Supplementary Figure 1 for

Identifying Management Actions that Promote Sustainable Fisheries

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This PDF file is provided separately from other Supplementary Information.

Supplementary Figure 1 (next 288 pages) | Stock status history relative to the timing of fisheries management interventions for 288 individual stocks included in analyses. Four panels show: stock biomass relative to target reference point ($B/B_{REF}$, on log scale); fishing pressure relative to target reference point ($U/U_{REF}$, on log scale); catch; and real ex-vessel price (predicted price and, if available, also observed price). Horizontal dashed grey lines in each panel show: target ratio of $B/B_{REF} = 1$; target ratio of $U/U_{REF} = 1$; mean catch excluding leading zeros (short dash) and, if available, best estimate of maximum sustainable yield (MSY, long dash); and mean predicted price from 2001-2010. In panels for $B/B_{REF}$ and $U/U_{REF}$, horizontal dotted grey lines show successive doubling or halving of target levels. Catch consists of at least commercial landings and, if available, also estimates of recreational catch, discards, and/or illegal or unreported catch. If applicable, the years in which the stock was under a rebuilding plan are shown with purple hatching. Years in which other management measures were first implemented are shown by vertical dashed lines, with measures labelled above the top panel. Management measures are grouped at the stock level (scientific surveys; stock assessments; harvest control rules (HCR); total allowable catches or other fleet-wide catch limits (TAC); individual quotas (IQ); and rebuilding plans), and at the national/international level (declaration of Exclusive Economic Zones (EEZ); first ratification of either the United Nations Food and Agriculture Organization Compliance Agreement or the United Nations Fish Stocks Agreement (UNCA/FSA); and a major national or international fisheries policy implementation). Stock histories are partitioned into ‘developing’ (shaded green, if applicable) and ‘mature’ fishery phases based on values of biomass, fishing pressure, and catch relative to reference points. Years during which relative biomass was depleted below 0.5 (one of many typical thresholds used around the world for defining ‘overfished’, $B/B_{REF} < 0.5$) are shaded red, if applicable. Notes to the right of the top three panels list details about the type of $B/B_{REF}$, $U/U_{REF}$, and MSY estimates available (taken from the RAM Legacy Stock Assessment Database, RAMLDB). Notes to the right of the bottom panel list the taxonomic groups and regions used for predicting ex-vessel prices for the stock (notes with ‘from region: none (100%)’ signify that region-specific prices were not available for the species, so predicted prices were drawn instead from the global mean price for the species). Page titles list the region, RAMLDB ‘stockid’ code, and stock name. Notes under page titles list the stock’s categorised taxonomic group, fishery type, and primary country. See Supplementary Table 1 for descriptions of management measures.
Australia -- BGRDRNSWWA -- Blue grenadier New South Wales to Western Australia

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Australia

Developing -> Mature

Phase

National/ international level

Stock level

B/B_{REF}

EEZ declaration

Fisheries Management Act

UN CA/FSA ratification

Surveys

TACs

IQs

Assessments

HCR

U/U_{REF}

SSB_{div}/SSB_{mgt-calc-dimensionless} = 1

F_{div}/F_{mgt-calc-dimensionless} = 1

Catch (t)

MSY: MSY-MT

mean catch: MT

Real price (2015 \$USD/t)

predictions for taxon:
- Cods, hakes, haddocks
  - Merlucciidae
  - Macruronus
  - Macruronus novaezelandiae

from regions:
- Australia (100%)

Mean predicted price 2001-2010
Australia -- DEEPFLATHEADSE -- Deepwater flathead Southeast Australia

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: Australia

Supplementary Figure 1,
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Australia -- GEMFISHSE -- Common gemfish Southeast Australia

taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: Australia

Supplementary Figure 1,
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Australia -- MORWONGESE -- Jackass morwong Eastern half of Southeast Australia

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: Australia

Supplementary Figure 1,

Assessments
TACs
IQs
EEZ declaration
Fisheries Management Act
UN CA/FSA ratification
HCR
Surveys

SSBdivSSBmgt-calc-dimensionless = 1
SSBdivSSBmgt-calc-dimensionless = 0.5

FdivFmgt-calc-dimensionless = 1

mean catch: MT
MSY: MSY-MT
predictions for taxon:
  Miscellaneous demersal fishes
  > Cheilodactylidae
  > Nemadactylus
  > Nemadactylus macropterus from regions:
  Australia (100%)

Real price (2015 $USD/t)
Observed
Predicted
Mean predicted price 2001-2010

Catch (t)
0 500 1000 1500 2000 2500 3000 3500 4000

Observed
Predicted

B/BREF
0.5 1.0 2.0 5.0

FdivFmgt-calc-dimensionless = 1

U/UREF
0 1.0 2.0 5.0 10.0 20.0

Supplementary Figure 1, page 5 of 289
Australia -- MORWONGWSE -- Jackass morwong Western half of Southeast Australia

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: Australia

Supplementary Figure 1,
Australia -- NZLINGESE -- Ling Southeast Australia
taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: Australia

Supplementary Figure 1,
page 7 of 289

Developing

Mature

EEZ declaration
Fisheries Management Act
UN CA/FSA ratification
TACs
IQs
HCR
Assessments
Surveys

SSBdivSSBmsy-calc-dimensionless = 1

ERdivERmsy-est-dimensionless = 1

mean catch: MT
MSY: MSY-est-MT

predictions for taxon:
Miscellaneous demersal fishes
> Ophidiidae
> Genypterus
> Genypterus blacodes
from regions:
Australia (100%)
Australia -- OROUGHYSE -- Orange roughy Southeast Australia

taxonomic group: pelagic fish (Other marine fish), predominant fishery type: single-species, primary country: Australia

Developing Phase

EEZ declaration
Fisheries Management Act
UN CA/FSA ratification
Surveys
TACs
Assessments
IQs
HCR
Rebuilding plan

Supplementary Figure 1,
page 8 of 289

Surveys
TACs
Assessments
IQs
HCR

EEZ declaration
Fisheries Management Act
UN CA/FSA ratification
Surveys
TACs
Assessments
IQs
HCR
Rebuilding plan

SSBdivSSBmgt-calc-dimensionless = 0.5
SSBdivSSBmgt-calc-dimensionless = 1

FddivFmgt-calc-dimensionless = 1

SSBdivSSBmgt-calc-dimensionless = 0.5

mean catch: MT
MSY: MSY-MT
predictions for taxon:
Miscellaneous demersal fishes
> Trachichthyidae
> Hoplostethus
> Hoplostethus atlanticus
from regions:
Australia (100%)

Mean predicted price 2001-2010
Observed
Predicted

0 1000 2000 3000 4000 5000
Real price (2015 $USD/t)

0 1000 2000 3000 4000 5000 6000
Catch (t)

0 5e-03 5e-02 5e-01 5e+00
10000 15000 20000 25000 30000 35000
Real price (2015 $USD/t)

0 1000 2000 3000 4000 5000 6000
Real price (2015 $USD/t)
Australia -- PTOOTHFISHMI -- Patagonian toothfish Macquarie Island
taxonomic group: pelagic fish (Other marine fish), predominant fishery type: single-species, primary country: Australia

Developing

Mature

National/international level

Stock level

EEZ declaration
Fisheries Management Act
UN CA/FSA ratification
Assessments
TACs
IGs
HCR

SSBdivSSBmsy-calc-dimensionless = 1

ERdivERmsy-calc-dimensionless = 1

mean catch: MT
MSY: MSY-MT

predictions for taxon:
Miscellaneous demersal fishes
> Nototheniidae
> Dissostichus
> Dissostichus eleginoides
from regions:
Australia (100%)

Supplementary Figure 1, page 9 of 289
Australia -- ROCKLOBSTERSAUSNZ -- Rock lobster South Australia Northern Zone

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: Australia

Supplementary Figure 1,
page 10 of 289

Developing

Mature

EEZ declaration
Fisheries Management Act
UN CA/FSA ratification
Assessments
TACs
IQs
HCR

TBdivTBmsy-est-dimensionless = 0.5

TBdivTBmsy-est-dimensionless = 1

ERdivERmsy-est-dimensionless = 1

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Lobsters, spiny-rock lobsters
> Palinuridae
> Jasus
> Jasus edwardsii
from regions:
Australia (100%)
Australia -- ROCKLOBSTERSAUSSZ -- Rock lobster South Australia Southern Zone

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: Australia

Supplementary Figure 1, page 11 of 289
Developing Phase

National/international level

Stock level

TACs IQs Assessments HCR Surveys

EEZ declaration Fisheries Management Act UN CA/FSA ratification

SSBdivSSBmgt-calc-dimensionless = 1

SSBdivSSBmgt-calc-dimensionless = 0.5

FdivFmgt-calc-dimensionless = 1

B/B_{EF}

U/U_{REF}

Catch (t)

Real price (2015 $USD/t)

0 500 1000 1500 2000 2500 3000 3500 4000

0 1000 2000 3000 4000 5000

0 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00 1.05 1.10 1.15 1.20 1.25 1.30 1.35 1.40 1.45 1.50 1.55 1.60 1.65 1.70 1.75 1.80 1.85 1.90 1.95 2.00 2.05 2.10 2.15 2.20 2.25 2.30


Mean predicted price 2001-2010

Observed Predicted

Mean predicted price 2001-2010

predictions for taxon:
Miscellaneous demersal fishes
> Centrolophidae
> Seriolella
> Seriolella punctata
from regions:
Australia (100%)
Australia -- SNAPSAUSSSG -- Snapper Southern Spencer Gulf

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: single-species, primary country: Australia

Supplementary Figure 1,

Assessments
EEZ declaration
Fisheries Management Act
UN CA/FSA ratification

TB\text{divTBmsy-est-dimensionless} = 0.5
TB\text{divTBmsy-est-dimensionless} = 1

ER\text{divERmsy-est-dimensionless} = 1

Catch (t)

predictions for taxon:
Miscellaneous coastal fishes
> Sparidae
> Chrysophrys
> Chrysophrys auratus
from regions:
Australia (100%)

Real price (2015 $USD/t)

Observed
Predicted

Mean predicted price 2001-2010

MSY: MSY-est-MT
mean catch: MT
Australia -- SWHITSE -- School whiting Southeast Australia

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: Australia

Developing

Mature

EEZ declaration
Fisheries Management Act
UN CA/FSA ratification
TACs
IQs
Assessments
HCR
Surveys

Supplementary Figure 1,
Australia -- TIGERFLATSE -- Tiger flathead Southeast Australia

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: Australia

Supplementary Figure 1,
Developing Mature

EEZ declaration
Fisheries Management Act
UN CA/FSA ratification
TACs IQs Assessments HCR Surveys Rebuilding plan

B/B_{EUF} = 5.0

U/U_{EUF} = 2.0

Catch (t)

MSY: MSY-MT
mean catch: MT

Real price (2015 $USD/t)

predictions for taxon:
Miscellaneous demersal fishes
> Centrolophidae
> Seriolella
> Seriolella brama
from regions:
Australia (100%)

Supplementary Figure 1, page 16 of 289
Developing Phase

National/international level

Stock level

Australia -- WAREHOUWSE -- Blue warehou Western half of Southeast Australia
taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: Australia

Supplementary Figure 1, page 17 of 289
Canada-East Coast -- COD2J3KL -- Atlantic cod Southern Labrador-Eastern Newfoundland

Taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Canada

![Graphical representation of stock level, phase, and international level]
Canada-East Coast -- GHAR4ST -- Greenland halibut Gulf of St. Lawrence
taxonomic group: demersal fish (Pleuronectidae), predominant fishery type: single-species, primary country: Canada
Canada-East Coast -- HAD4X5Y -- Haddock Western Scotian Shelf, Bay of Fundy and Gulf of Maine

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Canada

Supplementary Figure 1

Surveys
TACs
Assessments
IQs
EEZ declaration
Fisheries Act
UN CA/FSA ratification
HCR

B/B_{REF} = 0.5
B/B_{REF} = 1

U/U_{REF} = 0.2
U/U_{REF} = 0.5
U/U_{REF} = 1

SSB_{div}/SSB_{msy-calc-dimensionless} = 0.5
SSB_{div}/SSB_{msy-calc-dimensionless} = 1

ER_{div}/ER_{msy-est-dimensionless} = 1

Catch (t)

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Cods, hakes, haddocks
> Gadidae
> Melanogrammus
> Melanogrammus aeglefinus
from regions:
Canada.Atl (100%)

Mean predicted price 2001-2010

Real price (2015 $USD/t)
Canada-East Coast -- HERR4TFA -- Herring Southern Gulf of St. Lawrence (Fall spawners)
taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Canada
Canada-East Coast -- HERR4TSP -- Herring Southern Gulf of St. Lawrence (Spring spawners)

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Canada

Supplementary Figure 1,
Supplementary Figure 1, page 24 of 289

Canada-East Coast -- REDFISHSPP3LN -- Redfish species N and SW Grand Banks
taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: Canada

Mature Phase
National/international level
Stock level

TACs
Surveys
IQs
Assessments
HCR
EEZ declaration
Fisheries Act
UN CA/FSA ratification

Rebuilding plan

TB\text{div}TB_{\text{msy}}\text{-dimensionless} = 1
TB\text{div}TB_{\text{msy}}\text{-dimensionless} = 0.5

\text{FdivF}_{\text{msy}}\text{-dimensionless} = 1

Mean predicted price 2001-2010

Predictions for taxon:
- Miscellaneous demersal fishes
- Sebastidae
- Sebastes
- NA
from regions:
- Canada.Atl (100%)

Catch (t)

Mean catch: MT

Real price (2015 $USD/t)

Observed Predicted

Mean predicted price 2001-2010

0 200 400 600 800 1000 1200 1400 1600 1800 2000 2010

0 20000 40000 60000 80000 100000

0 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00

0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0

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Canada-East Coast -- SCALLGB -- Sea scallop Georges Bank

taxonomic group: invertebrate (Molluscs), predominant fishery type: single-species, primary country: Canada

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Surveys
Assessments
TACs
IQs
EEZ declaration
Fisheries Act
UN CA/FSA ratification

HCR

TBdivTBmgt-calc-dimensionless = 1
TBdivTBmgt-calc-dimensionless = 0.5

ERdivERmsy-est-dimensionless = 1

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Scallops, pectens
> Pectinidae
> Placopecten
> Placopecten magellanicus
from regions:
Canada.Atl (100%)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Catch (t)

B/B_{EF}

U/U_{EF}
Canada-East Coast -- Snow Crab Southern Gulf of St. Lawrence

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: Canada

Supplementary Figure 1

- **Phase**
  - Mature

- **National/international level**
  - EEZ declaration
  - Fisheries Act
  - UN CA/FSA ratification
  - TACs
  - Surveys
  - IQs
  - Assessments
  - HCR

- **Stock level**
  - Rebuilding plan

### Graphs

1. **TBdivTBmsy-est-dimensionless = 0.5**
   - $B/B_{EFF}$
   - $U/U_{EFF}$

2. **TBdivTBmsy-est-dimensionless = 1**
   - $B/B_{EFF}$
   - $U/U_{EFF}$

3. **MSY: MSY-est-MT**
   - Catch (t)

4. **Mean predicted price 2001-2010**
   - Real price (2015 $USD/t)

### Predictions

- Predictions for taxon: Crabs, sea-spiders
  - Oregoniidae
  - Chionoecetes
  - Chionoecetes opilio
  - From regions: Canada.Atl (100%)

Mean predicted price 2001-2010
Canada-East Coast -- YELL3LNO -- Yellowtail flounder Grand Banks

taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: Canada

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Canada-West Coast -- HERRCC -- Pacific herring Central Coast

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Canada

Phase

National/international level

Stock level

Mature

Surveys

Assessments

TACs

HCR

IQs

EEZ declaration

Fisheries Act

UN CA/FSA ratification

SSBdivSSBmsy-conv-dimensionless = 0.5

B

BREF

SSBdivSSBmsy-conv-dimensionless = 1

0.5

1.0

2.0

ERdivERmsy-est-dimensionless = 1

0

10000

20000

30000

40000

Catch (t)

MSY: MSY-est-MT

mean catch: MT

predictions for taxon:
Herrings, sardines, anchovies
> Clupeidae
> Clupea
> Clupea pallasii
from regions:
Canada.Pac (100%)

Real price (2015 $USD/t)

Observed

Predicted

Mean predicted price 2001-2010

Mean predicted price 2001-2010


1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

500 1000 1500 2000 2500 3000 3500 4000 4500 5000

SSBdivSSBmsy-dimensionless = 0.5

SSBdivSSBmsy-conv-dimensionless = 1

5e-01

5e-00

5e+00

5e-02

5e-03

5e-04

5e-05

5e-06

5e-07

5e-08

5e-09

5e-10

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Canada-West Coast -- HERRQCI -- Pacific herring Queen Charlotte Islands

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Canada

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Canada-West Coast -- HERRSOG -- Pacific herring Strait of Georgia

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Canada

Surveys
Assessments
TACs
HCR
IQs
EEZ declaration
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SSBdivSSBmsy-conv-dimensionless = 1
SSBdivSSBmsy-conv-dimensionless = 0.5
ERdivERmsy-est-dimensionless = 1
MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
- Herrings, sardines, anchovies
  - Clupeidae
  - Clupea
  - Clupea pallasii
  - from regions: Canada.Pac (100%)

Catch (t)

Real price (2015 $USD/t)

Observed
Predicted

Mean predicted price 2001-2010

Mean predicted price 2001-2010

Canada-West Coast -- HERRWCVANI -- Pacific herring West Coast of Vancouver Island
taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Canada

Surveys
Assessments
TACs
EEZ declaration
Fisheries Act
UN CA/FSA ratification

Rebuilding plan

B/BREF

SSBdivSSBmsy-conv-dimensionless = 1
SSBdivSSBmsy-conv-dimensionless = 0.5

ERdivERmsy-est-dimensionless = 1

Catch (t)

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Herrings, sardines, anchovies
> Clupeidae
> Clupea
> Clupea pallasii
from regions:
Canada.Pac (100%)

Real price (2015 $USD/t)

Observed
Predicted
Mean predicted price 2001-2010

Mean predicted price 2001-2010


Supplementary Figure 1, page 34 of 289
Canada-West Coast -- LINGCDSOG -- Lingcod Strait of Georgia

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: Canada

\[ \frac{B}{B_{EF}} ]

\[ \frac{U}{U_{REF}} ]

Catch (t)

Real price (2015 $USD/t)

Supplementary Figure 1, page 35 of 289
Canada-West Coast -- PANDALSMAFR -- Northern shrimp Shrimp Management Area FR

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: Canada

Supplementary Figure 1, page 37 of 289

Predictions for taxon: Shrimps, prawns > Pandalidae > Pandalus > Pandalus borealis from regions: Canada.Pac (100%)
Canada-West Coast -- PCOD5AB -- Pacific cod Queen Charlotte Sound
taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Canada

**Mature Phase**
National/international level
- Stock level
- EEZ declaration
- Fisheries Act
- UN CA/FSA ratification
- TACs
- IQs
- Surveys
- Assessments

**TACs**
- B/B_{EFP}
- U/U_{EFP}

**Surveys**
- Mean catch: MT
- MSY: MSY-MT

**Assessments**
- TBdivTBmsy-conv-dimensionless = 1
- TBdivTBmsy-conv-dimensionless = 0.5

**Supplementary Figure 1**
- Predictions for taxon: Cods, hakes, haddocks
  - > Gadidae
  - > Gadus
  - > Gadus macrocephalus
  - from regions: Canada, Pac (100%)

Mean predicted price 2001-2010
Real price (2015 $USD/t)

**Catch (t)**
- 0
- 500
- 1000
- 1500
- 2000
- 2500
- 3000

Observed
Predicted
Canada-West Coast -- PCODHS -- Pacific cod Hecate Strait

**taxonomic group:** demersal fish (Gadids), **predominant fishery type:** mixed-species, **primary country:** Canada

### Developing Phase
- National/international level
- Stock level

#### Assessments
- Surveys
- TACs
- IQs

#### EEZ declaration
- Fisheries Act
- UN CA/FSA ratification

#### TBdivTBmgt-calc-dimensionless
- $B/B_{REF}$
- $U/U_{REF}$

#### Catch (t)
- MSY: MSY-MT
- mean catch: MT

#### Real price (2015 $USD/t)
- Predictions for taxon: Cods, hakes, haddocks
  - > Gadidae
  - > Gadus
  - > Gadus macrocephalus from regions: Canada.Pac (100%)

### Stock level

### National/international level

### Developing Phase

---

**Supplementary Figure 1,** page 39 of 289
Canada-West Coast -- PERCHWCVANI -- Pacific ocean perch West Coast of Vancouver Island
taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: Canada

Developing phase

Mature phase

National/international level

Stock level

TACs
IQs
Surveys
Assessments

EEZ declaration
Fisheries Act
UN CA/FSA ratification

B/B_{REF}

S_{SBdiv}S_{Bmsy-calc-dimensionless} = 1

U/U_{REF}

E_{RDiv}E_{Rmsy-dimensionless} = 1

Catch (t)

M_{SY}: M_{SY}-M_{Tmean catch: MT}

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Predictions for taxon:
- Miscellaneous demersal fishes
- Sebastidae
- Sebastes
- Sebastes alutus
from regions:
- Canada.Pac (100%)
Developing Mature

EEZ declaration Fisheries Act, UN CA/FSA ratification, TACs, IQs, Surveys, Assessments

B/B_EFF

U/U_EFF

Catch (t)

Real price (2015 $USD/t)

Observed Predicted Mean predicted price 2001-2010

predictions for taxon: Flounders, halibuts, soles > Pleuronectidae > Lepidopsetta > Lepidopsetta bilineata from regions: Canada.Pac (100%)

SSBdivSSBmgt-calc-dimensionless = 1

ERdivERmgt-calc-dimensionless = 1

MSY: MSY-MT mean catch: MT

0.1 0.2 0.5 1.0 2.0 5.0

0 0.1 0.2 0.5 1.0

0 200 400 600 800 1000

Canada-West Coast -- SSSHRIMPSMAFR -- Sidestripe shrimp Shrimp Management Area FR

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: Canada

Phase

National/international level

Stock level

Surveys

HCR

TACs

Assessments

EEZ declaration

Fisheries Act

UN CA/FSA ratification

TBdivTBmsy-est-dimensionless = 1

ERdivERmsy-est-dimensionless = 1

MSY: MSY-est-MT

mean catch: MT

Predictions for taxon:
Shrimps, prawns
> Pandalidae
> Pandalopsis
> Pandalopsis dispar
from regions:
Canada.Pac (100%)

Catch (t)

Real price (2015 $USD/t)

Supplementary Figure 1, page 45 of 289
Mature Phase
National/international level
Stock level

Europe(EU) NE Atl – CODIIIaW-IV-VIIId – Atlantic cod ICES 3a(west)-4-7d

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Great Britain

Surveys
Assessments
TACs

Supplementary Figure 1,
Europe (EU) NE Atl -- CODIS -- Atlantic cod Irish Sea

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Ireland

Phase

National/ international level

Stock level

Assessments

TACs

Surveys

HCR

EEZ declaration

UN CA/FSA ratification

2002 reform of CFP

SSBdivSSBmgt-calc-dimensionless = 0.5

SSBdivSSBmgt-calc-dimensionless = 1

Rebuilding plan

B/B_{REF}

U/U_{REF}

Catch (t)

Real price (2015 $USD/t)

Observed

Predicted

Mean predicted price 2001-2010

predictions for taxon:
Cods, hakes, haddocks
> Gadidae
> Gadus
> Gadus morhua
from regions:
EU.Ireland (49.6%), EU.UK (44.8%), EU.Belgium (4.6%), EU.France (0.9%)
Europe(EU) NE Atl -- CODV1a -- Atlantic cod West of Scotland

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Great Britain

Supplementary Figure 1,

Mature

Phase

National/international level

Stock level

Assessments
TACs
EEZ declaration
UN CA/FSA ratification
2002 reform of CFP

Surveys
IQs
HCR

EEZ declaration
UN CA/FSA ratification
2002 reform of CFP

SSBdivSSBmgt-calc-dimensionless = 1
SSBdivSSBmgt-calc-dimensionless = 0.5

Rebuilding plan

FdivFmg-calc-dimensionless = 1

SSBmgt-calc-dimensionless = 0.5

0.1

0.2

0.5

1.0

2.0

B/B*EFF

U/U*EFF

Catch (t)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Predictions for taxon:
- Cods, hakes, haddocks
  - Gadidae
  - Gadus
  - Gadus morhua
from regions:
- EU.UK (61.6%), EU.France (17.1%), EU.Ireland (11.2%), Norway (9.4%), Faroe.Islands (0.5%), EU.Germany (0.2%)
Europe(EU) NE Atl -- HADNS-IIIa-VIa -- Haddock ICES 3a-4-6a

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Iceland

Supplementary Figure 1,

Surveys, Assessments, TACs, IQs, HCR, EEZ declaration, UN CA/FSA ratification, 2002 reform of CFP

B/BREF, U/UREF, F/Fmgt-calc-dimensionless = 1

SSBdiv/SSBmgt-calc-dimensionless = 0.5, 1

Catch (t), mean catch: MT

Real price (2015 $USD/t)

predictions for taxon:
- Cods, hakes, haddocks
- > Gadidae
- > Melanogrammus
- > Melanogrammus aeglefinus
from regions:
- Iceland (65.9%), EU.UK (27.8%), EU.Denmark (2.2%), Norway (1.7%), Faroe.Islands (0.9%), EU.Germany (0.7%), EU.Sweden (0.3%), EU.France (0.3%)
Europe(EU) NE Atl -- HADVIIb-k -- Haddock ICES 7b-k
taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: France
Europe (EU) NE Atl – HAKENRTN – Hake ICES 3a-4-6-7-8abd

Taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: France

Supplementary Figure 1, page 51 of 289
Europe(EU) NE Atl – HERR30-31 – Herring Subdivisions 30-31

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Finland

Supplementary Figure 1,
Europe(EU) NE Atl -- HERRIGA -- Herring Gulf of Riga East of Gotland

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Estonia

Supplementary Figure 1, page 53 of 289
Europe(EU) NE Atl -- HERRViaVIIbc -- Herring ICES 5a-7bc

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Great Britain

Mature

Phase

National/international level

Stock level

Supplementary Figure 1, page 54 of 289
Europe(EU) NE Atl – MACKNEICES – Mackerel ICES Northeast Atlantic
taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: single-species, primary country: Norway

<table>
<thead>
<tr>
<th>Phase</th>
<th>National/international level</th>
<th>Stock level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Surveys</td>
<td>HCR</td>
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<tr>
<td></td>
<td>Assessments</td>
<td>TACs</td>
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<td>EEZ declaration</td>
<td>IQs</td>
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<td>UN CA/FSA ratification</td>
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<tr>
<td></td>
<td>2002 reform of CFP</td>
<td></td>
</tr>
</tbody>
</table>

$\frac{B}{B_{REF}}$

$\frac{U}{U_{REF}}$

Catch (t)

Mean predicted price 2001-2010

Predictions for taxon:
- Miscellaneous pelagic fishes
- Scombridae
- Scomber
- Scomber scombrus

From regions:
- Norway (28.1%), EU.UK (27.2%), Faroe.Islands (11.8%), EU.Ireland (9.8%), EU.Denmark (5.2%), EU.Netherlands (4.5%), EU.Germany (3.3%), EU.Spain (3.2%), Iceland (2.8%), EU.France (2.7%), EU.Portugal (0.7%), EU.Sweden (0.6%), EU.Lithuania (0.2%)
Europe(EU) NE Atl -- NPOUTIIIa-IV -- Norway pout ICES 3a-4

taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: Denmark
Europe(EU) NE Atl -- PLAICNS -- European plaice North Sea

- **Taxonomic group:** demersal fish (Pleuronectidae)
- **Predominant fishery type:** mixed-species
- **Primary country:** Netherlands

**Supplementary Figure 1, page 57 of 289**

**Surveys, Assessments, TACs, IQs, HCR, EEZ declaration, UN CA/FSA ratification, 2002 reform of CFP**

**SSBdivSSBmgt-calc-dimensionless = 0.5**

**SSBdivSSBmgt-calc-dimensionless = 1**

**FdivFmgt-calc-dimensionless = 1**

**MSY: MSY-est-MT, mean catch: MT**

- **Predictions for taxon:** Flounders, halibuts, soles
  - > Pleuronectidae
  - > Pleuronectes
  - > Pleuronectes platessa
  - from regions:
    - EU.Netherlands (38.8%),
    - EU.Denmark (25.7%), EU.UK (21.1%), EU.Belgium (6.6%), EU.Germany (5.4%), Norway (1.5%),
    - EU.Sweden (0.4%), EU.France (0.4%)
Europe (EU) NE Atl -- SEELSSA1 -- Sand eel Sandeel Area 1

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Denmark
Europe (EU) NE Atl -- SEELNSSA2 -- Sand eel Sandeel Area 2

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Denmark
Europe(EU) NE Atl -- SELNSSA3 -- Sand eel Sandeel Area 3

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Denmark

Supplementary Figure 1,
page 60 of 289
Europe(EU) NE Atl -- SPRAT22-32 -- Sprat Baltic Areas 22-32

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Poland

Supplementary Figure 1,
Europe(EU) NE Atl -- WHITNS-VIIId -- Whiting ICES 4-7d

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Great Britain

Supplementary Figure 1, page 62 of 289
Europe(EU) NE Atl – WHITVIIek – Whiting Celtic Sea

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: France

Supplementary Figure 1,
Europe (non-EU) NE Atl -- CAPElla-V-XIV -- Capelin ICES 2a-5-14

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Iceland
Europe (non-EU) NE Atl -- CODFAPL -- Atlantic cod Faroe Plateau

**Taxonomic group:** demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Faroe Islands

### Stock level

- **Europe (non-EU) NE Atl -- CODFAPL -- Atlantic cod Faroe Plateau**
  - Taxonomic group: demersal fish (Gadids)
  - Predominant fishery type: mixed-species
  - Primary country: Faroe Islands

### Phase

- **Mature**

### National/international level

- **Assessments**
- **Surveys**
- **TACs**
- **IQs**
- **EEZ declaration**
- **Commercial Fisheries Act**

### Graphs

- **B/B_{REF}**
  - **F_{div}/F_{mgt-calc-dimensionless} = 1**
- **U/U_{REF}**
  - **F_{div}/F_{mgt-calc-dimensionless} = 1**
- **Catch (t)**
  - **MSY: MSY-est-MT**
  - **mean catch: MT**
- **Real price (2015 $USD/t)**

### Predictions

- **Predictions for taxon:**
  - Cods, hakes, haddocks
  - > Gadidae
  - > Gadus
  - > Gadus morhua
  - From regions:
    - Faroe Islands (97.7%), EU.UK (2%), Norway (0.2%)
Europe (non-EU) NE Atl -- CODICE -- Atlantic cod Iceland Grounds

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Iceland

Supplementary Figure 1

Phase

Mature

National/ international level

Stock level

Assessments

TACs

IQs

Surveys

EEZ declaration

Fisheries Management Act

UN CA/FSA ratification

B/BREF

SSBdivSSBmgt-calc-dimensionless = 1

U/UREF

FdivFmgt-calc-dimensionless = 1

Catch (t)

MSY: MSY-est-MT

mean catch: MT

Predictions for taxon:

- Cods, hakes, haddocks
- Gadidae
- Gadus
- Gadus morhua

from regions:

- Iceland (99.2%), Faroe.Islands (0.8%)
Europe (non-EU) NE Atl -- CODNEAR -- Atlantic cod North-East Arctic

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Norway

Supplementary Figure 1,
page 67 of 289
Europe (non-EU) NE Atl -- HADICE -- Haddock Iceland Grounds

Taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Iceland

Assessments
TACs
IQs
Surveys

EEZ declaration
Fisheries Management Act
UN CA/FSA ratification

B/B_{REF}

SSB_{div}/SSB_{mgmt-calc-dimensionless} = 1

F_{div}/F_{mgmt-calc-dimensionless} = 1

MSY: MSY-est-MT
mean catch: MT

Catch (t)

Real price (2015 $USD/t)

predictions for taxon:
- Gadidae
- Melanogrammus
- Melanogrammus aeglefinus
from regions:
- Iceland (98.7%), Faroe.Islands (1.3%)

Supplementary Figure 1, page 68 of 289
Europe(non-EU) NE Atl -- HADNEAR -- Haddock North-East Arctic

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Norway

Supplementary Figure 1, page 69 of 289
Europe(non-EU) NE Atl -- HERRIsum -- Herring Iceland (Summer spawners)
taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Iceland

Supplementary Figure 1, page 70 of 289
Europe (non-EU) NE Atl -- HERRNORSS -- Herring ICES 1-2-4a-5-14a (Norwegian Spring Spawners)
taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Norway

- Assessments
- TACs
- IQs
- Surveys
- EEZ declaration
- Discard Ban Package
- UN CA/FSA ratification

Rebuilding plan

SSBdivSSBmgt-calc-dimensionless = 1
SSBdivSSBmgt-calc-dimensionless = 0.5

FdivFmgt-calc-dimensionless = 1

catch (t)

mean catch: MT

predictions for taxon:
Herrings, sardines, anchovies
> Clupeidae
> Clupea
> Clupea harengus
from regions:
Norway (57.3%), Iceland (19.6%),
Faroe Islands (5.8%), EU Denmark (5.5%), EU UK (4.6%),
EU Netherlands (3.7%), EU Germany (1.6%), EU France (0.6%),
EU Sweden (0.6%), EU Ireland (0.4%)

Mean predicted price 2001-2010

Observed
Predicted

Real price (2015 $USD/t)

Supplementary Figure 1, page 71 of 289
Developing Maturity Phase

National/international level

Stock level

Supplementary Figure 1, page 72 of 289

Europe (non-EU) NE Atl -- POLLFAPL -- Pollock Faroe Plateau

taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: Faroe Islands

Assessments
Surveys

EEZ declaration
Commercial Fisheries Act

0.5 1.0 1.5 2.0 2.5 3.0 4.0
B/B_{REF}

0.5 1.0 1.5 2.0
U/U_{REF}

0 5000 10000 15000
Mean predicted price 2001-2010
Real price (2015 $USD/t)

Catch (t)

predicted for taxon: Cods, hakes, haddocks
> Gadidae
> Pollachius
> Pollachius virens
from regions: Faroe.Islands (99.3%), EU.UK (0.6%)

SSB_{div}/SSB_{mgt-calc-dimensionless} = 1

F_{div}/F_{mgt-calc-dimensionless} = 1

MSY: MSY-est-MT
mean catch: MT

Supplementary Figure 1, page 72 of 289
Europe (non-EU) NE Atl -- POLLIEG -- Pollock Iceland Grounds

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Iceland

Supplementary Figure 1, page 73 of 289
Europe-Med/Black Sea -- ANCHMEDGSA29 -- Anchovy Black Sea

taxonomic group: pelagic fish (Forage fish), predominant fishery type: mixed-species, primary country: Turkey

**Surveys**

**Assessments**

**Stock level**

**National/ international level**

**Phase**

**Mature**

Supplementary Figure 1, page 75 of 289

---

*Mean predicted price 2001-2010*

- Observed
- Predicted

Mean predicted price 2001-2010

Predictions for taxon:
- Herrings, sardines, anchovies
  - > Engraulidae
  - > Engraulis
  - > Engraulis encrasicolus
  - from regions:
    - EU.Bulgaria (62.7%), EU.Romania (37.3%)

**Catch (t)**

**Real price (2015 $USD/t)**
Europe-Med/Black Sea -- ANCHMEDGSA7 -- Anchovy Gulf of Lions

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: France

Supplementary Figure 1,
page 76 of 289
Europe-Med/Black Sea -- ANGLMEDGSA5 -- Black bellied angler Balearic Island

taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: Spain

[Supplementary Figure 1]

Surveys  
Assessments

UN CA/FSA ratification  
EEZ declaration

Stock level

Mature

National/international level

B/B_{EFF}

U/U_{EFF}

Catch (t)

Real price (2015 $USD/t)

SSB_{div}SSB_{msy-est-dimensionless} = 1

F_{div}F_{mgt-calc-dimensionless} = 1

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Miscellaneous demersal fishes
> Lophiidae
> Lophius
> Lophius budegassa
from regions:
EU.Spain (100%)

Mean predicted price 2001-2010

Supplementary Figure 1, page 77 of 289
Europe-Med/Black Sea -- MHMACKMEDGSA29 -- Mediterranean horse mackerel Black Sea

taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Turkey

Supplementary Figure 1,
page 78 of 289
Europe-Med/Black Sea -- NEPHMEDGSA15-16 -- Norway lobster Malta Island and South of Sicily (GSA 15, 16)

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: Italy

Supplementary Figure 1, page 79 of 289
Europe-Med/Black Sea -- RDSHRMPMEDGSA1 -- Red shrimp Northern Alboran Sea

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: Spain

Supplementary Figure 1,
page 80 of 289
Europe-Med/Black Sea -- RDSHRMPMEDGSA6 -- Red shrimp Northern Spain

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: Spain

Supplementary Figure 1, page 81 of 289
Europe-Med/Black Sea -- RMULLMEDGSA29 -- Red mullet Black Sea

- Taxonomic group: demersal fish (Other marine percoidids)
- Predominant fishery type: mixed-species
- Primary country: Turkey

Mature Phase

National/international level

Surveys

Assessments

Stock level

Supplementary Figure 1, page 82 of 289
Europe-Med/Black Sea -- RMULLMEDGSA6 -- Red mullet Northern Spain

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: Spain

Surveys
Assessments

UN CA/FSA ratification
EEZ declaration

SSBdivSSBmsy-est-dimensionless = 1
FdivFmgt-calc-dimensionless = 1
MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
> Miscellaneous coastal fishes
> Mullidae
> Mullus
> Mullus barbatus
from regions:
EU.Spain (100%)

Catch (t)

Real price (2015 $USD/t)

Observed
Predicted
Mean predicted price 2001-2010


Supplementary Figure 1, page 83 of 289
Europe-Med/Black Sea -- RMULLMEDGSA7 -- Red mullet Gulf of Lions

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: France

Supplementary Figure 1, page 84 of 289
Europe-Med/Black Sea -- RSHRPMEDGSA1 -- Deep water rose shrimp Northern Alboran Sea

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: Spain

Supplementary Figure 1, page 85 of 289
Europe-Med/Black Sea -- RSHRMPMEDGSA5 -- Deep water rose shrimp Balearic Island

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: Spain

Supplementary Figure 1, page 86 of 289
Europe-Med/Black Sea -- SARDMEDGSA16 -- Sardine South of Sicily

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Italy

Supplementary Figure 1,
page 87 of 289

Assessments
Surveys

UN CA/FSA ratification

B/B_{REF}

TB_{div}/TB_{msy-dimensionless} = 0.5

TB_{div}/TB_{msy-dimensionless} = 1

U/U_{REF}

ER_{div}/ER_{msy-calc-dimensionless} = 1

Catch (t)

MSY: MSY-MT

mean catch: MT

Real price (2015 $USD/t)

Observed
Predicted

Mean predicted price 2001-2010

predictions for taxon:
- Herrings, sardines, anchovies
  > Clupeidae
  > Sardina
  > Sardina pilchardus
from regions:
- EU, Italy (100%)
Europe-Med/Black Sea -- SARDMEDGSA17-18 -- Sardine Adriatic Sea (GSA 17,18)
taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Italy

Supplementary Figure 1,
page 88 of 289
Europe-Med/Black Sea -- SARDMEDGSA6 -- European pilchard Northern Spain

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Spain

Supplementary Figure 1,
page 89 of 289
Europe-Med/Black Sea -- SARDMEDGSA7 -- Sardine Gulf of Lions

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: France

Developing Phase

Mature Phase

UN CA/FSA ratification

EEZ declaration

Surveys

Assessments

HCR

Supplementary Figure 1,

Surveys

Assessments

HCR

TBdivTBmsy-est-dimensionless = 0.5

TBdivTBmsy-est-dimensionless = 1

ERdivERmsy-est-dimensionless = 1

MSY: MSY-est-MT

mean catch: MT

predictions for taxon:
Herrings, sardines, anchovies
> Clupeidae
> Sardina
> Sardina pilchardus
from regions:
EU.France (98.4%), EU.Spain (1.6%)

Real price (2015 $USD/t)


Observed

Predicted

Mean predicted price 2001-2010

Catch (t)

0 5000 10000 15000 20000 25000

0 200 400 600 800 1000

0 2000 4000 6000 8000 10000

B/BREF

U/UREF

TBdivTBmsy-est-dimensionless = 0.5

TBdivTBmsy-est-dimensionless = 1

ERdivERmsy-est-dimensionless = 1

Supplementary Figure 1,

page 90 of 289
Europe-Med/Black Sea -- SPRBLKGSA29 -- Sprat Black Sea

taxonomic group: pelagic fish (Forage fish), predominant fishery type: mixed-species, primary country: Ukraine

Supplementary Figure 1,
page 92 of 289
Europe-Med/Black Sea -- TURBLKGSA29 -- Turbot Black Sea

taxonomic group: demersal fish (Pleuronectidae), predominant fishery type: mixed-species, primary country: Turkey

Supplementary Figure 1

Surveys

TACs

Assessments

Stock level

National/international level

Phase

Mature

B/B_{REF}

0.2

0.5

1.0

2.0

SSB_{div}/SSB_{msy-est-dimensionless} = 1

SSB_{div}/SSB_{msy-est-dimensionless} = 0.5

F_{div}/F_{mgd-calc-dimensionless} = 1

Mean catch: MT

MSY: MSY-est-MT

Catch (t)

0

1000

2000

3000

4000

5000


Real price (2015 $USD/t)

0

2000

4000

6000

8000

10000

12000

Observed

Predicted

Mean predicted price 2001-2010

predictions for taxon:
Flounders, halibuts, soles
> Scophthalmidae
> Scophthalmus
> Scophthalmus maximus
from regions:
EU.Bulgaria (50.7%), EU.Romania (49.3%)
Japan -- APOLLNSJ -- Walleye pollock Sea of Japan North

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1,
Japan -- APOLLPJPN -- Walleye pollock Pacific Coast of Japan

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1,
page 95 of 289
Japan -- BMACKECS -- Spotted mackerel East China Sea

taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1,
page 96 of 289
Japan -- BMACKPJPN -- Spotted mackerel Pacific Coast of Japan
taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Japan
Japan -- CMACKPJPN -- Chub mackerel Pacific Coast of Japan

taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Japan

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**Graphical Representation**

- **Phase**
  - Mature

- **National/International level**
  - EEZ declaration
  - UN CA/FSA ratification

- **Stock level**
  - Surveys
  - Assessments
  - HCR
  - TACs

- **Graph Details**
  - $B/B_{REF}$
  - $U/U_{REF}$
  - Catch (t)
  - Real price (2015 $USD/t)

- **Rebuilding Plan**
  - SSBdivSSBmsy-calc-dimensionless = 0.5
  - SSBdivSSBmsy-calc-dimensionless = 1
  - ERdivERmsy-calc-dimensionless = 1

- **Predictions**
  - Mean predicted price 2001-2010
  - Observed
  - Predicted

- **Catch Predictions**
  - Mean catch: MT
  - MSY: MSY-MT

- **Regions**
  - Japan (100%)

- **Taxonomic Groups**
  - Miscellaneous pelagic fishes
  - > Scombridae
  - > Scomber
  - > Scomber japonicus

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Supplementary Figure 1, page 98 of 289
Japan -- CMAKTSST -- Chub mackerel Tsushima Strait

taxonomic group: pelagic (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1, page 99 of 289
Japan -- JAMBERJPN -- Japanese amberjack Japan

- Taxonomic group: pelagic fish (Carangids and mackerels)
- Predominant fishery type: mixed-species
- Primary country: Japan

Graphical representation:
- Stock level
- National/International level
- Phase

Variables: B/Bref, U/Uref, SSBdivSSBmsy-calc-dimensionless

Assessments, Surveys, HCR

Graphs:
- Catch (t)
- Mean predicted price 2001-2010

Predictions:
- Taxon: Miscellaneous pelagic fishes > Carangidae > Seriola > Seriola quinqueradiata
- Region: Japan (100%)
Mature Phase

National/international level

Stock level

Surveys

Assessments

HCR

EEZ declaration

UN CA/FSA ratification

Supplementary Figure 1, page 101 of 289

Japan -- JANCHOPJPN -- Japanese anchovy Pacific Coast of Japan
taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Japan

SSBdiv/SSBmsy-calc-dimensionless = 1
SSBdiv/SSBmsy-calc-dimensionless = 0.5

ERdiv/ERmsy-calc-dimensionless = 1

Catch (t)

MSY: MSY-MT
mean catch: MT

Real price (2015 $USD/t)
predictions for taxon:
Herrings, sardines, anchovies
> Engraulidae
> Engraulis
> Engraulis japonicus
from regions:
Japan (100%)

Mean predicted price 2001-2010
Japan -- JANCHOSETO -- Japanese anchovy Inland Sea of Japan

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Japan

Supplementary Figure 1,
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Japan -- JANCHOTSST -- Japanese anchovy Tsushima Strait

**taxonomic group:** pelagic fish (Forage fish), **predominant fishery type:** mixed-species, **primary country:** Japan

### Phase

- Mature
- EEZ declaration
- UN CA/FSA ratification

### National/international level

- Surveys
- Assessments
- HCR

### Stock level

- SSBdivSSBmsy-calc-dimensionless = 1
- SSBdivSSBmsy-calc-dimensionless = 0.5
- ERdivERmsy-calc-dimensionless = 1

### Predictions

- Mean predicted price 2001-2010

### Catch (t)

- Catch: MT

### Real price (2015 $USD/t)

- Predictions for taxon:
  - Herrings, sardines, anchovies
  - Engraulidae
  - Engraulis
  - Engraulis japonicus
  - From regions:
    - Japan (100%)
Supplementary Figure 1

Japan -- JCSQUIDJPNAR -- Japanese flying squid Japan Autumn recruitment
taxonomic group: invertebrate (Molluscs), predominant fishery type: single-species, primary country: Japan

Surveys, Assessments, HCR, TACs, EEZ declaration, UN CA/FSA ratification, Developing, Mature

Stock level

National/international level

Catch (t)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

predictions for taxon:
Squids, cuttlefishes, octopuses
> Ommastrephidae
> Todarodes
> Todarodes pacificus from regions:
Japan (100%)
Japan -- JCSQUIDJPNWR -- Japanese flying squid Japan Winter recruitment
taxonomic group: invertebrate (Molluscs), predominant fishery type: single-species, primary country: Japan
Japan -- JMACPKJPN -- Japanese jack mackerel Pacific Coast of Japan

taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1
Japan -- JMAC-TSST -- Japanese jack mackerel Tsushima Strait

taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Japan

Assessments
Surveys
HCR
TACs
EEZ declaration
UN CA/FSA ratification

B/BREF
0.5
1.0
1.5
2.0

SSB/divSSB,msy-calcdimensionless = 1
SSB/divSSB,msy-calcdimensionless = 0.5

U/UREF
0.5
1.0
1.5
2.0

ER/divER,msy-calcdimensionless = 1

Catch (t)
0
50000
100000
150000
200000
250000

MSY: MSY-MT
mean catch: MT

Real price (2015 $USD/t)
0
500
1000
1500
2000
2500
Mean predicted price 2001-2010

predicted for taxon:
Miscellaneous pelagic fishes
> Carangidae
> Trachurus
> Trachurus japonicus
from regions:
Japan (100%)

Supplementary Figure 1, page 107 of 289
Japan -- KCROCKNPAC -- Kichiji rockfish North Pacific

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: Japan
Japan -- PCODNPAC -- Pacific cod North Pacific

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Japan
Japan -- PHFLOUNSOJ -- Pointhead flounder Sea of Japan

taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1, page 110 of 289
Japan -- PILCHPJPN -- Japanese sardine Pacific Coast of Japan

taxonomic group: pelagic (Forage fish), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1
Japan -- PILCHTSST -- Japanese sardine Tsushima Strait

taxonomic group: pelagic fish (Forage fish), predominant fishery type: mixed-species, primary country: Japan

Mature Phase
National/international level
Stock level

Surveys
Assessments

HCR
TACs

EEZ declaration
UN CA/FSA ratification

SSBdivSSBmsy-calc-dimensionless = 1
SSBdivSSBmsy-calc-dimensionless = 0.5

ERdivERmsy-calc-dimensionless = 1

mean catch: MT
MSY: MSY-MT

predictions for taxon:
- Herrings, sardines, anchovies
  - Clupeidae
  - Sardinops
  - Sardinops sagax
from regions:
Japan (100%)

Real price (2015 $USD/t)

Mean predicted price 2001-2010
Developing Mature

EEZ declaration
UN CA/FSA ratification
Surveys
Assessments
HCR

B/BREF

U/UREF

Catch (t)

Real price (2015 $USD/t)

MSY: MSY-MT
mean catch: MT

SSBdivSSBmsy-calc-dimensionless = 1
SSBdivSSBmsy-calc-dimensionless = 0.5
ERdivERmsy-calc-dimensionless = 1

supplementary Figure 1, page 113 of 289
Japan -- RSFLOUNSOJ -- Round nose flounder Sea of Japan

taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1,
page 114 of 289
Japan -- SNOWCRABNPAC -- Snow crab North Pacific

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1,
Japan -- SSANDWSJ -- Sailfin sandfish Sea of Japan West

taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1,
Japan -- WLFLOUNNPAC -- Willowy flounder North Pacific

taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1, page 117 of 289
New Zealand -- BKCDLFENI -- Black cardinalfish East coast of North Island
taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: single-species, primary country: New Zealand

Developing → Mature

National/ international level

Stock level

TACs, IQs, Assessments, HCR, EEZ declaration, Fisheries Act 1983, UN CA/FSA ratification, SSBdivSSBmgt-calc-dimensionless = 0.5, 1.0, 2.0, BREF SSBdivSSBmgt-calc-dimensionless = 1, UREF, ERdivERmsy-calc-dimensionless = 1, mean catch: MT, MSY: MSY-MT

Predictions for taxon:
- Miscellaneous demersal fishes
  - Epigonidae
  - Epigonus
  - Epigonus telescopus
  - New.Zealand (100%)

Mean predicted price 2001-2010
Real price (2015 $USD/t)
New Zealand -- BNSNZ -- Bluenose New Zealand

taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: New Zealand

Developing

Mature

EEZ declaration
Fisheries Act 1983
UN CA/FSA ratification
TACs
I/Qs
Assessments
HCR
Rebuilding plan

SSBdivSSBmgt-calc-dimensionless = 0.5
SSBdivSSBmgt-calc-dimensionless = 1
ERdivERmsy-calc-dimensionless = 1

Catch (t)

Observed
Predicted
Mean predicted price 2001-2010

Predictions for taxon:
Miscellaneous demersal fishes
> Centrolophidae
> Hyperoglyphe
> Hyperoglyphe antarctica
from regions:
New.Zealand (100%)
New Zealand -- HOKIWNZ -- Hoki Western New Zealand

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: New Zealand

Developing

Mature

National/international level

Stock level

Supplementary Figure 1,

TACs
IQs
Surveys
Assessments
HCR
EEZ declaration
Fisheries Act 1983
UN CA/FSA ratification
SSBdivSSBmgmt-calc-dimensionless = 0.5
SSBdivSSBmgmt-calc-dimensionless = 1
ERdivERmsy-dimensionless = 1

B/BREF

U/UREF

Catch (t)

Mean predicted price 2001-2010

Real price (2015 $USD/t)

Predictions for taxon:
- Cod, hakes, haddocks
- Merluccidae
- Macrurus
- Macrurus novaezelandiae from regions:
  - New Zealand (100%)
Developing
Mature

EEZ declaration
Fisheries Act 1983
UN CA/FSA ratification
Surveys
Assessments
HCR

Rebuilding plan

SSBdivSSBmgt-calc-dimensionless = 1
SSBdivSSBmgt-calc-dimensionless = 0.5

B/BREF

FdivFmgt-dimensionless = 1

U/UREF

Catch (t)

Mean predicted price 2001-2010
Predictions for taxon:
- Miscellaneous coastal fishes
  - Sparidae
  - Chrysophrys
  - Chrysophrys auratus
from regions:
New Zealand (100%)

Real price (2015 $USD/t)

Observed
Predicted
New Zealand -- NZSNAPNZ8 -- New Zealand snapper New Zealand Area 8 (Auckland and Central West)

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: New Zealand

Developing

Mature

EEZ declaration
Fisheries Act 1983
TACs
IQs
Surveys
Assessments
HCR
Rebuilding plan
UN CA/FSA ratification

SSBdivSSBmsy-calc-dimensionless = 0.5
SSBdivSSBmsy-calc-dimensionless = 1

ERdivERmsy-calc-dimensionless = 1

Catch (t)

mean catch: MT
MSY: MSY-MT

Real price (2015 $USD/t)

predictions for taxon:
  Miscellaneous coastal fishes
  > Sparidae
  > Chrysophrys
  > Chrysophrys auratus
  from regions:
  New.Zealand (100%)

Supplementary Figure 1, page 124 of 289
Developing Mature

Stock level National/international level

TACs IQs Surveys Assessments HCR

EEZ declaration Fisheries Act 1983 UN CA/FSA ratification

SSB_{div};SSB_{mgt};calc-dimensionless = 1

ER_{div};ER_{mgt};dimensionless = 1

mean catch: MT MSY: MSY-MT

predictions for taxon:
- Miscellaneous demersal fishes
  - Trachichthyidae
  - Hoplostethus
  - Hoplostethus atlanticus
  from regions:
  - New.Zealand (100%)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Catch (t)

New Zealand -- OROUGHYNWCR -- Orange roughy Northwest Chatham Rise

taxonomic group: pelagic fish (Other marine fish), predominant fishery type: single-species, primary country: New Zealand

Supplementary Figure 1, page 125 of 289
New Zealand -- OROUGHYNZ7A -- Orange roughy New Zealand Challenger Plateau

taxonomic group: pelagic fish (Other marine fish), predominant fishery type: single-species, primary country: New Zealand

Supplementary Figure 1,
page 126 of 289
New Zealand -- OROUGHYNZMEC -- Orange roughy New Zealand Mid East Coast
taxonomic group: pelagic fish (Other marine fish), predominant fishery type: single-species, primary country: New Zealand

Supplementary Figure 1, page 127 of 289
New Zealand -- PAUAPAU5B -- Paua New Zealand Area PAU 5B (Stewart Island)
taxonomic group: invertebrate (Molluscs), predominant fishery type: single-species, primary country: New Zealand

Developing M Mature

EEZ declaration Fisheries Act 1983 UN CA/FSA ratification

TACs IQs Assessments HCR

Rebuilding plan

SSBdivSSBmgt-calc-dimensionless = 1

ERdivERmgt-dimensionless = 1

Catch (t)

MSY: MSY-MT mean catch: MT

predictions for taxon:
Abalones, winkles, conchs
> Haliotidae
> Haliotis
> Haliotis iris
from regions:
New.Zealand (100%)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Observed Predicted

Mean predicted price 2001-2010

Supplementary Figure 1, page 128 of 289
New Zealand -- PAUAPA5D -- Paua New Zealand Area PAU 5D (Otago)
taxonomic group: invertebrate (Molluscs), predominant fishery type: single-species, primary country: New Zealand

---

**Developed-Mature Phase**

- National/International level
- Taxonomic group: invertebrate (Molluscs)
- Predominant fishery type: single-species
- Primary country: New Zealand

**Supplementary Figure 1**

- TACs
- IQs
- Assessments
- HCR
- EEZ declaration
- Fisheries Act 1983
- UN CA/FSA ratification

- B/BREF
- U/UREF
- Catch (t)
- Real price (2015 $USD/t)

- Mean predicted price 2001-2010

- Predictions for taxon:
  - Abalones, winkles, conchs
  - Haliotidae
  - Haliotis
  - Haliotis iris
  - From regions:
    - New Zealand (100%)

---

**Graphs**

- Graph 1: B/BREF vs. time
- Graph 2: U/UREF vs. time
- Graph 3: Catch (t) vs. time
- Graph 4: Real price (2015 $USD/t) vs. time
Developing Mature

National/international level

Stock level

Supplementary Figure 1, page 130 of 289
New Zealand -- RROCKLOBSTERCRA1 -- Red rock lobster New Zealand Area CRA1

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: New Zealand

Supplementary Figure 1, page 131 of 289
New Zealand -- RROCKLOBSTERCRA3 -- Red rock lobster New Zealand Area CRA3

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: New Zealand

---

Supplementary Figure 1, page 133 of 289

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Developing

Mature

National/ international level

Stock level

---

EEZ declaration
Fisheries Act 1983
UN CA/FSA ratification
TACs
IQs
Assessments
HCR
Rebuilding plan

TBdivTBmsy-est-dimensionless = 1
ERdivERmsy-est-dimensionless = 1

mean catch: MT
MSY: MSY-MT

predictions for taxon:
Lobsters, spiny-rock lobsters
> Palinuridae
> Jasus
> Jasus edwardsii
from regions:
New.Zealand (100%)

---

Mean predicted price 2001-2010

Observed
Predicted

---

Real price (2015 $USD/t)

---

Catch (t)

---

Supplementary Figure 1, page 133 of 289
New Zealand -- RROCKLOBSTERCRA4 -- Red rock lobster New Zealand Area CRA4

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: New Zealand

Developing

Mature

EEZ declaration
Fisheries Act 1983
UN CA/FSA ratification
TACs
IQs
Assessments
HCR
Rebuilding plan

B/Bref

TBdivTBmsy-est-dimensionless = 1
TBdivTBmsy-est-dimensionless = 0.5

ErdivERmsy-est-dimensionless = 1

MSY: MSY-MT mean catch: MT

Catch (t)

Predictions for taxon:
Lobsters, spiny-rock lobsters
> Palinuridae
> Jasus
> Jasus edwardsii
from regions:
New.Zealand (100%)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Observed
Predicted

Supplementary Figure 1, page 134 of 289
New Zealand -- RROCKLOBSTERCRA5 -- Red rock lobster New Zealand Area CRA5

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: New Zealand

- Phase
- National/international level
- Stock level

Supplementary Figure 1, page 135 of 289
New Zealand -- SBWHITACIR -- Southern blue whiting Campbell Island Rise

taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: New Zealand
New Zealand -- SMOOTHOREOEPR -- Smooth oreo East Pukaki Rise

taxonomic group: demersal fish (Other marine fish), predominant fishery type: single-species, primary country: New Zealand

Developing Phase

Mature Phase

National/international level

Stock level

EEZ declaration
Fisheries Act 1983
TACs IQs
Surveys Assessments HCR
UN CA/FSA ratification

Supplementary Figure 1, page 139 of 289

SSB_{divSSB_{msy}}-dimensionless = 1

ER_{divER_{msy}}-calc-dimensionless = 1

Catch (t)

Mean predicted price 2001-2010

Real price (2015 $USD/t)

Predictions for taxon:
Miscellaneous demersal fishes
> Oreosomatidae
> Pseudocyttus
> Pseudocyttus maculatus
from regions:
New Zealand (100%)

B/B_{REF}

U/U_{REF}

mean catch: MT
MSY: MSY-MT
New Zealand -- SMOOTHOREOSLD -- Smooth oreo Southland

taxonomic group: demersal fish (Other marine fish), predominant fishery type: single-species, primary country: New Zealand

Developing Mature

National/ international level

Stock level

EEZ declaration
Fisheries Act 1983
TACs IQs
Surveys Assessments HCR
UN CA/FSA ratification

B/Bref

U/Uref

Catch (t)

Real price (2015 $USD/t)

0.005 0.010 0.020 0.050 0.100 0.200 0.500 1.000 2.000 5.000

0 200 400 600 800 1000 1200


Supplementary Figure 1, page 140 of 289
Russia-East Coast -- WPOLLNAV -- Walleye pollock Navarinsky

taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: Russia

Supplementary Figure 1,
Russia-East Coast -- W POLLNSO -- Walleye pollock Northern Sea of Okhotsk

taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: Russia

<table>
<thead>
<tr>
<th>Phase</th>
<th>National/ international level</th>
<th>Stock level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mature</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EEZ declaration
TACs
Surveys
Assessments
IQs
HCR
UN CA/FSA ratification
Fisheries Law

SSBdivSSBmgt-calc-dimensionless = 1
FdivFmgt-calc-dimensionless = 1
mean catch: MT
MSY: MSY-MT
Predictions for taxon:
- Cod, hakes, haddocks
- Gadidae
- Gadus
- Gadus chalcogrammus
from regions:
- none (100%)

Observed
Predicted
Mean predicted price 2001-2010

Real price (2015 $USD/t)
Catch (t)


B/B_{REF}
U/U_{REF}
Russia-East Coast -- WPOWLWBS -- Walleye pollock Western Bering Sea

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Russia

Supplementary Figure 1, page 143 of 289
South Africa -- ANCHOSA -- Anchovy South Africa

taxonomic group: pelagic fish (Forage fish), predominant fishery type: mixed-species, primary country: South Africa

Supplementary Figure 1, page 144 of 289

Assessments
TACs
Surveys
IQs
HCR

EEZ declaration

Marine Living Resources Act
UN CA/FSA ratification

TBdivTBmsy-est-dimensionless = 1
TBdivTBmsy-est-dimensionless = 0.5

ERdivERmsy-est-dimensionless = 1

MSY: MSY-est-MT
mean catch: MT

Catch (t)
predictions for taxon:
- Herrings, sardines, anchovies
  > Engraulidae
  > Engraulis
  > Engraulis encrasicolus
  from regions:
  none (100%)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Observed
Predicted

0e+00 1e+00 2e+00 3e+00 4e+00 5e+00 6e+00

0 500 1000 1500
500 1000

0.1 0.5 1.0 2.0

0.1 0.2 0.5 1.0 2.0

0.5 1.0 2.0

Supplementary Figure 1, page 144 of 289
Taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: South Africa

**South Africa -- CHAKESA -- Shallow water cape hake South Africa**

- **Phase**: Mature
- **National/international level**
- **Stock level**

**TACs Assessments**

**HCR IQs Surveys**

**EEZ declaration**

**Marine Living Resources Act**

**UN CA/FSA ratification**

**SSBdivSSBmgt-calc-dimensionless = 0.5**

**Rebuilding plan**

**ERdivERmsy-dimensionless = 1**

**Catch (t)**

**MSY: MSY-MT**

**mean catch: MT**

**Real price (2015 $USD/t)**

**Predictions for taxon:**
- Cods, hakes, haddocks
- Merlucciidae
- Merluccius
- Merluccius capensis
- None (100%)

**Mean predicted price 2001-2010**
South Africa -- CRLOBSTERSA12 -- West coast rock lobster South Africa Areas 1-2

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: South Africa

Supplementary Figure 1,
page 146 of 289

TACs (1946)
Assessments
HCR
Surveys
IQs
EEZ declaration
Marine Living Resources Act
UN CA/FSA ratification
Rebuilding plan

TBdivTBmsy-calc-dimensionless = 1
TBdivTBmsy-calc-dimensionless = 0.5

ERdivERmsy-calc-dimensionless = 1

Catch (t)
Mean catch: MT

Real price (2015 $USD/t)

Predictions for taxon:
Lobsters, spiny-rock lobsters
> Palinuridae
> Jasus
> Jasus lalandii
from regions:
none (100%)

Mean predicted price 2001-2010

B/BREF

U/UREF

TBdivTBmsy-calc-dimensionless = 1

Supplementary Figure 1
page 146 of 289
Supplementary Figure 1

TACs (1946)
Assessments
HCR
Surveys
IQs
EEZ declaration
Marine Living Resources Act
UN CA/FSA ratification
Rebuilding plan

TBdivTBmsy-calc-dimensionless = 1
TBdivTBmsy-calc-dimensionless = 0.5

B/B_{REF}

U/U_{REF}

Catch (t)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Observed
Predicted

predictions for taxon:
Lobsters, spiny-rock lobsters
> Palinuridae
> Jasus
> Jasus lalandii
from regions:
none (100%)

Mean predicted price 2001-2010

MSY: MSY-mvo-MT

Mean predicted price 2001-2010

Supplementary Figure 1, page 147 of 289
South Africa -- CRLOBSTERSA56 -- West coast rock lobster South Africa Areas 5-6

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: South Africa

Mature

Phase

National/ international level

Stock level

TACs (1946)

Assessments

HCR

Surveys

IQs

EEZ declaration

Marine Living Resources Act

UN CA/FSA ratification

Rebuilding plan

TB_{div}/TB_{msy-calc-dimensionless} = 0.5

TB_{div}/TB_{msy-calc-dimensionless} = 1

ER_{div}/ER_{msy-calc-dimensionless} = 1

MSY: MSY-mvo-MT

Mean predicted price 2001-2010

Real price (2015 $USD/t)

predications for taxon:
- Lobsters, spiny-rock lobsters
  - Palinuridae
  - Jasus
  - Jasus lalandii
from regions:
- none (100%)

South Africa -- CRLOBSTERSA56 -- West coast rock lobster South Africa Areas 5-6
taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: South Africa
South Africa -- CRLOBSTERSA7 -- West coast rock lobster South Africa Area 7

- Taxonomic group: invertebrate (Crustaceans)
- Predominant fishery type: single-species
- Primary country: South Africa

**Mature Phase**

- National/international level
- Stock level

**Supplementary Figure 1**

- TACs (1946)
- Assessments
- HCR
- Surveys
- IQs
- EEZ declaration
- Marine Living Resources Act
- UN CA/FSA ratification

- TB$_{div}/TB_{msy}$-calc-dimensionless = 0.5
- TB$_{div}/TB_{msy}$-calc-dimensionless = 1

- B$_{B_{REF}}$
- U$_{U_{REF}}$
- Catch (t)
- Mean predicted price 2001-2010

- Observed
- Predicted

- Mean predicted price 2001-2010
- MSY: MSY-mvo-MT

- Real price (2015 $USD/t)

- Predictions for taxon:
  - Lobsters, spiny-rock lobsters
  - > Palinuridae
  - > Jasus
  - > Jasus lalandii
  - From regions:
    - None (100%)
South Africa -- CRLOBSTERSA8 -- West coast rock lobster South Africa Area 8
taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: South Africa

- TACs (1946)
- Assessments
- HCR
- Surveys
- IQs
- EEZ declaration
- Marine Living Resources Act
- UN CA/FSA ratification
- Rebuilding plan

TB_{div}/TB_{msy-calc-dimensionless} = 1
TB_{div}/TB_{msy-calc-dimensionless} = 0.5

ER_{div}/ER_{msy-calc-dimensionless} = 1

MSY: MSY-mvo-MT
mean catch: MT

- Observed
- Mean predicted price 2001-2010
- Predicted

Predictions for taxon:
- Lobsters, spiny-rock lobsters
- Palinuridae
- Jasus
- Jasus lalandii
from regions:
- none (100%)
South Africa -- CTRACSA -- Cape horse mackerel South Africa South coast

taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: South Africa

Developing  Mature  

Phase  National/international level  Stock level

EEZ declaration  Marine Living Resources Act  UN CA/FSA ratification  

Surveys  Assessments  TACs  IQs

B/BREF  U/UREF

SSBdivSSBmsy-dimensionless = 1  ERdivERmsy-calc-dimensionless = 1

Catch (t)

MSY: MSY-MT  mean catch: MT

Real price (2015 $USD/t)

Predictions for taxon:
- Miscellaneous pelagic fishes
  - Carangidae
  - Trachurus
  - Trachurus capensis
from regions:
- none (100%)

Supplementary Figure 1, page 151 of 289
South Africa -- DEEPCHAKESA -- Deep water cape hake South Africa

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: South Africa

- **TACs Assessments HCR IQs Surveys**
- **EEZ declaration**
- **Marine Living Resources Act**
- **UN CA/FSA ratification**

- **B/BREF**
- **U/UREF**
- **Catch (t)**

- **Real price (2015 $USD/t)**

**Predictions for taxon:**
- Cods, hakes, haddocks
- Merlucciidae
- Merluccius
- Merluccius paradoxus

from regions:
- none (100%)
Supplementary Figure 1, page 153 of 289

Graphs showing the status indicators and management activities for the Kingdom of South Africa's "Kingklip South Africa" fishery. The taxonomic group is demersal fish (Other marine fish), the predominant fishery type is mixed-species, and the primary country is South Africa.

The timeline includes milestones such as EEZ declaration, Marine Living Resources Act, UN CA/FSA ratification, Surveys, Assessments, HCR, TACs, Rebuilding plan, B/B_{EFS}, U/U_{EFS}, Mean predicted price 2001-2010, Observed vs. Predicted, Catch (t), Real price (2015 $USD/t), and predictions for taxon: Miscellaneous demersal fishes, Ophidiidae, Genypterus, Genypterus capensis from regions: none (100%).

The graph indicates a mature phase with a focus on sustainable management practices and economic analysis.
South Africa -- PTOOTHFISHPEI -- Patagonian toothfish South Africa Subantarctic Prince Edward Islands

taxonomic group: pelagic fish (Other marine fish), predominant fishery type: single-species, primary country: South Africa

Supplementary Figure 1,
**South America -- ARGHAKENARG -- Argentine hake Northern Argentina**

taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: Argentina

---

**Phase**

**National/international level**

**Stock level**

---

Surveys

TACs

Assessments

IQs

EEZ declaration

UN CA/FSA ratification

Federal Fisheries Regime

Rebuilding plan

---

**Supplementary Figure 1**

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- **Surveys**
- **TACs**
- **Assessments**
- **IQs**
- **EEZ declaration**
- **UN CA/FSA ratification**
- **Federal Fisheries Regime**
- **Rebuilding plan**

---

**Graphs and Data**

- **B/B_{E0F}**
- **U/U_{E0F}**
- **Catch (t)**
- **Real price (2015 $USD/t)**

---

**MSY: MSY-est-MT**

**mean catch: MT**

**predictions for taxon:**

- Cods, hakes, haddocks
- Merlucciidae
- *Merluccius*
- *Merluccius hubbsi*

- **from regions:**
  - Chile (100%)
South America -- ARGHAKEARG -- Argentine hake Southern Argentina

taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: Argentina

- Mature Phase
- National/international level
- Stock level

Surveys, TACs, Assessments, IQs

EEZ declaration, UN CA/FSA ratification, Federal Fisheries Regime

B/B_{REF}, U/U_{REF}, Rebuilding plan

SSB_{div}/SSB_{mgt-calc-dimensionless} = 1

Fd_{div}/F_{msy-calc-dimensionless} = 1

Catch (t), Mean predicted price 2001-2010

Real price (2015 $USD/t)

predictions for taxon: Cod, hakes, haddocks > Merlucciidae > Merluccius > Merluccius hubbsi from regions: Chile (100%)

Supplementary Figure 1, page 158 of 289
Developing Mature

EEZ declaration (1947)

Fishing and Aquaculture Act

UN CA/FSA ratification

Surveys TACs IQs

Assessments

National/ international level

Stock level

South America -- CHTRACCH -- Chilean jack mackerel Chilean EEZ and offshore
taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: single-species, primary country: Chile

Supplementary Figure 1,
South America -- PANCHPERUNC -- Peruvian anchoveta North-Central Peruvian coast
taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: Peru

Mature Phase
National/international level
Stock level

Supplementary Figure 1, page 160 of 289

TACs
Assessments
Surveys

EEZ declaration (1947)
General Law of Fisheries
UN CA/FSA ratification

TBDivTBmgt-calc-dimensionless = 0.5
TBDivTBmgt-calc-dimensionless = 1

ERdivERmsy-est-dimensionless = 1

Rebuilding plan

Mean predicted price 2001-2010

Catch (t)

Real price (2015 $USD/t)

Observed
Predicted

predictions for taxon:
Herrings, sardines, anchovies
> Engraulidae
> Engraulis
> Engraulis ringens
from regions:
Peru (100%)
South America -- PATGRENADIERCH -- Patagonian grenadier Central-Southern Chile

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Chile

Assessments
Surveys
TACs
IQs

EEZ declaration (1947)
Fishing and Aquaculture Act
UN CA/FSA ratification

SSBdivSSBmsy-calc-dimensionless = 1
SSBdivSSBmsy-calc-dimensionless = 0.5

ERdivERmsy-est-dimensionless = 1

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Cods, hakes, haddocks
> Merlucciidae
> Macruronus
> Macruronus magellanicus
from regions:
Chile (100%)

Supplementary Figure 1, page 161 of 289
Developing Phase
Mature Phase

National/ international level

Stock level

Surveys
TACs
Assessments
IQs

EEZ declaration
UN CA/FSA ratification
Federal Fisheries Regime

B/B_{REF} = 1
F/F_{REF} = 1

Catch (t)

Mean predicted price 2001-2010

Predictions for taxon:
- Cods, hakes, haddocks
- Merlucciidae
- Macruronus
- Macruronus magellanicus
  from regions:
  - Chile (100%)

Supplementary Figure 1, page 162 of 289
Developing/Mature Phase

National/international level

Stock level

Surveys

Assessments

TACs

EEZ declaration

UN CA/FSA ratification

Federal Fisheries Regime

Rebuilding plan

Supplementary Figure 1,
page 163 of 289
South America -- PCEELCSCH -- Pink cusk eel Central-Southern Chile

taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: Chile

---

**Phase**

Mature

**National/international level**

Stock level

---

**EEZ declaration (1947)**

**Fishing and Aquaculture Act**

**UN CA/FSA ratification**

---

**TACs**

Assessments

IQs

---

**SSBdivSSBmsy-calc-dimensionless = 0.5**

**SSBdivSSBmsy-calc-dimensionless = 1**

**FdivFmsy-calc-dimensionless = 1**

---

**Catch (t)**

mean catch: MT

MSY: MSY-est-MT

---

**Real price (2015 $USD/t)**

predictions for taxon:
- Miscellaneous demersal fishes
  - Ophidiidae
  - Genypterus
  - Genypterus blacodes
from regions:
- Chile (100%)
South America -- SBWHITARGS -- Southern blue whiting Southern Argentina
taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: Argentina

Developing
Mature

EEZ declaration
UN CA/FSA ratification
Federal Fisheries Regime
Assessments
TACs
IQs

SSBdivSSBmgt-calc-dimensionless = 1
SSBdivSSBmgt-calc-dimensionless = 0.5
FdivFmgt-calc-dimensionless = 1

mean catch: MT

predictions for taxon:
- Cods, hakes, haddocks
  - Gadidae
  - Micromesistius
  - Micromesistius australis
from regions:
- Chile (100%)

Catch (t)
mean predicted price 2001-2010
Real price (2015 $USD/t)
Observed
Predicted
Supplementary Figure 1, page 165 of 289
South America -- SBWHITCH -- Southern blue whiting Central-Southern Chile
taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: Chile
South America -- SOUTHHAKECH -- Southern hake Central-Southern Chile

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Chile

Developing
Mature

Phase

National/international level

Stock level

Supplementary Figure 1, page 167 of 289

TACs
Assessments
Surveys
IQs

EEZ declaration (1947)
Fishing and Aquaculture Act
UN CA/FSA ratification

B/BREF

U/UREF

SSBdivSSBmgt-calc-dimensionless = 1
FdivFmgt-calc-dimensionless = 1

Catch (t)

Mean catch: MT
MSY: MSY-est-MT

Real price (2015 $USD/t)

Mean predicted price 2001-2010

predictions for taxon:
Cods, hakes, haddocks
> Merlucciidae
> Merluccius
> Merluccius australis
from regions:
Chile (100%)
South America -- SPHAKECH -- South Pacific hake Central-Southern Chile

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: Chile

Developing
Mature

EEZ declaration (1947)
Fishing and Aquaculture Act
UN CA/FSA ratification
TACs
Assessments
Surveys
IQs
HCR

SSBdivSSBmgt-calc-dimensionless = 1
SSBdivSSBmgt-calc-dimensionless = 0.5
FdivFmgt-calc-dimensionless = 1

Catch (t)

Mean predicted price 2001-2010

Real price (2015 $USD/t)

Supplementary Figure 1, page 168 of 289
US-Alaska -- ALPLAICBSAI -- Alaska plaice Bering Sea and Aleutian Islands
taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA
US-Alaska -- ARFLOUNDBSAI -- Arrowtooth flounder Bering Sea and Aleutian Islands
taxonomic group: demersal fish (Pleuronectidae), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1, page 170 of 289
US-Alaska -- ARFOLLOWGA -- Arrowtooth flounder Gulf of Alaska

taxonomic group: demersal fish (Pleuronectidae), predominant fishery type: mixed-species, primary country: USA

Mature

Phase

National/international level

Stock level

Surveys
HCR
TACs
Assessments
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

0.5
1.0
1.5
2.0
2.5
3.0

B/BREF

0.005
0.010
0.020
0.050
0.100
0.200
0.500
1.000
2.000

U/UREF

0
5000
10000
15000
20000
25000
30000
35000

Catch (t)

Mean predicted price 2001-2010

Real price (2015 $USD/t)


Observed
Predicted

predictions for taxon:
Flounders, halibuts, soles
> Pleuronectidae
> Atheresthes
> Atheresthes stomias
from regions:
US.Alaska (100%)

SSBdivSSBmsy-calc-dimensionless = 1

ERdivERmsy-calc-dimensionless = 1

MSY: MSY-est-MT
mean catch: MT

Supplementary Figure 1, page 171 of 289
US-Alaska -- BKINGCRABSMI -- Blue king crab Saint Matthews Island

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: USA

**Mature Phase**

**National/international level**

**Stock level**

**Surveys**

**TACs**

**HCR**

**Assessments**

**IQs**

**EEZ declaration**

**UN CA/FSA ratification**

**Sustainable Fisheries Act**

**SSBdivSSBmsy-calc-dimensionless = 0.5**

**SSBdivSSBmsy-calc-dimensionless = 1**

**ERdivERmsy-est-dimensionless = 1**

**Rebuilding plan**

**MSY: MSY-est-MT**

mean catch: MT

predictions for taxon:
King crabs, squat-lobsters
> Lithodidae
> Paralithodes
> Paralithodes platypus from regions:
US.Alaska (100%)
US-Alaska -- DUSROCKGA -- Dusky rockfish Gulf of Alaska

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Mature

Phase

National/international level

Stock level

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

Surveys

TACs

HCR

Assessments

IQs

B/B_{REF}

F_{DIV} = F_{MSY} - calc - dimensionless = 1

U/U_{REF}

SSB_{DIV} = SSB_{MSY} - calc - dimensionless = 1

Catch (t)

MSY: MSY-est-MT

mean catch: MT

Real price (2015 $USD/t)

predictions for taxon:

Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes variabilis
from regions:
US.Alaska (100%)

Mean predicted price 2001-2010

0 200 400 600 800 1000

0 2000 4000

0 1000 2000 3000 4000

0 0.1 0.2 0.5 1.0 2.0

0 0.5 1.0 1.5 2.0

0 1.0 2.0

0 2.0 1.5 1.0 0.5 0.1


Supplementary Figure 1, page 173 of 289
US-Alaska -- FLSOLEBSAI -- Flathead sole Bering Sea and Aleutian Islands

- Taxonomic group: demersal fish (Pleuronectids)
- Predominant fishery type: mixed-species
- Primary country: USA

**Supplementary Figure 1, page 174 of 289**

- *B*/*B*<sub>EFF</sub>
- *U*/*U*<sub>REF</sub>
- *F*<sub>div</sub>*F*<sub>msy-calc-dimensionless</sub> = 1
- *SSB*<sub>div</sub>*SSB*<sub>msy-calc-dimensionless</sub> = 0.5
- *SSB*<sub>div</sub>*SSB*<sub>msy-calc-dimensionless</sub> = 1
- *F*<sub>div</sub>*F*<sub>msy-calc-dimensionless</sub> = 1
- Mean predicted price 2001-2010
- Observed vs. Predicted

**Stock level**
- EEZ declaration
- HCR
- TACs
- Assessments
- IQs

**National/international level**
- UN CA/FSA ratification
- Sustainable Fisheries Act

**Phase**
- Mature

**Predictions for taxon:**
- Flounders, halibuts, soles
- > Pleuronectidae
- > Hippoglossoides
- > Hippoglossoides elassodon
  - from regions: US.Alaska (100%)
US-Alaska -- GHALBSAI -- Greenland halibut Bering Sea and Aleutian Islands

taxonomic group: demersal fish (Pleuronectidae), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1, page 175 of 289
US-Alaska -- NROCKBSAI -- Northern rockfish Bering Sea and Aleutian Islands

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Phase

National/international level

Stock level

Mature

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

Surveys

HCR

TACs

Assessments

SSBdivSSBmsy-calc-dimensionless = 1

FdivFmsy-calc-dimensionless = 1

MSY: MSY-est-MT

mean catch: MT

predictions for taxon:

Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes polyspinis
from regions:
US.Alaska (100%)

B/B_{EFF}

U/U_{REF}

Catch (t)

Real price (2015 $USD/t)

mean predicted price 2001-2010

Observed

Predicted

Supplementary Figure 1, page 176 of 289
Mature Phase

National/international level

Stock level

Surveys
HCR
TACs
Assessments
IQs

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

SSBdivSSBmsy-calc-dimensionless = 1
SSBdivSSBmsy-calc-dimensionless = 0.5

FdivFmsy-calc-dimensionless = 1

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Flounders, halibuts, soles
> Pleuronectidae
> Lepidopsetta
> Lepidopsetta polyxystra
from regions:
US.Alaska (100%)
US-Alaska -- PCODBS -- Pacific cod Bering Sea

taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: USA

Supplementary Figure 1, page 178 of 289
Developing Mature

Phase National/international level

Stock level

Surveys
Assessments
HCR
TACs
IQs

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

Rebuilding plan

SSBdivSSB\text{msy-calc-dimensionless} = 1

FdivF\text{msy-calc-dimensionless} = 1

mean catch: MT
MSY: MSY-est-MT

predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes alutus
from regions:
US.Alaska (100%)

Observed Predicted
Mean predicted price 2001-2010

Real price (2015 $USD/t)

Catch (t)

Supplementary Figure 1, page 179 of 289
US-Alaska -- PHALNPAC -- Pacific halibut North Pacific
taxonomic group: demersal fish (Pleuronectids), predominant fishery type: single-species, primary country: USA

Supplementary Figure 1

TACs (1931)  Assessments  Surveys  HCR  IQs

EEZ declaration  UN CA/FSA ratification  Sustainable Fisheries Act

Rebuilding plan

SSBdivSSBmgt-calc-dimensionless = 1

FdivFmgt-calc-dimensionless = 1

mean catch: MT

predictions for taxon:
Flounders, halibuts, soles
> Pleuronectidae
> Hippoglossus
> Hippoglossus stenolepis
from regions:
US.Alaska (74%), Canada.Pac (24%), US.West.Coast (2%)

Observed  Predicted

Mean predicted price 2001-2010
Real price (2015 $USD/t)

Catch (t)

0  5000  10000  15000  20000  25000  30000  35000

Supplementary Figure 1, page 180 of 289
US-Alaska -- POPERCHGA -- Pacific ocean perch Gulf of Alaska

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

B/B_{EFF}

U/U_{EFF}

Catch (t)

Real price (2015 $USD/t)

Developing
Mature

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Surveys
Assessments
HCR
TACs
IQs
Rebuilding plan

SSB_{div}SSB_{msy-calc-dimensionless} = 0.5
SSB_{div}SSB_{msy-calc-dimensionless} = 1
ER_{div}ER_{msy-calc-dimensionless} = 1

mean catch: MT
MSY: MSY-MT

predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes alutus
from regions:
US.Alaska (100%)

cref: Supplementary Figure 1, page 181 of 289
US-Alaska -- REYEROCKBSAI -- Rougheye rockfish Bering Sea and Aleutian Islands

- Taxonomic group: Demersal fish (Scorpaenids)
- Predominant fishery type: Mixed-species
- Primary country: USA

### Supplementary Figure 1

- **Phase**
  - National/international level
  - Stock level

- **Surveys**
- **HCR**
- **Assessments**
- **TACs**
- **EEZ declaration**
- **UN CA/FSA ratification**
- **Sustainable Fisheries Act**

#### SSBdivSSBmsy-calc-dimensionless
- 0.5
- 1

#### FdivFmsy-calc-dimensionless
- 1

#### Catch (t)
- Mean predicted price 2001-2010
- Real price (2015 $USD/t)

Predictions for taxon:
- Miscellaneous demersal fishes
- Sebastidae
- Sebastes
- Sebastes aleutianus
- From regions: US.Alaska (100%)
US-Alaska -- RKCRABBB -- Red king crab Bristol Bay

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: USA

Supplementary Figure 1

Surveys

TACs

HCR

Assessments

IQs

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

TB\text{div}\text{TB}_{\text{msy-calc-dimensionless}} = 1

ER\text{div}\text{ER}_{\text{msy-calc-dimensionless}} = 1

MSY: MSY-MT

mean catch: MT

predictions for taxon:
King crabs, squat-lobsters
> Lithodidae
> Paralithodes
> Paralithodes camtschaticus
from regions:
US.Alaska (100%)

Real price (2015 $USD/t)

Observed
Predicted
Mean predicted price 2001-2010

Mean predicted price 2001-2010
US-Alaska -- RKCRABNS -- Red king crab Norton Sound

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: USA

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Developing
  Mature

EEZ declaration

Surveys
TACs

UN CA/FSA ratification
Sustainable Fisheries Act

Sustainable Fisheries Act

0.005
0.010
0.020
0.050
0.100
0.200
0.500
1.000
2.000
5.000

B/BREF

SSBdivSSBmsy-calc-dimensionless = 1

ERdivERmsy-est-dimensionless = 1

Catch (t)

mean catch: MT
MSY: MSY-est-MT

predictions for taxon:
  King crabs, squat-lobsters
> Lithodidae
> Paralithodes
> Paralithodes camtschaticus
from regions:
US.Alaska (100%)

Real price (2015 $USD/t)

Observed
Predicted
Mean predicted price 2001-2010


Mean predicted price 2001-2010
US-Alaska -- SNOWCRABBS -- Snow crab Bering Sea

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: USA

Developing

Mature

EEZ declaration

Surveys

TACs

HCR

Assessments

IQs

UN CA/FSA ratification

Sustainable Fisheries Act

Rebuilding plan

TBdivTBmsy-calc-dimensionless = 1

FdivFmsy-calc-dimensionless = 1

MSY: MSY-est-MT

mean catch: MT

predictions for taxon:
Crabs, sea-spiders
> Oregoniidae
> Chionoecetes
> Chionoecetes opilio
from regions:
US.Alaska (100%)

Catch (t)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

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Developing Mature
Developing

EEZ declaration
Surveys
TACs
HCR
IQs
Assessments

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Rebuilding plan

TBdivTBmsy-calldimensionless = 1
FdIvFmgt-calldimensionless = 1

Catch (t)
mean catch: MT

Mean predicted price 2001-2010

Predictions for taxon:
Crabs, sea-spiders
> Oregoniidae
> Chionoecetes
> Chionoecetes bairdi
from regions:
US.Alaska (100%)

Real price (2015 $USD/t)

0 2000 4000 6000 8000 10000 12000 14000

Observed
Predicted

0 2000 4000 6000 8000 10000 12000 14000

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US-Alaska -- WPOLLAI -- Walleye pollock Aleutian Islands
taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: USA

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US-Alaska -- WPOLLEBS -- Walleye pollock Eastern Bering Sea

taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: USA

Supplementary Figure 1,
page 188 of 289
US-Alaska -- WPOLLGA -- Walleye pollock Gulf of Alaska
taxonomic group: demersal fish (Gadids), predominant fishery type: single-species, primary country: USA

Phase

National/international level

Stock level

Mature

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

TACs

Surveys

Assessments

HCR

SSBdivSSBmsy-calc-dimensionless = 0.5

SSBdivSSBmsy-calc-dimensionless = 1

FdivFmg-calc-dimensionless = 1

MSY: MSY-est-MT

mean catch: MT

Predictions for taxon:
Cod, hake, haddock
> Gadidae
> Gadus
> Gadus chalcogrammus
from regions:
US Alaska (100%)

Catch (t)

Mean predicted price 2001-2010

Real price (2015 $USD/t)

Supplementary Figure 1, page 189 of 289
US-Alaska -- YSOLEBSAI -- Yellowfin sole Bering Sea and Aleutian Islands
taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA

Developing to Mature Phase

National/international level

Stock level

Surveys
TACs
Assessments
HCR
IQs
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

SSB_{div}/SSB_{msy-cal-calc-dimensionless} = 0.5
SSB_{div}/SSB_{msy-cal-calc-dimensionless} = 1

F_{div}/F_{msy-cal-calc-dimensionless} = 1

Catch (t)
MSY: MSY-est-MT
mean catch: MT

Real price (2015 $USD/t)
predictions for taxon:
- Flounders, halibuts, soles
- Pleuronectidae
- Limanda
- Limanda aspera
from regions:
- US.Alaska (100%)

supplementary figure 1, page 190 of 289
US-Northeast -- ACADREDGOMGB -- Acadian redfish Gulf of Maine / Georges Bank
taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Surveys
Assessments
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

B/B_0 = 0.5

U/U_0 = 1

SSBdivSSBmsy-calc-dimensionless = 0.5
SSBdivSSBmsy-calc-dimensionless = 1

FdivFmsy-calc-dimensionless = 1

Catch (t)

MSY: MSY-MT, mean catch: MT

Real price (2015 $USD/t)
predictions for taxon:
  Miscellaneous demersal fishes
    > Sebastidae
    > Sebastes
    > Sebastes fasciatus
  from regions:
    US.New.England (100%)

Mean predicted price 2001-2010

Supplementary Figure 1, page 191 of 289
US-Northeast -- ATHAL5YZ -- Atlantic halibut Gulf of Maine / Georges Bank
taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA

Mature

Phase

National/international level

Stock level

Surveys

HCR

Assessments

TACs

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

TB_{div}/TB_{msy\_calc\_dimensionless} = 0.5

TB_{div}/TB_{msy\_calc\_dimensionless} = 1

Rebuilding plan

B/B_{REF}

U/U_{REF}

Catch (t)

Real price (2015 $USD/t)

mean catch: MT

predictions for taxon:
Flounders, halibuts, soles
> Pleuronectidae
> Hippoglossus
> Hippoglossus hippoglossus
from regions:
US.New.England (100%)

Supplementary Figure 1, page 193 of 289
US-Northeast – ATL-CROAKMATLC -- Atlantic croaker Mid-Atlantic Coast

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1,

Surveys
Assessments
HCR

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

Stock level
National/international level

Mature

Phase

B/B_{Eff}

SSB_{div}/SSB_{msy-calc}-dimensionless = 0.5
SSB_{div}/SSB_{msy-calc}-dimensionless = 1
F_{div}/F_{msy-calc}-dimensionless = 1

U/U_{Eff}

mean catch: MT
MSY: MSY-est-MT

Catch (t)

0 10000 15000 20000
1000 5000
0
0

Real price (2015 $USD/t)

Mean predicted price 2001-2010
Predicted
Observed

0 500 1000 1500 2000
0 500 1000 1500 2000

predictions for taxon:
Miscellaneous coastal fishes
> Sciaenidae
> Micropogonias
> Micropogonias undulatus
from regions:
US.Mid.Atl (100%)


Observed
Predicted

Mature

National/international level

Phase

Surveys

Assessments

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

HCR

Supplementary Figure 1, page 195 of 289

US-Northeast – BCRABCHESB – Blue crab Chesapeake Bay
taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: USA

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Surveys

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

HCR

B/B_{EFF}

U/U_{EFF}

Catch (t)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

predictions for taxon:
Crabs, sea-spiders
> Portunidae
> Callinectes
> Callinectes sapidus
from regions:
US.Mid.Atl (100%)

Supplementary Figure 1, page 195 of 289
US-Northeast -- BLUEFISHATLC -- Bluefish Atlantic Coast

taxonomic group: pelagic fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA
US-Northeast – BSBA"SMATLC – Black sea bass Mid-Atlantic Coast
taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

Phase
- National/international level
- Stock level

Surveys
- Assessments
- HCR
- TACs
- EEZ declaration
- UN CA/FSA ratification
- Sustainable Fisheries Act
- Rebuilding plan

Supplementary Figure 1,
page 197 of 289

### Catch (t)
- Observed
- Predicted

### Real price (2015 $USD/t)
- Predictions for taxon:
  - Miscellaneous coastal fishes
  - > Serranidae
  - > Centropristis
  - > Centropristis striata
  - from regions:
    - US.Mid.Atl (100%)

### Mean predicted price 2001-2010
US-Northeast -- CODGB -- Atlantic cod Georges Bank

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: USA

Surveys
Assessments
HCR
TACs
IQs
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Rebuilding plan

B/B_{REF} = 0.5
B/B_{REF} = 1

U/U_{REF} = 1
U/U_{REF} = 1

Catch (t)
MSY: MSY-MT
mean catch: MT

Mean predicted price 2001-2010
Predictions for taxon:
- Cods, hakes, haddocks
- Gadidae
- Gadus
- Gadus morhua
from regions:
- US.New.England (100%)

Supplementary Figure 1, page 198 of 289
US-Northeast -- CODGOM -- Atlantic cod Gulf of Maine

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1, page 199 of 289
US-Northeast – HAD5Y – Haddock Gulf of Maine

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: USA

Surveys
HCR
Assessments
TACs
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

Rebuilding plan

SSBdivSSBmsy-calc-dimensionless = 1
SSBdivSSBmsy-calc-dimensionless = 0.5

FdivFmsy-calc-dimensionless = 1

Mean predicted price 2001-2010

Predictions for taxon:
- Cods, hakes, haddocks
- > Gadidae
- > Melanogrammus
- > Melanogrammus aeglefinus
  from regions:
- US.New.England (100%)

Mean catch: MT
MSY: MSY-MT

Catch (t)

Real price (2015 $USD/t)

Supplementary Figure 1, page 200 of 289
US-Northeast – HADGB – Haddock Georges Bank

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: USA

**Phase**
- Mature

**National/international level**
- Stock level

**Surveys**
- Assessments
- HCR
- TACs
- IQs
- EEZ declaration
- UN CA/FSA ratification
- Sustainable Fisheries Act

**SSBdivSSBmsy-calc-dimensionless = 0.5**

**SSBdivSSBmsy-calc-dimensionless = 1**

**FdivFmsy-calc-dimensionless = 1**

**Catch (t)**
- MSY: MSY-MT
- mean catch: MT

**Real price (2015 $USD/t)**
- Predictions for taxon:
  - Cods, hakes, haddocks
  - > Gadidae
  - > Melanogrammus
  - > Melanogrammus aeglefinus
  - from regions:
    - US.New.England (100%)

**Mean predicted price 2001-2010**

**Supplementary Figure 1**, page 201 of 289
US-Northeast -- HERRNWATLC -- Herring Northwestern Atlantic Coast

taxonomic group: pelagic fish (Forage fish), predominant fishery type: single-species, primary country: USA

Supplementary Figure 1,
page 202 of 289
US-Northeast – LISQUIDATLC -- Longfin inshore squid Atlantic Coast

taxonomic group: invertebrate (Molluscs), predominant fishery type: single-species, primary country: USA

Supplementary Figure 1, page 203 of 289
US-Northeast -- LOBSTERTGOM -- American lobster Gulf of Maine

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: USA

**Mature Phase**

**National/international level**

Stock level

---

Surveys: EEZ declaration, UN CA/FSA ratification, Sustainable Fisheries Act

Assessments: HCR, SSBdivSSBmsy-calc-dimensionless

Rebuilding plan

---

**Graphs:**

- B/B_{ref} vs. time
- U/U_{ref} vs. time
- Mean catch vs. time
- Real price vs. time

---

Predictions for taxon: Lobsters, spiny-rock lobsters > Nephropidae > Homarus > Homarus americanus from regions: US.New.England (100%)

---

Mean predicted price 2001-2010

Observed - Predicted

---

Supplementary Figure 1, page 204 of 289
Mature Phase

National/international level

Stock level

**Surveys**

**Assessments**

**HCR**

**TACs**

**EEZ declaration**

**UN CA/FSA ratification**

**Sustainable Fisheries Act**

**SSBdivSSBmgt-calc-dimensionless = 0.5**

**SSBdivSSBmgt-calc-dimensionless = 1**

**FdivFmgt-calc-dimensionless = 1**

**Catch (t)**

**MSY: MSY-est-MT**

mean catch: MT

predictions for taxon:

- Herrings, sardines, anchovies
  - > Clupeidae
  - > Brevoortia
  - > Brevoortia tyrannus

from regions:

- US.Mid.Atl (81.7%), US.South.Atl (15.3%), US.New.England (3%)

**Mean predicted price 2001-2010**

- **Real price (2015 $USD/t)**
US-Northeast -- PANDALGOM -- Northern shrimp Gulf of Maine

taxonomic group: invertebrate (Crustaceans), predominant fishery type: single-species, primary country: USA
Developing Phase

Mature Phase

Surveys
Assessments
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

HCR
TACs

Developing

Mature

National/ international level

Stock level

US-Northeast -- POLL5YZ -- Pollock Gulf of Maine / Georges Bank
taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1, page 207 of 289
US-Northeast -- SCALL5ZMAB -- Sea scallop Georges Bank and Mid-Atlantic Bight

taxonomic group: invertebrate (Molluscs), predominant fishery type: single-species, primary country: USA

Supplementary Figure 1, page 208 of 289

Predictions for taxon:
Scallops, pectens
> Pectinidae
> Placopecten
> Placopecten magellanicus
from regions:
US.New.England (65.5%),
US.Mid.Atl (34.5%)
US-Northeast -- SFLOUNMATLC -- Summer flounder Mid-Atlantic Coast
taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1, page 210 of 289
US-Northeast -- TILEMATLC -- Tilefish Mid-Atlantic Coast
taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: single-species, primary country: USA

Supplementary Figure 1, page 212 of 289
US-Northeast -- WHAKEGBGOM -- White hake Gulf of Maine / Georges Bank

taxonomic group: demersal fish (Gadids), predominant fishery type: mixed-species, primary country: USA

- Mature
- National/international level
- Stock level

Surveys

Assessments

HCR

TACs

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

Rebuilding plan

SSBdivSSBmsy-calc-dimensionless = 0.5

SSBdivSSBmsy-calc-dimensionless = 1

FdivFmsy-calc-dimensionless = 1

MSY: MSY-MT

mean catch: MT

Predictions for taxon:
- Cods, hakes, haddocks
  > Phycidae
  > Urophycis
  > Urophycis tenuis
  from regions:
  - US.New.England (100%)

Mean predicted price 2001-2010


Real price (2015 $USD/t)

Observed

Predicted

Supplementary Figure 1, page 213 of 289
US-Northeast -- WINDOWGOMGB -- Windowpane flounder Gulf of Maine / Georges Bank

taxonomic group: demersal fish (Pleuronectids),  predominant fishery type: mixed-species,  primary country: USA

Surveys

HCR

TACs

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

Rebuilding plan

B/B_{EFF}

U/U_{EFF}

Catch (t)

Real price (2015 $USD/t)

Mature

Phase

National/ international level

Stock level

TBdivTB_{msy-cal-c-dimensionless} = 1

TBdivTB_{msy-cal-c-dimensionless} = 0.5

ERdivER_{msy-cal-c-dimensionless} = 1

Mean predicted price 2001-2010

Mean predicted price 2001-2010

Predictions for taxon: Flounders, halibuts, soles > Scophthalmidae > Scophthalmus > Scophthalmus aquosus from regions: US.New.England (100%)

0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
8500
9000
9500
10000
10500
11000
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31000
31500
32000
32500
33000
33500

Observed

Predicted

Supplementary Figure 1, page 214 of 289
taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1,
page 215 of 289
US-Northeast -- WINFLOUN5Z -- Winter flounder Georges Bank

- Taxonomic group: demersal fish (Pleuronectids)
- Predominant fishery type: mixed-species
- Primary country: USA

**Diagrams:**
- B/B_{REF} and U/U_{REF} vs. time
- Catch (t) vs. time
- Real price (2015 $USD/t) vs. time

**Key Events:**
- Surveys
- Assessments
- HCR
- TACs
- EEZ declaration
- UN CA/FSA ratification
- Sustainable Fisheries Act
- Rebuilding plan

**Key Metrics:**
- SSB_{DIV}/SSB_{MSY-calculated, dimensionless} = 0.5
- F_{DIV}/F_{MSY-calculated, dimensionless} = 1
- MSY: MSY-MT
- Mean catch: MT

**Predictions:**
- For taxon: Flounders, halibuts, soles
  - > Pleuronectidae
  - > Pseudopleuronectes
  - > Pseudopleuronectes americanus
- From regions: US.New.England (100%)
US-Northeast -- WINFLOUNSNEMATL -- Winter flounder Southern New England /Mid Atlantic

taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1
US-Northeast -- WITFLOUN5Y -- Witch flounder Gulf of Maine

taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1,
page 218 of 289
US-Northeast -- YELLCODGOM -- Yellowtail flounder Cape Cod / Gulf of Maine

taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA

Surveys
Assessments
HCR
TACs
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Rebuilding plan
SSBdivSSBmsy-calc-dimensionless = 0.5
SSBdivSSBmsy-calc-dimensionless = 1
FdivFmsy-calc-dimensionless = 1

Catch (t)

Mean catch: MT
MSY: MSY-MT

Mean predicted price 2001-2010

Predictions for taxon:
- Flounders, halibuts, soles
- > Pleuronectidae
- > Limanda
- > Limanda ferruginea
from regions:
- US.New.England (100%)

Real price (2015 $USD/t)

Observed
Predicted

Supplementary Figure 1, page 219 of 289
US-Northeast -- YELLGB -- Yellowtail flounder Georges Bank

taxonomic group: demersal fish (Pleuronectidae), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1,
US-Northeast -- YELLSNEMATL -- Yellowtail flounder Southern New England /Mid Atlantic
taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA

Surveys

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

Supplementary Figure 1, page 221 of 289

B/B_REF

U/U_REF

Catch (t)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Pre德州

Observed

Predicted

Predictions for taxon:
> Flounders, halibuts, soles
> Pleuronectidae
> Limanda
> Limanda ferruginea
from regions:
US.Mid.Atl (100%)

SSBdivSSBmsy-calc-dimensionless = 0.5

SSBdivSSBmsy-calc-dimensionless = 1

FdivFmsy-calc-dimensionless = 1

Rebuilding plan

TACs

HCR

Assessments

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

Supplementary Figure 1, page 221 of 289
Developing

Mature

Surveys

Assessments

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

National/ international level

Stock level

Supplementary Figure 1,
page 222 of 289

US-Southeast -- BHEADSHARATL -- Bonnethead shark Atlantic
taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: USA

B/B_{REF}

F/F_{REF}

Catch (t)

Real price (2015 $USD/t)

mean catch: MT

predictions for taxon:
Sharks, rays, chimaeras
> Sphyrnidae
> Sphyrna
> Sphyrna tiburo
from regions:
US.South.Atl (93.3%),
US.Gulf.Mexico (6.7%)

SSB_{div}SSB_{msy-calc-dimensionless} = 1

USDivUSD_{msy-calc-dimensionless} = 1

Observed
Predicted

Mean predicted price 2001-2010
US-Southeast -- BLACKGROUPERGMSATL -- Black grouper Gulf of Mexico and South Atlantic
taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

[Diagram showing various metrics and phases related to fisheries management, including B/BREF, U/UREF, catch (t), and real price (2015 $USD/t) over time.]

Supplementary Figure 1, page 223 of 289
US-Southeast -- BNOSESHARATL -- Blacknose shark Atlantic

taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: USA

Developing Phase

Mature Phase

National/international level

Stock level

Surveys

Assessments

TACs

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

Rebuilding plan

SSBdiv/SSBmsy-calc-dimensionless = 1

Fdiv/Fmgt-calc-dimensionless = 1

MSY: MSY-MT

mean catch: MT

predictions for taxon:
Sharks, rays, chimaeras
> Carcharhinidae
> Carcharhinus
> Carcharhinus acronotus
from regions:
US.South.Atl (86.5%), US.Gulf.Mexico (13.5%)

0.5
1.0
1.5
2.0
2.5
0.05
0.10
0.20
0.50
1.00

B/BREF

U/UREF

Catch (t)

Real price (2015 $USD/t)

Mean predicted price 2001-2010
Developing
Mature
National/international level
Stock level

US-Southeast -- BRNSHRIMPGM -- Brown shrimp Gulf of Mexico
taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1, page 225 of 289

Assessments
Surveys
HCR
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

SSBdivSSBmsy-calc-dimensionless = 1
FdivFmsy-calc-dimensionless = 1

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Shrimps, prawns
> Penaeidae
> Penaeus
> Penaeus aztecus
from regions:
US.Gulf.Mexico (100%)

Observed
Predicted
Mean predicted price 2001-2010

Real price (2015 $USD/t)

Catch (t)

B/BREF

U/UREF

1.00
0.50
0.20
0.10
0.05
0.0

0 2000 4000 6000 8000

Mean predicted price 2001-2010
US-Southeast -- BSBASSSATL -- Black sea bass South Atlantic

taxonomic group: demersal fish (Other marine percoidids)
predominant fishery type: mixed-species
primary country: USA
**US-Southeast -- GAGGM -- Gag Gulf of Mexico**

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

**Phase**

**National/international level**

**Stock level**

---

**Surveys**

**Assessments**

**HCR**

**TACs**

**IQs**

**EEZ declaration**

**UN CA/FSA ratification**

**Sustainable Fisheries Act**

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**SSBdivSSBmgt-calc-dimensionless = 0.5**

---

**Rebuilding plan**

---

**SSBdivSSBmgt-calc-dimensionless = 1**

---

**FdivFmgt-calc-dimensionless = 1**

---

**MSY: MSY-est-MT**

**mean catch: MT**

---

**predictions for taxon:**

- Miscellaneous coastal fishes
- > Serranidae
- > Mycteroperca
- > Mycteroperca microlepis

from regions:

- US.Gulf.Mexico (100%)

---

**Mean predicted price 2001-2010**

---

**Observed**

**Predicted**

---

**Real price (2015 $USD/t)**

---

**Catch (t)**

---

**Real price (2015 $USD/t)**

---

**Mean predicted price 2001-2010**

---

**Supplementary Figure 1, page 227 of 289**
Developing Phase

Mature Phase

National/international level

Stock level

US-Southeast -- GAGSATLC -- Gag Southern Atlantic coast

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1,

page 228 of 289
US-Southeast -- GRAMBERGM -- Greater amberjack Gulf of Mexico

taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: USA

Developing Phase

National/international level

Supplementary Figure 1, page 229 of 289
Developing
Mature

Phase
National/international level
Stock level

US-Southeast -- KMACKGM -- King mackerel Gulf of Mexico
taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: USA

Stock level

Surveys
Assessments
HCR
TACs
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Rebuilding plan

B/BREF

SSBdivSSBmgt-calc-dimensionless = 1

U/UREF

FdivFmgt-calc-dimensionless = 1

Catch (t)

mean catch: MT

0 500 1000 1500 2000 2500

Real price (2015 $USD/t)

0 1000 2000 3000 4000 5000

Supplementary Figure 1, page 231 of 289
US-Southeast -- MUTSNAPSATLCGM -- Mutton snapper Southern Atlantic coast and Gulf of Mexico

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA
US-Southeast -- RGROUPSATL -- Red grouper South Atlantic

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

Mature Phase
National/international level
Stock level

Supplementary Figure 1, page 233 of 289
US-Southeast -- RPORGYSATLC -- Red porgy Southern Atlantic coast

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

Developing Phase -- Mature Phase

National/international level

Stock level

Surveys

HCR Assessments

TACs

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

Rebuilding plan

SSB_{div}/SSB_{msy-calc-dimensionless} = 1

SSB_{div}/SSB_{msy-calc-dimensionless} = 0.5

ER_{div}/ER_{msy-calc-dimensionless} = 1

Catch (t)

MSY: MSY-MT

mean catch: MT

Real price (2015 $USD/t)

predictions for taxon:
- Miscellaneous coastal fishes
- > Sparidae
- > Pagrus
- > Pagrus pagrus
from regions:
US.South.Atl (100%)

Supplementary Figure 1, page 234 of 289
US-Southeast -- RSNAPGM -- Red snapper Gulf of Mexico

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

Developing

Mature

EEZ declaration

Surveys

HCR

TACs

Sustainable Fisheries Act

UN CA/FSA ratification

Sustainable Fisheries Act

Sustainable Fisheries Act

SSB\textsubscript{div}\textsubscript{SSB\textsubscript{msy-calc-dimensionless}} = 1

SSB\textsubscript{div}\textsubscript{SSB\textsubscript{msy-calc-dimensionless}} = 0.5

Rebuilding plan

IQs

ER\textsubscript{div}\textsubscript{ER\textsubscript{mgt-calc-dimensionless}} = 1

Catch (t)

Mean predicted price 2001-2010

Predictions for taxon:

Miscellaneous coastal fishes

> Lutjanidae

> Lutjanus

> Lutjanus campechanus

from regions:

US.Gulf.Mexico (100%)

Real price (2015 $USD/t)

Supplementary Figure 1, page 235 of 289
US-Southeast -- RSNAPSATLC -- Red snapper Southern Atlantic coast

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA
US-Southeast -- SBARSHARATL -- Sandbar shark Atlantic

taxonomic group: demersal fish (Other marine fish), predominant fishery type: mixed-species, primary country: USA

Developing

Mature

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Surveys
Assessments
TACs
Rebuilding plan

SSBdivSSBmsy-calc-dimensionless = 0.5
SSBdivSSBmsy-calc-dimensionless = 1
FdivFmsy-calc-dimensionless = 1
Mean predicted price 2001-2010

Real price (2015 $USD/t)

Observed
Predicted
Mean predicted price 2001-2010

Catch (t)

0 500 1000 1500 2000 2500

mean catch: MT
MSY: MSY-MT
predictions for taxon: Sharks, rays, chimaeras
>Carcharhinidae
>Carcharhinus
>Carcharhinus plumbeus from regions: US.Gulf.Mexico (48.3%), US.South.Atl (46.8%), US.Mid.Atl (5%)

Supplementary Figure 1, page 237 of 289
US-Southeast -- SNOWGROUPSATLC -- Snowy grouper Southern Atlantic coast
taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

Developing M mature Phase
National/ international level
Stock level

Surveys HCR TACs Assessments
EEZ declaration UN CA/FSA ratification Sustainable Fisheries Act

SSBdivSSBmsy-calc-dimensionless = 1
SSBdivSSBmsy-calc-dimensionless = 0.5

ERdivERmsy-calc-dimensionless = 1

Catch (t)

MSY: MSY-MT mean catch: MT

predictions for taxon:
Miscellaneous coastal fishes
> Serranidae
> Hyporthodus
> Hyporthodus niveatus
from regions:
US.South.Atl (100%)

Real price (2015 $USD/t)

Observed Predicted
Mean predicted price 2001-2010

Supplementary Figure 1, page 238 of 289
US-Southeast -- SPANMACKGM -- Spanish mackerel Gulf of Mexico

taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: USA

Developing

Mature

Phase

National/international level

Stock level

EEZ declaration

UN CA/FSA ratification

Sustainable Fisheries Act

HCR

TACs

Surveys

Assessments

SSBdivSSBmsy-calc-dimensionless = 1

FdivFmsy-calc-dimensionless = 1

mean catch: MT

MSY: MSY-est-MT

predictions for taxon:

Tunas, bonitos, billfishes

> Scombridae

> Scomberomorus

> Scomberomorus maculatus

from regions:

US.Gulf.Mexico (100%)

Real price (2015 $USD/t)

Catch (t)

Observed

Predicted

Mean predicted price 2001-2010
Developing

Phase

Mature

National/ international level

Stock level

US-Southeast -- SPANMACKSATLC -- Spanish mackerel Southern Atlantic coast
taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: USA

HCR TACs Surveys Assessments

EEZ declaration

UN CA/FSA ratification Sustainable Fisheries Act

Sustainable Fisheries Act

0.5 1.0 1.5 2.0

B/B_{REF}

0.2 0.5 1.0 2.0

U/U_{REF}

0

Catch (t)

5000 4000 3000 2000 1000

MSY: MSY-MT mean catch: MT

predictions for taxon:
Tunas, bonitos, billfishes
> Scombridae
> Scomberomorus
> Scomberomorus maculatus
from regions:
US.South.Atl (100%)

SSB_{div}/SSB_{mgt-calc-dimensionless} = 1

F_{div}/F_{mgt-calc-dimensionless} = 1

Mean predicted price 2001-2010

Real price (2015 $USD/t)
US-Southeast -- TILESATLC -- Tilefish Southern Atlantic coast

taxonomic group: demersal fish (Other marine percoidids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1.
US-Southeast -- WSHRIMPGM -- White shrimp Gulf of Mexico

taxonomic group: invertebrate (Crustaceans), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1, page 242 of 289
US-West Coast -- BLACKROCKWASH -- Black rockfish Washington

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1,
page 243 of 289
Developing Mature

Phase

National/international level

Stock level

Supplementary Figure 1, page 244 of 289

US-West Coast -- BLUEROCKCAL -- Blue rockfish California
taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

B/B_{	ext{REF}}

SSB_{	ext{div}}SSB_{	ext{msy-calc-dimensionless}} = 1

SSB_{	ext{div}}SSB_{	ext{msy-calc-dimensionless}} = 0.5

U/U_{	ext{REF}}

F_{	ext{div}}F_{	ext{msy-calc-dimensionless}} = 1

Catch (t)

MSY: MSY-MT
mean catch: MT

Real price (2015 $USD/t)
predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes mystinus
from regions:
US.West.Coast (100%)

Mean predicted price 2001-2010

Observed Predicted


Supplementary Figure 1, page 244 of 289
US-West Coast -- BOCACCSPCOAST -- Bocaccio Southern Pacific Coast

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Mature Phase

National/international level

Stock level

Surveys
Assessments
HCR
TACs
IQs
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

TBdivTBmsy-est-dimensionless = 0.5
TBdivTBmsy-est-dimensionless = 1

FdivFmsy-calc-dimensionless = 1

Rebuilding plan

TBdivTBmsy-est-dimensionless = 0.5

B/BREF

U/UREF

Catch (t)

Mean predicted price 2001-2010
Predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes paucispinis
from regions:
US.West.Coast (100%)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Supplementary Figure 1, page 245 of 289
US-West Coast -- CABEZSCAL -- Cabezon Southern California

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1,
Developing
Mature

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Surveys
Assessments
HCR
TACs
IQs

B/B_{REF} = 1
F_{div}F_{msy-calc-dimensionless} = 1
SSB_{div}SSB_{msy-calc-dimensionless} = 1

Catch (t)

Mean predicted price 2001-2010
Real price (2015 $USD/t)

Observed
Predicted

Mean predicted price 2001-2010

predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes goodei
from regions:
US.West.Coast (100%)
US-West Coast -- CMACKPCOAST -- Pacific chub mackerel Pacific Coast
taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: USA

Surveys
TACs
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

Rebuilding plan
HCR
Assessments

SSB_{divSSB_{msy-calc-dimensionless}} = 0.5
SSB_{divSSB_{msy-calc-dimensionless}} = 1

B_{B_{REF}}

U_{U_{REF}}

Catch (t)

Real price (2015 $USD/t)

Mean predicted price, 2001-2010

Predictions for taxon:
- Miscellaneous pelagic fishes
- Scombridae
- Scomber
- Scomber japonicus
  from regions:
  - US.West.Coast (100%)

Supplementary Figure 1, page 248 of 289
US-West Coast -- COWCODSCAL -- Cowcod Southern California

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1,
page 249 of 289

Assessments
HCR
TACs
Surveys
IQs
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
SSBdivSSBmgt-calc-dimensionless = 1
SSBdivSSBmgt-calc-dimensionless = 0.5
ERdivERmgt-calc-dimensionless = 1
mean catch, MT
MSY, MST-MT
predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes levis
from regions:
US.West.Coast (100%)
US-West Coast -- CROCKPCOAST -- Canary rockfish Pacific Coast

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1, page 250 of 289

Surveys
Assessments
HCR
TACs
IQs
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Rebuilding plan

B/B_{EFF}
U/U_{EFF}
Catch (t)
Real price (2015 $USD/t)

predictions for taxon:
  Miscellaneous demersal fishes
  > Sebastidae
  > Sebastes
  > Sebastes pinniger
  from regions:
  US.West.Coast (100%)
Developing Mature

National/ international level

Stock level

Surveys HCR Assessments TACs IQs

EEZ declaration UN CA/FSA ratification Sustainable Fisheries Act

SSBdivSSBmsy-calc-dimensionless = 1 SSBdivSSBmsy-calc-dimensionless = 0.5

FdivFmsy-calc-dimensionless = 1

B/Bref SSBdivSSBmsy-calc-dimensionless = 0.5

U/Uref

Catch (t)

Real price (2015 $USD/t)

predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes crameri
from regions:
US.West.Coast (100%)

Observed Predicted Mean predicted price 2001-2010

Supplementary Figure 1, page 251 of 289
US-West Coast -- GRSPROCKNCAL -- Greenspotted rockfish Northern Pacific Coast
taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Developing
Mature

Phase

National/ international level

Stock level

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Surveys
Assessments
HCR

SSBdivSSBmsy-calc-dimensionless = 1
SSBdivSSBmsy-calc-dimensionless = 0.5
ERdivERmsy-calc-dimensionless = 1

B/B_{REF}
U/U_{REF}
Catch (t)

Mean predicted price 2001-2010
Mean predicted price 2001-2010

Real price (2015 $USD/t)

observed
predicted
predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes chlorostictus
from regions:
US.West.CCoeast (100%)
US-West Coast -- GRSPROCKSCAL -- Greenspotted rockfish Southern Pacific Coast
taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Developing Phase

Mature

National/international level

Stock level

Supplementary Figure 1, page 253 of 289
US-West Coast -- LINGCODNPOAST -- Lingcod Northern Pacific Coast

Taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Developing Phase

Mature Phase

Supplementary Figure 1, page 254 of 289
US-West Coast -- LINGCODSPCOAST -- Lingcod Southern Pacific Coast

taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Supplementary Figure 1,
page 255 of 289
Developing Mature

National/international level

Stock level

Surveys Assessments HCR TACs IQs

EEZ declaration

UN CA/FSA ratification Sustainable Fisheries Act

Rebuilding plan

SSB\text{div}\text{SSBmgmt-calc-dimensionless} = 1

ER\text{div}\text{ERmgmt-calc-dimensionless} = 1

MSY: MSY-MT

mean catch: MT

predictions for taxon: Cods, hakes, haddocks > Merlucciidae > Merluccius > Merluccius productus from regions: US.West.Coast (77.9%), Canada.Pac (22.1%)

observed

predicted

Mean predicted price 2001-2010

Real price (2015 $USD/t)

Catch (t)

B/B_{\text{REF}}

U/U_{\text{REF}}


Observed Predicted

0e+00 1e+05 2e+05 3e+05 4e+05

0 50 100 150 200 250 300 350

0 1.0 1.5 2.0 2.5

0 0.5 1.0 1.5 2.0

0 0.2
US-West Coast -- POPERCHPCOAST -- Pacific ocean perch Pacific Coast
taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA

Developing Phase
Mature Phase

National/international level

Stock level

Supplementary Figure 1, page 257 of 289

Assessments
Surveys
HCR
TACs
IQs

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

Rebuilding plan

SSBdivSSBmsy-calc-dimensionless = 1
SSBdivSSBmsy-calc-dimensionless = 0.5

ERdivERmsy-calc-dimensionless = 1

Catch (t)
Mean predicted price 2001-2010
Observed Predicted

Real price (2015 $USD/t)

Mean catch: MT
MSY: MSY-MT

predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes alutus
from regions:
US.West.Coast (100%)

0 500 1000 1500 2000 2500 3000 3500
0 500 1000 1500 2000 2500 3000
0 0.5 1.0 1.5 2.0 2.5
0 0.2 0.5 1.0 2.0 5.0 10.0
0 5000 10000 15000 20000
0 0.5 1.0 1.5 2.0 2.5
0 0.5 1.0 1.5 2.0 2.5
0 0.5 1.0 1.5 2.0 2.5
0 0.5 1.0 1.5 2.0 2.5
US-West Coast -- PSOLECOAST -- Petrale sole Pacific Coast

taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA
US-West Coast -- SARDPCOAST -- Pacific sardine Pacific Coast

taxonomic group: pelagic fish (Forage fish), predominant fishery type: mixed-species, primary country: USA

Surveys
TACs
Assessments
HCR
EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

TBdivTBmsy-est-dimensionless = 1
TBdivTBmsy-est-dimensionless = 0.5
ERdivERmsy-est-dimensionless = 1

Rebuilding plan

Predictions for taxon:
Herrings, sardines, anchovies
> Clupeidae
> Sardinops
> Sardinops sagax
from regions:
US.West.Coast (100%)
US-West Coast -- STFLOUNSPCOAST -- Starry flounder Southern Pacific Coast
taxonomic group: demersal fish (Pleuronectids), predominant fishery type: mixed-species, primary country: USA

Developing
Mature

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act
Assessments
HCR
TACs
IQs

TBdivTBmsy-calc-dimensionless = 1
ERdivERmsy-calc-dimensionless = 1

observed
predicted

Mean predicted price 2001-2010
predictions for taxon:
Flounders, halibuts, soles
> Pleuronectidae
> Platichthys
> Platichthys stellatus
from regions:
US.West.Coast (100%)

Catch (t)
Real price (2015 $USD/t)
Developing

Mature

Phase

National/ international level

Stock level

Surveys
Assessments
HCR
TACs
IQs

EEZ declaration
UN CA/FSA ratification
Sustainable Fisheries Act

HCR
TACs
IQs

Rebuilding plan

Sustainable Stock level

B/B_{RE}

SSB_{divSSBmsy-calc-dimensionless} = 0.5

F_{divFmsy-calc-dimensionless} = 1

mean catch: MT
MSY: MSY-est-MT

Real price (2015 $USD/t)

Mean predicted price 2001-2010

predictions for taxon:
Miscellaneous demersal fishes
> Sebastidae
> Sebastes
> Sebastes ruberrimus
from regions:
US.West.Coast (100%)

Catch (t)

Predicted
Observed

Real price (2015 $USD/t)

Mean predicted price 2001-2010

mean catch: MT
MSY: MSY-est-MT

US-West Coast -- YEYEROCKPCOAST -- Yelloweye rockfish Pacific Coast
taxonomic group: demersal fish (Scorpaenids), predominant fishery type: mixed-species, primary country: USA
West Africa -- CHMACKWA -- Cunene horse mackerel West Africa
taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Mauritania

Supplementary Figure 1, page 263 of 289

![Graph showing immature, mature, and national/international phases with stock levels, EEZ declaration, UN CA/FSA ratification, Surveys, Assessments, TACs, IQs, Biological/Breference, U/Freference, Catch (t), Real price (2015 $USD/t).]

Predictions for taxon:
- Miscellaneous pelagic fishes
  - > Carangidae
  - > Trachurus
  - > Trachurus trecae
from regions:
- none (100%)
West Africa -- CMACKWA -- Chub mackerel West Africa
taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Morocco

Supplementary Figure 1,
page 264 of 289
West Africa -- HMACKWA -- Horse mackerel West Africa

taxonomic group: pelagic fish (Carangids and mackerels), predominant fishery type: mixed-species, primary country: Morocco

Supplementary Figure 1,
West Africa -- SARDINWA -- Sardinella West Africa

taxonomic group: pelagic fish (Forage fish), predominant fishery type: mixed-species, primary country: Senegal

Supplementary Figure 1,
West Africa -- SARDWAZC -- Sardine West Africa Zone C

taxonomic group: pelagic fish (Forage fish), predominant fishery type: mixed-species, primary country: Morocco

Surveys
Assessments
TACs
IQs
EEZ declaration
UN CA/FSA ratification

TB_{divTB_{msy-calc-dimensionless}} = 1
TB_{divTB_{msy-calc-dimensionless}} = 0.5

F_{divF_{msy-calc-dimensionless}} = 1

Catch (t)
Mean predicted price 2001-2010
Real price (2015 $USD/t)

predictions for taxon:
Herrings, sardines, anchovies
> Clupeidae
> Sardina
> Sardina pilchardus
from regions:
none (100%)
Tuna RFMOs -- ALBANATL -- Albacore tuna Northern Atlantic

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Spain

Assessments

TACs

ICCAT

UN CA/FSA ratification

TBdivTBmsy-dimensionless = 1

FdivFmsy-dimensionless = 1

Catch (t)

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Tunas, bonitos, billfishes
> Scombridae
> Thunnus
> Thunnus alalunga
from regions:
EU.Spain (63.6%), EU.France (18%), EU.Ireland (9.4%),
EU.Portugal (4.7%), Japan (2.8%),
EU.UK (0.3%), US.Mid.Atl (0.3%),
US.South.Atl (0.3%), Canada.Atl (0.1%), US.New.England (0.1%)

Real price (2015 $USD/t)

mean predicted price 2001-2010

Observed
Predicted

Supplementary Figure 1, page 268 of 289
Tuna RFMOs -- ALBASATL -- Albacore tuna South Atlantic

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Taiwan

Developing

Mature

ICCAT
Assessments
TACs

TBdivTBmsy-dimensionless = 1

FdivFmsy-dimensionless = 1

MSY: MSY-MT
mean catch: MT

predictions for taxon:
Tunas, bonitos, billfishes
> Scombridae
> Thunnus
> Thunnus alalunga
from regions:
Japan (71.2%), EU.Spain (22.2%),
Philippines (4.2%), EU.Portugal (2.4%)

Catch (t)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Supplementary Figure 1, page 269 of 289
Tuna RFMOs -- ATBTUNAEATL -- Atlantic bluefin tuna Eastern Atlantic

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: single-species, primary country: Spain

Supplementary Figure 1, page 270 of 289
Tuna RFMOs -- ATBTUNAWATL -- Atlantic bluefin tuna Western Atlantic
taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: single-species, primary country: USA

Assessments
TACs
ICCAT
UN CA/FSA ratification

Rebuilding plan
SSBdivSSBmgt-calc-dimensionless = 1
SSBdivSSBmgt-calc-dimensionless = 0.5

FdivFmsy-dimensionless = 1

Catch (t)
mean catch: MT
MSY: MSY-est-MT
predictions for taxon:
Tunas, bonitos, billfishes
> Scombridae
> Thunnus
> Thunnus thynnus
from regions:
Canada.Atl (37.3%), US.New.England (25.6%), Japan (24.5%), Mexico.Atl (5%), US.South.Atl (4.8%), US.Mid.Atl (1.5%), US.Gulf.Mexico (1.2%)

Real price (2015 $USD/t)

Supplementary Figure 1, page 271 of 289
Tuna RFMOs -- BIGEYEATL -- Bigeye tuna Atlantic Ocean

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Japan

Developing Maturity Phase:

National/international level

Stock level

Assessments

TACs

UN CA/FSA ratification

Supplementary Figure 1, page 272 of 289

TBdivTBmsy-dimensionless = 1

FdivFmsy-dimensionless = 1

Catch (t)

MSY: MSY-est-MT
mean catch: MT

predictions for taxon:
Tunas, bonitos, billfishes
> Scombridae
> Thunnus
> Thunnus obesus
from regions:
Japan (42.6%), EU.Spain (28.5%),
EU.Portugal (14.8%), EU.France (8.2%),
Philippines (4.1%),
US.South.Atl (0.9%), Canada.Atl (0.5%),
US.Gulf.Mexico (0.4%)
Tuna RFMOs -- BIGEYECWPAC -- Bigeye tuna Central Western Pacific Ocean

- Taxonomic group: pelagic fish (Tuna and billfish)
- Predominant fishery type: mixed-species
- Primary country: Japan

Supplementary Figure 1, page 273 of 289
Tuna RFMOs -- BMARLINATL -- Blue marlin Atlantic Ocean

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1, page 274 of 289
Tuna RFMOs -- PACBTUNA -- Pacific bluefin tuna Pacific Ocean

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: single-species, primary country: Japan
Developing Mature

Phase

National/international level

Stock level

Supplementary Figure 1, page 276 of 289
Tuna RFMOs -- SAILWATL -- Sailfish Western Atlantic

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Venezuela

Developing to Mature Phase
National/International level
Stock level

Supplementary Figure 1, page 277 of 289
Tuna RFMOs -- SBT -- Southern bluefin tuna Southern Oceans

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: single-species, primary country: Japan

Supplementary Figure 1,
page 278 of 289
Tuna RFMOs -- SKJCIO -- Skipjack tuna Indian Ocean

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Indonesia

Developing Phase

National/international level

Stock level

Assessments

IOTC

UN CA/FSA ratification

Supplementary Figure 1,
page 279 of 289

B/B_{REF}

F_{DIV}/F_{MSY}-dimensionless = 1

S_{DIV}/S_{MSY}-dimensionless = 1

MSY: MSY-MT

mean catch: MT

predictions for taxon:
Tunas, bonitos, billfishes
> Scombridae
> Katsuwonus
> Katsuwonus pelamis
from regions:
EU.Spain (71.3%), EU.France (24.6%), Japan (2.2%), EU.Italy (1.7%), Australia (0.2%)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Observed

Predicted

Catch (t)

Mean predicted price 2001-2010

mean catch: MT

predictions for taxon:
Tunas, bonitos, billfishes
> Scombridae
> Katsuwonus
> Katsuwonus pelamis
from regions:
EU.Spain (71.3%), EU.France (24.6%), Japan (2.2%), EU.Italy (1.7%), Australia (0.2%)
Tuna RFMOs -- SKJWATL -- Skipjack tuna Western Atlantic

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Brazil

Developing ----> Mature

National/ international level

Stock level

Supplementary Figure 1, page 280 of 289

Assessments

ICCAT

UN CA/FSA ratification

B/B_{EFF}

F/diffF_{mg}-calc-dimensionless = 1

U/U_{EFF}

Catch (t)

MSY: MSY-MT

Mean predicted price 2001-2010

Real price (2015 $USD/t)

predictions for taxon:
- Tunas, bonitos, billfishes
  - Scombridae
  - Katsuwonus
  - Katsuwonus pelamis

from regions:
- Mexico.Atl (76.8%), EU.Portugal (7%), EU.France (5.7%), EU.Spain (3.4%), US.Mid.Atl (3.1%), US.South.Atl (2.7%), Japan (0.6%), US.New.England (0.3%), US.Gulf.Mexico (0.2%)
Tuna RFMOs -- STMARLINNEPAC -- Striped marlin Northeast Pacific

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: USA

IATTC Convention Agreement
UN CA/FSA ratification
Assessments

IATTC Convention Agreement

UN CA/FSA ratification
Assessments

Supplementary Figure 1, page 282 of 289
Tuna RFMOs -- STMARLINSWPO -- Striped marlin Western Pacific Ocean

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Japan

Supplementary Figure 1,
Assessments

UN CA/FSA ratification
CCM HMS WCPO

SSBdivSSB\text{msy-calc-dimensionless} = 1
SSBdivSSB\text{msy-calc-dimensionless} = 0.5

ERdiv\text{ERmsy-calc-dimensionless} = 1

mean catch: MT
MSY: MSY-MT

predictions for taxon:
- Tunas, bonitos, billfishes
  - Istiophoridae
  - Kajikia
  - Kajikia audax
from regions:
- Japan (89.5%), Australia (10.2%), Philippines (0.2%)

Catch (t)
Real price (2015 $USD/t)

Developing
Mature
National/ international level
Stock level

Tuna RFMOs -- STMARLINWCNPAC -- Striped marlin Western and Central North Pacific
taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Japan
Developing Phase

Mature Phase

National/international level

Stock level

Tuna RFMOs -- SWORDNATL -- Swordfish Northern Atlantic

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Spain

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Tuna RFMOs -- WMARLINATL -- White marlin Atlantic Ocean

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Taiwan

Developing
Mature

National/international level

Stock level

Supplementary Figure 1,
page 286 of 289

Assessments
TACs
Rebuilding plan

SSBdivSSBmsy-calc-dimensionless = 0.5
SSBdivSSBmsy-calc-dimensionless = 1
ERdivERmsy-calc-dimensionless = 1

mean catch: MT
MSY: MSY-MT

predictions for taxon:
Tunas, bonitos, billfishes
> Istiophoridae
> Kajikia
> Kajikia albida
from regions:
EU.Spain (39.8%), Japan (24.6%),
Mexico.Atl (18.2%), EU.Portugal (14.9%),
Canada.Atl (2%),
Philippines (0.5%)
Tuna RFMOs -- YFINATL -- Yellowfin tuna Atlantic Ocean

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Spain

Developing -> Mature

Phase

National/international level

Stock level

Supplementary Figure 1, page 287 of 289

Assessments

TACs

ICCAT

UN CA/FSA ratification

TBdivTBmsy-dimensionless = 1

FdivFmsy-dimensionless = 1

MSY: MSY-est-MT

mean catch: MT

predictions for taxon:
- Tunas, bonitos, billfishes
- Scombridae
- Thunnus
- Thunnus albacares from regions:
  - EU.Spain (41.3%), EU.France (40%), Japan (10.8%), Mexico.Atl (2.6%), US.Gulf.Mexico (1.8%), EU.Portugal (1.2%), US.South.Atl (0.9%), US.Mid.Atl (0.4%), EU.Latvia (0.4%), Philippines (0.3%), Canada.Atl (0.3%), US.New England (0.1%)

Catch (t)

Real price (2015 $USD/t)

Mean predicted price 2001-2010

Observed Predicted
Tuna RFMOs -- YFINEIO -- Yellowfin tuna Indian Ocean

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Spain

Supplementary Figure 1, page 288 of 289

Mean predicted price 2001-2010

Real price (2015 $USD/t)


Predictions for taxon:
- Tunas, bonitos, billfishes
  - Scombridae
  - Thunnus
    - Thunnus albacares
  - from regions:
    - EU.Spain (57.2%), EU.France (31.7%), Japan (9%), EU.Italy (1.4%), Philippines (0.5%)
Tuna RFMOs -- YFINEPAC -- Yellowfin tuna Eastern Pacific

taxonomic group: pelagic fish (Tuna and billfish), predominant fishery type: mixed-species, primary country: Mexico

Supplementary Figure 1,