

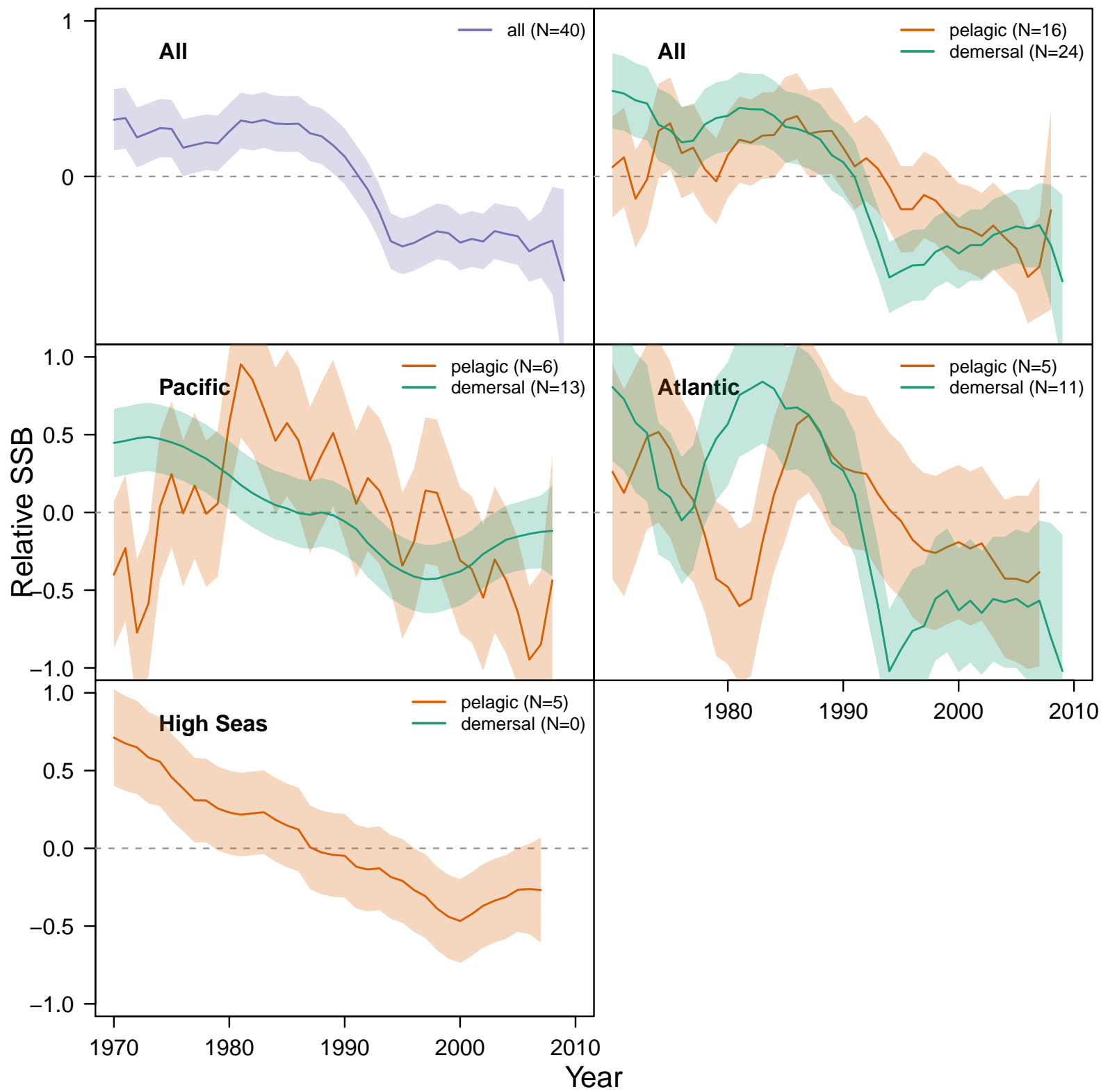
Stocks of Canadian interest (for the Royal
Society of Canada - Expert Panel on Oceans
Health and Biodiversity)

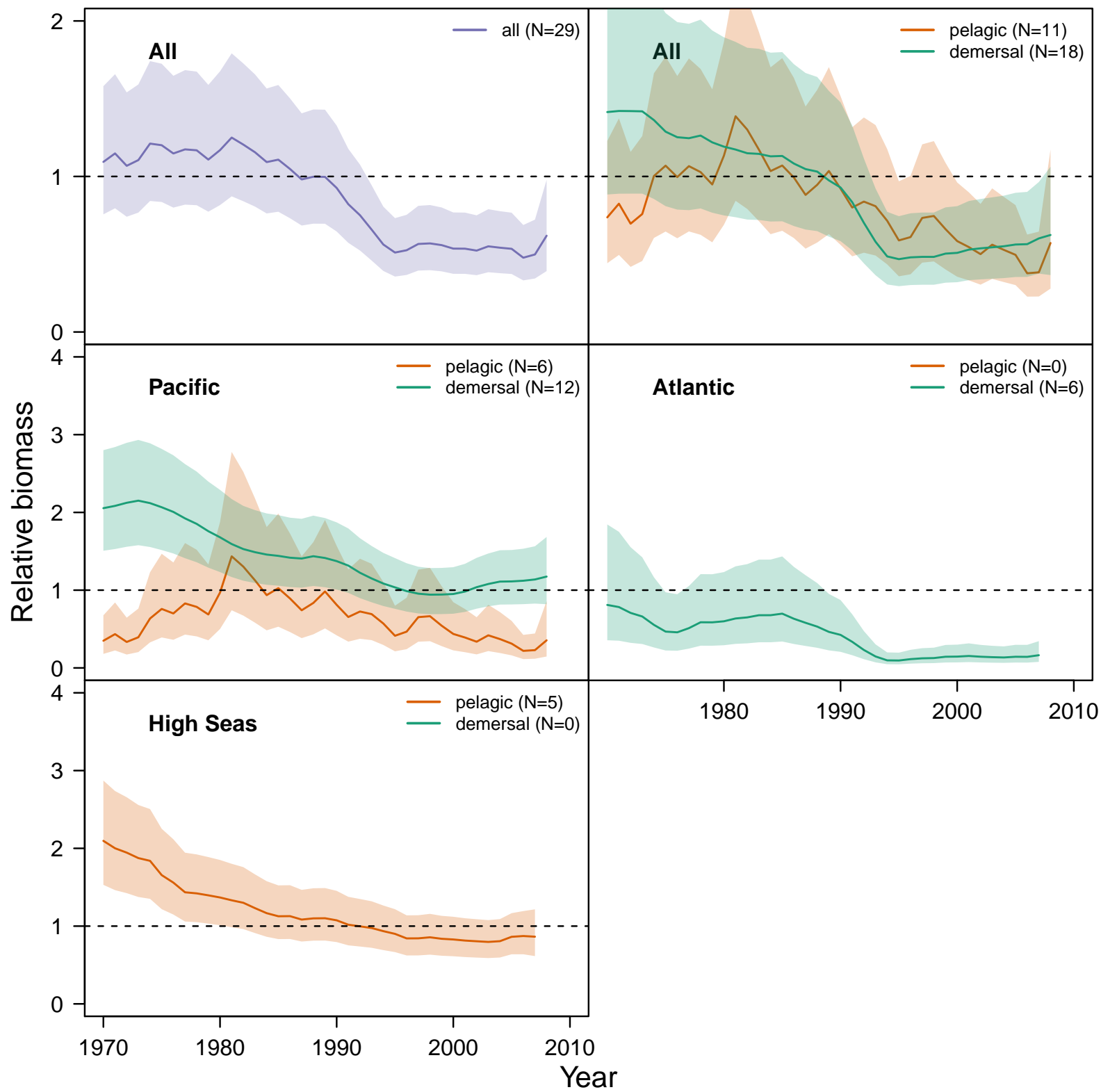
Jeffrey Hutchings * Daniel Ricard

March 22, 2011

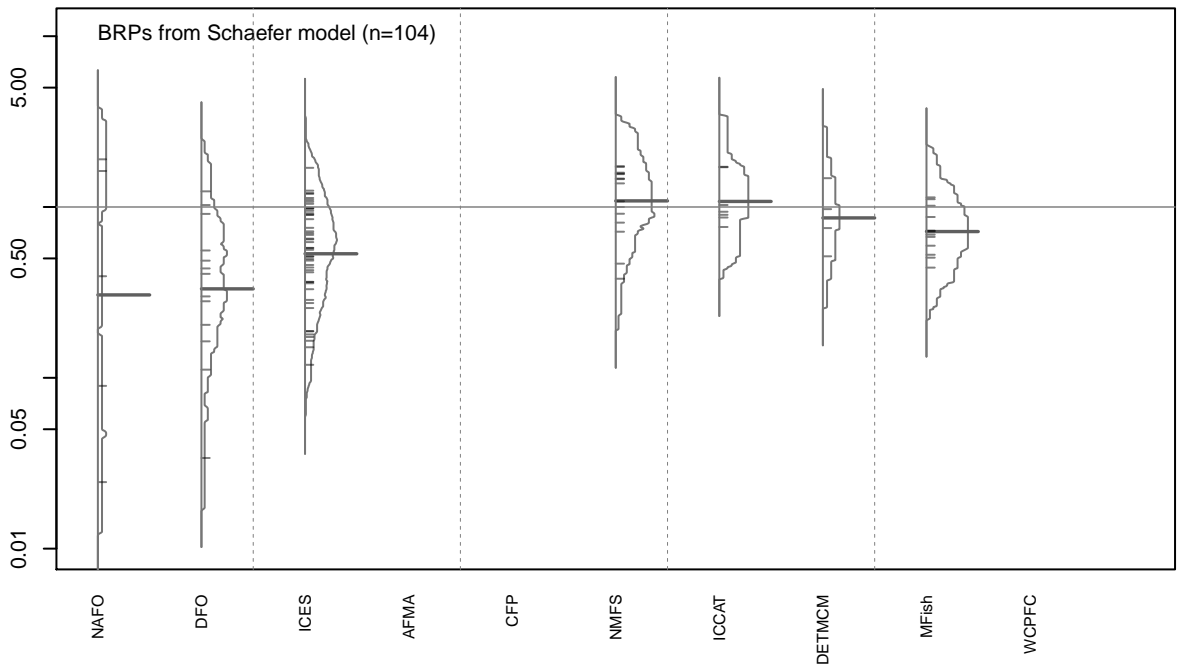
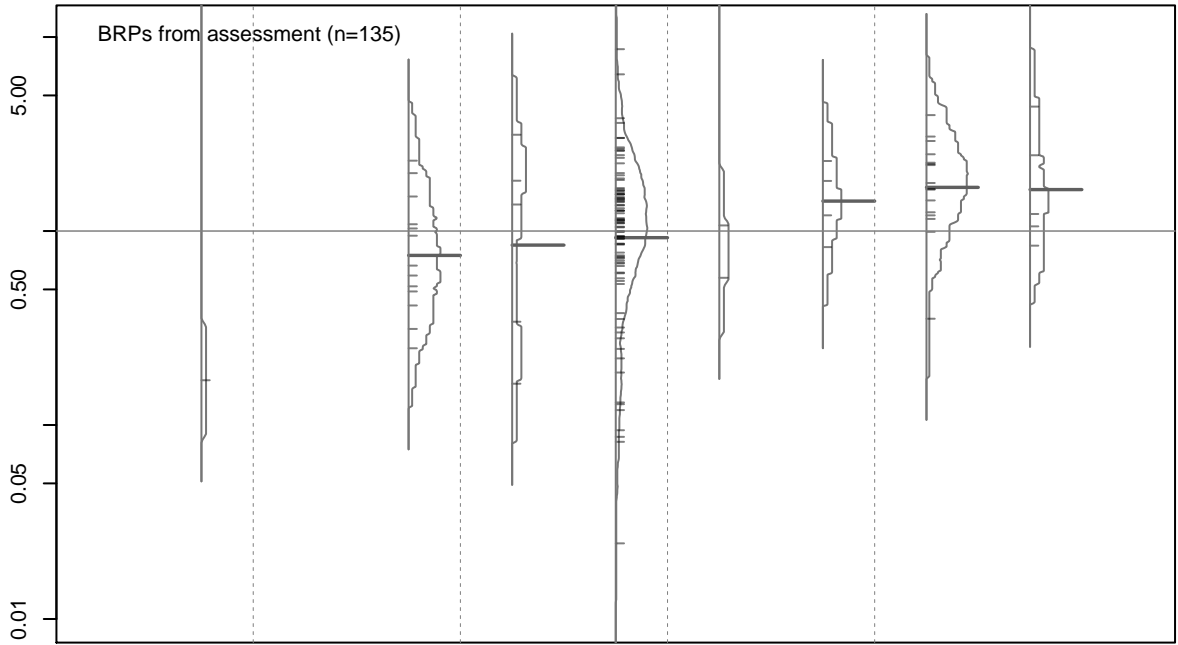
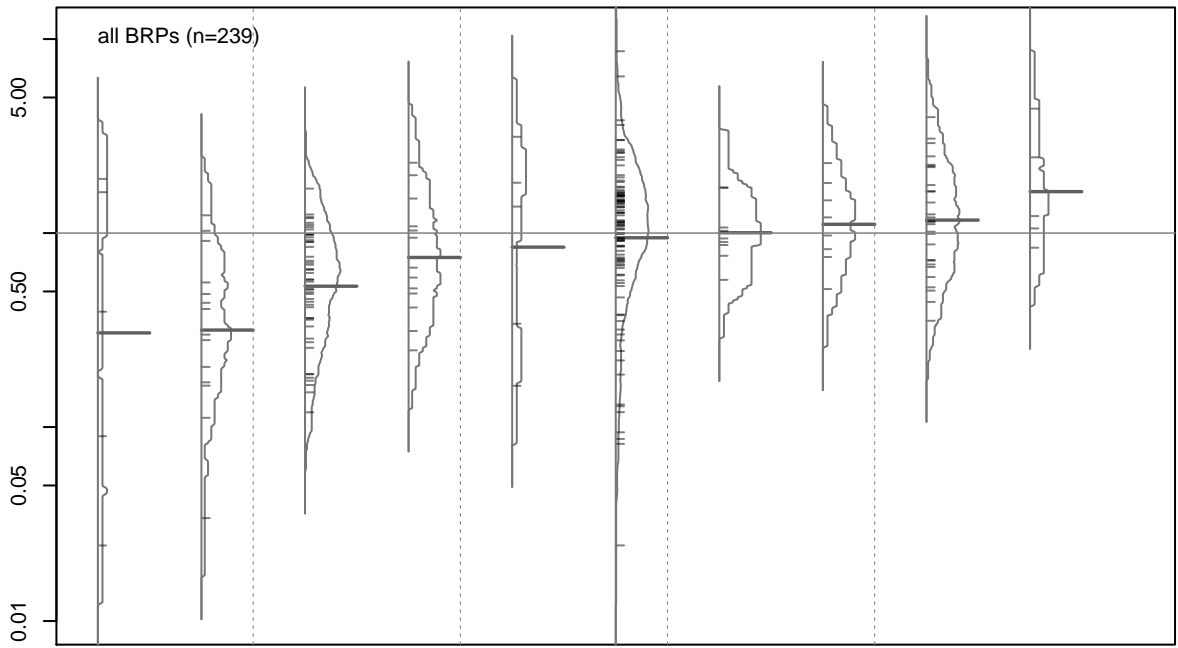
1 Summary plots

*Dalhousie University, Halifax, NS, Canada

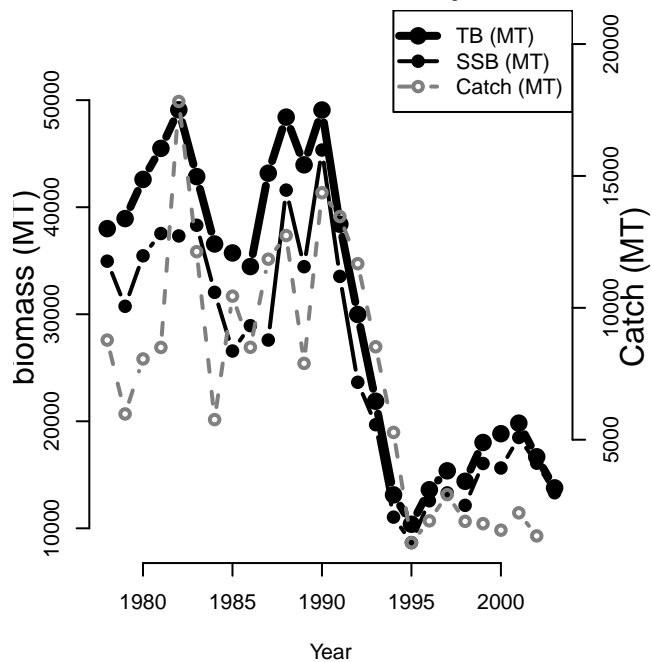




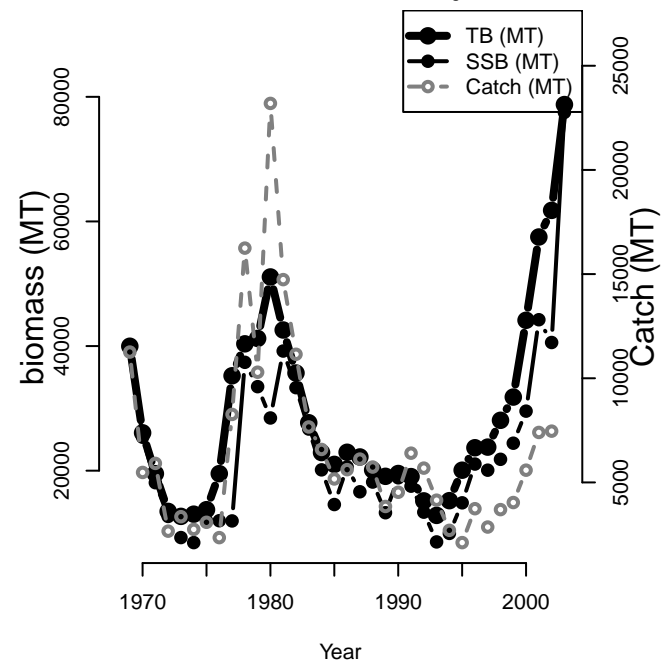
B/B_{msy}



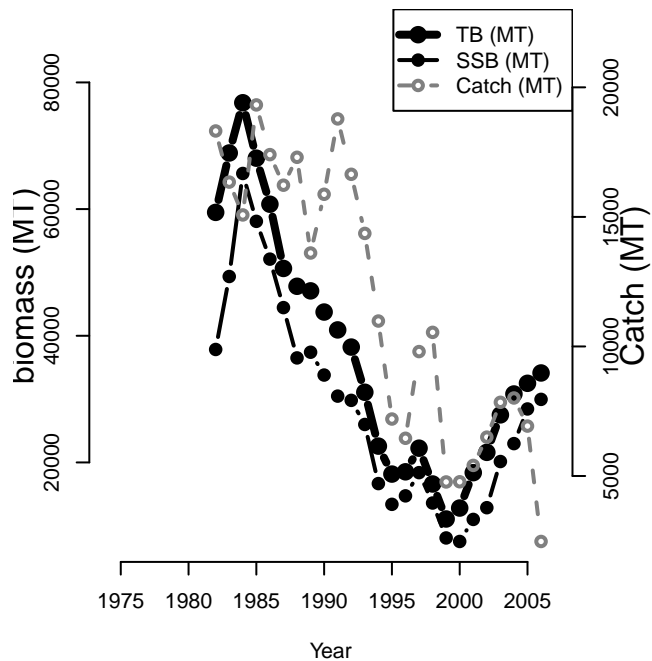
Atlantic cod NAFO 5Zjm



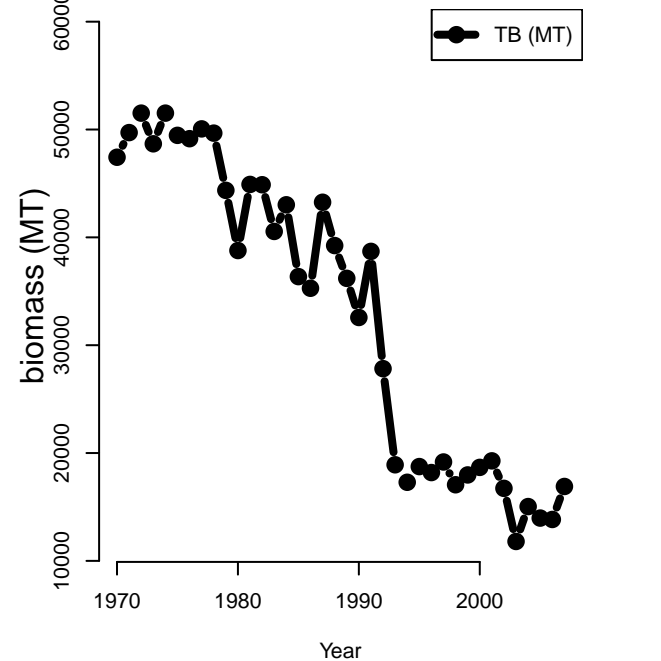
Haddock NAFO-5Zejm



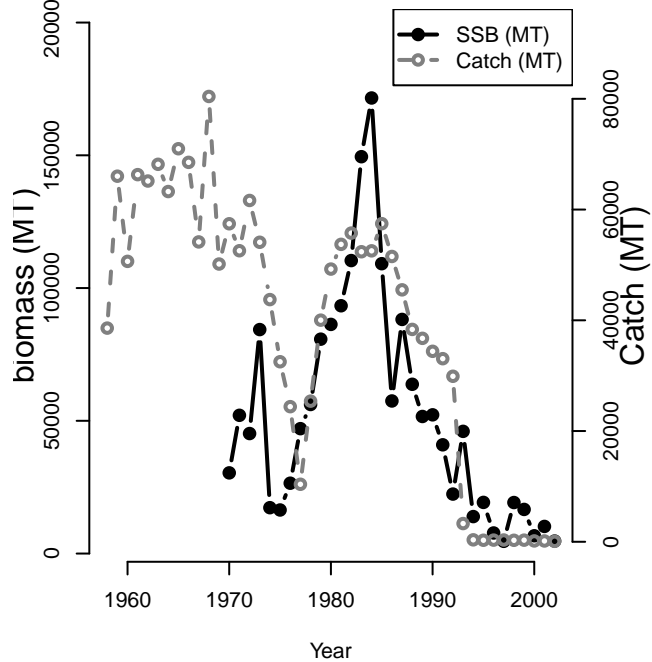
Pollock NAFO-4VWX5Zc



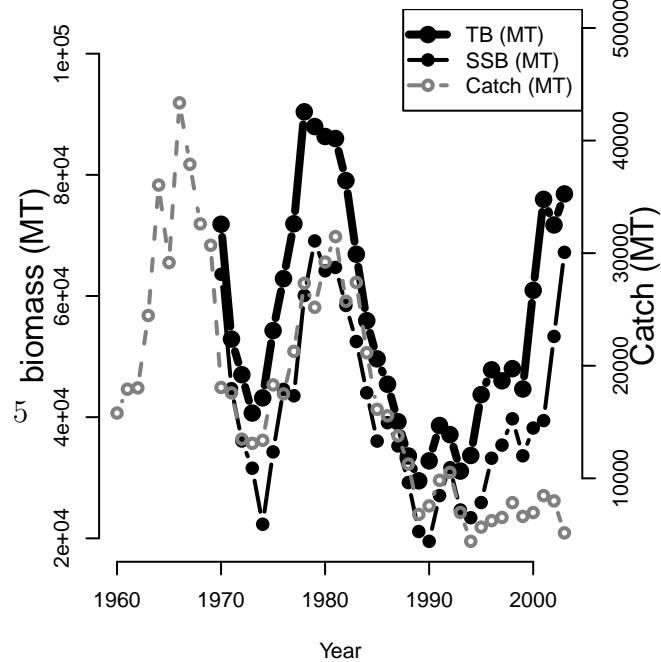
Cusk NAFO 4X



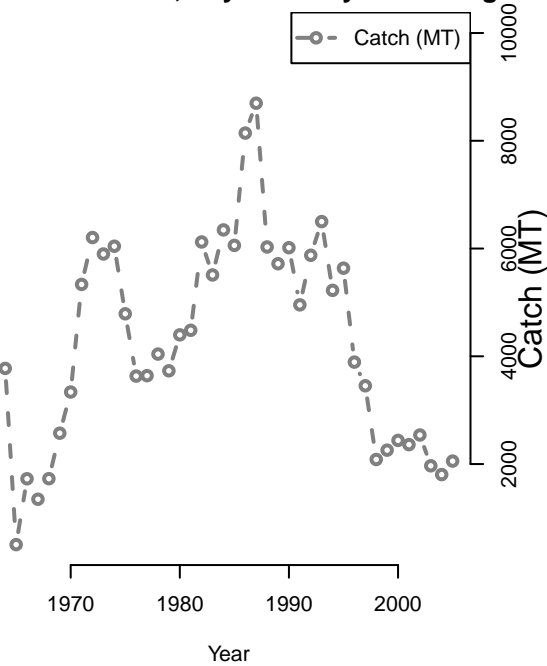
Atlantic cod NAFO 4VsW



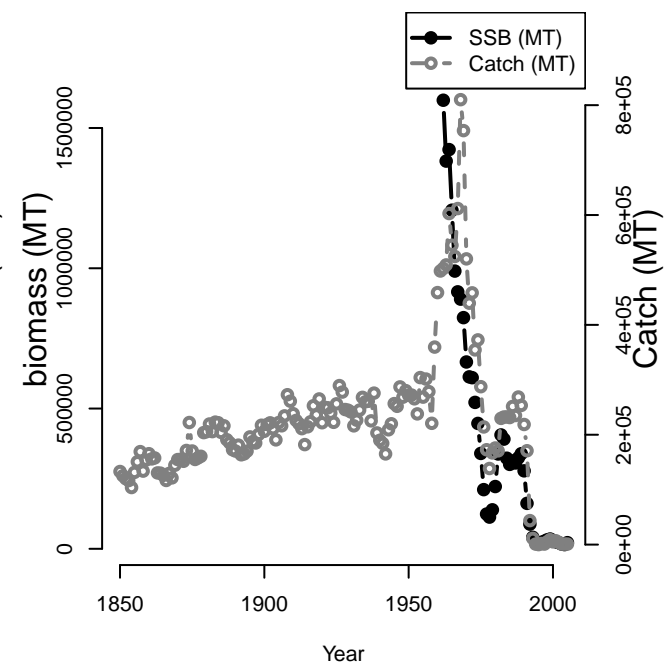
Haddock NAFO-4X5Y



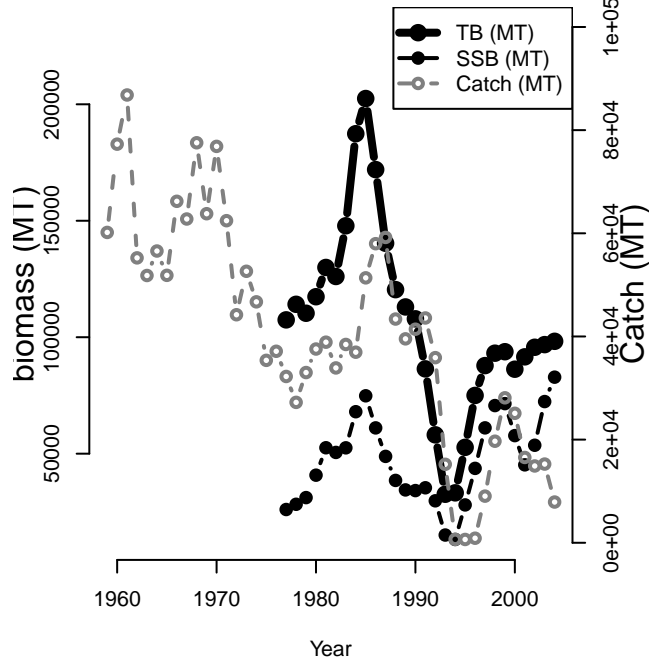
Atlantic cod NAFO 2J3KL



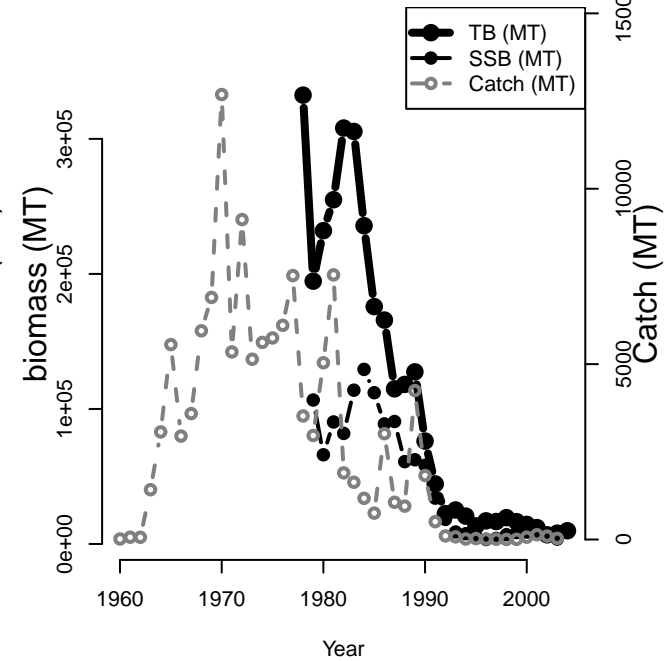
Atlantic cod NAFO 2J3KL



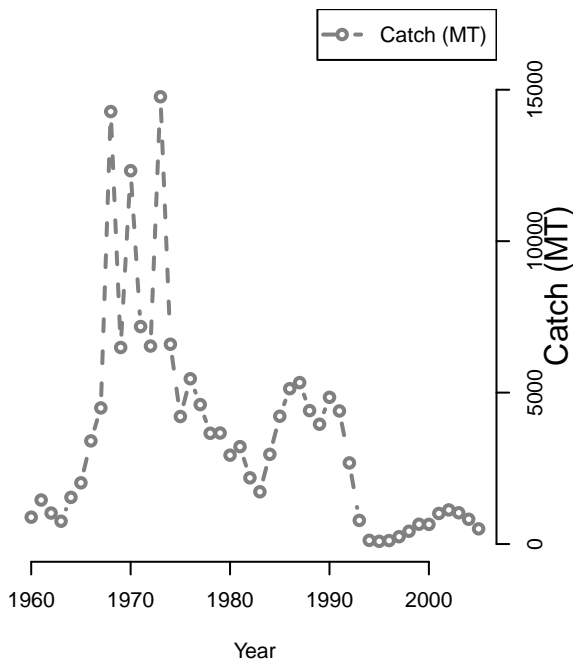
Atlantic cod NAFO 3Ps



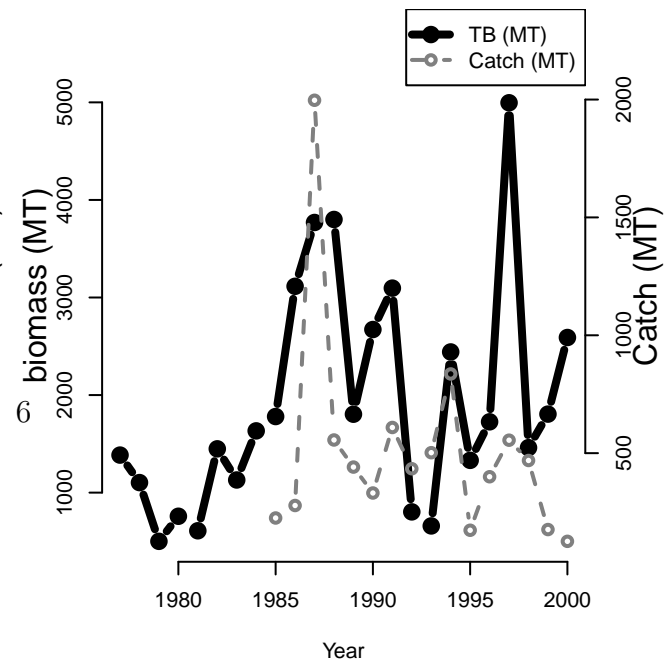
American Plaice NAFO-23K



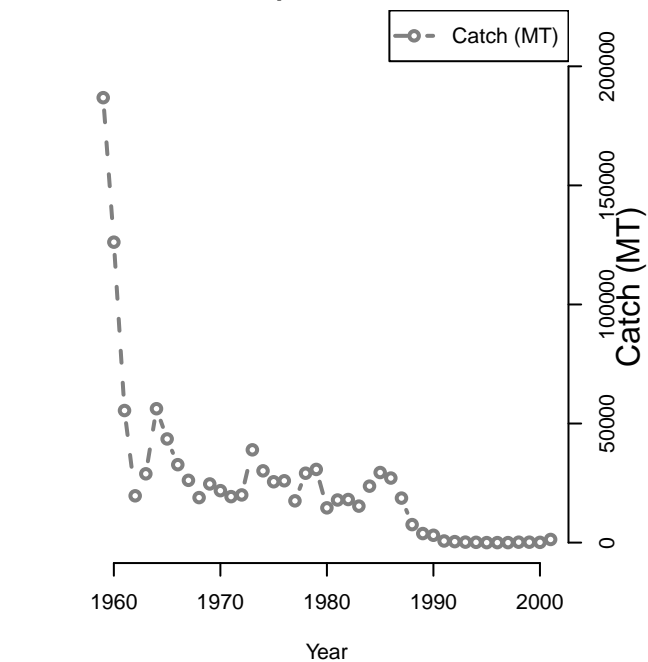
American Plaice NAFO-3Ps



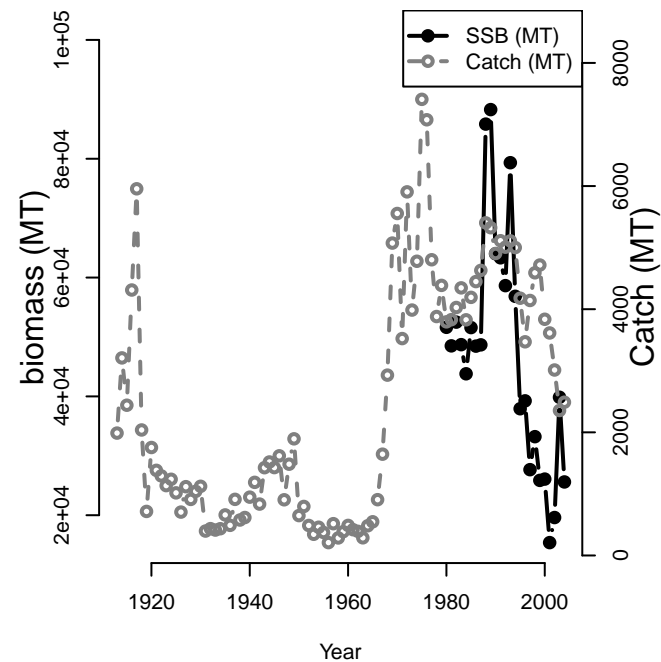
Atlantic cod Labrador Shelf – Grand Banks – St. Pierre Bar



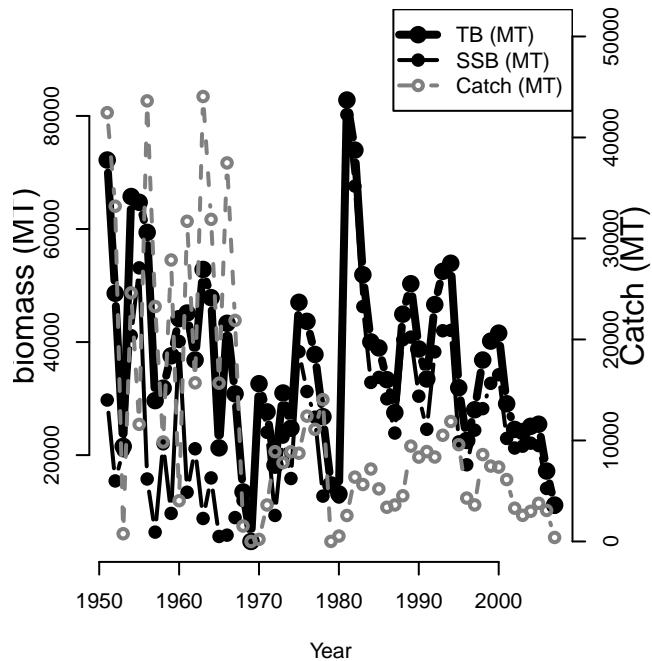
Redfish species NAFO 23K



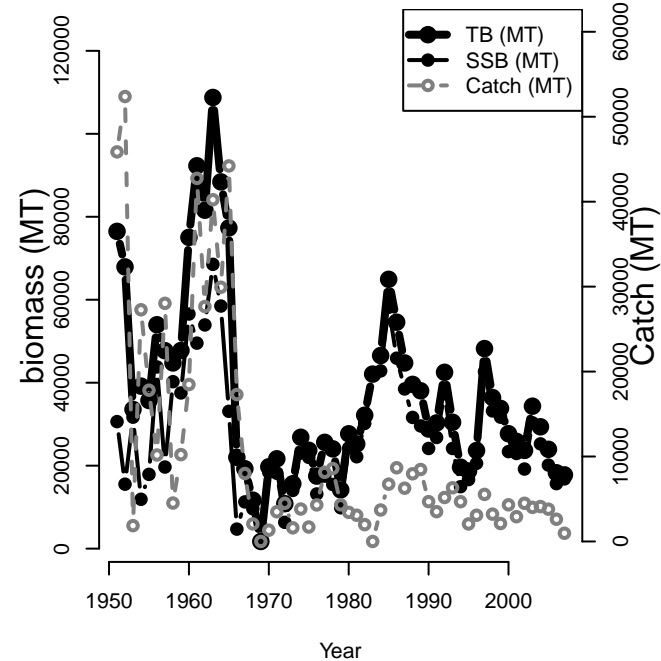
Sablefish Pacific Coast of Canada



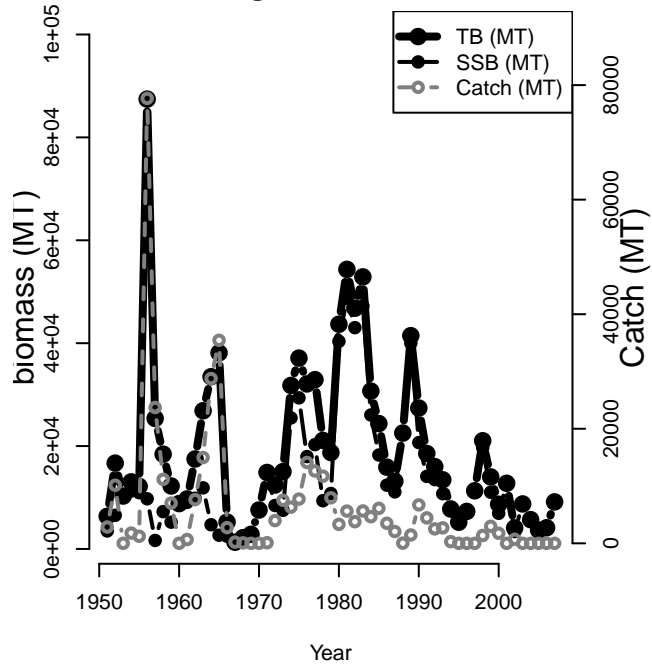
Pacific herring Central Coast



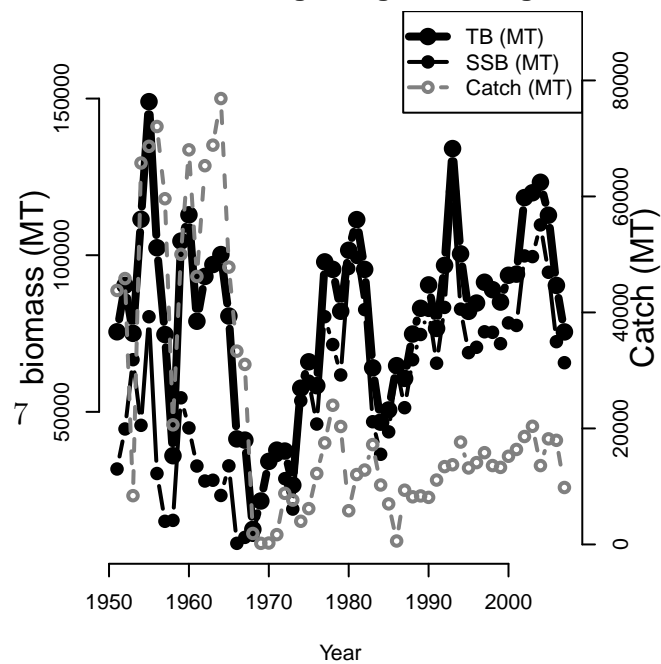
Pacific herring Prince Rupert District



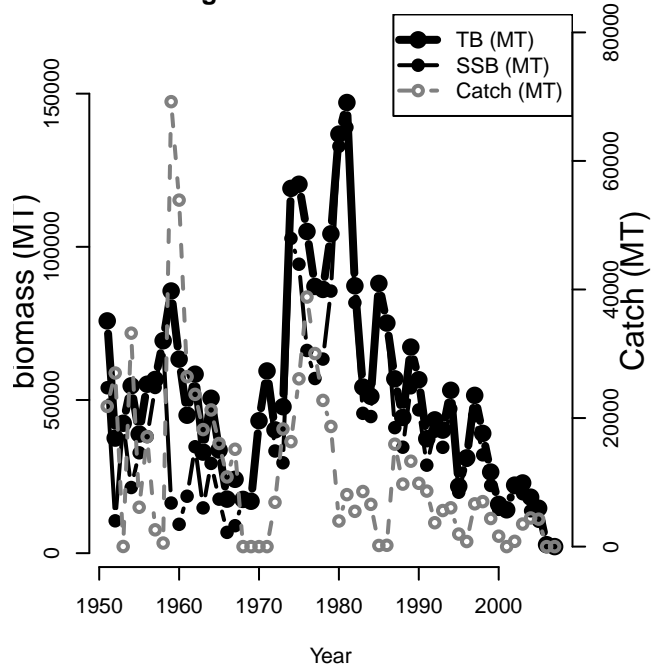
Pacific herring Queen Charlotte Islands



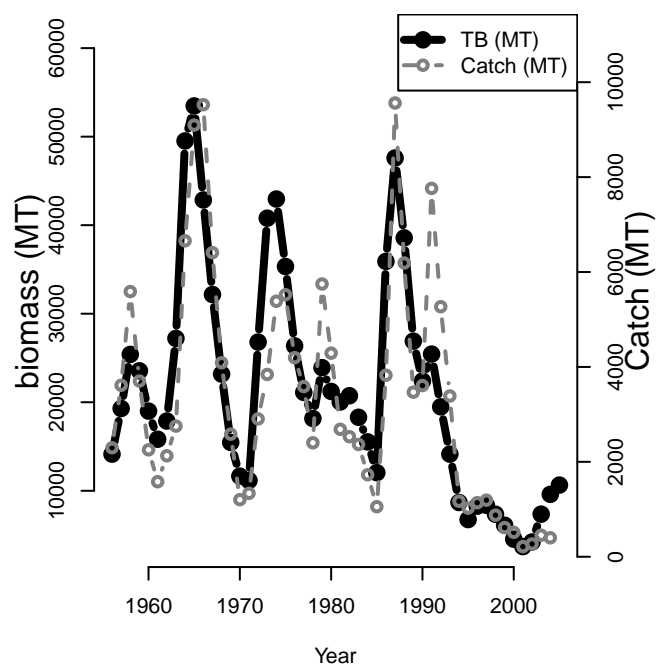
Pacific herring Strait of Georgia



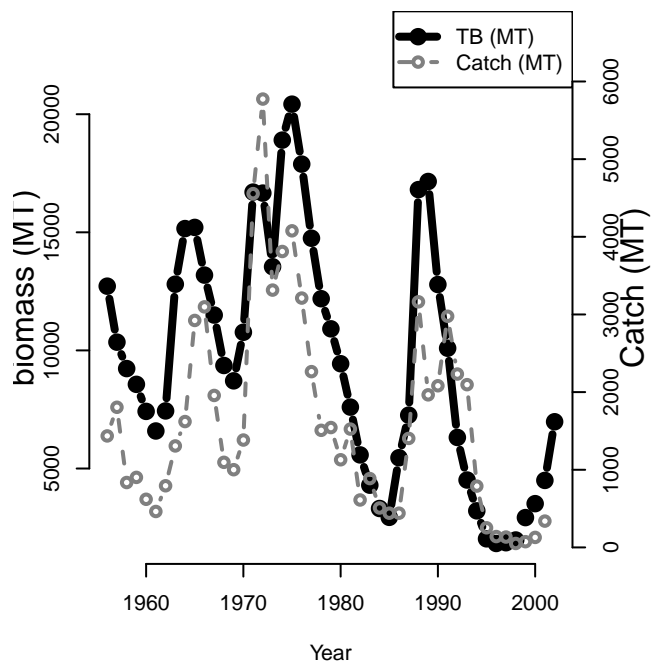
Pacific herring West Coast of Vancouver Island



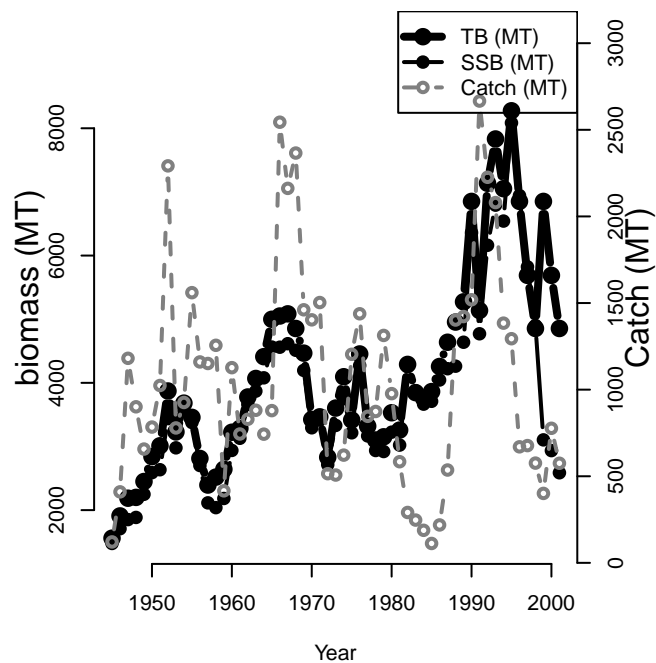
Pacific cod Hecate Strait



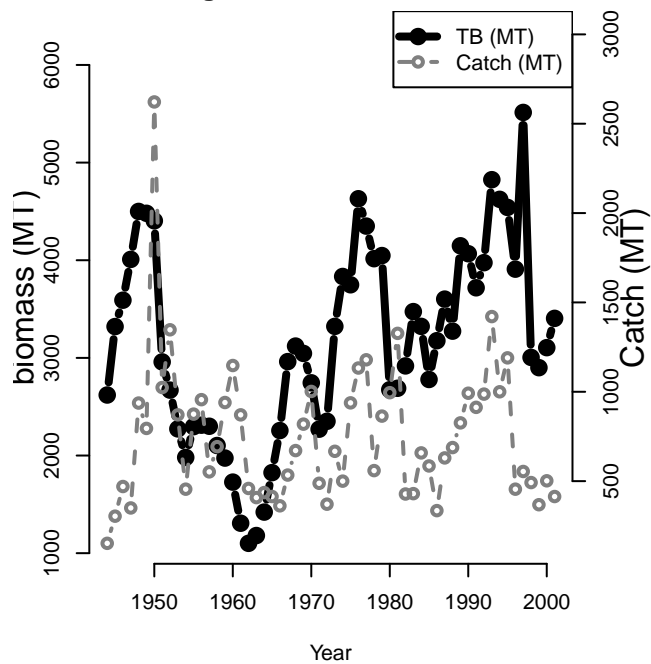
Pacific cod West Coast of Vancouver Island



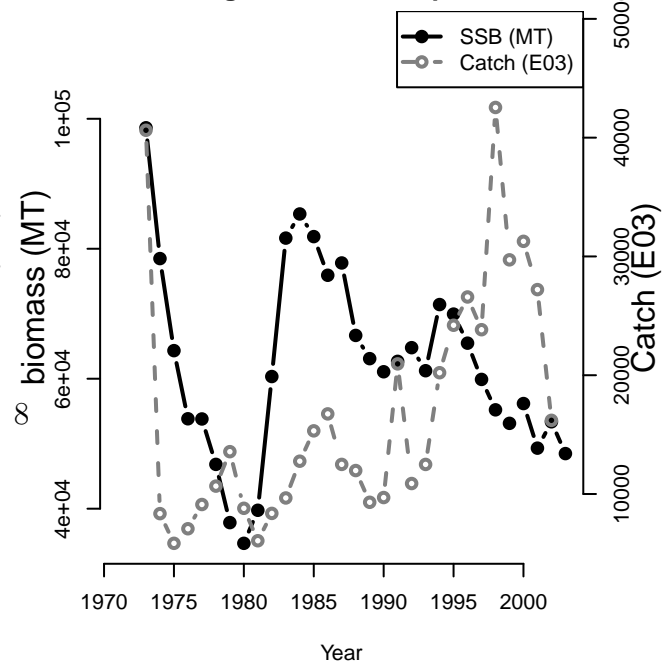
Rock sole Hecate Strait

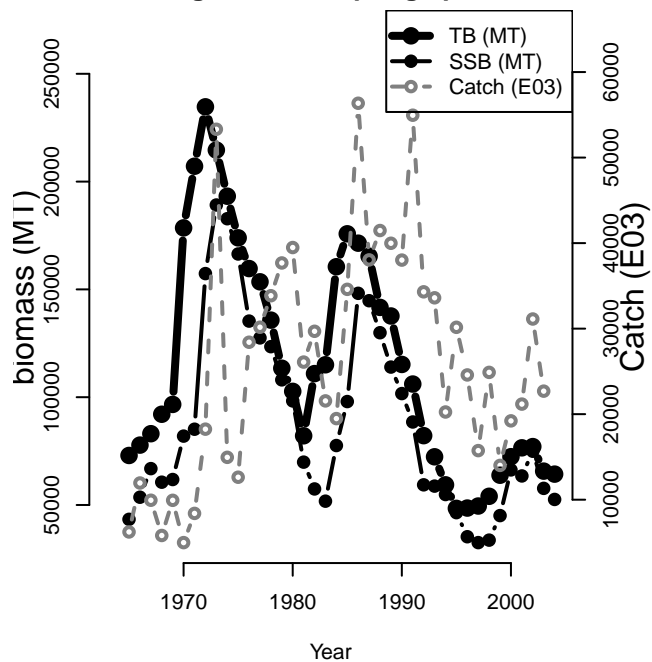
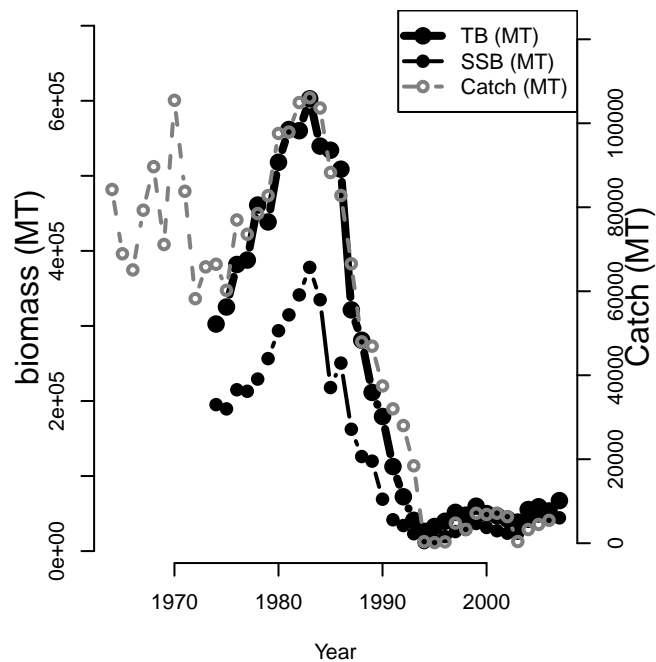
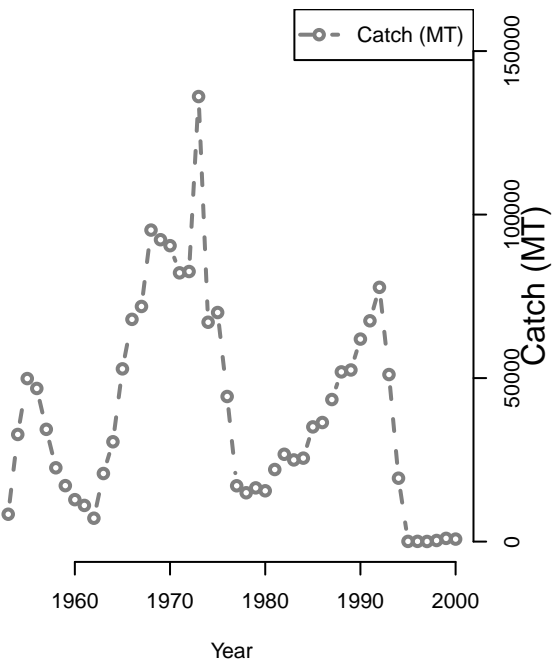
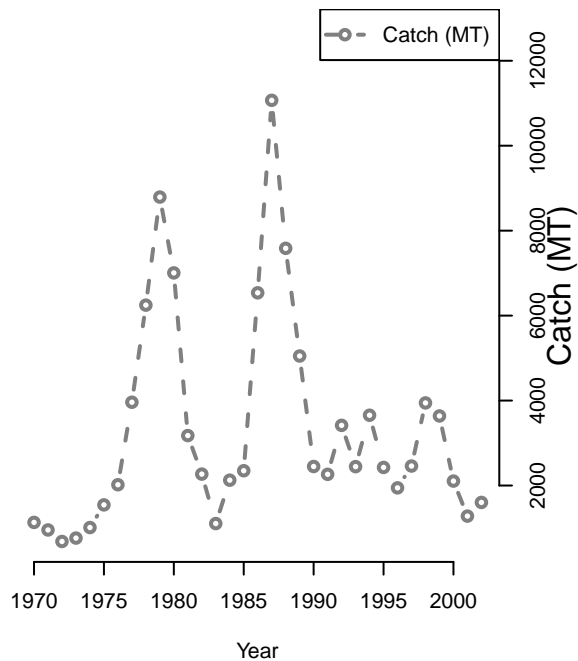
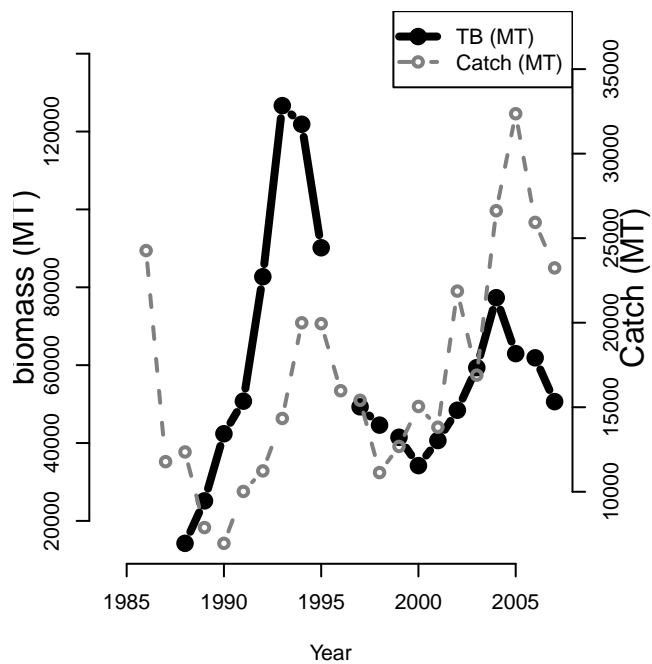
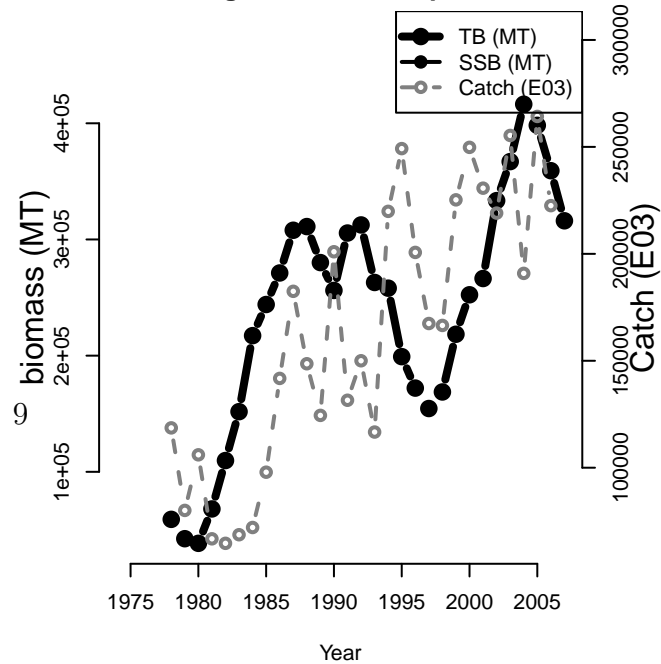


English sole Hecate Strait

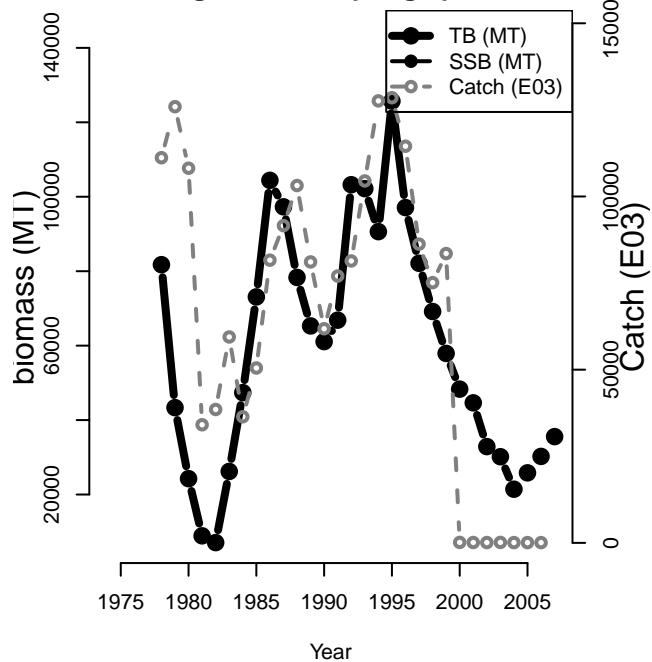


Herring NAFO 4R fall spawners

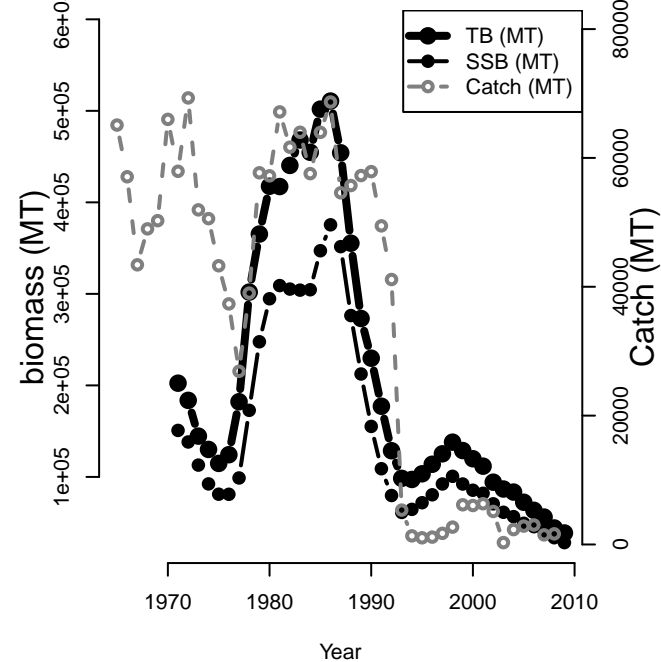


Herring NAFO 4R spring spawners**Atlantic cod NAFO 3Pn4RS****Redfish species NAFO 3Pn4RSTVn****Greenland halibut NAFO 4RST****Snow crab Southern Gulf of St. Lawrence****Herring NAFO 4T fall spawners**

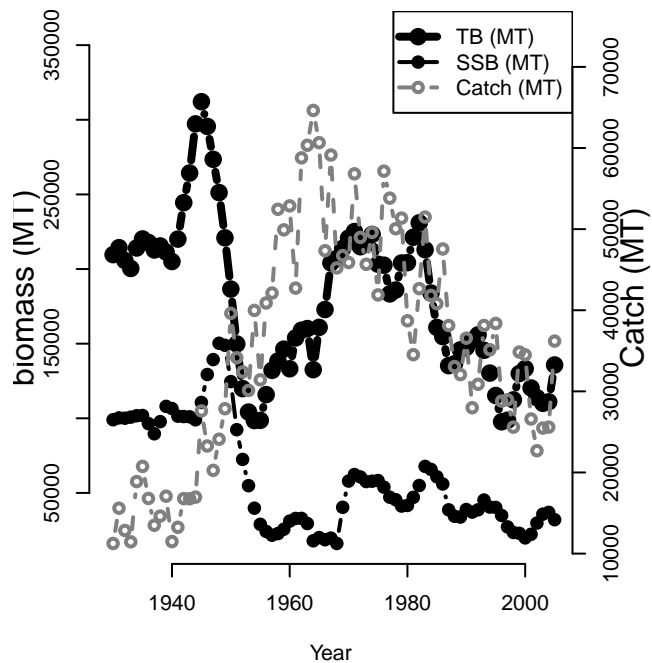
Herring NAFO 4T spring spawners



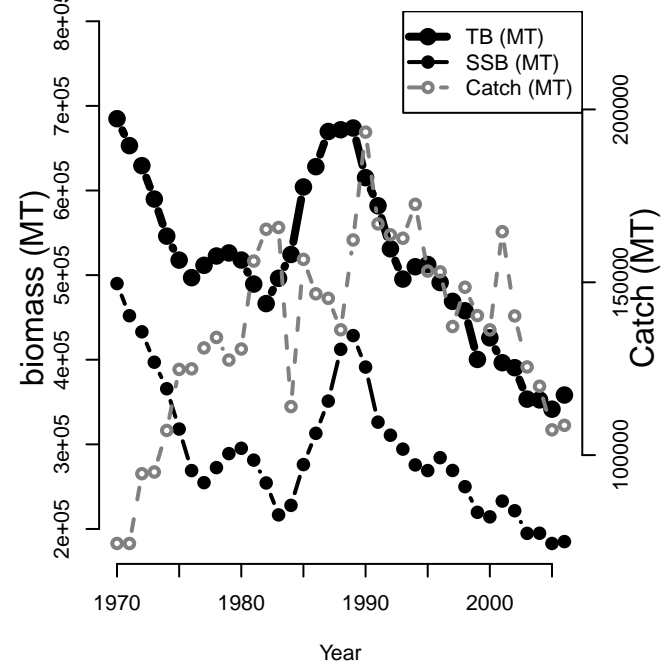
Atlantic cod NAFO 4TVn



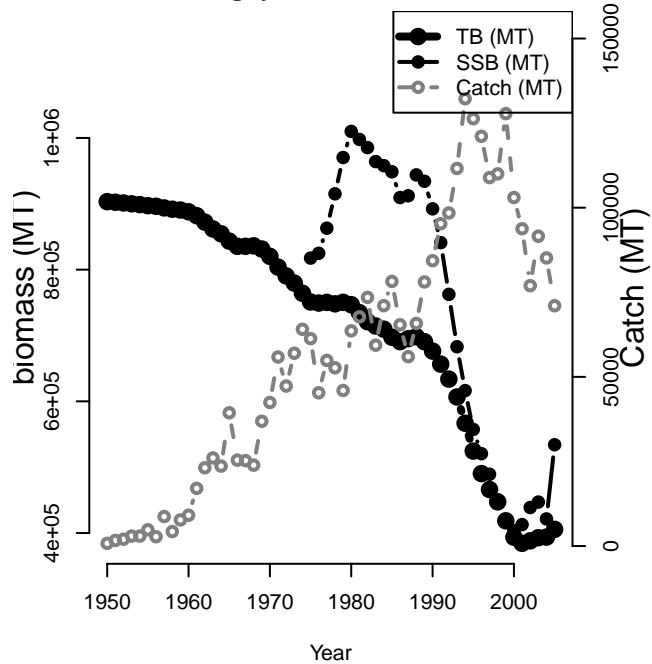
Albacore tuna North Atlantic



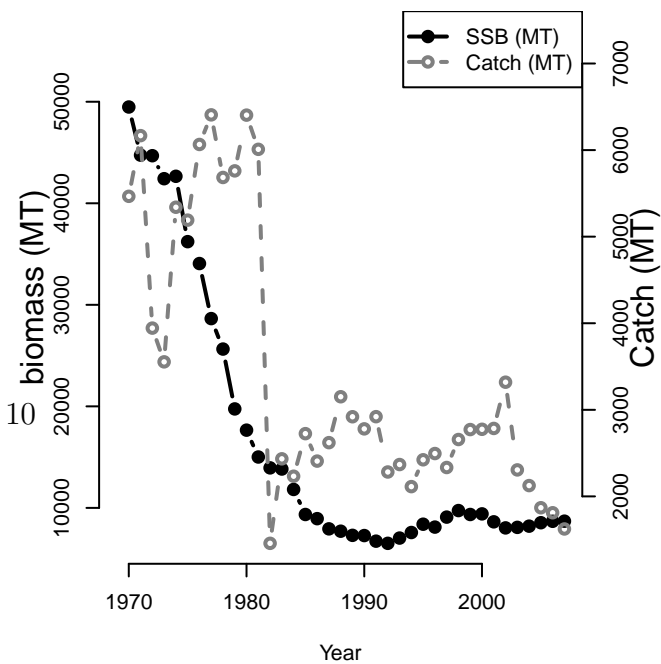
Yellowfin tuna Atlantic



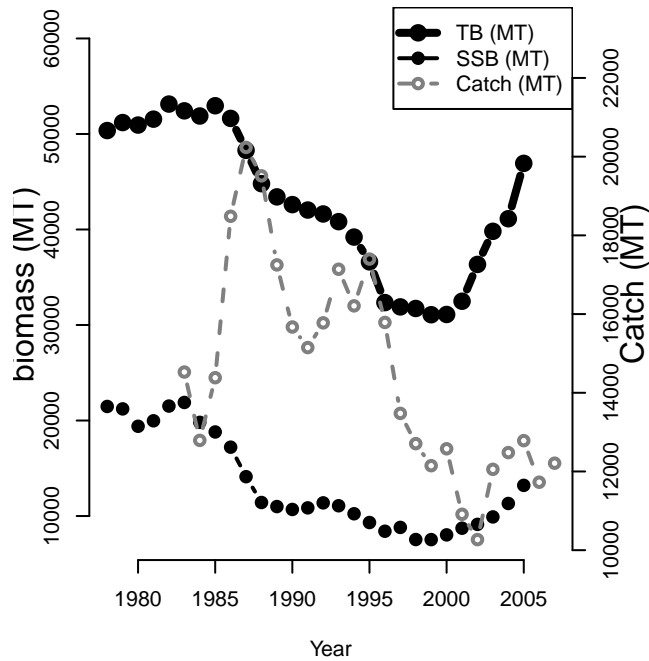
Bigeye tuna Atlantic



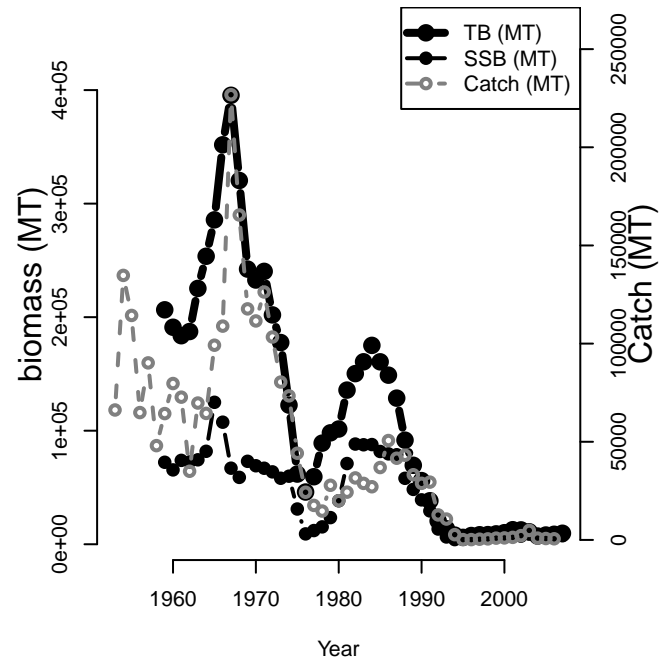
Bluefin tuna Western Atlantic



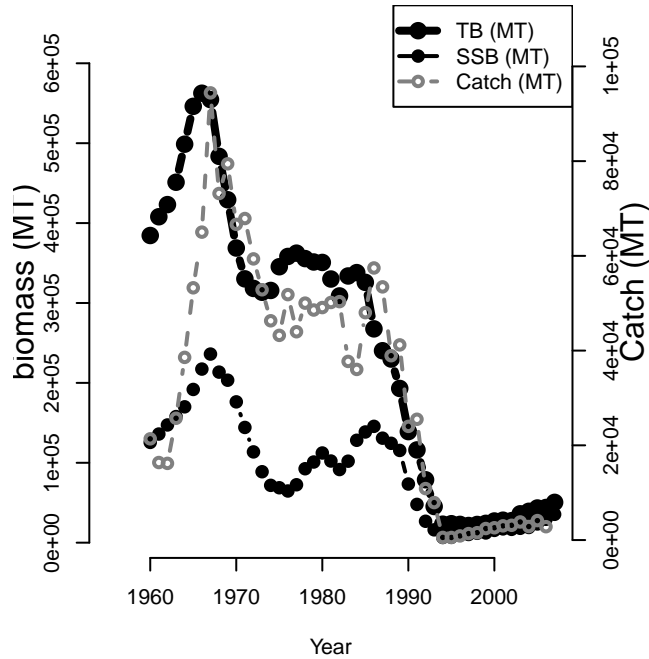
Swordfish North Atlantic



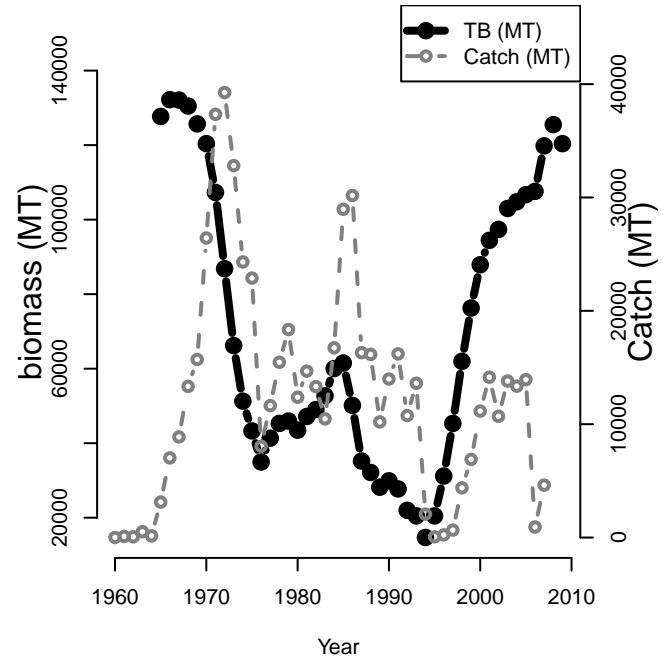
Atlantic cod NAFO 3NO



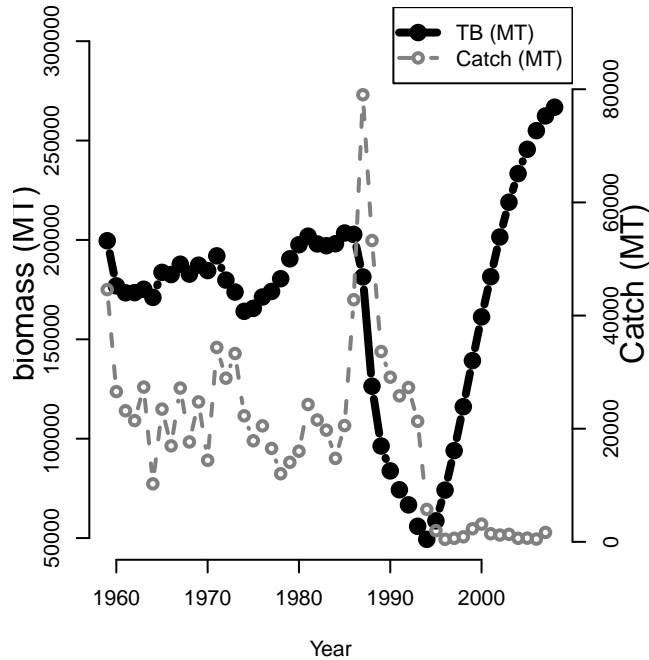
American Plaice NAFO-3LNO



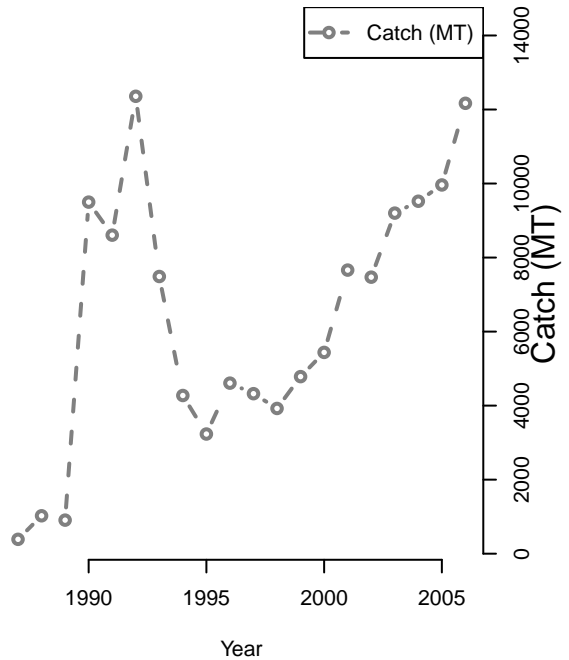
Yellowtail Flounder NAFO 3LNO



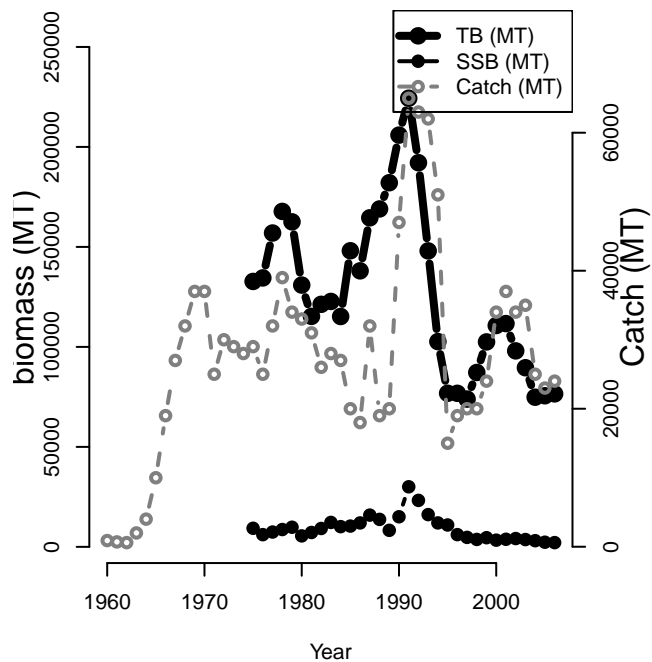
Redfish species NAFO 3LN



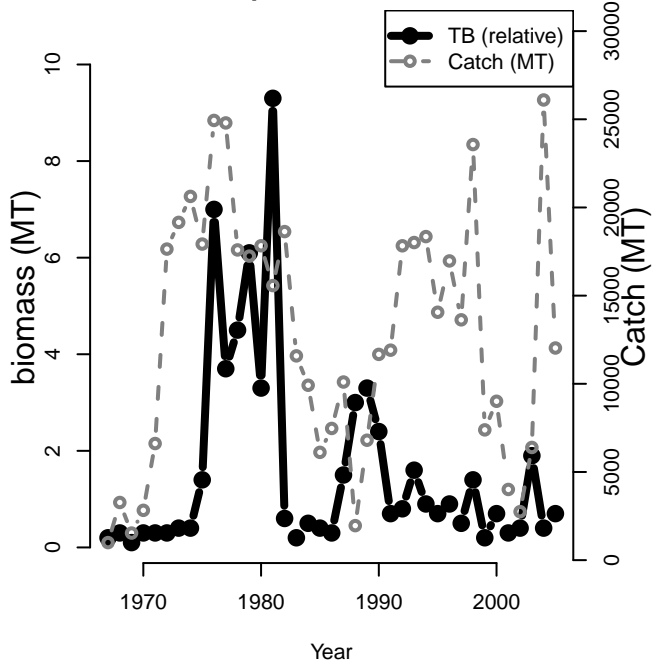
Greenland halibut NAFO 01ABCDEF



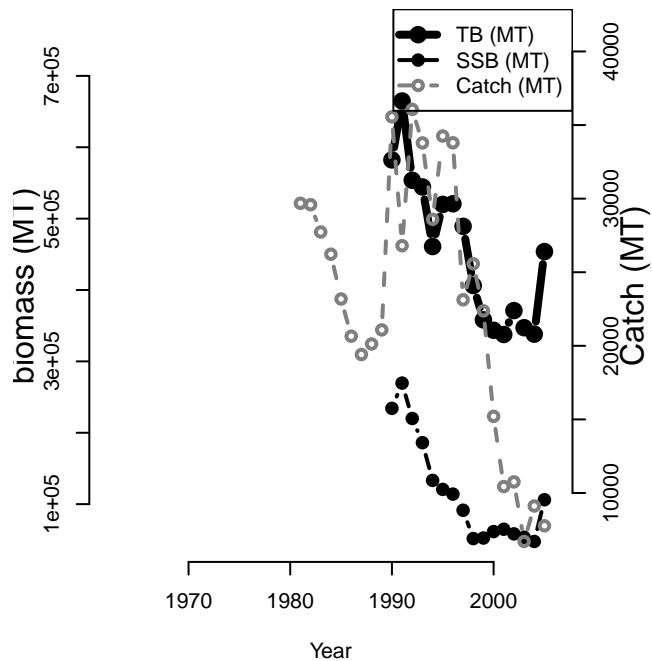
Greenland halibut NAFO 23KLMNO



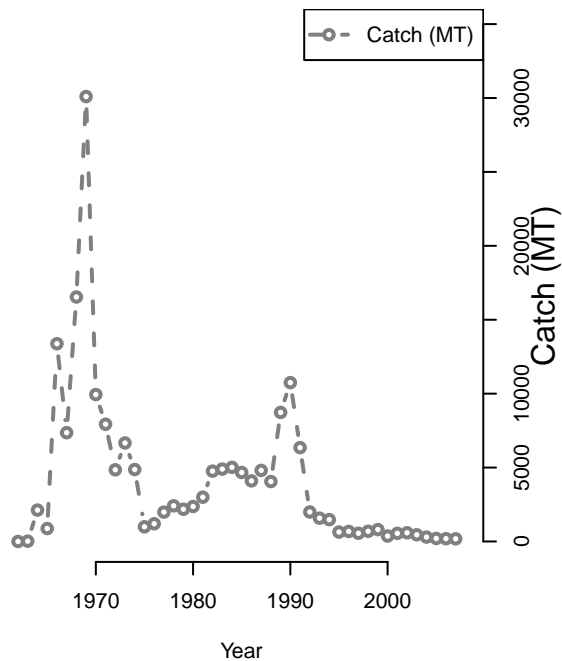
northern shortfin squid Northwestern Atlantic Coast



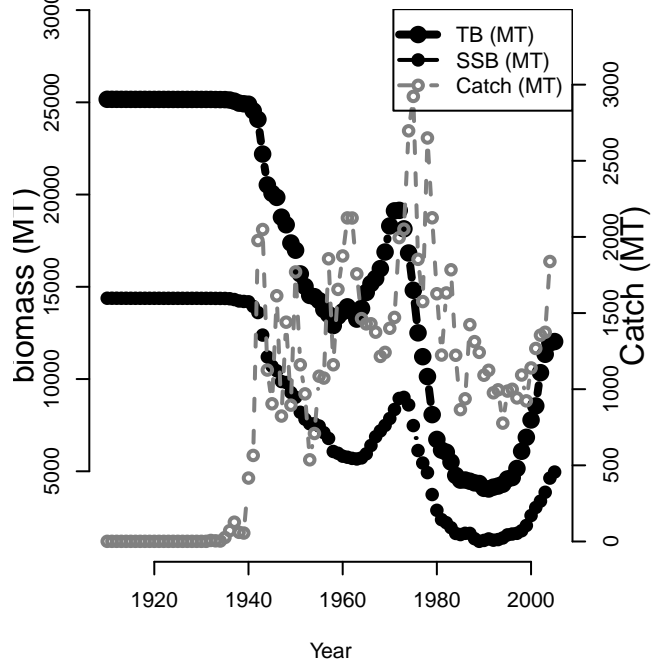
Spiny dogfish Atlantic Coast



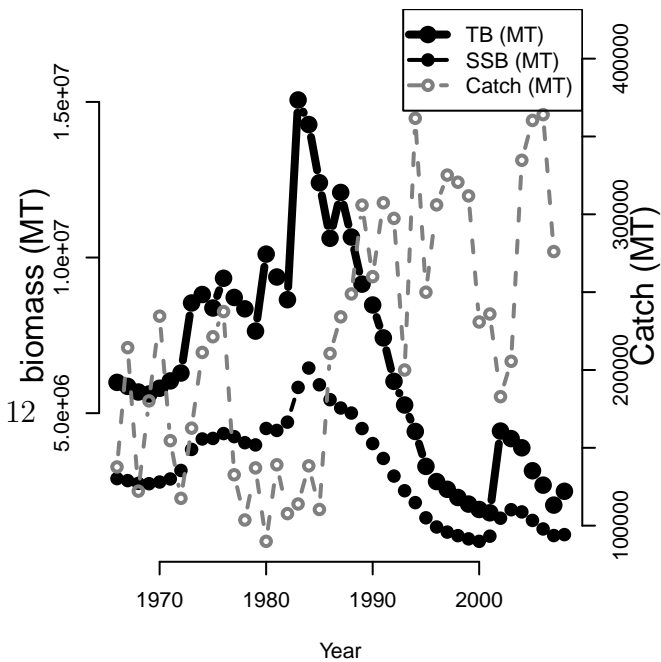
Ocean pout Northwestern Atlantic Coast



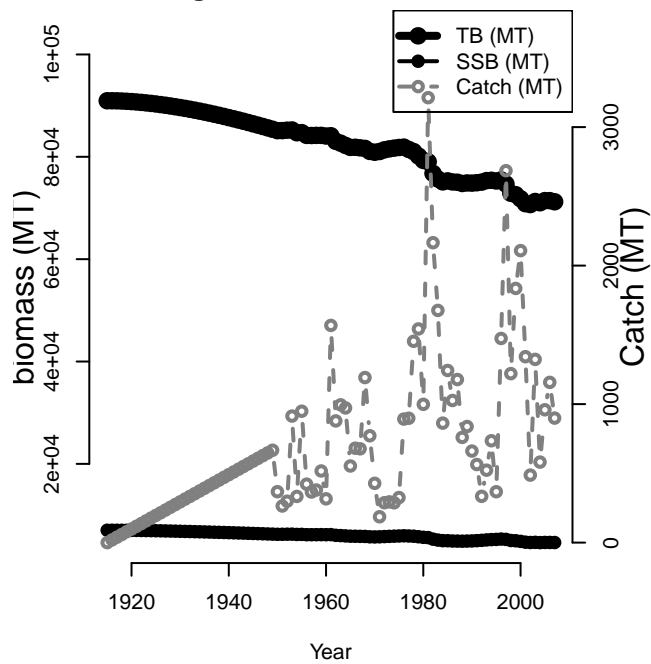
Petrale sole Northern Pacific Coast



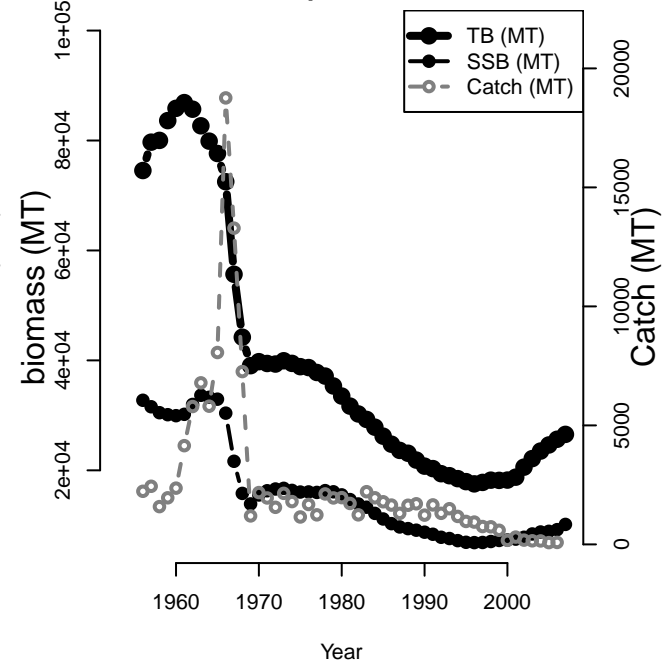
Pacific hake Pacific Coast



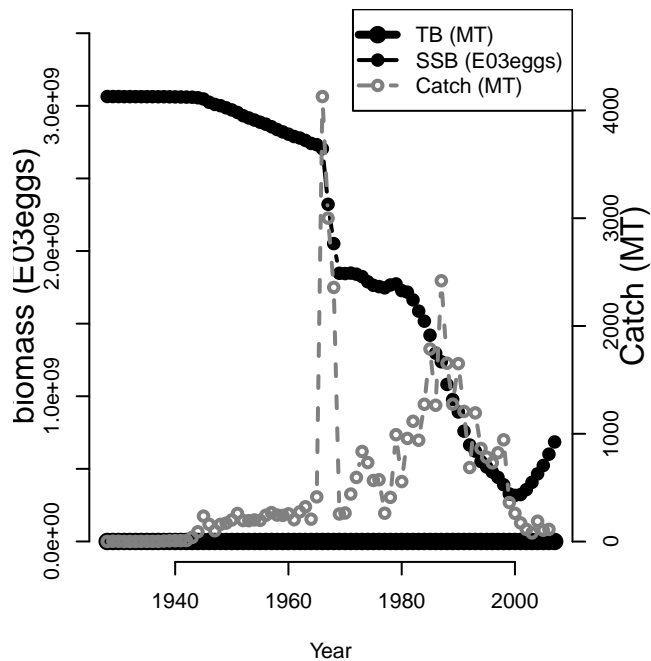
Longnose skate Pacific Coast



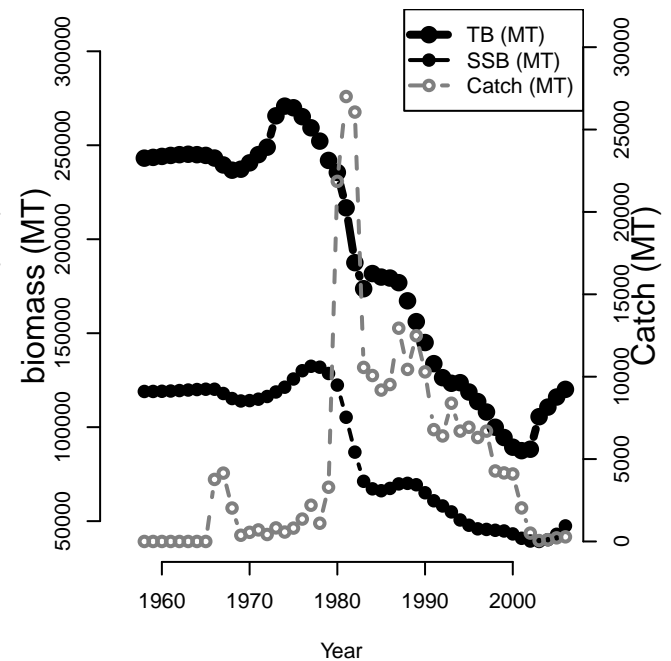
Pacific ocean perch Pacific Coast



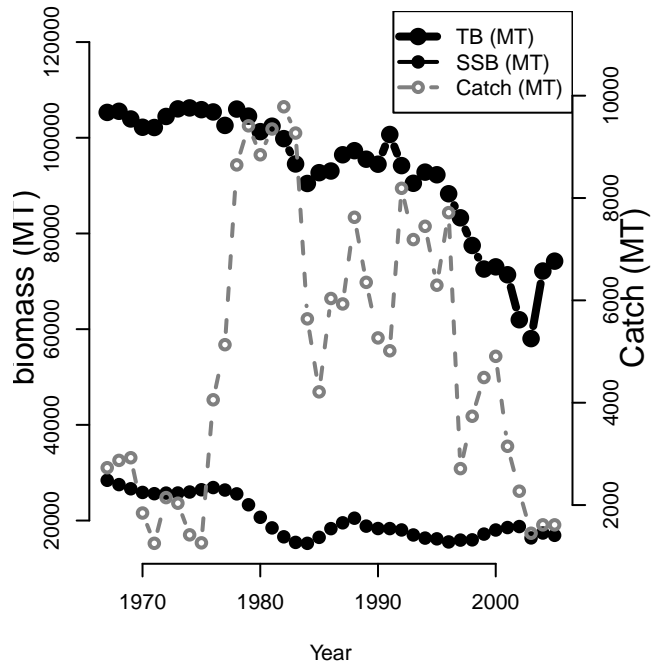
Darkblotched rockfish Pacific Coast



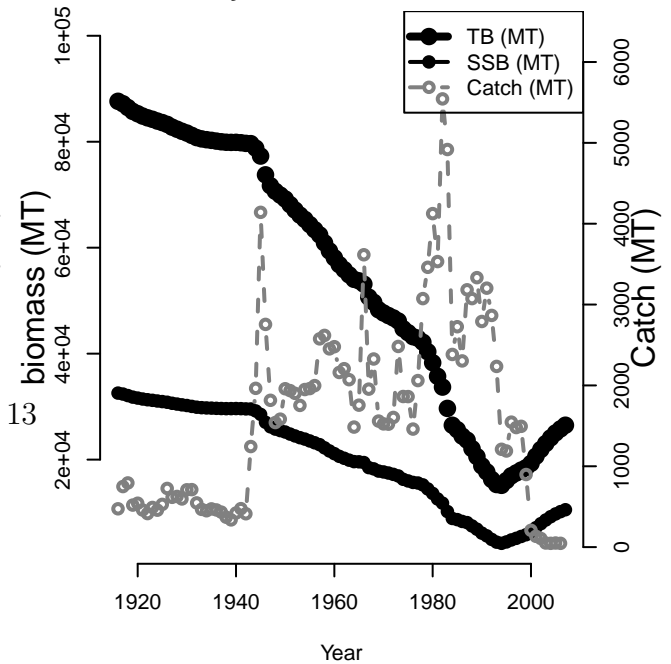
Widow rockfish Pacific Coast



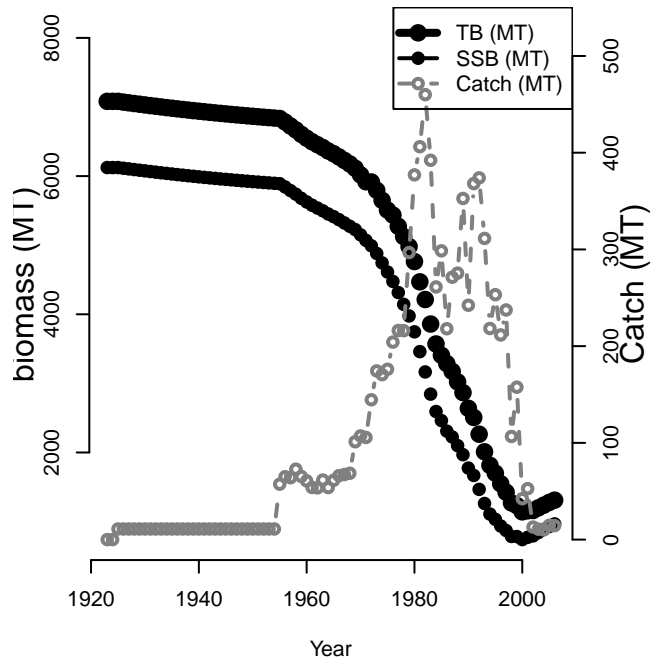
Yellowtail rockfish Northern Pacific Coast



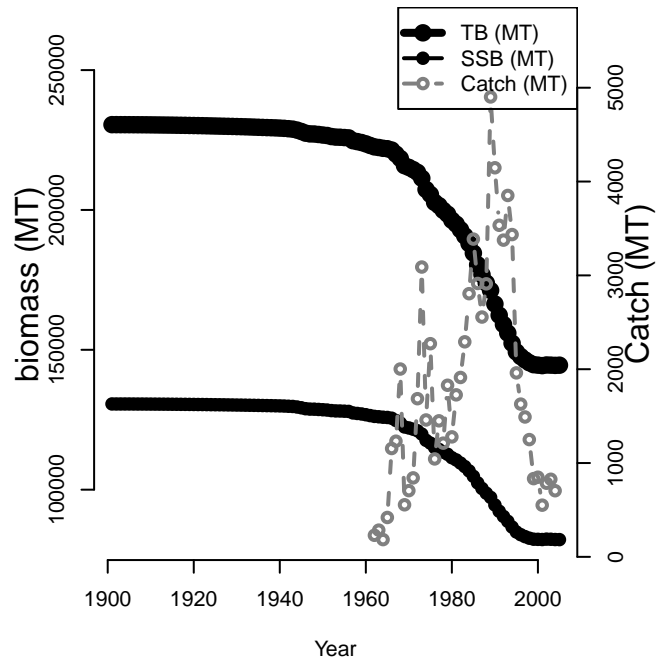
Canary rockfish Pacific Coast



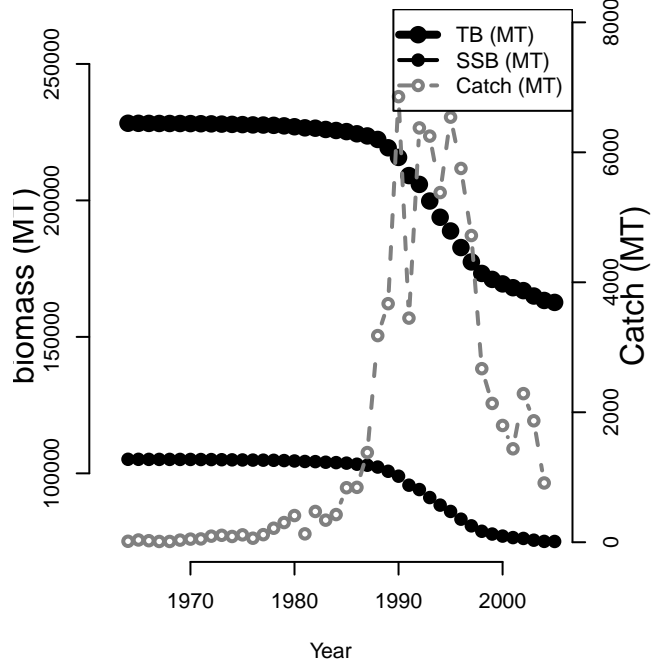
Yelloweye rockfish Pacific Coast



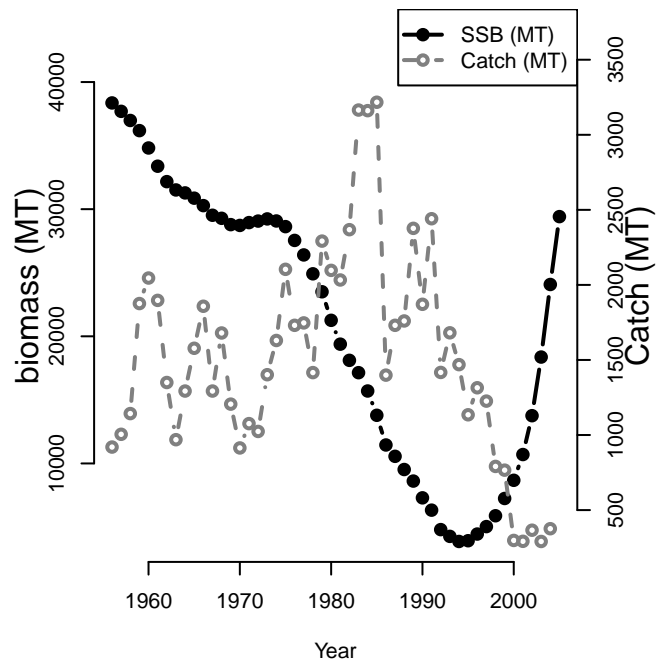
Shortspine thornyhead Pacific Coast



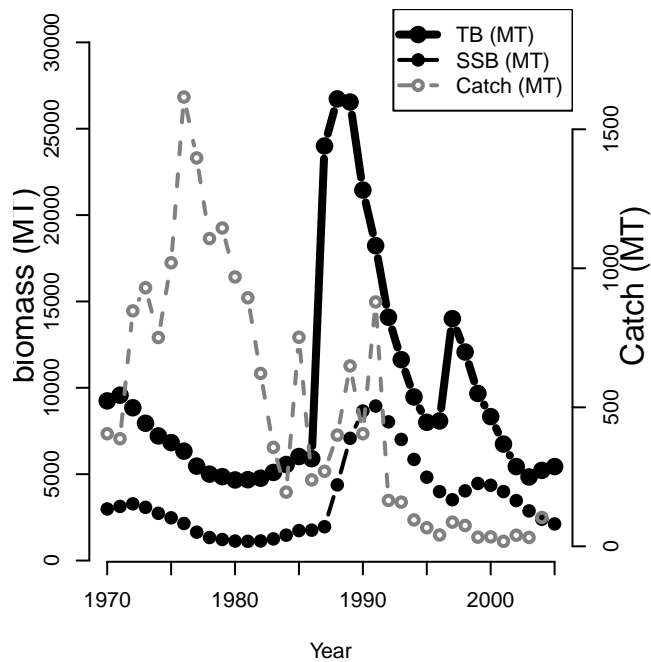
Longspine thornyhead Pacific Coast



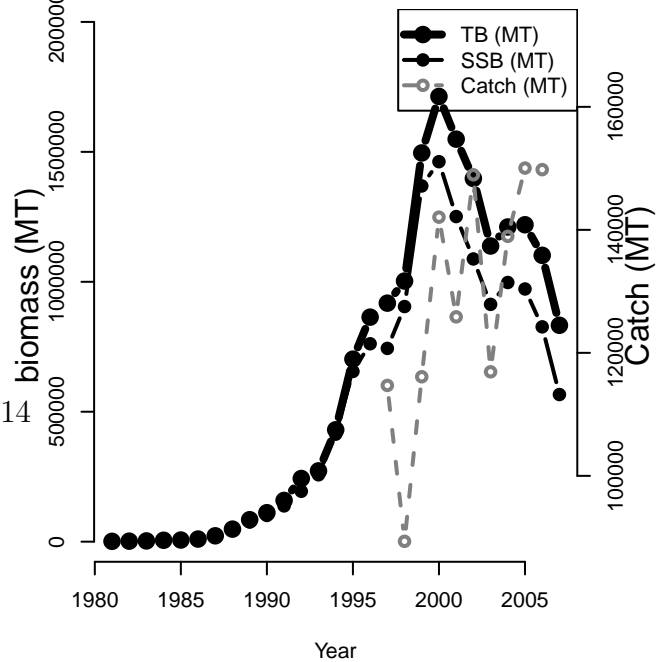
Lingcod Northern Pacific Coast



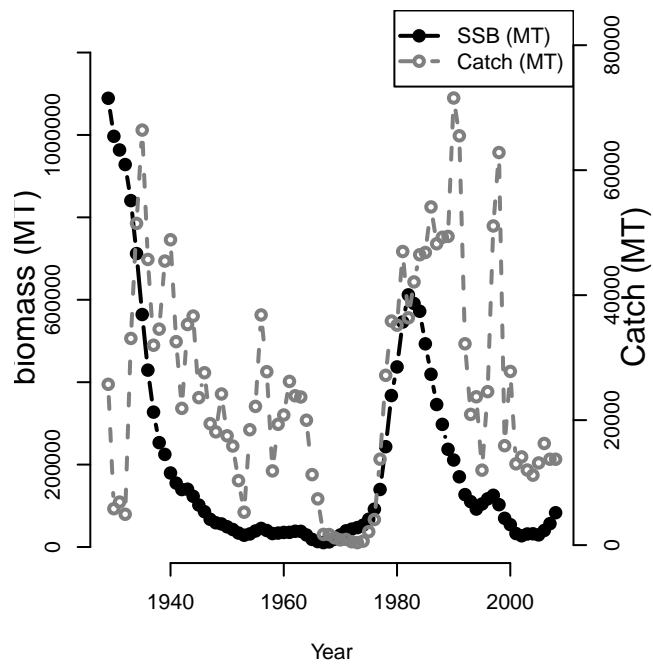
Starry flounder Northern Pacific Coast



Pacific sardine Pacific Coast



Pacific 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 canus	ameri-	DFO	1977-2000	Newfoundland-Labrador Shelf
Redfish species	NAFO 23K	Redfish species		DFO	1959-2001	Newfoundland-Labrador Shelf
Sablefish	Pacific Coast of Canada	Anoplopoma	fimbria	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 macrocephalus		DFO	1956-2005	Gulf of Alaska
Pacific cod	West Coast of Vancouver Island	Gadus macrocephalus		DFO	1956-2002	Gulf of Alaska
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
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 NAFO-3LNO	Plaice		Hippoglossoides platessoides	NAFO	1955-2007	Newfoundland-Labrador Shelf
Yellowtail NAFO 3LNO	Flounder		Limanda ferruginea	NAFO	1960-2009	Northeast U.S. Continental Shelf
Redfish species 3LN	NAFO		Redfish species	NAFO	1959-2008	Newfoundland-Labrador Shelf
Greenland NAFO 01ABCDEF	halibut		Reinhardtius hippoglossoides	NAFO	1987-2006	West Greenland Shelf
Greenland NAFO 23KLMNO	halibut		Reinhardtius hippoglossoides	NAFO	1960-2006	Newfoundland-Labrador Shelf
Northern squid Atlantic Coast	shortfin Northwestern		Illex illecebrosus	NMFS	1967-2005	Northeast U.S. Continental Shelf
Spiny dogfish Coast	Atlantic		Squalus acanthias	NMFS	1962-2006	Northeast U.S. Continental Shelf
Ocean pout western Coast	North-Atlantic		Zoarces americanus	NMFS	1962-2008	Northeast U.S. Continental Shelf
Petrale sole Pacific Coast	Northern		Eopsetta jordani	NMFS	1910-2005	California Current
Pacific hake Coast	Pacific		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	1916-2007	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				

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