-2005	Scotian Shelf			
Atlantic cod	NAFO 2J3KL	Gadus morhua	DFO	1850-2005	Newfoundland-Labrador Shelf			
Atlantic cod	NAFO 3Ps	Gadus morhua	DFO	1959-2004	Newfoundland-Labrador Shelf			
American NAFO-23K	Plaice	Hippoglossoides platessoides	DFO	1960-2004	Newfoundland-Labrador Shelf			
American NAFO-3Ps	Plaice	Hippoglossoides platessoides	DFO	1960-2005	Newfoundland-Labrador Shelf			

Monkfish	Labrador Shelf - Grand Banks - St. Pierre Bank	Lophius	ameri- canus	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 Georgia	Clupea	pallasii	DFO	1951-2007	Gulf of Alaska
Pacific herring	West Coast of Vancouver Island	Clupea	pallasii	DFO	1951-2007	Gulf of Alaska
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
Rock sole	Hecate Strait	Lepidopsetta	bilin- eata	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
Greenland halibut NAFO 4RST		Reinhardtius hippoglossoides	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
Albacore tuna North Atlantic		Thunnus alalunga	ICCAT	1929-2005	Atlantic High Seas
Yellowfin tuna Atlantic		Thunnus albacares	ICCAT	1970-2006	Atlantic High Seas
Bigeye tuna Atlantic		Thunnus obesus	ICCAT	1950-2005	Atlantic High Seas
Bluefin tuna Western Atlantic		Thunnus thynnus	ICCAT	1969-2007	Atlantic High Seas

Swordfish	North Atlantic	Atlant	Xiphias gladius	ICCAT	1978-2007	Atlantic High Seas
Atlantic cod	NAFO 3NO		Gadus morhua	NAFO	1953-2007	Newfoundland-Labrador Shelf
American Plaice	NAFO-3LNO		Hippoglossoides platessoides	NAFO	1955-2007	Newfoundland-Labrador Shelf
Yellowtail Flounder	NAFO 3LNO		Limanda ferruginea	NAFO	1960-2009	Northeast U.S. Continental Shelf
Redfish species	NAFO 3LN		Redfish species	NAFO	1959-2008	Newfoundland-Labrador Shelf
Greenland halibut	NAFO 01ABCDEF		Reinhardtius hippoglossoides	NAFO	1987-2006	West Greenland Shelf
Greenland halibut	NAFO 23KLMNO		Reinhardtius hippoglossoides	NAFO	1960-2006	Newfoundland-Labrador Shelf
Northern shortfin squid	Northwestern Atlantic Coast		Illex illecebrosus	NMFS	1967-2005	Northeast U.S. Continental Shelf
Spiny dogfish	Atlantic Coast		Squalus acanthias	NMFS	1962-2006	Northeast U.S. Continental Shelf
Ocean pout	Northwestern Atlantic Coast		Zoarces americanus	NMFS	1962-2008	Northeast U.S. Continental Shelf
Petrale sole	Northern Pacific Coast		Eopsetta jordani	NMFS	1910-2005	California Current
Pacific hake	Pacific Coast		Merluccius productus	NMFS	1966-2008	California Current

Longnose skate Pacific Coast	<i>Raja rhina</i>	NMFS	1915-2007	California Current
Pacific ocean perch Pacific Coast	<i>Sebastes alutus</i>	NMFS	1953-2007	California Current
Darkblotched rockfish Pacific Coast	<i>Sebastes crameri</i>	NMFS	1928-2007	California Current
Widow rockfish Pacific Coast	<i>Sebastes entomelas</i>	NMFS	1955-2006	California Current
Yellowtail rockfish Northern Pacific Coast	<i>Sebastes flavidus</i>	NMFS	1967-2005	California Current
Canary rockfish Pacific Coast	<i>Sebastes pinniger</i>	NMFS	1916-2009	California Current
Yelloweye rockfish Pacific Coast	<i>Sebastes ruber-rimus</i>	NMFS	1923-2006	California Current
Shortspine thornyhead Pacific Coast	<i>Sebastolobus alascanus</i>	NMFS	1901-2005	California Current
Longspine thornyhead Pacific Coast	<i>Sebastolobus altivelis</i>	NMFS	1962-2005	California Current
Lingcod Northern Pacific Coast	<i>Ophiodon elongatus</i>	NMFS	1956-2005	California Current
Starry flounder Northern Pacific Coast	<i>Platichthys stellatus</i>	NMFS	1970-2005	California Current
Pacific sardine Pacific Coast	<i>Sardinops sagax</i>	NMFS	1981-2007	California Current

Pacific chub mackerel	Scomber japonicus	NMFS	1929-2008	California Current
Pacific Coast				

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Table 3: Stocks present in the RAM Legacy database that inhabit Canadian waters and are of national relevance.