

# Supplementary materials for Fish and Fisheries manuscript

June 15, 2010

## **Supporting Information**

### **Entity relationship diagram**

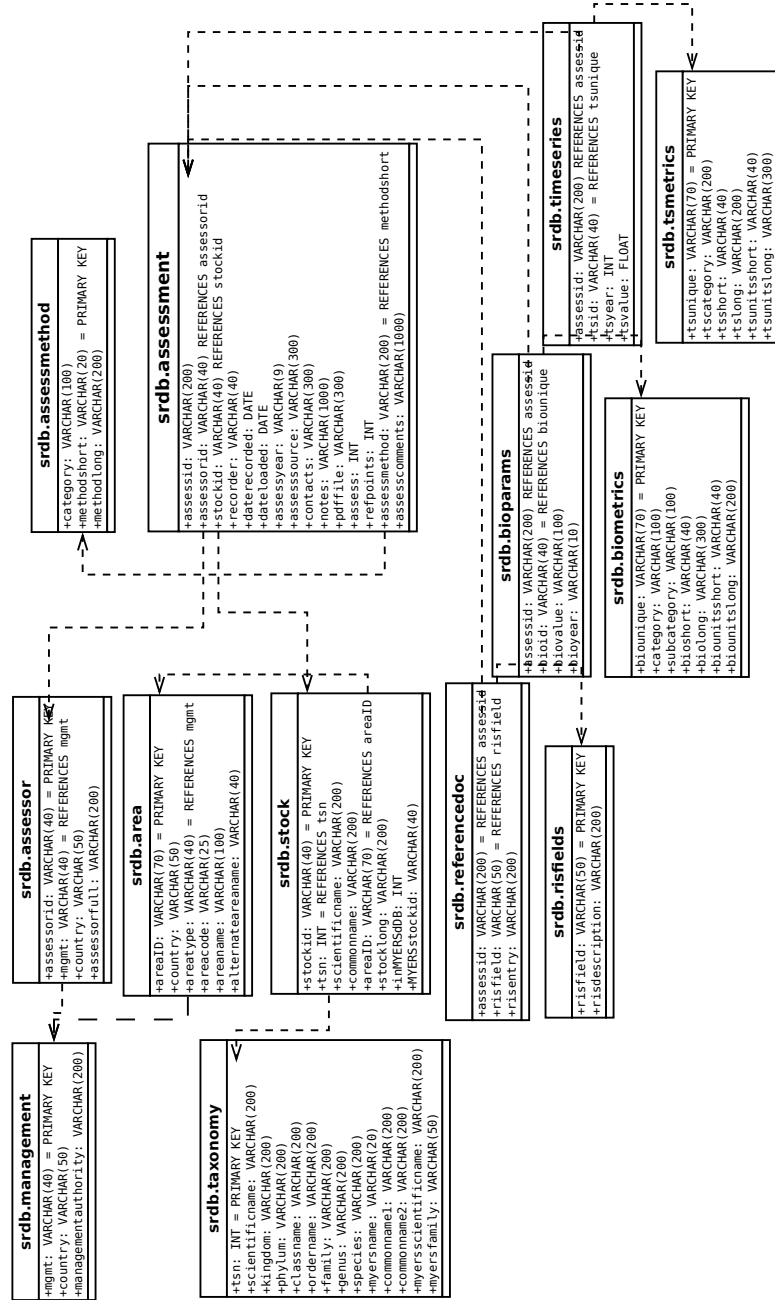


Figure 1: Entity relationship diagram of the RAM legacy database.

Management Stock ID	Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.	
AFMA	Bight redfish Southeast Australia	<i>Centroberyx gerrardi</i>	1958-2007				[1]	
AFMA	New Zealand ling Eastern half of Southeast Australia	<i>Genypterus blacodes</i>	1968-2007	2007	0.60	2.20	no	[2]
AFMA	New Zealand ling Western half of Southeast Australia	<i>Genypterus blacodes</i>	1968-2007					[2]
AFMA	Orange roughy Cascade Plateau	<i>Hoplostethus atlanticus</i>	1987-2006	2006	1.76	0.34	no	[3]
AFMA	Orange roughy South-east Australia	<i>Hoplostethus atlanticus</i>	1978-2007	2006	0.89	0.29	no	[4]
AFMA	Jackass morwong Southeast Australia	<i>Nemadactylus macropterus</i>	1913-2007	2007	0.25	1.80	no	[5]
AFMA	Tiger flathead South-east Australia	<i>Neoplatycephalus richardsoni</i>	1913-2006	2006	1.05	0.00	no	[6]
AFMA	Northern Australia brown tiger shrimp	<i>Penaeus esculentus</i>	1970-2006					[7]
AFMA	Northern Australia grooved Tiger Prawn	<i>Penaeus esculentus</i>	1970-2006					[7]
AFMA	Deepwater flathead Southeast Australia	<i>Platycephalus conatus</i>	1978-2007	2006	1.33	0.61	no	[1]
AFMA	Tasmanian giant crab Tasmania	<i>Pseudocarcinus gigas</i>	1990-2007	2007	0.50	1.71	no	[8]
AFMA	common gemfish South-east Australia	<i>Rexea solandri</i>	1966-2007	2007	0.10	0.39	no	[9]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
AFMA	Blue Warehou Eastern half of Southeast Australia	<i>Seriolella brama</i>	1984-2006	2006	0.17	0.84	no	[10]
AFMA	Blue Warehou Western half of Southeast Australia	<i>Seriolella brama</i>	1984-2006	2006	0.62	2.04	no	[10]
AFMA	Silverfish Southeast Australia	<i>Seriolella punctata</i>	1978-2006	2006	1.15	0.79	no	[11]
AFMA	School whiting South-east Australia	<i>Sillago flindersi</i>	1945-2007	2007	1.10	0.82	no	[12]
CCAMLR	Antarctic toothfish Ross Sea	<i>Dissostichus mawsoni</i>	1995-2007	2007	1.76	1.09	no	[13]
CFP	Argentine anchoita Northern Argentina	<i>Engraulis anchoita</i>	1989-2007	2007	1.37	0.17	yes	[14]
CFP	Argentine anchoita Southern Argentina	<i>Engraulis anchoita</i>	1992-2007	2007	3.13	0.04	yes	[15]
CFP	Patagonian grenadier Southern Argentina	<i>Macruronus magellanicus</i>	1983-2006	2006	1.82	0.60	yes	[16]
CFP	Argentine hake Northern Argentina	<i>Merluccius hubbsi</i>	1985-2007	2007	0.16	1.26	yes	[17]
CFP	Argentine hake Southern Argentina	<i>Merluccius hubbsi</i>	1985-2008	2008	0.34	1.49	yes	[18]
CFP	Southern blue whiting Southern Argentina	<i>Micromesistius australis</i>	1985-2007					[19]
DETMCM	Patagonian tooth-fish South Africa Subantarctic Prince Edward Islands	<i>Dissostichus eleginoides</i>	1960-2008					[20]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
DETMCM	Anchovy South Africa	<i>Engraulis encrasicolus</i>	1984-2006	2006	0.97	0.36	no	[21]
DETMCM	Kingklip South Africa	<i>Genypterus capensis</i>	1932-2008	2008	1.13	0.55	no	[22]
DETMCM	South African abalone	<i>Haliotis midae</i>	1951-2008					[23]
DETMCM	South African west coast rock lobster	<i>Jasus lalandii</i>	1910-2008					[24]
DETMCM	South African west coast rock lobster South Africa Areas 1-2	<i>Jasus lalandii</i>	1910-2008					[24]
DETMCM	South African west coast rock lobster South Africa Areas 3-4	<i>Jasus lalandii</i>	1910-2008					[24]
DETMCM	South African west coast rock lobster South Africa Areas 5-6	<i>Jasus lalandii</i>	1910-2008					[24]
DETMCM	South African west coast rock lobster South Africa Area 7	<i>Jasus lalandii</i>	1910-2008					[24]
DETMCM	Shallow-water cape hake South Africa	<i>Merluccius capensis</i>	1917-2008	2008	1.16	0.40	no	[25]
DETMCM	Deep-water cape hake South Africa	<i>Merluccius paradoxus</i>	1917-2008					[26]
DETMCM	Southern spiny lobster South Africa South coast	<i>Palinurus gilchristi</i>	1973-2008	2008	0.51	1.50	no	[27]
DETMCM	Sardine South Africa	<i>Sardinops sagax</i>	1984-2006	2006	0.75	0.55	no	[28]

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Management Stock ID	Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
DETMCM Cape horse mackerel South Africa South coast	<i>Trachurus capensis</i>	1950-2007	2007	1.47	0.76	no	[29]
DFO Herring Scotian Shelf and Bay of Fundy	<i>Clupea harengus</i>	1965-2006					[30]
DFO Herring NAFO 4R fall spawners	<i>Clupea harengus</i>	1973-2003					[31]
DFO Herring NAFO 4R spring spawners	<i>Clupea harengus</i>	1965-2004					[32]
DFO Herring NAFO 4T fall spawners	<i>Clupea harengus</i>	1978-2007					[33]
DFO Herring NAFO 4T spring spawners	<i>Clupea harengus</i>	1978-2007					[34]
DFO Pacific herring Central Coast	<i>Clupea pallasii</i>	1951-2007	2007	0.30	0.11	no	[?]
DFO Pacific herring Prince Rupert District	<i>Clupea pallasii</i>	1951-2007	2007	0.16	0.32	no	[?]
DFO Pacific herring Queen Charlotte Islands	<i>Clupea pallasii</i>	1951-2007	2007	0.20	0.00	no	[?]
DFO Pacific herring Straight of Georgia	<i>Clupea pallasii</i>	1951-2007	2007	0.91	0.40	no	[?]
DFO Pacific herring West Coast of Vancouver Island	<i>Clupea pallasii</i>	1951-2007	2007	0.03	0.00	no	[?]
DFO Pacific cod Hecate Strait	<i>Gadus macrocephalus</i>	1956-2005	2004	0.37	0.25	no	[?]
DFO Pacific cod West Coast of Vancouver Island	<i>Gadus macrocephalus</i>	1956-2002	2001	0.28	0.61	no	[?]

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Management Stock ID				Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
DFO	Atlantic	cod	NAFO	<i>Gadus morhua</i>	1978-2003	2002	0.34	0.45	no	[35]
	5Zjm									
DFO	Atlantic	cod	NAFO	<i>Gadus morhua</i>	1959-2006	2005	1.60	0.14	no	[36]
	2J3KL	inshore								
DFO	Atlantic	cod	NAFO	<i>Gadus morhua</i>	1959-2004	2004	0.49	0.41	no	[37]
DFO	Atlantic	cod	NAFO	<i>Gadus morhua</i>	1964-2007	2006	0.09	0.79	no	[38]
	3Pn4RS									
DFO	Atlantic	cod	NAFO	<i>Gadus morhua</i>	1965-2007	2006	0.17	0.32	no	[39]
	4TVn									
DFO	Rock sole	Hecate Strait		<i>Lepidopsetta bilineata</i>	1945-2001	2001	1.03	0.45	no	[40]
DFO	Haddock	NAFO-4X5Y		<i>Melanogrammus aeglefinus</i>	1960-2003	2003	0.85	0.33	no	[41]
DFO	Haddock	NAFO-5Zejm		<i>Melanogrammus aeglefinus</i>	1969-2003	2002	1.00	0.65	no	[42]
DFO	English	sole	Hecate Strait	<i>Parophrys vetulus</i>	1944-2001	2001	1.23	0.37	no	[40]
DFO	Pollock		NAFO-4VWX5Zc	<i>Pollachius virens</i>	1974-2007	2006	0.56	0.30	no	[43]
IATTC	Yellowfin	tuna	Eastern Pacific	<i>Thunnus albacares</i>	1975-2007					[44]
IATTC	Bigeye	tuna	Eastern Pacific	<i>Thunnus obesus</i>	1975-2007					[45]
ICCAT	Skipjack	tuna	Atlantic	<i>Katsuwonus pelamis</i>	1950-2006	2006	1.71	0.27	no	[46]
ICCAT	Skipjack	tuna	Western Atlantic	<i>Katsuwonus pelamis</i>	1952-2006	2006	1.72	0.27	no	[46]
ICCAT	Albacore	tuna	North Atlantic	<i>Thunnus alalunga</i>	1929-2005	2005	0.81	1.49	yes	[?]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
ICCAT	Yellowfin tuna Atlantic	<i>Thunnus albacares</i>	1970-2006	2006	1.07	0.81	yes	[47]
ICCAT	Bigeye tuna Atlantic	<i>Thunnus obesus</i>	1950-2005	2005	0.90	0.86	no	[48]
ICCAT	Bluefin tuna Eastern Atlantic	<i>Thunnus thynnus</i>	1969-2007	2007	0.34	9.38	yes	[49]
ICCAT	Bluefin tuna Western Atlantic	<i>Thunnus thynnus</i>	1969-2007	2007	0.57	1.33	yes	[49]
ICCAT	Swordfish Mediter-ranean Sea	<i>Xiphias gladius</i>	1968-2006	2006	0.94	1.27	yes	[50]
ICCAT	Swordfish North At-lantic	<i>Xiphias gladius</i>	1978-2007	2005	1.03	0.82	no	[51]
ICCAT	Swordfish South At-lantic	<i>Xiphias gladius</i>	1950-2005	2005	1.18	0.69	no	[51]
ICES	Sandeel North Sea	<i>Ammodytes marinus</i>	1983-2007	2007	0.92	0.24	no	[52]
ICES	Herring ICES 22-24-IIIa	<i>Clupea harengus</i>	1991-2006	2006	0.73	1.02	no	[53]
ICES	Herring Northern Irish Sea	<i>Clupea harengus</i>	1960-2006	2006	0.72	0.34	no	[53]
ICES	Herring North Sea	<i>Clupea harengus</i>	1960-2007	2006	0.65	1.32	no	[53]
ICES	Herring ICES VIa	<i>Clupea harengus</i>	1957-2006	2006	0.18	1.59	no	[53]
ICES	Herring ICES VIa-VIIb-VIIc	<i>Clupea harengus</i>	1969-2000	2000	0.50	1.04	no	[53]
ICES	Herring ICES 25-32	<i>Clupea harengus</i>	1973-2006	2006	0.69	0.79	no	[54]
ICES	Herring ICES 30	<i>Clupea harengus</i>	1972-2007	2006	1.19	1.10	no	[54]
ICES	Herring ICES 31	<i>Clupea harengus</i>	1979-2006	2006	0.29	1.60	no	[54]
ICES	Herring Iceland (Sum-mer spawners)	<i>Clupea harengus</i>	1983-2007	2006	1.00	0.79	no	[55]
ICES	Herring ICES 28	<i>Clupea harengus</i>	1976-2007	2006	1.21	0.87	no	[54]
ICES	Anchovy ICES VIII	<i>Engraulis encrasicolus</i>	1986-2007					[56]

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Management Stock ID	Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
ICES Atlantic cod coastal Norway	<i>Gadus morhua</i>	1982-2006	2006	0.27	2.17	no	[57]
ICES Atlantic cod Northeast Arctic	<i>Gadus morhua</i>	1943-2006	2006	0.56	1.42	no	[58]
ICES Atlantic cod Faroe Plateau	<i>Gadus morhua</i>	1959-2006	2006	0.26	1.52	no	[55]
ICES Atlantic cod Iceland	<i>Gadus morhua</i>	1952-2006	2006	0.46	1.17	no	[55]
ICES Atlantic cod Baltic Areas 22 and 24	<i>Gadus morhua</i>	1969-2007	2006	0.36	1.43	no	[54]
ICES Atlantic cod Baltic Areas 25-32	<i>Gadus morhua</i>	1964-2007	2006	0.16	1.46	no	[54]
ICES Atlantic cod Kattegat	<i>Gadus morhua</i>	1970-2006	2006	0.19	0.31	no	[54]
ICES Atlantic cod Irish Sea	<i>Gadus morhua</i>	1968-2006	2006	0.15	0.56	no	[59]
ICES Atlantic cod West of Scotland	<i>Gadus morhua</i>	1977-2006	2006	0.12	0.42	no	[59]
ICES Atlantic cod North Sea	<i>Gadus morhua</i>	1962-2007	2006	0.19	0.80	no	[52]
ICES Fourspotted megrim ICES VIIIc-IXa	<i>Lepidorhombus boscii</i>	1986-2006	2006	0.70	1.01	no	[60]
ICES Megrim ICES VIIIc-IXa	<i>Lepidorhombus whiffiagonis</i>	1985-2007	2006	0.43	1.07	no	[60]
ICES Capelin Barents Sea	<i>Mallotus villosus</i>	1965-2007	2006	0.17	0.00	no	[57]
ICES Capelin Iceland	<i>Mallotus villosus</i>	1977-2007	2006	0.49	0.85	no	[55]
ICES Haddock Northeast Arctic	<i>Melanogrammus aeglefinus</i>	1947-2006	2006	1.10	1.06	no	[57]
ICES Haddock Faroe Plateau	<i>Melanogrammus aeglefinus</i>	1955-2006	2006	0.85	1.07	no	[55]
ICES Haddock Iceland	<i>Melanogrammus aeglefinus</i>	1977-2007	2007	0.98	1.23	no	[55]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
ICES	Haddock West of Scotland	<i>Melanogrammus aeglefinus</i>	1977-2006	2006	0.58	0.73	no	[59]
ICES	Haddock ICES IIIa and North Sea	<i>Melanogrammus aeglefinus</i>	1963-2006	2006	0.62	0.25	no	[52]
ICES	Haddock Rockall Bank	<i>Melanogrammus aeglefinus</i>	1990-2007	2006	1.10	0.52	no	[59]
ICES	Haddock ICES VIIb-k	<i>Melanogrammus aeglefinus</i>	1993-2006	2006	1.37	0.41	no	[61]
ICES	Haddock Irish Sea	<i>Melanogrammus aeglefinus</i>	1972-2006					[59]
ICES	Whiting ICES IIIa, VIId and North Sea	<i>Merlangius merlangus</i>	1979-2006	2006	0.33	1.04	no	[52]
ICES	Whiting ICES VIIe-k	<i>Merlangius merlangus</i>	1982-2007	2006	0.44	1.25	no	[61]
ICES	Whiting ICES VIa	<i>Merlangius merlangus</i>	1984-2007					[59]
ICES	Hake Northeast Atlantic North	<i>Merluccius merluccius</i>	1977-2007	2006	1.04	0.74	no	[60]
ICES	Hake Northeast Atlantic South	<i>Merluccius merluccius</i>	1982-2007					[60]
ICES	Whiting Northeast Atlantic	<i>Micromesistius poutassou</i>	1980-2007	2006	0.67	1.66	no	[62]
ICES	European Plaice Irish Sea	<i>Pleuronectes platessa</i>	1962-2006	2006	1.07	0.23	no	[59]
ICES	European Plaice ICES VIIIf-g	<i>Pleuronectes platessa</i>	1976-2006	2006	0.65	0.41	no	[61]
ICES	European Plaice ICES VIIe	<i>Pleuronectes platessa</i>	1975-2006	2006	0.51	1.39	no	[61]
ICES	European Plaice ICES VIId	<i>Pleuronectes platessa</i>	1979-2006					[52]

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Management Stock ID	Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
ICES European Plaice ICES IIIa	<i>Pleuronectes platessa</i>	1976-2006					[52]
ICES European Plaice North Sea	<i>Pleuronectes platessa</i>	1956-2006					[52]
ICES Pollock Northeast Arctic	<i>Pollachius virens</i>	1957-2006	2006	1.70	0.60	no	[57]
ICES Pollock Faroe Plateau	<i>Pollachius virens</i>	1958-2006	2006	0.99	1.52	no	[55]
ICES Pollock ICES IIIa, VI and North Sea	<i>Pollachius virens</i>	1964-2006	2006	0.57	0.97	no	[52]
ICES Greenland halibut Northeast Arctic	<i>Reinhardtius hippoglossoides</i>	1959-2007	2006	0.36	1.20	no	[57]
ICES European pilchard ICES VIIIc-IXa	<i>Sardina pilchardus</i>	1978-2007					[63]
ICES Mackerel ICES North-east Atlantic	<i>Scomber scombrus</i>	1972-2007	2006	0.98	0.73	no	[63]
ICES Golden Redfish North-east Arctic	<i>Sebastes norvegicus</i>	1986-2006	2006	0.29	2.65	no	[57]
ICES common European sole ICES Kattegat and Skagerrak	<i>Solea vulgaris</i>	1982-2007	2006	1.25	0.54	no	[54]
ICES common European sole Bay of Biscay	<i>Solea vulgaris</i>	1982-2006	2006	0.76	1.00	no	[60]
ICES common European sole Irish Sea	<i>Solea vulgaris</i>	1968-2006	2006	0.36	1.16	no	[59]
ICES common European sole Celtic Sea	<i>Solea vulgaris</i>	1970-2006	2006	0.90	0.95	no	[61]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
ICES	common European sole Western English Channel	<i>Solea vulgaris</i>	1968-2006	2006	0.51	1.74	no	[61]
ICES	common European sole North Sea	<i>Solea vulgaris</i>	1956-2006					[52]
ICES	common European sole ICES VIId	<i>Solea vulgaris</i>	1981-2006					[52]
ICES	Sprat ICES Baltic Areas 22-32	<i>Sprattus sprattus</i>	1973-2007	2006	1.13	1.27	no	[54]
ICES	Sprat North Sea	<i>Sprattus sprattus</i>	1995-2007					[53]
ICES	Norway pout North Sea	<i>Trisopterus esmarkii</i>	1983-2007	2006	0.90	0.33	no	[52]
IOTC	Bigeye tuna Indian Ocean	<i>Thunnus obesus</i>	1957-2006	2004	1.23	0.97	yes	[64]
IPHC	Pacific halibut North Pacific	<i>Hippoglossus stenolepis</i>	1988-2009	2008	0.54	2.01	no	[65]
MFish	Black oreo West end of Chatham Rise	<i>Allocyttus niger</i>	1973-2007	2007	0.99	0.82	yes	[?]
MFish	Australian salmon New Zealand	<i>Arripis trutta</i>	1975-2006	2006	1.64	0.33	yes	[?]
MFish	New Zealand snapper New Zealand Area 8	<i>Chrysophrys auratus</i>	1931-2005	2005	0.35	2.50	yes	[?]
MFish	New Zealand ling New Zealand Areas LIN 3 and 4	<i>Genypterus blacodes</i>	1972-2007	2007	3.07	0.09	yes	[?]
MFish	New Zealand ling New Zealand Areas LIN 5 and 6	<i>Genypterus blacodes</i>	1972-2007	2007	3.96	0.10	yes	[?]

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Management Stock ID			Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
MFish	New Zealand ling New Zealand Area LIN 6b		<i>Genypterus blacodes</i>	1980-2006	2006	2.19	0.11	yes	[?]
MFish	New Zealand ling New Zealand Area LIN 72		<i>Genypterus blacodes</i>	1972-2007	2007	2.49	0.32	yes	[?]
MFish	New Zealand ling New Zealand Area LIN 7WC - WCSI		<i>Genypterus blacodes</i>	1972-2008	2008	2.21	0.13	yes	[?]
MFish	New Zealand abalone species New Zealand Area PAU 5A		<i>Haliotis iris</i>	1964-2006	2006	0.72	2.83	no	[?]
MFish	New Zealand abalone species New Zealand Area PAU 5B		<i>Haliotis iris</i>	1963-2007	2007	1.02	0.59	no	[?]
MFish	New Zealand abalone species New Zealand Area PAU 5D		<i>Haliotis iris</i>	1964-2006	2006	0.44	2.10	no	[?]
MFish	New Zealand abalone species New Zealand Area PAU 7		<i>Haliotis iris</i>	1964-2008	2008	0.87	0.94	no	[?]
MFish	Orange roughy New Zealand Mid East Coast		<i>Hoplostethus atlanticus</i>	1981-2004	2004	1.20	0.35	yes	[?]
MFish	Red rock lobster New Zealand area CRA1		<i>Jasus edwardsii</i>	1945-2001	2001	1.14	0.88	no	[?]
MFish	Red rock lobster New Zealand area CRA2		<i>Jasus edwardsii</i>	1945-2001	2001	0.53	2.12	no	[?]
MFish	Red rock lobster New Zealand area CRA4		<i>Jasus edwardsii</i>	1945-2005	2005	0.67	1.33	no	[?]

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Management Stock ID				Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
MFish	Red rock lobster	New Zealand area CRA5		<i>Jasus edwardsii</i>	1945-2002	2002	0.59	1.68	no	[?]
MFish	Red rock lobster	New Zealand area CRA7		<i>Jasus edwardsii</i>	1976-2005	2005	0.73	0.43	no	[?]
MFish	Red rock lobster	New Zealand area CRA8		<i>Jasus edwardsii</i>	1976-2005	2005	0.69	0.49	no	[?]
MFish	Red rock lobster	New Zealand area CRA3		<i>Jasus edwardsii</i>	1945-2007					[?]
MFish	Hoki Eastern Zealand	New		<i>Macruronus novaezealandiae</i>	1972-2007	2007	1.11	0.33	no	[66]
MFish	Hoki Western Zealand	New		<i>Macruronus novaezealandiae</i>	1972-2007	2007	0.51	0.57	no	[66]
MFish	Southern Chatham Rise	hake		<i>Merluccius australis</i>	1975-2006	2006	1.77	0.12	yes	[?]
MFish	Southern Antarctic	hake	Sub-	<i>Merluccius australis</i>	1975-2007	2007	2.91	0.11	yes	[?]
MFish	Southern blue whiting	Campbell Island Rise		<i>Micromesistius australis</i>	1979-2006	2006	1.15	0.92	yes	[?]
MFish	Trevally	New Zealand Areas TRE 7		<i>Pseudocaranx dentex</i>	1944-2005	2005	1.44	0.83	yes	[?]
MFish	Smooth oreo	Chatham Rise		<i>Pseudocyttus maculatus</i>	1979-2006	2006	2.25	0.38	yes	[?]
MFish	Smooth oreo	West end of Chatham Rise		<i>Pseudocyttus maculatus</i>	1973-2004	2004	1.25	0.53	yes	[?]
MFish	common gemfish	New Zealand		<i>Rexea solandri</i>	1952-2007	2006	1.64	0.43	yes	[?]
NAFO	Atlantic cod	NAFO 3NO		<i>Gadus morhua</i>	1953-2007	2006	0.02	0.27	no	[67]

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Management Stock ID	Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NAFO	Atlantic cod NAFO 3M	<i>Gadus morhua</i>	1959-2008				[68]
NAFO	American Plaice NAFO-3LNO	<i>Hippoglossoides platesoides</i>	1955-2007	2006	0.08	0.77	no [69]
NAFO	American Plaice NAFO-3M	<i>Hippoglossoides platesoides</i>	1960-2007	2007	0.13	0.00	no [70]
NAFO	Yellowtail Flounder NAFO 3LNO	<i>Limanda ferruginea</i>	1960-2009	2007	1.62	0.15	no [71]
NAFO	Redfish species NAFO 3LN	<i>Redfish species</i>	1959-2008	2008	1.88	0.04	yes [72]
NAFO	Redfish species NAFO 3LN	<i>Redfish species</i>	1959-2007	2006	1.95	0.01	no [73]
NAFO	Redfish species NAFO 3M	<i>Redfish species</i>	1989-2006	2006	0.93	0.15	no [74]
NAFO	Greenland halibut NAFO 23KLMNO	<i>Reinhardtius hippoglossoides</i>	1960-2006	2006	0.39	1.73	no [75]
NMFS	Sablefish Eastern Bering Sea / Aleutian Islands / Gulf of Alaska	<i>Anoplopoma fimbria</i>	1956-2008	2008	1.05	0.66	yes [?]
NMFS	Sablefish Pacific Coast	<i>Anoplopoma fimbria</i>	1900-2007	2007	0.84	1.09	no [76]
NMFS	Ocean quahog Atlantic Coast	<i>Arctica islandica</i>	1978-2008				[77]
NMFS	Gray triggerfish Gulf of Mexico	<i>Balistes capriscus</i>	1981-2004				[78]
NMFS	Gulf menhaden Gulf of Mexico	<i>Brevoortia patronus</i>	1964-2004	2004	1.08	0.48	no [?]
NMFS	Atlantic menhaden Atlantic	<i>Brevoortia tyrannus</i>	1940-2005	2005	0.47	0.97	no [79]

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Management Stock ID	Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS Blacknose shark Atlantic	<i>Carcharhinus acronotus</i>	1950-2005					[80]
NMFS Finetooth shark Atlantic	<i>Carcharhinus isodon</i>	1976-2005					[80]
NMFS Blacktip shark Atlantic	<i>Carcharhinus limbatus</i>	1981-2004					[81]
NMFS Blacktip shark Gulf of Mexico	<i>Carcharhinus limbatus</i>	1981-2004					[81]
NMFS Sandbar shark Atlantic	<i>Carcharhinus plumbeus</i>	1975-2004					[81]
NMFS Black sea bass Mid-Atlantic Coast	<i>Centropristis striata</i>	1968-2007	2007	1.21	0.67	no	[82]
NMFS Snow crab Bering Sea	<i>Chionoecetes opilio</i>	1979-2008	2008	0.35	1.49	no	[83]
NMFS Atlantic herring North-western Atlantic Coast	<i>Clupea harengus</i>	1960-2005					[84]
NMFS Pacific herring Prince William Sound	<i>Clupea pallasii</i>	1980-2006					[?]
NMFS Pacific herring Sitka	<i>Clupea pallasii</i>	1978-2007					[?]
NMFS Weakfish Atlantic Coast	<i>Cynoscion regalis</i>	1980-2008	2008	0.06	1.49	no	[85]
NMFS Petrale sole Northern Pacific Coast	<i>Eopsetta jordani</i>	1910-2005	2004	0.96	1.26	no	[?]
NMFS Petrale sole Southern Pacific Coast	<i>Eopsetta jordani</i>	1874-2005	2004	0.63	0.61	no	[?]
NMFS Red grouper Gulf of Mexico	<i>Epinephelus morio</i>	1986-2005	2005	1.00	0.88	no	[86]
NMFS Snowy grouper Southern Atlantic coast	<i>Epinephelus niveatus</i>	1961-2002	2002	0.19	3.08	yes	[?]
NMFS Pacific cod Bering Sea and Aleutian Islands	<i>Gadus macrocephalus</i>	1964-2008	2007	0.89	0.93	no	[?]

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Management Stock ID				Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS	Pacific cod	Gulf of Alaska		<i>Gadus macrocephalus</i>	1964-2008	2007	1.07	0.84	no	[?]
NMFS	Atlantic cod	Georges Bank		<i>Gadus morhua</i>	1960-2008	2007	0.18	0.72	no	[87]
NMFS	Atlantic cod	Gulf of Maine		<i>Gadus morhua</i>	1893-2008	2007	1.46	0.29	no	[88]
NMFS	Witch Flounder	NAFO-5Y		<i>Glyptocephalus cynoglossus</i>	1982-2008	2007	0.30	1.45	yes	[?]
NMFS	Rex sole	Gulf of Alaska		<i>Glyptocephalus zachirus</i>	1979-2008					[?]
NMFS	Kelp greenling	Oregon Coast		<i>Hexagrammos decagrammus</i>	1979-2005					[89]
NMFS	Flathead sole	Bering Sea and Aleutian Islands		<i>Hippoglossoides elassodon</i>	1977-2008	2008	1.66	0.18	no	[?]
NMFS	Flathead sole	Gulf of Alaska		<i>Hippoglossoides elassodon</i>	1978-2008					[?]
NMFS	American NAFO-5YZ	Plaice		<i>Hippoglossoides platessoides</i>	1960-2008	2007	0.55	0.30	no	[?]
NMFS	Atlantic NAFO-5YZ	Halibut		<i>Hippoglossus hippoglossus</i>	1800-2007					[?]
NMFS	American Georges Bank	lobster		<i>Homarus americanus</i>	1981-2007					[?]
NMFS	American Gulf of Maine	lobster		<i>Homarus americanus</i>	1981-2007					[?]
NMFS	American Southern New England	lobster		<i>Homarus americanus</i>	1981-2007					[?]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS	Northern shortfin squid Northwestern Atlantic Coast	<i>Illex illecebrosus</i>	1967-2005					[90]
NMFS	Northern rock sole Eastern Bering Sea and Aleutian Islands	<i>Lepidopsetta polyxystra</i>	1971-2008	2007	3.02	0.21	yes	[?]
NMFS	Yellowfin sole Bering Sea and Aleutian Islands	<i>Limanda aspera</i>	1959-2008	2008	1.94	0.62	yes	[?]
NMFS	Yellowtail flounder Cape Cod / Gulf of Maine	<i>Limanda ferruginea</i>	1935-2008	2007	0.25	1.73	yes	[91]
NMFS	Yellowtail flounder Georges Bank	<i>Limanda ferruginea</i>	1935-2008	2007	0.22	1.14	yes	[92]
NMFS	Yellowtail Flounder Southern New England-Mid Atlantic	<i>Limanda ferruginea</i>	1935-2008	2007	0.13	1.61	yes	[93]
NMFS	Golden king crab Aleutian Islands Eastern segment	<i>Lithodes aequispinus</i>	1990-2007					[83]
NMFS	Golden king crab Aleutian Islands Western segment	<i>Lithodes aequispinus</i>	1989-2007					[83]
NMFS	Monkfish Gulf of Maine / Northern Georges Bank	<i>Lophius americanus</i>	1964-2006	2006	1.73	0.38	no	[94]

Continued on next page

Management Stock ID				Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS	Monkfish	Southern Georges Bank / Mid-Atlantic		<i>Lophius americanus</i>	1964-2006	2006	1.72	0.30	no	[95]
NMFS	Tilefish	Southern Atlantic coast		<i>Lopholatilus chamaeleonticeps</i>	1961-2002	2002	0.94	1.55	yes	[?]
NMFS	Tilefish	Mid-Atlantic Coast		<i>Lopholatilus chamaeleonticeps</i>	1973-2008	2005	0.72	0.61	no	[96]
NMFS	Mutton snapper	Southern Atlantic coast and Gulf of Mexico		<i>Lutjanus analis</i>	1981-2006					[97]
NMFS	Red snapper	Eastern Gulf of Mexico		<i>Lutjanus campechanus</i>	1872-2003					[98]
NMFS	Red snapper	Southern Atlantic coast		<i>Lutjanus campechanus</i>	1945-2006					[99]
NMFS	Red snapper	Western Gulf of Mexico		<i>Lutjanus campechanus</i>	1880-2003					[98]
NMFS	Haddock	NAFO-5Y		<i>Melanogrammus aeglefinus</i>	1956-2008	2007	0.36	1.21	no	[100]
NMFS	Haddock	Georges Bank		<i>Melanogrammus aeglefinus</i>	1930-2008					[101]
NMFS	Silver hake	Gulf of Maine / Northern Georges Bank		<i>Merluccius bilinearis</i>	1955-2005					[102]
NMFS	Silver hake	Southern Georges Bank / Mid-Atlantic		<i>Merluccius bilinearis</i>	1955-2005					[102]
NMFS	Pacific hake	Pacific Coast		<i>Merluccius productus</i>	1966-2008	2008	1.61	0.73	yes	[103]

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Management Stock ID			Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS	Atlantic croaker	Mid-Atlantic Coast	<i>Micropogonias undulatus</i>	1973-2002	2002	1.42	0.27	yes	[?]
NMFS	Dover sole	Pacific Coast	<i>Microstomus pacificus</i>	1910-2005	2004	1.33	0.45	no	[?]
NMFS	Dover sole	Gulf of Alaska	<i>Microstomus pacificus</i>	1978-2010					[?]
NMFS	Striped bass	Gulf of Maine / Cape Hatteras	<i>Morone saxatilis</i>	1982-2006					[?]
NMFS	Gag	Gulf of Mexico	<i>Mycteroperca crolepis</i>	1963-2004	2004	1.00	2.44	yes	[104]
NMFS	Gag	Southern Atlantic coast	<i>Mycteroperca crolepis</i>	1962-2005	2005	0.94	1.31	yes	[105]
NMFS	Yellowtail snapper	Southern Atlantic Coast and Gulf of Mexico	<i>Ocyurus chrysurus</i>	1962-2001	2001	1.14	0.61	yes	[?]
NMFS	Lingcod	Northern Pacific Coast	<i>Ophiodon elongatus</i>	1956-2005					[?]
NMFS	Lingcod	Southern Pacific Coast	<i>Ophiodon elongatus</i>	1956-2005					[?]
NMFS	Red porgy	Southern Atlantic coast	<i>Pagrus pagrus</i>	1972-2004	2004	0.61	0.39	yes	[106]
NMFS	Northern shrimp	Gulf of Maine	<i>Pandalus borealis</i>	1960-2009	2008	1.58	0.56	no	[?]
NMFS	Summer flounder	Mid-Atlantic Coast	<i>Paralichthys dentatus</i>	1940-2007					[107]
NMFS	Red king crab	Bristol Bay	<i>Paralithodes camtschaticus</i>	1960-2008	2008	1.27	1.05	yes	[83]

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Management Stock ID	Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS Red king crab Norton Sound	<i>Paralithodes camtschaticus</i>	1976-2008					[83]
NMFS English sole Pacific Coast	<i>Parophrys vetulus</i>	1876-2007	2006	2.06	0.14	no	[108]
NMFS Atlantic butterfish Gulf of Maine / Cape Hatteras	<i>Peprilus triacanthus</i>	1965-2005					[109]
NMFS Sea scallop Georges Bank	<i>Placopecten magellanicus</i>	1964-2006	2006	1.59	0.78	no	[110]
NMFS Sea scallop Mid-Atlantic Coast	<i>Placopecten magellanicus</i>	1964-2006	2006	1.00	0.36	no	[110]
NMFS Starry flounder Northern Pacific Coast	<i>Platichthys stellatus</i>	1970-2005	2004	0.68	0.33	no	[?]
NMFS Starry flounder Southern Pacific Coast	<i>Platichthys stellatus</i>	1970-2005	2004	1.15	0.12	no	[?]
NMFS Atka mackerel Bering Sea and Aleutian Islands	<i>Pleurogrammus monopterygius</i>	1976-2009	2008	1.50	0.55	no	[?]
NMFS Alaska plaice Bering Sea and Aleutian Islands	<i>Pleuronectes quadrituberculatus</i>	1972-2008	2008	2.46	0.07	yes	[?]
NMFS Pollock NAFO-5YZ	<i>Pollachius virens</i>	1963-2007					[111]
NMFS Bluefish Atlantic Coast	<i>Pomatomus saltatrix</i>	1981-2007	2007	0.81	1.25	no	[112]
NMFS Winter Flounder NAFO-5Z	<i>Pseudopleuronectes americanus</i>	1982-2007	2006	1.41	0.25	no	[113]
NMFS Winter Flounder Southern New England-Mid Atlantic	<i>Pseudopleuronectes americanus</i>	1940-2007	2007	0.17	1.10	no	[114]

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Management Stock ID			Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS	Winter	Flounder	<i>Pseudopleuronectes americanus</i>	1982-2008					[111]
	NAFO-5Y								
NMFS	Longnose skate	Pacific Coast	<i>Raja rhina</i>	1915-2007	2007	1.56	0.40	no	[?]
NMFS	Greenland turbot	Bering Sea and Aleutian Islands	<i>Reinhardtius hippoglossoides</i>	1960-2009	2009	1.48	0.05	yes	[?]
NMFS	Arrowtooth flounder	Pacific Coast	<i>Reinhardtius stomias</i>	1916-2007	2007	3.81	0.21	yes	[?]
NMFS	Arrowtooth flounder	Bering Sea and Aleutian Islands	<i>Reinhardtius stomias</i>	1970-2008	2008	1.28	0.31	no	[?]
NMFS	Arrowtooth flounder	Gulf of Alaska	<i>Reinhardtius stomias</i>	1958-2010	2007	1.33	0.28	no	[?]
NMFS	Atlantic sharpnose shark	Atlantic	<i>Rhizoprionodon ter-raenovae</i>	1950-2005					[80]
NMFS	Vermilion snapper	Southern Atlantic coast	<i>Rhomboplites rorubens</i>	1946-2008	2007	0.86	1.27	yes	[?]
NMFS	Vermilion snapper	Gulf of Mexico	<i>Rhomboplites rorubens</i>	1981-2004					[115]
NMFS	Pacific sardine	North Pacific	<i>Sardinops sagax</i>	1981-2008	2006	1.73	0.37	no	[?]
NMFS	Pacific sardine	Pacific Coast	<i>Sardinops sagax</i>	1981-2007	2006	1.36	0.41	no	[116]
NMFS	Pacific chub mackerel	Pacific Coast	<i>Scomber japonicus</i>	1929-2008					[117]
NMFS	King mackerel	Gulf of Mexico	<i>Scomberomorus cavalla</i>	1992-2001	2001	1.51	0.44	no	[118]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS	King mackerel Southern Atlantic Coast	<i>Scomberomorus cavalla</i>	1981-2001	2001	1.38	0.56	no	[118]
NMFS	Spanish mackerel Southern Atlantic Coast	<i>Scomberomorus maculatus</i>	1950-2008	2007	0.38	0.91	yes	[119]
NMFS	Atlantic mackerel Gulf of Maine / Cape Hatteras	<i>Scomber scombrus</i>	1960-2005					[120]
NMFS	Windowpane flounder - Gulf of Maine / Georges Bank	<i>Scophthalmus aquosus</i>	1975-2007					[121]
NMFS	Windowpane Southern New England-Mid Atlantic	<i>Scophthalmus aquosus</i>	1975-2007					[111]
NMFS	California scorpionfish Southern California	<i>Scorpaena guttata</i>	1990-2005					[122]
NMFS	Cabazon Northern California	<i>Scorpaenichthys marmoratus</i>	1916-2005	2004	0.89	0.99	no	[?]
NMFS	Cabazon Southern California	<i>Scorpaenichthys marmoratus</i>	1932-2005	2004	0.81	0.53	no	[?]
NMFS	Rougheye rockfish Bering Sea and Aleutian Islands	<i>Sebastes aleutianus</i>	1974-2009					[?]
NMFS	Rougheye rockfish Gulf of Alaska	<i>Sebastes aleutianus</i>	1974-2007					[?]
NMFS	Pacific ocean perch Gulf of Alaska	<i>Sebastes alutus</i>	1959-2008	2008	1.16	0.73	yes	[?]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS	Pacific ocean perch Pacific Coast	<i>Sebastes alutus</i>	1953-2007	2007	0.69	0.00	yes	[?]
NMFS	Pacific Ocean perch Eastern Bering Sea and Aleutian Islands	<i>Sebastes alutus</i>	1974-2009	2008	1.70	0.26	no	[?]
NMFS	Shortraker rockfish Bering Sea and Aleutian Islands	<i>Sebastes borealis</i>	1977-2008					[?]
NMFS	Gopher rockfish Southern Pacific Coast	<i>Sebastes carnatus</i>	1965-2005	2004	0.88	0.62	no	[?]
NMFS	Darkblotched rockfish Pacific Coast	<i>Sebastes crameri</i>	1928-2007	2007	0.73	0.31	yes	[?]
NMFS	Widow rockfish Pacific Coast	<i>Sebastes entomelas</i>	1955-2006	2006	0.91	0.07	no	[123]
NMFS	Acadian redfish Gulf of Maine / Georges Bank	<i>Sebastes fasciatus</i>	1913-2007					[124]
NMFS	Yellowtail rockfish Northern Pacific Coast	<i>Sebastes flavidus</i>	1967-2005	2005	0.75	0.51	no	[?]
NMFS	Chilipepper Southern Pacific Coast	<i>Sebastes goodei</i>	1892-2007	2006	1.43	0.04	no	[?]
NMFS	Shortbelly rockfish Pacific Coast	<i>Sebastes jordani</i>	1950-2005					[?]
NMFS	Cowcod Southern California	<i>Sebastes levis</i>	1900-2007	2007	0.09	0.07	yes	[?]
NMFS	Black rockfish Southern Pacific Coast	<i>Sebastes melanops</i>	1915-2007	2007	2.23	0.33	yes	[?]
NMFS	Black rockfish Northern Pacific Coast	<i>Sebastes melanops</i>	1914-2006	2006	1.37	0.57	no	[?]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS	Blackgill rockfish Pacific Coast	<i>Sebastes melanostomus</i>	1950-2005	2004	0.80	1.20	no	[?]
NMFS	Blue rockfish California	<i>Sebastes mystinus</i>	1916-2007	2007	0.75	1.19	yes	[?]
NMFS	Bocaccio Southern Pacific Coast	<i>Sebastes paucispinis</i>	1951-2006	2006	0.32	0.10	yes	[?]
NMFS	Canary rockfish Pacific Coast	<i>Sebastes pinniger</i>	1916-2007	2007	0.85	0.02	yes	[125]
NMFS	Northern rockfish Gulf of Alaska	<i>Sebastes polyspinis</i>	1959-2008	2008	1.50	0.66	yes	[?]
NMFS	Northern rockfish Bering Sea and Aleutian Islands	<i>Sebastes polyspinis</i>	1974-2009	2008	1.07	0.13	no	[?]
NMFS	Yelloweye rockfish Pacific Coast	<i>Sebastes ruberrimus</i>	1923-2006	2006	0.38	0.34	no	[126]
NMFS	Dusky rockfish Gulf of Alaska	<i>Sebastes variabilis</i>	1973-2008	2007	1.54	0.54	yes	[?]
NMFS	Shortspine thornyhead Pacific Coast	<i>Sebastolobus alascanus</i>	1901-2005	2004	1.55	0.93	no	[?]
NMFS	Longspine thornyhead Pacific Coast	<i>Sebastolobus altivelis</i>	1962-2005	2005	2.65	0.23	yes	[?]
NMFS	Greater amberjack Gulf of Mexico	<i>Seriola dumerili</i>	1986-2004	2004	0.46	1.52	no	[127]
NMFS	Greater amberjack Southern Atlantic coast	<i>Seriola dumerili</i>	1946-2006					[128]
NMFS	Bonnethead shark Atlantic	<i>Sphyrna tiburo</i>	1950-2005					[80]
NMFS	Atlantic surfclam Mid-Atlantic Coast	<i>Spisula solidissima</i>	1965-2008	1994	1.85	0.00	no	[129]

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Management Stock ID		Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
NMFS	Spiny dogfish Atlantic Coast	<i>Squalus acanthias</i>	1962-2006	2005	1.61	0.15	no	[130]
NMFS	Scup Atlantic Coast	<i>Stenotomus chrysops</i>	1960-2007					[131]
NMFS	Walleye pollock Aleutian Islands	<i>Theragra chalcogramma</i>	1976-2008	2008	0.86	0.02	yes	[?]
NMFS	Walleye pollock Eastern Bering Sea	<i>Theragra chalcogramma</i>	1963-2008	2008	0.68	0.85	no	[?]
NMFS	Walleye pollock Gulf of Alaska	<i>Theragra chalcogramma</i>	1964-2008					[?]
NMFS	White hake Georges Bank / Gulf of Maine	<i>Urophycis tenuis</i>	1963-2007	2007	0.35	0.80	yes	[132]
RFFA	Walleye pollock Northern Sea of Okhotsk	<i>Theragra chalcogramma</i>	1985-1994	1992	1.11	0.87	no	[133]
RFFA	Walleye pollock Western Bering Sea	<i>Theragra chalcogramma</i>	1994-2004	2004	2.16	0.26	no	[134]
SPRFMO	Chilean jack mackerel Chilean EEZ and off-shore	<i>Trachurus murphyi</i>	1975-2007	2006	0.52	1.20	no	[135]
UNKNOWN	Shortfin mako Northwest Pacific Ocean	<i>Isurus oxyrinchus</i>	1990-2003					[136]
US State	American lobster Rhode Island	<i>Homarus americanus</i>	1959-2007	2006	0.53	0.67	no	[?]
US State	Winter flounder Rhode Island	<i>Pseudopleuronectes americanus</i>	1959-2007	2006	0.25	1.59	no	[?]
US State	Tautog Rhode Island	<i>Tautoga onitis</i>	1959-2007	2006	0.84	0.59	no	[?]
WCPFC	Skipjack tuna Central Western Pacific	<i>Katsuwonus pelamis</i>	1972-2006	2006	4.38	0.30	yes	[137]

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Management Stock ID				Scientific name	Timespan	Current year	B ratio	U ratio	From assessment	Ref.
WCPFC	Albacore tuna	South Pacific Ocean		<i>Thunnus alalunga</i>	1959-2006	2006	2.46	0.90	yes	[138]
WCPFC	Yellowfin tuna	Central Western Pacific		<i>Thunnus albacares</i>	1952-2005	2005	1.22	0.80	yes	[139]
WCPFC	Bigeye tuna	Western Pacific Ocean		<i>Thunnus obesus</i>	1952-2006	2006	1.06	1.38	yes	[140]

Table 1: Summary of the assessments used in this analysis and their estimated ratios of current biomass to the biomass at maximum sustainable yield and current harvest rate to the harvest rate that results in maximum sustainable yield. The estimated ratios were preferentially obtained directly from the assessment document or derived from surplus production model fits. When both an SSB<sub>msy</sub> and B<sub>msy</sub> reference points are available, the SSB is chosen preferentially.

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