

# elasmobranchs Stocks

## v4.66 (Nov-03-2024)

Not present Present Preferred

Stock	B/Bmsy	Time Series Types			
		U/Umsy	B/Bmgt	U/Umgt	
1. ALSKABSAI [Alaska skate Bering Sea and Aleutian Islands]	TB SSB	ER F	TB SSB	ER F	
2. ASHARNEATL [Angel shark Northeast Atlantic]	TB SSB	ER F	TB SSB	ER F	
3. BHEADSHARATL [Bonnethead shark Atlantic]	TB SSB	ER F	TB SSB	ER F	
4. BIGSKA3CD [Big skate West Coast of Vancouver Island]	TB SSB	ER F	TB SSB	ER F	
5. BIGSKA4B [Big skate Strait of Georgia]	TB SSB	ER F	TB SSB	ER F	
6. BIGSKA5AB [Big skate Queen Charlotte Sound]	TB SSB	ER F	TB SSB	ER F	
7. BIGSKA5CDE [Big skate Hecate Strait]	TB SSB	ER F	TB SSB	ER F	
8. BIGSKAGA [Big skate Gulf of Alaska]	TB SSB	ER F	TB SSB	ER F	
9. BIGSKAPCOAST [Big skate Pacific Coast]	TB SSB	ER F	TB SSB	ER F	
10. BLRAYIVa-VI [Blonde ray ICES 4a-6]	TB SSB	ER F	TB SSB	ER F	
11. BLRAYIVc-VIId [Blonde ray ICES 4c-7d]	TB SSB	ER F	TB SSB	ER F	
12. BLRAYIXa [Blonde ray Portugese Waters -East]	TB SSB	ER F	TB SSB	ER F	
13. BLRAYVIIafg [Blonde ray ICES 7afg]	TB SSB	ER F	TB SSB	ER F	
14. BLRAYVIIe [Blonde ray Western English Channel]	TB SSB	ER F	TB SSB	ER F	
15. BLSHARIO [Blue shark Indian Ocean]	TB SSB	ER F	TB SSB	ER F	
16. BLSHARNATL [Blue shark Northern Atlantic]	TB SSB	ER F	TB SSB	ER F	
17. BLSHARNPAC [Blue shark North Pacific]	TB SSB	ER F	TB SSB	ER F	
18. BLSHARSATL [Blue shark South Atlantic]	TB SSB	ER F	TB SSB	ER F	
19. BMDOGVIII-IXa [Blackmouth dogfish ICES 8-9a]	TB SSB	ER F	TB SSB	ER F	
20. BMDOGVI-VII [Blackmouth dogfish ICES 6-7]	TB SSB	ER F	TB SSB	ER F	
21. BNOSESHARATL [Blacknose shark Atlantic]	TB SSB	ER F	TB SSB	ER F	
22. BSKAT5YZSNE [Barndoor skate Gulf of Maine / Georges Bank-Southern New England]	TB SSB	ER F	TB SSB	ER F	
23. BSKSHARNEATL [Basking shark Northeast Atlantic]	TB SSB	ER F	TB SSB	ER F	
24. BTIPSHARATL [Blacktip shark Atlantic]	TB SSB	ER F	TB SSB	ER F	
25. BTIPSHARGM [Blacktip shark Gulf of Mexico]	TB SSB	ER F	TB SSB	ER F	
26. CKRAYIIIa-IV [Cuckoo ray ICES 3a-4]	TB SSB	ER F	TB SSB	ER F	
27. CKRAYIXa [Cuckoo ray Portugese Waters -East]	TB SSB	ER F	TB SSB	ER F	
28. CKRAYVIIIc [Cuckoo ray Bay of Biscay -South]	TB SSB	ER F	TB SSB	ER F	
29. CKRAYVI-VII [Cuckoo ray ICES 6-7]	TB SSB	ER F	TB SSB	ER F	
30. CSKATMATLC [Clearnose skate Mid-Atlantic Coast]	TB SSB	ER F	TB SSB	ER F	
31. DSKSHARGMATL [Dusky shark Gulf of Mexico and Atlantic]	TB SSB	ER F	TB SSB	ER F	
32. FTOOTHSHARATL [Finetooth shark Atlantic]	TB SSB	ER F	TB SSB	ER F	
33. KFSHARNEATL [Kitefin shark Northeast Atlantic]	TB SSB	ER F	TB SSB	ER F	
34. LGSHARNEATL [Leafscale gulper shark Northeast Atlantic]	TB SSB	ER F	TB SSB	ER F	
35. LNOSESKA3CD [Longnose skate West Coast of Vancouver Island]	TB SSB	ER F	TB SSB	ER F	
36. LNOSESKA4B [Longnose skate Strait of Georgia]	TB SSB	ER F	TB SSB	ER F	
37. LNOSESKA5AB [Longnose skate Queen Charlotte Sound]	TB SSB	ER F	TB SSB	ER F	
38. LNOSESKA5CDE [Longnose skate Hecate Strait]	TB SSB	ER F	TB SSB	ER F	

39. LNOSESKAGA [Longnose skate Gulf of Alaska]	TB SSB	ER F	TB SSB	ER F
40. LNOSESKAPCOAST [Longnose skate Pacific Coast]	TB SSB	ER F	TB SSB	ER F
41. LSDOGIIa-IV-VIId [Lesser spotted dogfish ICES 3a-4-7d]	TB SSB	ER F	TB SSB	ER F
42. LSDOGVIIIabd [Lesser spotted dogfish ICES 8abd]	TB SSB	ER F	TB SSB	ER F
43. LSDOGVIIIc-IXa [Lesser spotted dogfish ICES 8c-9a]	TB SSB	ER F	TB SSB	ER F
44. LSDOGVI-VIIabcefg hij [Lesser spotted dogfish ICES 6-7abcefg hij]	TB SSB	ER F	TB SSB	ER F
45. LSKAT5YCHATT [Little skate Gulf of Maine / Cape Hatteras]	TB SSB	ER F	TB SSB	ER F
46. LSKAT5ZSNE [Little skate Georges Bank-Southern New England]	TB SSB	ER F	TB SSB	ER F
47. OWSHARCWPAC [Oceanic whitetip shark Central Western Pacific Ocean]	TB SSB	ER F	TB SSB	ER F
48. PORSHARATL [Porbeagle shark Canadian Atlantic Ocean]	TB SSB	ER F	TB SSB	ER F
49. PORSHARNEATL [Porbeagle shark Northeast Atlantic]	TB SSB	ER F	TB SSB	ER F
50. RSKATMATLC [Rosette skate Mid-Atlantic Coast]	TB SSB	ER F	TB SSB	ER F
51. SBARSHARATL [Sandbar shark Atlantic]	TB SSB	ER F	TB SSB	ER F
52. SCHHEADATL [Scalloped hammerhead Atlantic]	TB SSB	ER F	TB SSB	ER F
53. SDOG4VWX5 [Spiny dogfish Scotian Shelf, Bay of Fundy and Georges Bank]	TB SSB	ER F	TB SSB	ER F
54. SDOGATLC [Spiny dogfish Atlantic Coast]	TB SSB	ER F	TB SSB	ER F
55. SDOGBLK GSA29 [Spiny dogfish Black Sea]	TB SSB	ER F	TB SSB	ER F
56. SDRAYVI-VII [Sandy ray ICES 6-7]	TB SSB	ER F	TB SSB	ER F
57. SERAYVIIde [Smalleyed ray ICES 7de]	TB SSB	ER F	TB SSB	ER F
58. SERAYVII f-g [Smalleyed ray Celtic Sea]	TB SSB	ER F	TB SSB	ER F
59. SFMAKONATL [Shortfin mako Northern Atlantic]	TB SSB	ER F	TB SSB	ER F
60. SFMAKONPAC [Shortfin mako North Pacific]	TB SSB	ER F	TB SSB	ER F
61. SFMAKONWPAC [Shortfin mako Northwest Pacific Ocean]	TB SSB	ER F	TB SSB	ER F
62. SFMAKOSATL [Shortfin mako South Atlantic]	TB SSB	ER F	TB SSB	ER F
63. SGRAYVI-VII [Shagreen ray ICES 6-7]	TB SSB	ER F	TB SSB	ER F
64. SHSPNEATL [Smooth hound Northeast Atlantic]	TB SSB	ER F	TB SSB	ER F
65. SLKSHARCWPAC [Silky shark Central Western Pacific Ocean]	TB SSB	ER F	TB SSB	ER F
66. SMDOGATL [Smooth dogfish Atlantic]	TB SSB	ER F	TB SSB	ER F
67. SMOOTHSKA2J3K [Smooth skate NAFO Division 2J3K]	TB SSB	ER F	TB SSB	ER F
68. SMOOTHSKA4T [Smooth skate Southern Gulf of St. Lawrence]	TB SSB	ER F	TB SSB	ER F
69. SNOSESHARATL [Atlantic sharpnose shark Atlantic]	TB SSB	ER F	TB SSB	ER F
70. SPRAYIIa-IV-VIId [Spotted ray ICES 3a-4-7d]	TB SSB	ER F	TB SSB	ER F
71. SPRAYIXa [Spotted ray Portugese Waters -East]	TB SSB	ER F	TB SSB	ER F
72. SPRAYVIIaefgh [Spotted ray ICES 7aefgh]	TB SSB	ER F	TB SSB	ER F
73. SPRAYVIII [Spotted ray Bay of Biscay]	TB SSB	ER F	TB SSB	ER F
74. SPRAYVI-VIIbj [Spotted ray ICES 6-7bj]	TB SSB	ER F	TB SSB	ER F
75. SPSDOGPCOAST [Spotted spiny dogfish Pacific Coast]	TB SSB	ER F	TB SSB	ER F
76. SPURDNEATL [Spurdog Northeast Atlantic]	TB SSB	ER F	TB SSB	ER F
77. SSKAT5YZSNE [Smooth skate Gulf of Maine / Georges Bank-Southern New England]	TB SSB	ER F	TB SSB	ER F
78. STRAYII-IIIa-IV [Starry ray ICES 2-3a-4]	TB SSB	ER F	TB SSB	ER F
79. TBSKAIIa-IV-VIId [Thornback skate ICES 3a-4-7d]	TB SSB	ER F	TB SSB	ER F
80. TBSKAIXa [Thornback skate Portugese Waters -East]	TB SSB	ER F	TB SSB	ER F
81. TBSKAMEDGSA29 [Thornback skate Black Sea]	TB SSB	ER F	TB SSB	ER F
82. TBSKAVI [Thornback skate ICES 6]	TB SSB	ER F	TB SSB	ER F
83. TBSKAVIIafg [Thornback skate ICES 7afg]	TB SSB	ER F	TB SSB	ER F
84. TBSKAVIle [Thornback skate Western English Channel]	TB SSB	ER F	TB SSB	ER F

85. TBSKAVIII [Thornback skate Bay of Biscay]	TB SSB	ER F	TB SSB	ER F
86. THRSHARNPAC [Thresher shark North Pacific]	TB SSB	ER F	TB SSB	ER F
87. TPSHARNEATL [Tope shark Northeast Atlantic]	TB SSB	ER F	TB SSB	ER F
88. TSKA3LNOPs [Thorny skate Grand Bank and St Pierre Bank]	TB SSB	ER F	TB SSB	ER F
89. TSKA4T [Thorny skate Southern Gulf of St. Lawrence]	TB SSB	ER F	TB SSB	ER F
90. TSKAT5YZSNE [Thorny skate Gulf of Maine / Georges Bank-Southern New England]	TB SSB	ER F	TB SSB	ER F
91. URAYVIIde [Undulate ray ICES 7de]	TB SSB	ER F	TB SSB	ER F
92. URAYVIIIab [Undulate ray ICES 8ab]	TB SSB	ER F	TB SSB	ER F
93. WSKAT5YCHATT [Winter skate Gulf of Maine / Cape Hatteras]	TB SSB	ER F	TB SSB	ER F
94. WSKAT5ZSNE [Winter skate Georges Bank-Southern New England]	TB SSB	ER F	TB SSB	ER F
95. YNOSESKACSCH [Yellownose skate Central-Southern Chile]	TB SSB	ER F	TB SSB	ER F
96. YNOSESKASCH [Yellownose skate Southern Chile]	TB SSB	ER F	TB SSB	ER F

## Alaska skate Bering Sea and Aleutian Islands [ALSKABSAI]

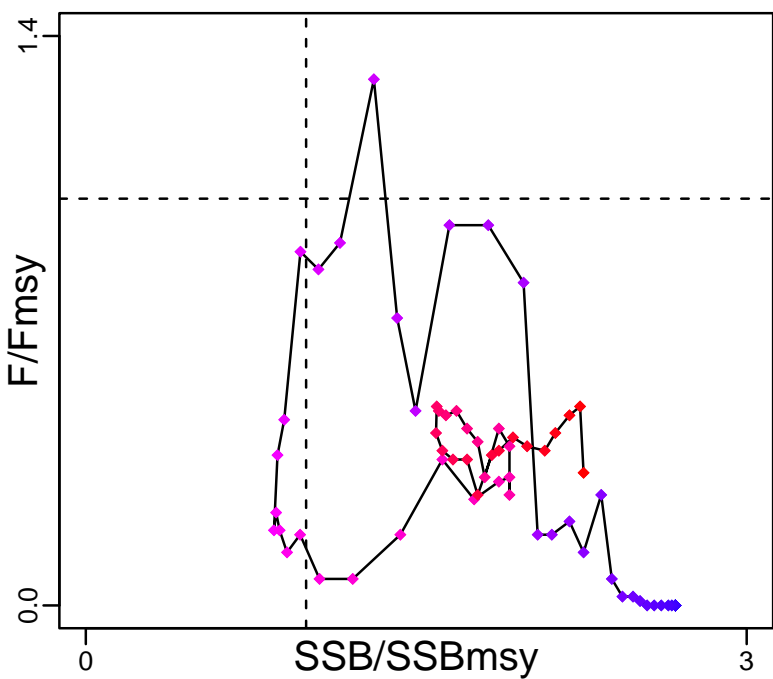
Metadata	
<b>Scientific Name</b>	Bathyraja parmifera
<b>Current Assess ID</b>	AFSC-ALSKABSAI-1950-2020-SISIMP2021-2
<b>Area</b>	Bering Sea and Aleutian Islands
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Alaska Fisheries Science Center
<b>Asmts in RAM</b>	2015, 2016, 2018, 2020, 2010

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-MT	2020	62,400
<b>Fmsy</b>	Fmsy-1/yr	2020	0.092
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	Flim-1/yr	2020	0.078
<b>ERlim</b>	-	-	-

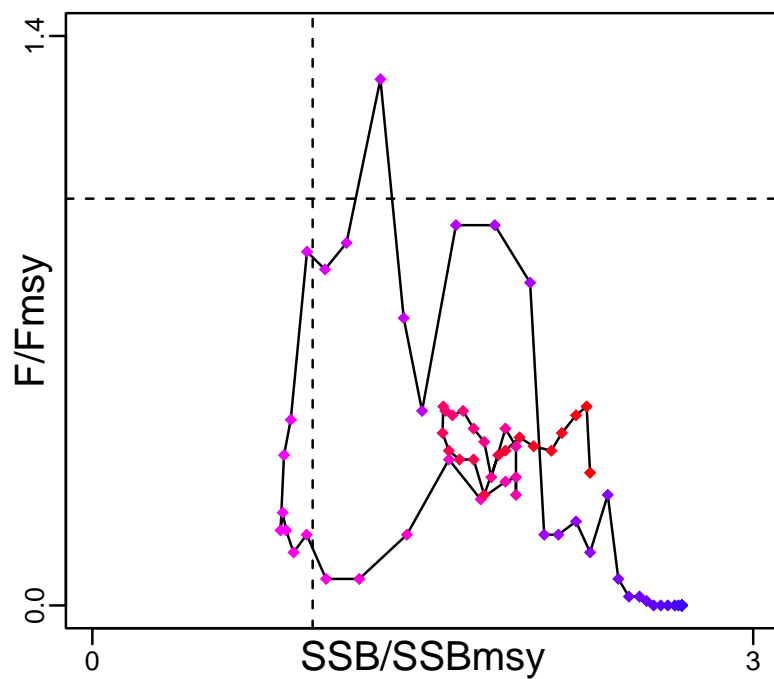
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2015	519,000	Both	0+
<b>SSB</b>	SSB-MT	2020	142,000	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2020	24,900,000	-	1
<b>F</b>	F-1/yr	2020	0.03	-	-
<b>ER</b>	ER-ratio	2018	0.052	-	-
<b>TC</b>	TC-MT	2020	15,500		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSB-MT/SSBmsy-MT	2020	2.276		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2020	0.326		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

# Alaska skate Bering Sea and Aleutian Islands [ALSKABSAI]

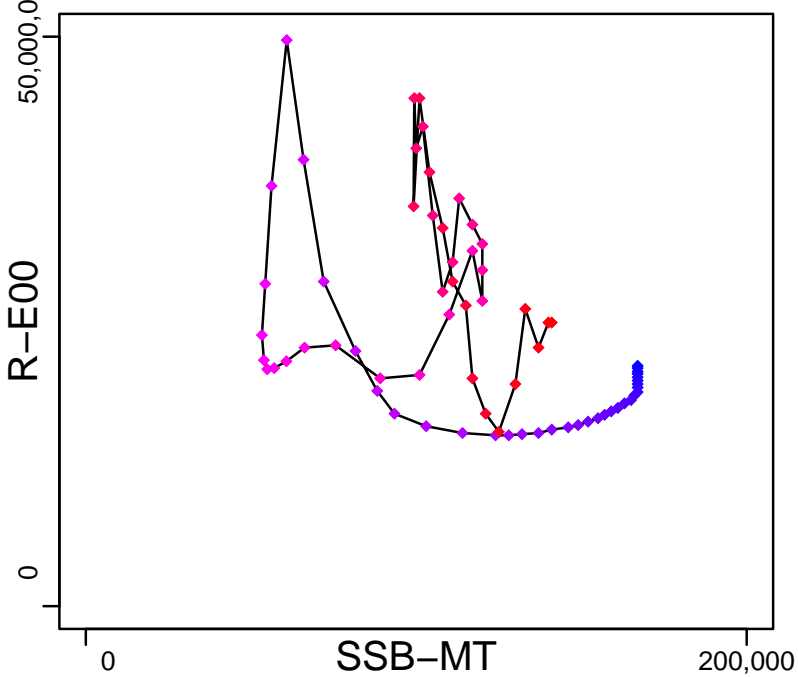
Kobe MSYpref (1950–2020–SISIMP2021–2)



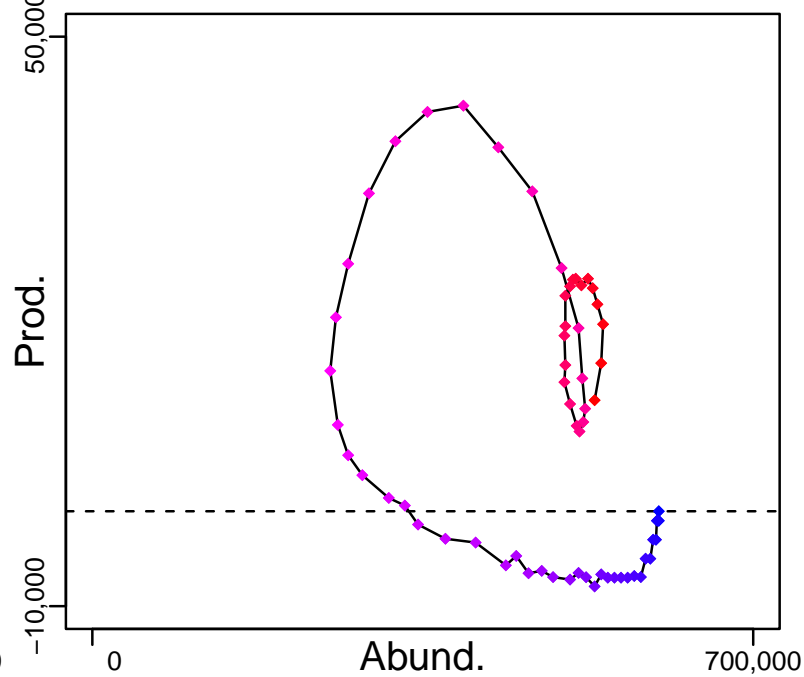
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Spawner Recruit (1950–2020–SISIMP2021–2)



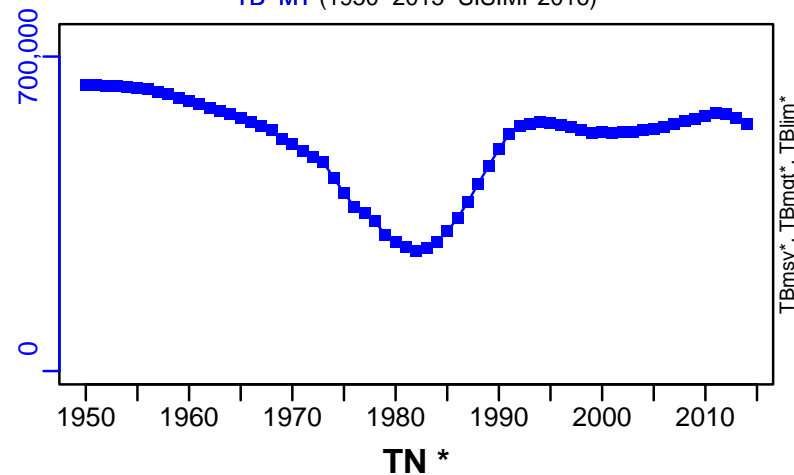
Production (1950–2015–SISIMP2016)



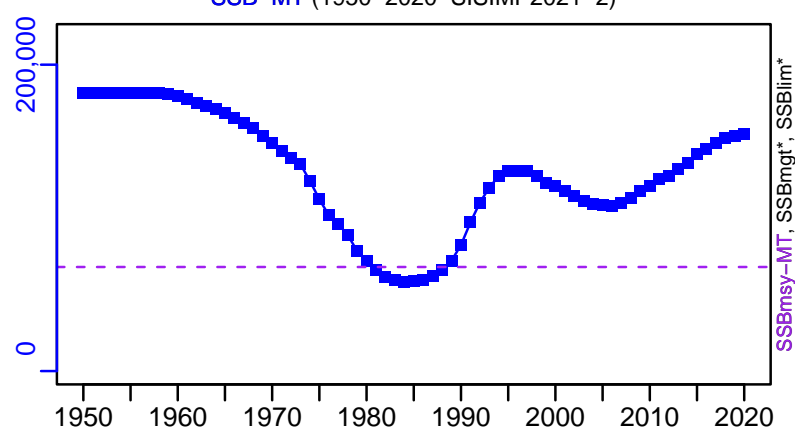
◆ Start Year ◆ End Year \* No Data

# Alaska skate Bering Sea and Aleutian Islands [ALSKABSAI]

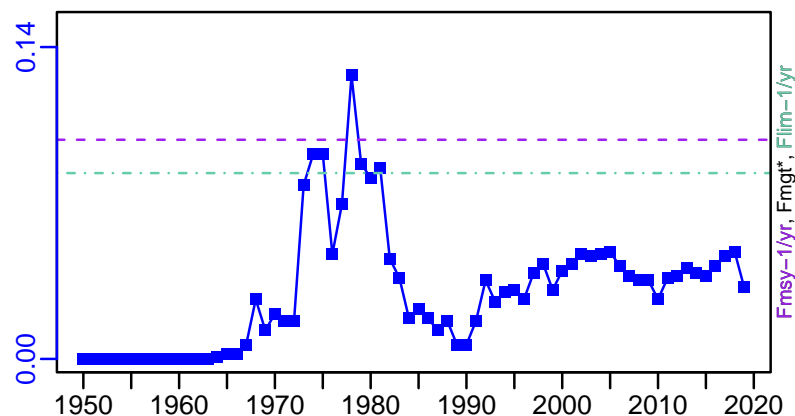
TB-MT (1950–2015–SISIMP2016)



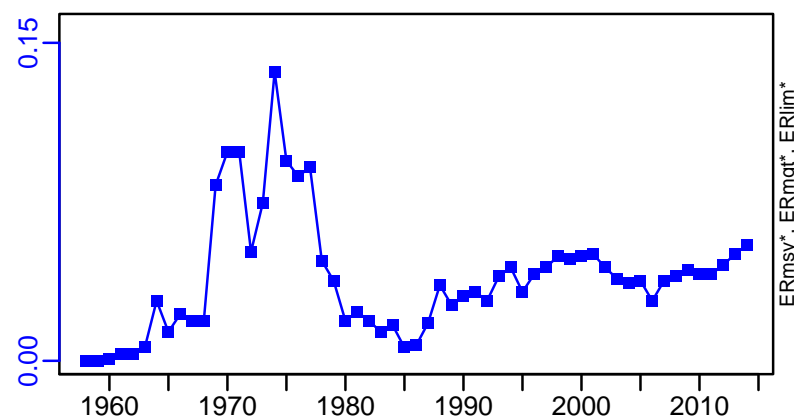
SSB-MT (1950–2020–SISIMP2021–2)



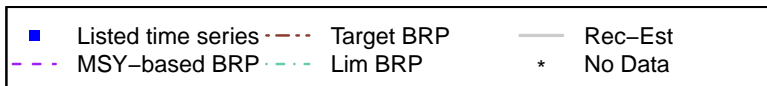
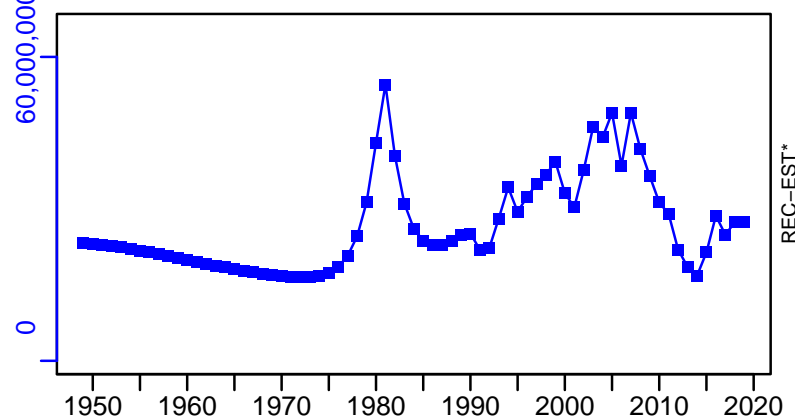
F-1/yr (1950–2020–SISIMP2021–2)



ER-ratio (1950–2018–SISIMP2021)



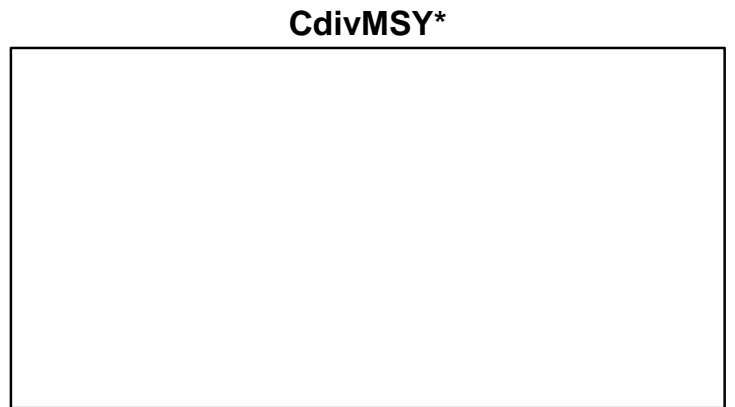
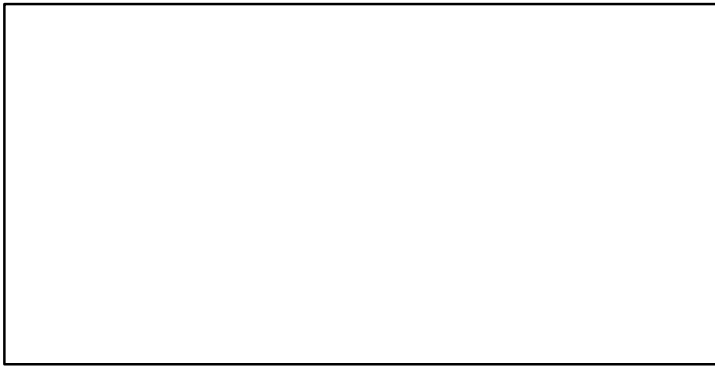
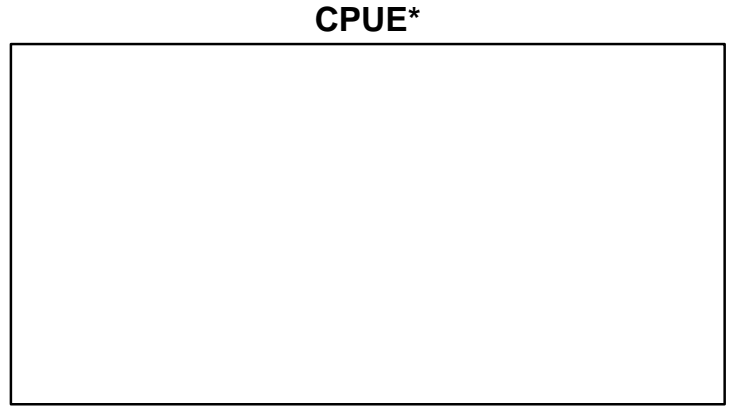
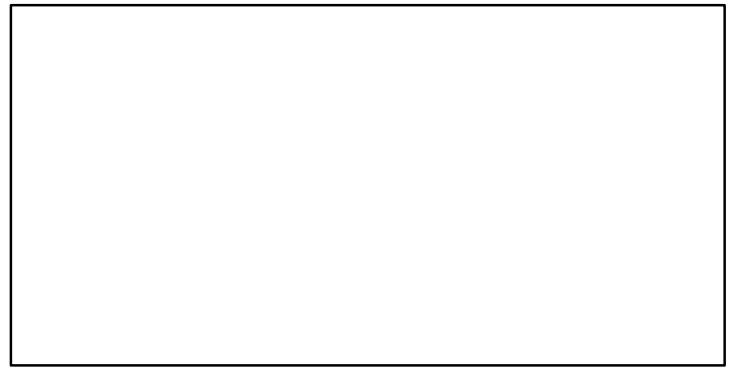
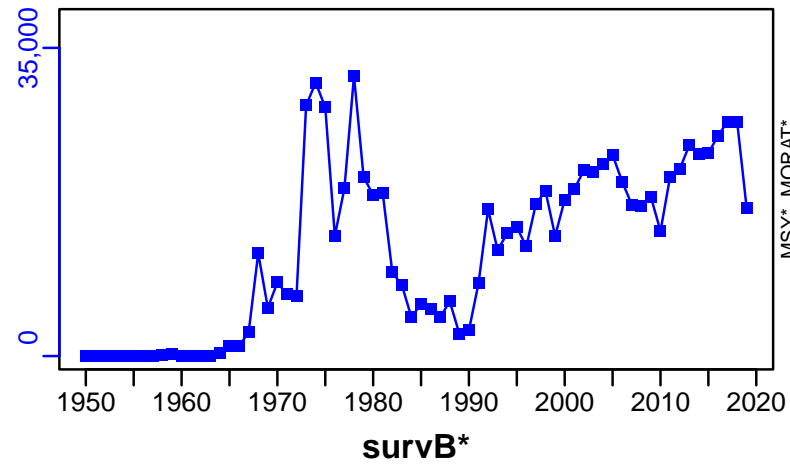
R-E00 (1950–2020–SISIMP2021–2)



# Alaska skate Bering Sea and Aleutian Islands [ALSKABSAI]

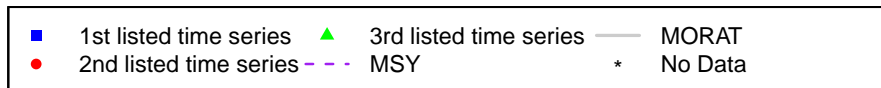
TC-MT, TL\*, RecC\* (1950-2020-SISIMP2021-2)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CdivMSY\*



## Angel shark Northeast Atlantic [ASHARNEATL]

Metadata	
<b>Scientific Name</b>	Squatina squatina
<b>Current Assess ID</b>	WGEF-ASHARNEATL-1973-2018-ICESIMP2021
<b>Area</b>	Northeast Atlantic
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2011, 2018

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	0		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

Angel shark Northeast Atlantic [ASHARNEATL]

TB\*



SSB\*



TN \*



F\*



ER\*

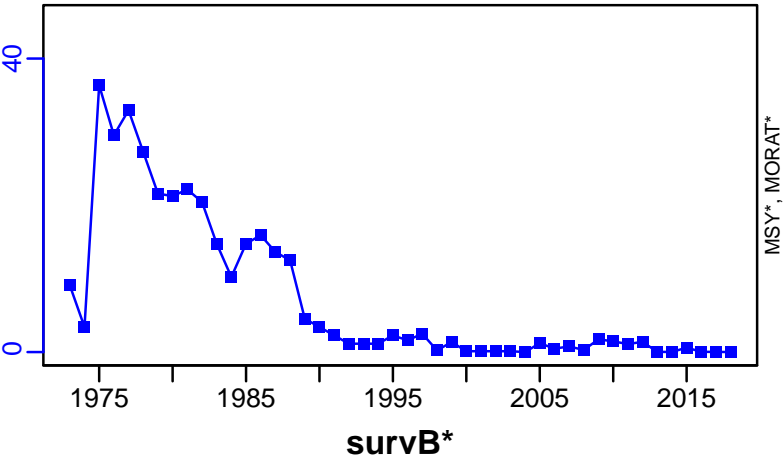


Recruits\*



Angel shark Northeast Atlantic [ASHARNEATL]

TL-MT, TC\*, RecC\* (1973–2018–ICESIMP2021)



TAC\*, Cpair\*, Cadv\*



CPUE\*



EFFORT\*



CdivMSY\*



## Bonnethead shark Atlantic [BHEADSHARATL]

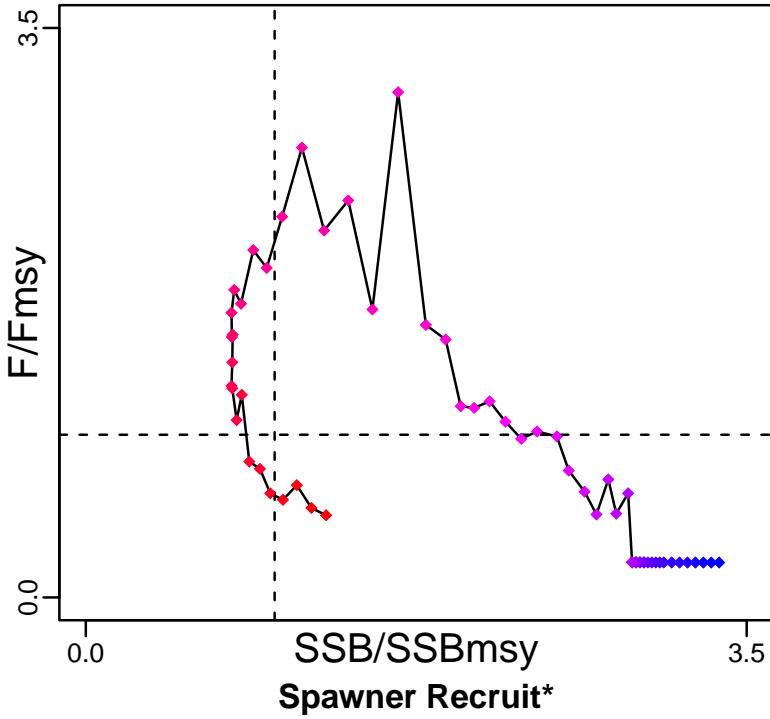
Metadata	
<b>Scientific Name</b>	Sphyrna tiburo
<b>Current Assess ID</b>	SEFSC-BHEADSHARATL-1950-2011-HIVELY
<b>Area</b>	Atlantic
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2011

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSFmsy-E00	2011	4,770,000
<b>Fmsy</b>	Fmsy-1/yr	2011	0.2
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-E00	2011	589,000
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

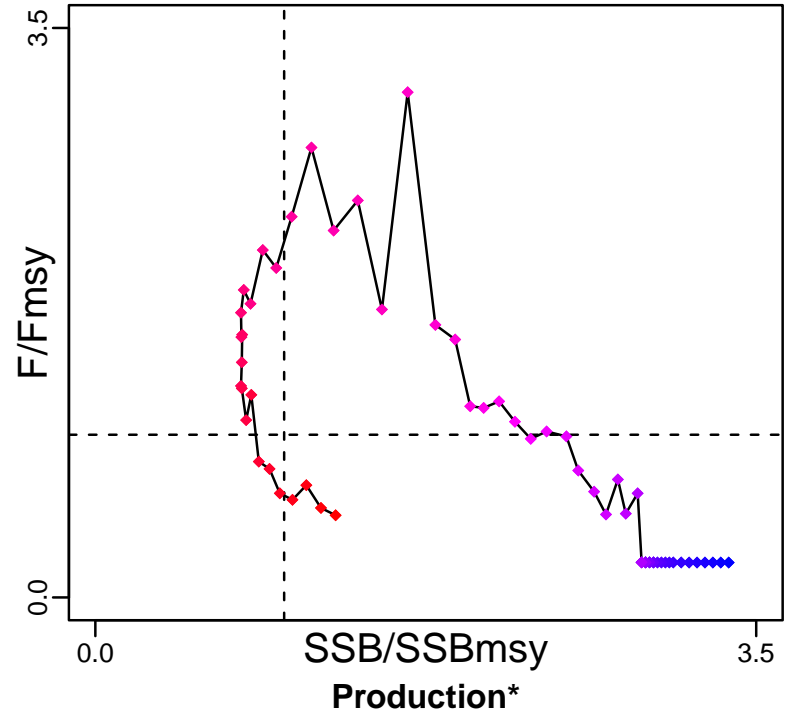
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSF-E00	2011	6,070,000	-	-
<b>TN</b>	TN-E00	2011	4,890,000	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2011	0.101	-	-
<b>ER</b>	ER-calc-ratio	2011	0.075	-	-
<b>TC</b>	TC-E00	2011	369,000		
<b>TL</b>	TL-MT	2011	19		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSF-E00/SSFmsy-E00	2011	1.273		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2011	0.505		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

# Bonnethead shark Atlantic [BHEADSHARATL]

Kobe MSYpref (1950–2011–HIVELY)



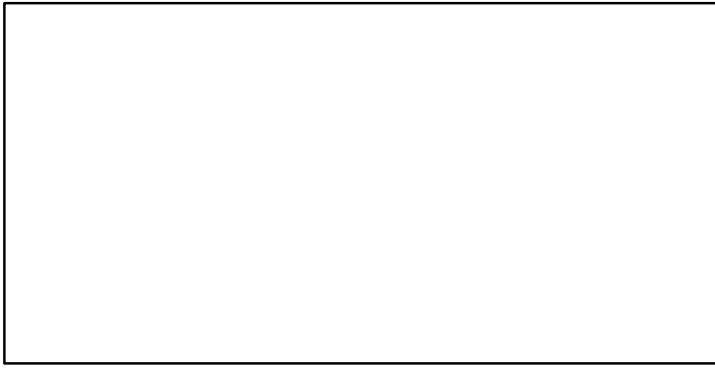
Kobe MGTpref (1950–2011–HIVELY)



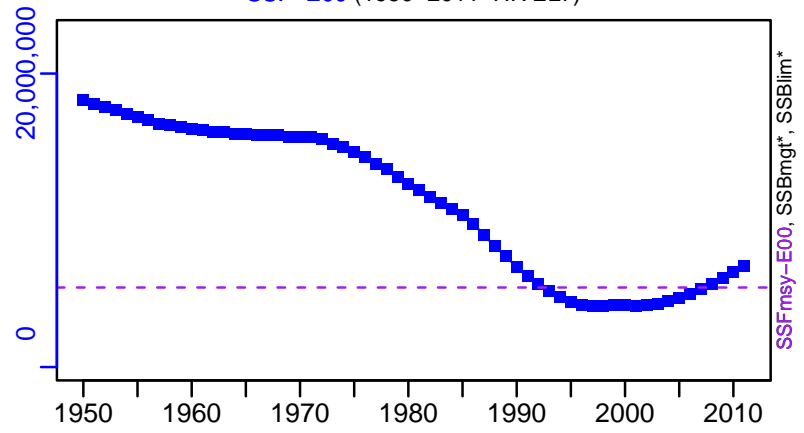
◆ Start Year ◆ End Year \* No Data

# Bonnethead shark Atlantic [BHEADSHARATL]

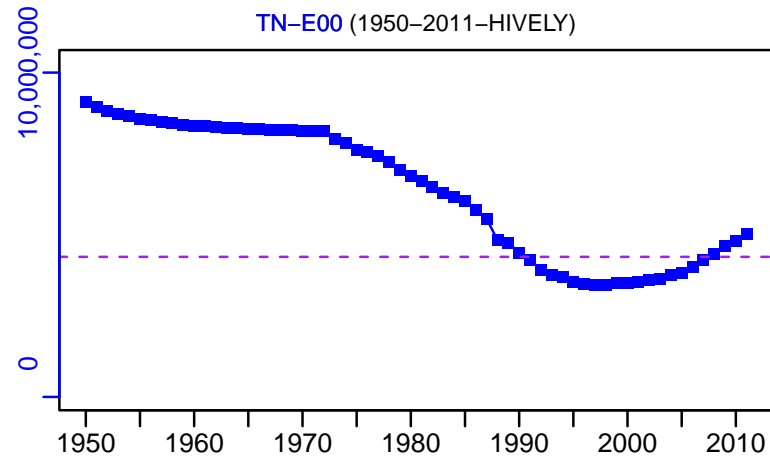
TB\*



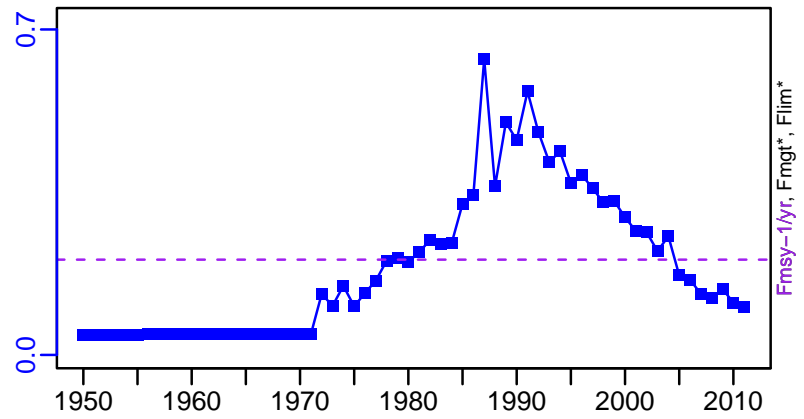
SSF-E00 (1950-2011-HIVELY)



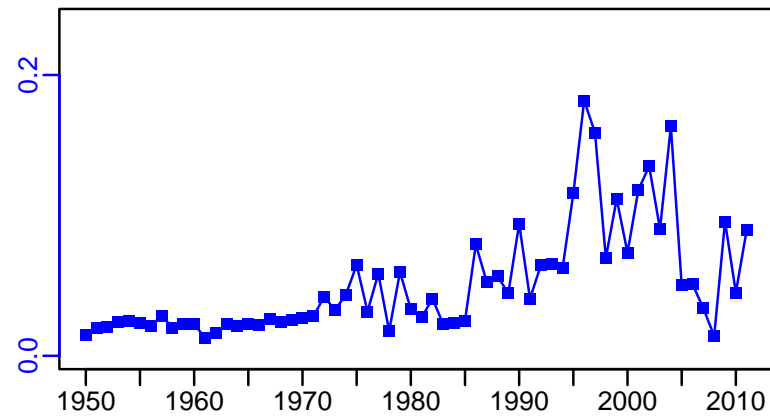
TN-E00 (1950-2011-HIVELY)



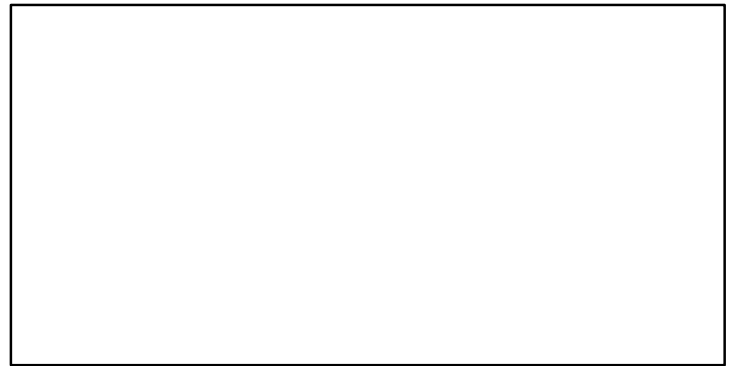
F-1/yr (1950-2011-HIVELY)



ER-calc-ratio (1950-2011-HIVELY)

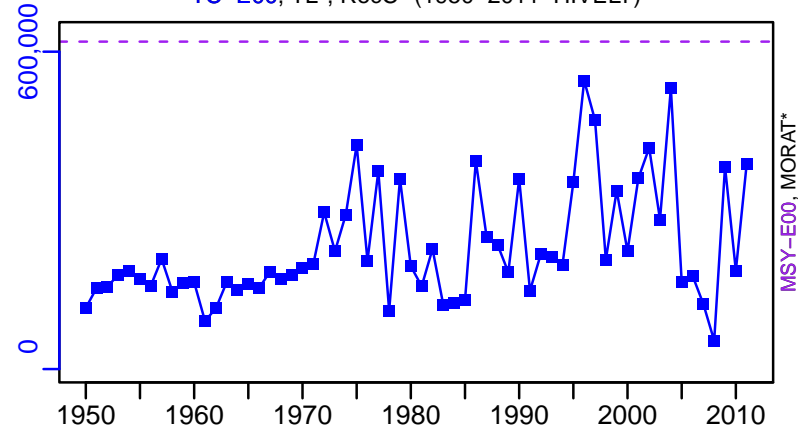


Recruits\*



# Bonnethead shark Atlantic [BHEADSHARATL]

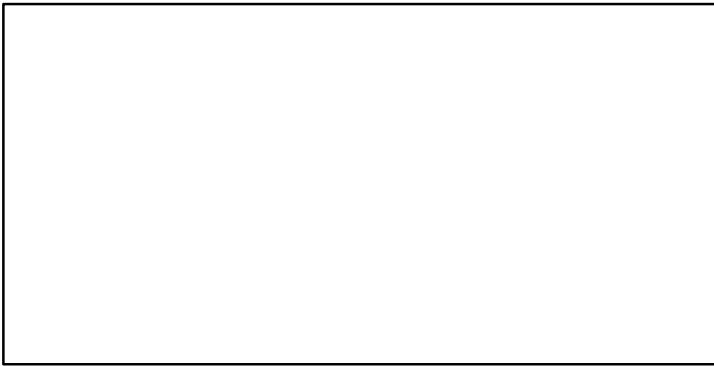
TC-E00, TL\*, RecC\* (1950–2011–HIVELY)



TAC\*, Cpair\*, Cadv\*



survB\*



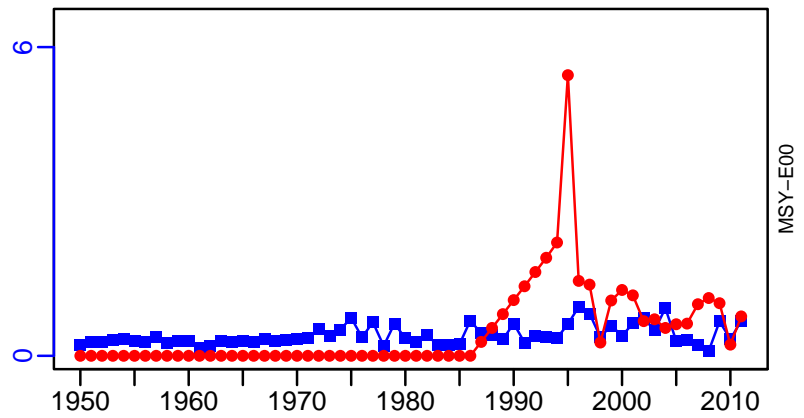
CPUE\*



EFFORT\*



TC-E00/MSY-E00, CdivMEANC-ratio, (1950–2011–HIVELY)



- 1st listed time series    ▲ 3rd listed time series    — MORAT
- 2nd listed time series    - - - MSY    \* No Data

## Big skate West Coast of Vancouver Island [BIGSKA3CD]

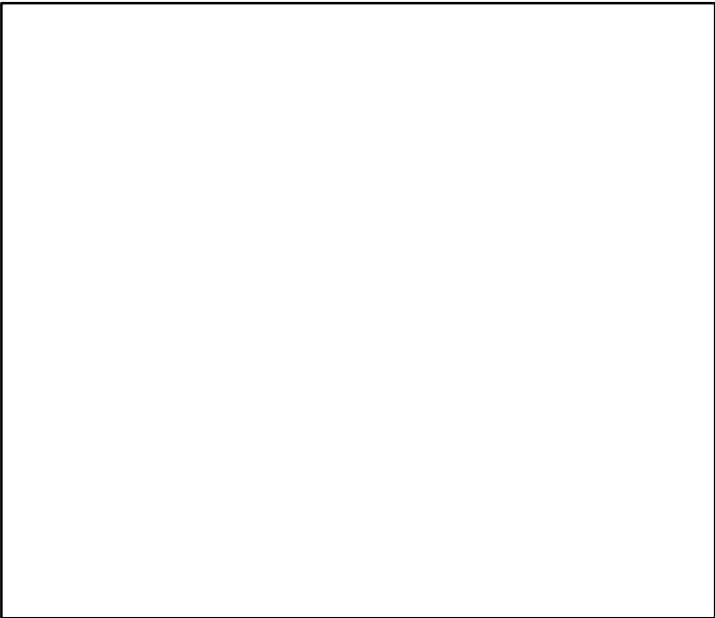
Metadata	
<b>Scientific Name</b>	Raja binoculata
<b>Current Assess ID</b>	DFO-PAC-BIGSKA3CD-1954-2011-OSGOOD
<b>Area</b>	West Coast of Vancouver Island
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Pacific Region
<b>Asmts in RAM</b>	2011

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2011	37		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



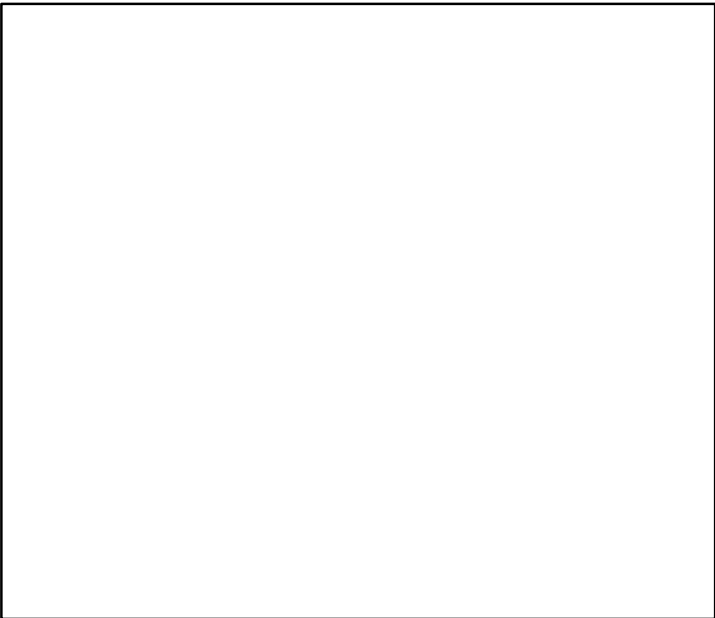
Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

Big skate West Coast of Vancouver Island [BIGSKA3CD]

TB\*



SSB\*



TN \*



F\*



ER\*

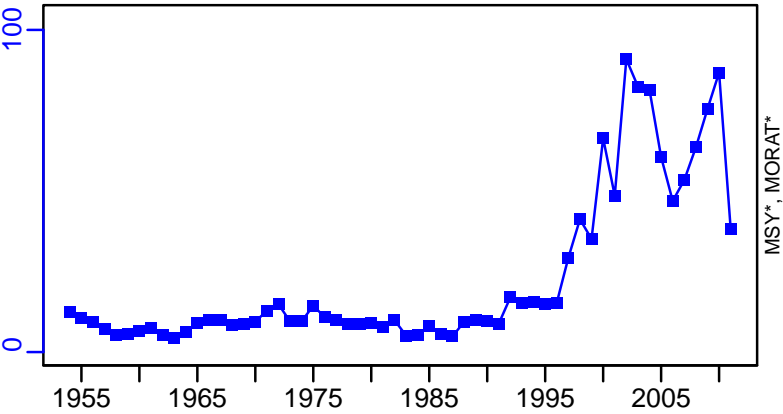


Recruits\*



Big skate West Coast of Vancouver Island [BIGSKA3CD]

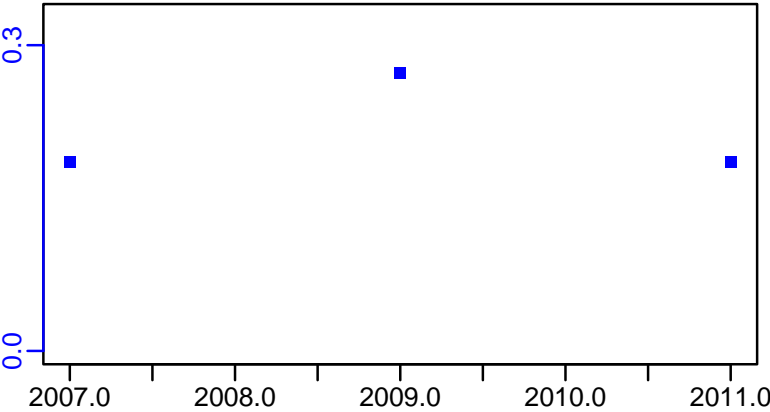
TC-MT, TL\*, RecC\* (1954-2011-OSGOOD)



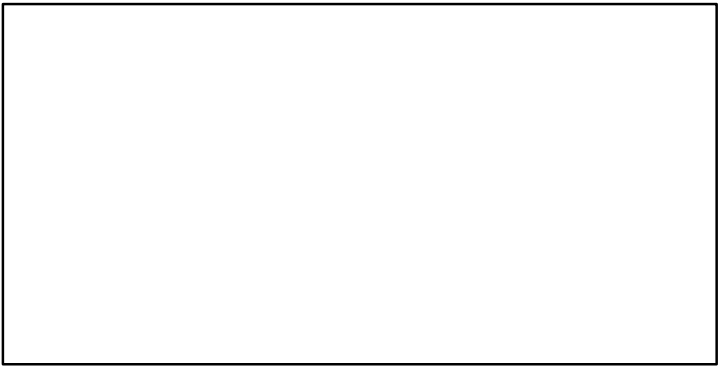
TAC\*, Cpair\*, Cadv\*



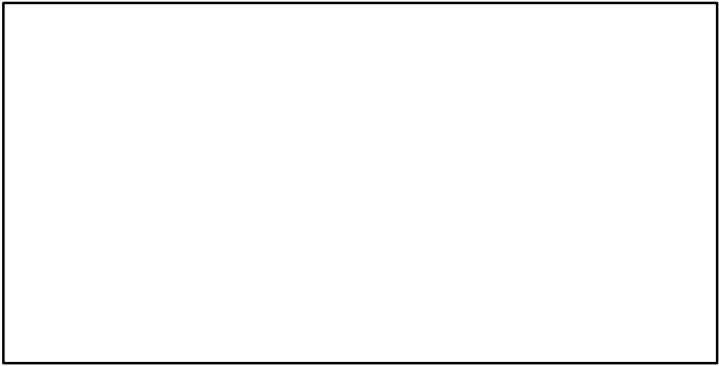
survB-fishperE02hooks (1954-2011-OSGOOD)



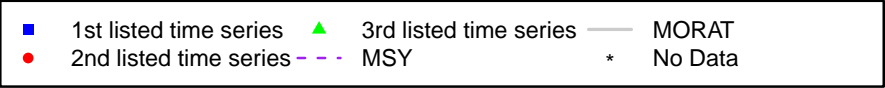
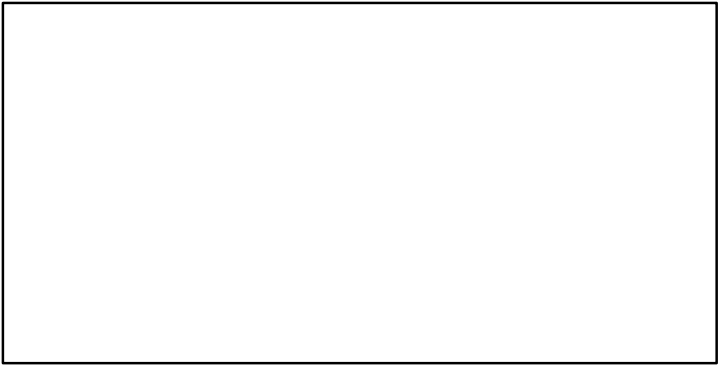
CPUE\*



EFFORT\*



CdivMSY\*



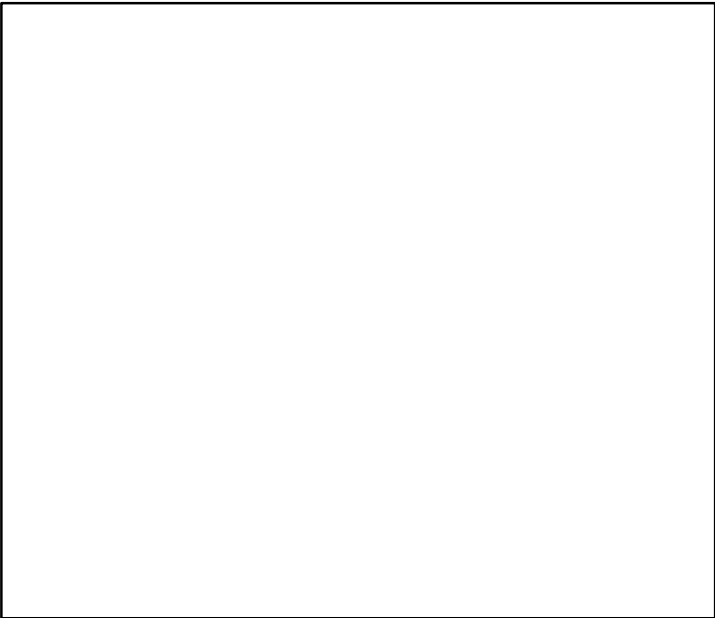
## Big skate Strait of Georgia [BIGSKA4B]

Metadata	
<b>Scientific Name</b>	Raja binoculata
<b>Current Assess ID</b>	DFO-PAC-BIGSKA4B-1996-2011-OSGOOD
<b>Area</b>	Strait of Georgia
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Pacific Region
<b>Asmts in RAM</b>	2011

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2011	10		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

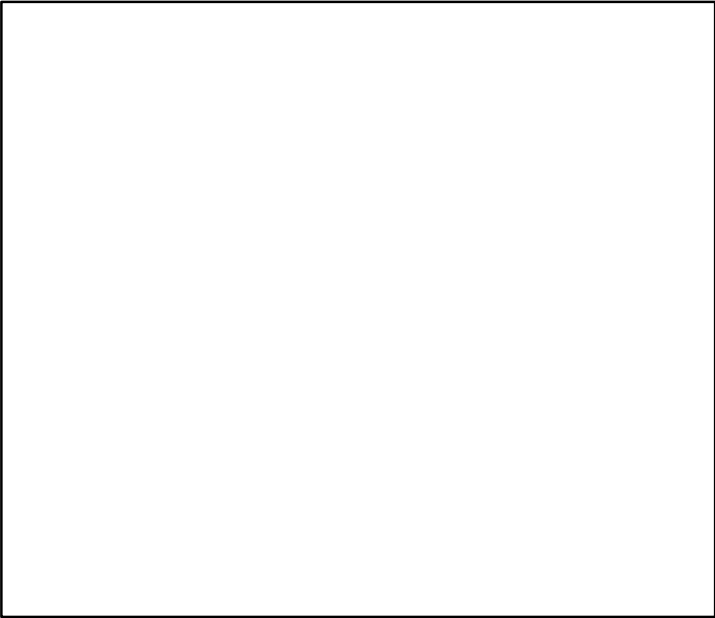
Kobe MSY\*



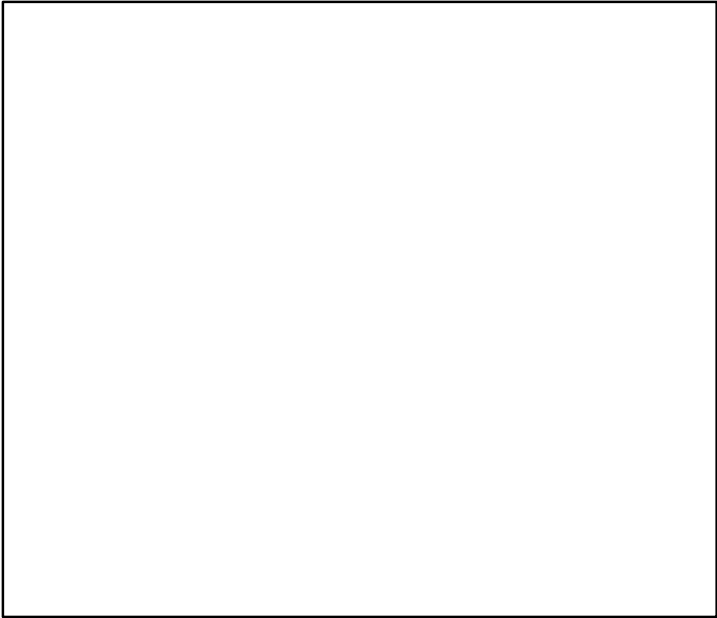
Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year    ◆ End Year    \* No Data

Big skate Strait of Georgia [BIGSKA4B]

TB\*



SSB\*



TN \*



F\*



ER\*



Recruits\*



■ Listed time series

--- MSY-based BRP

--- Target BRP

--- Lim BRP

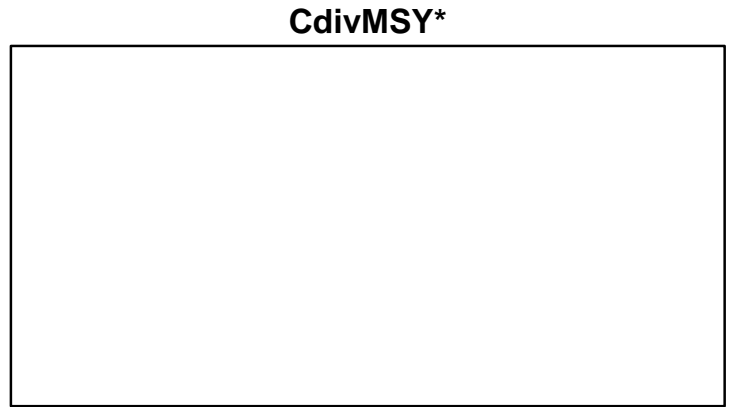
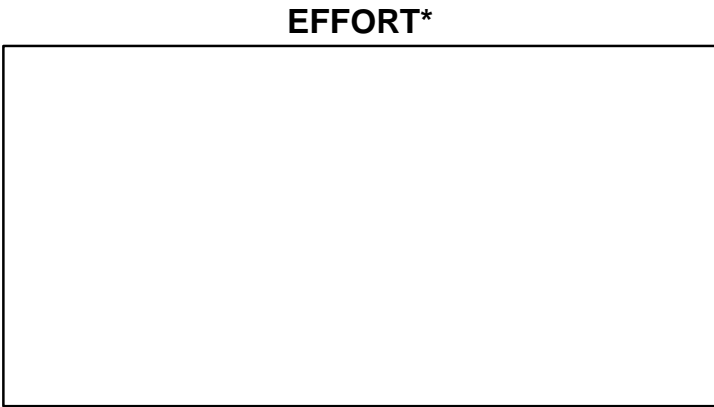
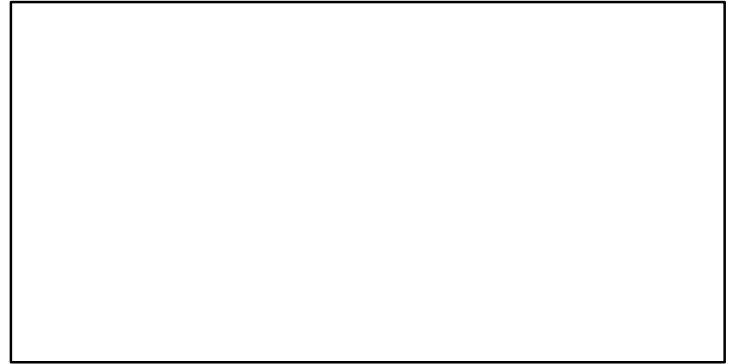
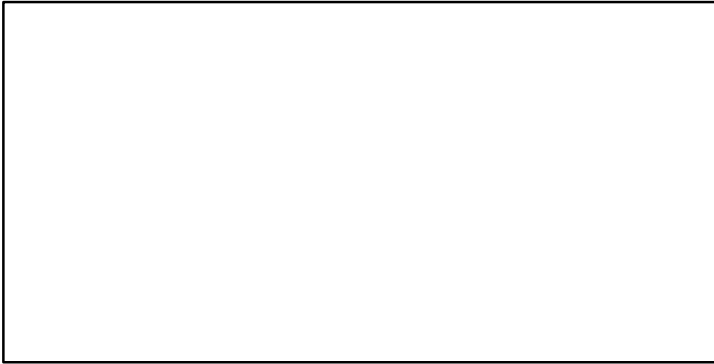
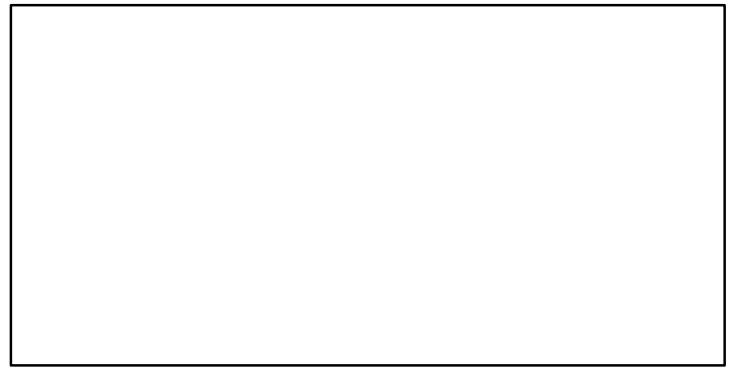
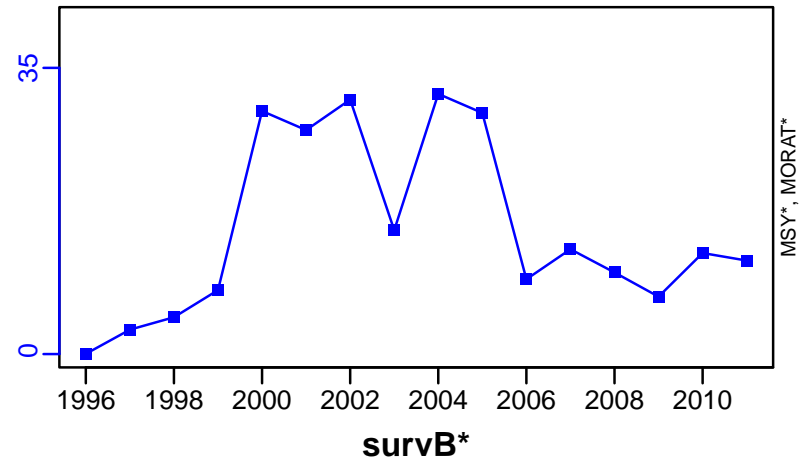
— Rec-Est

\* No Data

# Big skate Strait of Georgia [BIGSKA4B]

TC-MT, TL\*, RecC\* (1996-2011-OSGOOD)

TAC\*, Cpair\*, Cadv\*



## Big skate Queen Charlotte Sound [BIGSKA5AB]

Metadata	
<b>Scientific Name</b>	Raja binoculata
<b>Current Assess ID</b>	DFO-PAC-BIGSKA5AB-1954-2011-OSGOOD
<b>Area</b>	Queen Charlotte Sound
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Pacific Region
<b>Asmts in RAM</b>	2011

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2011	299		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

TB\*



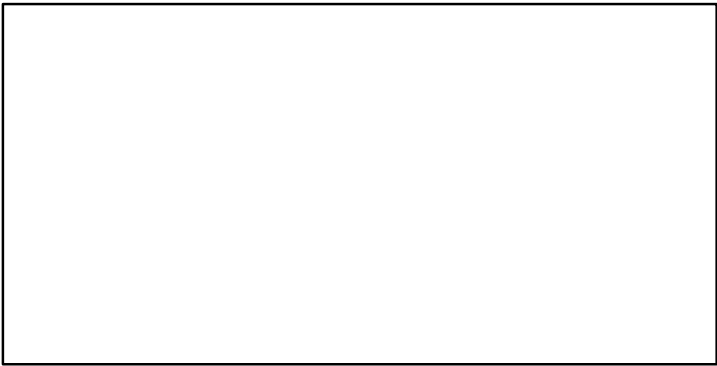
SSB\*



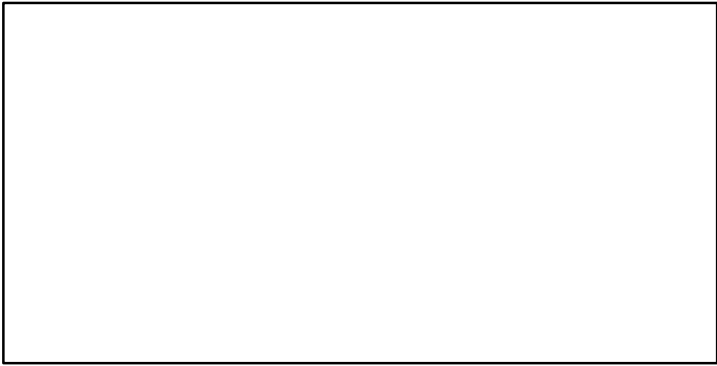
TN \*



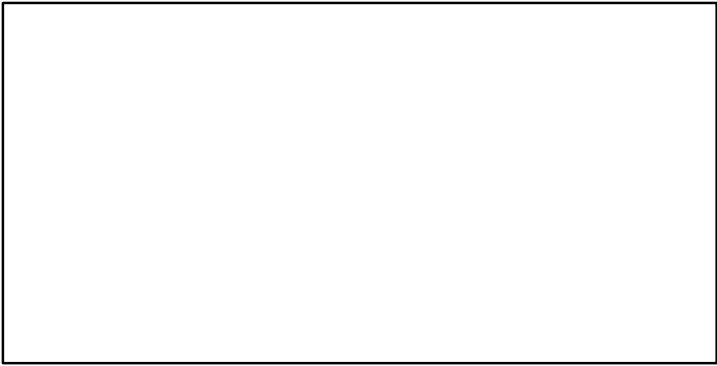
F\*



ER\*

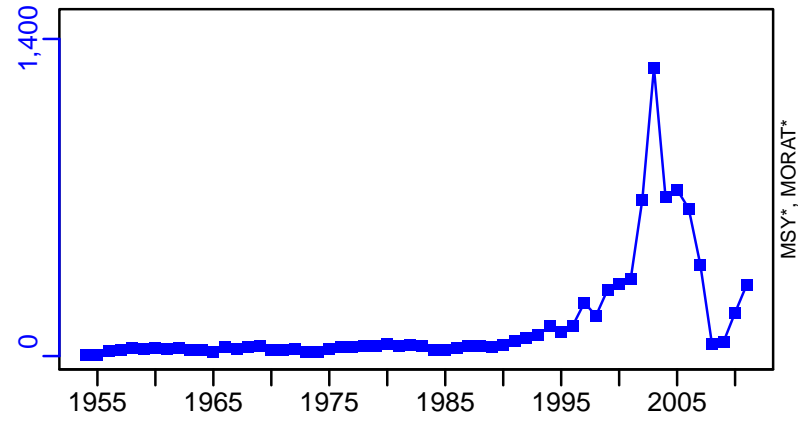


Recruits\*



# Big skate Queen Charlotte Sound [BIGSKA5AB]

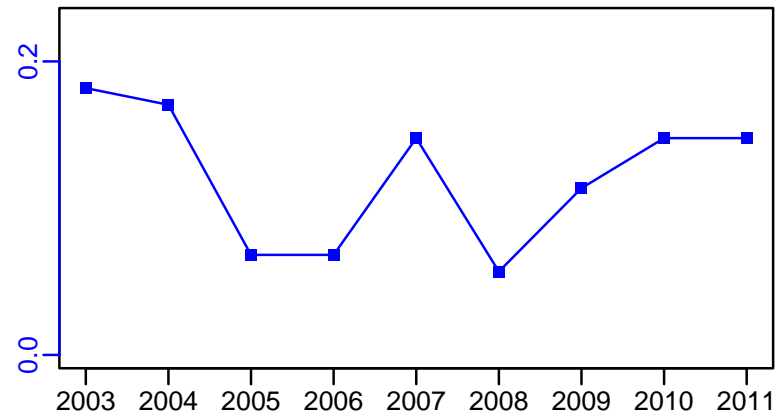
TC-MT, TL\*, RecC\* (1954-2011-OSGOOD)



TAC\*, Cpair\*, Cadv\*



survB-fishperE02hooks (1954-2011-OSGOOD)



CPUE\*



EFFORT\*



CdivMSY\*



## Big skate Hecate Strait [BIGSKA5CDE]

Metadata	
<b>Scientific Name</b>	Raja binoculata
<b>Current Assess ID</b>	DFO-PAC-BIGSKA5CDE-1954-2011-OSGOOD
<b>Area</b>	Hecate Strait
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Pacific Region
<b>Asmts in RAM</b>	2011

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	MSY-MT	2011	351
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2011	628		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year   ◆ End Year   \* No Data

Big skate Hecate Strait [BIGSKA5CDE]

TB\*



SSB\*



TN \*



F\*



ER\*



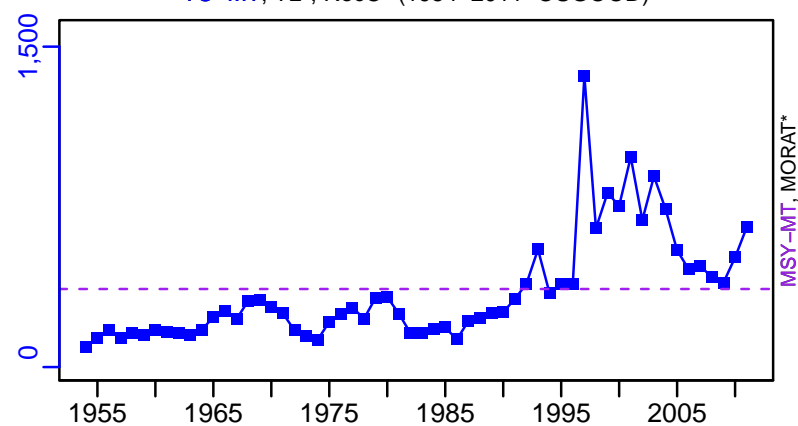
Recruits\*



■ Listed time series	- - - Target BRP	— Rec-Est
- - - MSY-based BRP	· · · Lim BRP	* No Data

# Big skate Hecate Strait [BIGSKA5CDE]

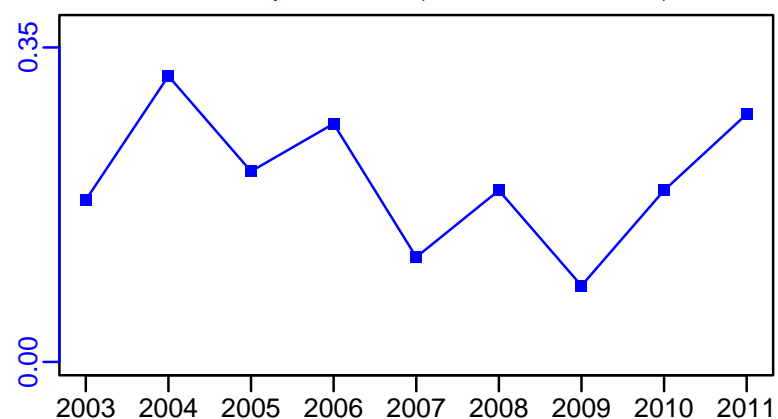
TC-MT, TL\*, RecC\* (1954-2011-OSGOOD)



TAC\*, Cpair\*, Cadv\*



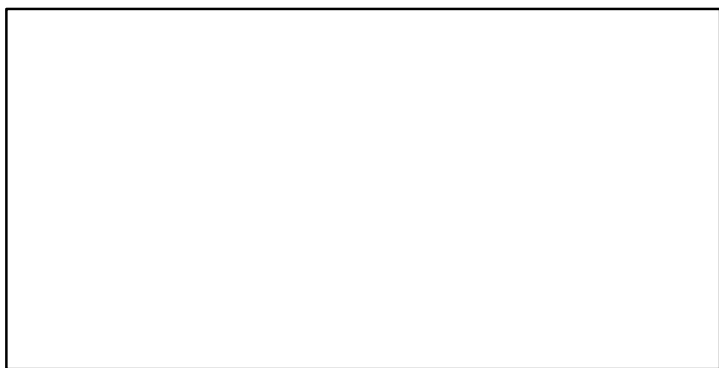
survB-fishperE02hooks (1954-2011-OSGOOD)



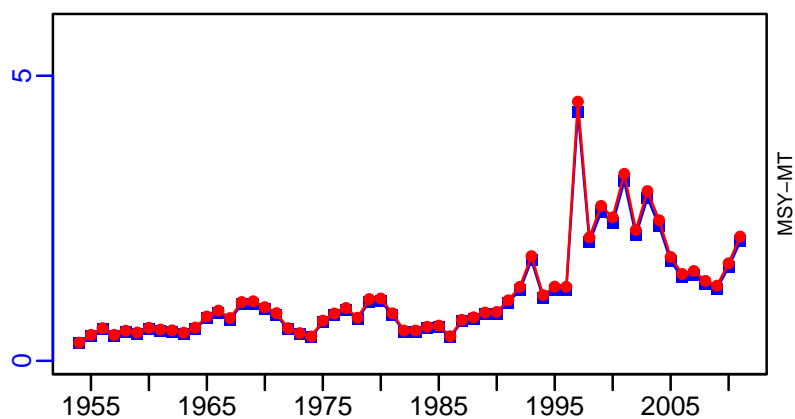
CPUE\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1954-2011-OSGOOD)



- 1st listed time series    ▲ 3rd listed time series    — MORAT
- 2nd listed time series    - - - MSY    \* No Data

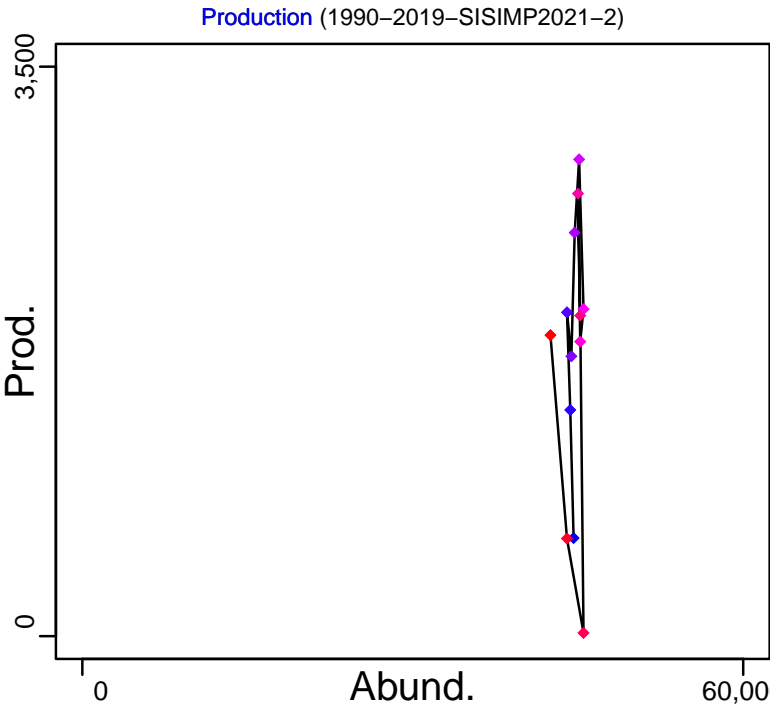
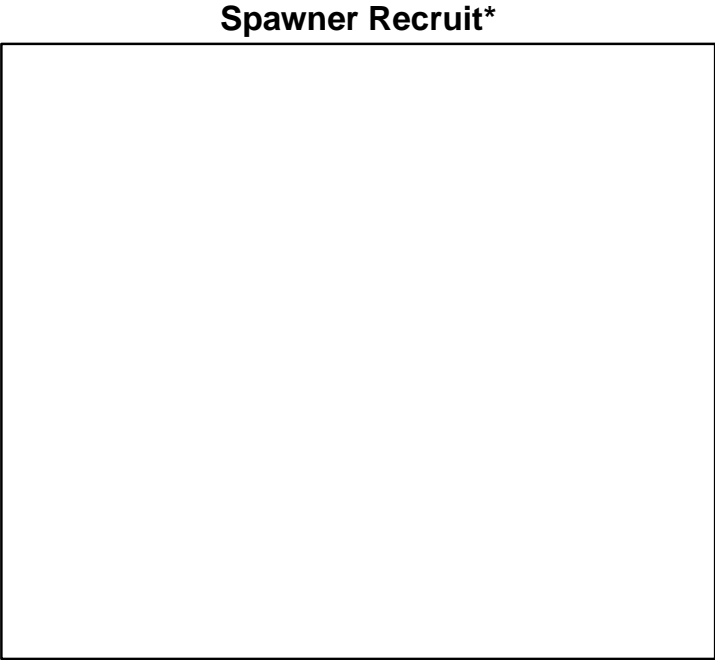
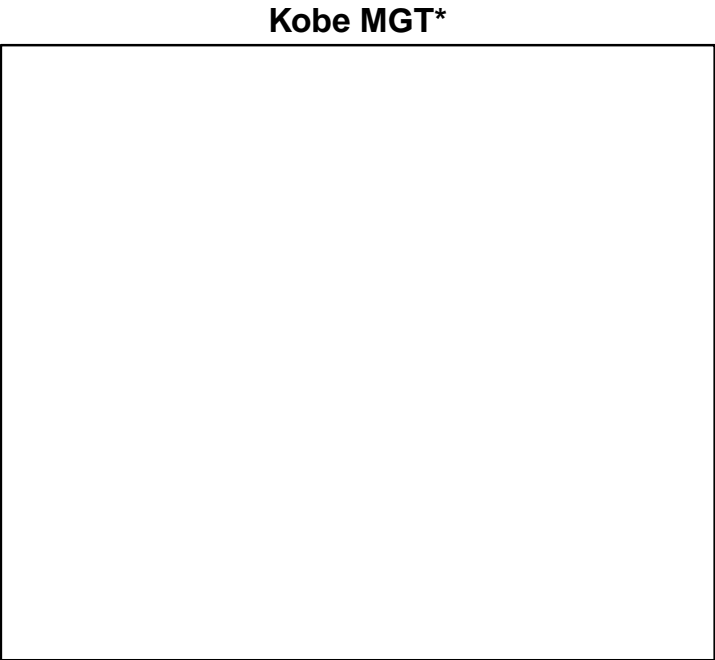
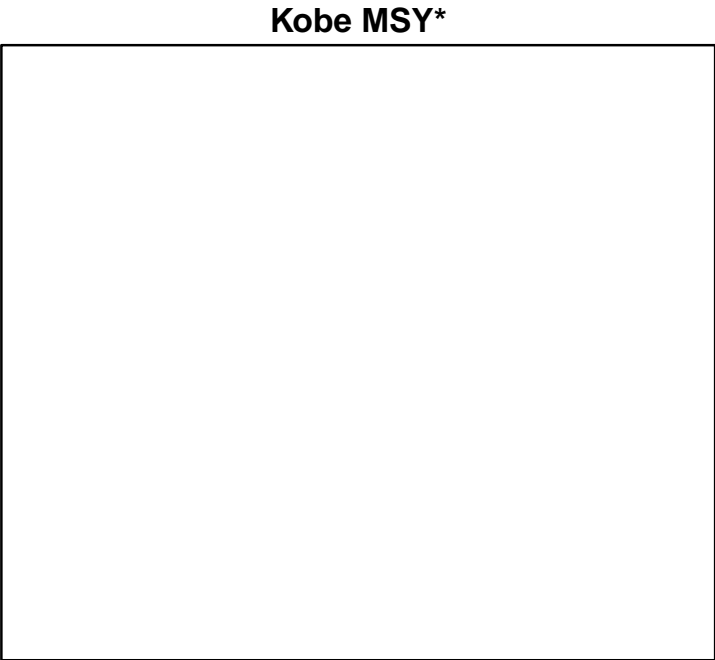
## Big skate Gulf of Alaska [BIGSKAGA]

Metadata	
<b>Scientific Name</b>	Raja binoculata
<b>Current Assess ID</b>	AFSC-BIGSKAGA-1990-2019-SISIMP2021-2
<b>Area</b>	Gulf of Alaska
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Alaska Fisheries Science Center
<b>Asmts in RAM</b>	2019

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	-	-	-
<b>Fmsy</b>	-	-	-
<b>ERmsy</b>	ERmsy-ratio	2019	0.1
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	ERlim-ratio	2019	0.1

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2019	42,800	-	-
<b>SSB</b>	-	-	-	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	-	-	-	-	-
<b>ER</b>	ER-ratio	2019	0.03	-	-
<b>TC</b>	TC-MT	2019	1370		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	-	-	-		
<b>F/Fmsy</b>	-	-	-		
<b>ER/ERmsy</b>	ER-ratio/ERmsy-ratio	2019	0.3		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

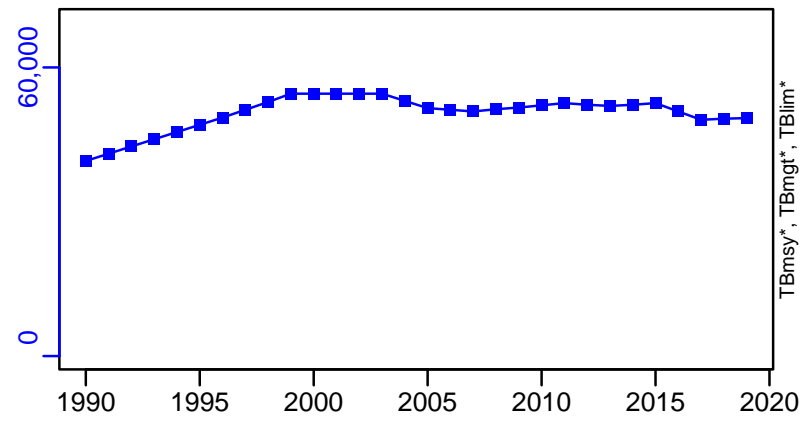




◆ Start Year ◆ End Year \* No Data

# Big skate Gulf of Alaska [BIGSKAGA]

TB-MT (1990-2019-SISIMP2021-2)



SSB\*



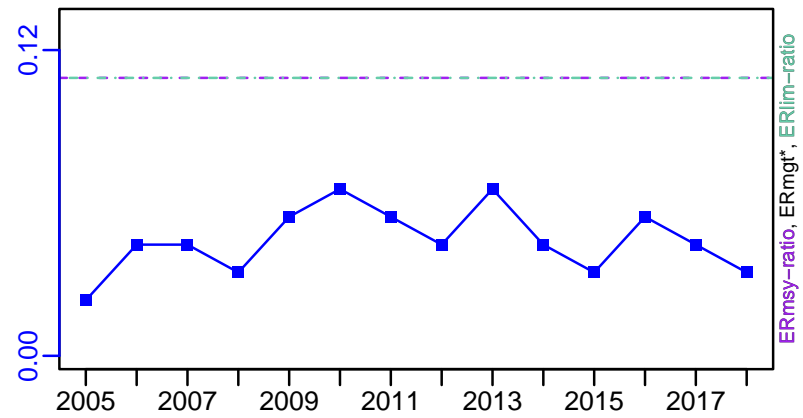
TN \*



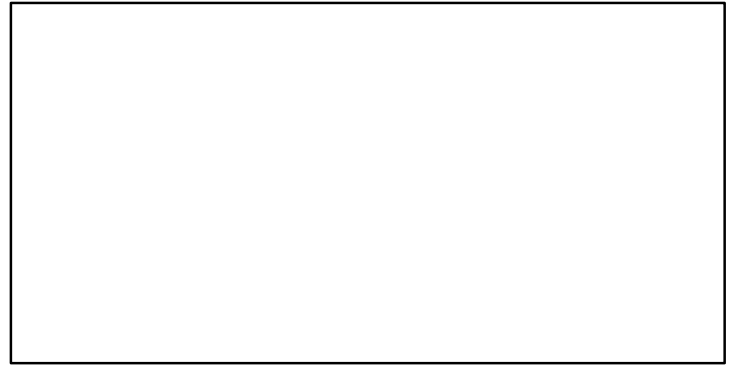
F\*



ER-ratio (1990-2019-SISIMP2021-2)



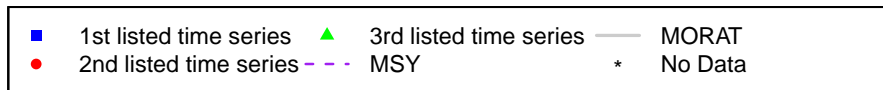
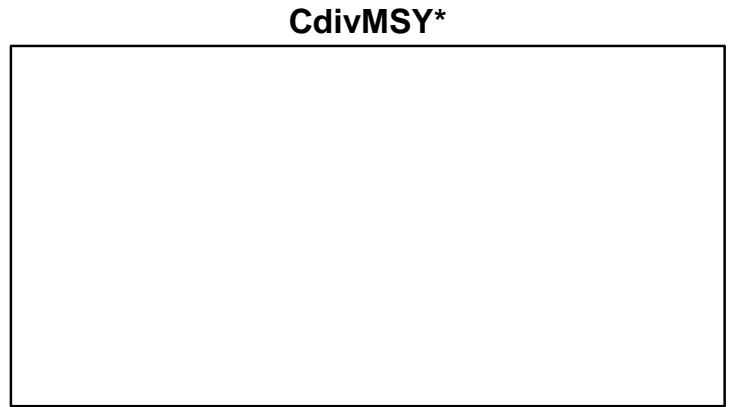
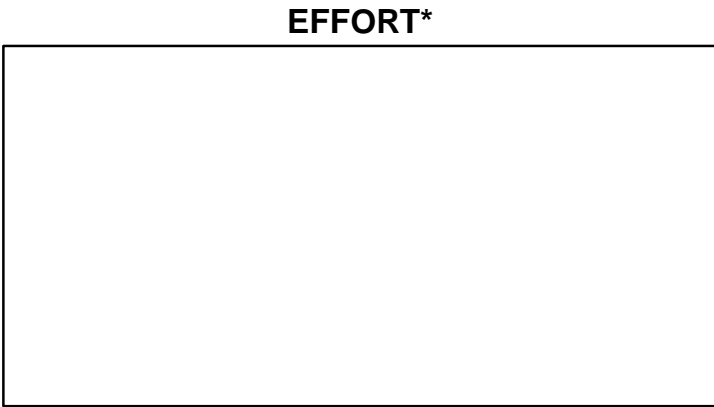
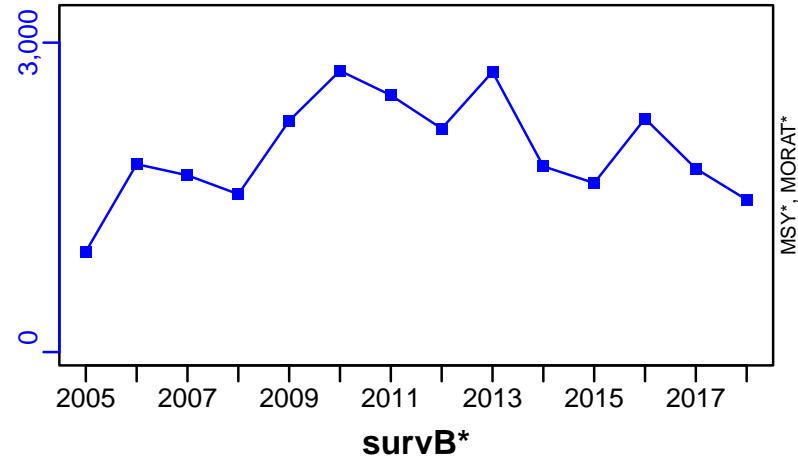
Recruits\*



# Big skate Gulf of Alaska [BIGSKAGA]

TC-MT, TL\*, RecC\* (1990-2019-SISIMP2021-2)

TAC\*, Cpair\*, Cadv\*



## Big skate Pacific Coast [BIGSKAPCOAST]

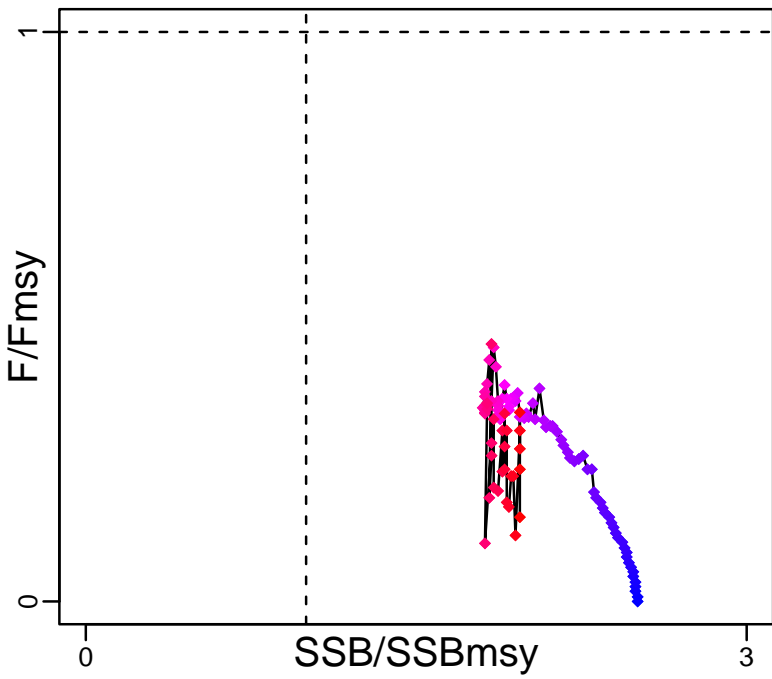
Metadata	
<b>Scientific Name</b>	Raja binoculata
<b>Current Assess ID</b>	NWFSC-BIGSKAPCOAST-1916-2019-SISIMP2021-2
<b>Area</b>	Pacific Coast
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northwest Fisheries Science Center
<b>Asmts in RAM</b>	2019

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-MT	2019	1010
<b>Fmsy</b>	Fmsy-1/yr	2019	0.5
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2019	703
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	SSBlim-MT	2019	631
<b>Flim</b>	Flim-1/yr	2019	0.5
<b>ERlim</b>	-	-	-

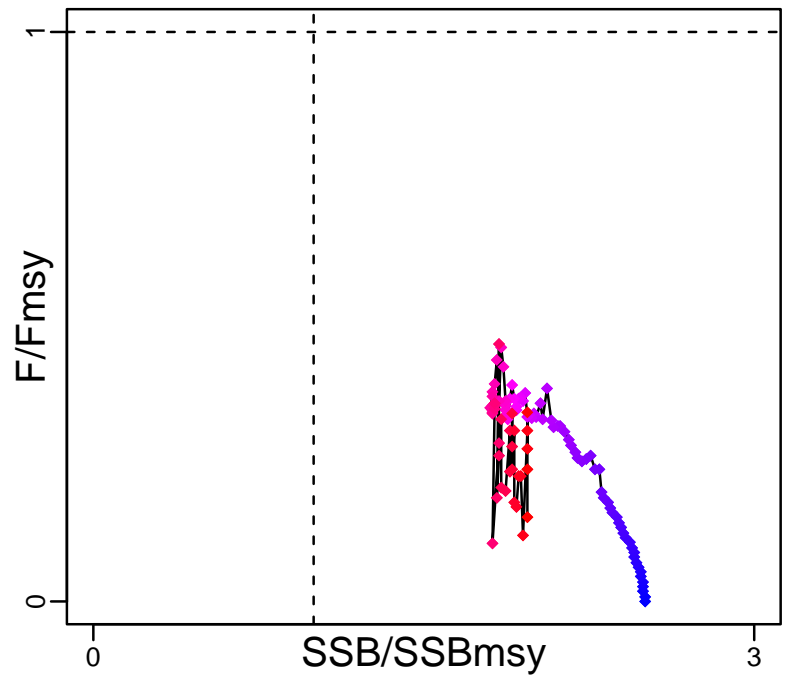
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSB-MT	2019	2000	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2019	6,710,000	-	0
<b>F</b>	F-1/yr	2019	0.074	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	TC-MT	2019	185		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSB-MT/SSBmsy-MT	2019	1.98		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2019	0.148		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

# Big skate Pacific Coast [BIGSKAPCOAST]

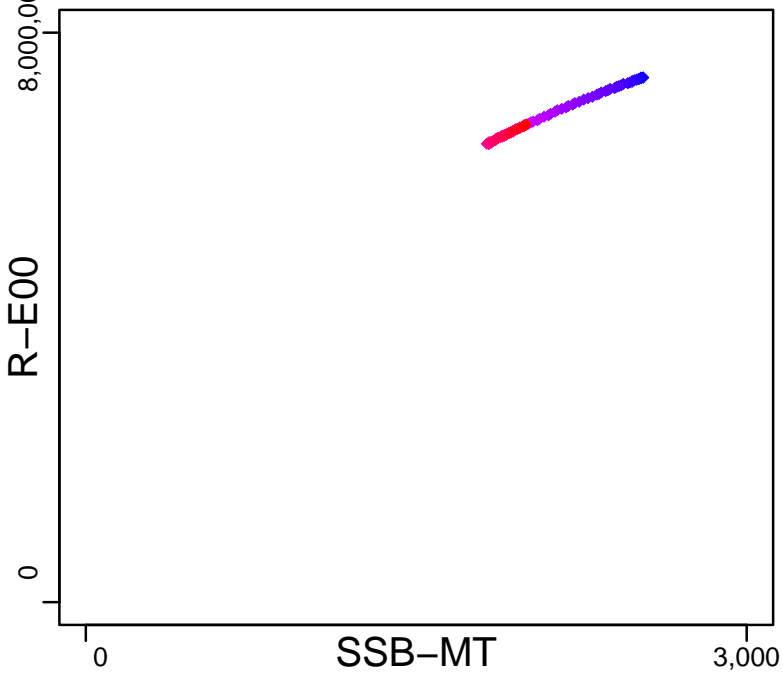
Kobe MSYpref (1916–2019–SISIMP2021–2)



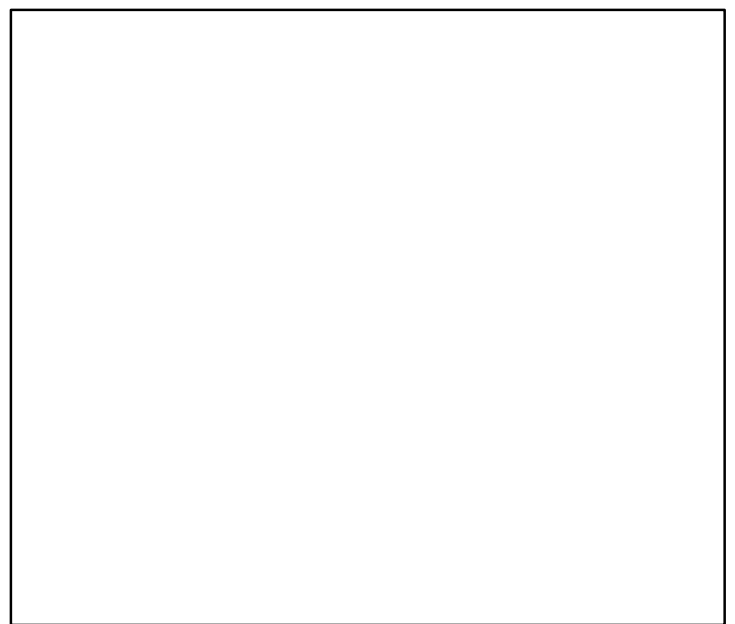
Kobe MGTpref (1916–2019–SISIMP2021–2)



Spawner Recruit (1916–2019–SISIMP2021–2)



Production\*



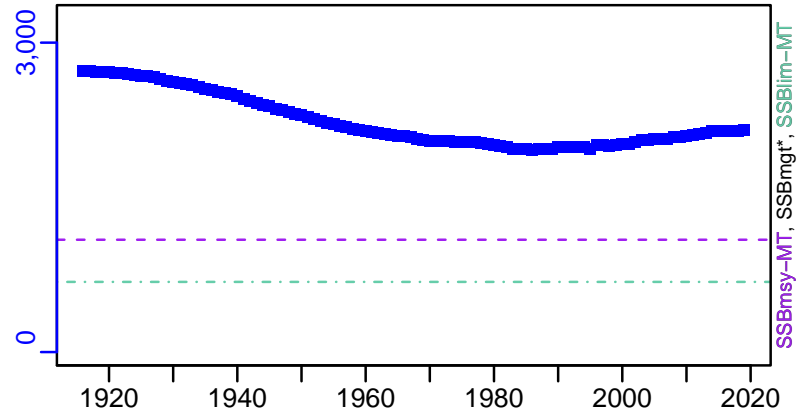
◆ Start Year ◆ End Year \* No Data

# Big skate Pacific Coast [BIGSKAPCOAST]

TB\*



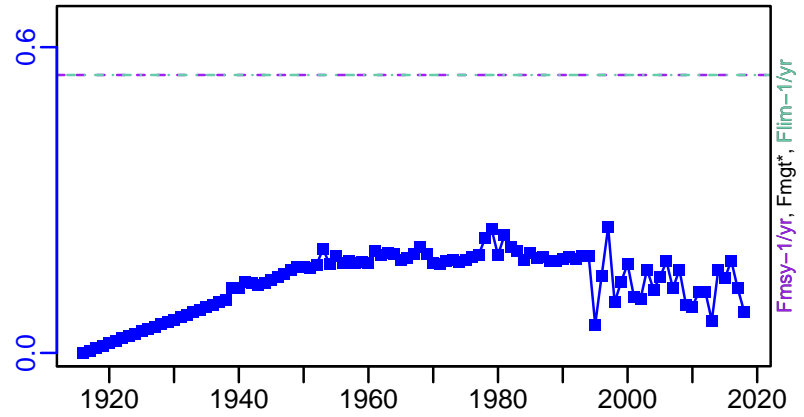
SSB-MT (1916-2019-SISIMP2021-2)



TN \*



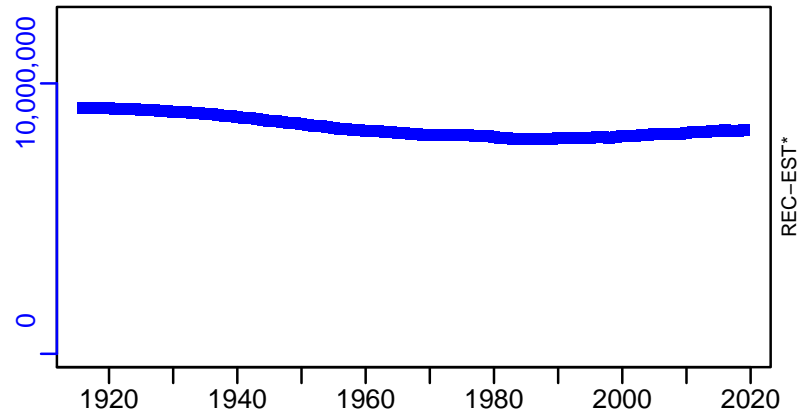
F-1/yr (1916-2019-SISIMP2021-2)



ER\*



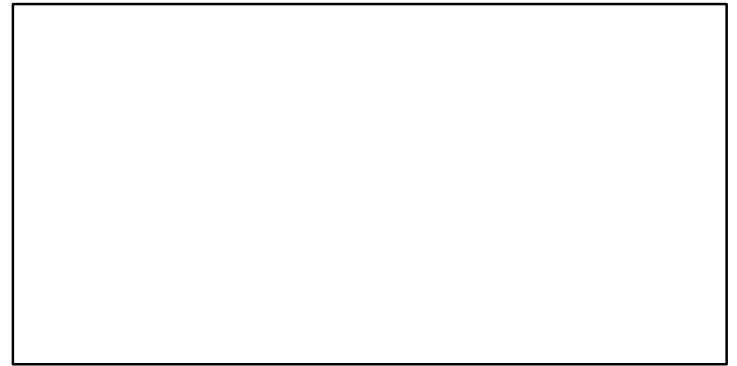
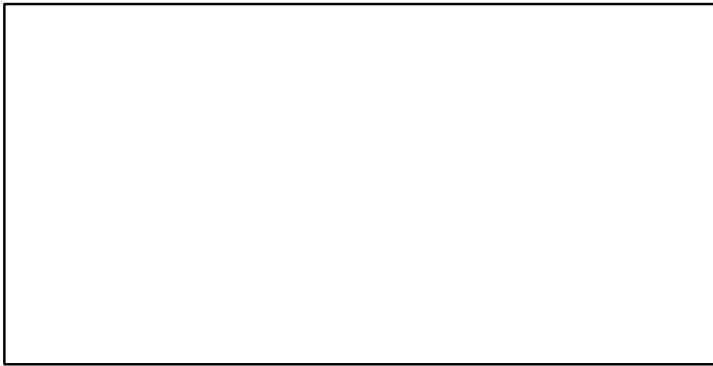
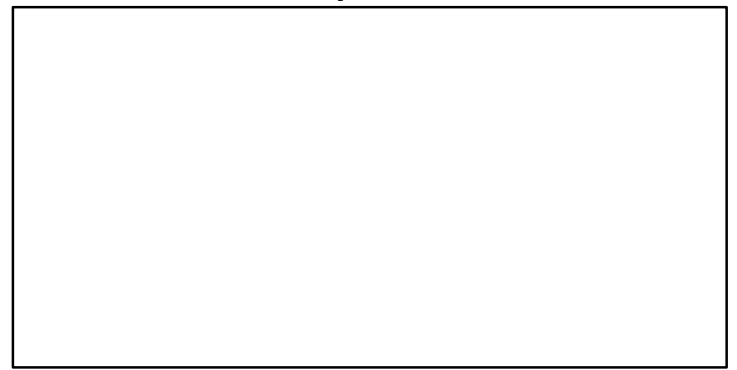
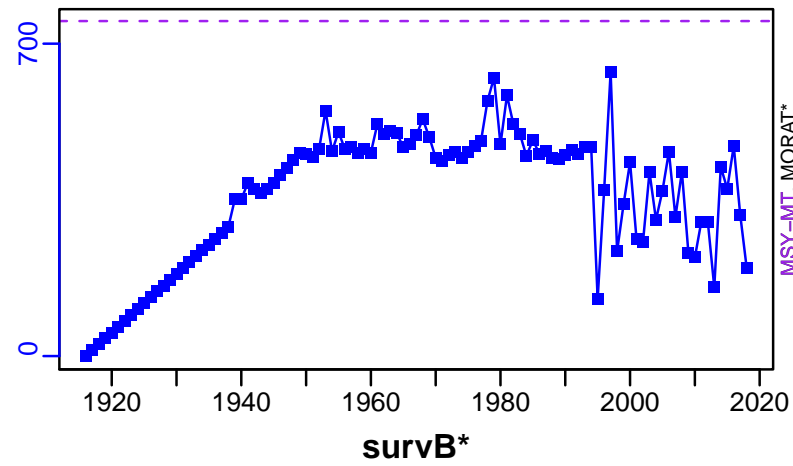
R-E00 (1916-2019-SISIMP2021-2)



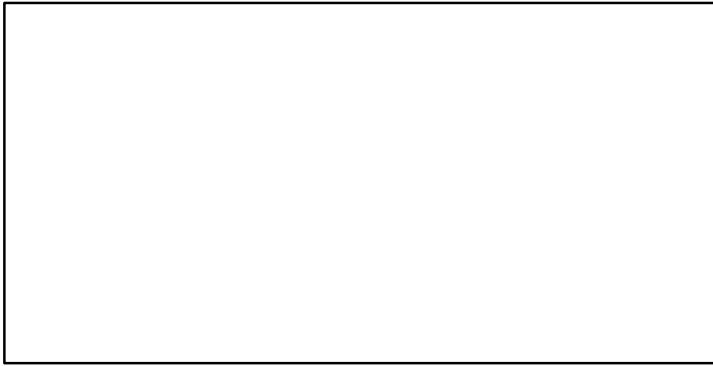
# Big skate Pacific Coast [BIGSKAPCOAST]

TC-MT, TL\*, RecC\* (1916-2019-SISIMP2021-2)

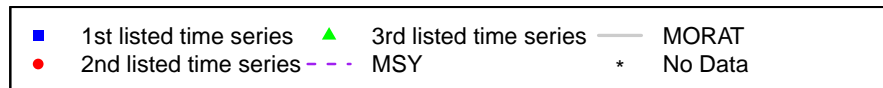
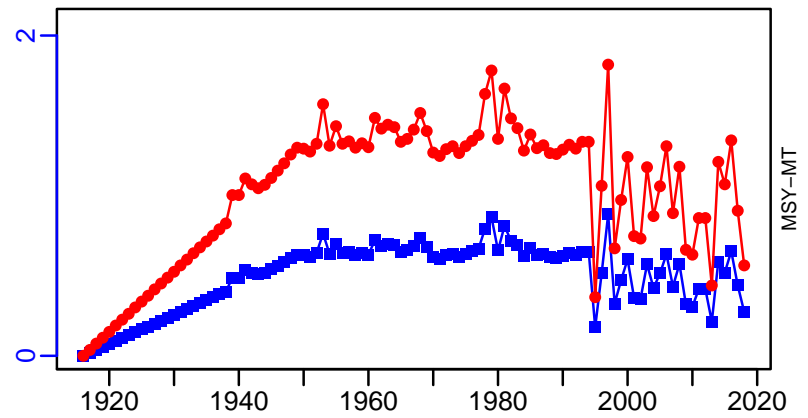
TAC\*, Cpair\*, Cadv\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1916-2019-SISIMP2021-2)



## Blonde ray ICES 4a-6 [BLRAYIVa-VI]

Metadata	
<b>Scientific Name</b>	Raja brachyura
<b>Current Assess ID</b>	WGEF-BLRAYIVa-VI-2005-2018-ICESIMP2021
<b>Area</b>	ICES 4a-6
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2018, 2016

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	27		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



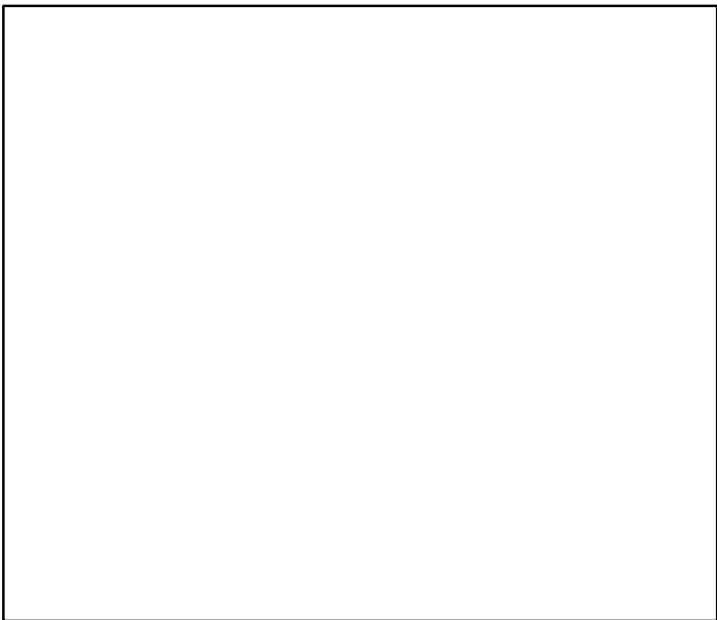
Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



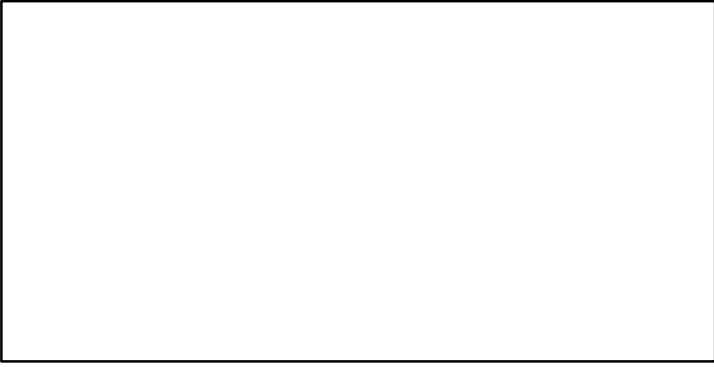
Production\*



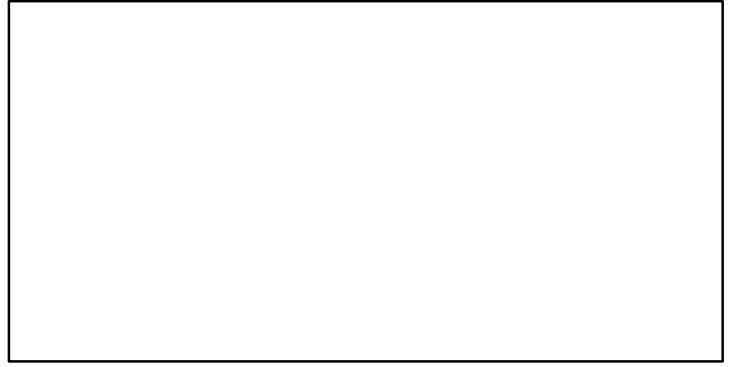
◆ Start Year   ◆ End Year   \* No Data

Blonde ray ICES 4a–6 [BLRAYIVa–VI]

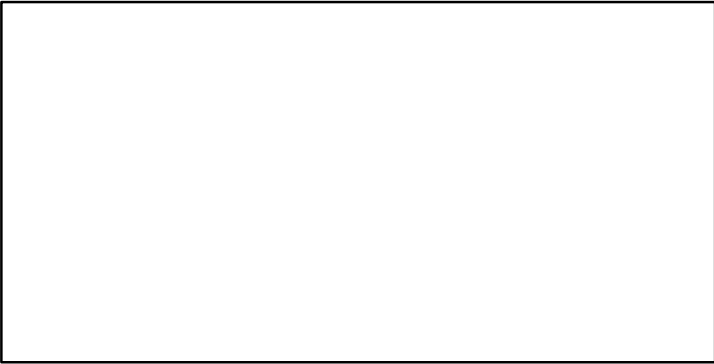
**TB\***



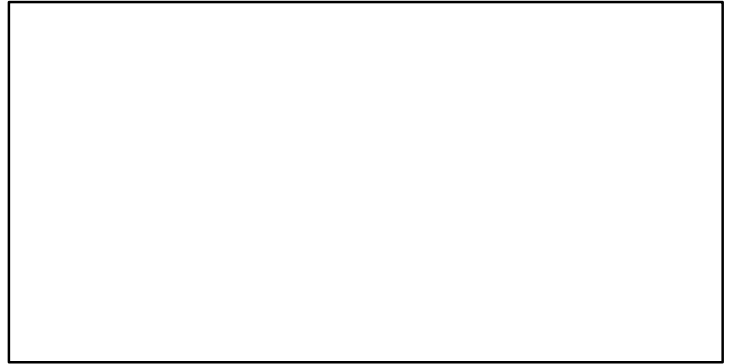
**SSB\***



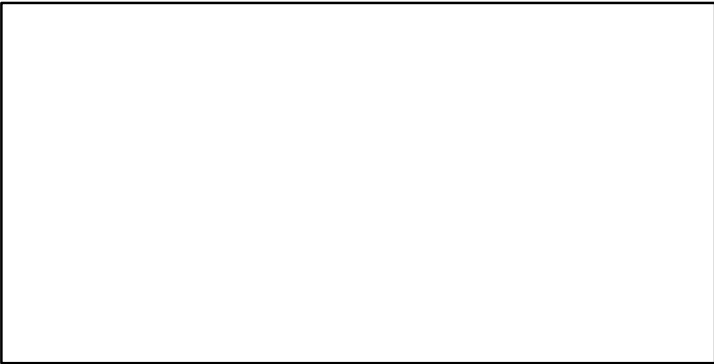
**TN \***



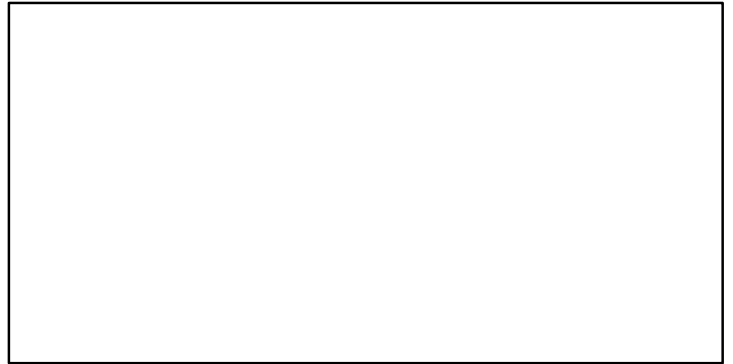
**F\***



**ER\***



**Recruits\***



# Blonde ray ICES 4a-6 [BLRAYIVa-VI]

TL-MT, TC\*, RecC\* (2005-2018-ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

MSY\*, MORAT\*

survB-index (2005-2018-ICESIMP2021)

CPUE\*

EFFORT\*

CdivMSY\*

■ 1st listed time series ▲ 3rd listed time series — MORAT  
● 2nd listed time series - - - MSY \* No Data

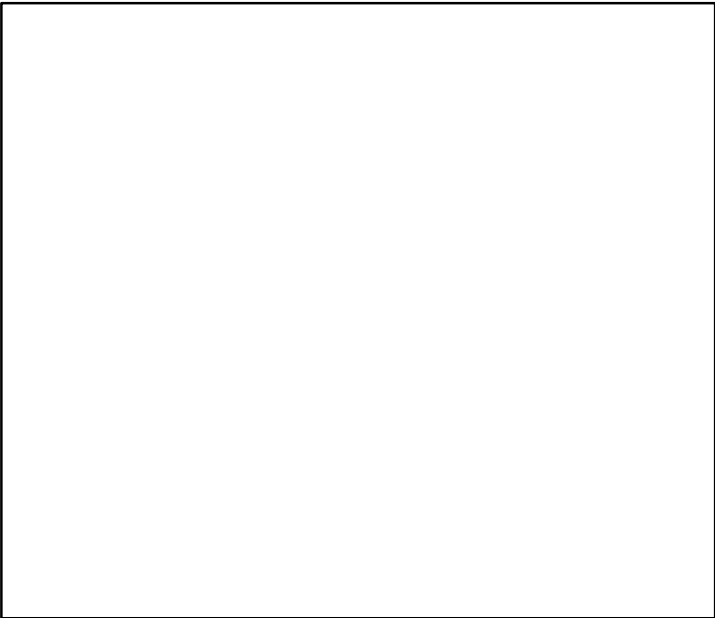
## Blonde ray ICES 4c-7d [BLRAYIVc-VIId]

Metadata	
<b>Scientific Name</b>	Raja brachyura
<b>Current Assess ID</b>	WGEF-BLRAYIVc-VIId-1988-2018-ICESIMP2021
<b>Area</b>	ICES 4c-7d
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2018, 2016

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	251		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

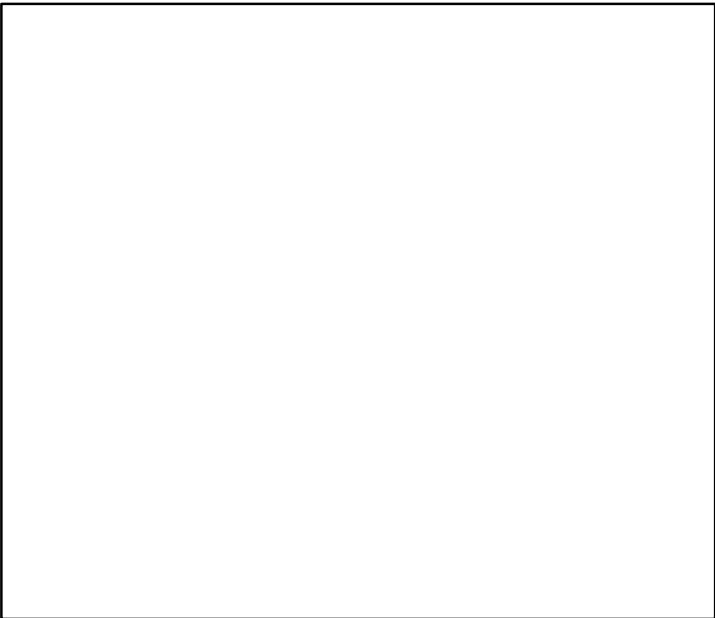
Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

TB\*



SSB\*



TN \*



F\*



ER\*

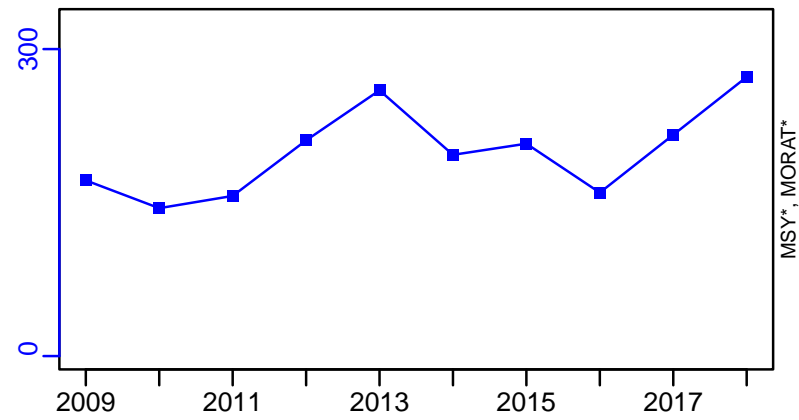


Recruits\*



# Blonde ray ICES 4c-7d [BLRAYIVc-VIId]

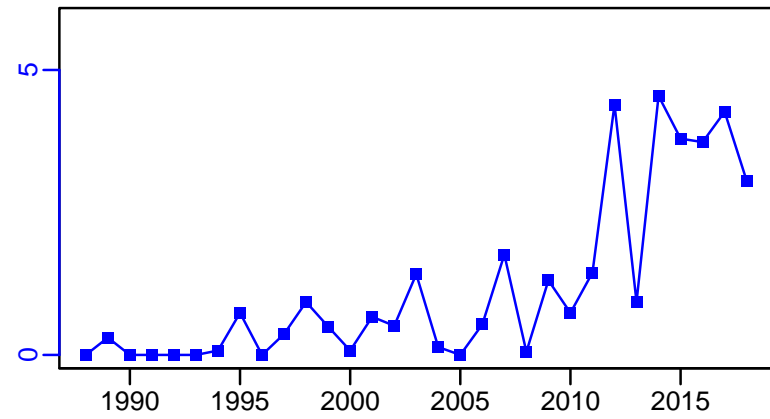
TL-MT, TC\*, RecC\* (1988-2018-ICESIMP2021)



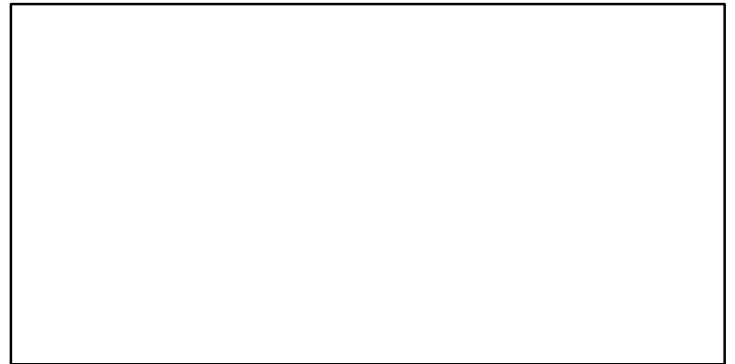
TAC\*, Cpair\*, Cadv\*



survB-index (1988-2018-ICESIMP2021)



CPUE\*



EFFORT\*



CdivMSY\*



■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - - MSY    \* No Data

## Blonde ray Portuguese Waters -East [BLRAYIXa]

Metadata	
<b>Scientific Name</b>	Raja brachyura
<b>Current Assess ID</b>	WGEF-BLRAYIXa-2005-2015-ICESIMP2018
<b>Area</b>	Portugese Waters -East
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	1.09	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	218		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



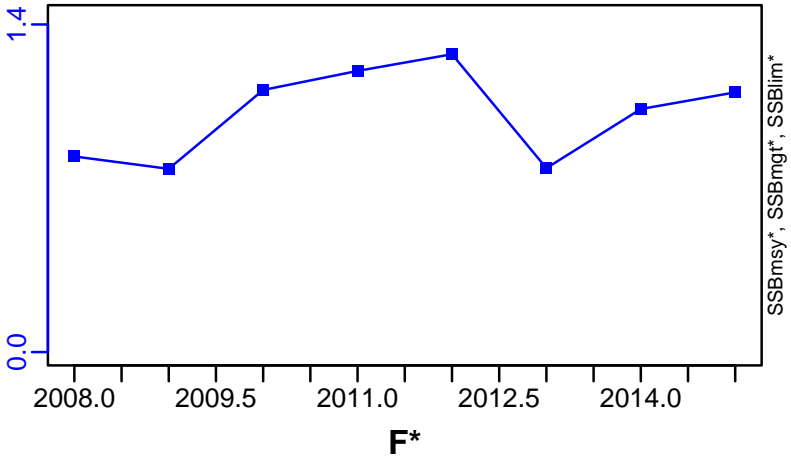
◆ Start Year   ◆ End Year   \* No Data

Blonde ray Portugese Waters –East [BLRAYIXa]

TB\*



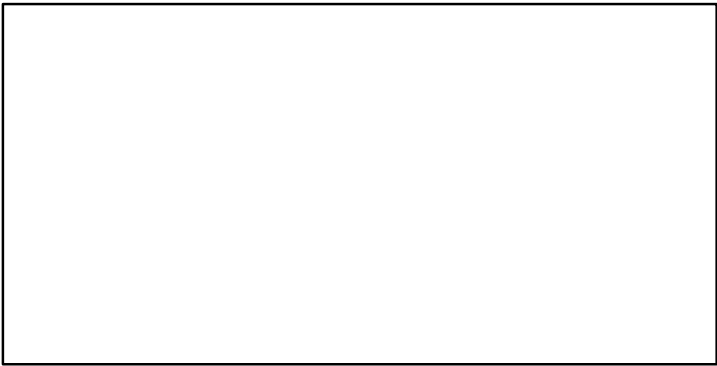
SSB-index (2005–2015–ICESIMP2018)



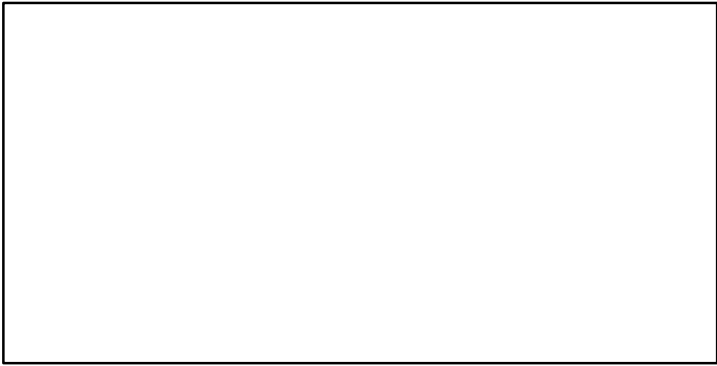
TN \*



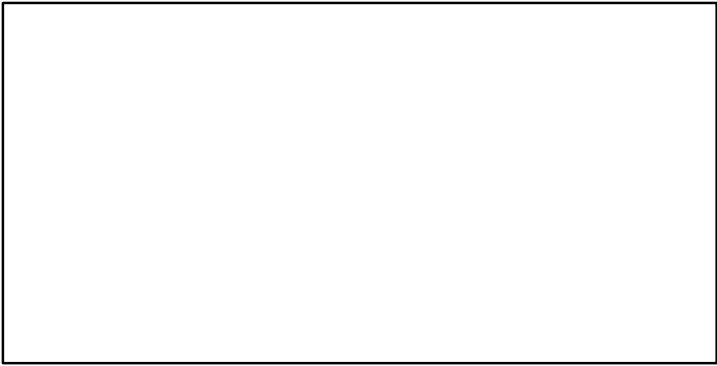
F\*



ER\*

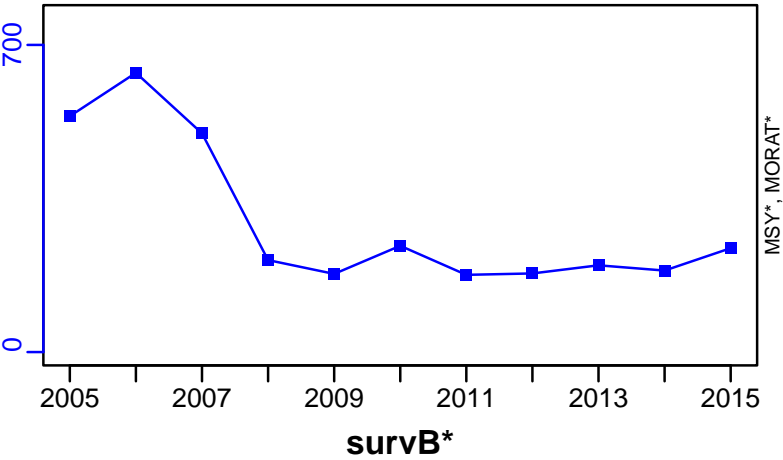


Recruits\*



Blonde ray Portuguese Waters –East [BLRAYIXa]

TL–MT, TC\*, RecC\* (2005–2015–ICESIMP2018)



TAC\*, Cpair\*, Cadv\*



CPUE\*



EFFORT\*



CdivMSY\*



## Blonde ray ICES 7afg [BLRAYVIIafg]

Metadata	
<b>Scientific Name</b>	Raja brachyura
<b>Current Assess ID</b>	WGEF-BLRAYVIIafg-1993-2015-ICESIMP2018
<b>Area</b>	ICES 7afg
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	1170		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

TB\*



SSB\*



TN \*



F\*



ER\*

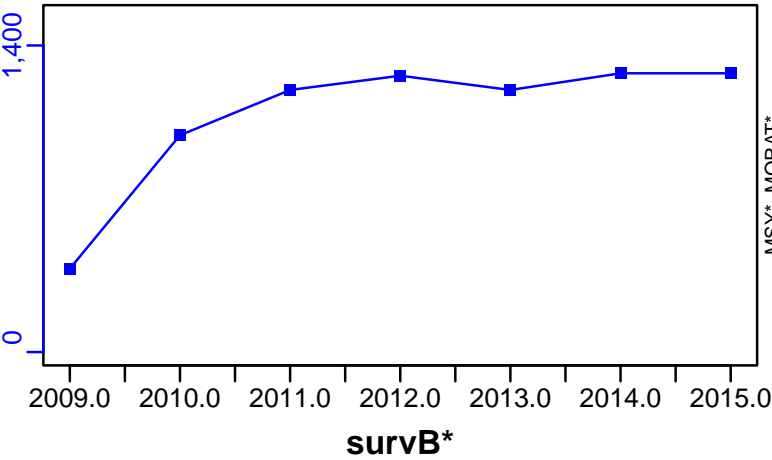


Recruits\*



Blonde ray ICES 7afg [BLRAYVIIafg]

TL-MT, TC\*, RecC\* (1993–2015–ICESIMP2018)



TAC\*, Cpair\*, Cadv\*



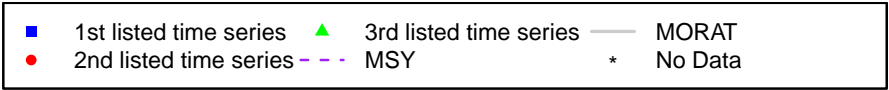
CPUE\*



EFFORT\*



CdivMSY\*



## Blonde ray Western English Channel [BLRAYVIIe]

Metadata	
<b>Scientific Name</b>	Raja brachyura
<b>Current Assess ID</b>	WGEF-BLRAYVIIe-2009-2015-ICESIMP2018
<b>Area</b>	Western English Channel
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	731		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



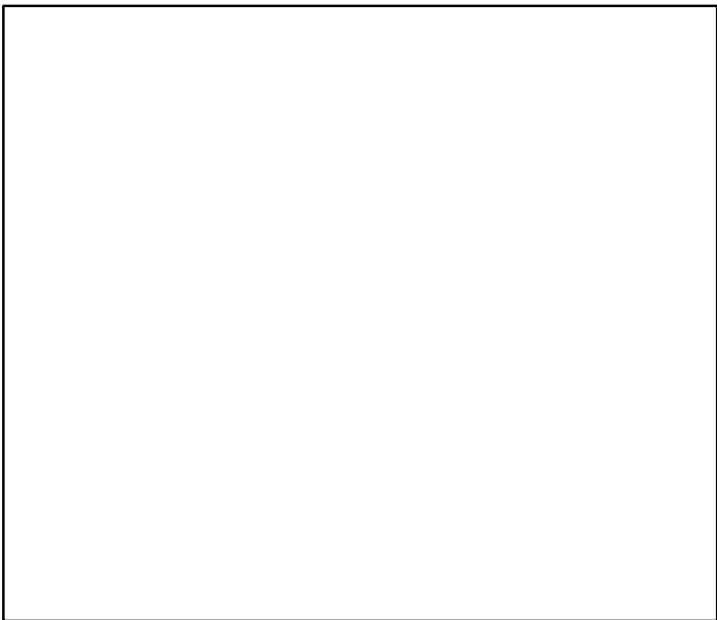
Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

TB\*



SSB\*



TN \*



F\*



ER\*



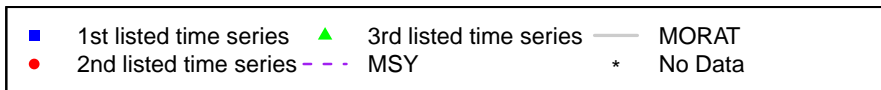
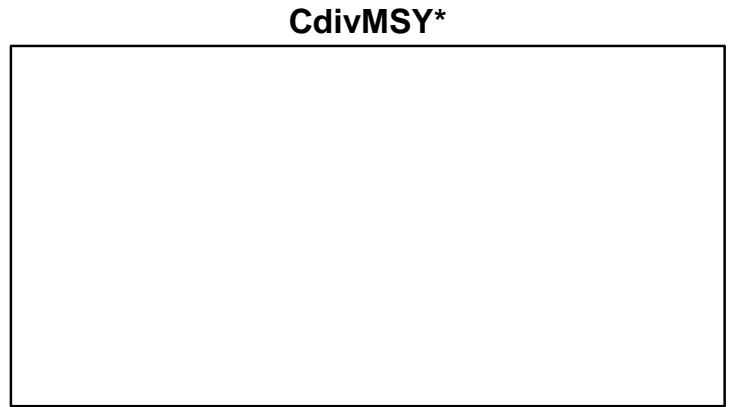
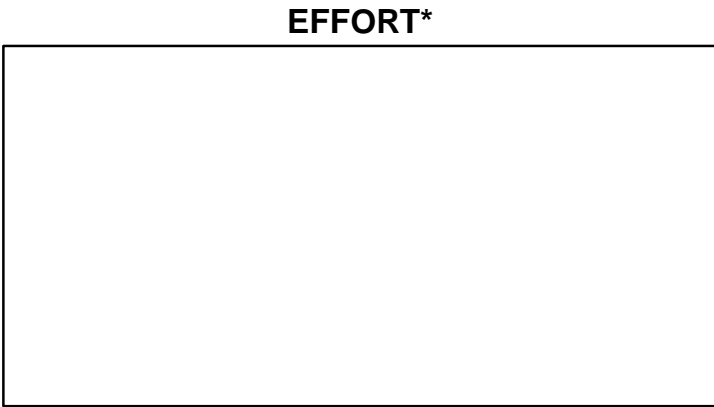
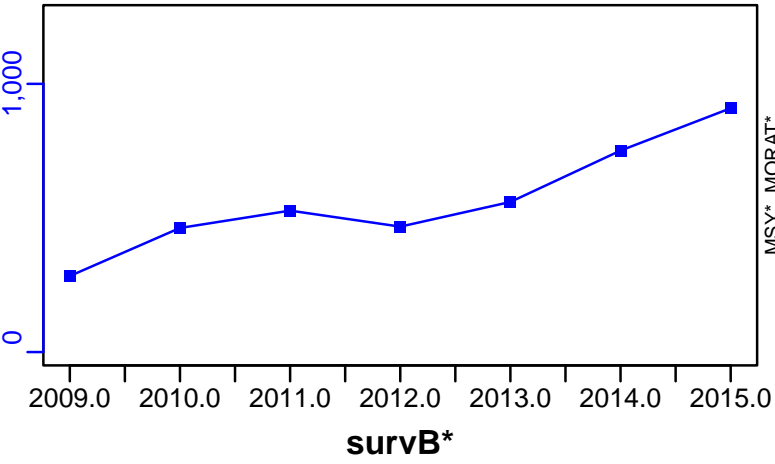
Recruits\*



# Blonde ray Western English Channel [BLRAYVlle]

TL-MT, TC\*, RecC\* (2009–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Blue shark Indian Ocean [BLSHARIO]

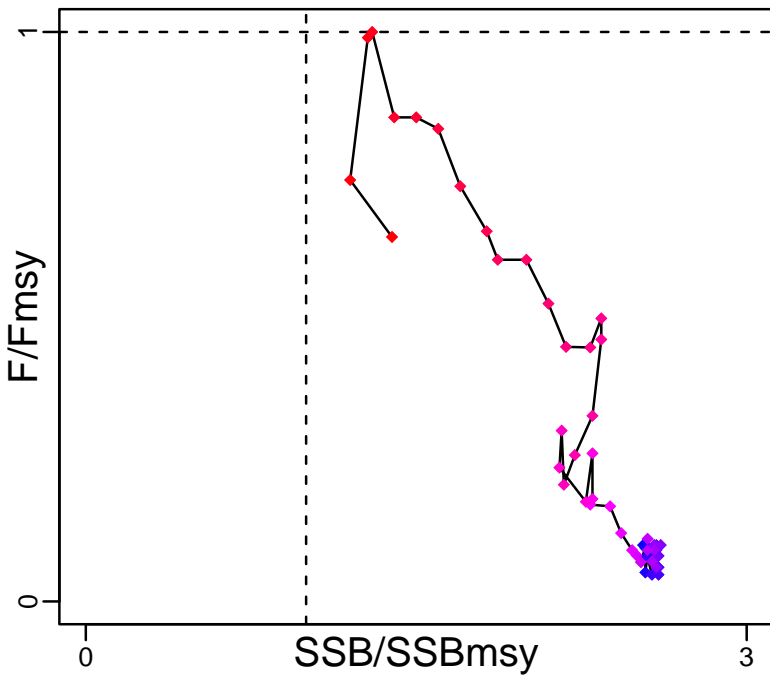
Metadata	
<b>Scientific Name</b>	Prionace glauca
<b>Current Assess ID</b>	IOTC-BLSHARIO-1970-2019-SMITH
<b>Area</b>	Indian Ocean
<b>Management Authority</b>	Indian Ocean Tuna Commission
<b>Assessor</b>	Indian Ocean Tuna Commission
<b>Asmts in RAM</b>	2018, 2019

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-extr-MT	2019	39,017
<b>Fmsy</b>	-	-	-
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2019	36,000
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2019	351,960	-	-
<b>SSB</b>	SSB-MT	2019	46,320	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	-	-	-	-	-
<b>ER</b>	ER-calc-ratio	2019	0.123	-	-
<b>TC</b>	TC-MT	2019	43,420		
<b>TL</b>	TL-MT	2018	22,385		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSBdivSSBmsy-dimensionless	2019	1.39		
<b>F/Fmsy</b>	FdivFmsy-dimensionless	2019	0.64		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

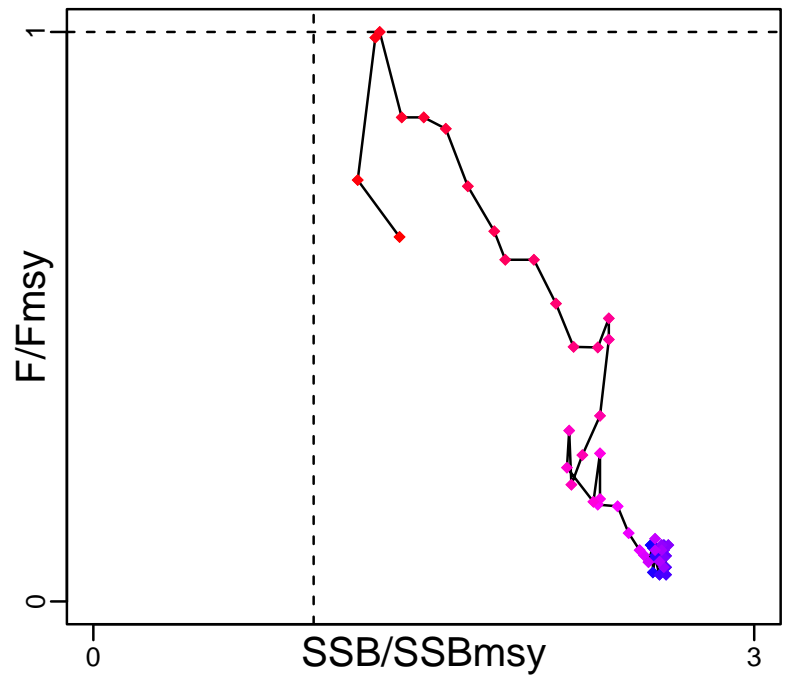
# Blue shark Indian Ocean [BLSHARIO]

Kobe MSYpref (1970–2019–SMITH)

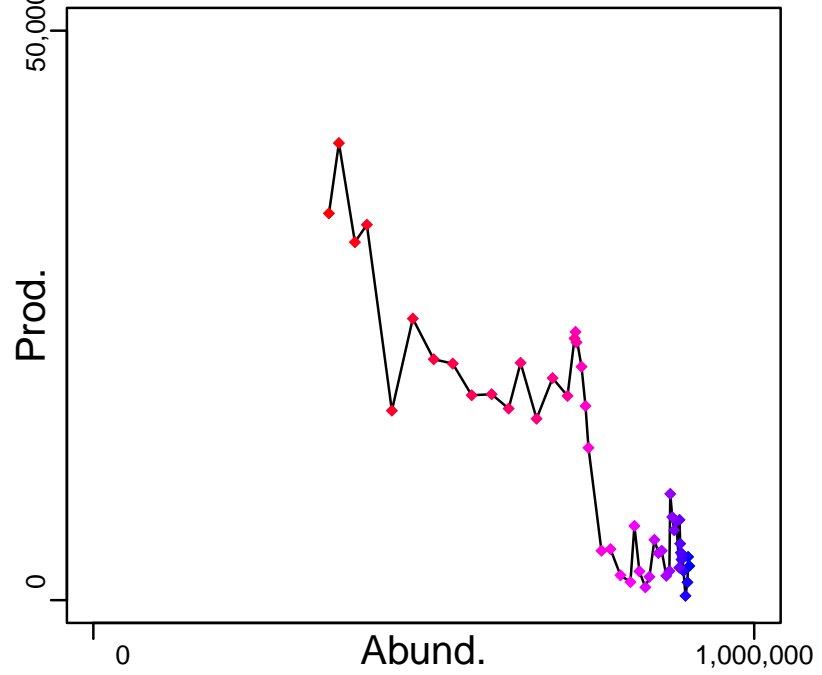


Spawner Recruit\*

Kobe MGTpref (1970–2019–SMITH)

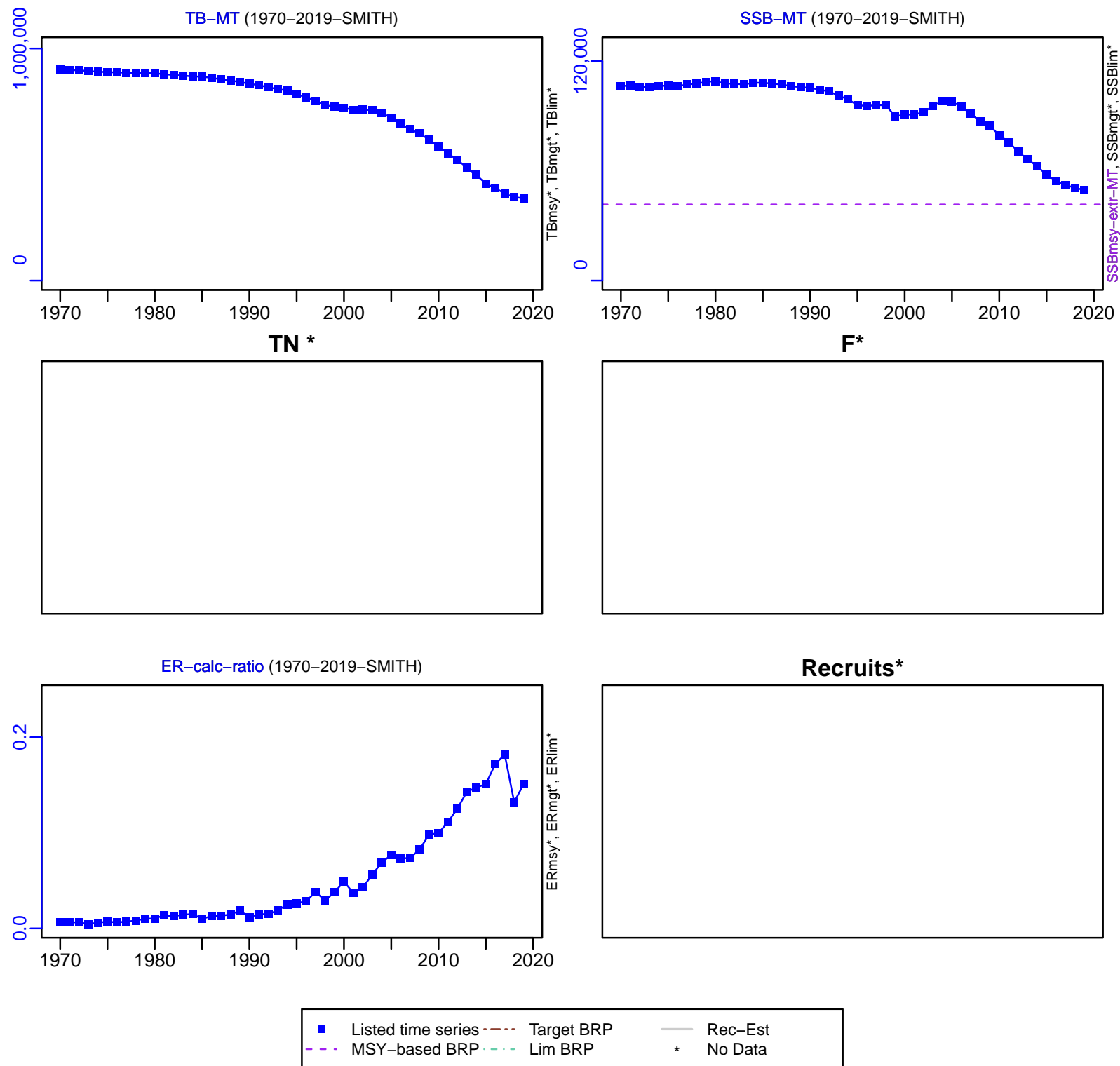


Production (1970–2019–SMITH)



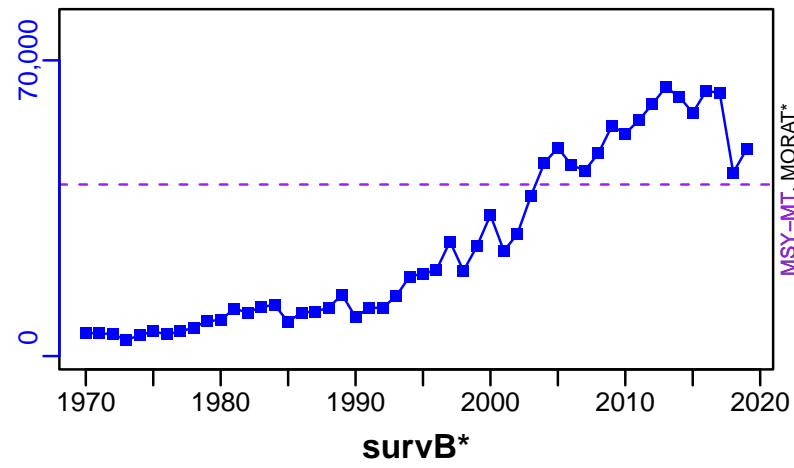
◆ Start Year ◆ End Year \* No Data

# Blue shark Indian Ocean [BLSHARIO]



# Blue shark Indian Ocean [BLSHARIO]

TC-MT, TL\*, RecC\* (1970–2019–SMITH)



TAC\*, Cpair\*, Cadv\*



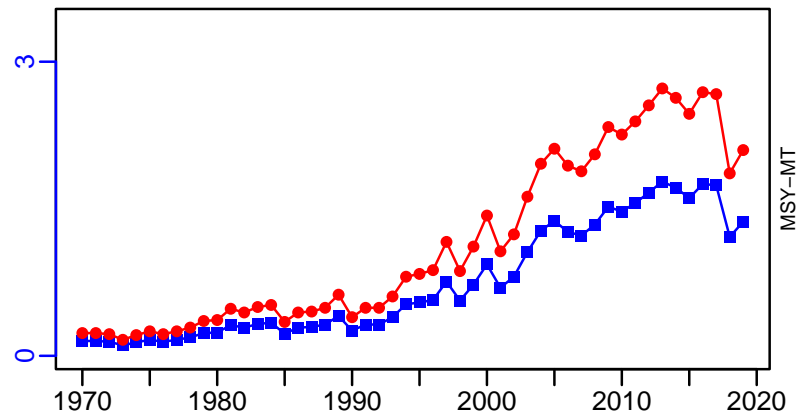
CPUE\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1970–2019–SMITH)



- 1st listed time series
- 2nd listed time series
- 3rd listed time series
- MSY
- MORAT
- No Data

## Blue shark Northern Atlantic [BLSHARNATL]

Metadata	
<b>Scientific Name</b>	Prionace glauca
<b>Current Assess ID</b>	ICCAT-BLSHARNATL-1957-2018-PONS
<b>Area</b>	Northern Atlantic
<b>Management Authority</b>	International Commission for the Conservation of Atlantic Tunas
<b>Assessor</b>	International Commission for the Conservation of Atlantic Tunas
<b>Asmts in RAM</b>	2018

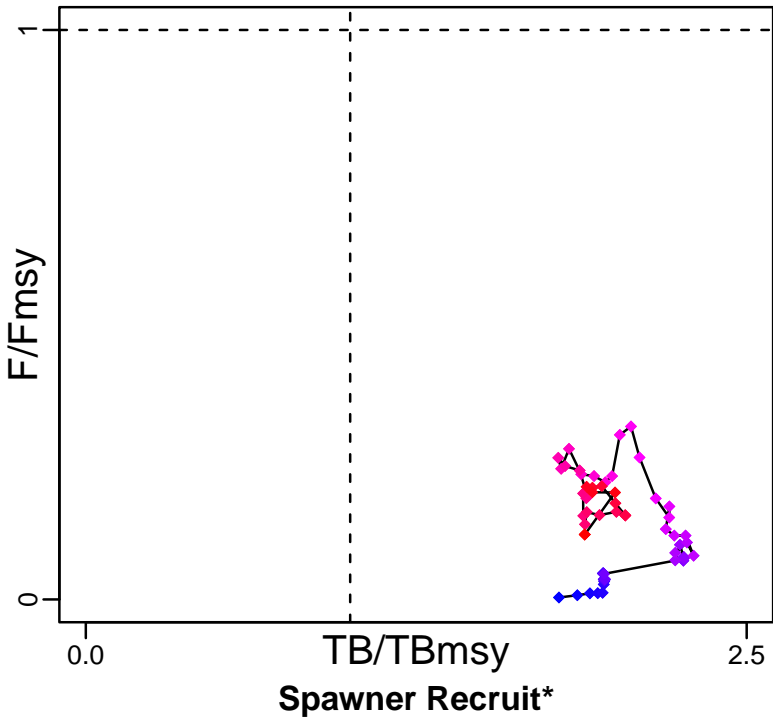
Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	MSY-MT	2018	403,500
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	33,964		
TB/TBmsy	TBdivTBmsy-dimensionless	2018	1.887		
SSB/SSBmsy	-	-	-		
F/Fmsy	FdivFmsy-dimensionless	2018	0.114		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

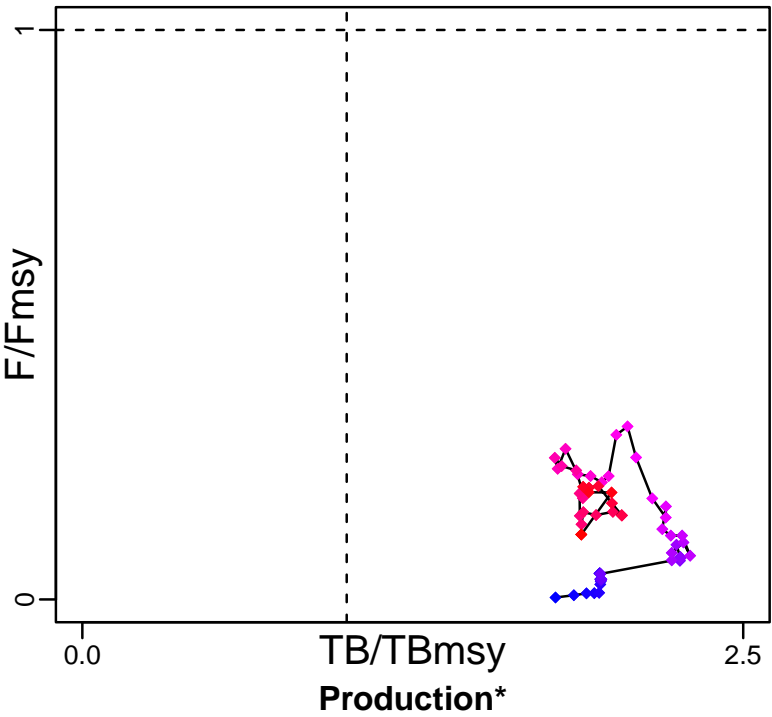


Blue shark Northern Atlantic [BLSHARNATL]

Kobe MSY<sub>pref</sub> (1957–2018–PONS)



Kobe MGT<sub>pref</sub> (1957–2018–PONS)



Blue shark Northern Atlantic [BLSHARNATL]

TB\*



SSB\*



TN \*



F\*



ER\*



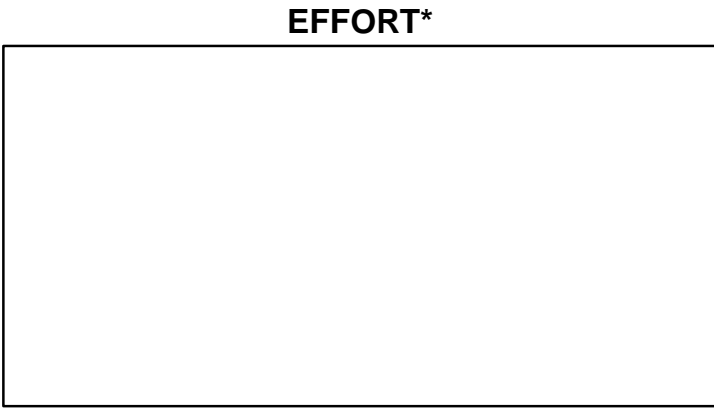
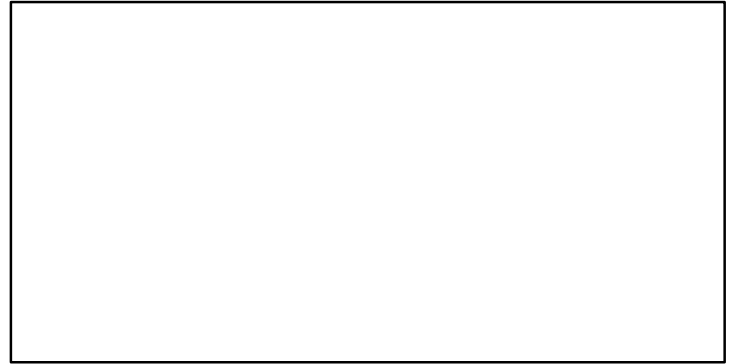
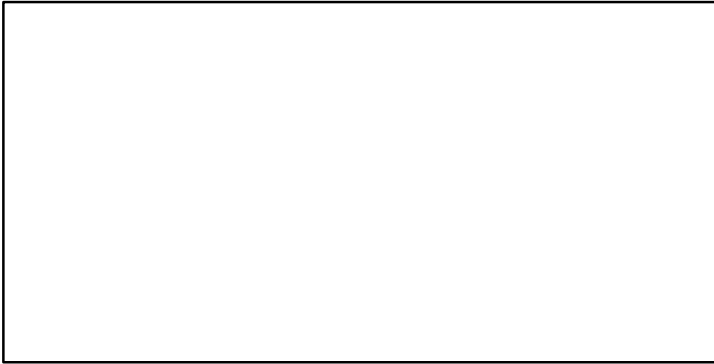
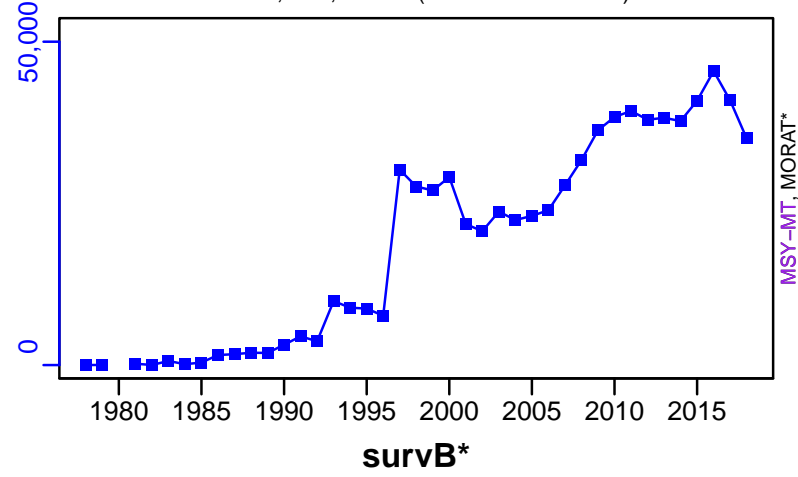
Recruits\*



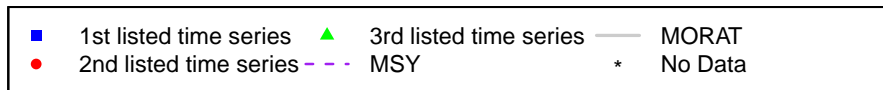
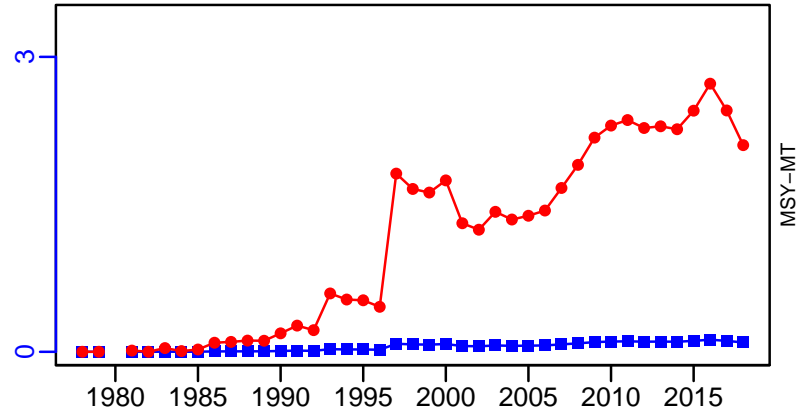
# Blue shark Northern Atlantic [BLSHARNATL]

TL-MT, TC\*, RecC\* (1957-2018-PONS)

TAC\*, Cpair\*, Cadv\*



TL-MT/MSY-MT, CdivMEANC-ratio, (1957-2018-PONS)



## Blue shark North Pacific [BLSHARNPAC]

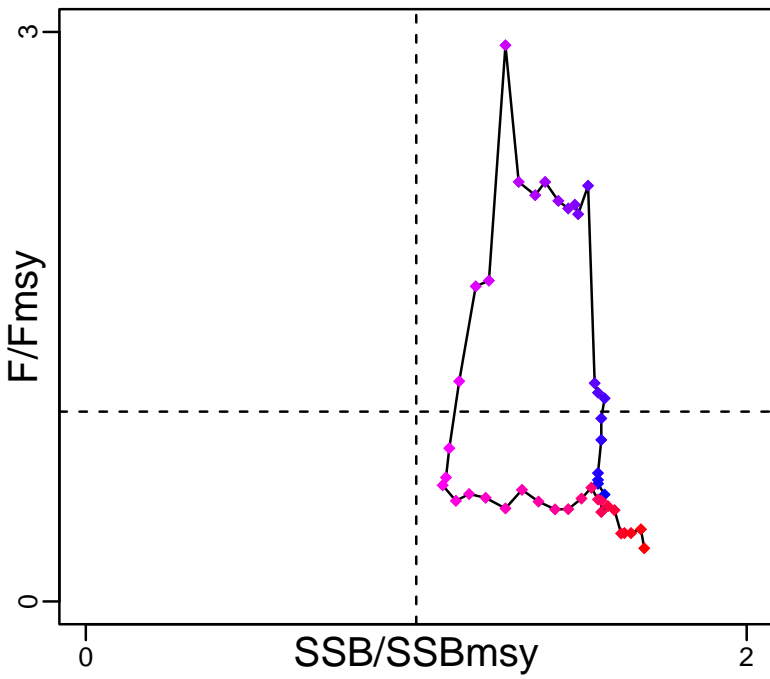
Metadata	
<b>Scientific Name</b>	Prionace glauca
<b>Current Assess ID</b>	SPC-BLSHARNPAC-1970-2015-SMITH
<b>Area</b>	North Pacific
<b>Management Authority</b>	Western and Central Pacific Fisheries Commission
<b>Assessor</b>	Secretariat of the Pacific Community
<b>Asmts in RAM</b>	2015, 2012

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	TBmsy-calc-MT	2012	320,547
<b>SSBmsy</b>	SSBmsy-extr-MT	2015	190,412
<b>Fmsy</b>	Fmsy-extr-1/yr	2015	0.359
<b>ERmsy</b>	ERmsy-ratio	2012	0.225
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	SSB0-MT	2012	593,707
<b>MSY</b>	MSY-MT	2012	72,123
<b>M</b>	M-1/yr	2012	0.135
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

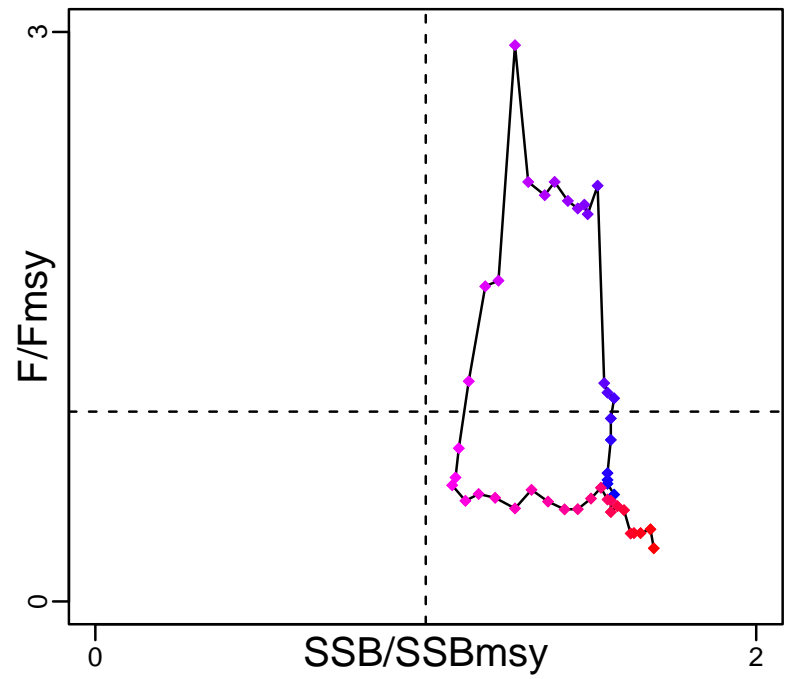
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSB-MT	2015	295,774	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2012	30,100,000	Both	0
<b>F</b>	F-1/yr	2015	0.1	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	TC-MT	2015	37,300		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSBdivSSBmsy-dimensionless	2015	1.69		
<b>F/Fmsy</b>	FdivFmsy-dimensionless	2015	0.28		
<b>ER/ERmsy</b>	ERdivERmsy-dimensionless	2012	0.358		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

# Blue shark North Pacific [BLSHARNPAC]

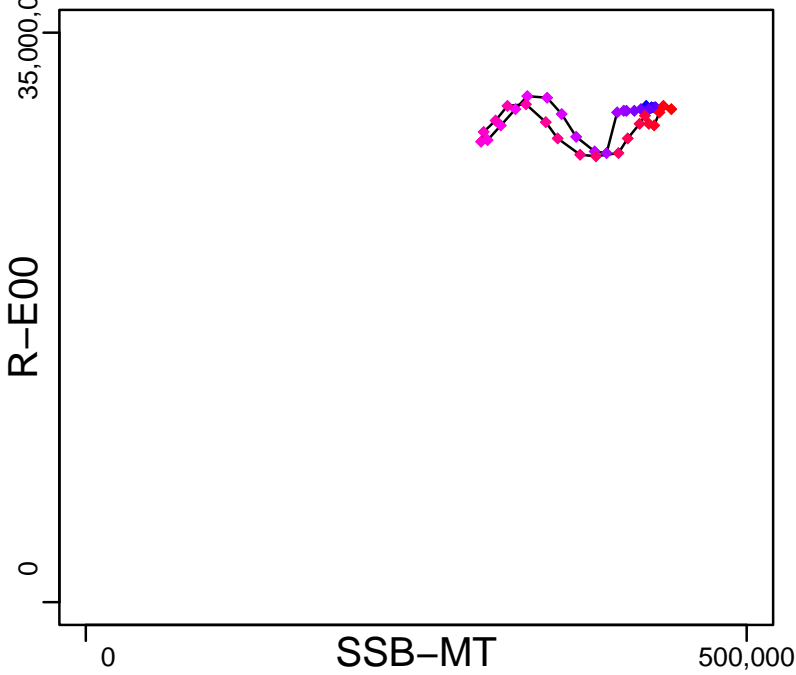
Kobe MSYpref (1970–2015–SMITH)



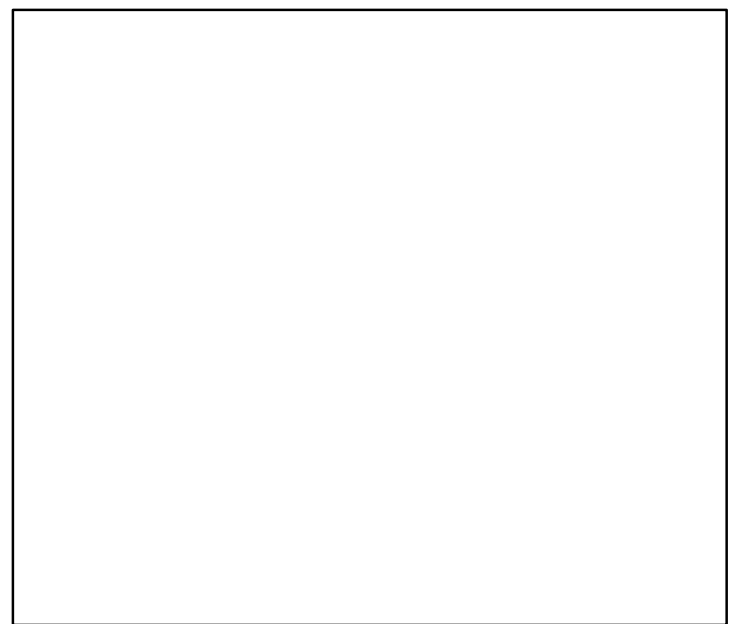
Kobe MGTpref (1970–2015–SMITH)



Spawner Recruit (1971–2012–ASHBROOK)



Production\*



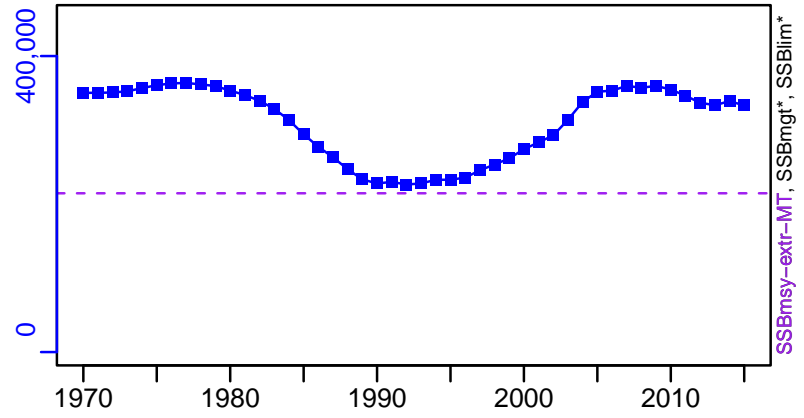
◆ Start Year ◆ End Year \* No Data

# Blue shark North Pacific [BLSHARNPAC]

TB\*



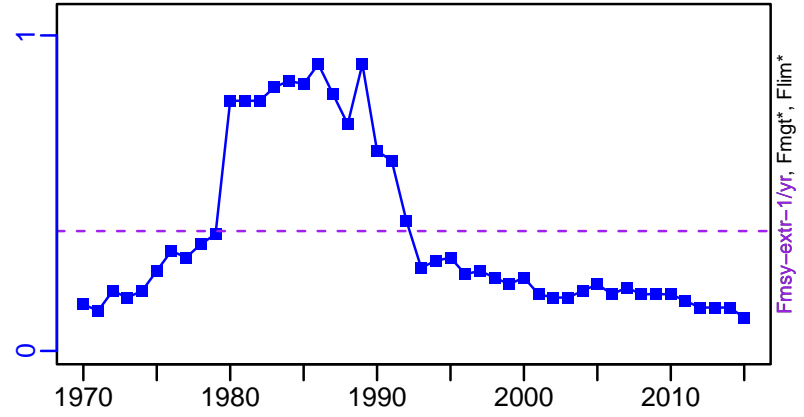
SSB-MT (1970–2015–SMITH)



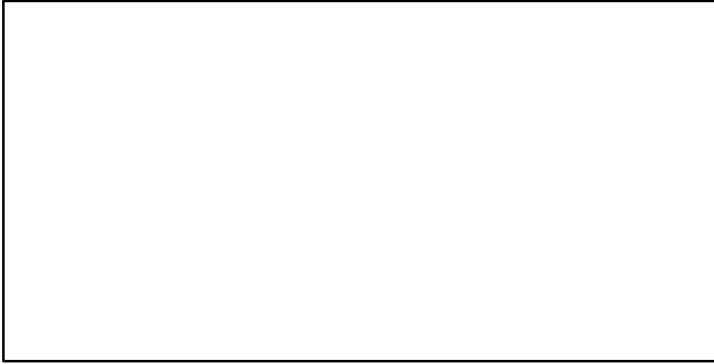
TN \*



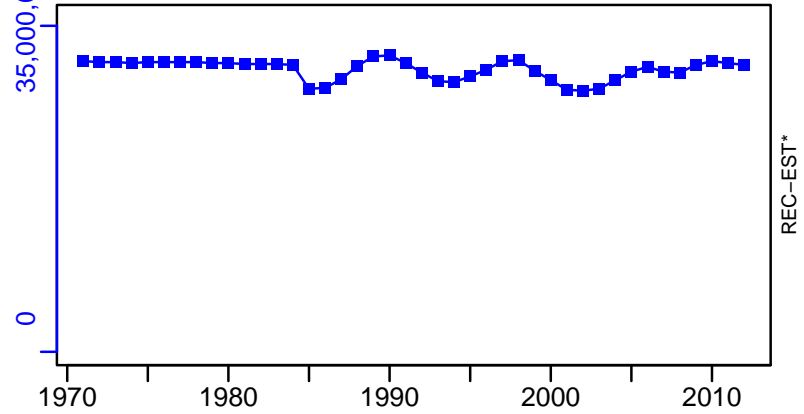
F-1/yr (1970–2015–SMITH)



ER\*



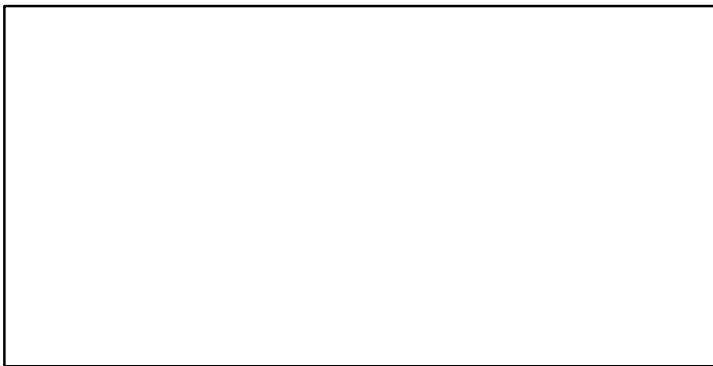
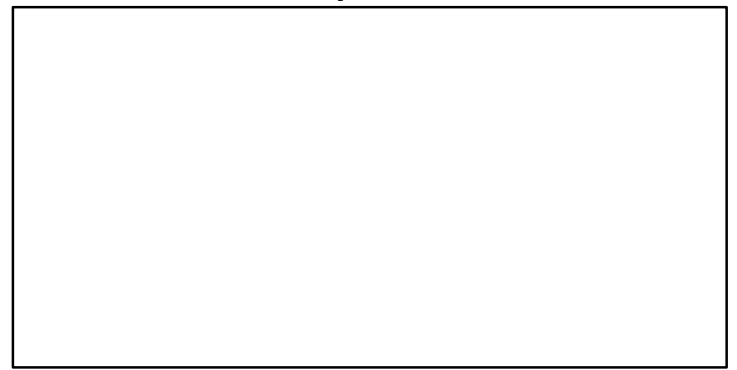
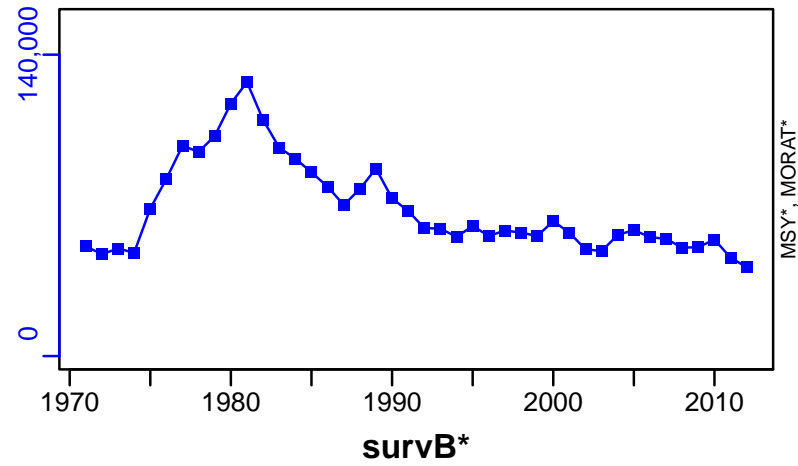
R-E00 (1971–2012–ASHBROOK)



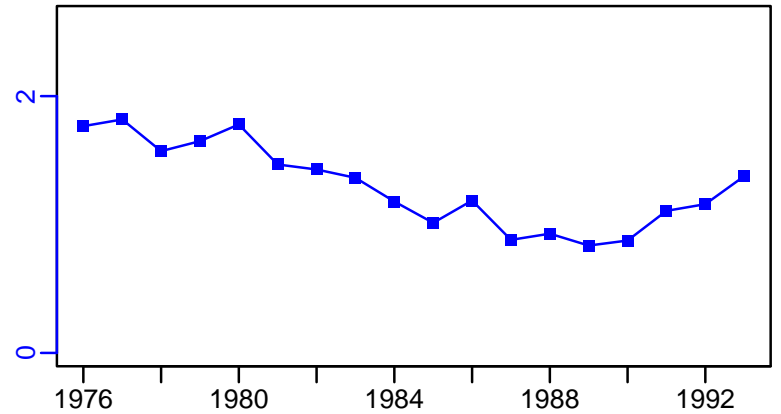
# Blue shark North Pacific [BLSHARNPAC]

TC-MT, TL\*, RecC\* (1970-2015-SMITH)

TAC\*, Cpair\*, Cadv\*



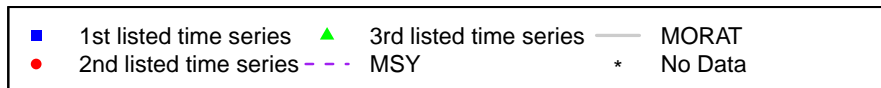
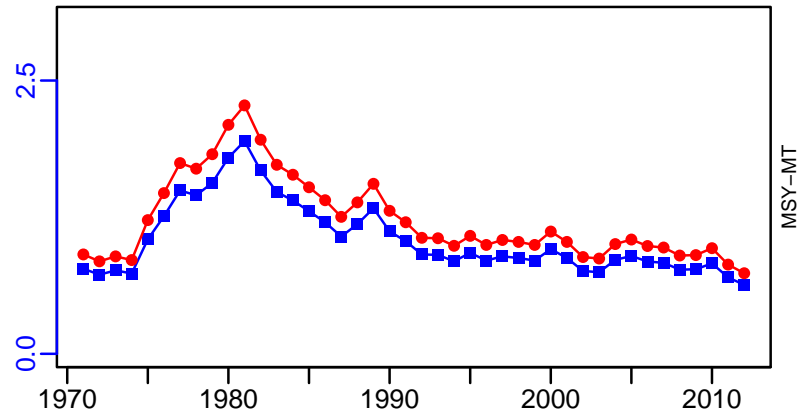
CPUE-1-index (1971-2012-ASHBROOK)



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1971-2012-ASHBROOK)



## Blue shark South Atlantic [BLSHARSATL]

Metadata	
<b>Scientific Name</b>	Prionace glauca
<b>Current Assess ID</b>	ICCAT-BLSHARSATL-1971-2018-PONS
<b>Area</b>	South Atlantic
<b>Management Authority</b>	International Commission for the Conservation of Atlantic Tunas
<b>Assessor</b>	International Commission for the Conservation of Atlantic Tunas
<b>Asmts in RAM</b>	2018

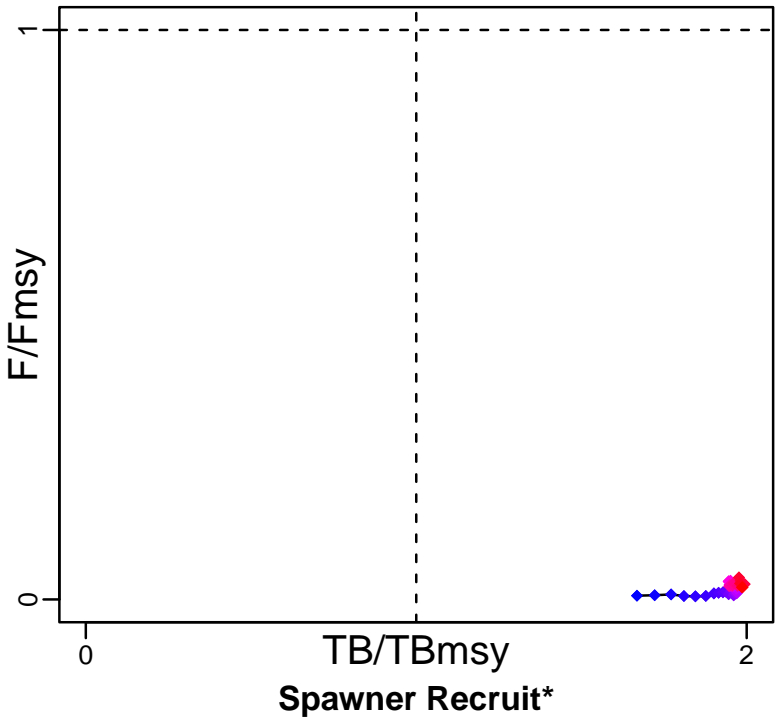
Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	-	-	-
<b>Fmsy</b>	-	-	-
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2018	1,994,250
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	-	-	-	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	-	-	-	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	-	-	-		
<b>TL</b>	TL-MT	2018	34,309		
<b>TB/TBmsy</b>	TBdivTBmsy-dimensionless	2018	1.986		
<b>SSB/SSBmsy</b>	-	-	-		
<b>F/Fmsy</b>	FdivFmsy-dimensionless	2018	0.022		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

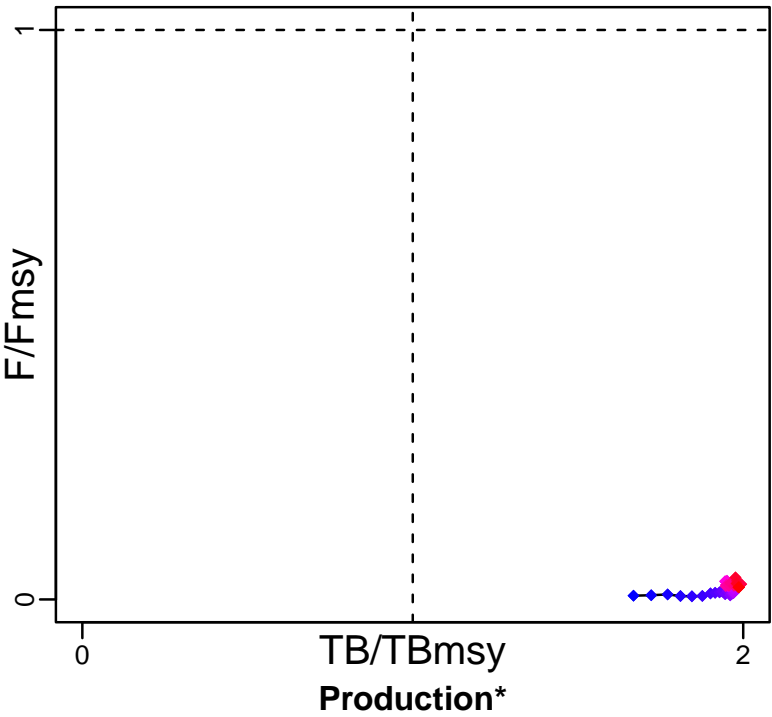


Blue shark South Atlantic [BLSHARSATL]

Kobe MSYpref (1971–2018–PONS)



Kobe MGTpref (1971–2018–PONS)



◆ Start Year ◆ End Year \* No Data

Blue shark South Atlantic [BLSHARSATL]

TB\*



SSB\*



TN \*



F\*



ER\*



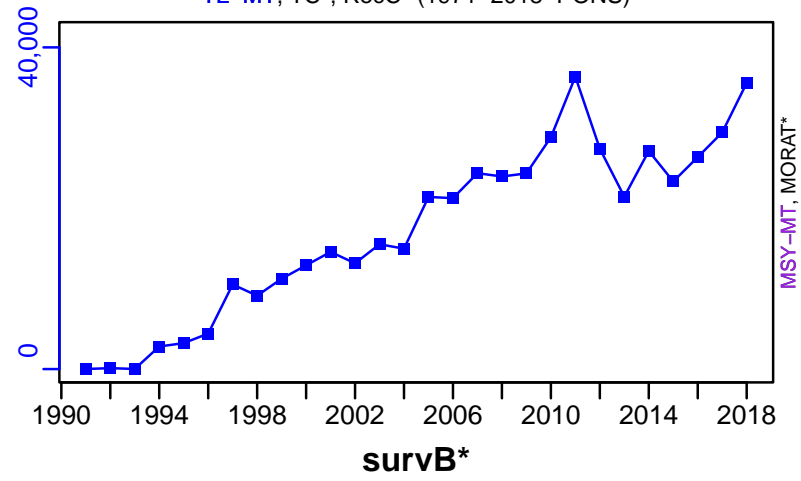
Recruits\*



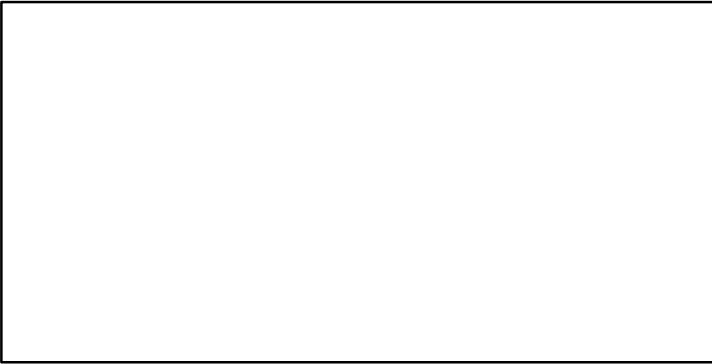
# Blue shark South Atlantic [BLSHARSATL]

TL-MT, TC\*, RecC\* (1971-2018-PONS)

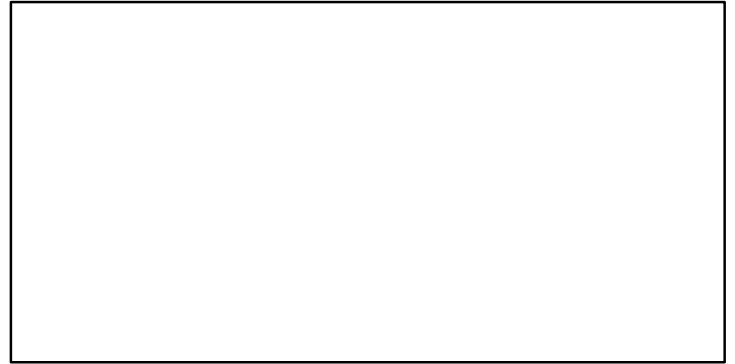
TAC\*, Cpair\*, Cadv\*



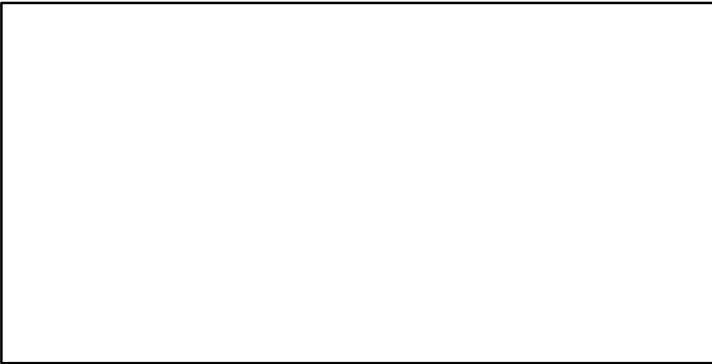
survB\*



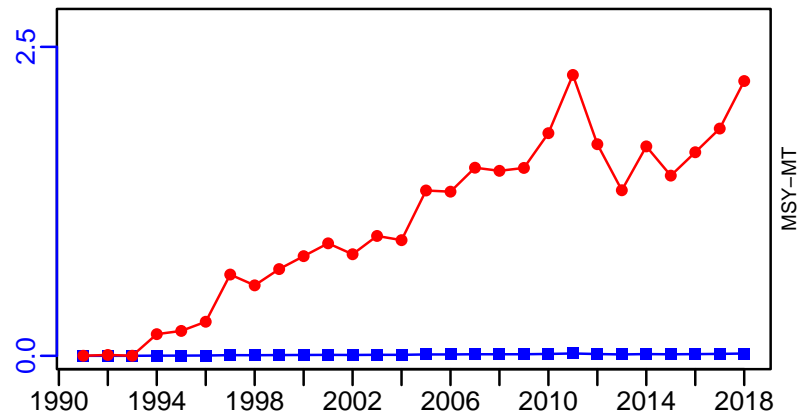
CPUE\*



EFFORT\*



TL-MT/MSY-MT, CdivMEANC-ratio, (1971-2018-PONS)



## Blackmouth dogfish ICES 8-9a [BMDOGVIII-IXa]

Metadata	
<b>Scientific Name</b>	Galeus melastomus
<b>Current Assess ID</b>	WGEF-BMDOGVIII-IXa-1997-2018-ICESIMP2021
<b>Area</b>	ICES 8-9a
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2016, 2018

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	1.2	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2018	454		
TL	TL-MT	2018	181		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

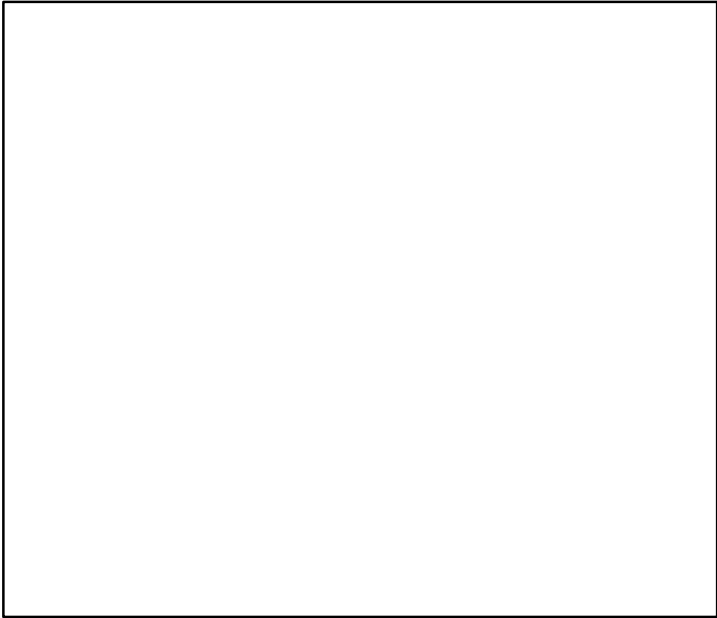
Kobe MSY\*



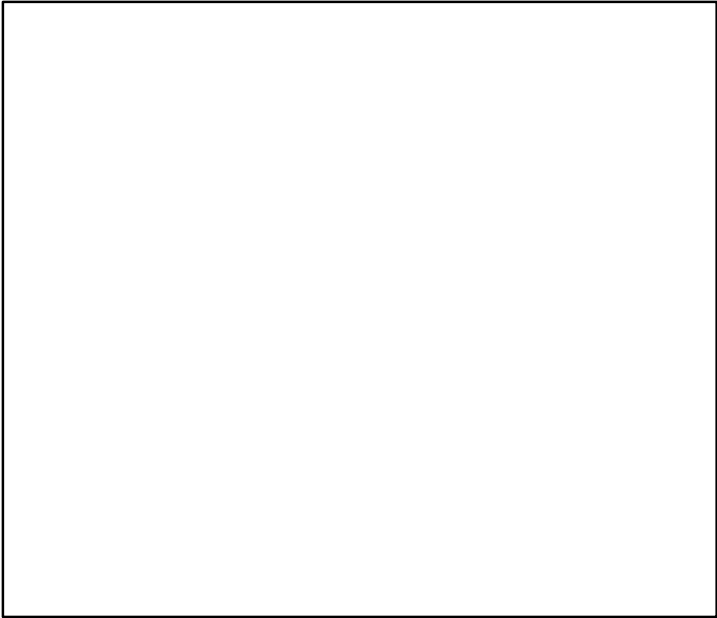
Kobe MGT\*



Spawner Recruit\*



Production\*



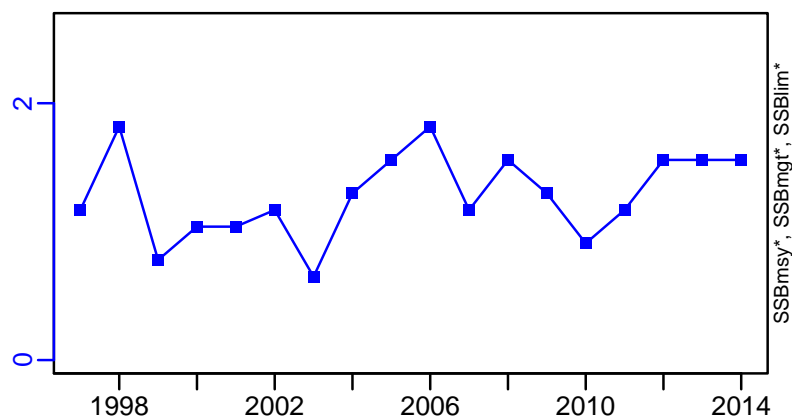
◆ Start Year   ◆ End Year   \* No Data

# Blackmouth dogfish ICES 8–9a [BMDOGVIII–IXa]

TB\*



SSB-index (1997–2014–ICESIMP2018)



TN \*



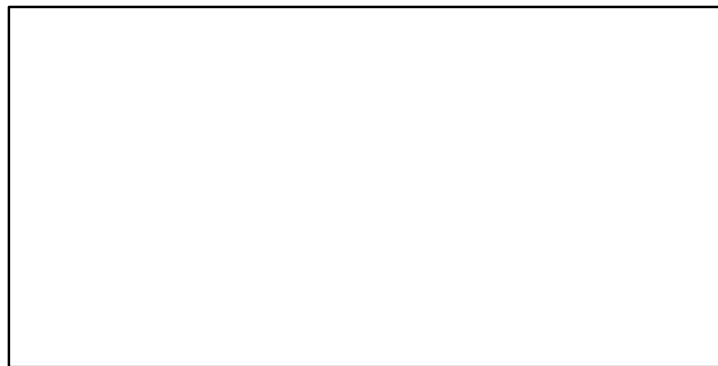
F\*



ER\*

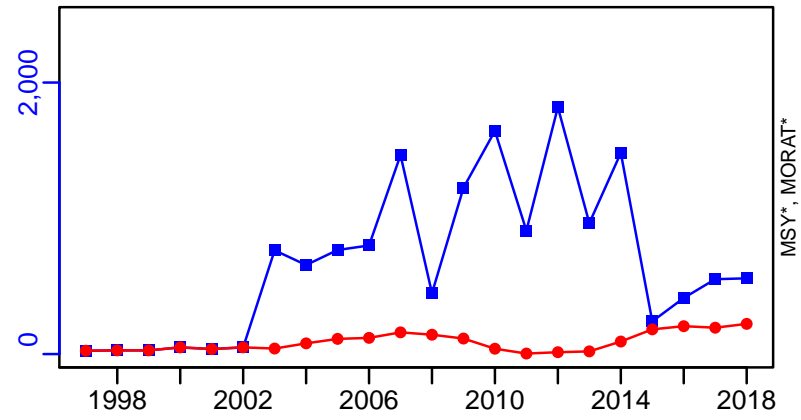


Recruits\*



# Blackmouth dogfish ICES 8–9a [BMDOGVIII–IXa]

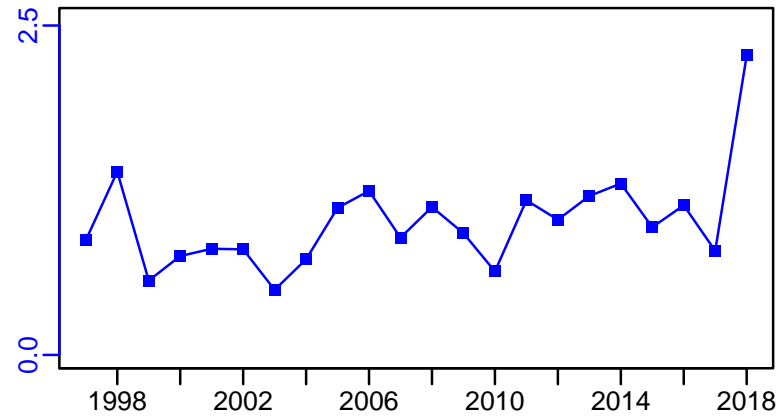
TC–MT, TL–MT, RecC\* (1997–2018–ICESIMP2021)



TAC\*, Cpair\*, Cadv\*



survB–MT (1997–2018–ICESIMP2021)



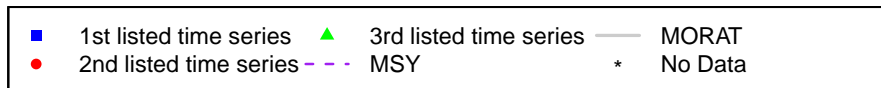
CPUE\*



EFFORT\*



CdivMSY\*



## Blackmouth dogfish ICES 6-7 [BMDOGVI-VII]

Metadata	
<b>Scientific Name</b>	Galeus melastomus
<b>Current Assess ID</b>	WGEF-BMDOGVI-VII-2001-2018-ICESIMP2021
<b>Area</b>	ICES 6-7
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018, 2016

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2018	61	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	0.015		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



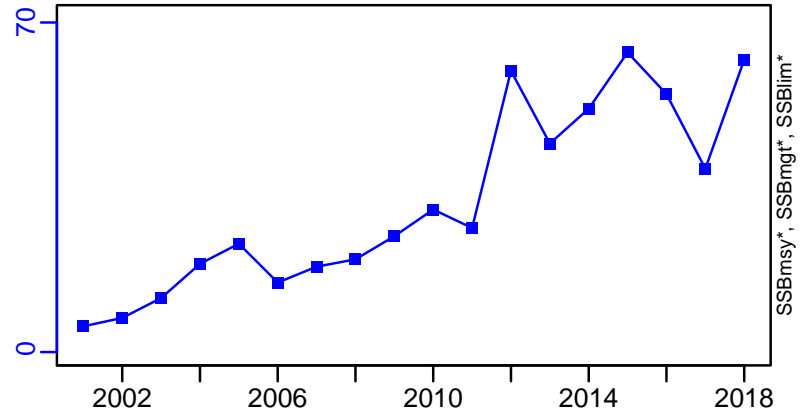
◆ Start Year ◆ End Year \* No Data

# Blackmouth dogfish ICES 6–7 [BMDOGVI–VII]

TB\*



SSB-index (2001–2018–ICESIMP2021)



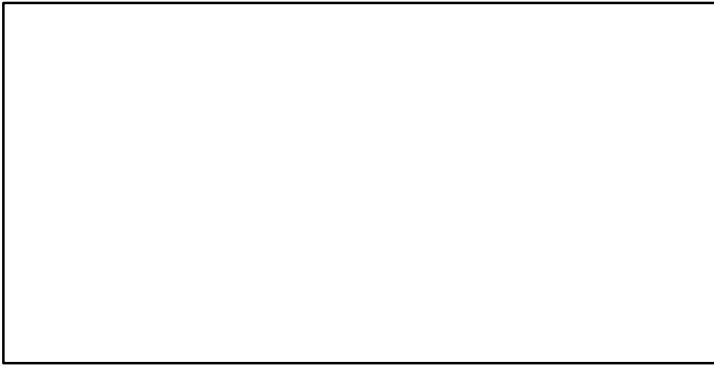
TN \*



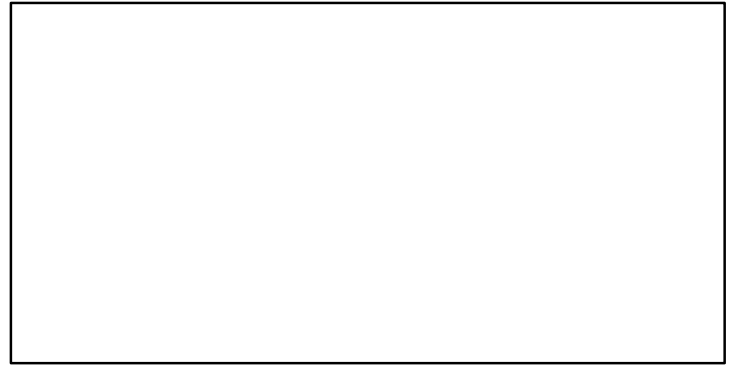
F\*



ER\*



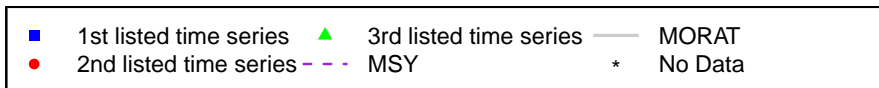
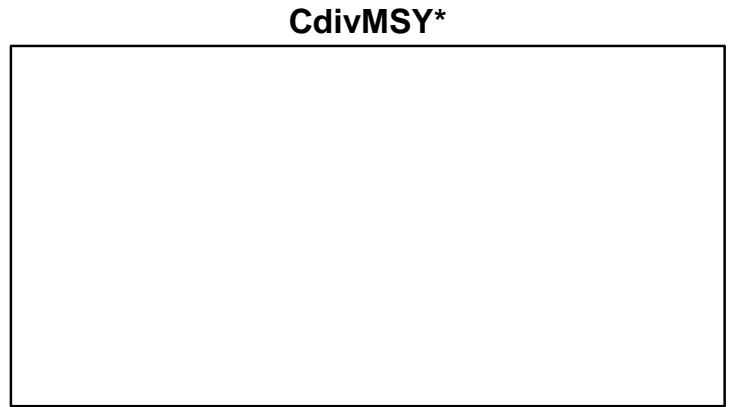
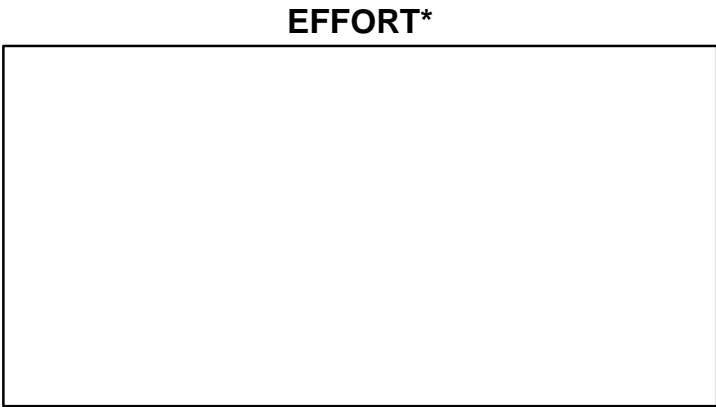
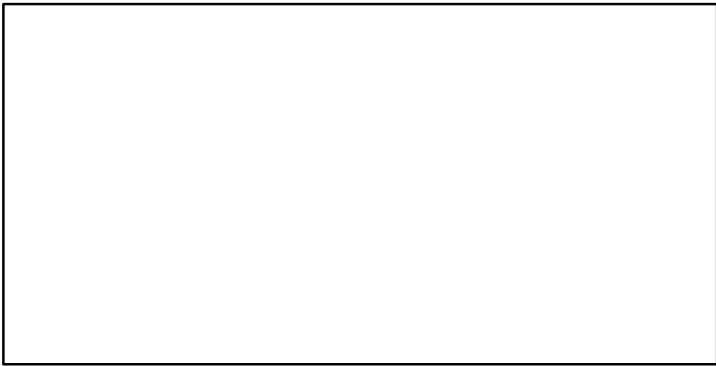
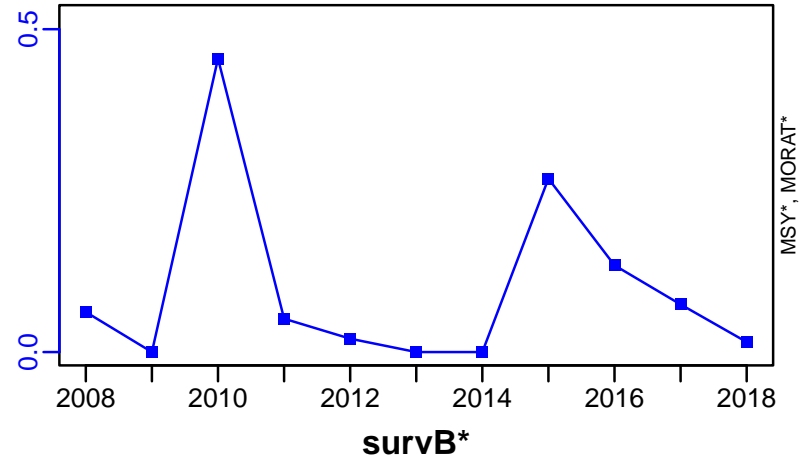
Recruits\*



# Blackmouth dogfish ICES 6–7 [BMDOGVI–VII]

TL–MT, TC\*, RecC\* (2001–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



## Blacknose shark Atlantic [BNOSESHARATL]

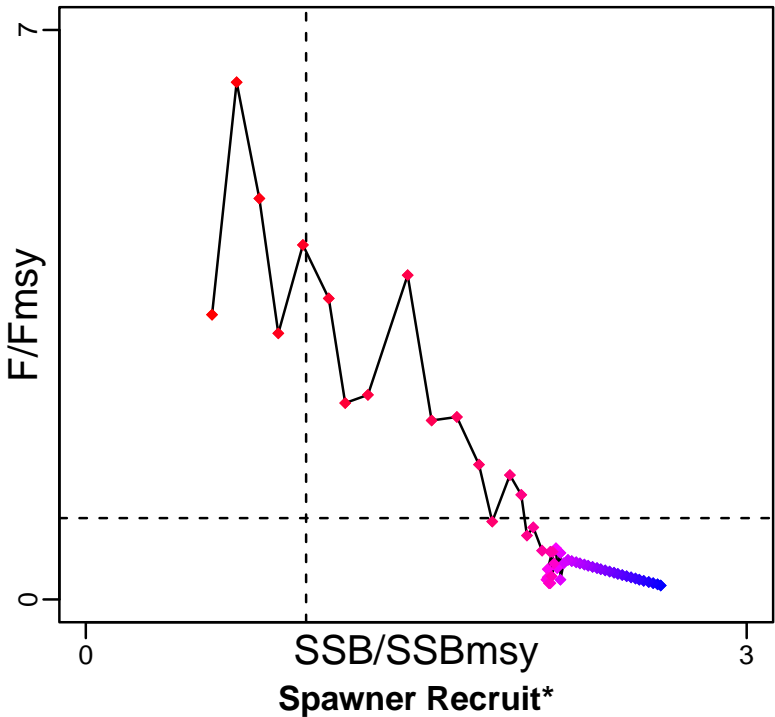
Metadata	
<b>Scientific Name</b>	Carcharhinus acronotus
<b>Current Assess ID</b>	SEFSC-BNOSESHARATL-1950-2009-SISIMP2016
<b>Area</b>	Atlantic
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2005, 2009

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-E00pups	2009	153,709
<b>Fmsy</b>	Fmsy-1/yr	2009	0.08
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	Fmgt-1/yr	2009	0.06
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-E00	2009	24,495
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	SSBlim-E00pups	2009	77,447
<b>Flim</b>	Flim-1/yr	2009	0.08
<b>ERlim</b>	-	-	-

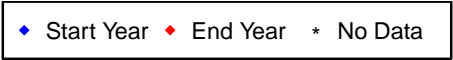
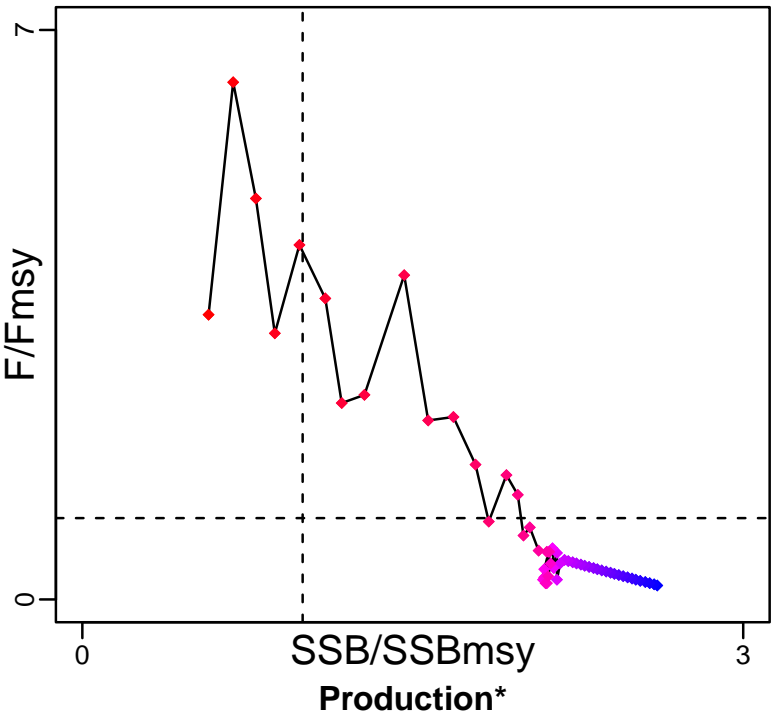
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSB-E00pups	2009	58,000	-	-
<b>TN</b>	TN-E00	2009	152,000	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2009	0.376	-	-
<b>ER</b>	ER-calc-ratio	2009	0.206	-	-
<b>TC</b>	TC-E00	2009	31,300		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSF-E00/SSFmsy-E00	2005	0.573		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2009	4.7		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	F-1/yr/Fmgt-1/yr	2009	6.267		
<b>ER/ERmgt</b>	-	-	-		

Blacknose shark Atlantic [BNOSESHARATL]

Kobe MSYpref (1950–2005–FAUCONNET)

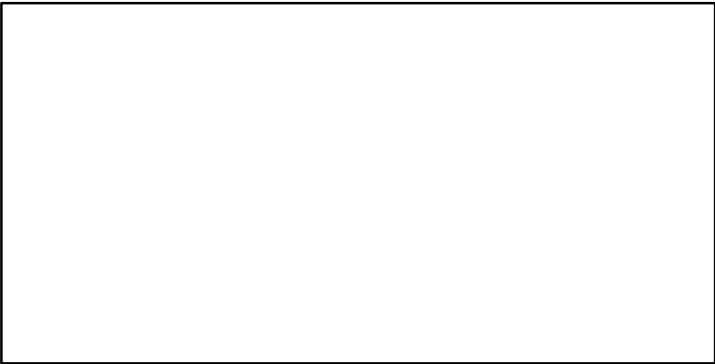


Kobe MGTpref (1950–2005–FAUCONNET)

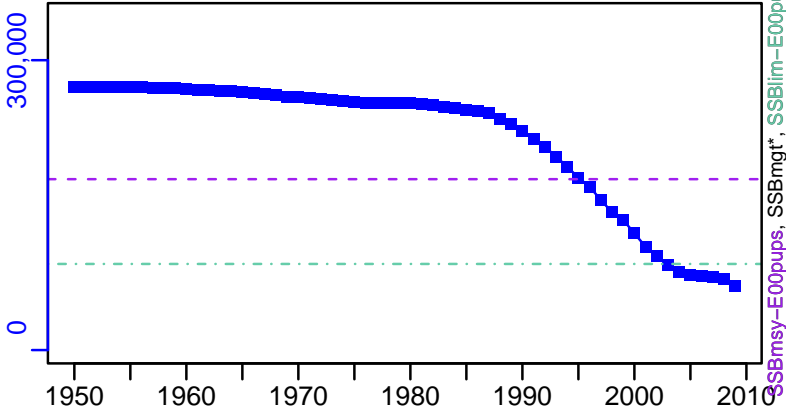


Blacknose shark Atlantic [BNOSESHARATL]

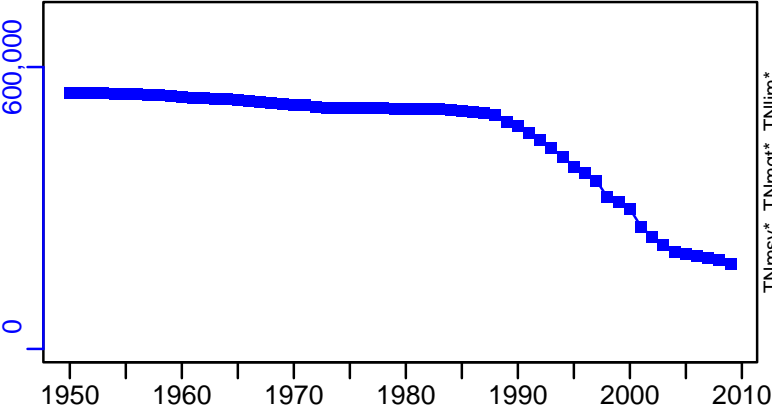
TB\*



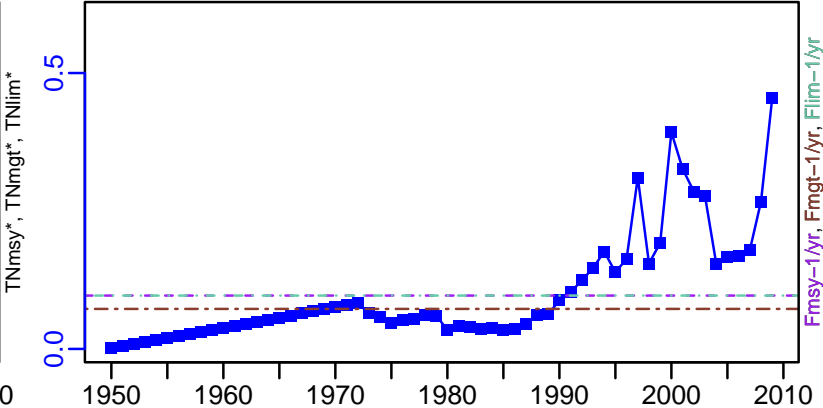
SSB-E00pups (1950-2009-SISIMP2016)



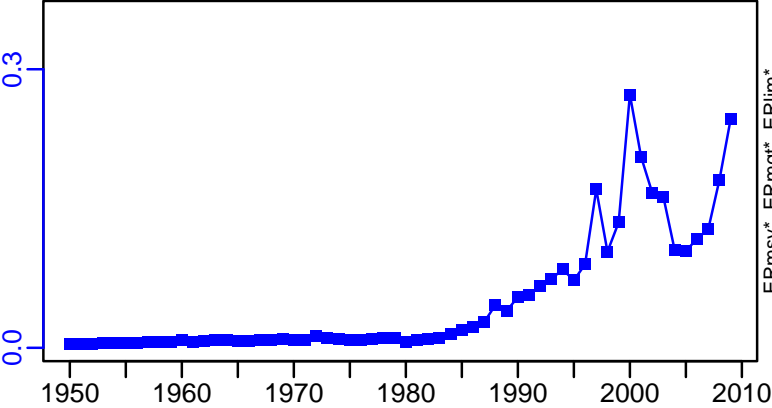
TN-E00 (1950-2009-SISIMP2016)



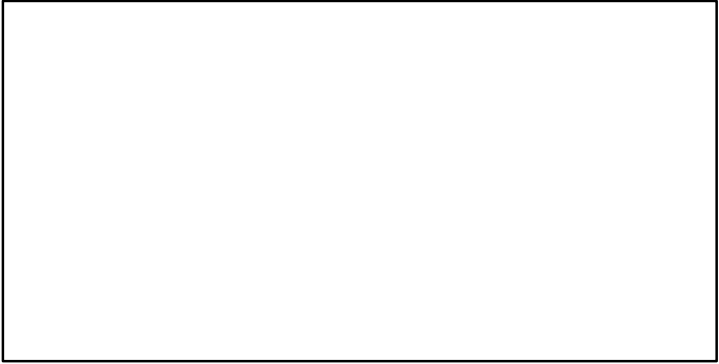
F-1/yr (1950-2009-SISIMP2016)



ER-calc-ratio (1950-2009-SISIMP2016)

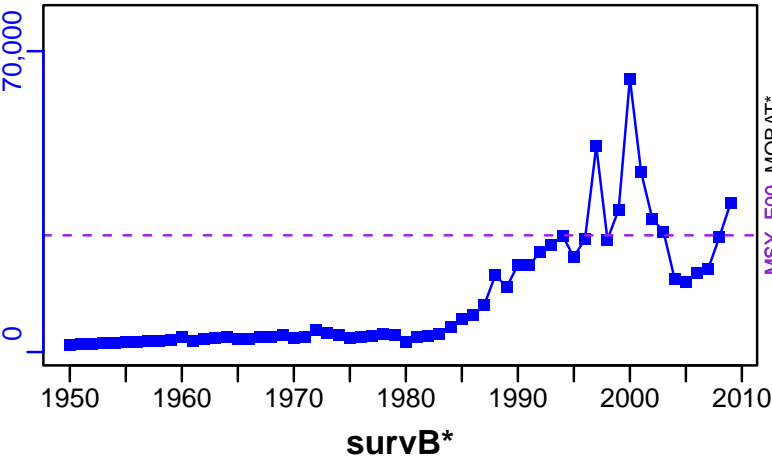


Recruits\*



Blacknose shark Atlantic [BNOSESHARATL]

TC-E00, TL\*, RecC\* (1950-2009-SISIMP2016)



TAC\*, Cpair\*, Cadv\*



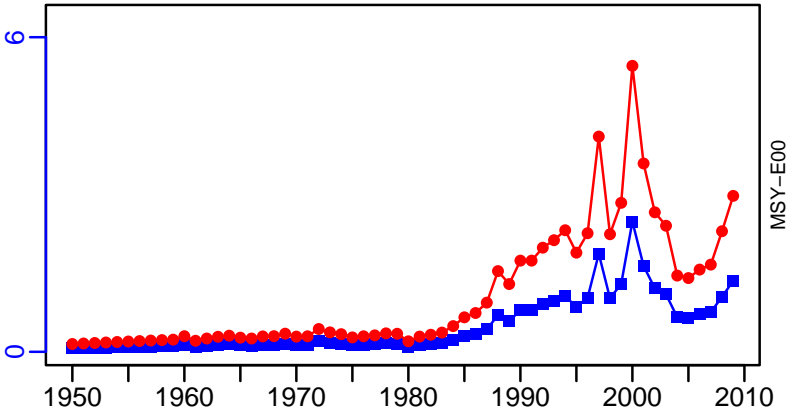
CPUE\*



EFFORT\*



TC-E00/MSY-E00, CdivMEANC-ratio, (1950-2009-SISIMP2016)



**Barndoor skate Gulf of Maine / Georges Bank-Southern New England  
[BSKAT5YZSNE]**

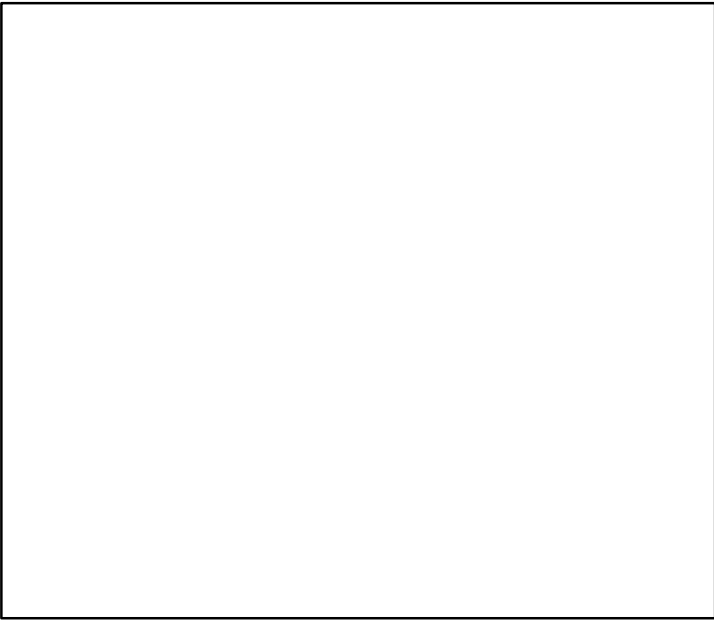
Metadata	
<b>Scientific Name</b>	Dipturus laevis
<b>Current Assess ID</b>	NEFSC-BSKAT5YZSNE-1965-2019-SISIMP2021-2
<b>Area</b>	Gulf of Maine / Georges Bank-Southern New England
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2005, 2018, 2019

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

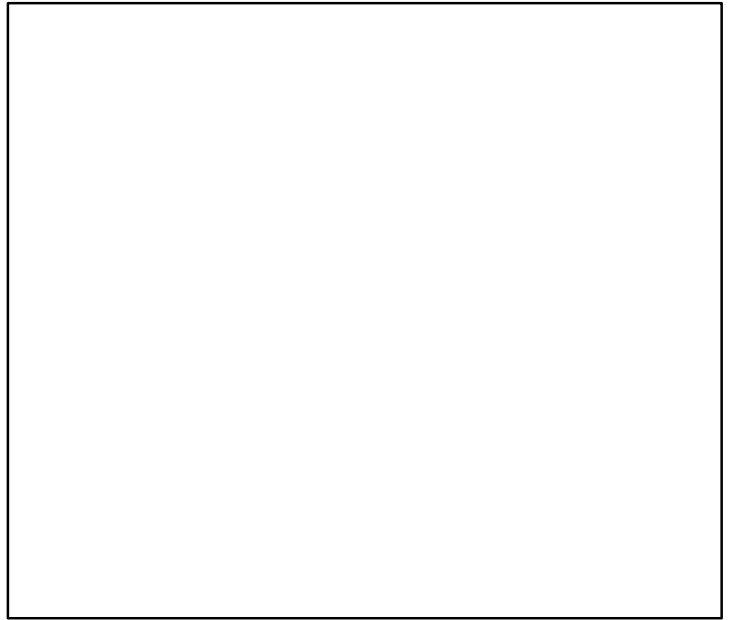
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2019	1350		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



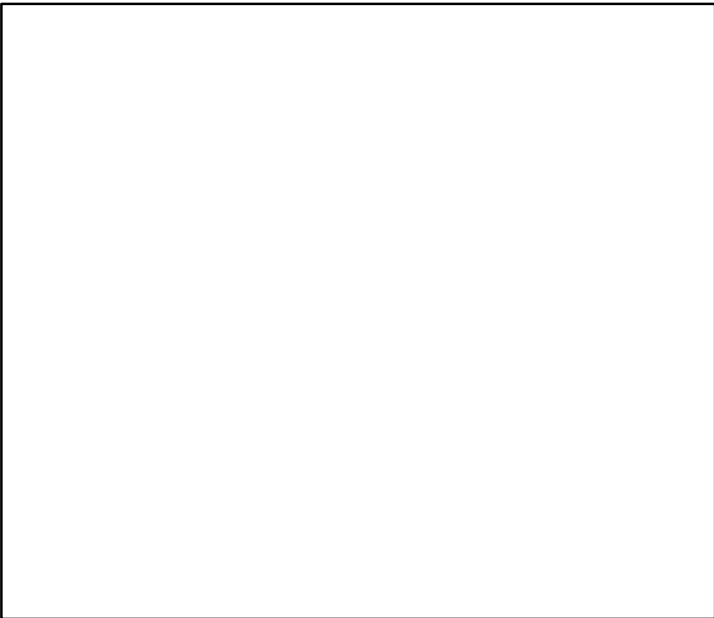
**Kobe MSY\***



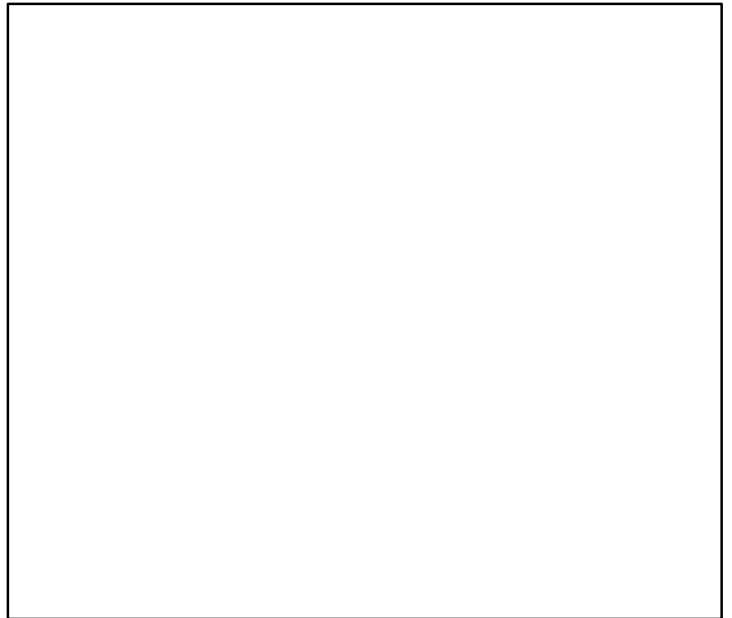
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ◆ End Year \* No Data

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



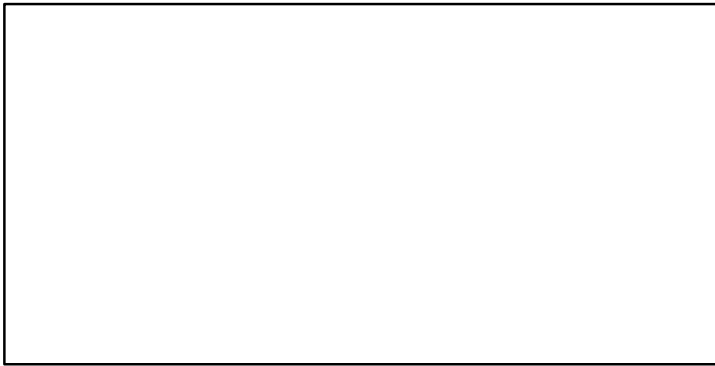
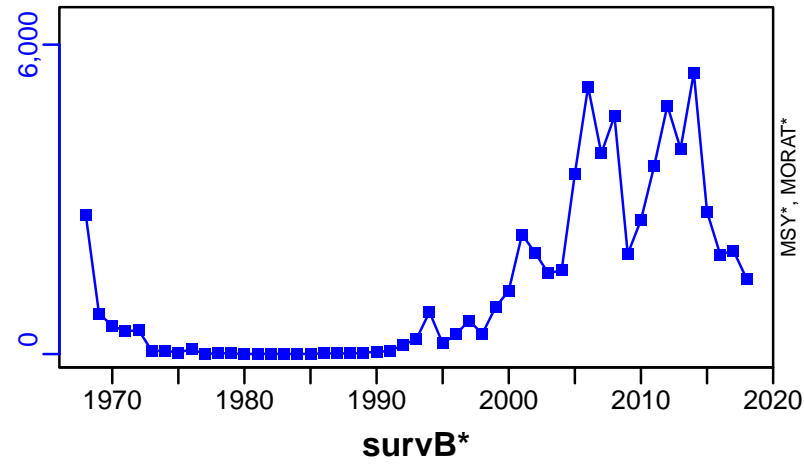
**Recruits\***



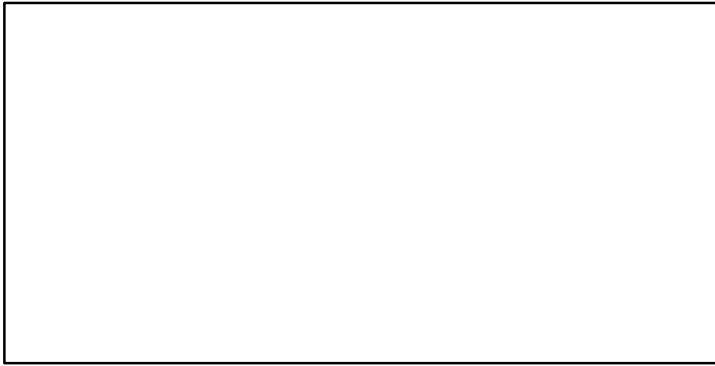
# Barndoor skate Gulf of Maine / Georges Bank–Southern New England [BSKAT5YZSNE]

TC–MT, TL\*, RecC\* (1965–2019–SISIMP2021–2)

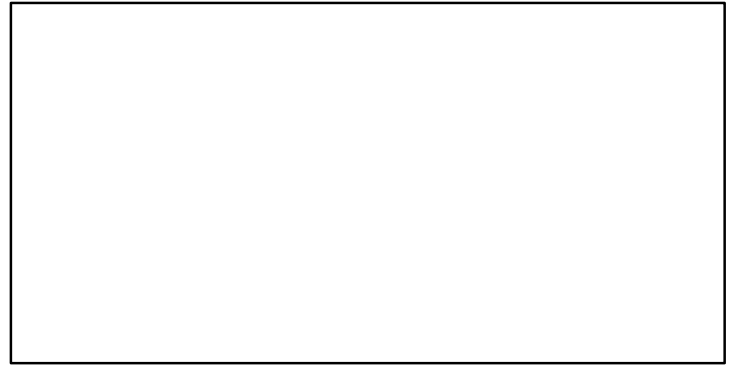
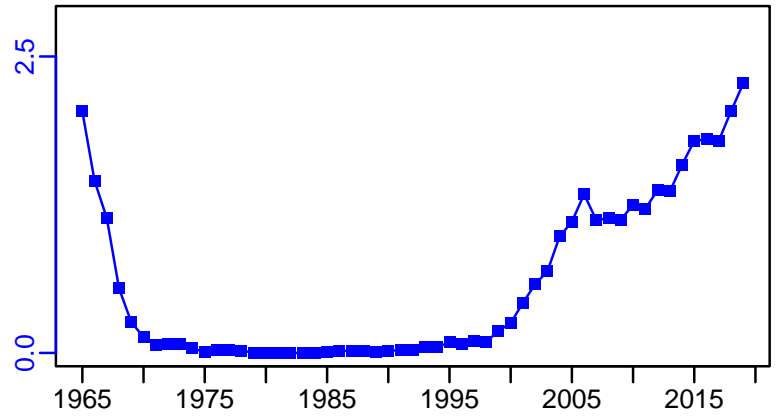
TAC\*, Cpair\*, Cadv\*



EFFORT\*



CPUE–index (1965–2019–SISIMP2021–2)



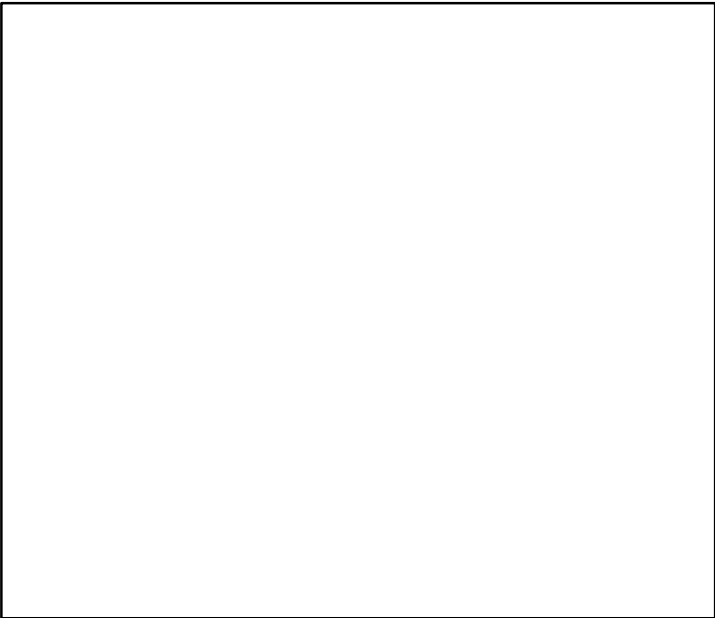
## Basking shark Northeast Atlantic [BSKSHARNEATL]

Metadata	
<b>Scientific Name</b>	Cetorhinus maximus
<b>Current Assess ID</b>	WGEF-BSKSHARNEATL-1977-2018-ICESIMP2021
<b>Area</b>	Northeast Atlantic
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018

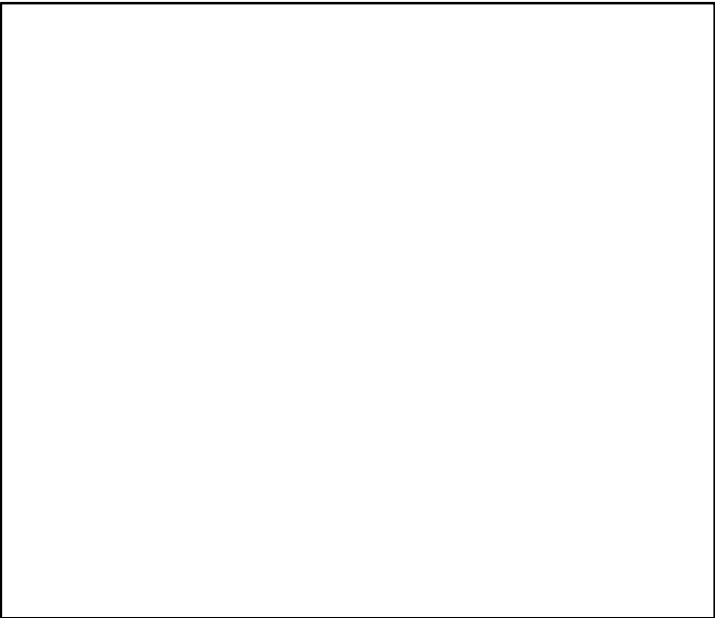
Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	0		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

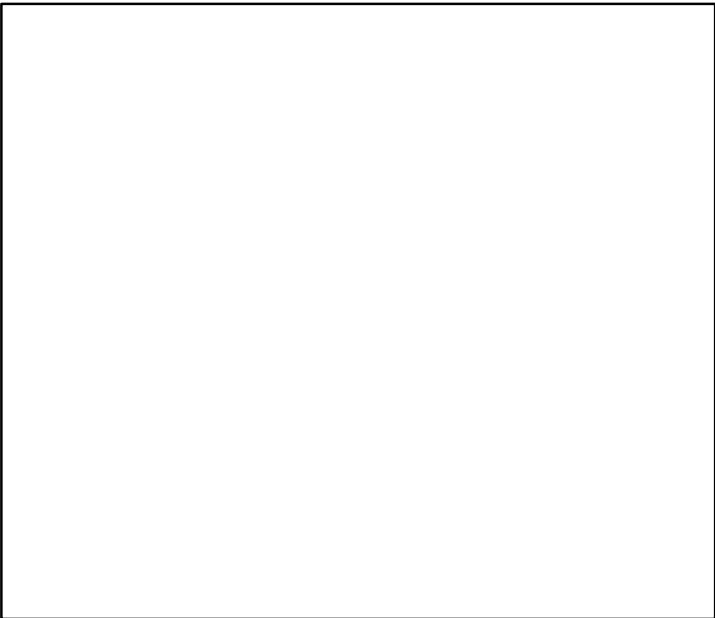
Kobe MSY\*



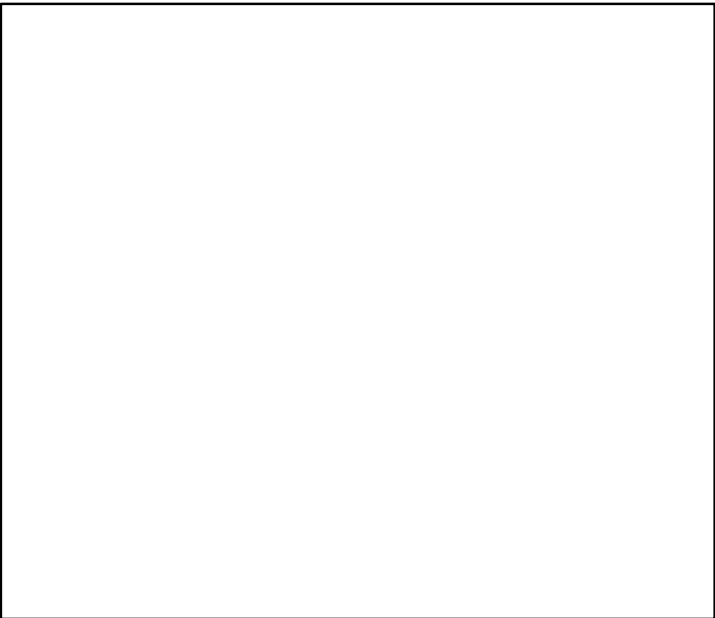
Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

Basking shark Northeast Atlantic [BSKSHARNEATL]

TB\*



SSB\*



TN \*



F\*



ER\*



Recruits\*



■ Listed time series

--- MSY-based BRP

--- Target BRP

--- Lim BRP

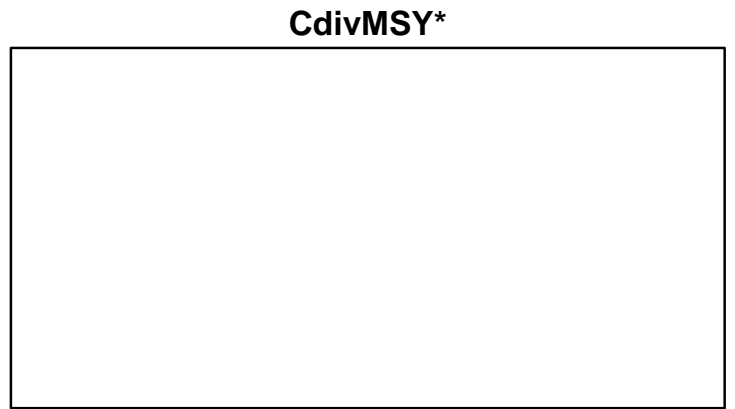
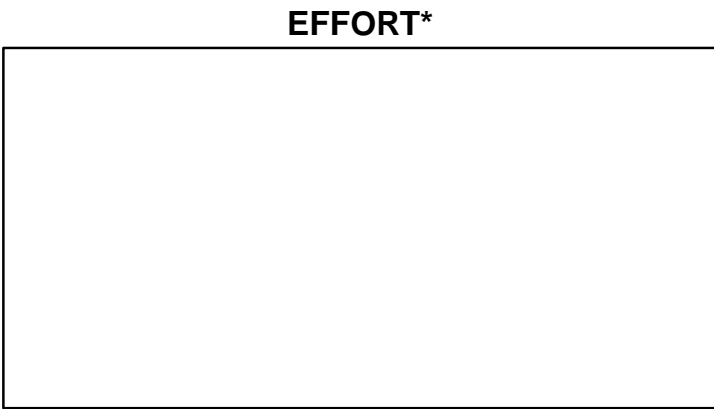
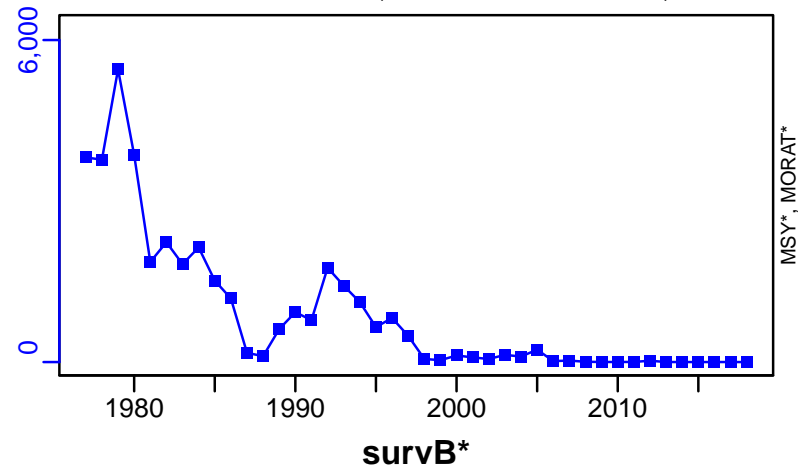
— Rec-Est

\* No Data

# Basking shark Northeast Atlantic [BSKSHARNEATL]

TL-MT, TC\*, RecC\* (1977–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



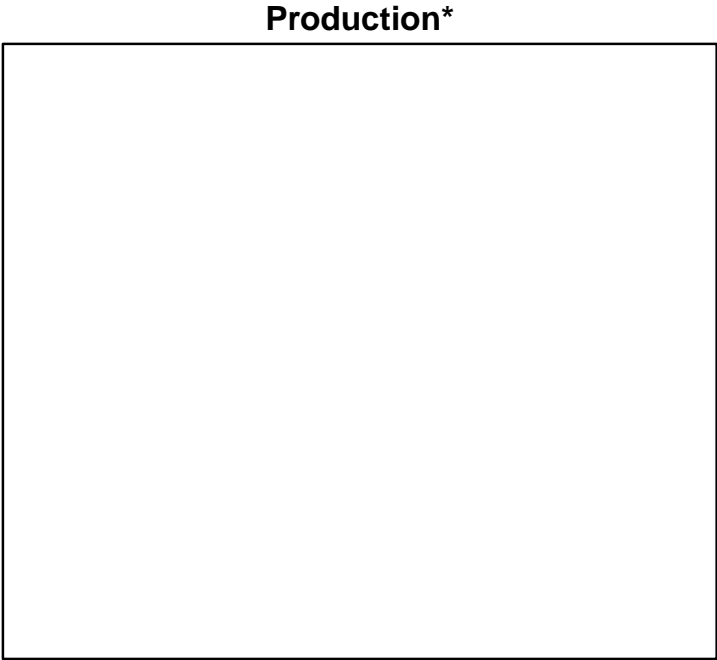
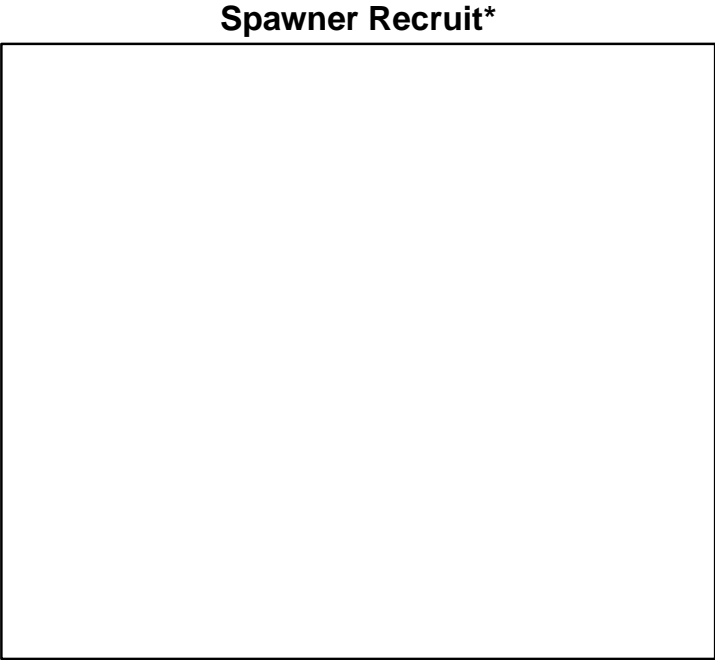
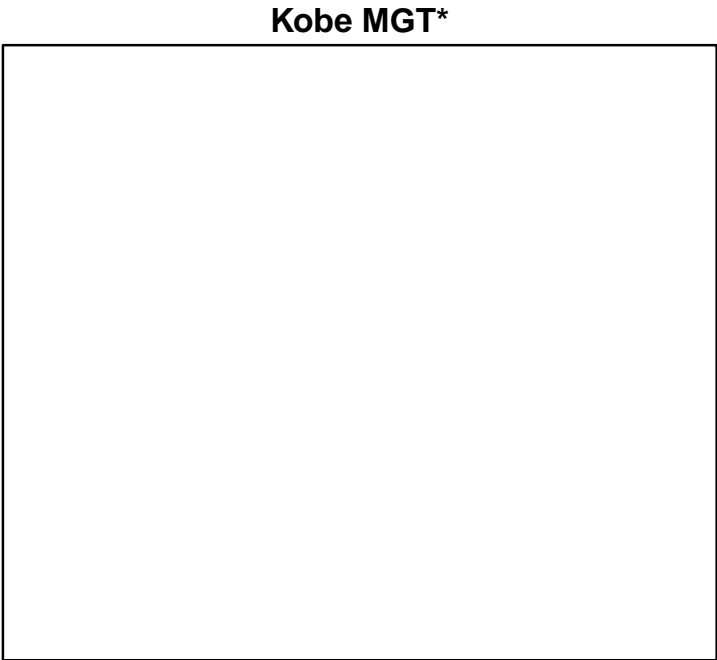
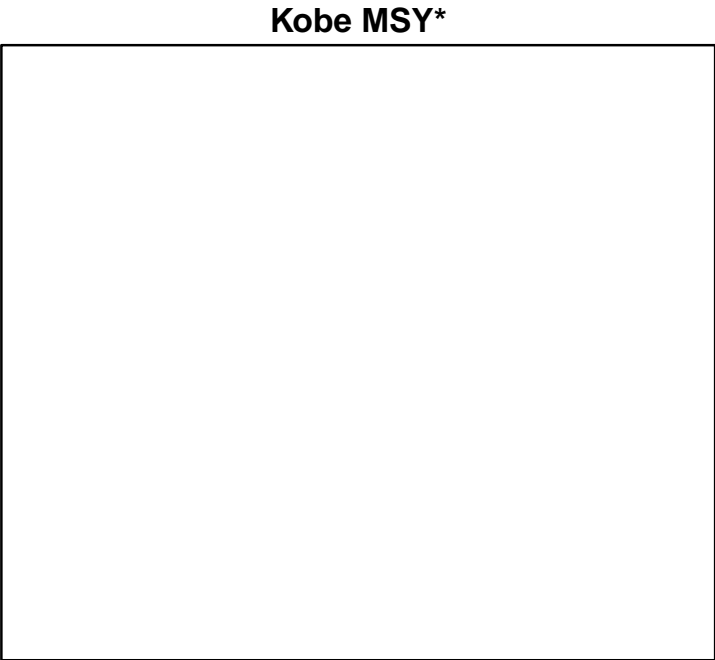
## Blacktip shark Atlantic [BTIPSHARATL]

Metadata	
<b>Scientific Name</b>	Carcharhinus limbatus
<b>Current Assess ID</b>	SEFSC-BTIPSHARATL-1981-2004-FAUCONNET
<b>Area</b>	Atlantic
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2004

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	-	-	-
<b>Fmsy</b>	Fmsy-1/yr	2004	0.2
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2004	14,900
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSF-E00	2004	18,200,000	Females	7.5
<b>TN</b>	TN-E00	2004	50,400,000	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2004	0.001	-	-
<b>ER</b>	ER-calc-ratio	2004	0	-	-
<b>TC</b>	TC-E00	2004	17,700		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	-	-	-		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2004	0.005		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		





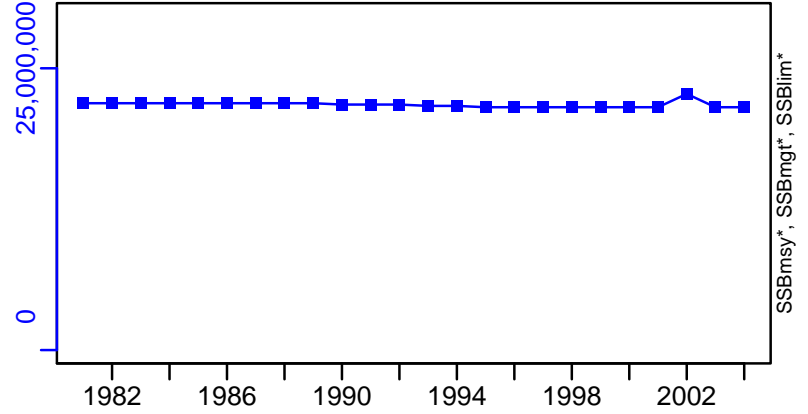
◆ Start Year   ◆ End Year   \* No Data

# Blacktip shark Atlantic [BTIPSHARATL]

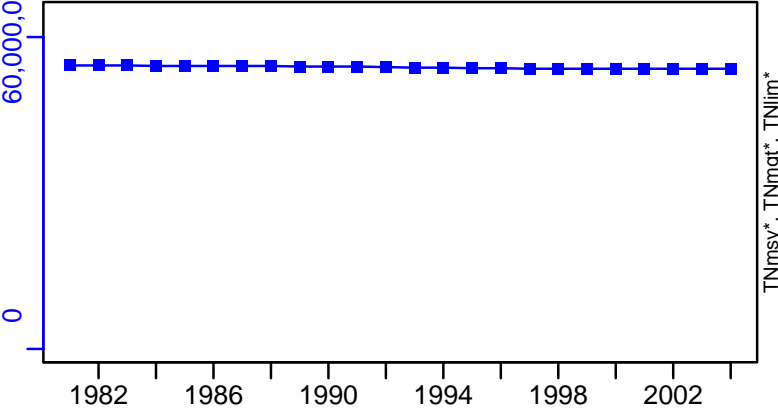
TB\*



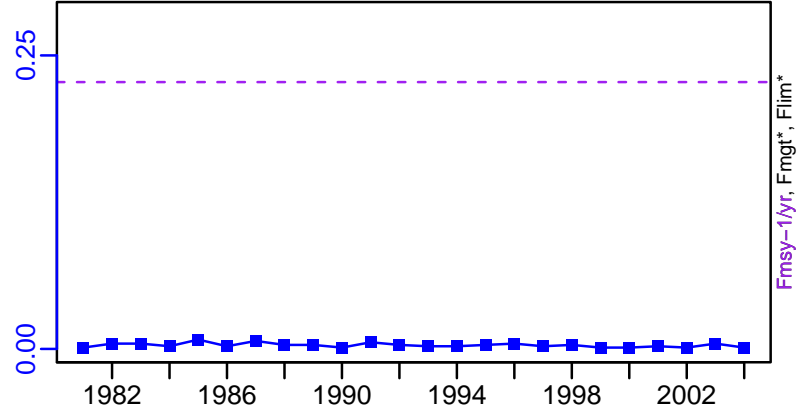
SSF-E00 (1981-2004-FAUCONNET)



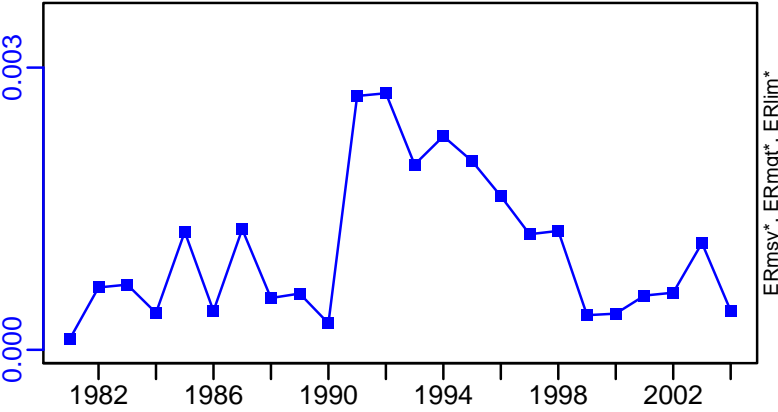
TN-E00 (1981-2004-FAUCONNET)



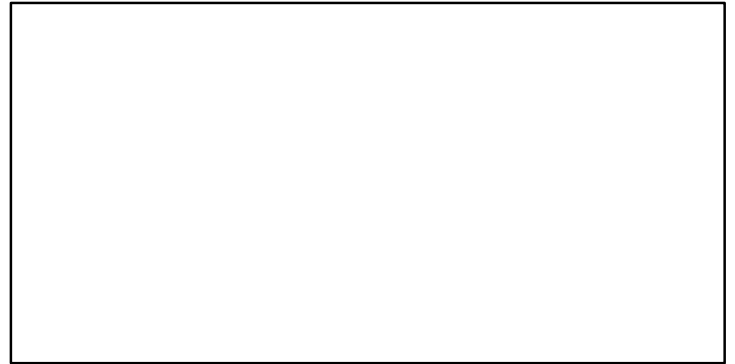
F-1/yr (1981-2004-FAUCONNET)



ER-calc-ratio (1981-2004-FAUCONNET)



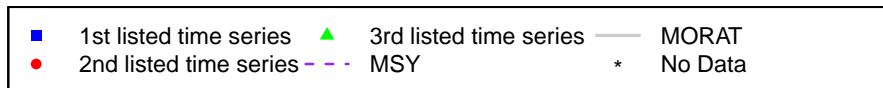
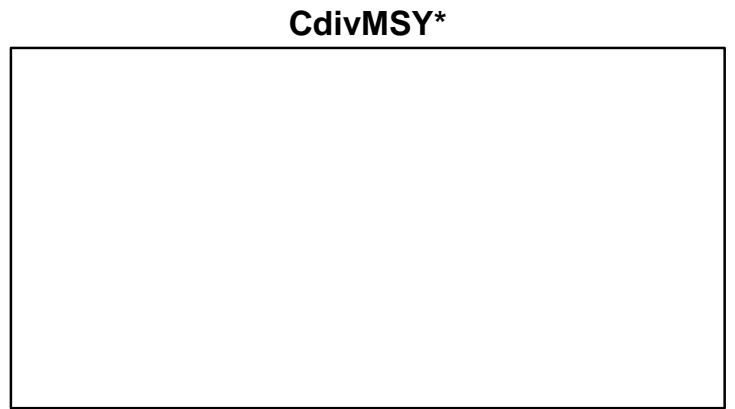
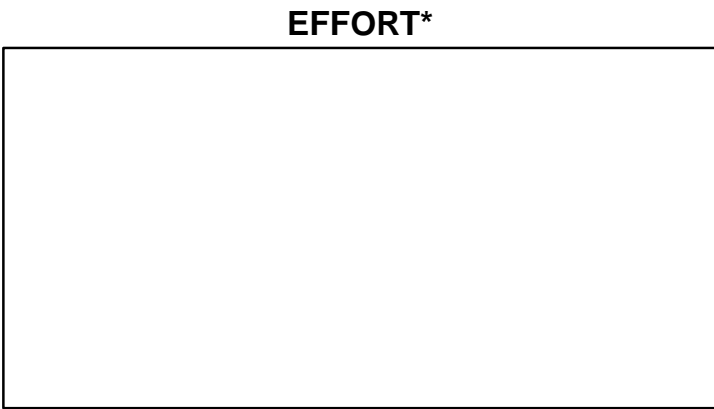
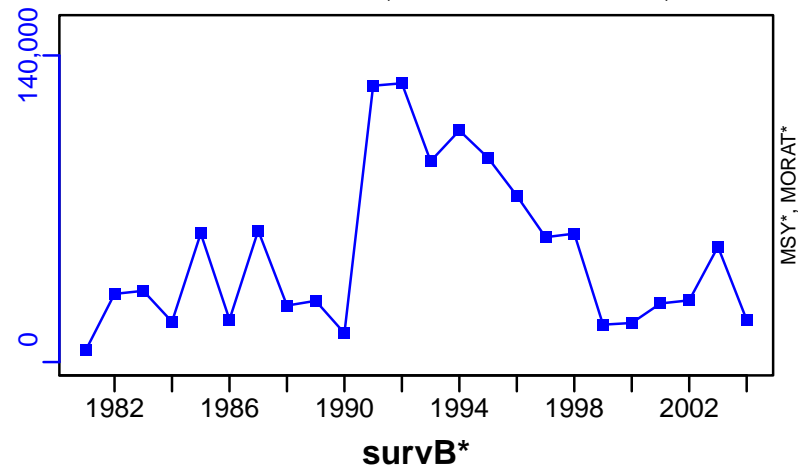
Recruits\*



# Blacktip shark Atlantic [BTIPSHARATL]

TC-E00, TL\*, RecC\* (1981-2004-FAUCONNET)

TAC\*, Cpair\*, Cadv\*



## Blacktip shark Gulf of Mexico [BTIPSHARGM]

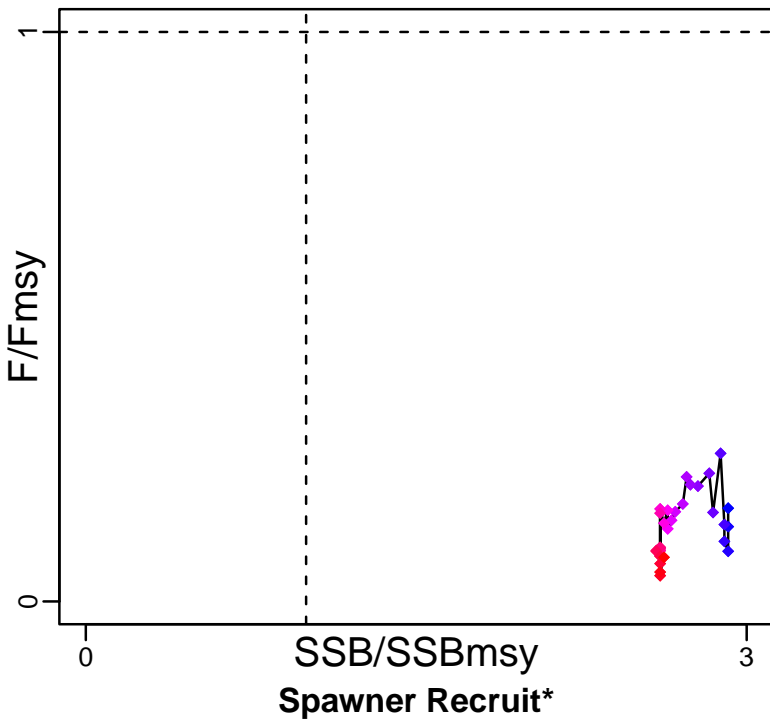
Metadata	
<b>Scientific Name</b>	Carcharhinus limbatus
<b>Current Assess ID</b>	SEFSC-BTIPSHARGM-1981-2010-HIVELY
<b>Area</b>	Gulf of Mexico
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2010

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSFmsy-E00	2010	5,830,000
<b>Fmsy</b>	Fmsy-1/yr	2010	0.08
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	SSBmgt-E00	2010	7,287,500
<b>Fmgt</b>	Fmgt-1/yr	2010	0.063
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-E00	2010	1,340,000
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

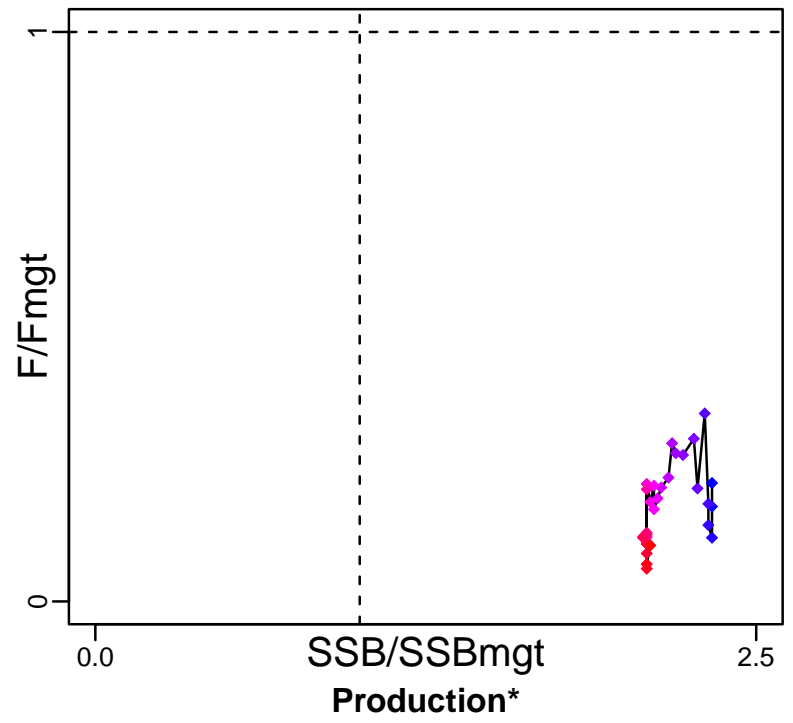
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSF-E00	2010	15,300,000	-	-
<b>TN</b>	TN-E00	2010	23,800,000	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2010	0.006	-	-
<b>ER</b>	ER-calc-ratio	2010	0.004	-	-
<b>TC</b>	TC-E00	2010	86,700		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSF-E00/SSFmsy-E00	2010	2.624		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2010	0.078		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	SSF-E00/SSBmgt-E00	2010	2.099		
<b>F/Fmgt</b>	F-1/yr/Fmgt-1/yr	2010	0.098		
<b>ER/ERmgt</b>	-	-	-		

Blacktip shark Gulf of Mexico [BTIPSHARGM]

Kobe MSYpref (1981–2010–HIVELY)



Kobe MGTpref (1981–2010–HIVELY)



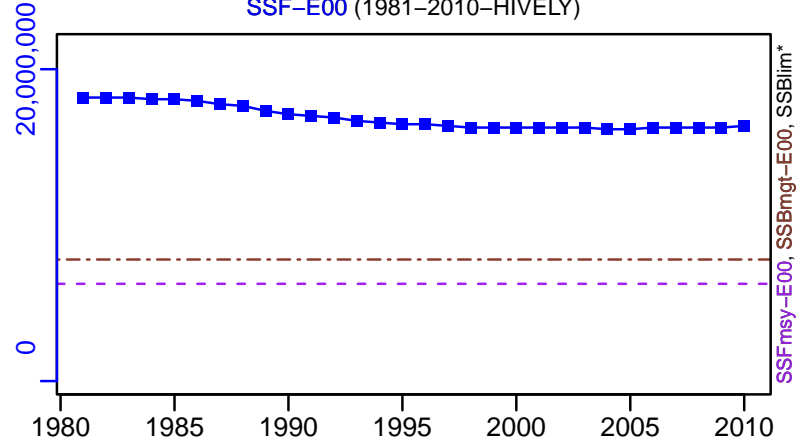
◆ Start Year ◆ End Year \* No Data

# Blacktip shark Gulf of Mexico [BTIPSHARGM]

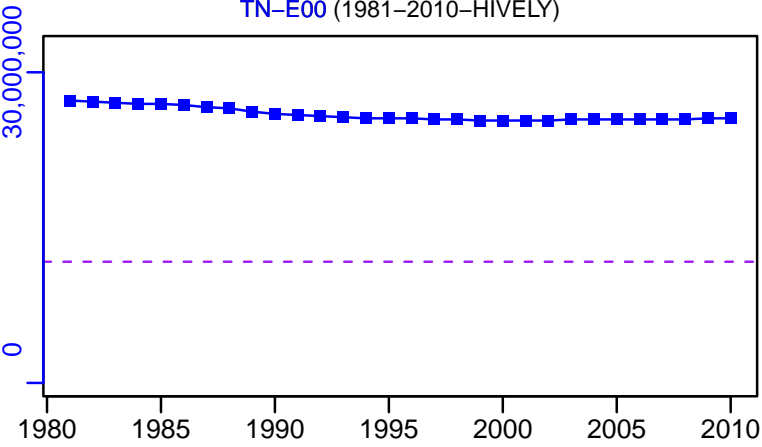
TB\*



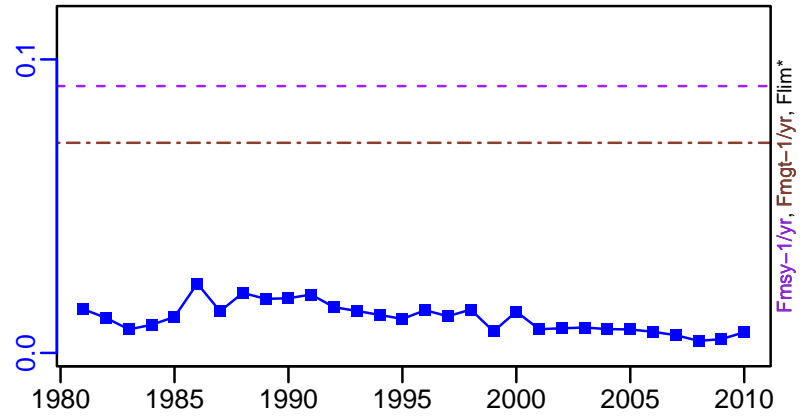
SSF-E00 (1981-2010-HIVELY)



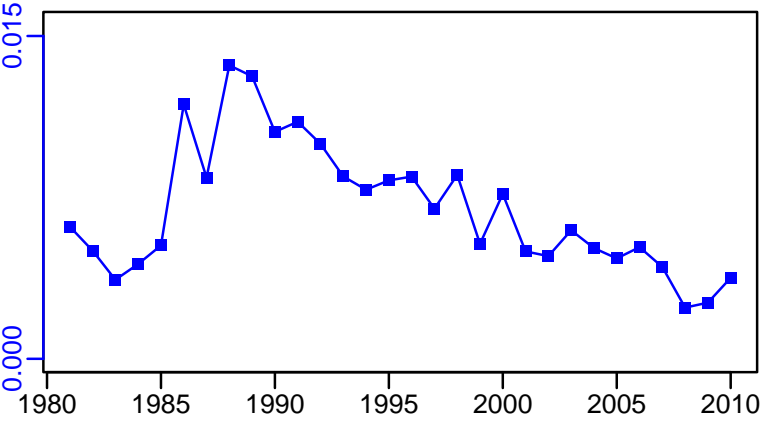
TN-E00 (1981-2010-HIVELY)



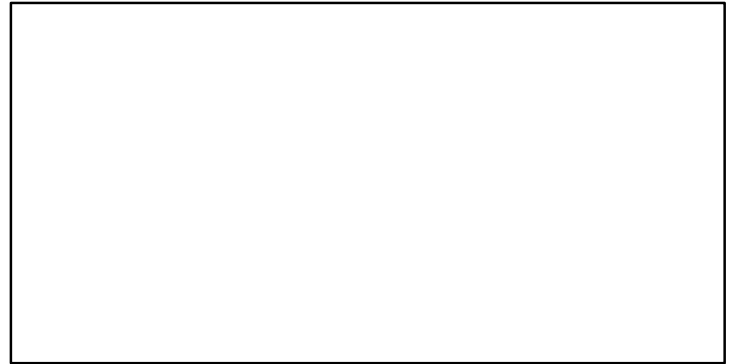
F-1/yr (1981-2010-HIVELY)



ER-calc-ratio (1981-2010-HIVELY)



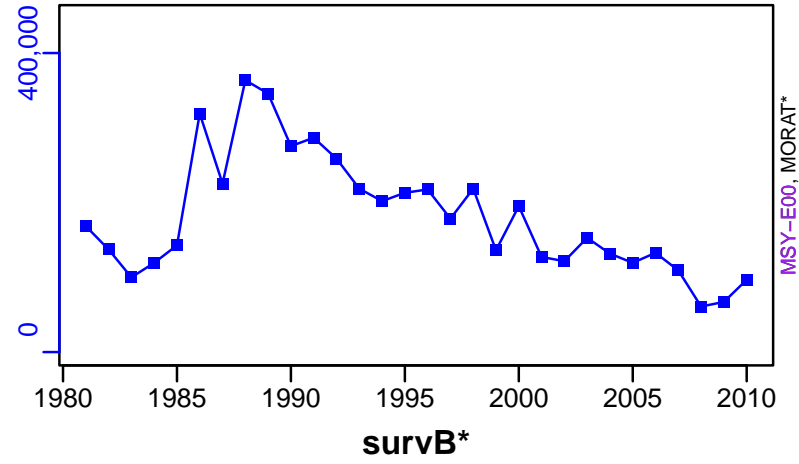
Recruits\*



# Blacktip shark Gulf of Mexico [BTIPSHARGM]

TC-E00, TL\*, RecC\* (1981-2010-HIVELY)

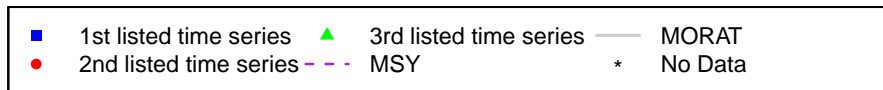
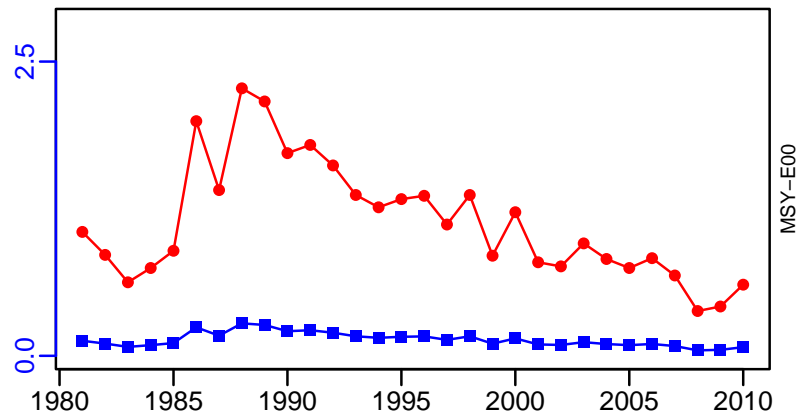
TAC\*, Cpair\*, Cadv\*



EFFORT\*



TC-E00/MSY-E00, CdivMEANC-ratio, (1981-2010-HIVELY)



## Cuckoo ray ICES 3a-4 [CKRAYIIIa-IV]

Metadata	
<b>Scientific Name</b>	Leucoraja naevus
<b>Current Assess ID</b>	WGEF-CKRAYIIIa-IV-1991-2018-ICESIMP2021
<b>Area</b>	ICES 3a-4
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018, 2016

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	1.03	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	180		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



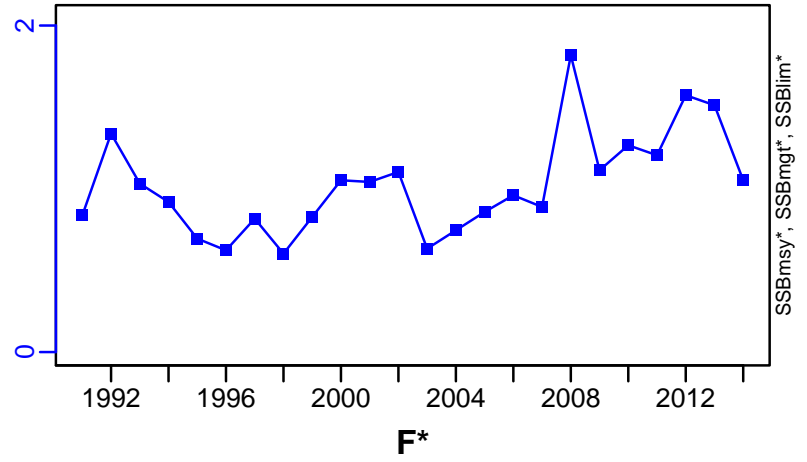
◆ Start Year   ◆ End Year   \* No Data

Cuckoo ray ICES 3a-4 [CKRAYIIIa-IV]

TB\*



SSB-index (1991-2014-ICESIMP2018)



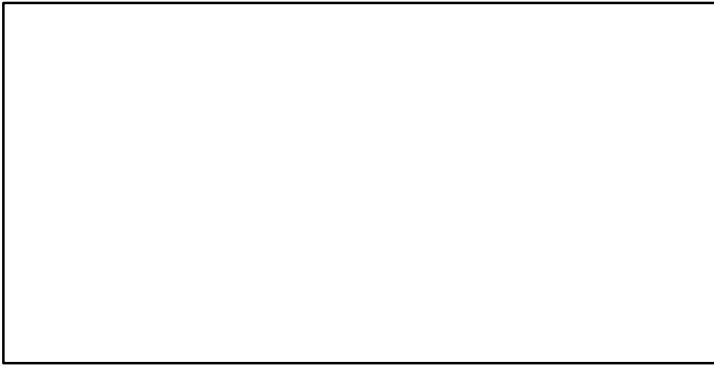
TN \*



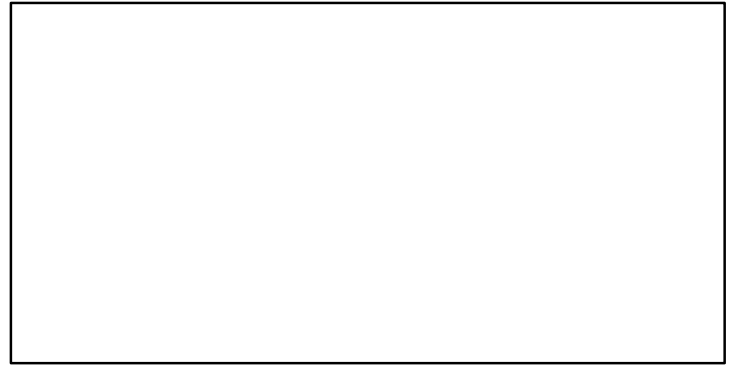
F\*



ER\*

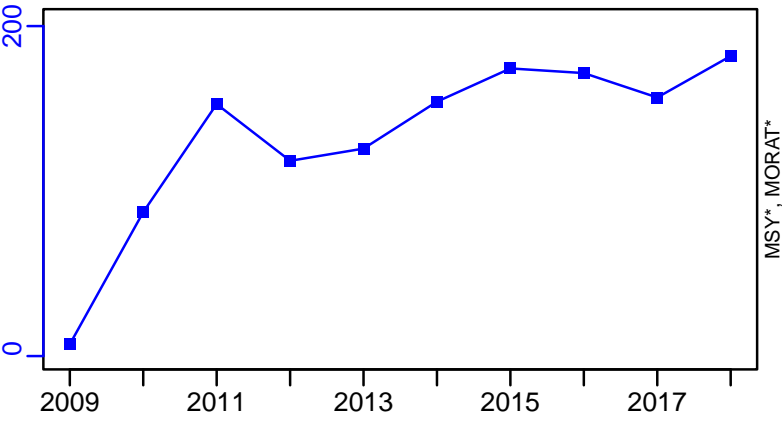


Recruits\*



# Cuckoo ray ICES 3a-4 [CKRAYIIIa-IV]

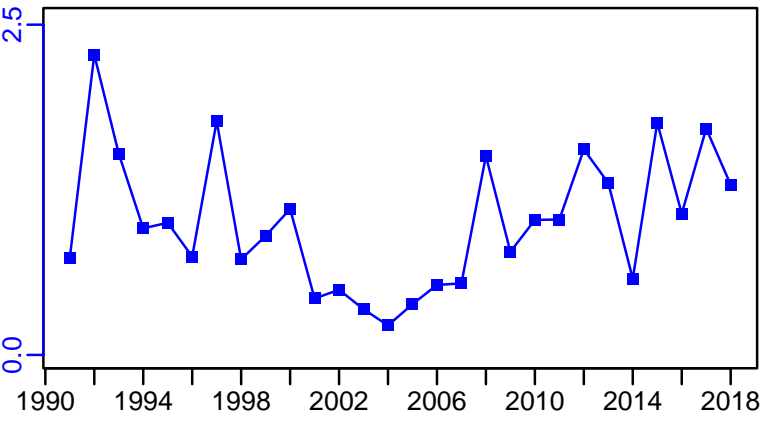
TL-MT, TC\*, RecC\* (1991-2018-ICESIMP2021)



TAC\*, Cpair\*, Cadv\*



survB-index (1991-2018-ICESIMP2021)



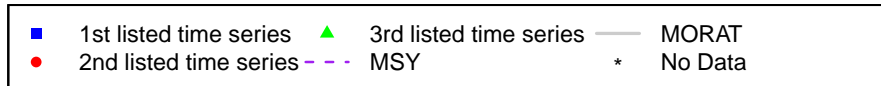
CPUE\*



EFFORT\*



CdivMSY\*



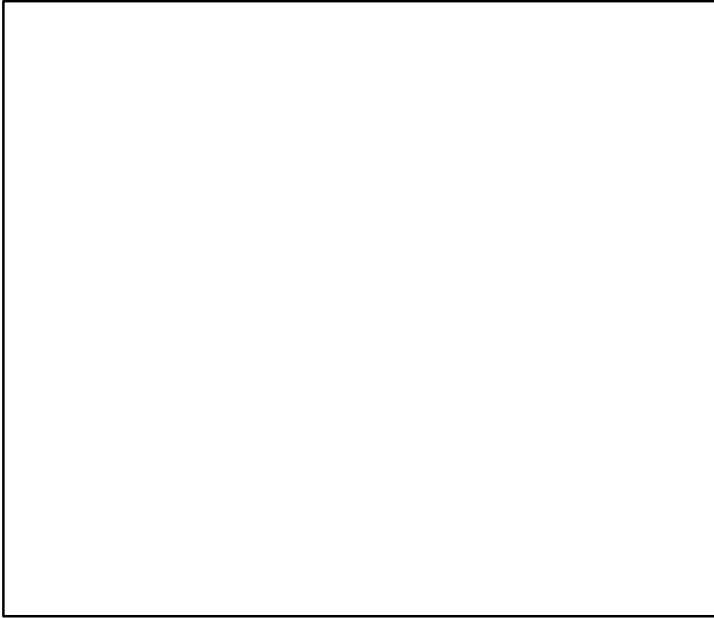
## Cuckoo ray Portuguese Waters -East [CKRAYIXa]

Metadata	
<b>Scientific Name</b>	Leucoraja naevus
<b>Current Assess ID</b>	WGEF-CKRAYIXa-1998-2015-ICESIMP2018
<b>Area</b>	Portugese Waters -East
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

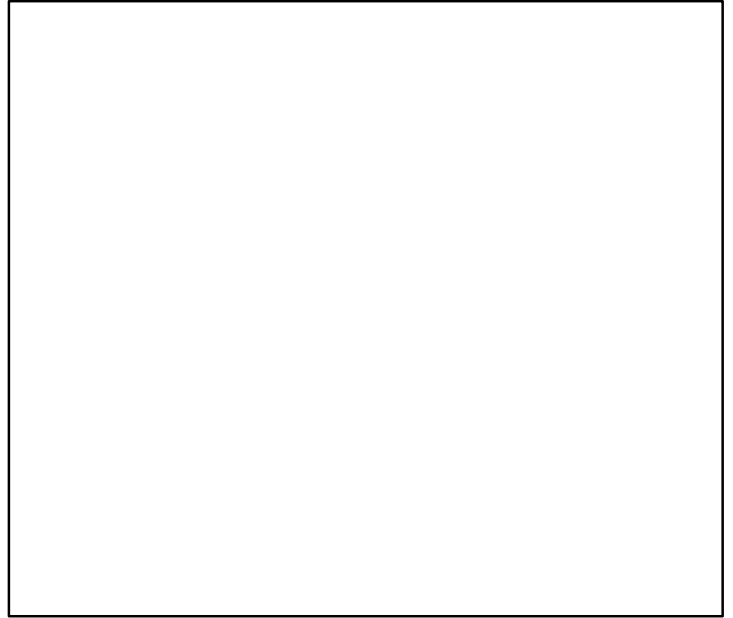
Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	2.62	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	19		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



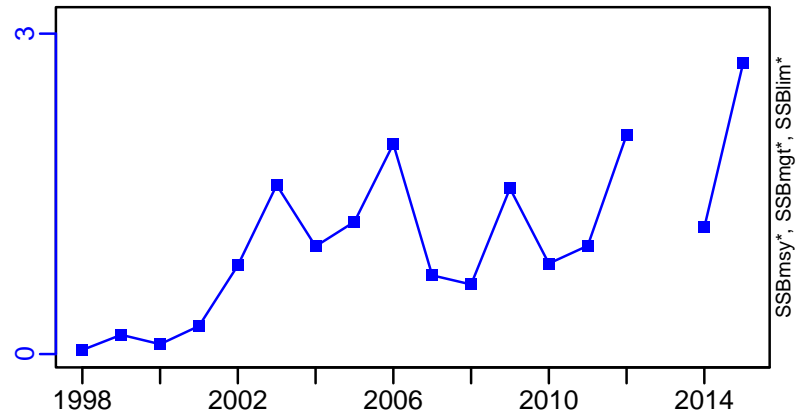
◆ Start Year   ◆ End Year   \* No Data

# Cuckoo ray Portugese Waters –East [CKRAYIXa]

TB\*



SSB-index (1998–2015–ICESIMP2018)



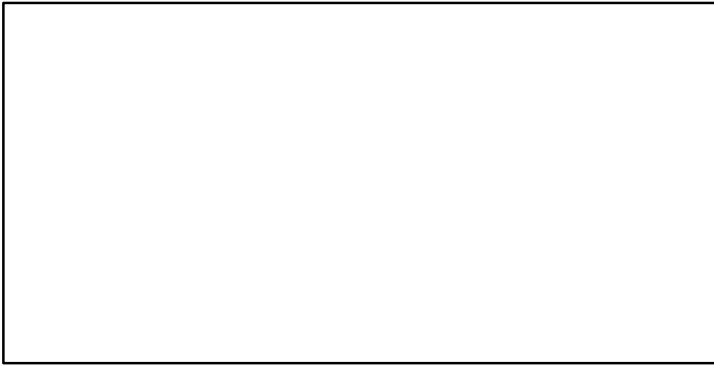
TN \*



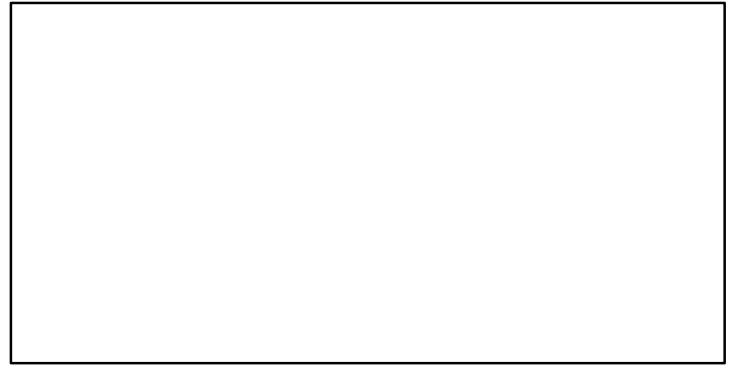
F\*



ER\*



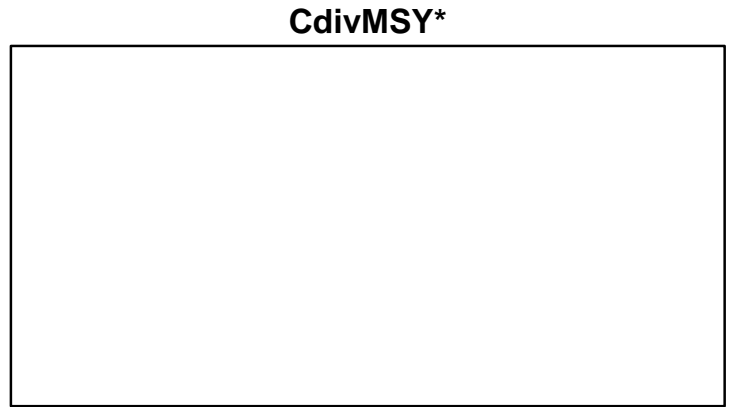
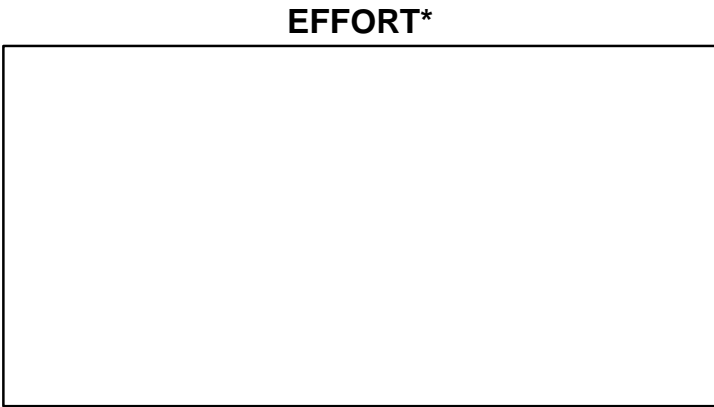
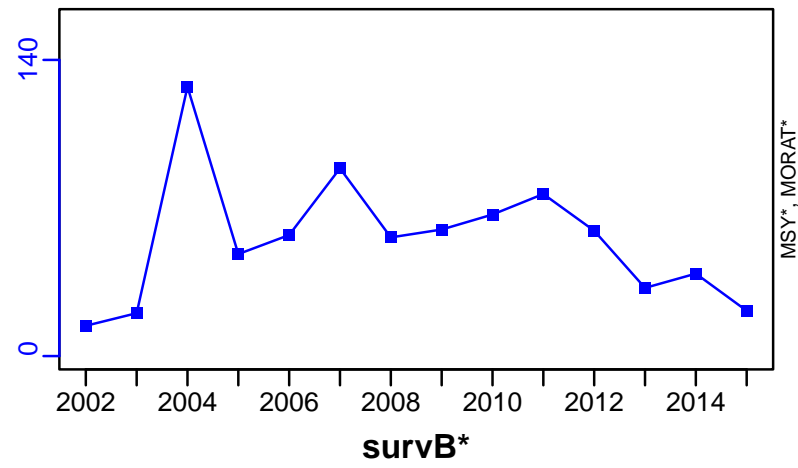
Recruits\*



# Cuckoo ray Portuguese Waters –East [CKRAYIXa]

TL–MT, TC\*, RecC\* (1998–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Cuckoo ray Bay of Biscay -South [CKRAYVIIIc]

Metadata	
<b>Scientific Name</b>	Leucoraja naevus
<b>Current Assess ID</b>	WGEF-CKRAYVIIIc-1999-2015-ICESIMP2018
<b>Area</b>	Bay of Biscay -South
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	0.309	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	15		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



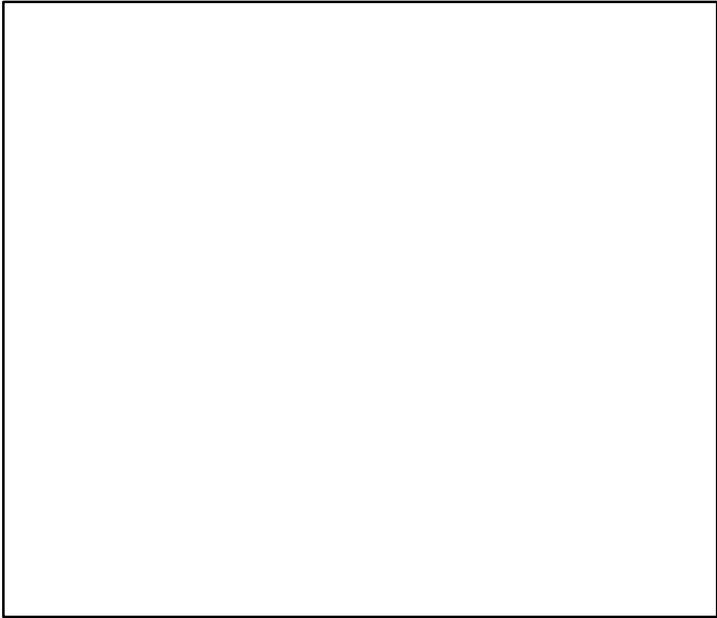
Kobe MSY\*



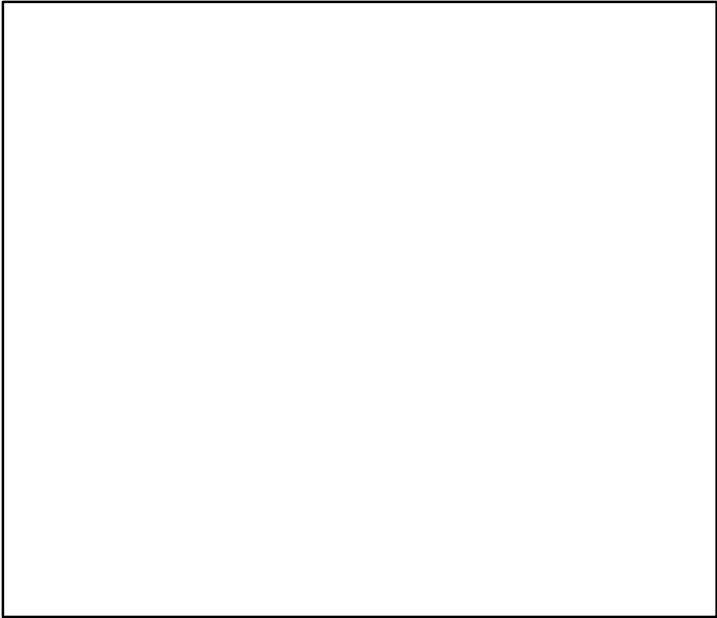
Kobe MGT\*



Spawner Recruit\*



Production\*



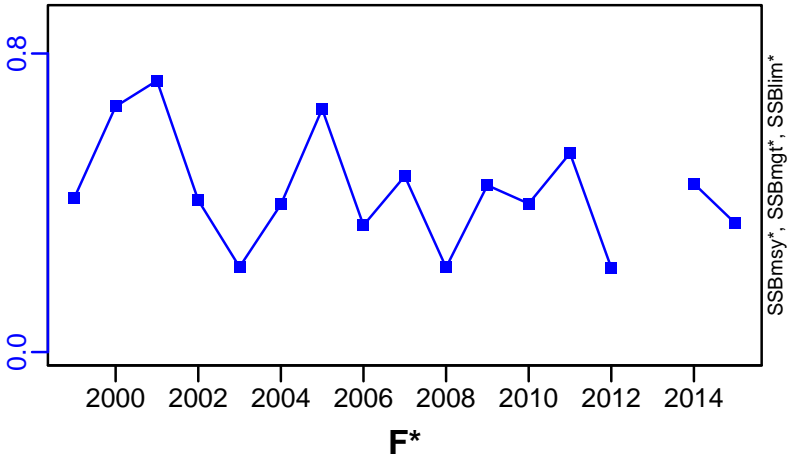
◆ Start Year   ◆ End Year   \* No Data

Cuckoo ray Bay of Biscay –South [CKRAYVIIIc]

TB\*



SSB-index (1999–2015–ICESIMP2018)



TN \*



F\*



ER\*

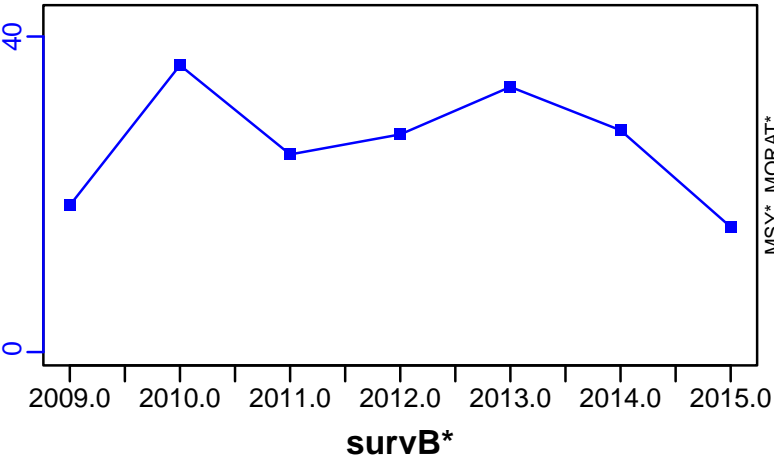


Recruits\*



Cuckoo ray Bay of Biscay –South [CKRAYVIIIc]

TL–MT, TC\*, RecC\* (1999–2015–ICESIMP2018)



TAC\*, Cpair\*, Cadv\*



CPUE\*



EFFORT\*



CdivMSY\*



## Cuckoo ray ICES 6-7 [CKRAYVI-VII]

Metadata	
<b>Scientific Name</b>	Leucoraja naevus
<b>Current Assess ID</b>	WGEF-CKRAYVI-VII-2005-2015-ICESIMP2018
<b>Area</b>	ICES 6-7
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	1.51	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	3360		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



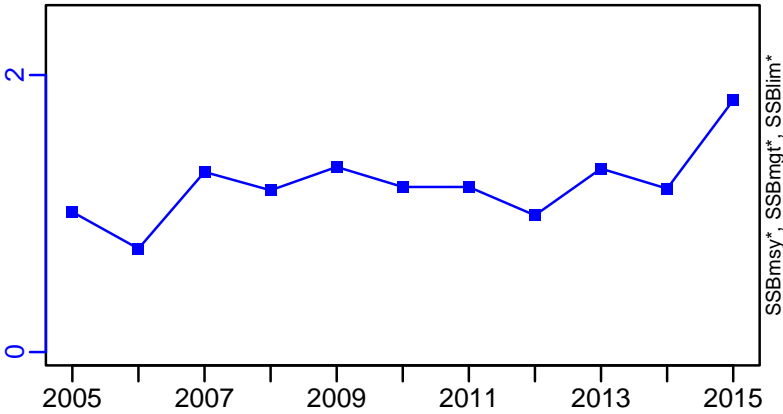
◆ Start Year   ◆ End Year   \* No Data

Cuckoo ray ICES 6–7 [CKRAYVI–VII]

TB\*



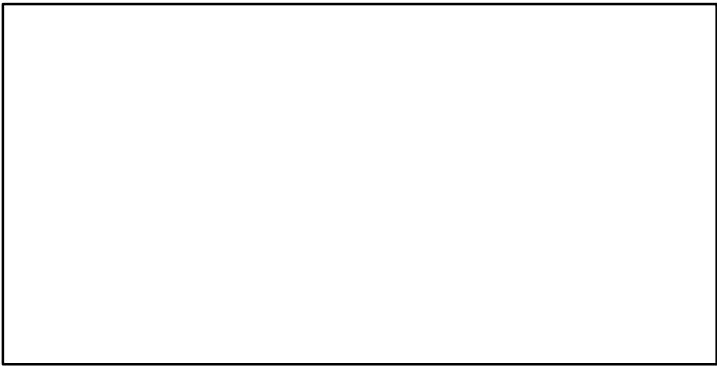
SSB-index (2005–2015–ICESIMP2018)



TN \*



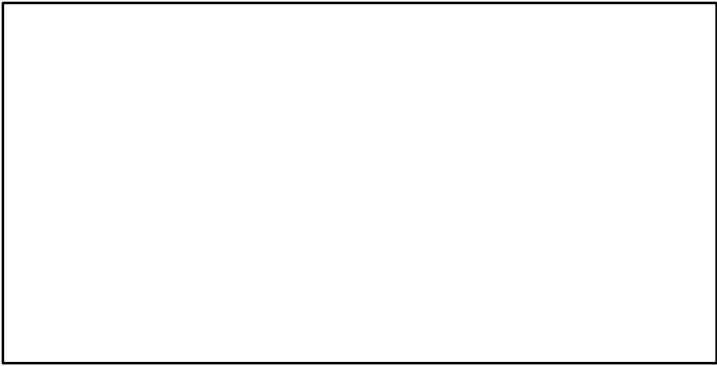
F\*



ER\*

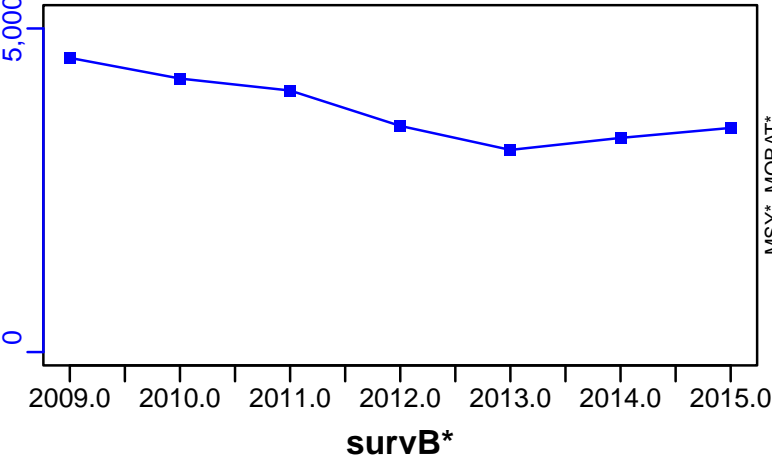


Recruits\*



Cuckoo ray ICES 6–7 [CKRAYVI–VII]

TL–MT, TC\*, RecC\* (2005–2015–ICESIMP2018)



TAC\*, Cpair\*, Cadv\*



CPUE\*



EFFORT\*



CdivMSY\*



## Clearnose skate Mid-Atlantic Coast [CSKATMATLC]

Metadata	
<b>Scientific Name</b>	Raja eglanteria
<b>Current Assess ID</b>	NEFSC-CSKATMATLC-1968-2019-SISIMP2021-2
<b>Area</b>	Mid-Atlantic Coast
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2018, 2019, 2005

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

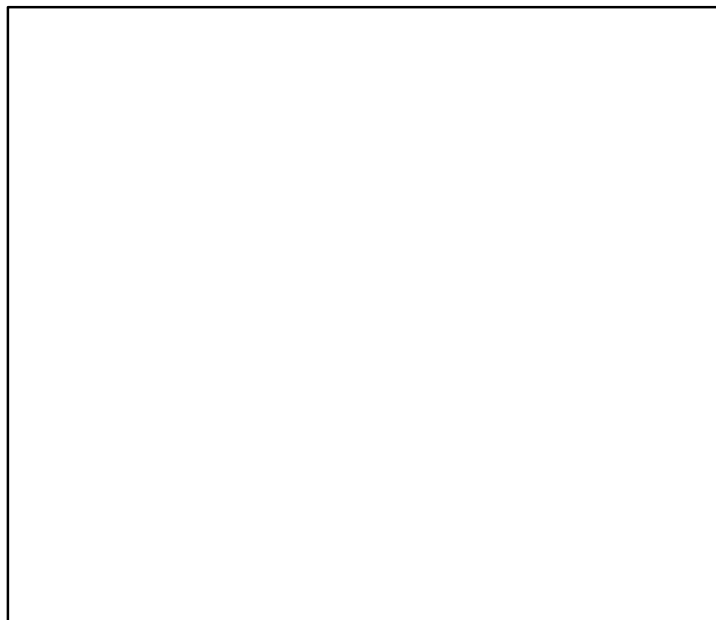
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2019	945		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



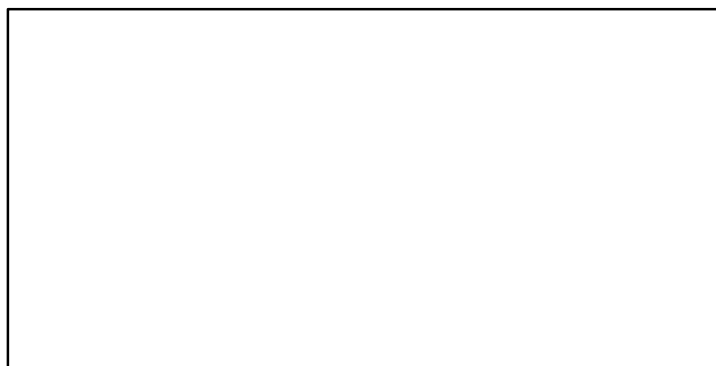
◆ Start Year   ◆ End Year   \* No Data

Clearnose skate Mid-Atlantic Coast [CSKATMATLC]

**TB\***



**SSB\***



**TN \***



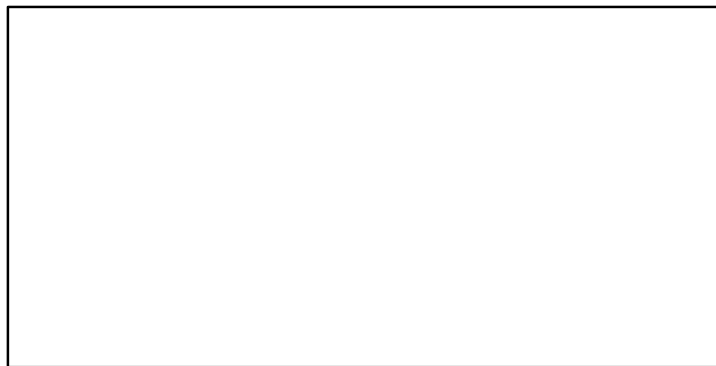
**F\***



**ER\***

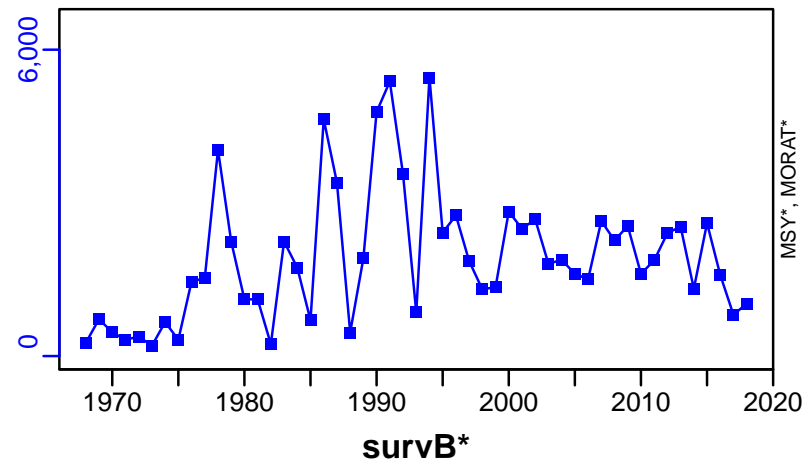


**Recruits\***



# Clearnose skate Mid-Atlantic Coast [CSKATMATLC]

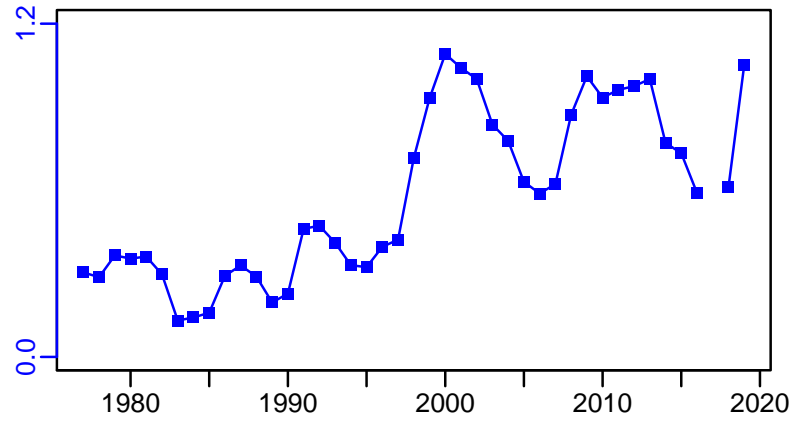
TC-MT, TL\*, RecC\* (1968-2019-SISIMP2021-2)



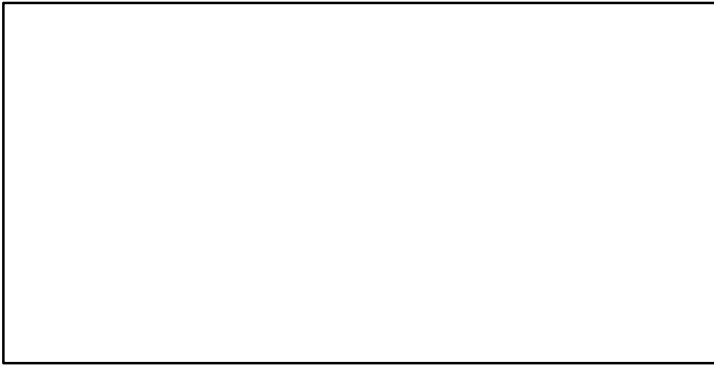
TAC\*, Cpair\*, Cadv\*



CPUE-index (1968-2019-SISIMP2021-2)



EFFORT\*



■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - - MSY    \* No Data

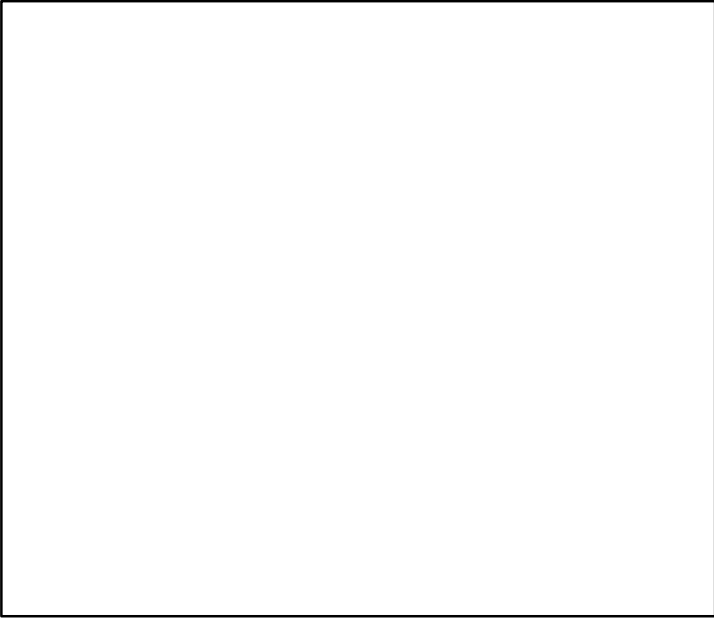
## Dusky shark Gulf of Mexico and Atlantic [DSKSHARGMATL]

Metadata	
<b>Scientific Name</b>	Carcharhinus obscurus
<b>Current Assess ID</b>	SEFSC-DSKSHARGMATL-1960-2009-SISIMP2016
<b>Area</b>	Gulf of Mexico and Atlantic
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2009

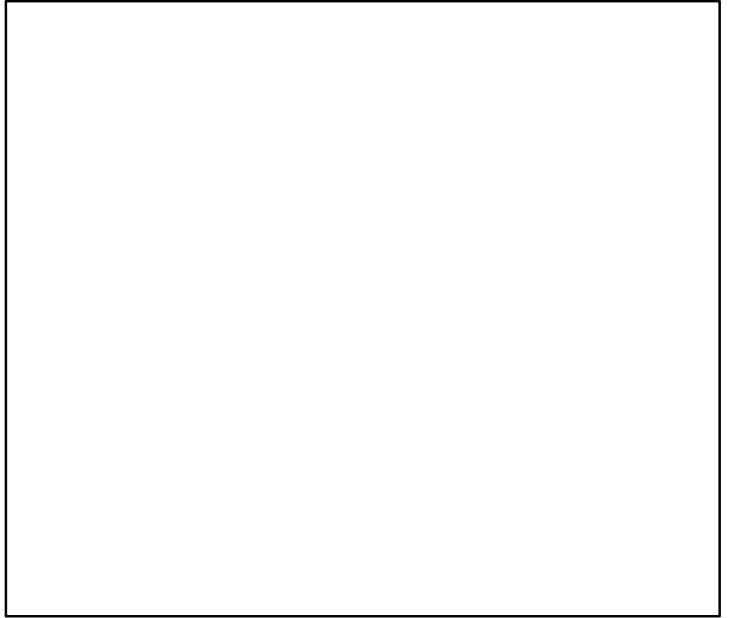
Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	-	-	-
<b>Fmsy</b>	Fmsy-extr-1/yr	2009	0.034
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	-	-	-	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2009	0.056	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	-	-	-		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	-	-	-		
<b>F/Fmsy</b>	FdivFmsy-dimensionless	2009	1.56		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

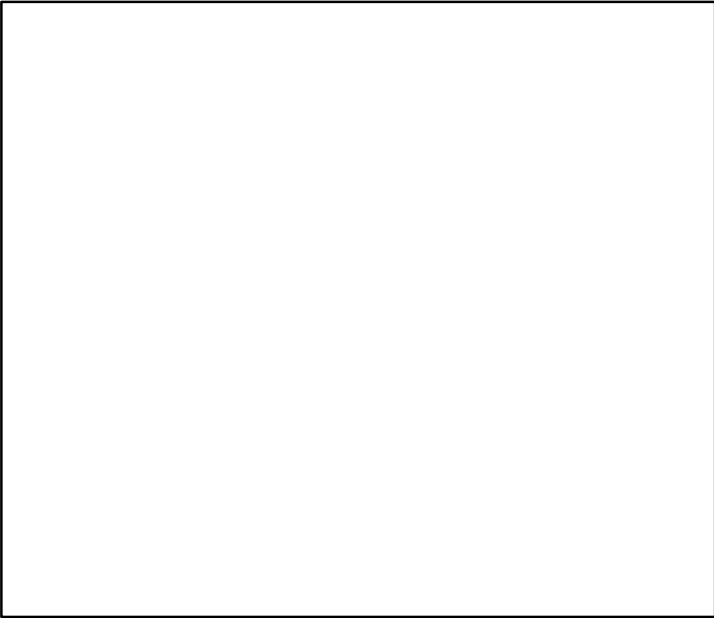
**Kobe MSY\***



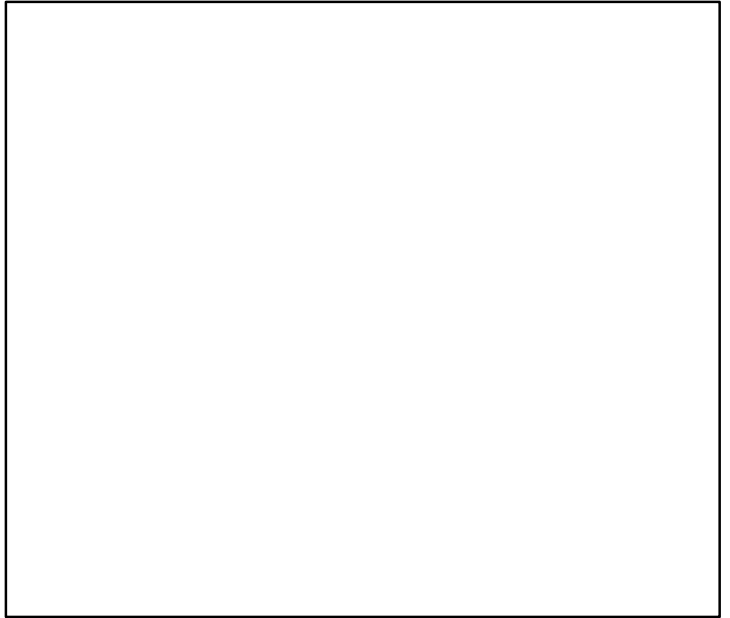
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ◆ End Year \* No Data

Dusky shark Gulf of Mexico and Atlantic [DSKSHARGMATL]

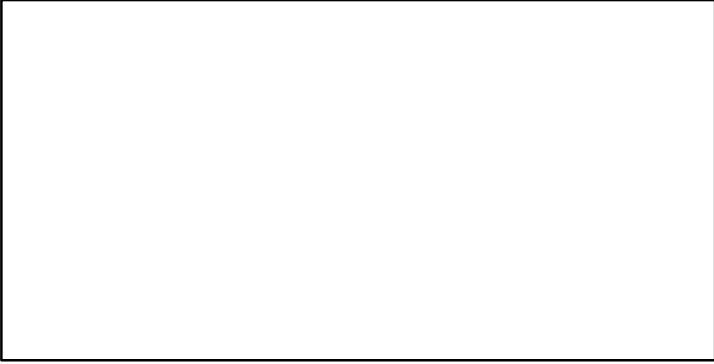
TB\*



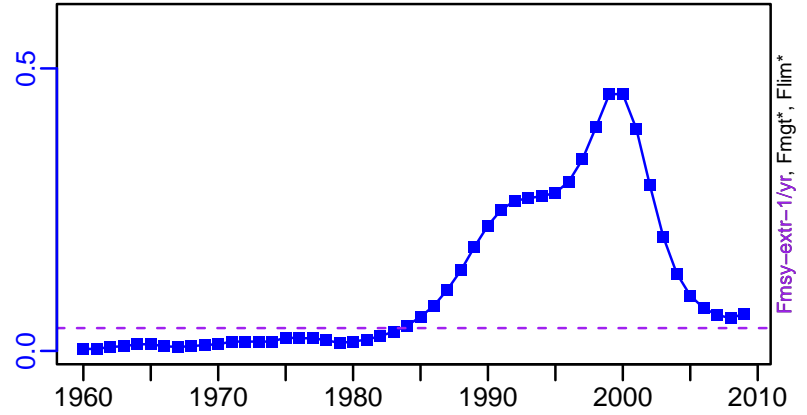
SSB\*



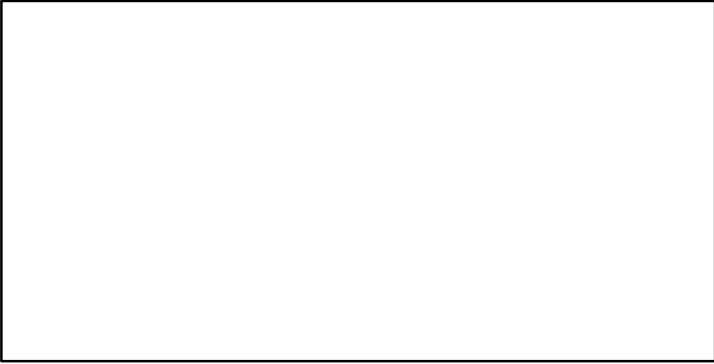
TN \*



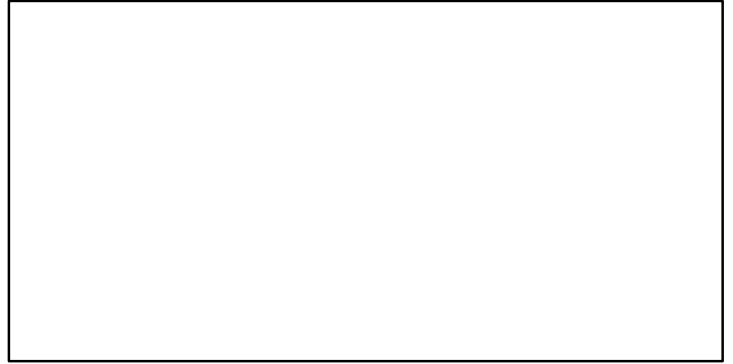
F-1/yr (1960–2009–SISIMP2016)



ER\*

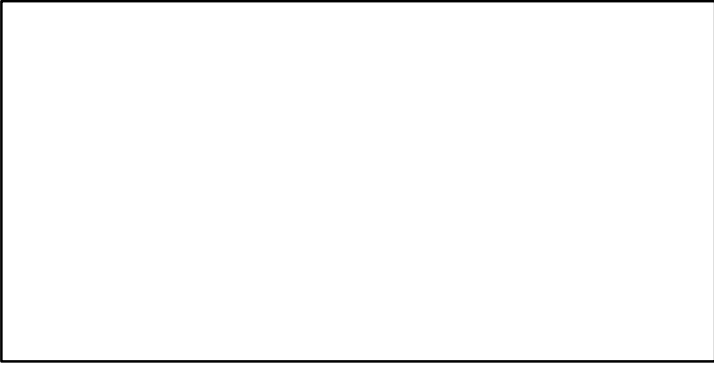


Recruits\*



Dusky shark Gulf of Mexico and Atlantic [DSKSHARGMATL]

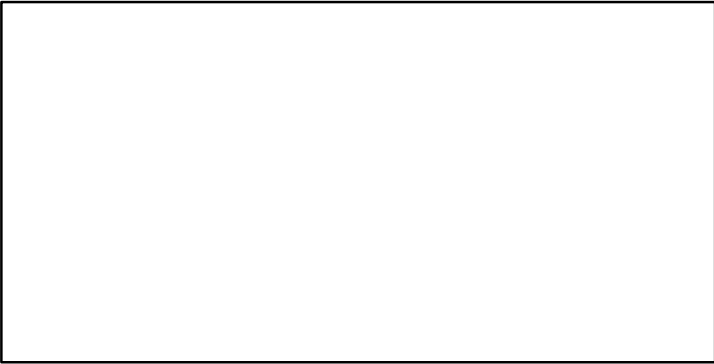
**TC\*, TL\*, RecC\***



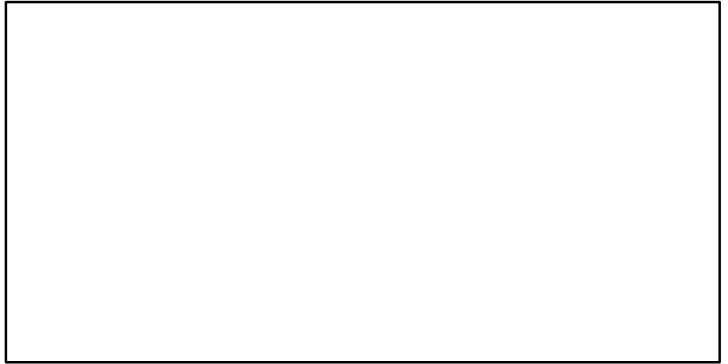
**TAC\*, Cpair\*, Cadv\***



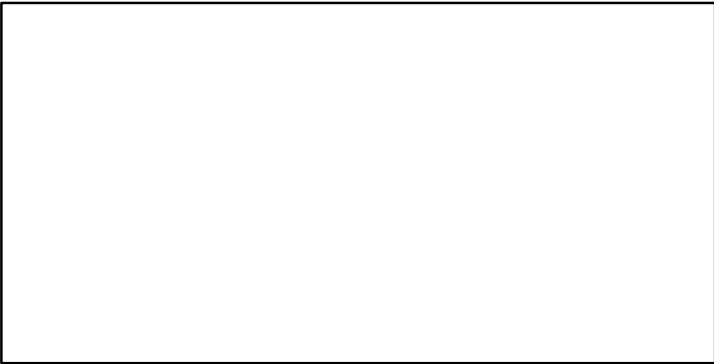
**survB\***



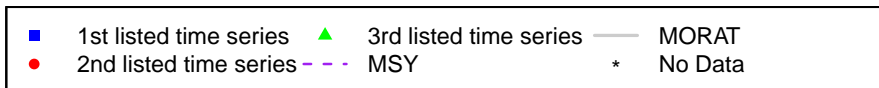
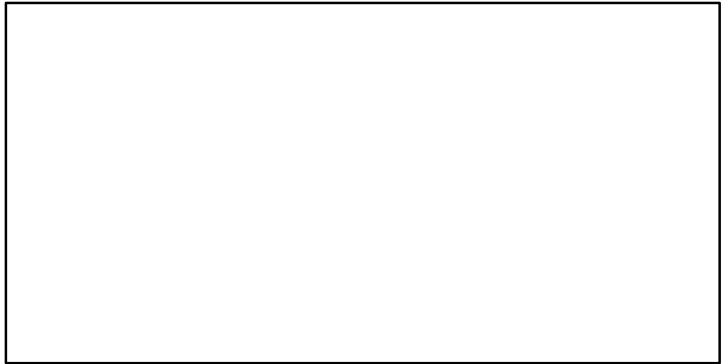
**CPUE\***



**EFFORT\***



**CdivMSY\***



## Finetooth shark Atlantic [FTOOTHSHARATL]

Metadata	
<b>Scientific Name</b>	Carcharhinus isodon
<b>Current Assess ID</b>	SEFSC-FTOOTHSHARATL-1976-2005-FAUCONNET
<b>Area</b>	Atlantic
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2005

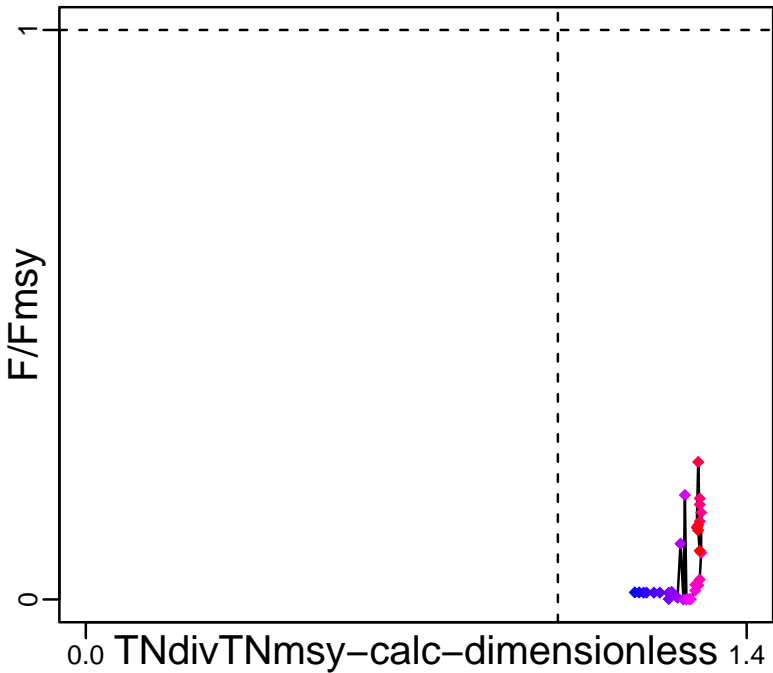
Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	-	-	-
<b>Fmsy</b>	Fmsy-1/yr	2005	0.03
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-E00	2005	96,000
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	-	-	-	-	-
<b>TN</b>	TN-E00	2005	4,160,000	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2005	0.003	-	-
<b>ER</b>	ER-calc-ratio	2005	0.003	-	-
<b>TC</b>	TC-E00	2005	10,700		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	-	-	-		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2005	0.086		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

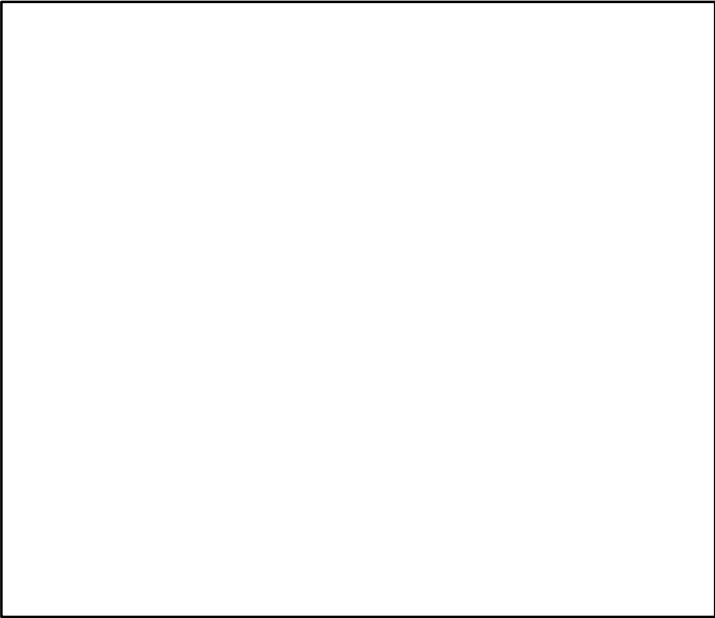


Finetooth shark Atlantic [FTOOTHSHARATL]

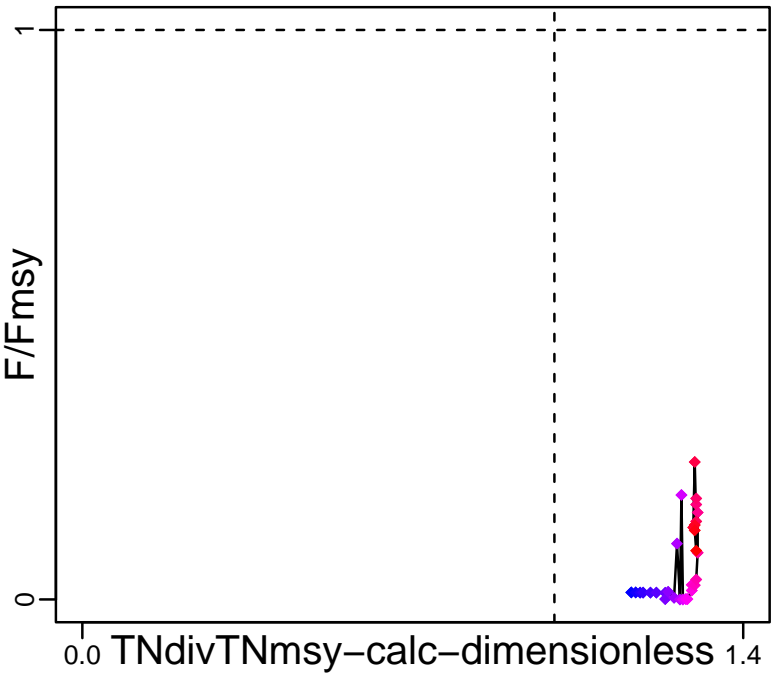
Kobe MSYpref (1976–2005–FAUCONNET)



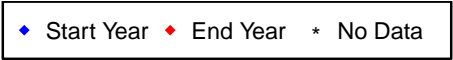
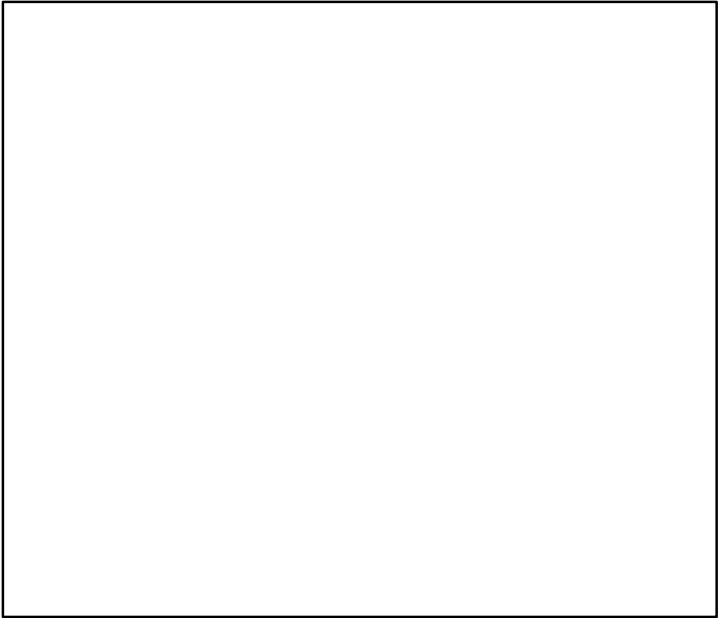
Spawner Recruit\*



Kobe MGTpref (1976–2005–FAUCONNET)



Production\*



Finetooth shark Atlantic [FTOOTHSHARATL]

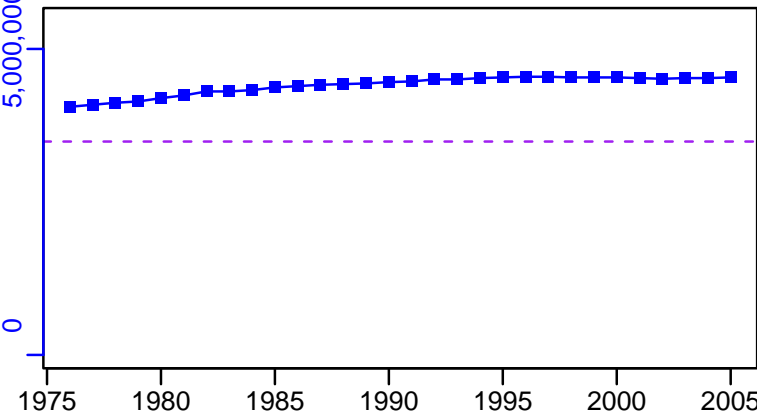
TB\*



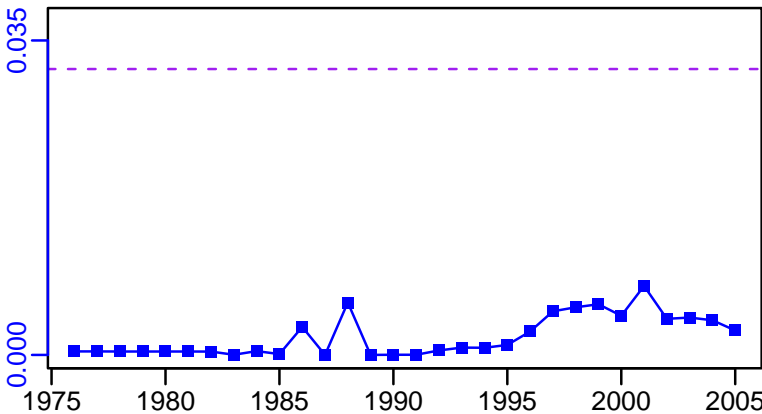
SSB\*



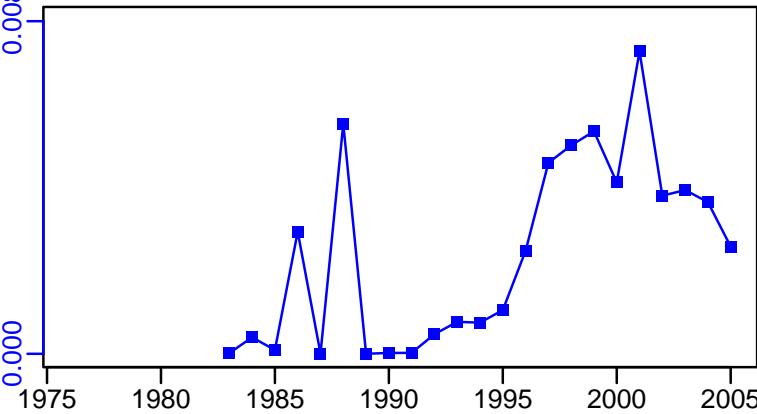
TN-E00 (1976–2005–FAUCONNET)



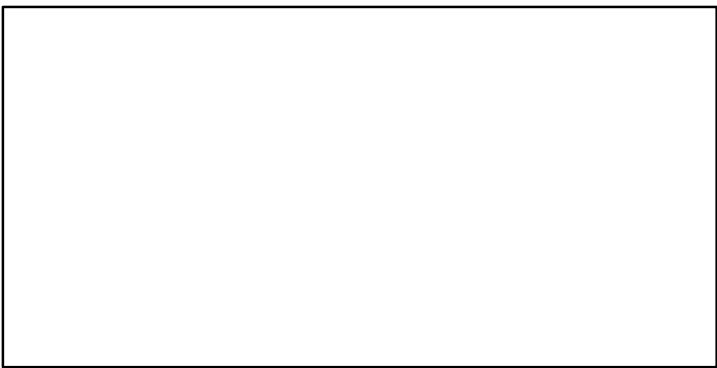
F-1/yr (1976–2005–FAUCONNET)



ER-calc-ratio (1976–2005–FAUCONNET)

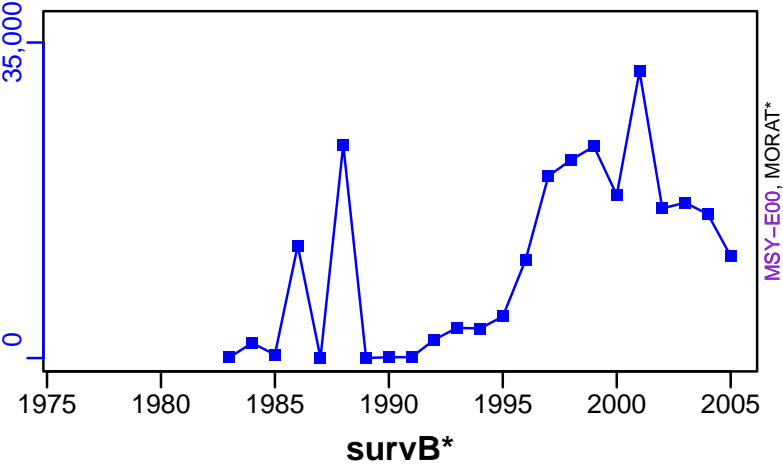


Recruits\*



Finetooth shark Atlantic [FTOOTHSHARATL]

TC-E00, TL\*, RecC\* (1976–2005–FAUCONNET)



TAC\*, Cpair\*, Cadv\*



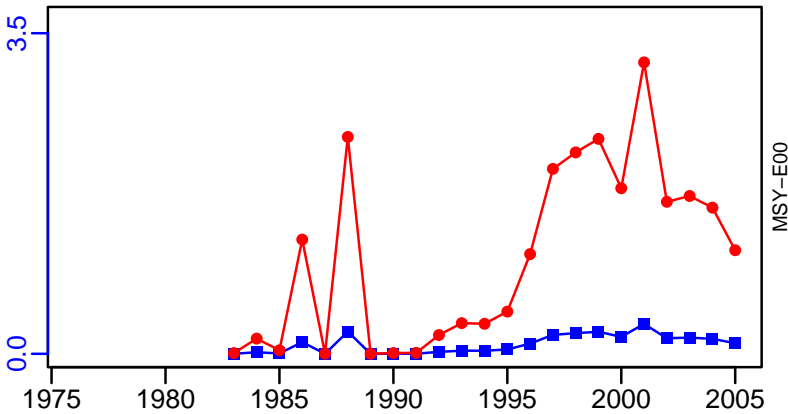
CPUE\*



EFFORT\*



TC-E00/MSY-E00, CdivMEANC-ratio, (1976–2005–FAUCONNET)



## Kitefin shark Northeast Atlantic [KFSHARNEATL]

Metadata	
<b>Scientific Name</b>	Dalatias licha
<b>Current Assess ID</b>	WGEF-KFSHARNEATL-1972-2018-ICESIMP2021
<b>Area</b>	Northeast Atlantic
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2018, 2014

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	0		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

Kitefin shark Northeast Atlantic [KFSHARNEATL]

TB\*



SSB\*



TN \*



F\*



ER\*

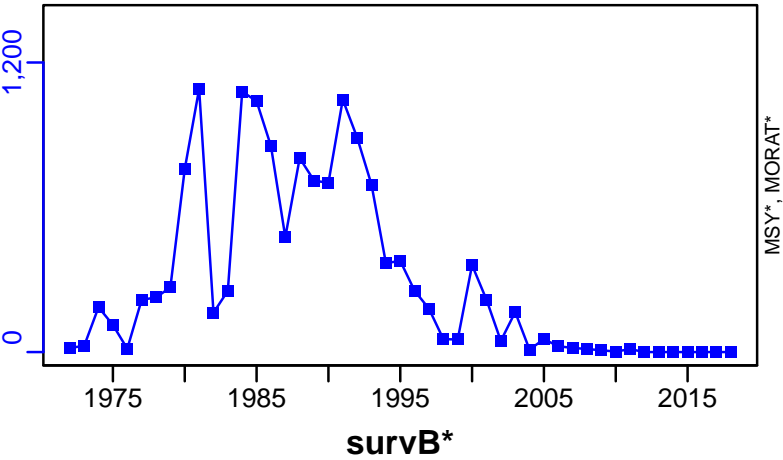


Recruits\*



Kitefin shark Northeast Atlantic [KFSHARNEATL]

TL-MT, TC\*, RecC\* (1972-2018-ICESIMP2021)



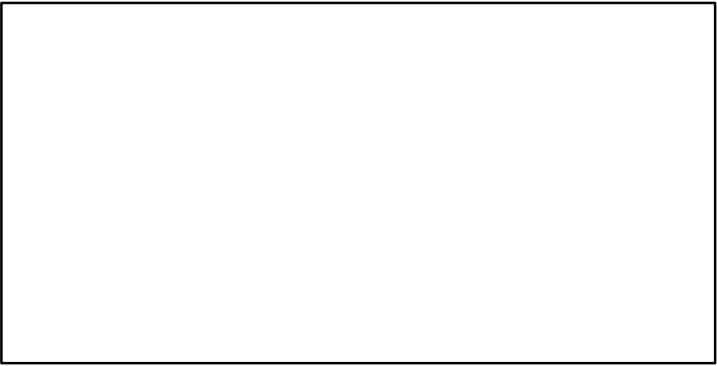
TAC\*, Cpair\*, Cadv\*



CPUE\*



EFFORT\*



CdivMSY\*



## Leafscale gulper shark Northeast Atlantic [LGSHARNEATL]

Metadata	
<b>Scientific Name</b>	Centrophorus squamosus
<b>Current Assess ID</b>	WGEF-LGSHARNEATL-1988-2018-ICESIMP2021
<b>Area</b>	Northeast Atlantic
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	2		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year    ◆ End Year    \* No Data

Leafscale gulper shark Northeast Atlantic [LGSHARNEATL]

TB\*



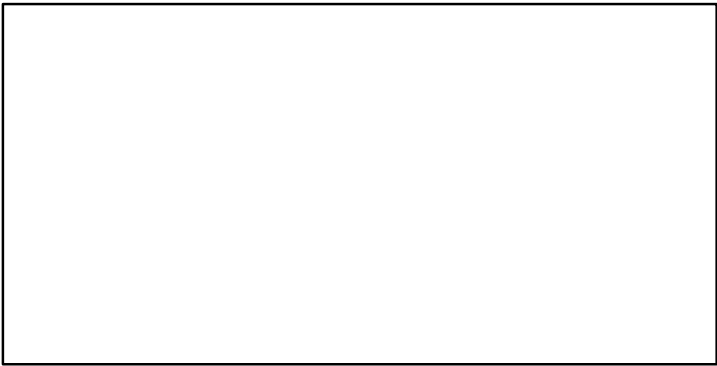
SSB\*



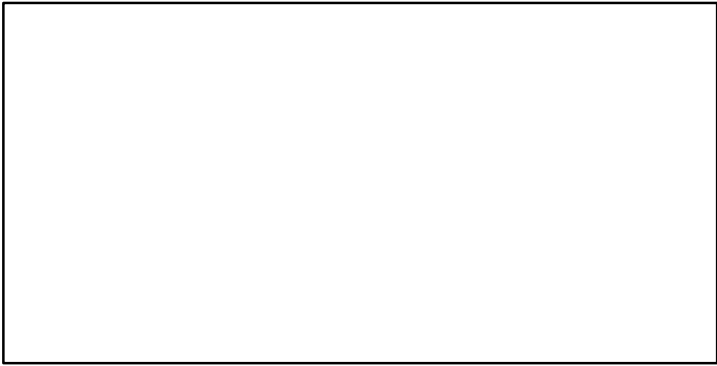
TN \*



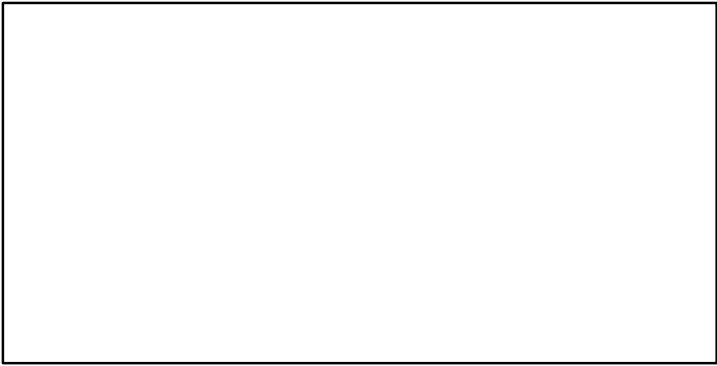
F\*



ER\*



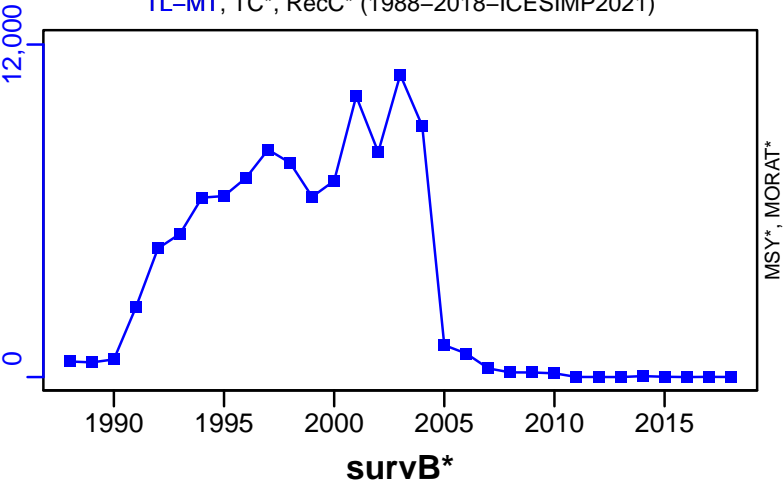
Recruits\*



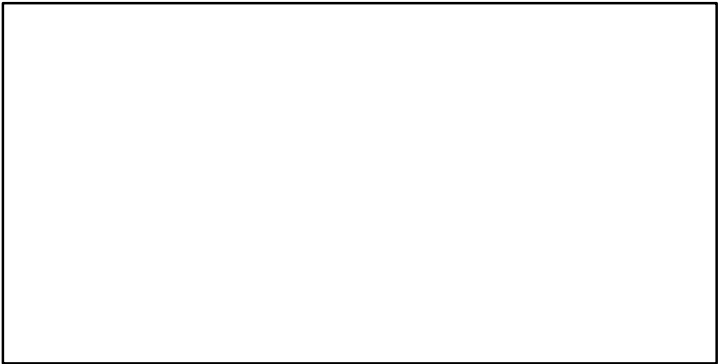
■ Listed time series	- - - Target BRP	— Rec-Est
- - - MSY-based BRP	· · · Lim BRP	* No Data

Leafscale gulper shark Northeast Atlantic [LGSHARNEATL]

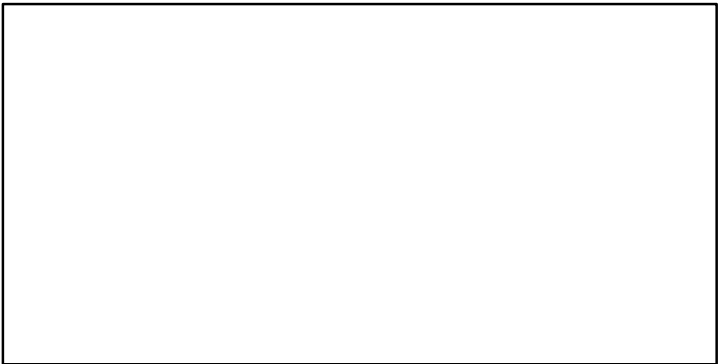
TL-MT, TC\*, RecC\* (1988-2018-ICESIMP2021)



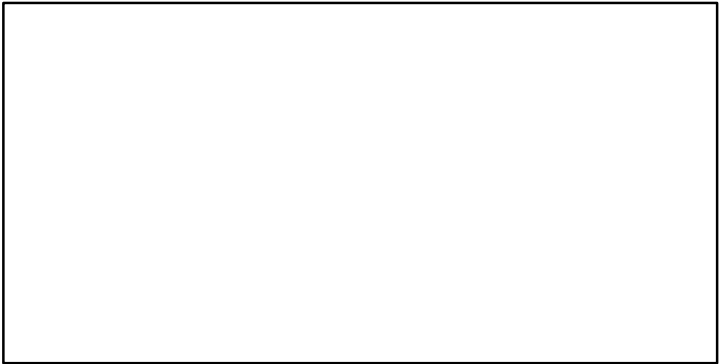
TAC\*, Cpair\*, Cadv\*



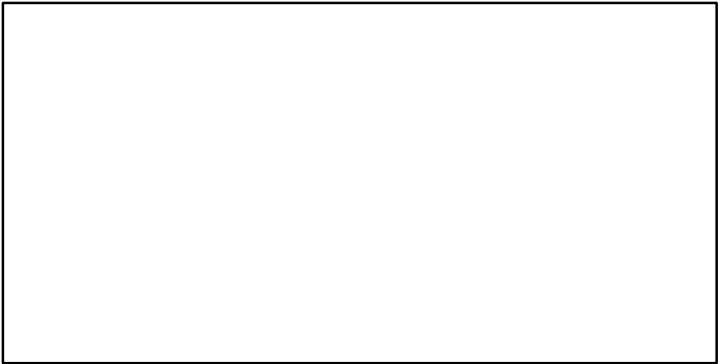
CPUE\*



EFFORT\*



CdivMSY\*



## Longnose skate West Coast of Vancouver Island [LNOSESKA3CD]

Metadata	
<b>Scientific Name</b>	Raja rhina
<b>Current Assess ID</b>	DFO-PAC-LNOSESKA3CD-1954-2011-OSGOOD
<b>Area</b>	West Coast of Vancouver Island
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Pacific Region
<b>Asmts in RAM</b>	2011

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2011	286		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



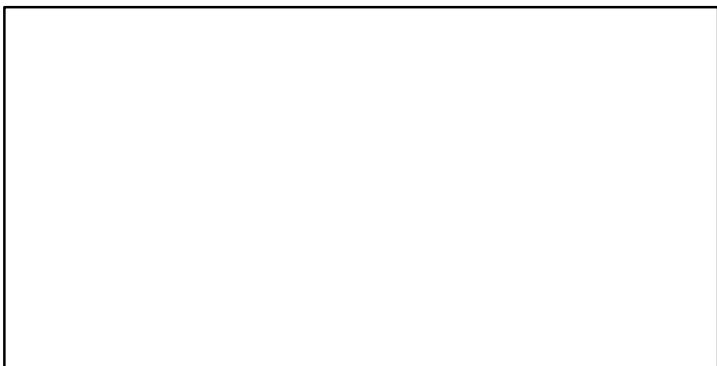
**Production\***



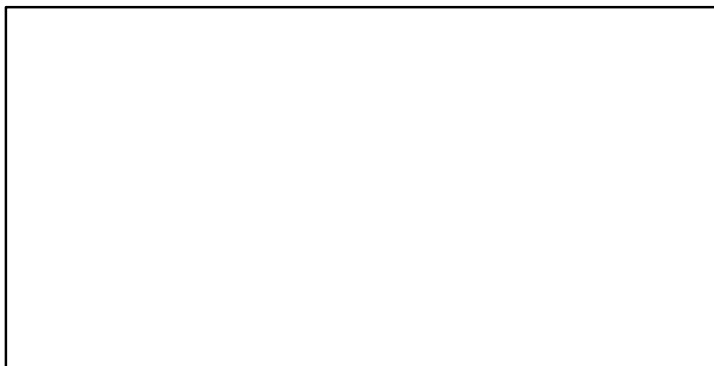
◆ Start Year ◆ End Year \* No Data

Longnose skate West Coast of Vancouver Island [LNOSESKA3CD]

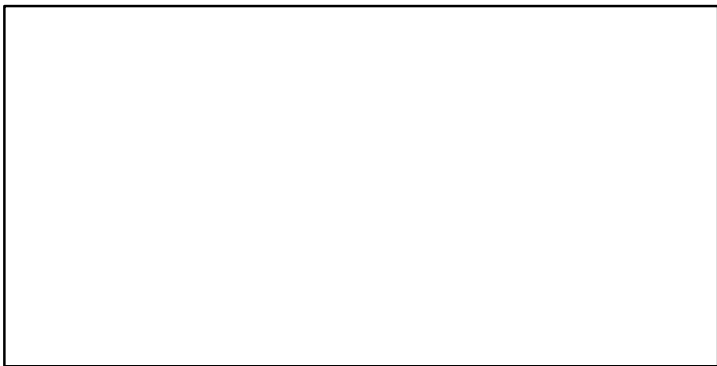
**TB\***



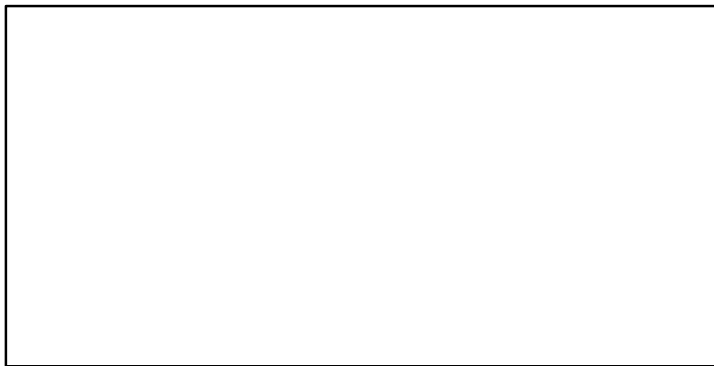
**SSB\***



**TN \***



**F\***



**ER\***

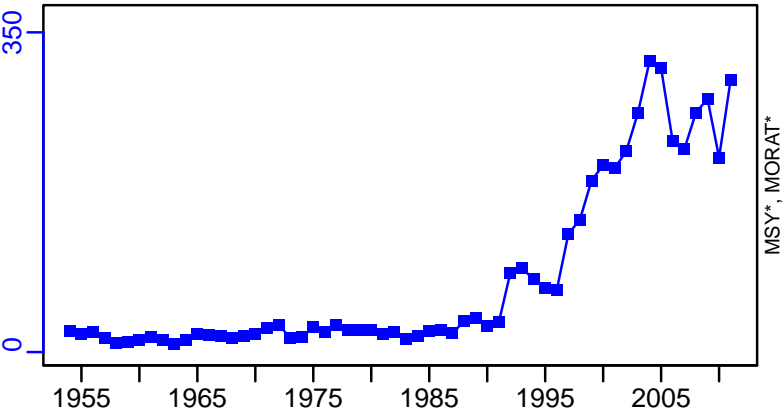


**Recruits\***



# Longnose skate West Coast of Vancouver Island [LNOSESKA3CD]

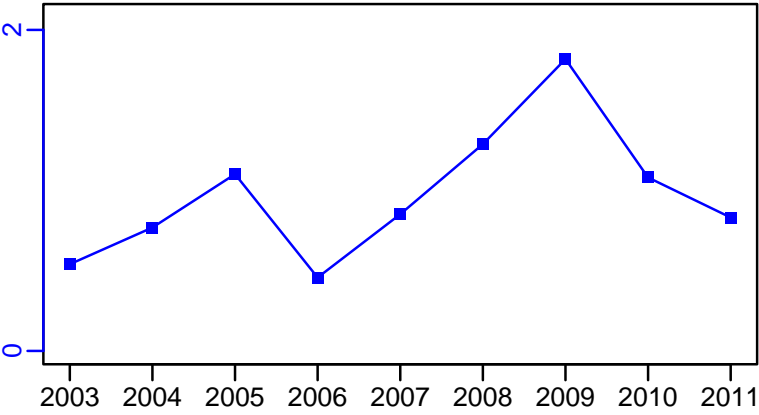
TC-MT, TL\*, RecC\* (1954-2011-OSGOOD)



TAC\*, Cpair\*, Cadv\*



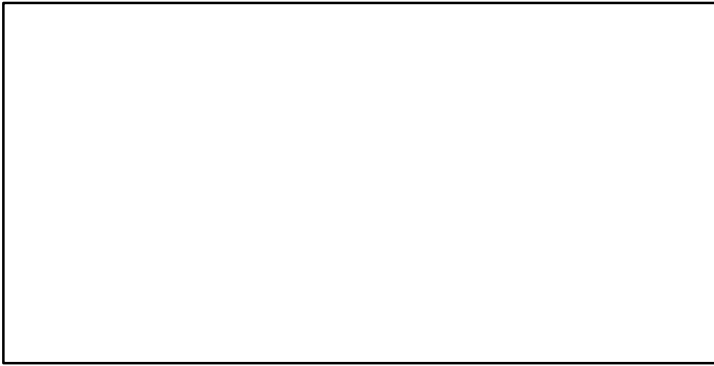
survB-fishperE02hooks (1954-2011-OSGOOD)



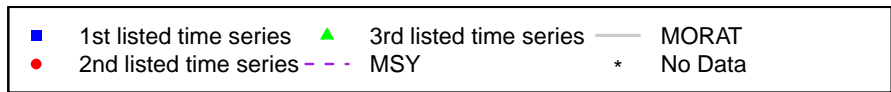
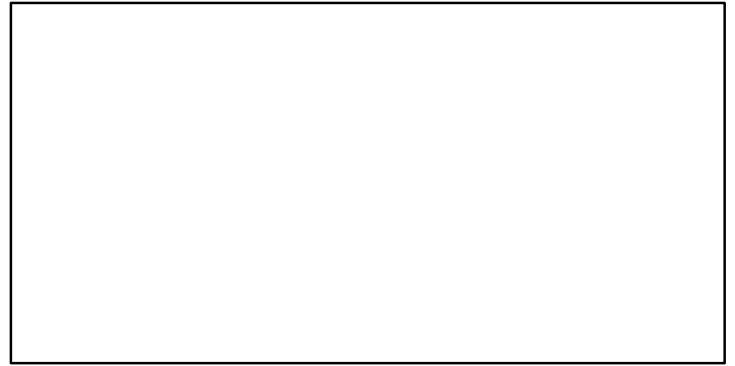
CPUE\*



EFFORT\*



CdivMSY\*



## Longnose skate Strait of Georgia [LNOSESKA4B]

Metadata	
<b>Scientific Name</b>	Raja rhina
<b>Current Assess ID</b>	DFO-PAC-LNOSESKA4B-1996-2011-OSGOOD
<b>Area</b>	Strait of Georgia
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Pacific Region
<b>Asmts in RAM</b>	2011

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2011	1.5		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year   ◆ End Year   \* No Data

Longnose skate Strait of Georgia [LNOSESKA4B]

TB\*



SSB\*



TN \*



F\*



ER\*



Recruits\*



■ Listed time series

--- MSY-based BRP

--- Target BRP

--- Lim BRP

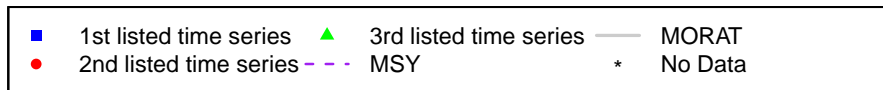
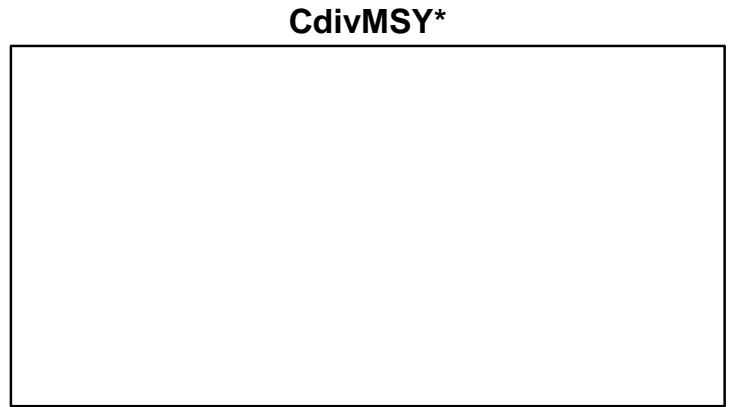
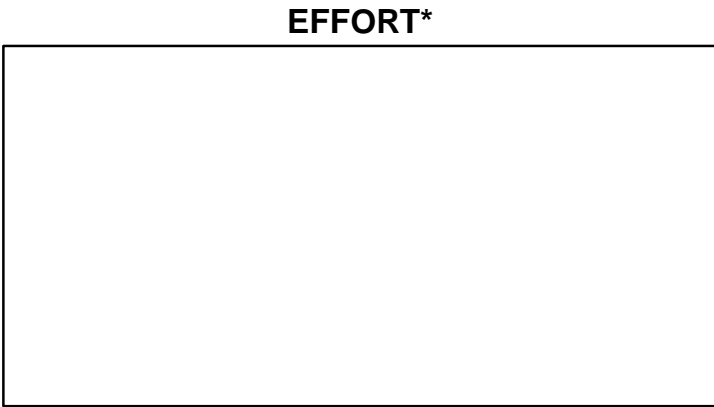
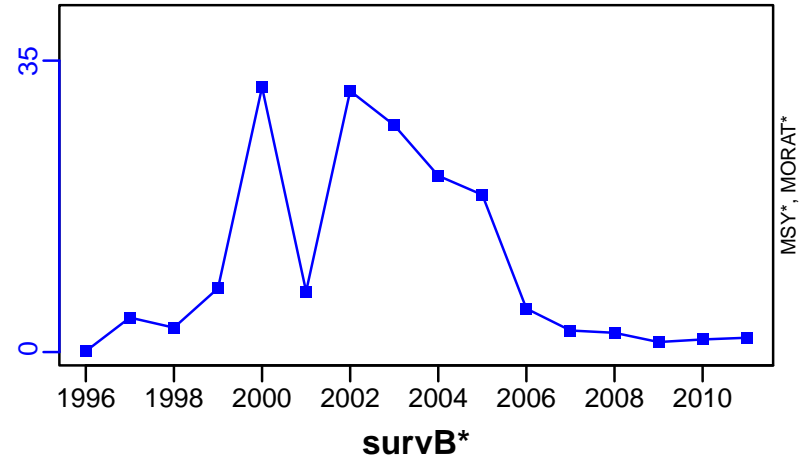
— Rec-Est

\* No Data

# Longnose skate Strait of Georgia [LNOSESKA4B]

TC-MT, TL\*, RecC\* (1996-2011-OSGOOD)

TAC\*, Cpair\*, Cadv\*



## Longnose skate Queen Charlotte Sound [LNOSESKA5AB]

Metadata	
<b>Scientific Name</b>	Raja rhina
<b>Current Assess ID</b>	DFO-PAC-LNOSESKA5AB-1954-2012-OSGOOD
<b>Area</b>	Queen Charlotte Sound
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Pacific Region
<b>Asmts in RAM</b>	2012

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2012	115		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



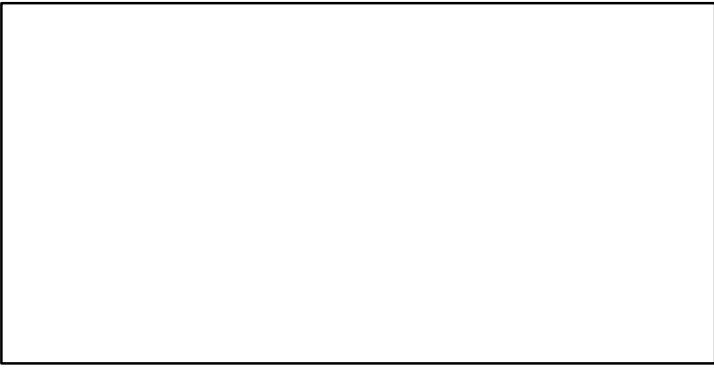
**Production\***



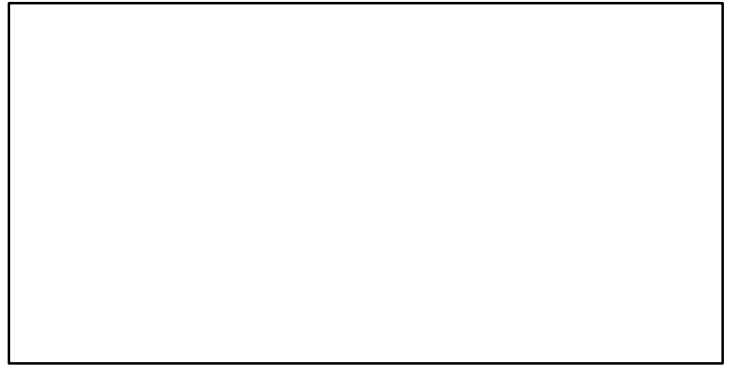
◆ Start Year   ◆ End Year   \* No Data

Longnose skate Queen Charlotte Sound [LNOSESKA5AB]

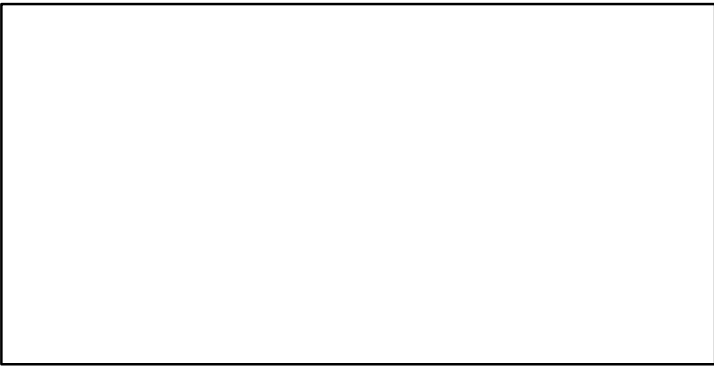
**TB\***



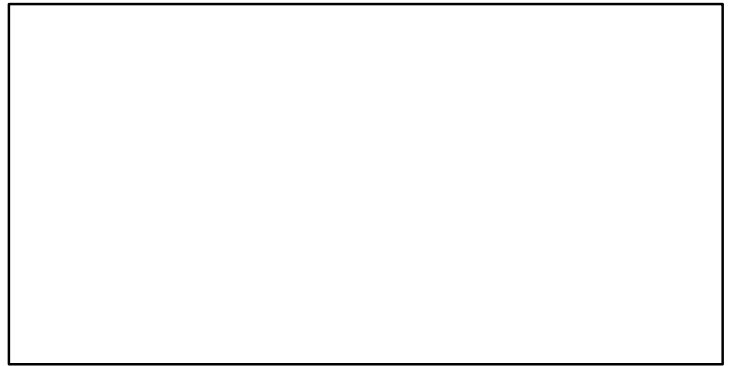
**SSB\***



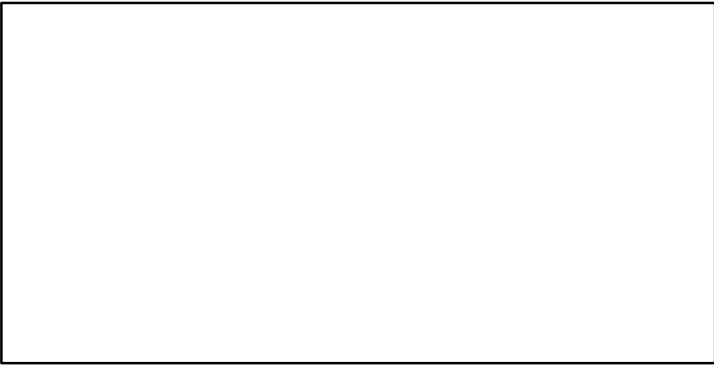
**TN \***



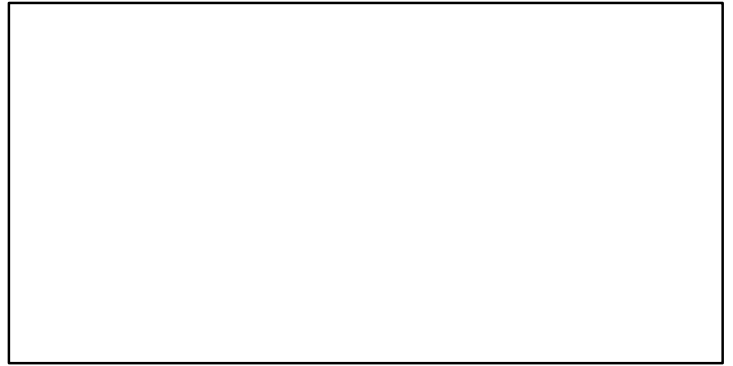
**F\***



**ER\***

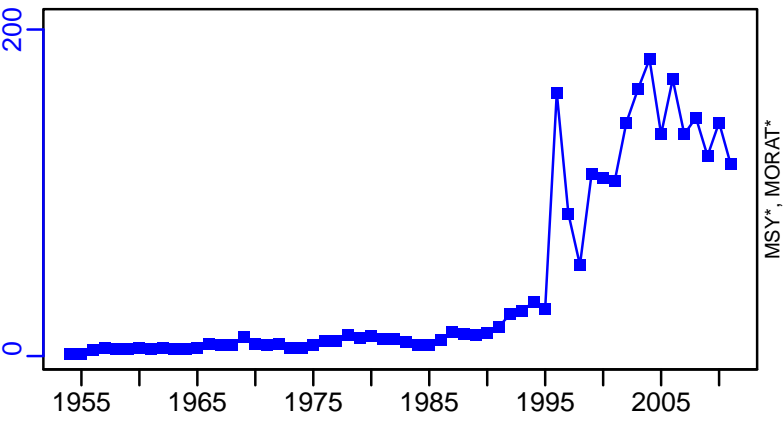


**Recruits\***



# Longnose skate Queen Charlotte Sound [LNOSEKA5AB]

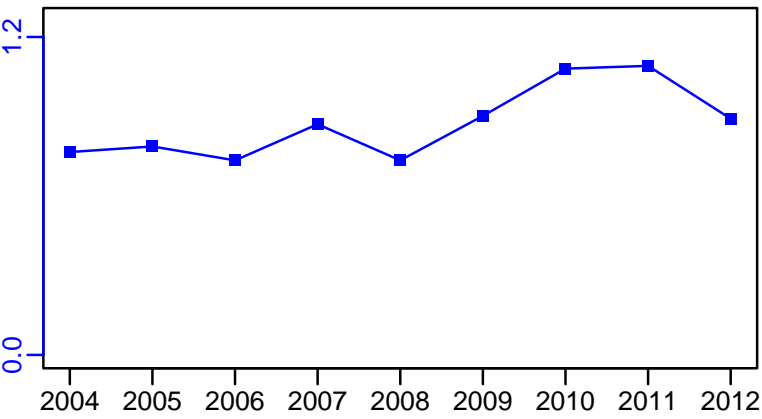
TC-MT, TL\*, RecC\* (1954-2012-OSGOOD)



TAC\*, Cpair\*, Cadv\*



survB-fishperE02hooks (1954-2012-OSGOOD)



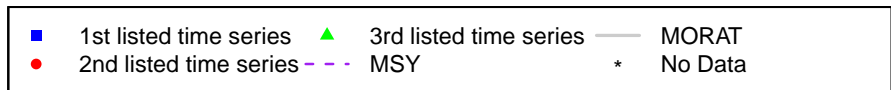
CPUE\*



EFFORT\*



CdivMSY\*



## Longnose skate Hecate Strait [LNOSESKA5CDE]

Metadata	
<b>Scientific Name</b>	Raja rhina
<b>Current Assess ID</b>	DFO-PAC-LNOSESKA5CDE-1954-2011-OSGOOD
<b>Area</b>	Hecate Strait
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Pacific Region
<b>Asmts in RAM</b>	2011

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

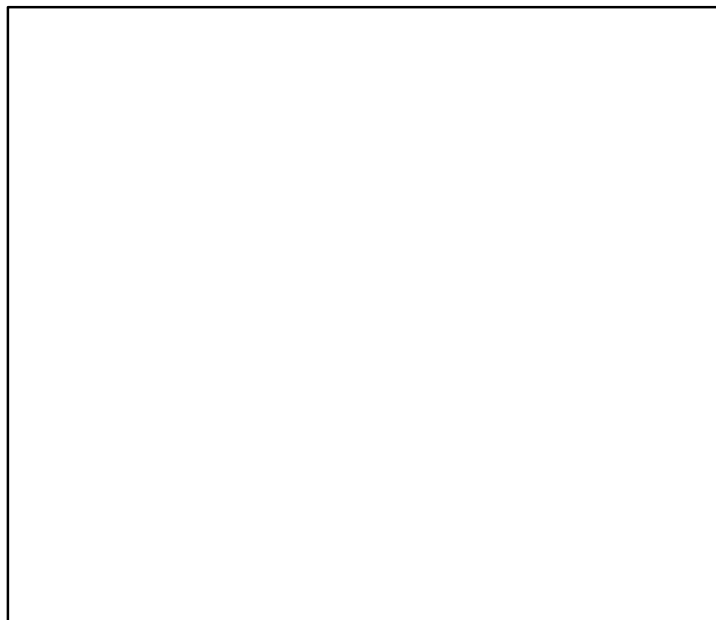
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2011	73		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ◆ End Year \* No Data

Longnose skate Hecate Strait [LNOSESKA5CDE]

TB\*



SSB\*



TN \*



F\*



ER\*



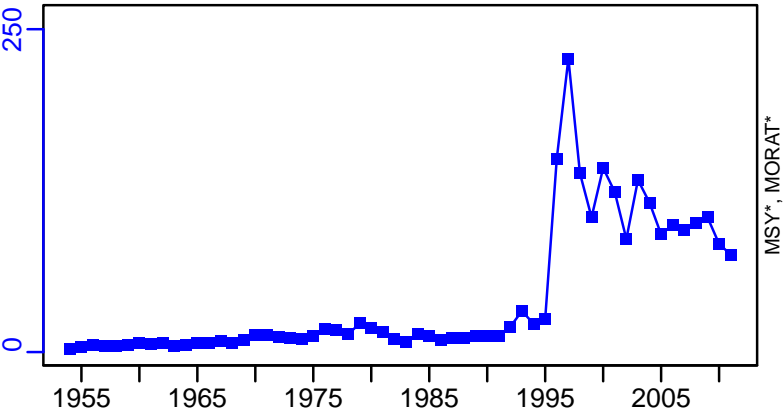
Recruits\*



■ Listed time series	- - - Target BRP	— Rec-Est
- - - MSY-based BRP	· · · Lim BRP	* No Data

# Longnose skate Hecate Strait [LNOSESKA5CDE]

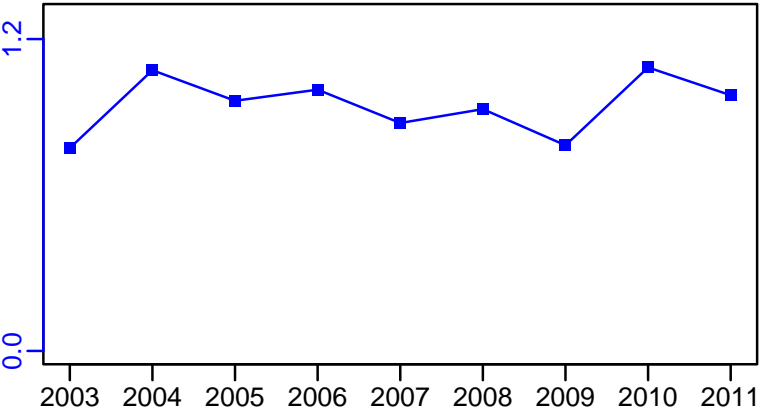
TC-MT, TL\*, RecC\* (1954-2011-OSGOOD)



TAC\*, Cpair\*, Cadv\*



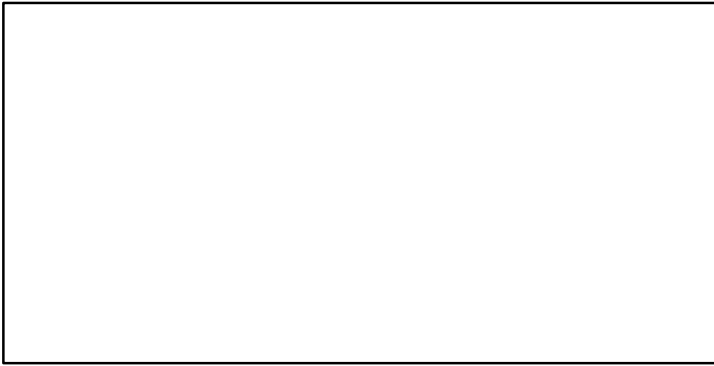
survB-fishperE02hooks (1954-2011-OSGOOD)



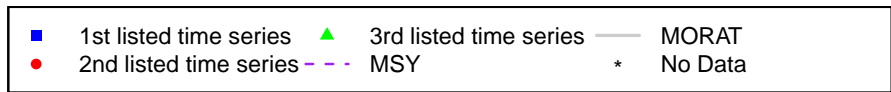
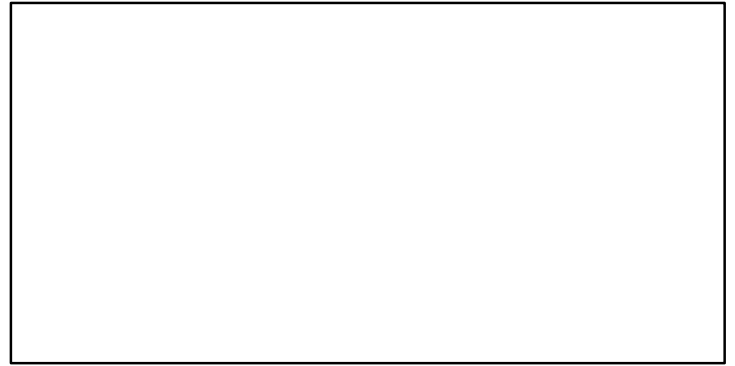
CPUE\*



EFFORT\*



CdivMSY\*

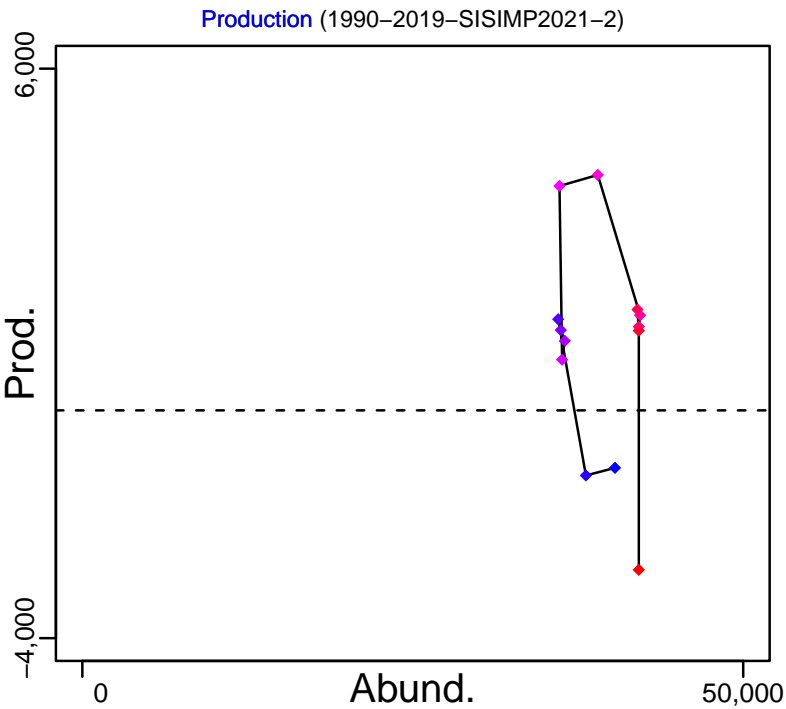
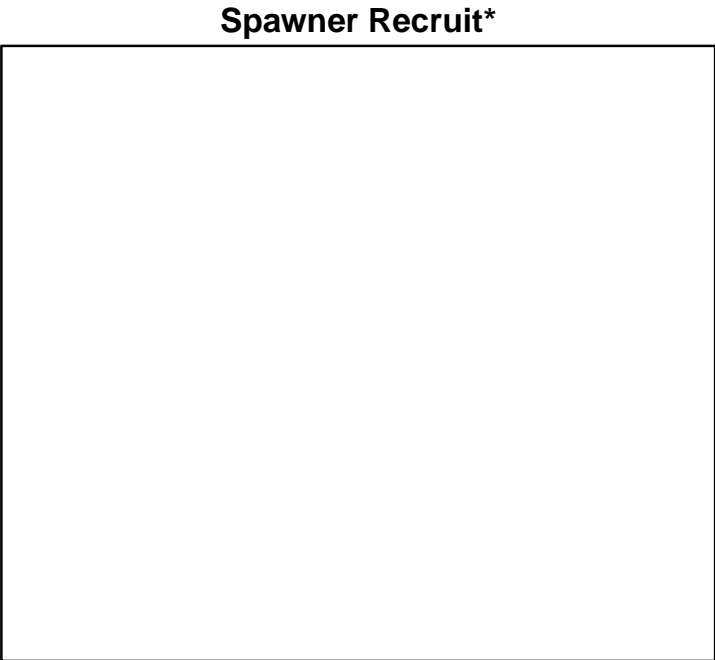
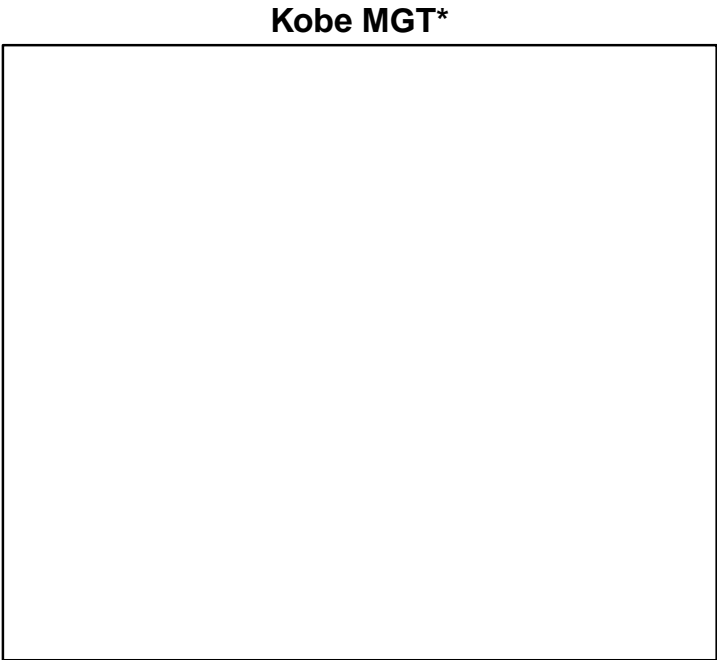
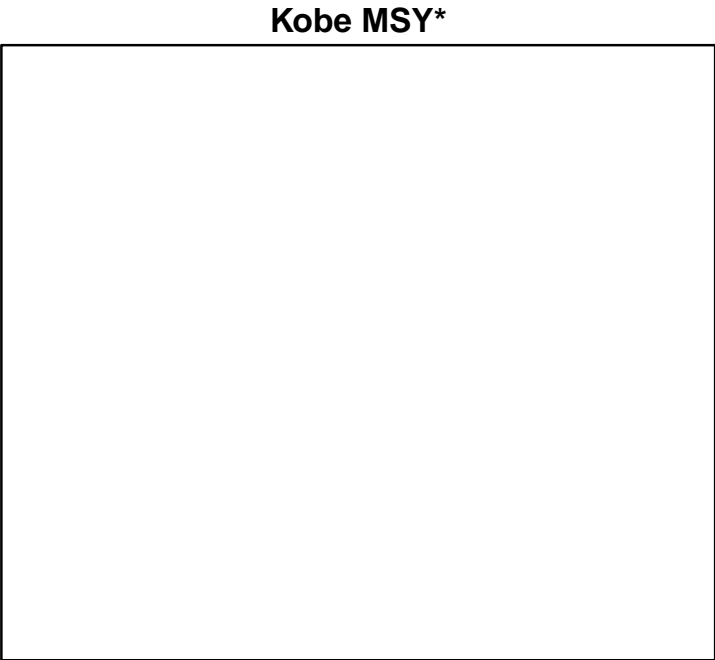


## Longnose skate Gulf of Alaska [LNOSESKAGA]

Metadata	
<b>Scientific Name</b>	Raja rhina
<b>Current Assess ID</b>	AFSC-LNOSESKAGA-1990-2019-SISIMP2021-2
<b>Area</b>	Gulf of Alaska
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Alaska Fisheries Science Center
<b>Asmts in RAM</b>	2019

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	TB-MT	2019	34,500	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	ER-calc-ratio	2019	0.024	-	-
TC	TC-MT	2019	914		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

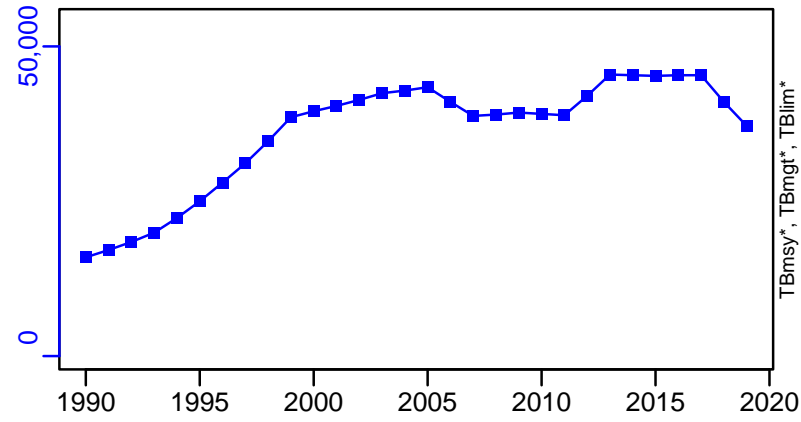


◆ Start Year ◆ End Year \* No Data

# Longnose skate Gulf of Alaska [LNOSESKAGA]

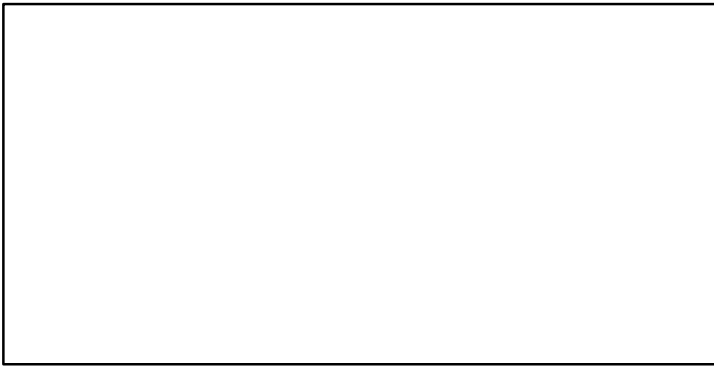
TB-MT (1990-2019-SISIMP2021-2)

SSB\*



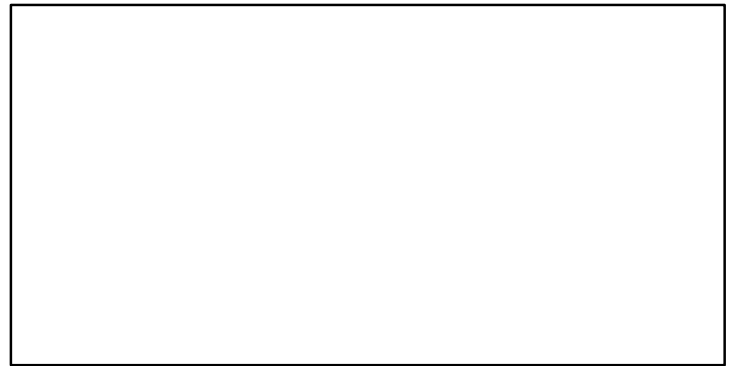
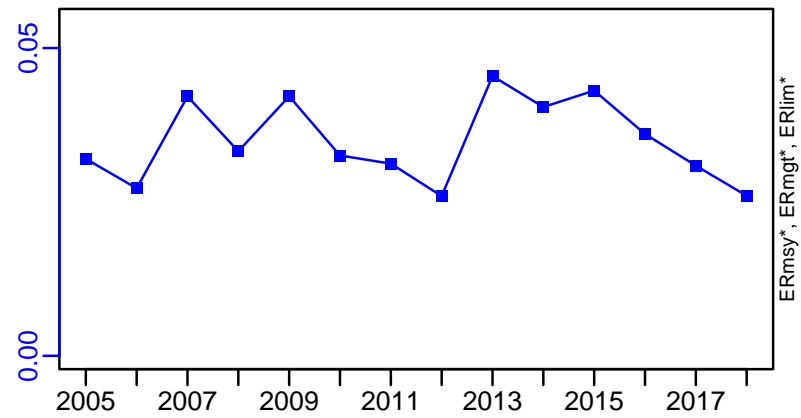
TN \*

F\*



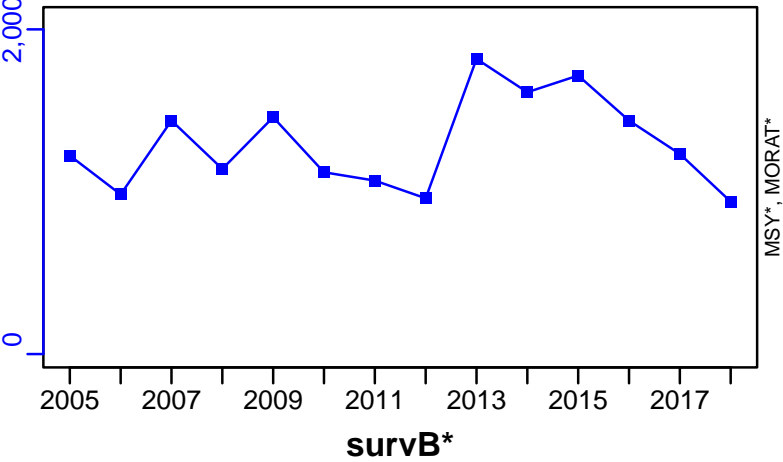
ER-calc-ratio (1990-2019-SISIMP2021-2)

Recruits\*



Longnose skate Gulf of Alaska [LNOSESKAGA]

TC-MT, TL\*, RecC\* (1990-2019-SISIMP2021-2)



TAC\*, Cpair\*, Cadv\*



CPUE\*



EFFORT\*



CdivMSY\*



## Longnose skate Pacific Coast [LNOSESKAPCOAST]

Metadata	
<b>Scientific Name</b>	Raja rhina
<b>Current Assess ID</b>	NWFSC-LNOSESKAPCOAST-1916-2019-SISIMP2021-2
<b>Area</b>	Pacific Coast
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northwest Fisheries Science Center
<b>Asmts in RAM</b>	2007, 2019

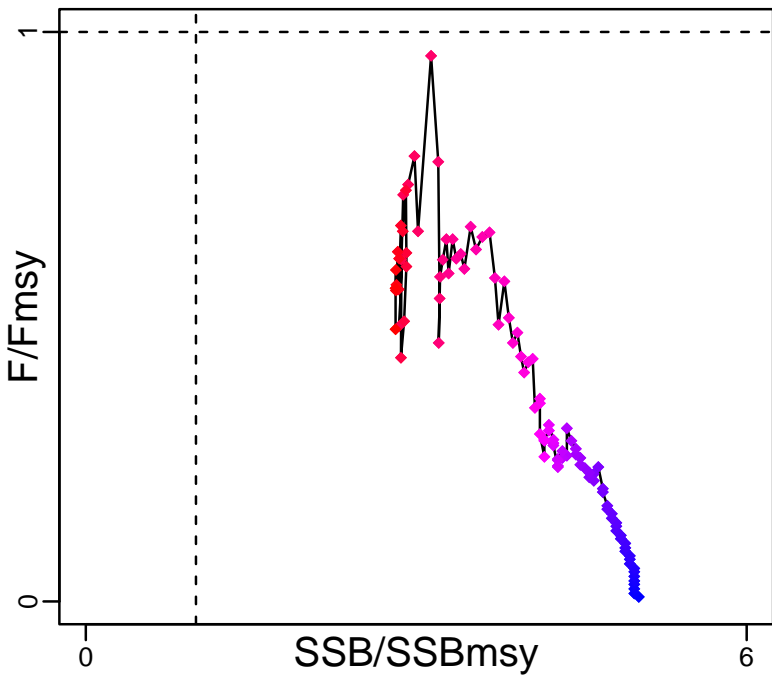
Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	TBmsy-calc-MT	2007	46,963
<b>SSBmsy</b>	SSBmsy-MT	2019	2450
<b>Fmsy</b>	Fmsy-1/yr	2019	0.5
<b>ERmsy</b>	ERmsy-ratio	2007	0.027
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	SSB0-MT	2007	7034
<b>MSY</b>	MSY-MT	2019	1030
<b>M</b>	M-1/yr	2007	0.2
<b>TBlim</b>	TBlim-MT	2007	4617
<b>SSBlim</b>	SSBlim-MT	2019	1530
<b>Flim</b>	Flim-1/yr	2019	0.5
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2007	71,200	-	0+
<b>SSB</b>	SSB-MT	2019	6920	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2019	10,100,000	-	0
<b>F</b>	F-1/yr	2019	0.239	-	-
<b>ER</b>	ER-ratio	2007	0.022	-	-
<b>TC</b>	TC-MT	2019	771		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	TB-MT/TBmsy-calc-MT	2007	1.516		
<b>SSB/SSBmsy</b>	SSB-MT/SSBmsy-MT	2019	2.824		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2019	0.478		
<b>ER/ERmsy</b>	ER-ratio/ERmsy-ratio	2007	0.8		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

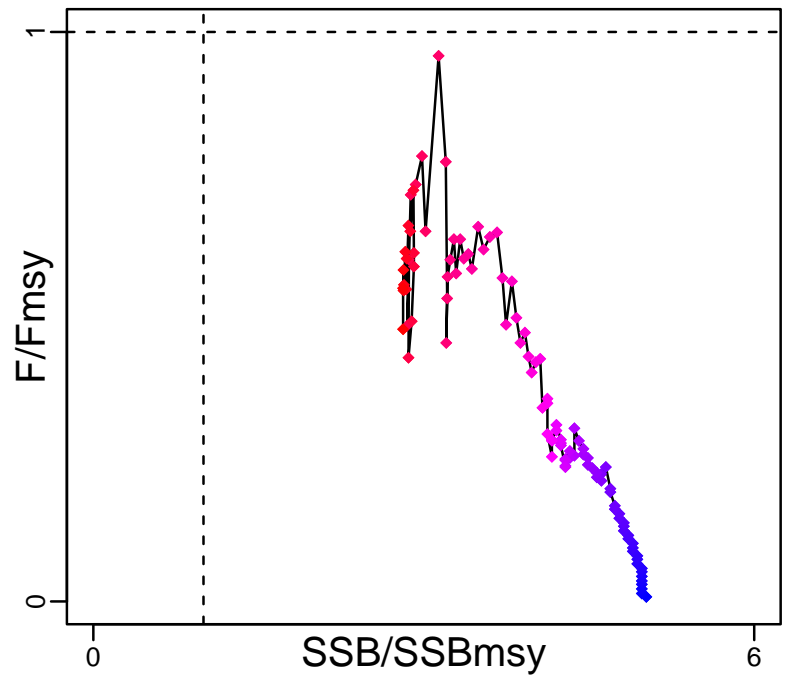


# Longnose skate Pacific Coast [LNOSESKAPCOAST]

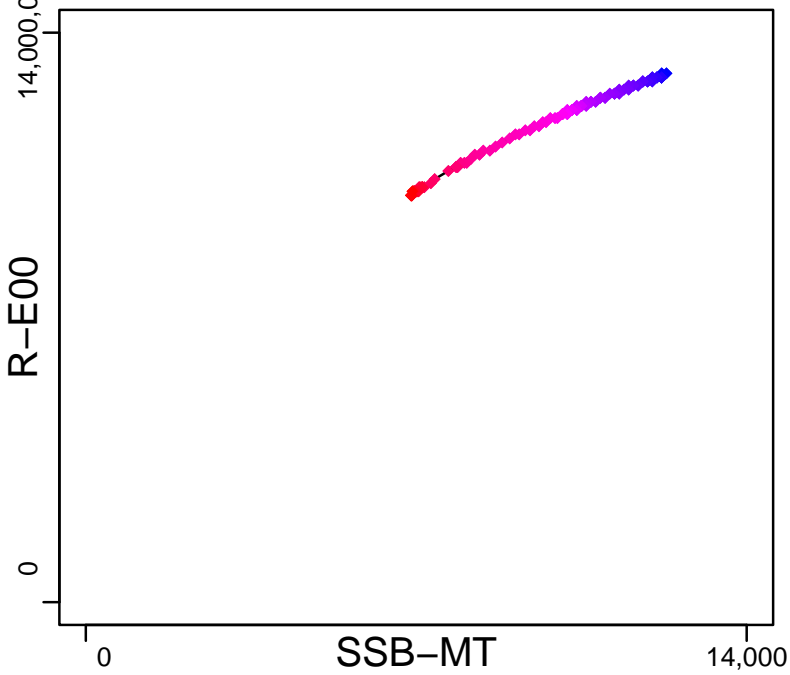
Kobe MSYpref (1916–2019–SISIMP2021–2)



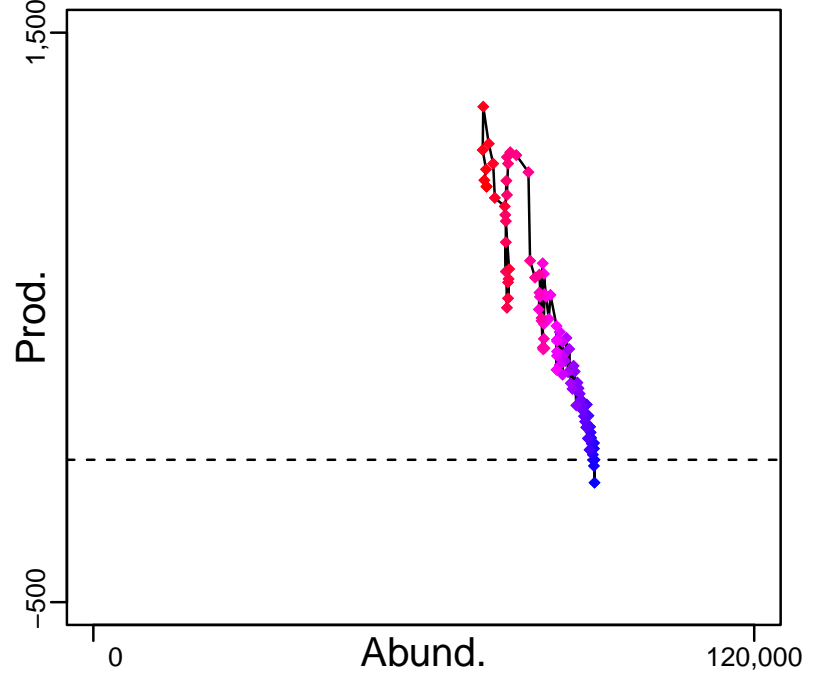
Kobe MGTpref (1916–2019–SISIMP2021–2)



Spawner Recruit (1916–2019–SISIMP2021–2)



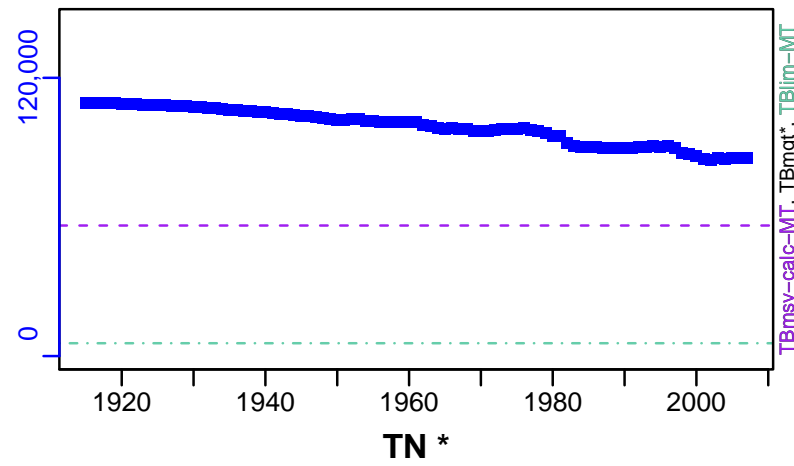
Production (1915–2007–BRANCH)



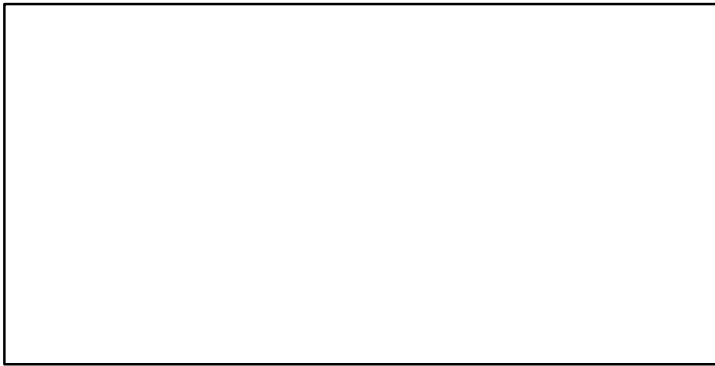
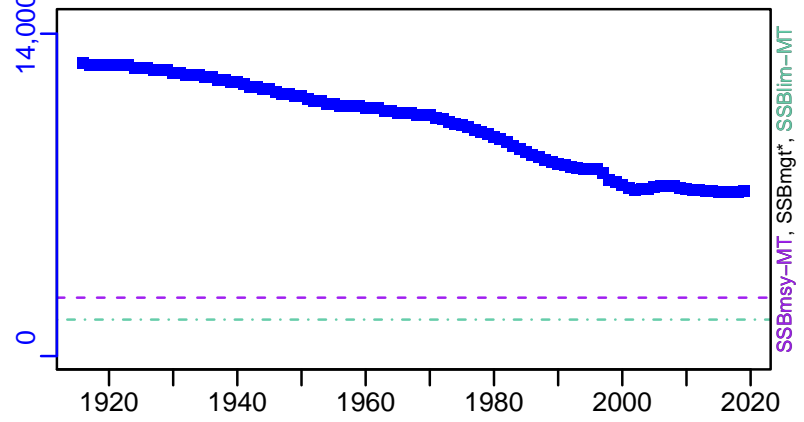
◆ Start Year ◆ End Year \* No Data

# Longnose skate Pacific Coast [LNOSEKAPCOAST]

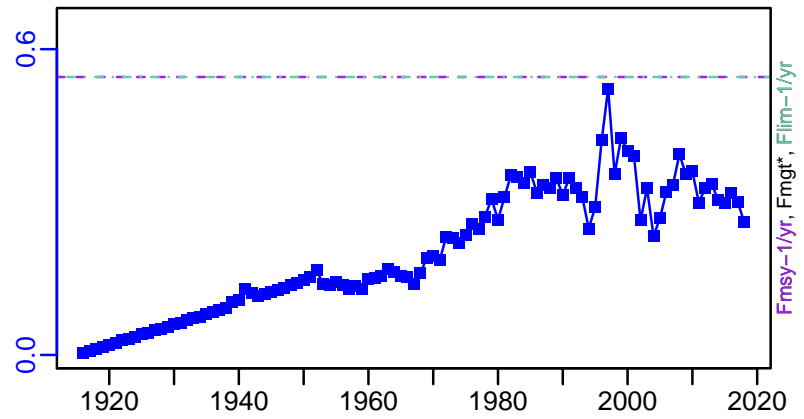
TB-MT (1915-2007-BRANCH)



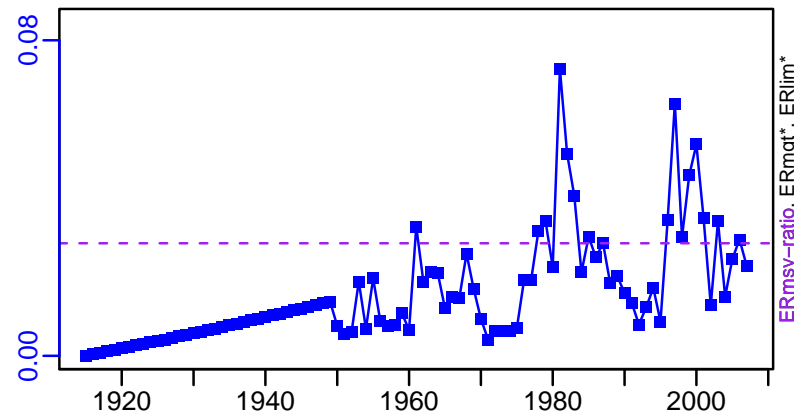
SSB-MT (1916-2019-SISIMP2021-2)



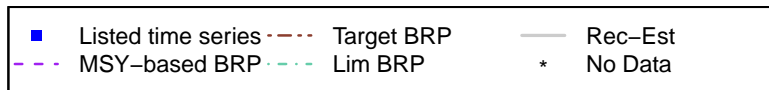
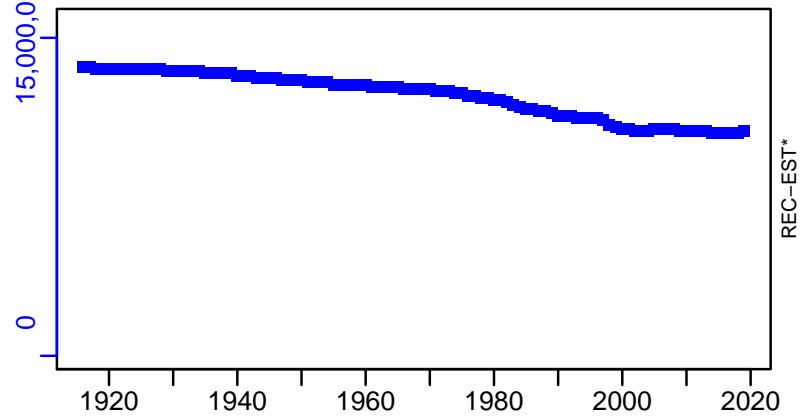
F-1/yr (1916-2019-SISIMP2021-2)



ER-ratio (1915-2007-BRANCH)



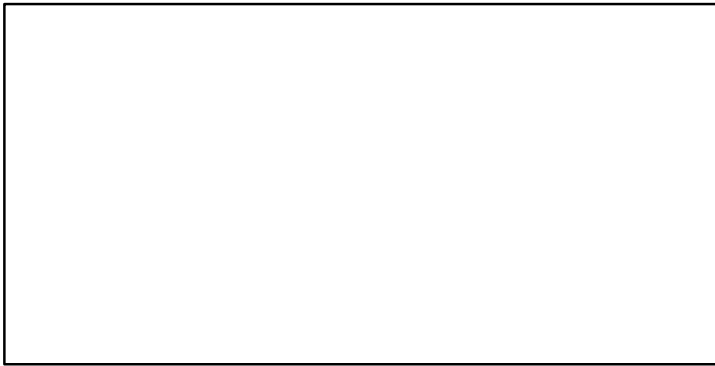
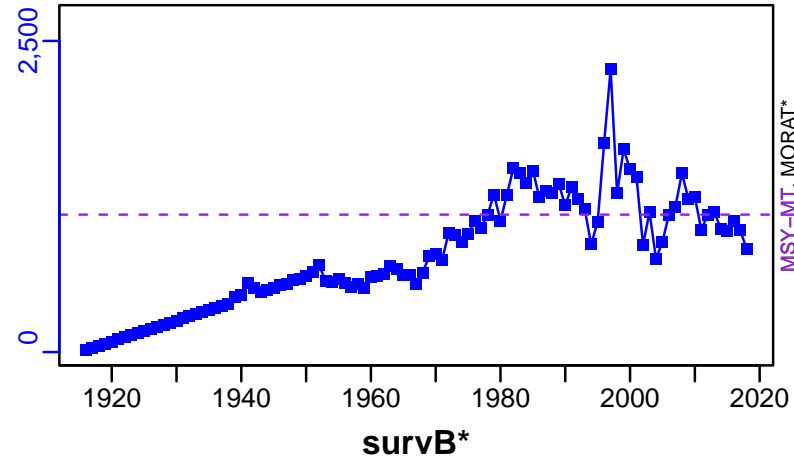
R-E00 (1916-2019-SISIMP2021-2)



# Longnose skate Pacific Coast [LNOSESKAPCOAST]

TC-MT, TL\*, RecC\* (1916-2019-SISIMP2021-2)

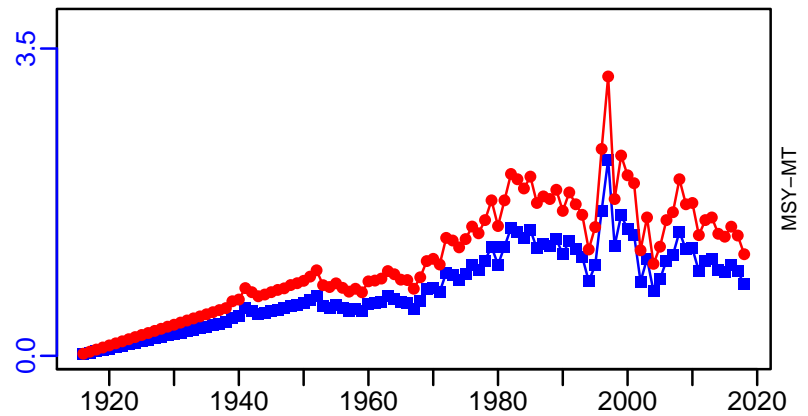
TAC\*, Cpair\*, Cadv\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1916-2019-SISIMP2021-2)



## Lesser spotted dogfish ICES 3a-4-7d [LSDOGIIIa-IV-VIId]

Metadata	
<b>Scientific Name</b>	Scyliorhinus canicula
<b>Current Assess ID</b>	WGEF-LSDOGIIIa-IV-VIId-1993-2018-ICESIMP2021
<b>Area</b>	ICES 3a-4-7d
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018, 2016

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	1.93	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	2340		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***

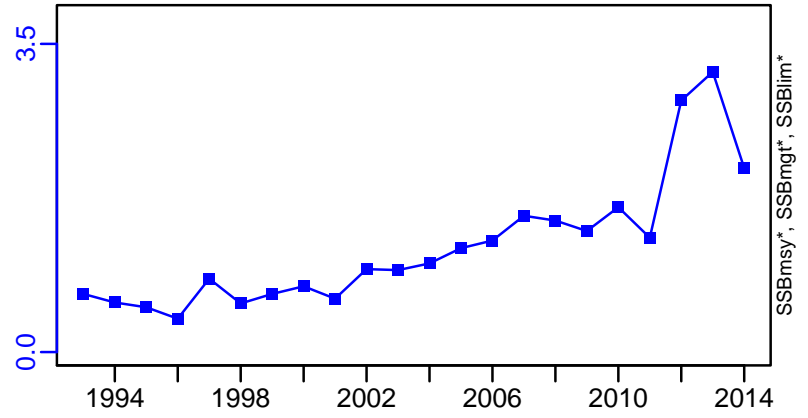
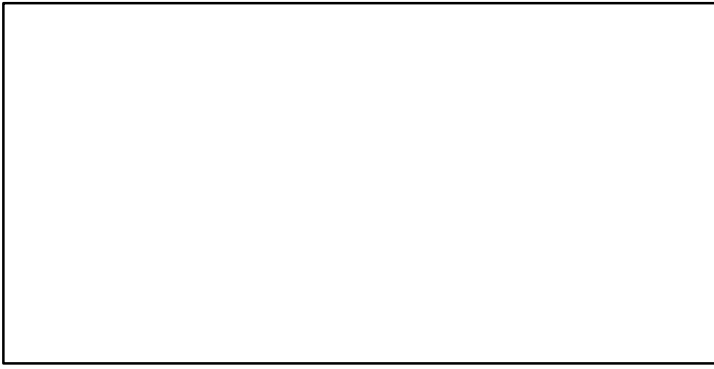


◆ Start Year ◆ End Year \* No Data

# Lesser spotted dogfish ICES 3a–4–7d [LSDOGIIIa–IV–VIIId]

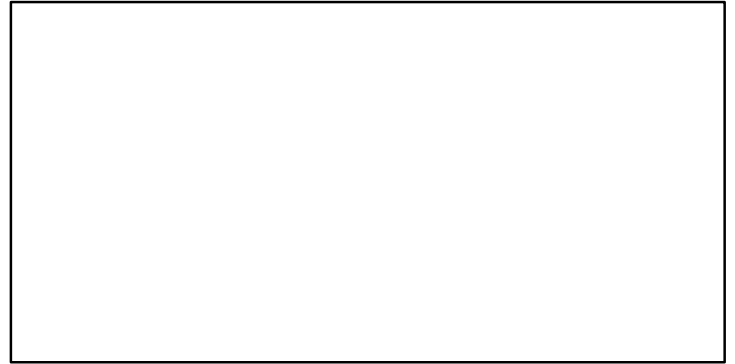
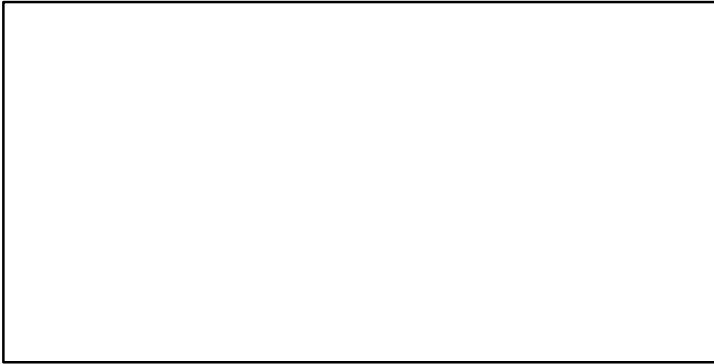
TB\*

SSB-index (1993–2014–ICESIMP2018)



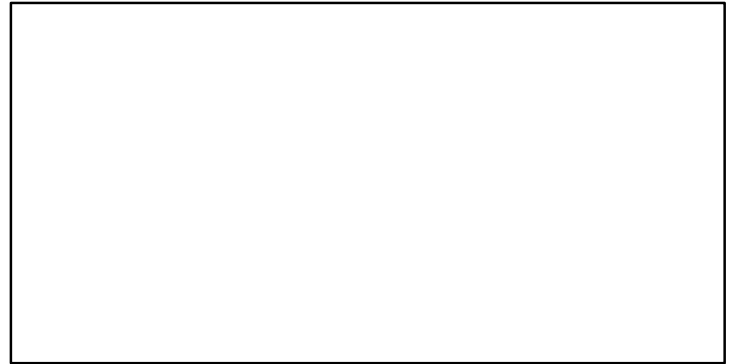
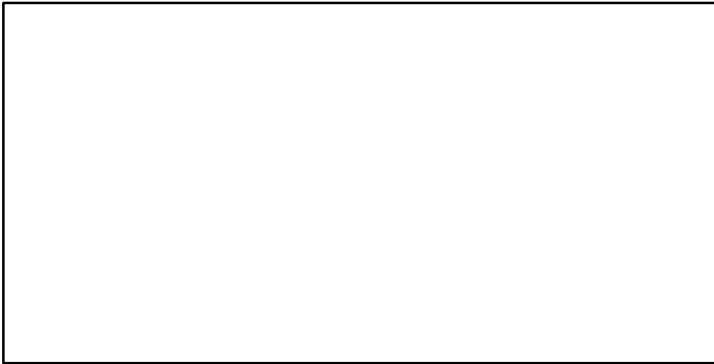
TN \*

F\*



ER\*

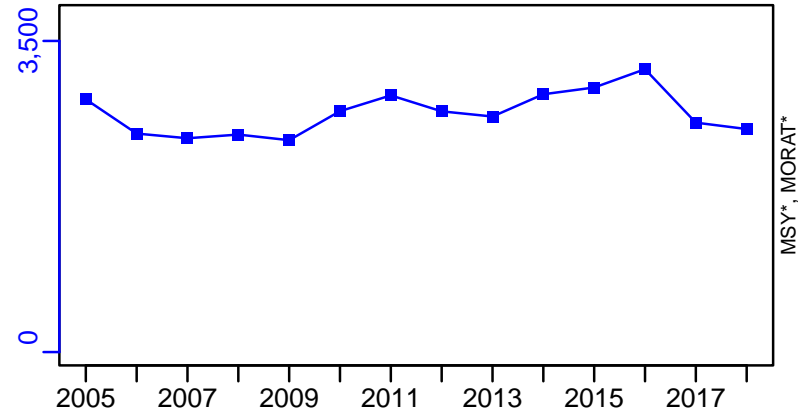
Recruits\*



# Lesser spotted dogfish ICES 3a–4–7d [LSDOGIIIa–IV–VIIId]

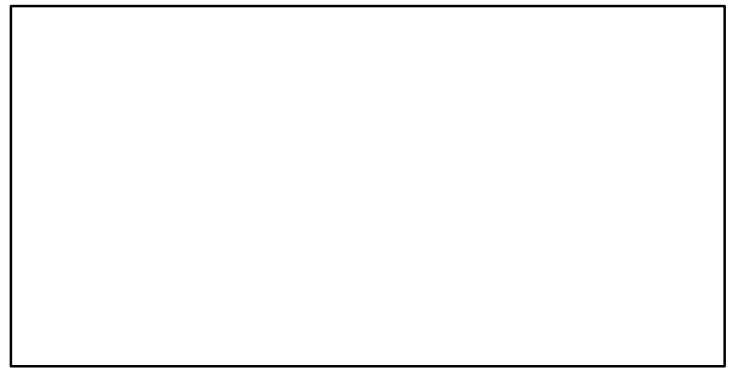
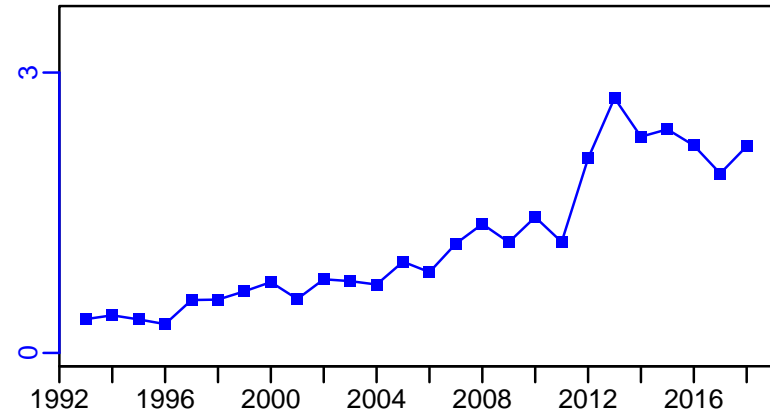
TL–MT, TC\*, RecC\* (1993–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



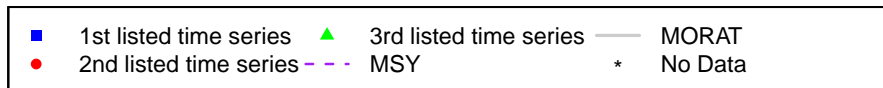
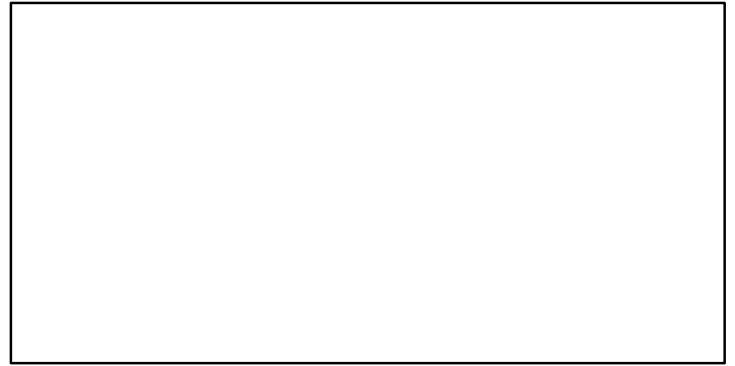
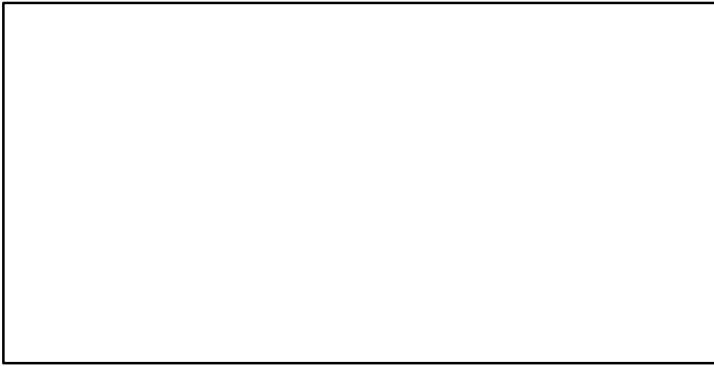
survB–index (1993–2018–ICESIMP2021)

CPUE\*



EFFORT\*

CdivMSY\*



## Lesser spotted dogfish ICES 8abd [LSDOGVIIIabd]

Metadata	
<b>Scientific Name</b>	Scyliorhinus canicula
<b>Current Assess ID</b>	WGEF-LSDOGVIIIabd-1997-2018-ICESIMP2021
<b>Area</b>	ICES 8abd
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2016, 2018

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	1.02	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2018	8148		
TL	TL-MT	2018	1092		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



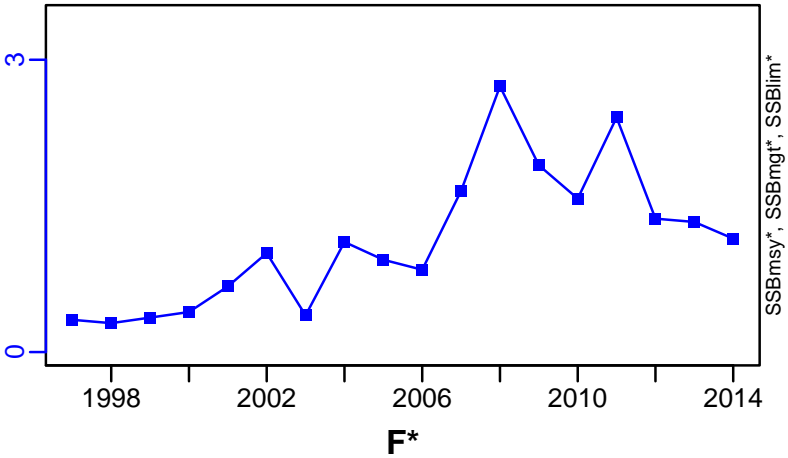
◆ Start Year ◆ End Year \* No Data

Lesser spotted dogfish ICES 8abd [LSDOGVIIIabd]

TB\*



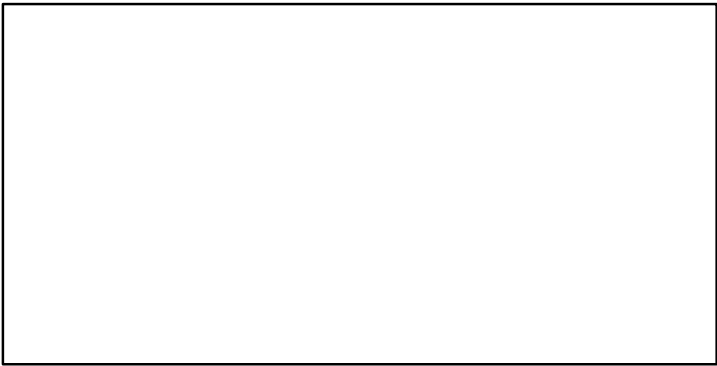
SSB-index (1997–2014–ICESIMP2018)



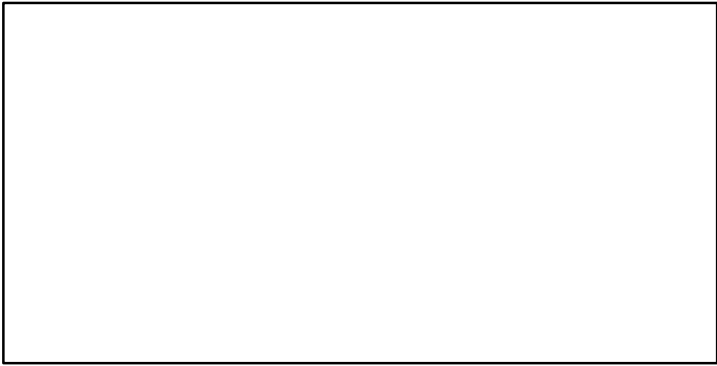
TN \*



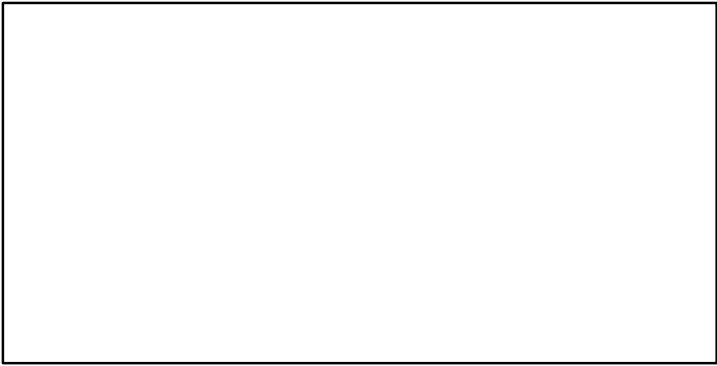
F\*



ER\*

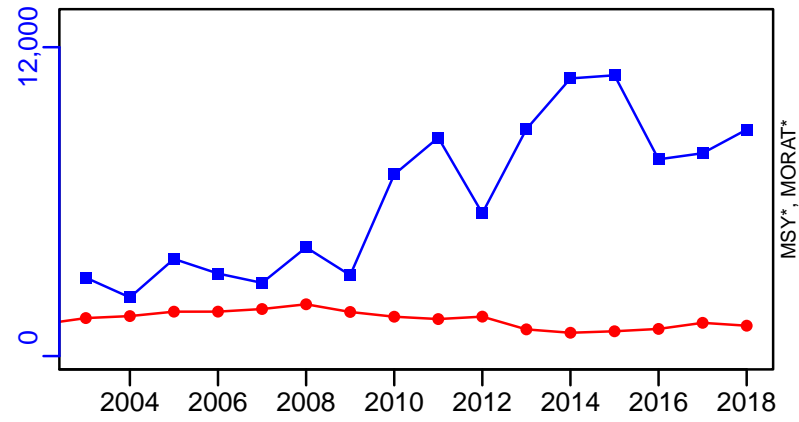


Recruits\*

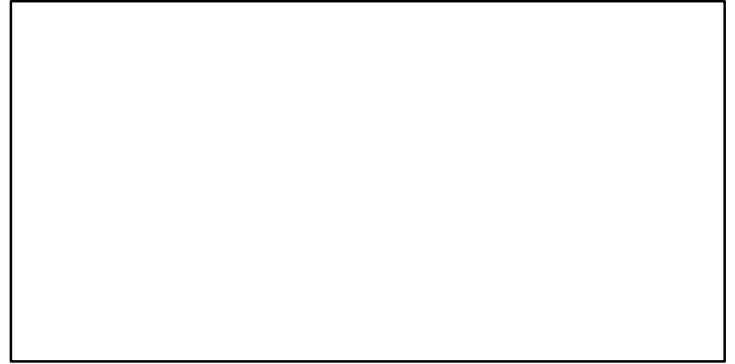


# Lesser spotted dogfish ICES 8abd [LSDOGVIIIabd]

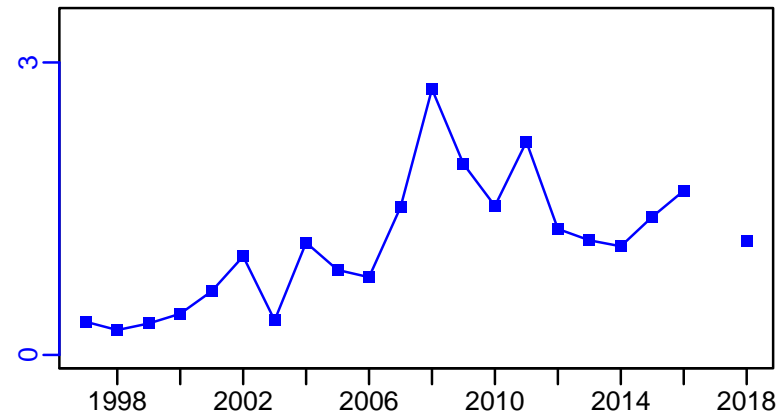
TC-MT, TL-MT, RecC\* (1997–2018–ICESIMP2021)



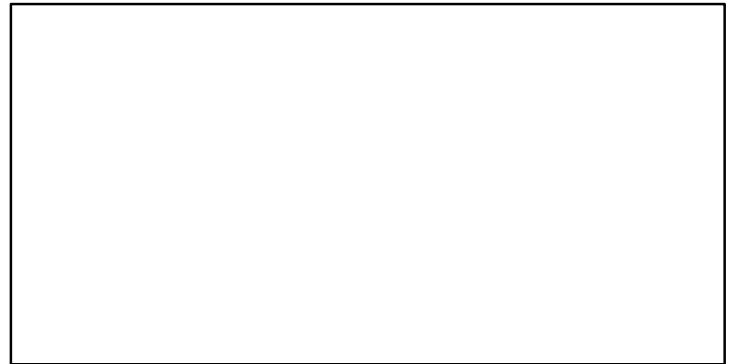
TAC\*, Cpair\*, Cadv\*



survB-index (1997–2018–ICESIMP2021)



CPUE\*



EFFORT\*



CdivMSY\*



## Lesser spotted dogfish ICES 8c-9a [LSDOGVIIIc-IXa]

Metadata	
<b>Scientific Name</b>	Scyliorhinus canicula
<b>Current Assess ID</b>	WGEF-LSDOGVIIIc-IXa-1993-2018-ICESIMP2021
<b>Area</b>	ICES 8c-9a
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2018, 2016, 2014

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	1.42	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	1035		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

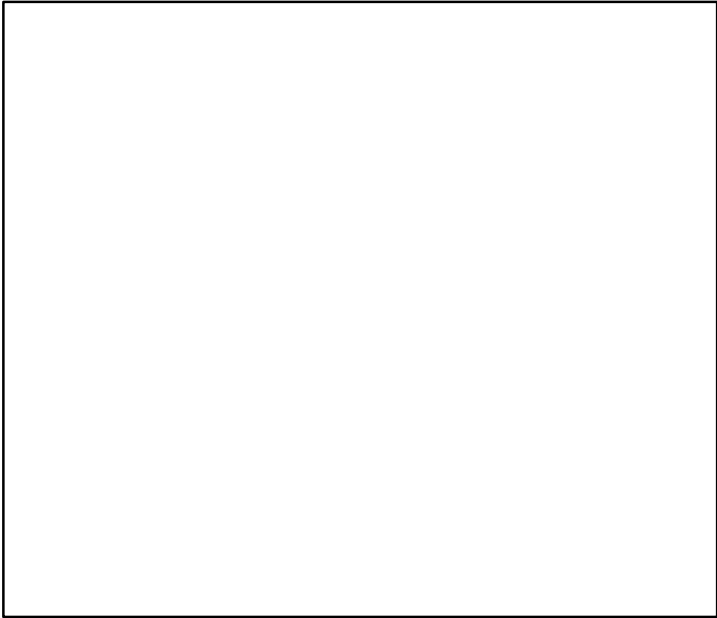
**Kobe MSY\***



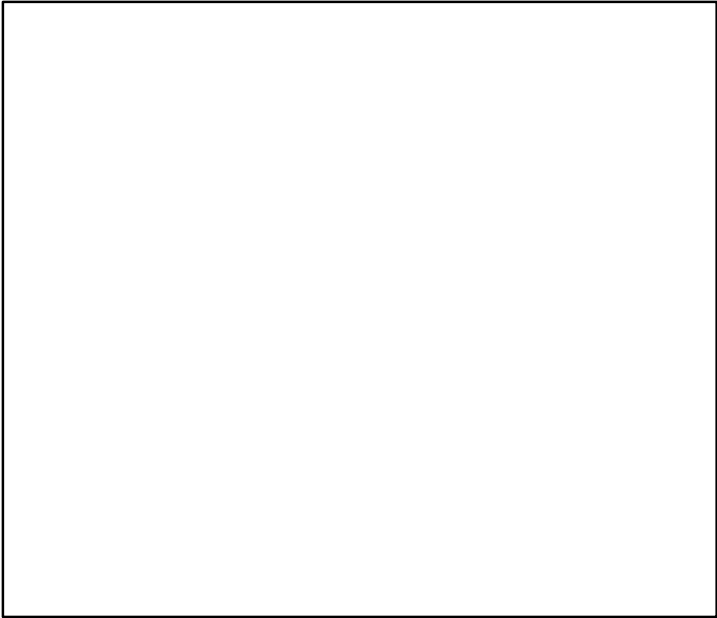
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



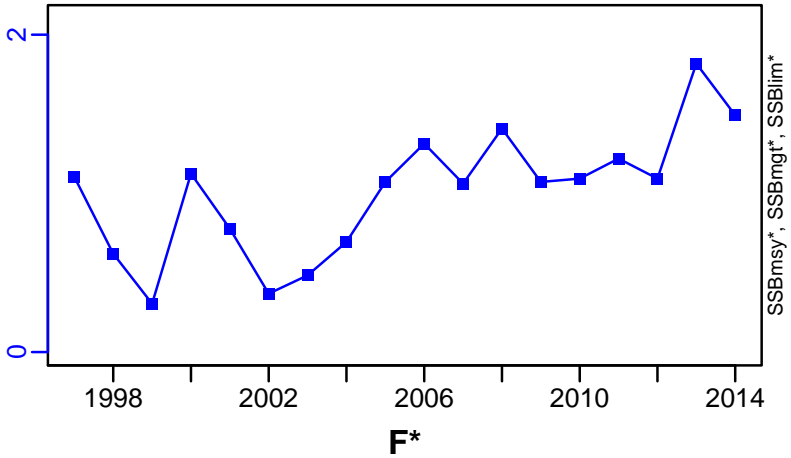
◆ Start Year   ◆ End Year   \* No Data

Lesser spotted dogfish ICES 8c-9a [LSDOGVIIIc-IXa]

TB\*



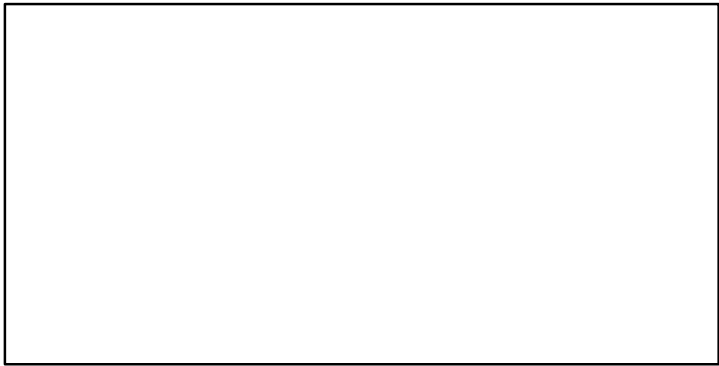
SSB-index (1997-2014-ICESIMP2018)



TN \*



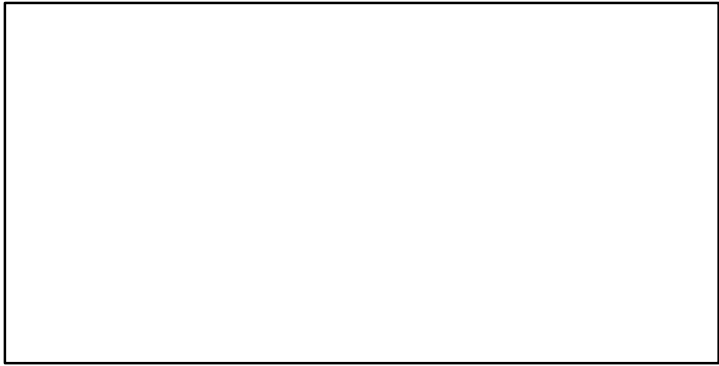
F\*



ER\*

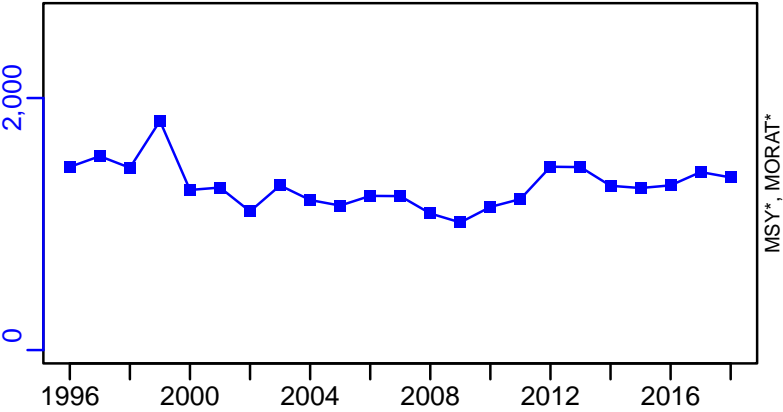


Recruits\*

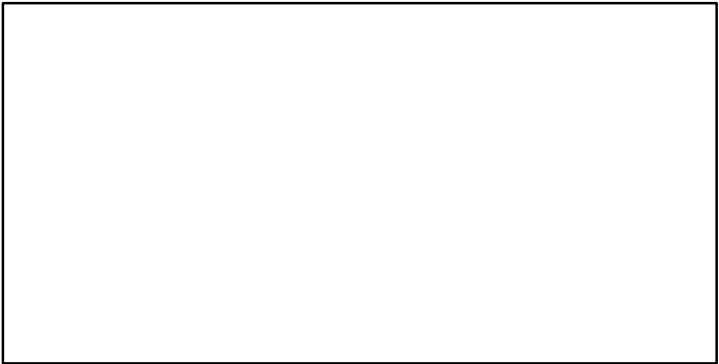


Lesser spotted dogfish ICES 8c-9a [LSDOGVIIIc-IXa]

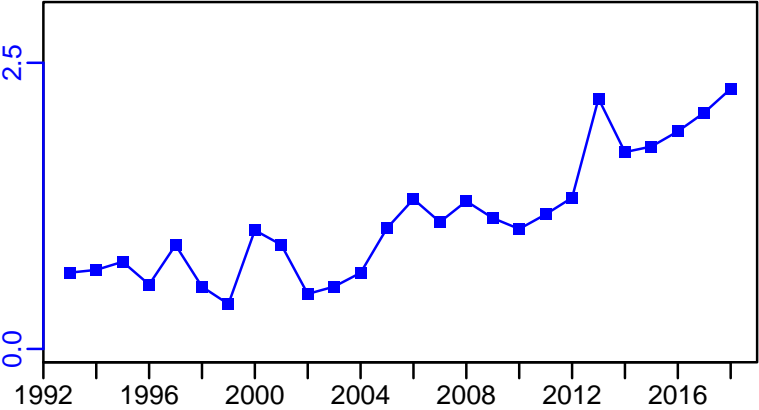
TL-MT, TC\*, RecC\* (1993-2018-ICESIMP2021)



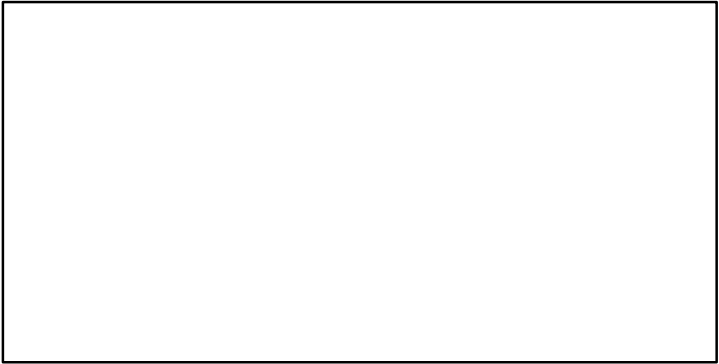
TAC\*, Cpair\*, Cadv\*



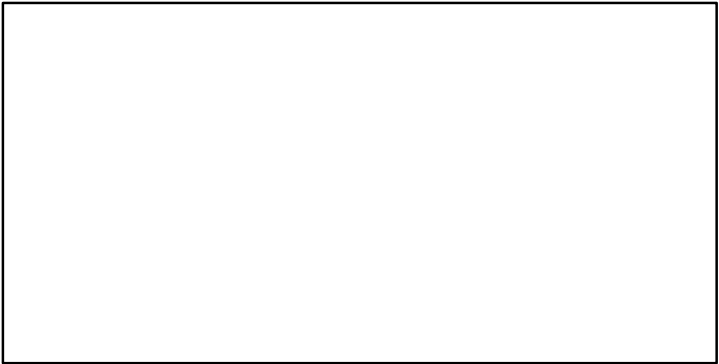
survB-MT (1993-2018-ICESIMP2021)



CPUE\*



CdivMSY\*



## Lesser spotted dogfish ICES 6-7abcefg hij [LSDOGVI-VIIabcefg hij]

Metadata	
<b>Scientific Name</b>	Scyliorhinus canicula
<b>Current Assess ID</b>	WGEF-LSDOGVI-VIIabcefg hij-2005-2018-ICESIMP2021
<b>Area</b>	ICES 6-7abcefg hij
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2016, 2018

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	1.14	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	3763		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



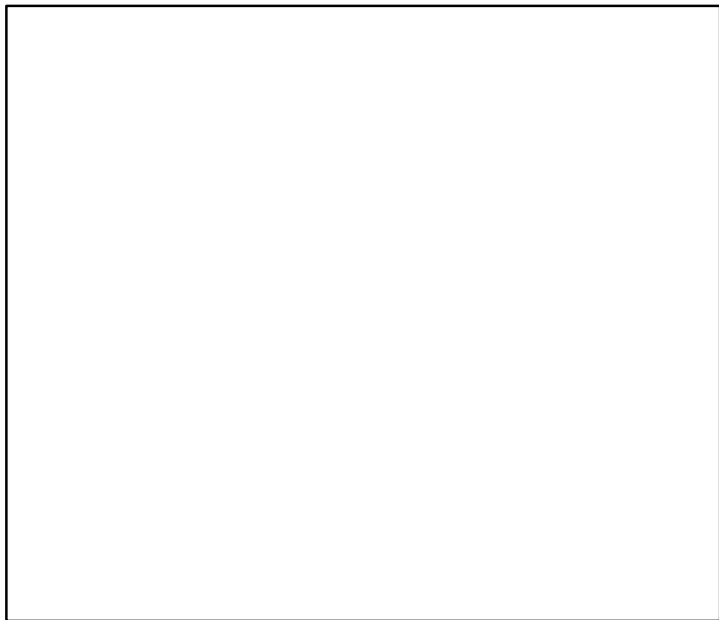
**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



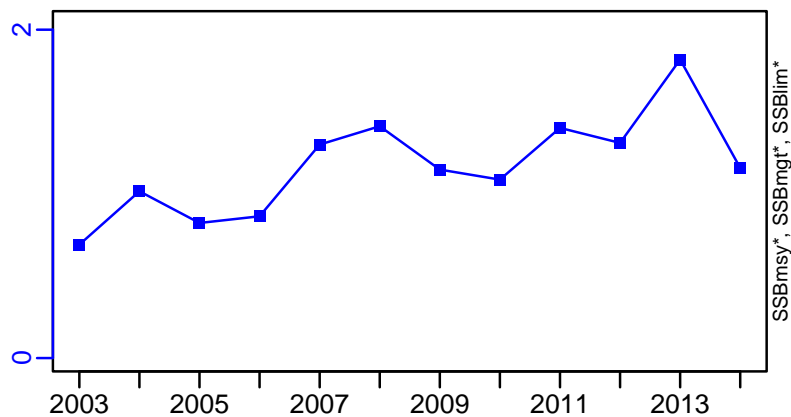
◆ Start Year ◆ End Year \* No Data

Lesser spotted dogfish ICES 6–7abcefg hij [LSDOGVI–VIIabcefg hij]

TB\*



SSB-index (2003–2014–ICESIMP2018)



TN \*



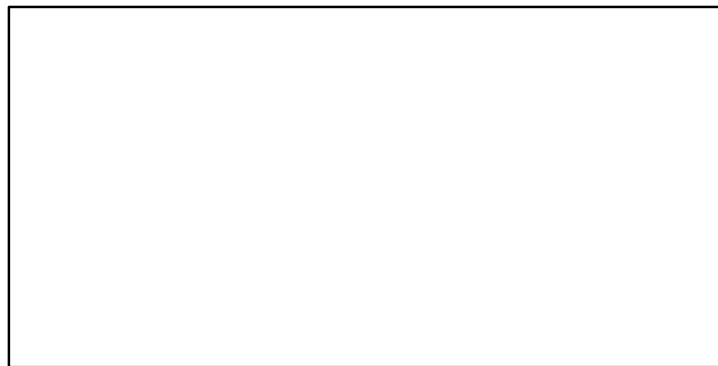
F\*



ER\*

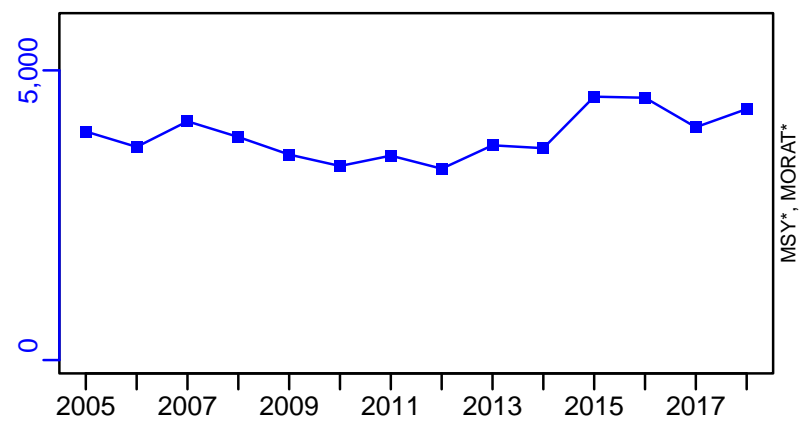


Recruits\*



# Lesser spotted dogfish ICES 6–7abcefg hij [LSDOGVI–VIIabcefg hij]

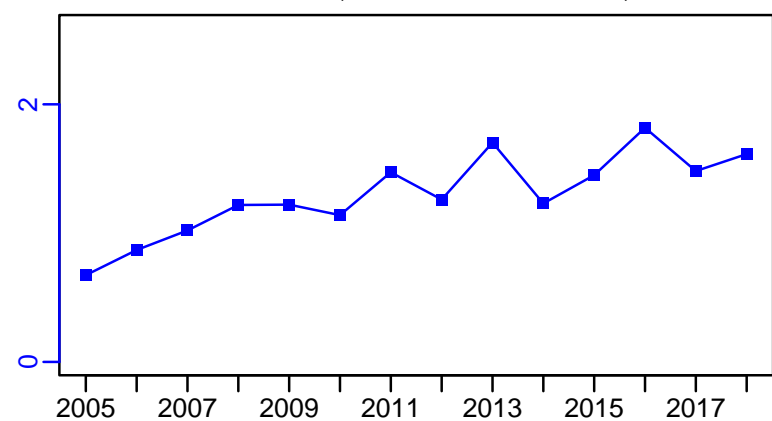
TL–MT, TC\*, RecC\* (2005–2018–ICESIMP2021)



TAC\*, Cpair\*, Cadv\*



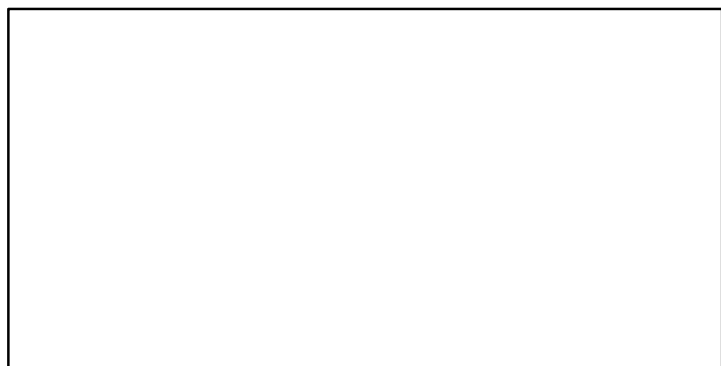
survB–index (2005–2018–ICESIMP2021)



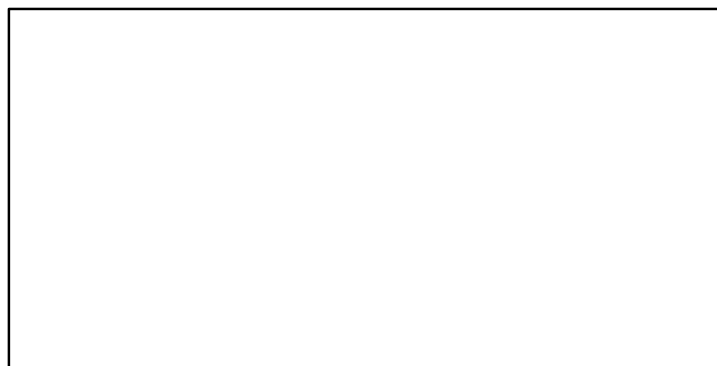
CPUE\*



EFFORT\*



CdivMSY\*



■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - - MSY    \* No Data

## Little skate Gulf of Maine / Cape Hatteras [LSKAT5YCHATT]

Metadata	
<b>Scientific Name</b>	Leucoraja erinacea
<b>Current Assess ID</b>	NEFSC-LSKAT5YCHATT-1968-2006-SOSEBEE
<b>Area</b>	Gulf of Maine / Cape Hatteras
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2006

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2006	3320		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year    ◆ End Year    \* No Data

TB\*



SSB\*



TN \*



F\*



ER\*



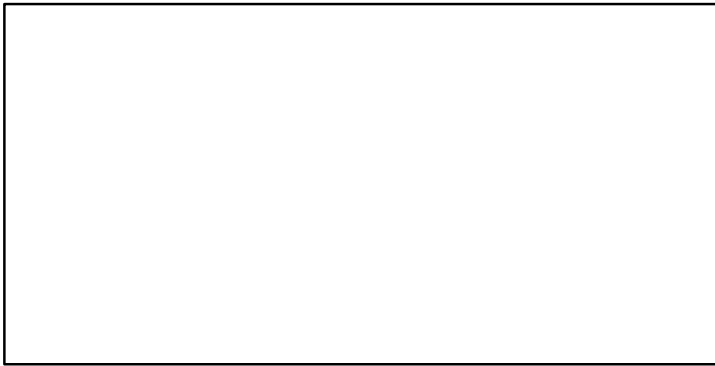
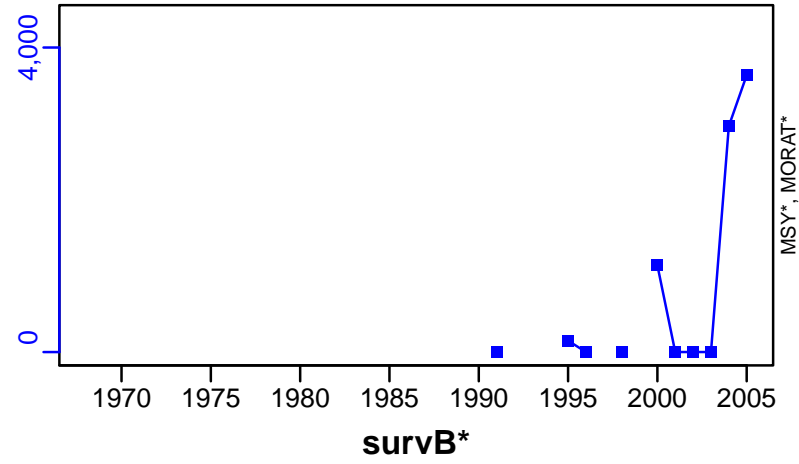
Recruits\*



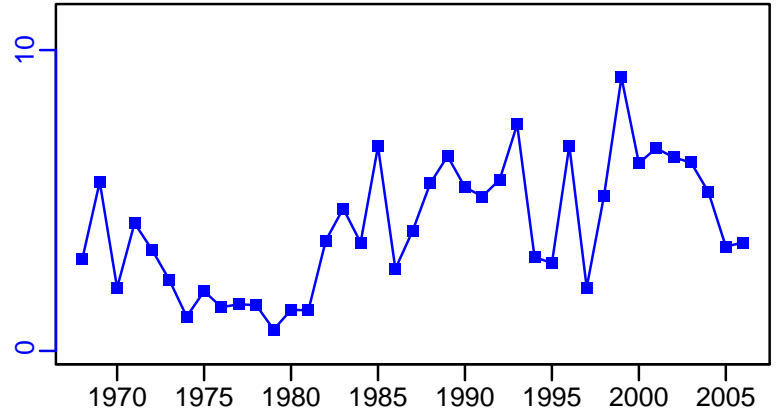
# Little skate Gulf of Maine / Cape Hatteras [LSKAT5YCHATT]

TC-MT, TL\*, RecC\* (1968-2006-SOSEBEE)

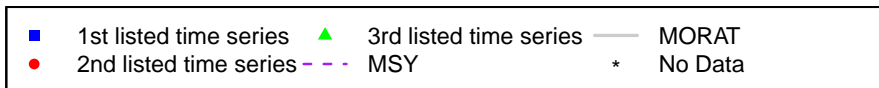
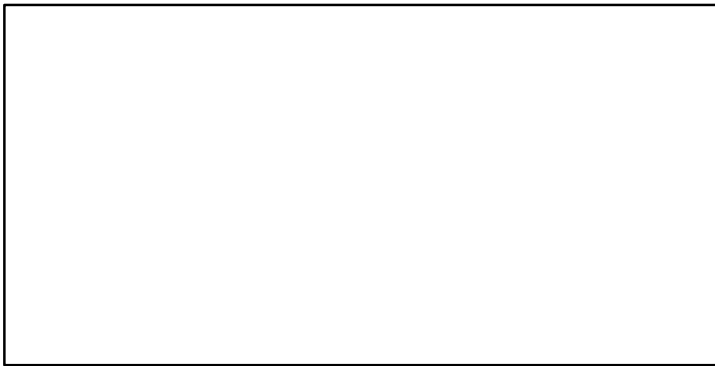
TAC\*, Cpair\*, Cadv\*



CPUE-kgpertow (1968-2006-SOSEBEE)



EFFORT\*



## Little skate Georges Bank-Southern New England [LSKAT5ZSNE]

Metadata	
<b>Scientific Name</b>	Leucoraja erinacea
<b>Current Assess ID</b>	NEFSC-LSKAT5ZSNE-1968-2019-SISIMP2021-2
<b>Area</b>	Georges Bank-Southern New England
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2019

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2019	8840		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



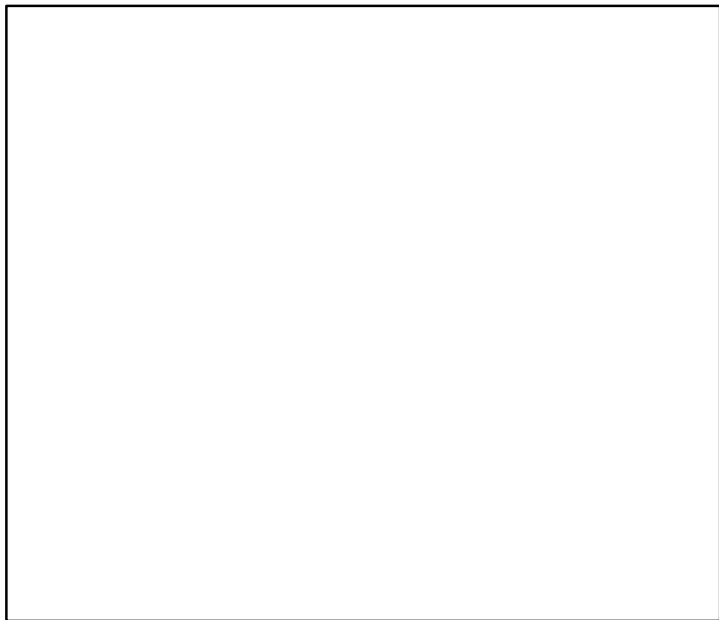
**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



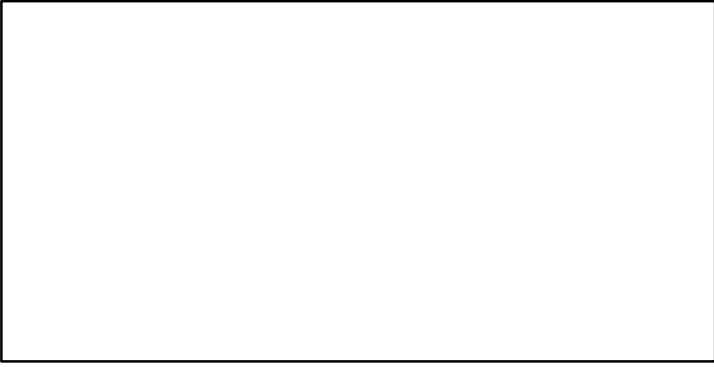
**Production\***



◆ Start Year ◆ End Year \* No Data

Little skate Georges Bank–Southern New England [LSKAT5ZSNE]

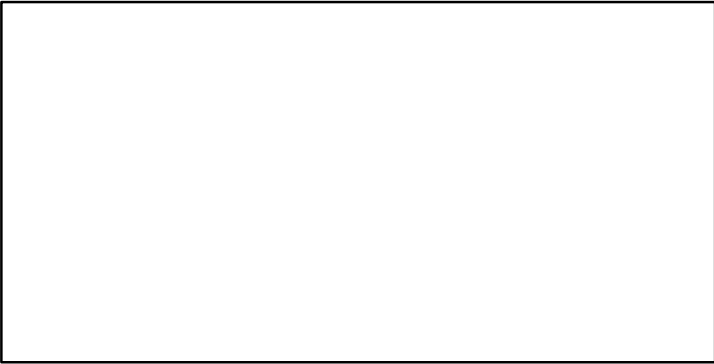
**TB\***



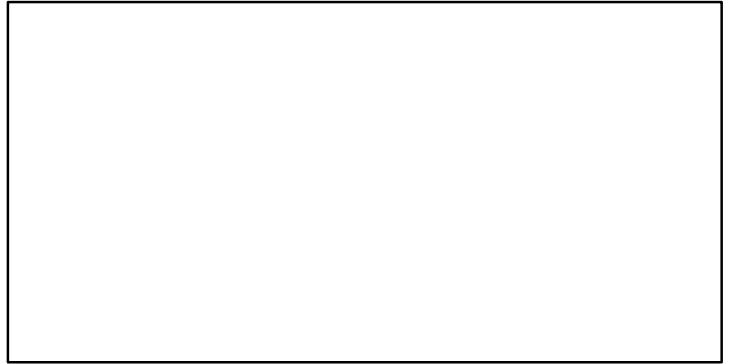
**SSB\***



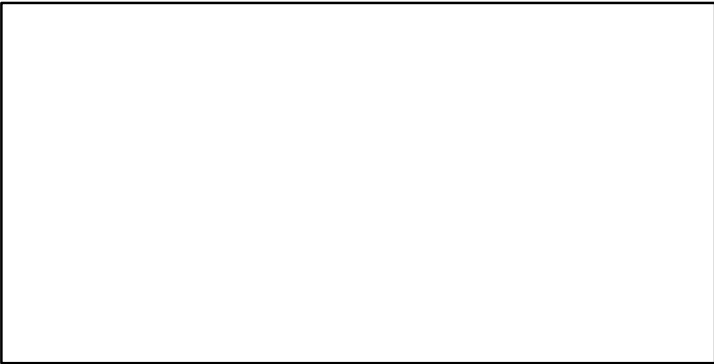
**TN \***



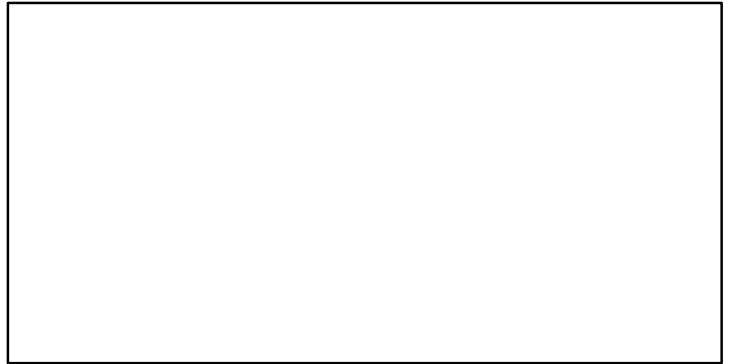
**F\***



**ER\***



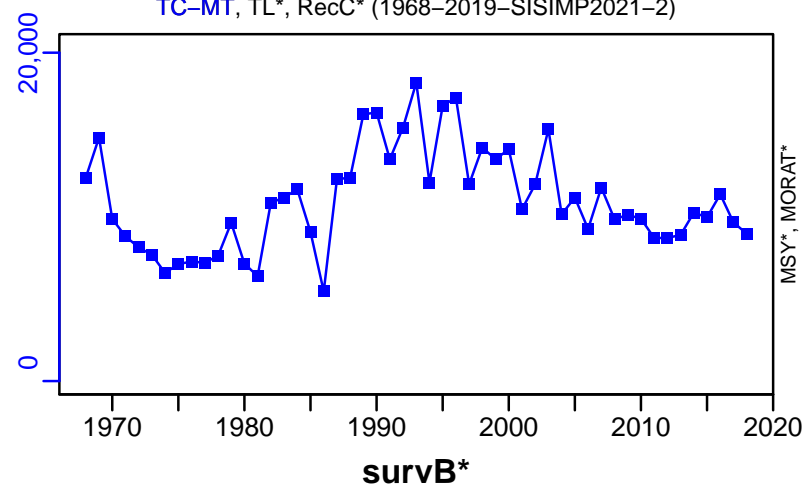
**Recruits\***



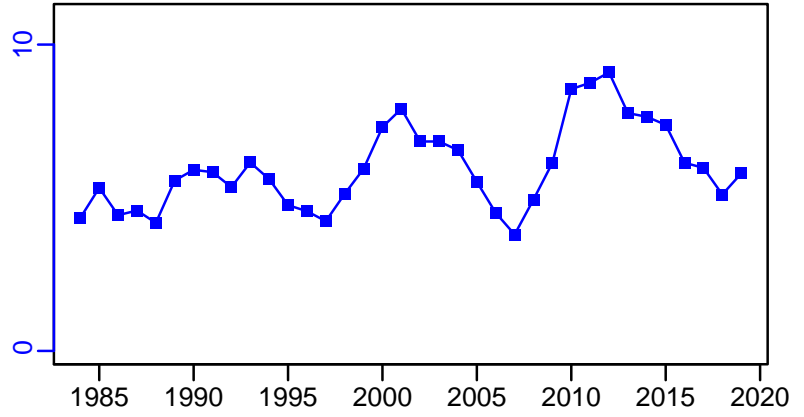
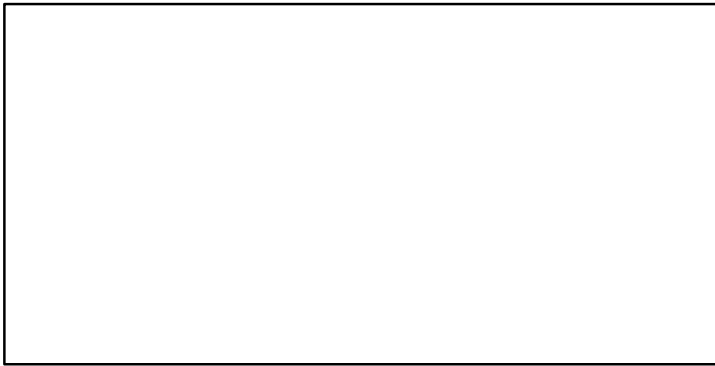
# Little skate Georges Bank–Southern New England [LSKAT5ZSNE]

TC–MT, TL\*, RecC\* (1968–2019–SISIMP2021–2)

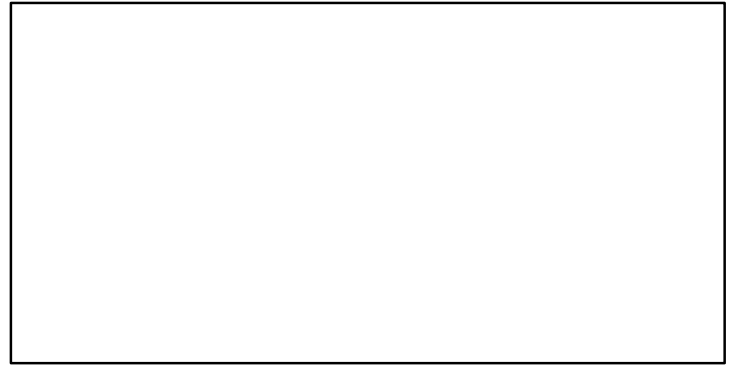
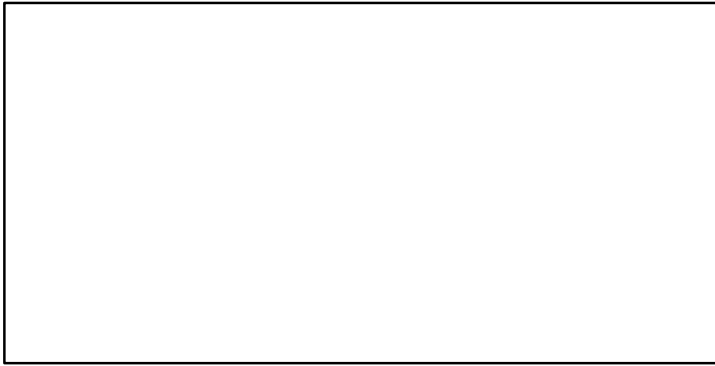
TAC\*, Cpair\*, Cadv\*



CPUE–index (1968–2019–SISIMP2021–2)



EFFORT\*



## Oceanic whitetip shark Central Western Pacific Ocean [OWSHARCWPAC]

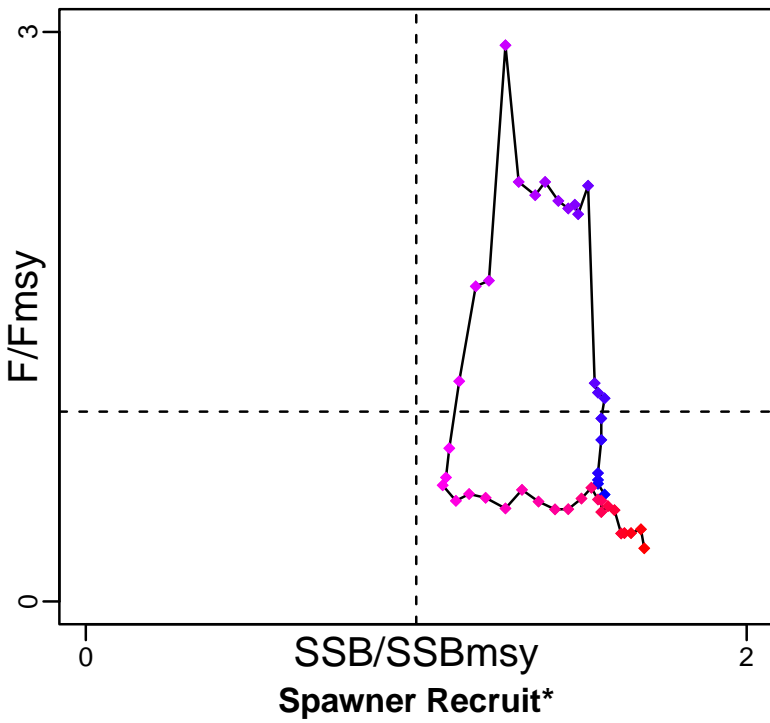
Metadata	
<b>Scientific Name</b>	Carcharhinus longimanus
<b>Current Assess ID</b>	SPC-OWSHARCWPAC-1970-2016-SMITH
<b>Area</b>	Central Western Pacific Ocean
<b>Management Authority</b>	Western and Central Pacific Fisheries Commission
<b>Assessor</b>	Secretariat of the Pacific Community
<b>Asmts in RAM</b>	2016

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-extr-MT	2016	190,412
<b>Fmsy</b>	Fmsy-extr-1/yr	2016	0.359
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2016	7055
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

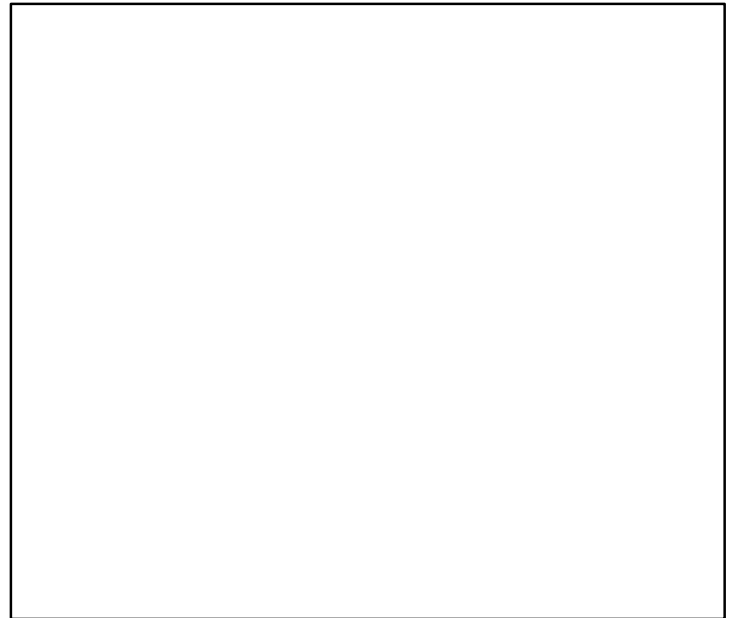
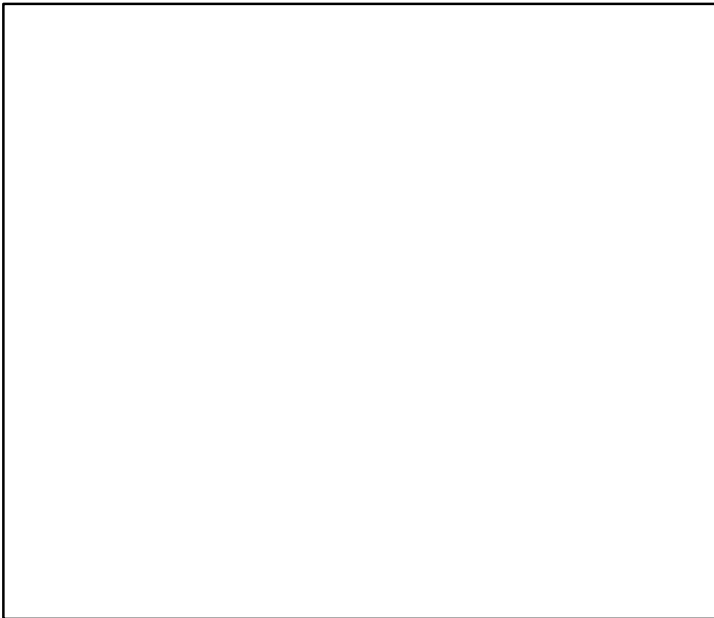
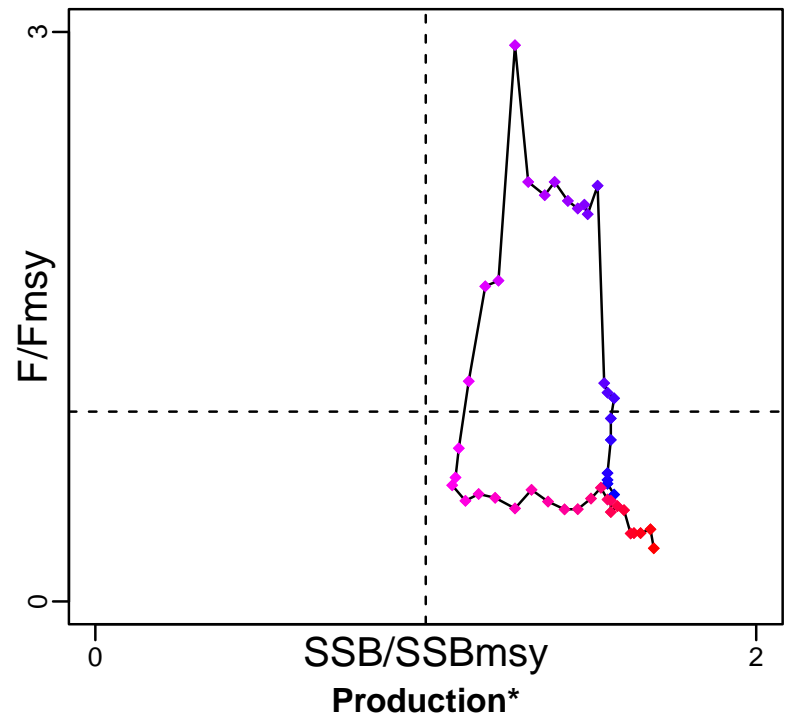
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSB-MT	2016	295,774	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2016	0.1	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	TC-MT	2016	2464		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSBdivSSBmsy-dimensionless	2016	1.69		
<b>F/Fmsy</b>	FdivFmsy-dimensionless	2016	0.28		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

# Oceanic whitetip shark Central Western Pacific Ocean [OWSHARCWPAC]

Kobe MSYpref (1970–2016–SMITH)



Kobe MGTpref (1970–2016–SMITH)



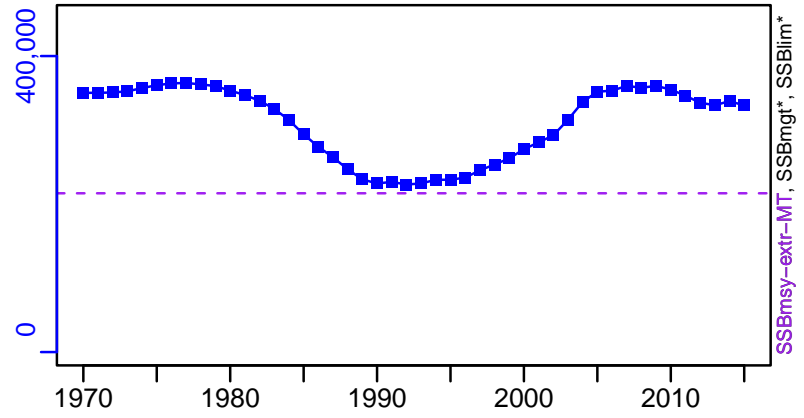
♦ Start Year ♦ End Year \* No Data

Oceanic whitetip shark Central Western Pacific Ocean [OWSHARCWPAC]

TB\*



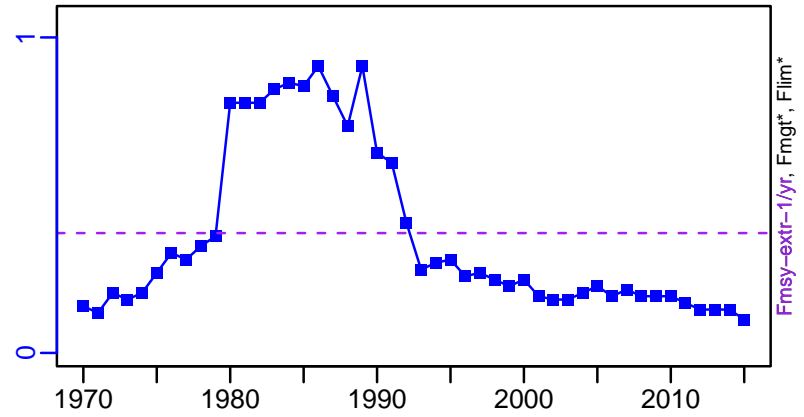
SSB-MT (1970–2016–SMITH)



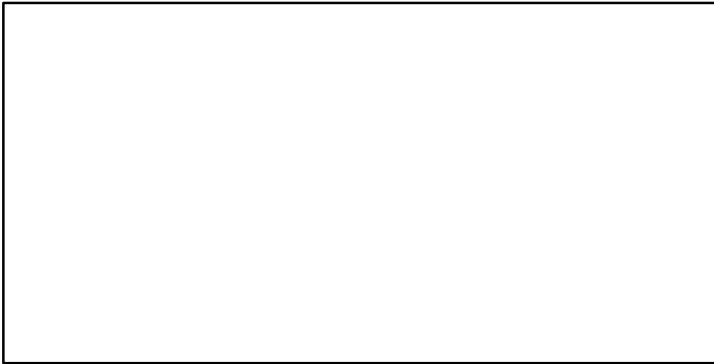
TN \*



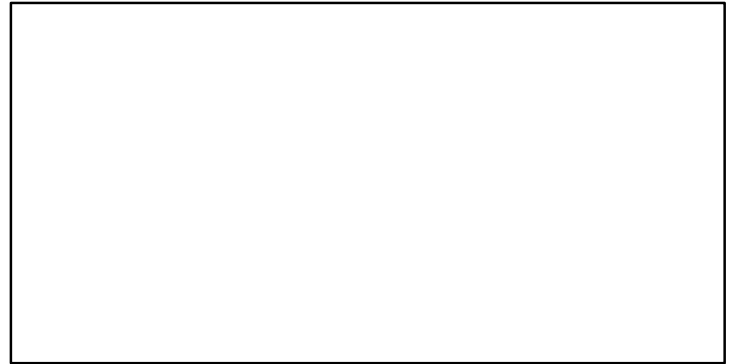
F-1/yr (1970–2016–SMITH)



ER\*



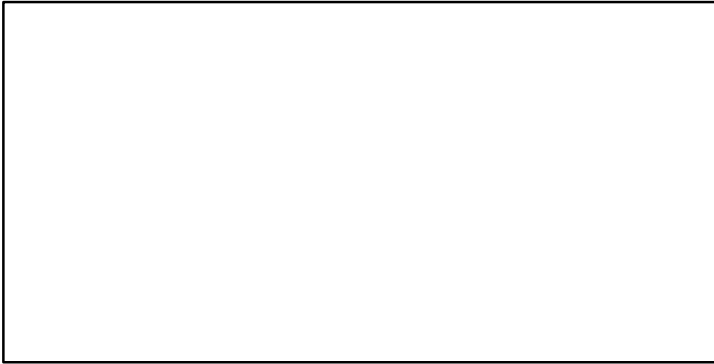
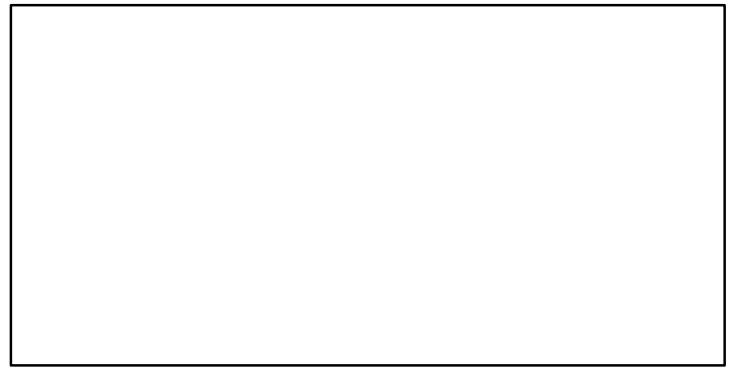
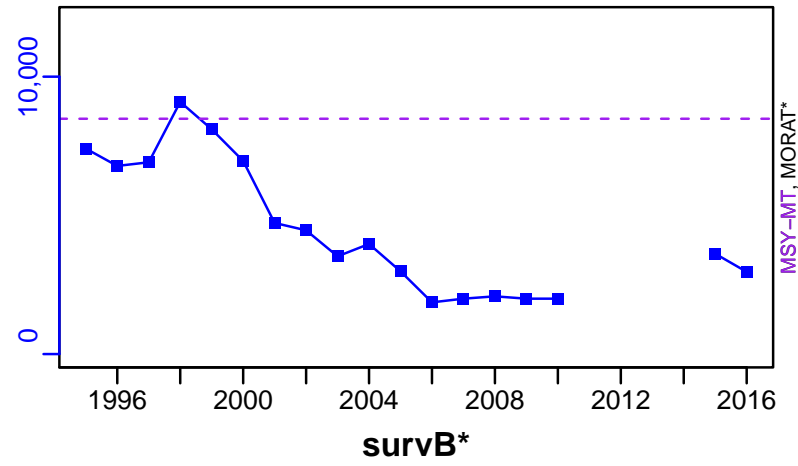
Recruits\*



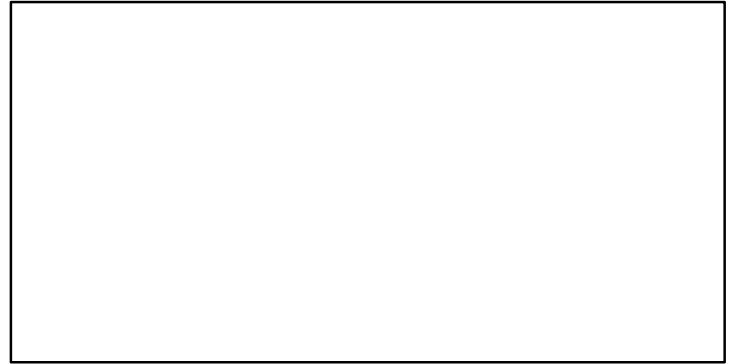
# Oceanic whitetip shark Central Western Pacific Ocean [OWSHARCWPAC]

TC-MT, TL\*, RecC\* (1970–2016–SMITH)

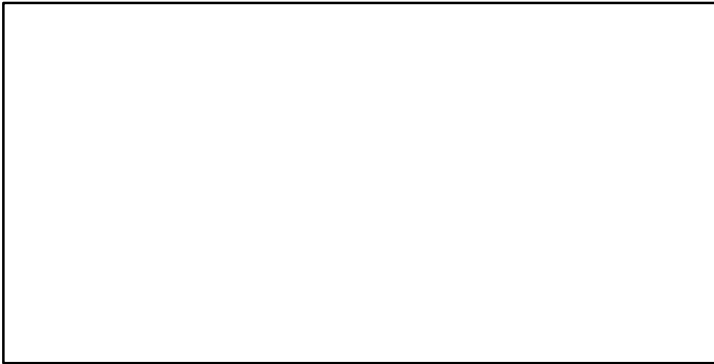
TAC\*, Cpair\*, Cadv\*



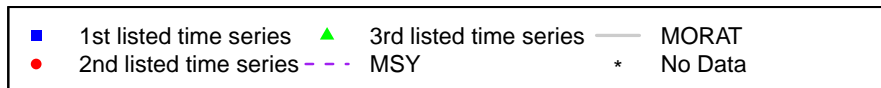
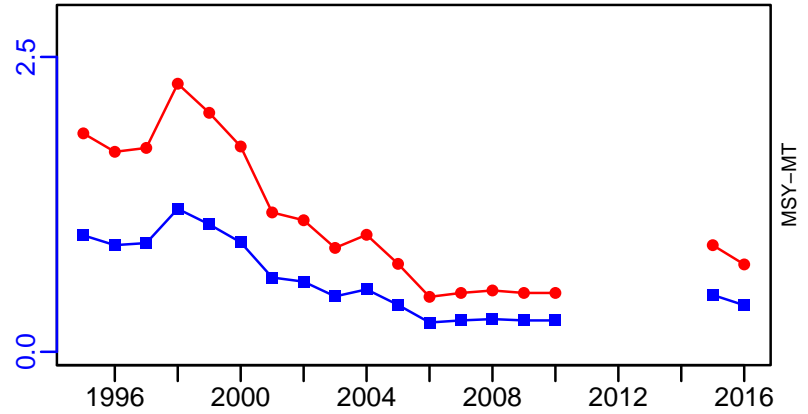
CPUE\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1970–2016–SMITH)



## Porbeagle shark Canadian Atlantic Ocean [PORSHARATL]

Metadata	
<b>Scientific Name</b>	Lamna nasus
<b>Current Assess ID</b>	DFO-PORSHARATL-1960-2014-OSGOOD
<b>Area</b>	Canadian Atlantic Ocean
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans
<b>Asmts in RAM</b>	2014

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-E00	2014	34,573
<b>Fmsy</b>	-	-	-
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	SSBmgt-E00	2014	27,658
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	M-1/yr	2014	0.2
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSB-E00	2014	12,900	-	-
<b>TN</b>	TN-E00	2014	199,000	Both	-
<b>R</b>	R-E00	2014	26,500	Both	1
<b>F</b>	-	-	-	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	TC-MT	2014	81		
<b>TL</b>	TL-MT	2014	9		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSB-E00/SSBmsy-E00	2014	0.373		
<b>F/Fmsy</b>	-	-	-		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	SSB-E00/SSBmgt-E00	2014	0.466		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		



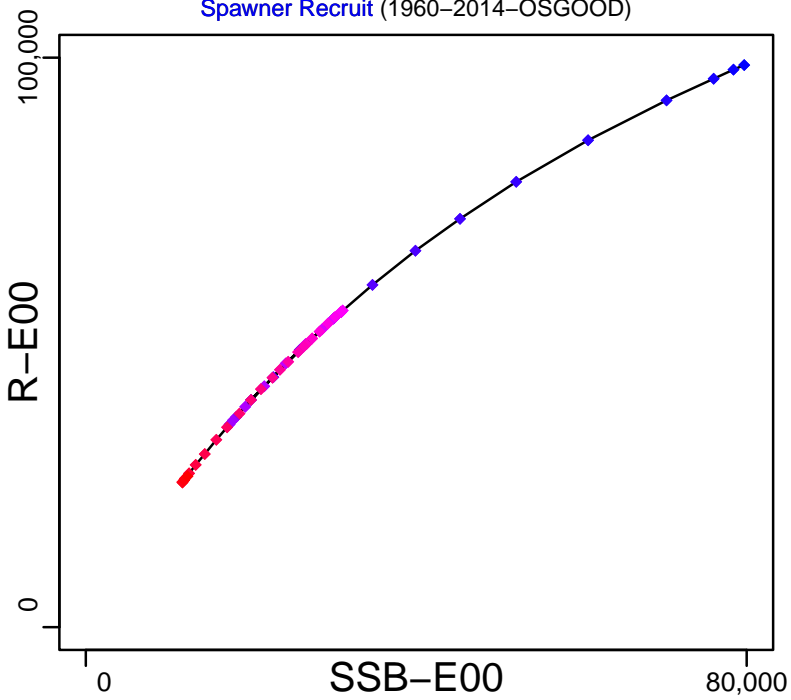
**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit** (1960–2014–OSGOOD)



**Production\***



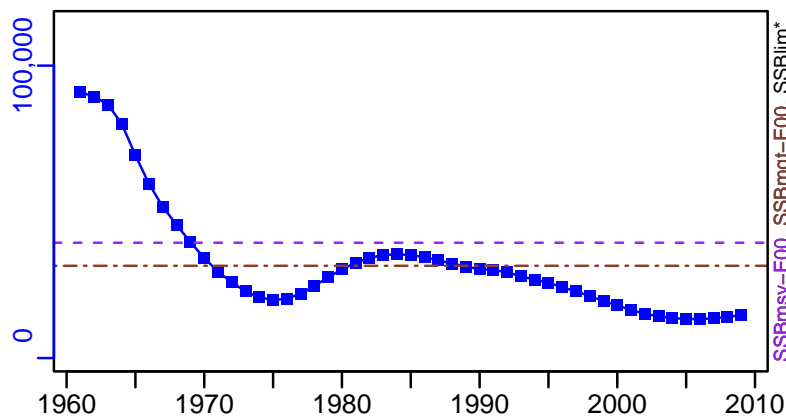
◆ Start Year ◆ End Year \* No Data

Porbeagle shark Canadian Atlantic Ocean [PORSHARATL]

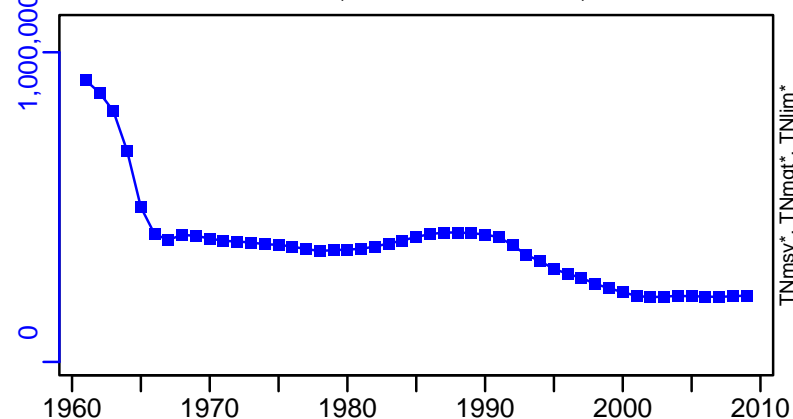
TB\*



SSB-E00 (1960–2014–OSGOOD)



TN-E00 (1960–2014–OSGOOD)



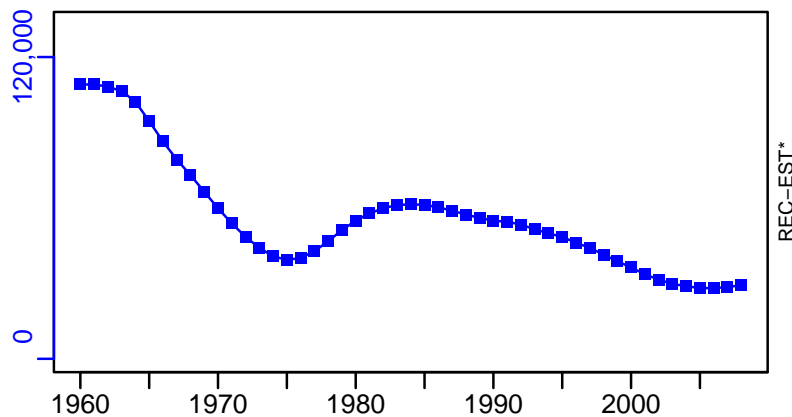
F\*



ER\*

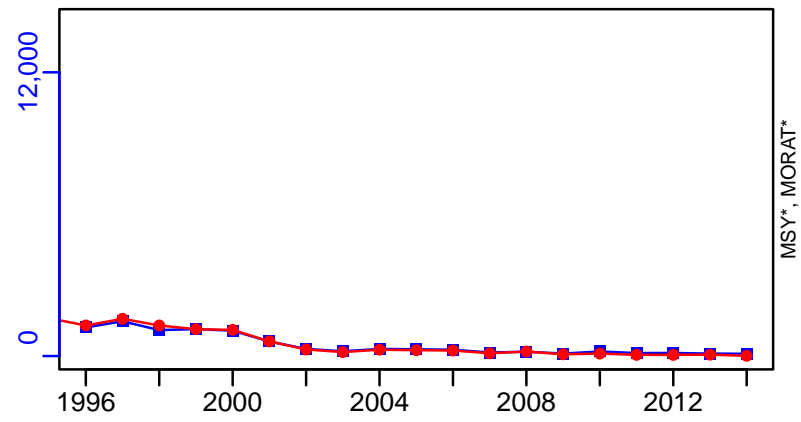


R-E00 (1960–2014–OSGOOD)



Porbeagle shark Canadian Atlantic Ocean [PORSHARATL]

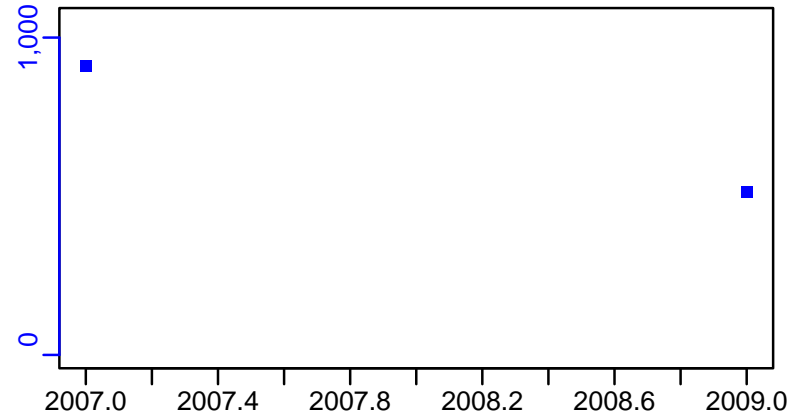
TC-MT, TL-MT, RecC\* (1960-2014-OSGOOD)



TAC\*, Cpair\*, Cadv\*



survB-E00 (1960-2014-OSGOOD)



CPUE\*



EFFORT\*



CdivMSY\*



## Porbeagle shark Northeast Atlantic [PORSHARNEATL]

Metadata	
<b>Scientific Name</b>	Lamna nasus
<b>Current Assess ID</b>	WGEF-PORSHARNEATL-1926-2018-ICESIMP2021
<b>Area</b>	Northeast Atlantic
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	7		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



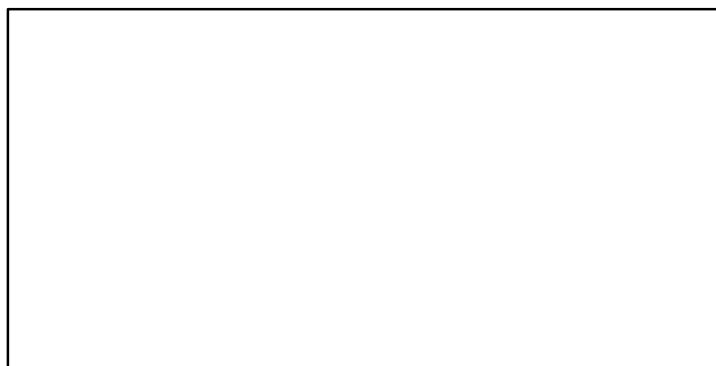
◆ Start Year    ◆ End Year    \* No Data

Porbeagle shark Northeast Atlantic [PORSHARNEATL]

**TB\***



**SSB\***



**TN \***



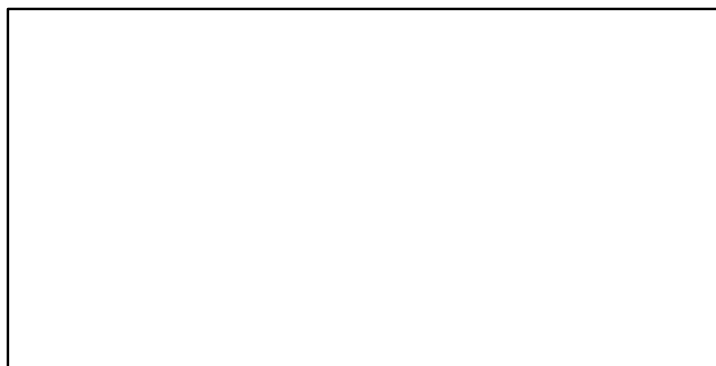
**F\***



**ER\***

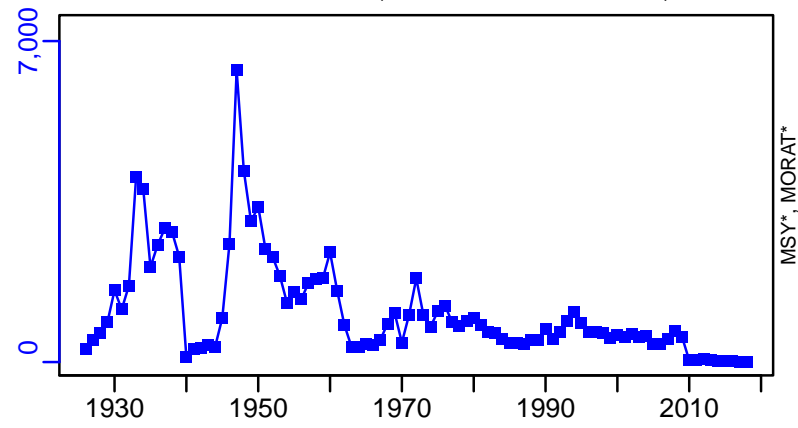


**Recruits\***



# Porbeagle shark Northeast Atlantic [PORSHARNEATL]

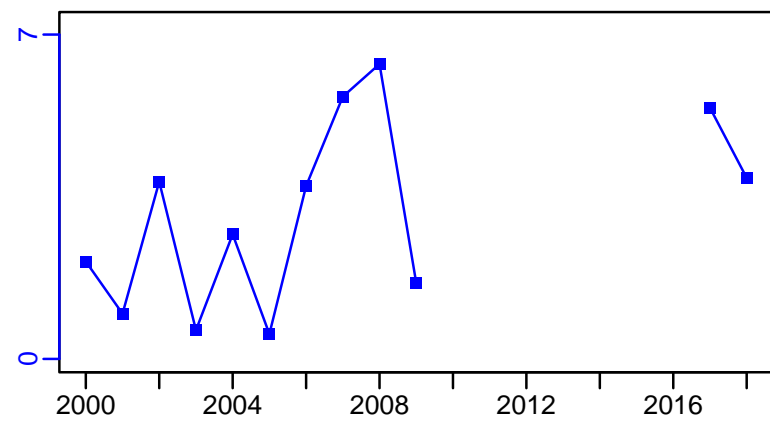
TL-MT, TC\*, RecC\* (1926–2018–ICESIMP2021)



TAC\*, Cpair\*, Cadv\*



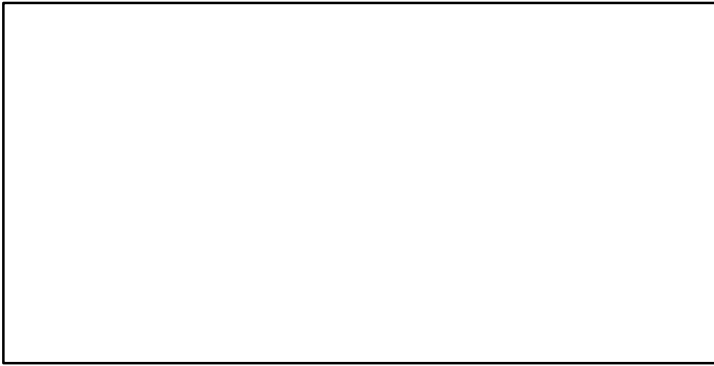
survB-index (1926–2018–ICESIMP2021)



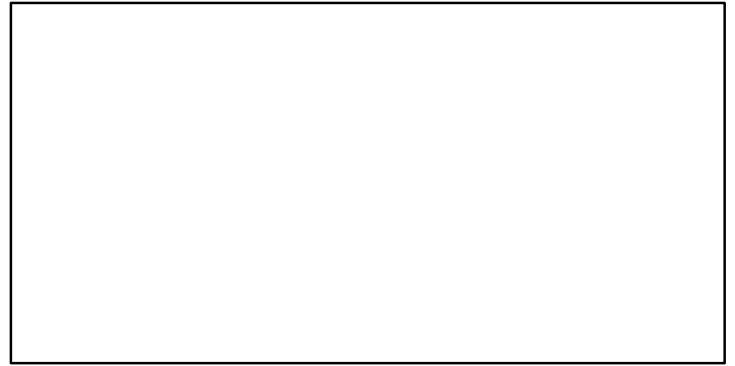
CPUE\*



EFFORT\*



CdivMSY\*



■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - - MSY    \* No Data

## Rosette skate Mid-Atlantic Coast [RSKATMATLC]

Metadata	
<b>Scientific Name</b>	Leucoraja garmani
<b>Current Assess ID</b>	NEFSC-RSKATMATLC-1968-2019-SISIMP2021-2
<b>Area</b>	Mid-Atlantic Coast
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2005, 2018, 2019

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2019	48		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

Rosette skate Mid-Atlantic Coast [RSKATMATLC]

TB\*



SSB\*



TN \*



F\*



ER\*



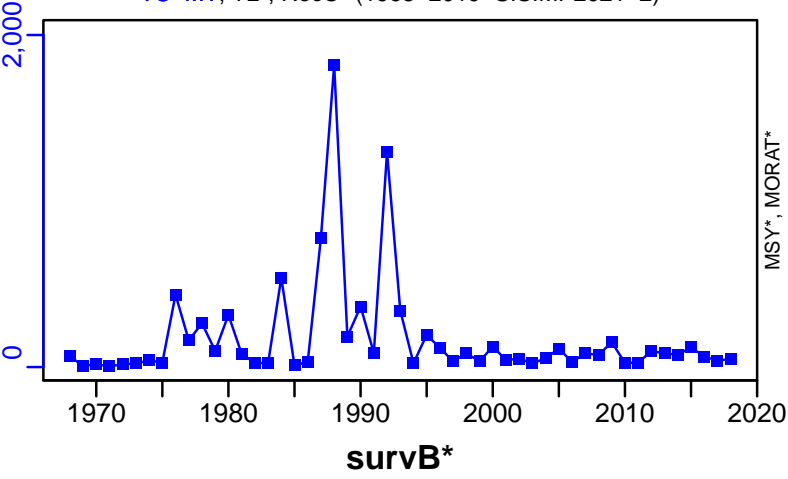
Recruits\*



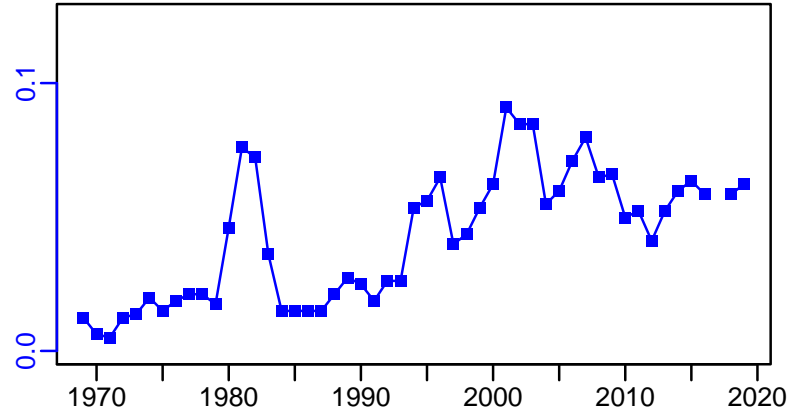
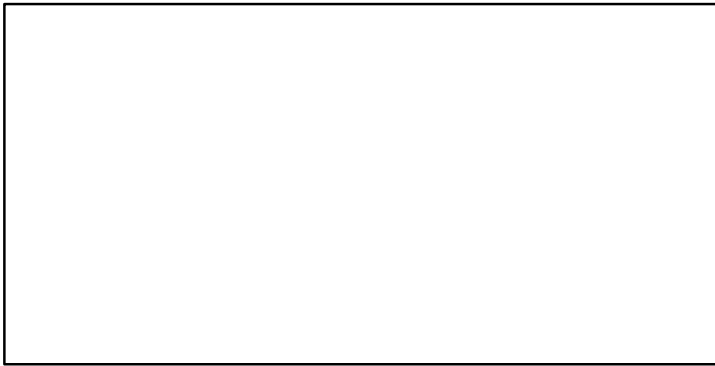
# Rosette skate Mid-Atlantic Coast [RSKATMATLC]

TC-MT, TL\*, RecC\* (1968-2019-SISIMP2021-2)

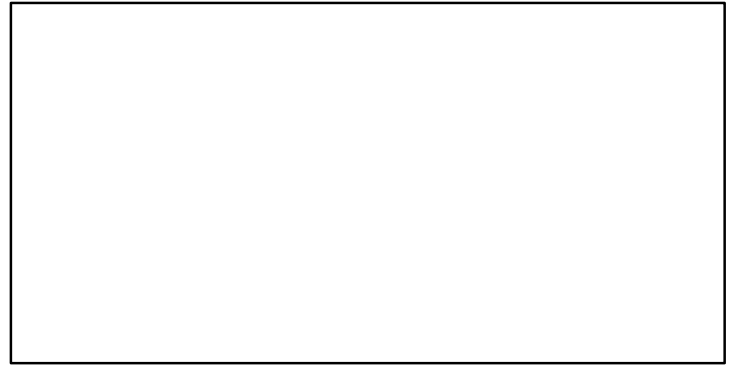
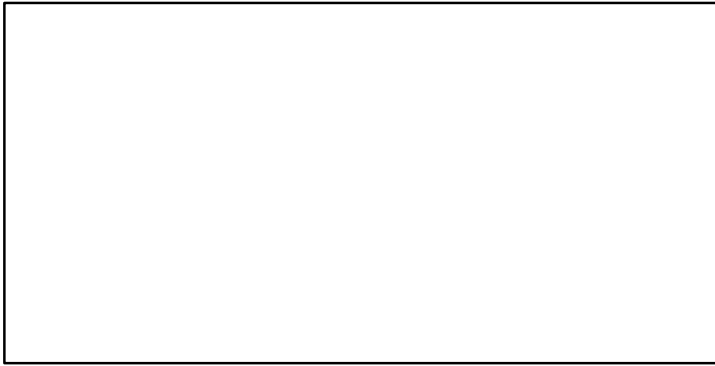
TAC\*, Cpair\*, Cadv\*



CPUE-index (1968-2019-SISIMP2021-2)



EFFORT\*



## Sandbar shark Atlantic [SBARSHARATL]

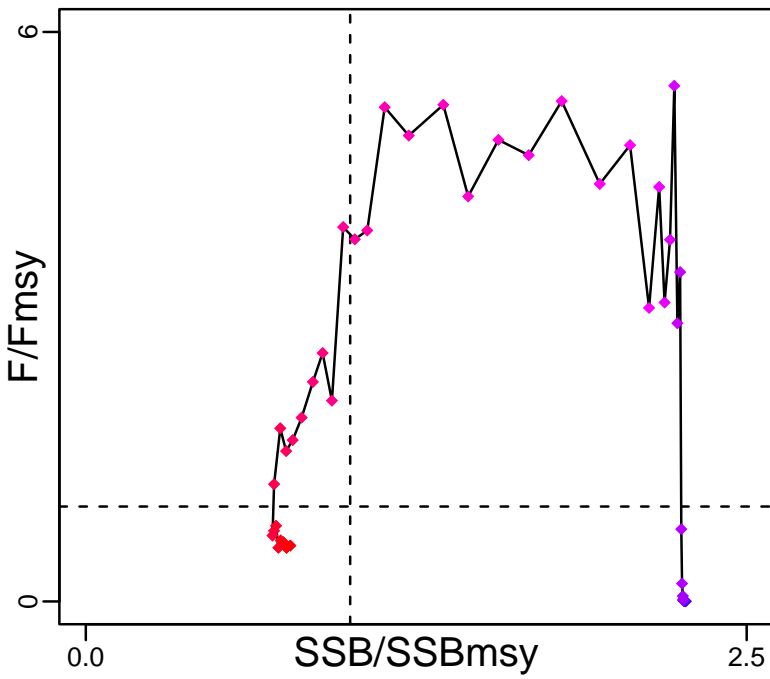
Metadata	
<b>Scientific Name</b>	Carcharhinus plumbeus
<b>Current Assess ID</b>	SEFSC-SBARSHARATL-1960-2015-SISIMP2021
<b>Area</b>	Atlantic
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2009, 2015, 2004

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-E00	2015	681,000
<b>Fmsy</b>	Fmsy-1/yr	2015	0.07
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2004	403
<b>M</b>	M-1/yr	2004	0.224
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	SSBlim-E00	2015	595,000
<b>Flim</b>	Flim-1/yr	2015	0.07
<b>ERlim</b>	-	-	-

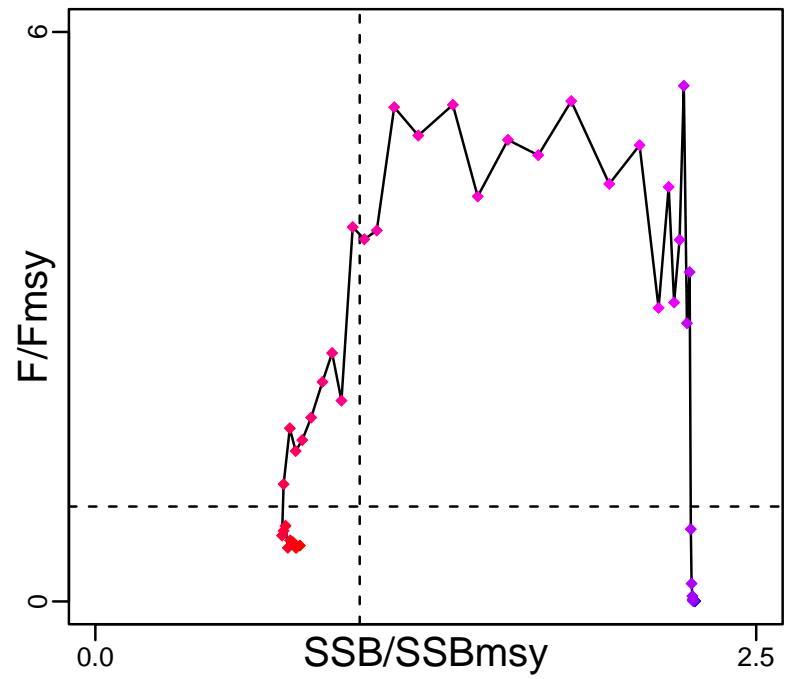
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2015	37,620	-	-
<b>SSB</b>	SSB-E00	2015	527,000	-	-
<b>TN</b>	TN-E00	2009	1,540,000	-	-
<b>R</b>	R-E00	2015	233,000	-	0
<b>F</b>	F-1/yr	2015	0.041	-	-
<b>ER</b>	ER-calc-ratio	2015	0.005	-	-
<b>TC</b>	TC-MT	2015	203		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSB-E00/SSBmsy-E00	2015	0.774		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2015	0.589		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

# Sandbar shark Atlantic [SBARSHARATL]

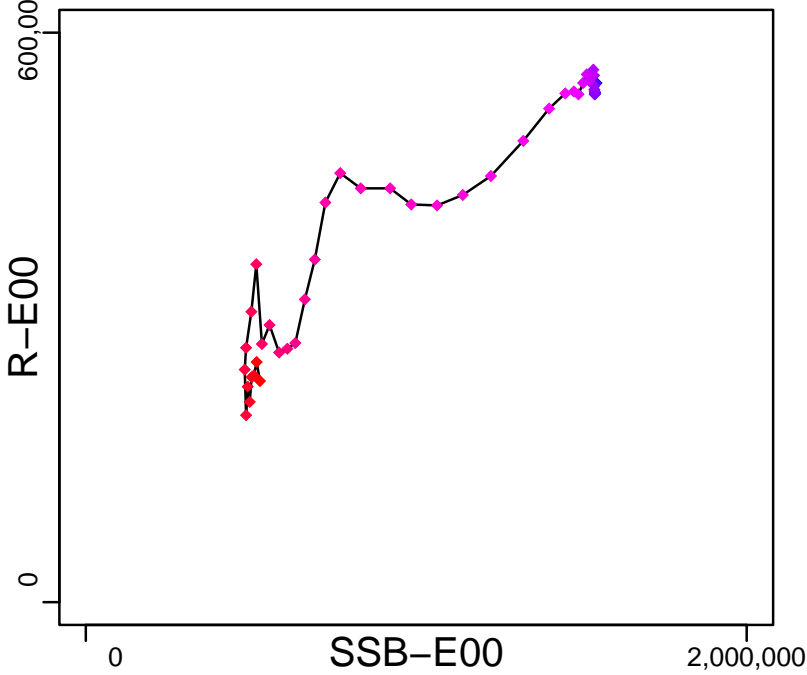
Kobe MSYpref (1960–2015–SISIMP2021)



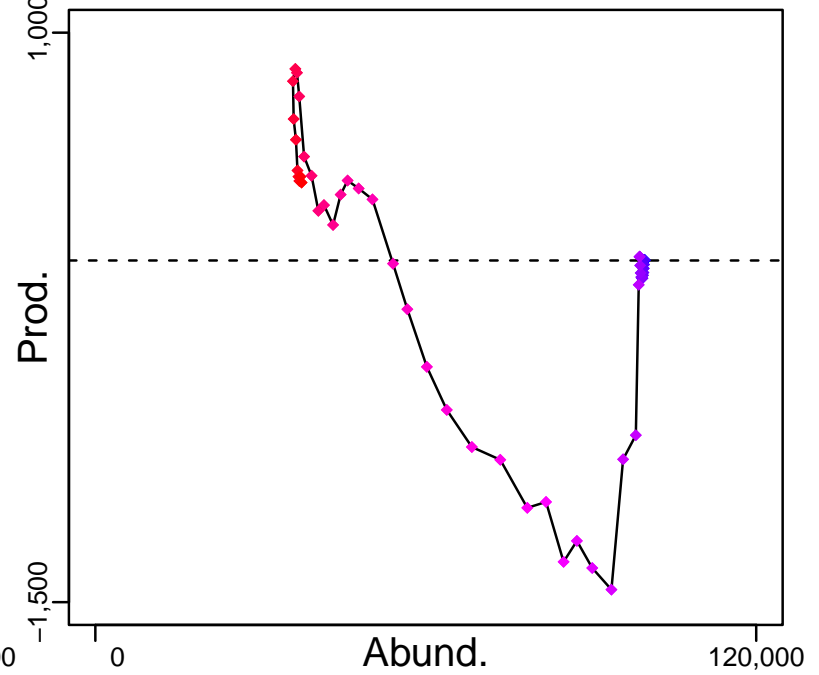
Kobe MGTpref (1960–2015–SISIMP2021)



Spawner Recruit (1960–2015–SISIMP2021)

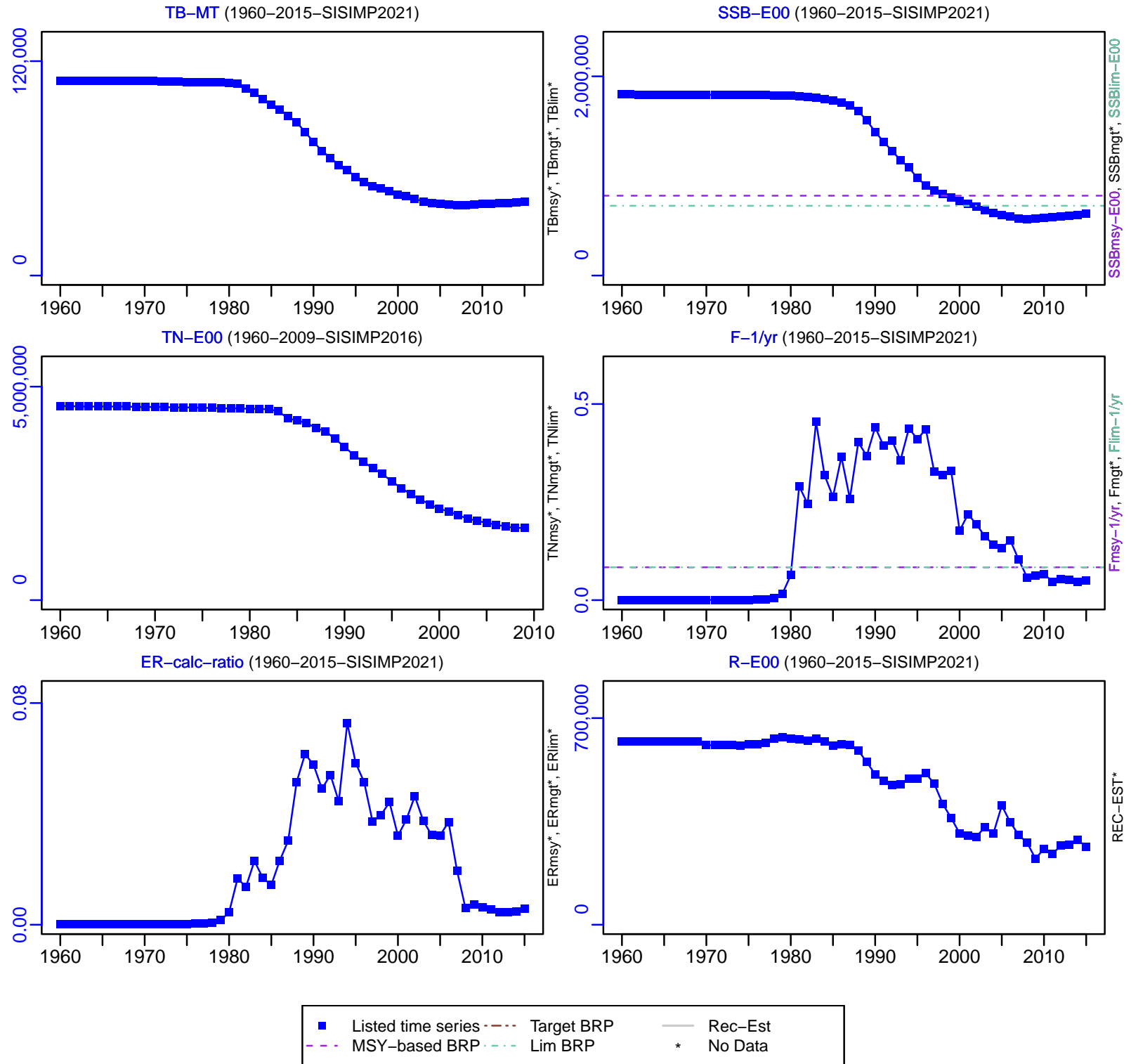


Production (1960–2015–SISIMP2021)



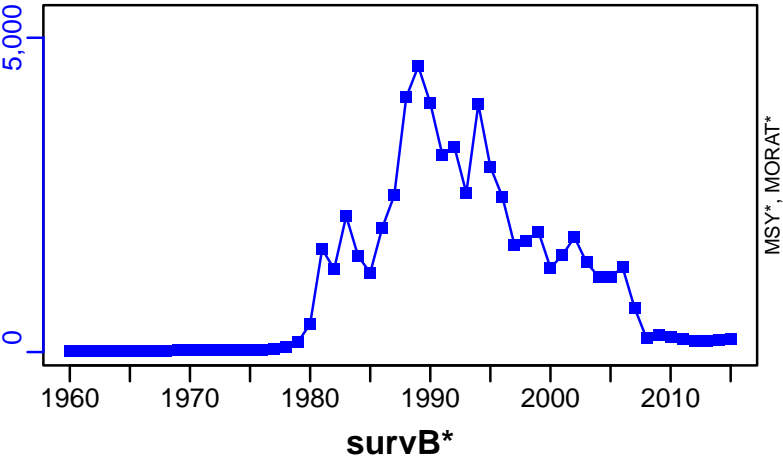
◆ Start Year ◆ End Year \* No Data

# Sandbar shark Atlantic [SBARSHARATL]



Sandbar shark Atlantic [SBARSHARATL]

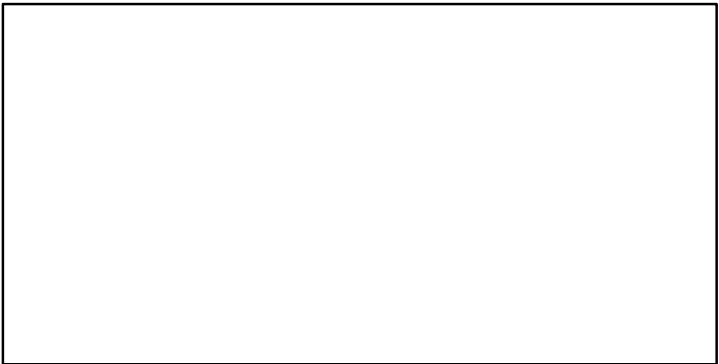
TC-MT, TL\*, RecC\* (1960-2015-SISIMP2021)



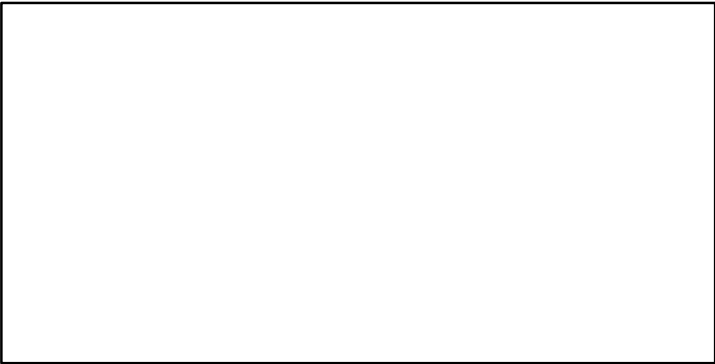
TAC\*, Cpair\*, Cadv\*



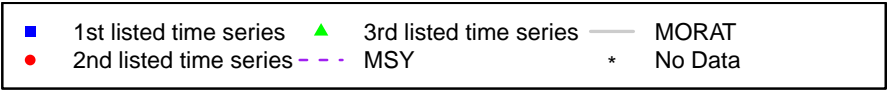
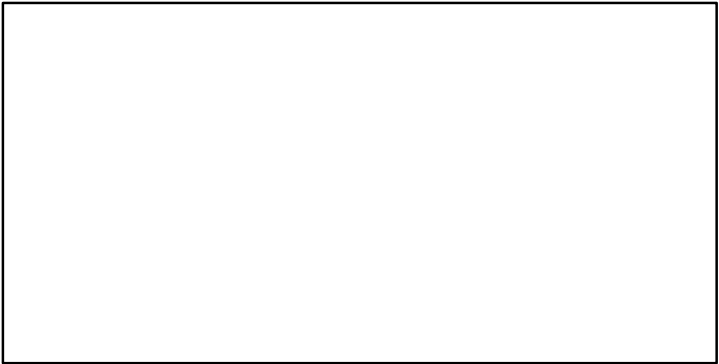
CPUE\*



EFFORT\*



CdivMSY\*



## Scalloped hammerhead Atlantic [SCHHEADATL]

Metadata	
<b>Scientific Name</b>	Sphyrna lewini
<b>Current Assess ID</b>	SEFSC-SCHHEADATL-1981-2005-SISIMP2016
<b>Area</b>	Atlantic
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2005

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	MSY-E00	2005	7100
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-E00	2005	4140		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

Scalloped hammerhead Atlantic [SCHHEADATL]

TB\*



SSB\*



TN \*



F\*



ER\*



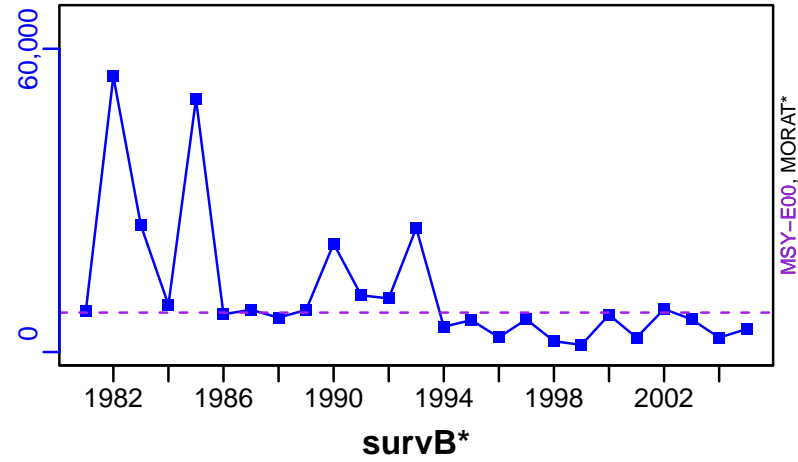
Recruits\*



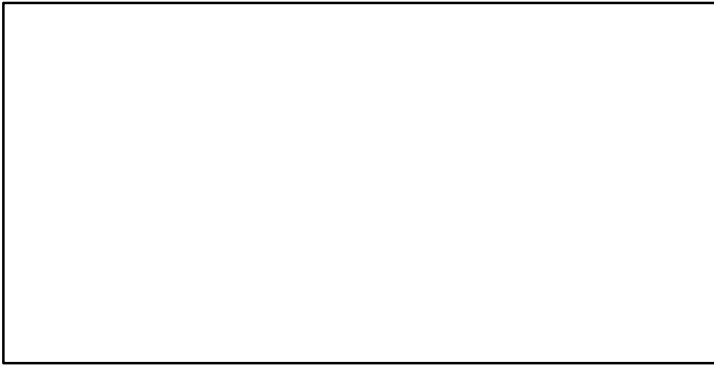
# Scalloped hammerhead Atlantic [SCHHEADATL]

TL-E00, TC\*, RecC\* (1981-2005-SISIMP2016)

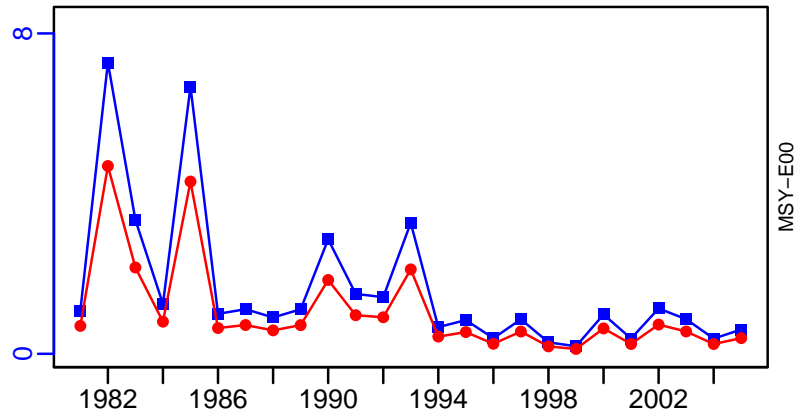
TAC\*, Cpair\*, Cadv\*



EFFORT\*



TL-E00/MSY-E00, CdivMEANC-ratio, (1981-2005-SISIMP2016)



## Spiny dogfish Scotian Shelf, Bay of Fundy and Georges Bank [SDOG4VWX5]

Metadata	
<b>Scientific Name</b>	Squalus acanthias
<b>Current Assess ID</b>	DFO-MAR-SDOG4VWX5-1922-2013-OSGOOD
<b>Area</b>	Scotian Shelf, Bay of Fundy and Georges Bank
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Maritimes Region
<b>Asmts in RAM</b>	2013

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	MSY-MT	2013	742
M	M-1/yr	2013	0.1
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-E00	2013	1790	-	-
TN	TN-E00	2013	792,000	Both	0+
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2013	993		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

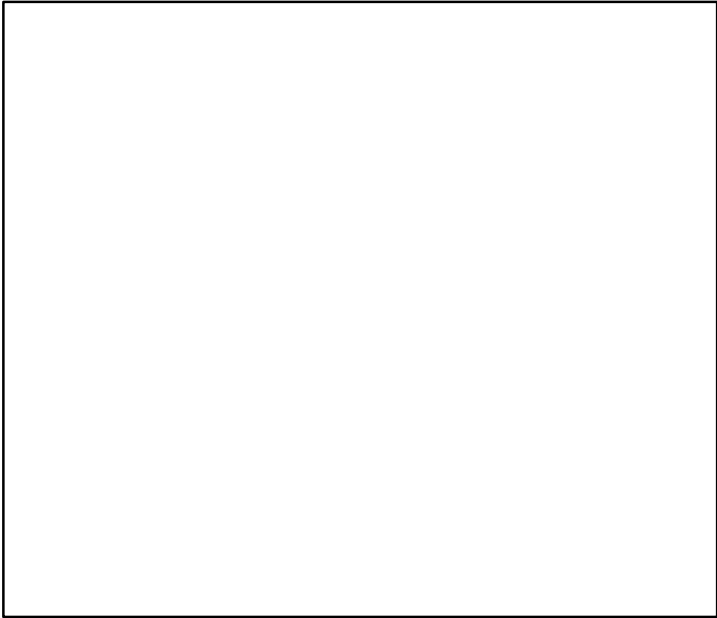
Kobe MSY\*



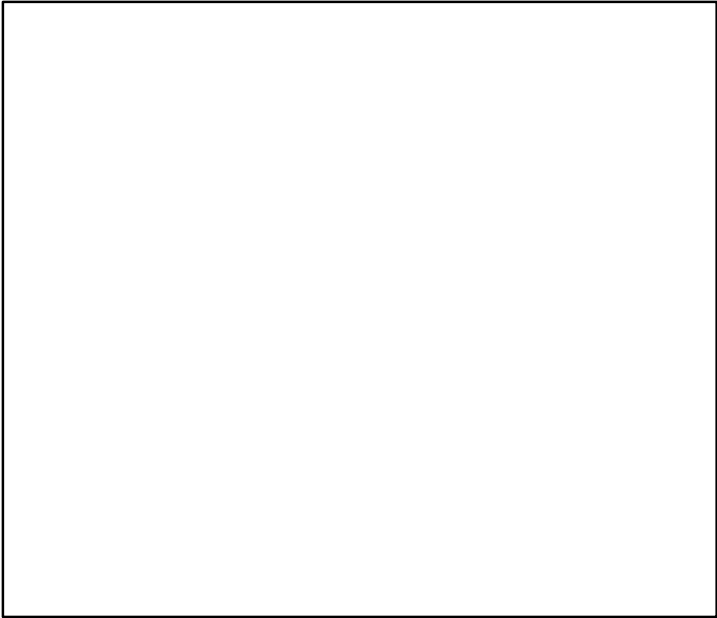
Kobe MGT\*



Spawner Recruit\*



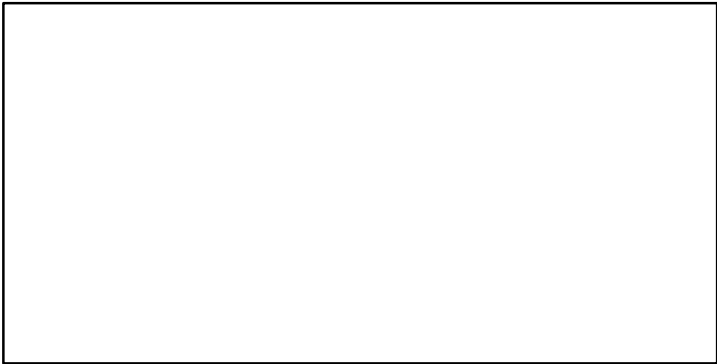
Production\*



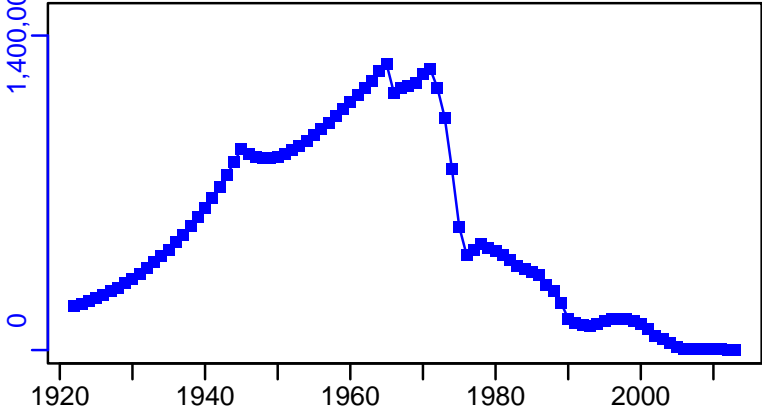
◆ Start Year    ◆ End Year    \* No Data

Spiny dogfish Scotian Shelf, Bay of Fundy and Georges Bank [SDOG4VWX5]

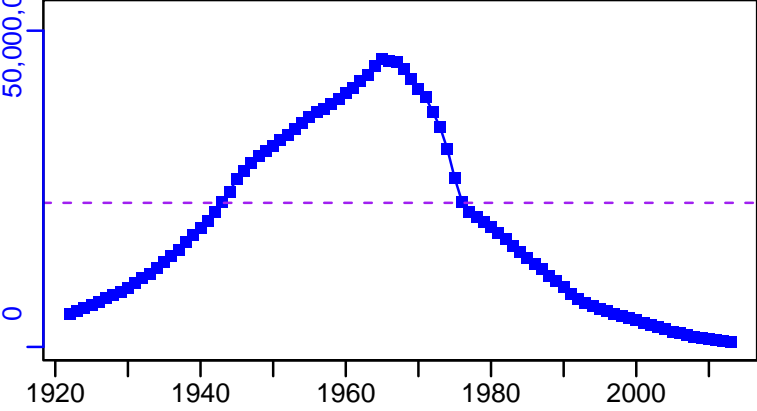
TB\*



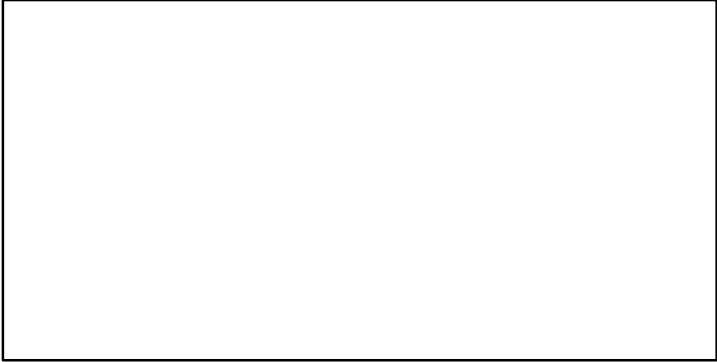
SSB-E00 (1922-2013-OSGOOD)



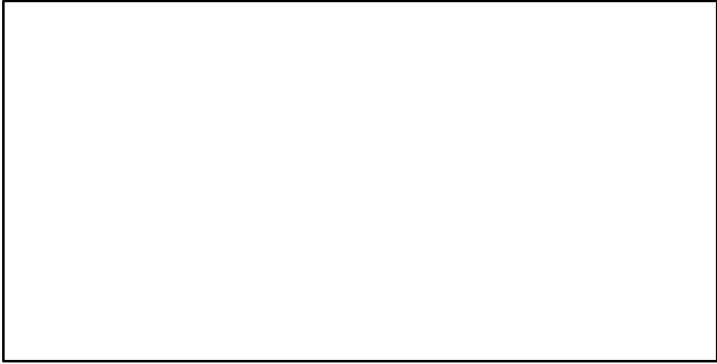
TN-E00 (1922-2013-OSGOOD)



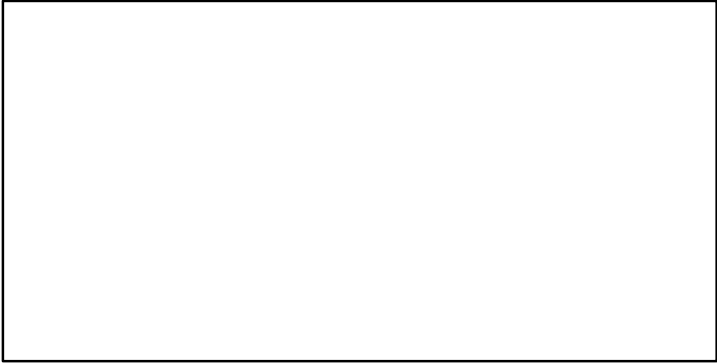
F\*



ER\*

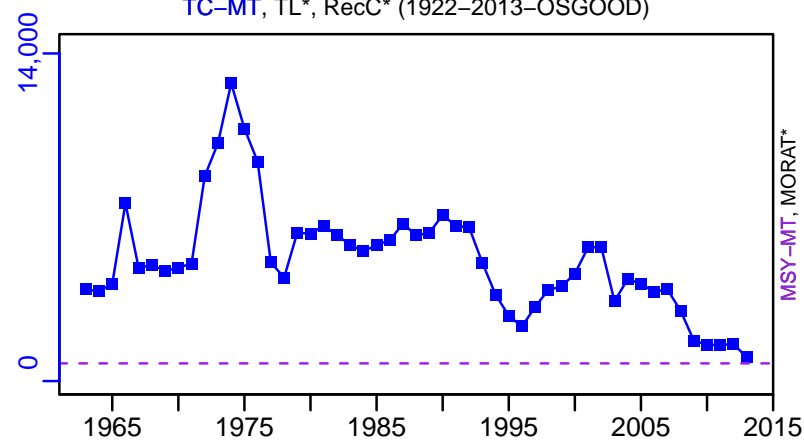


Recruits\*

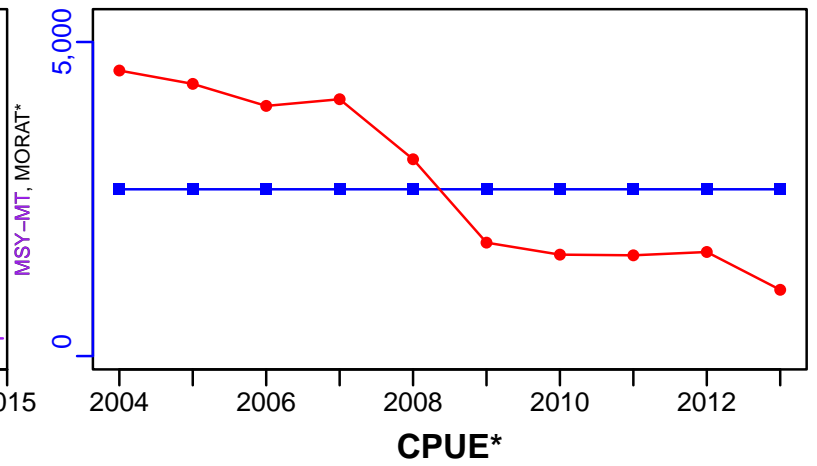


# Spiny dogfish Scotian Shelf, Bay of Fundy and Georges Bank [SDOG4VWX5]

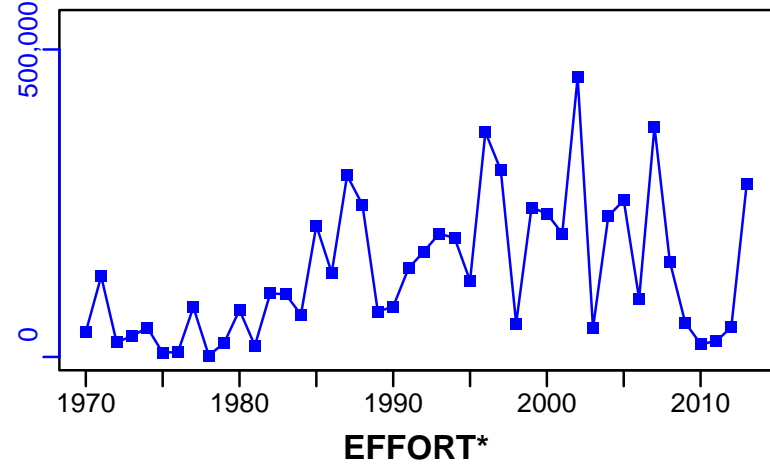
TC-MT, TL\*, RecC\* (1922-2013-OSGOOD)



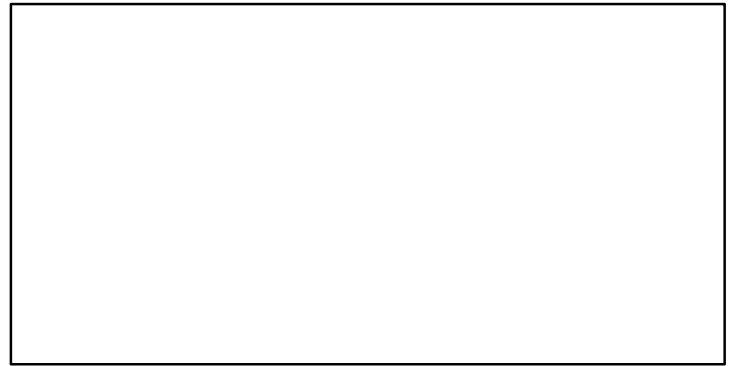
TAC-MT, Cpair-MT, Cadv\* (1922-2013-OSGOOD)



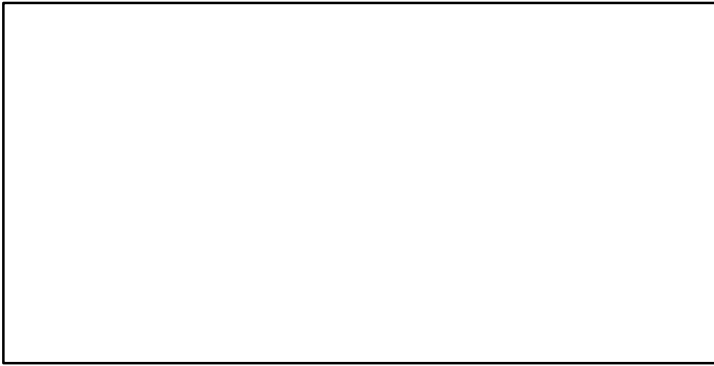
survB-MT (1922-2013-OSGOOD)



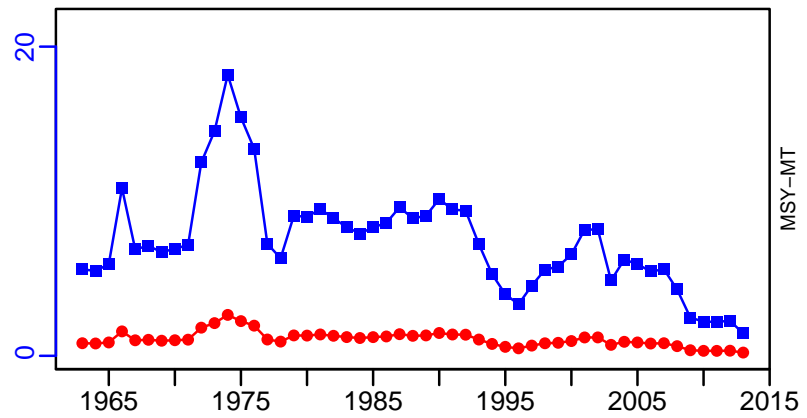
CPUE\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1922-2013-OSGOOD)



■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - - MSY    \* No Data

## Spiny dogfish Atlantic Coast [SDOGATLC]

Metadata	
<b>Scientific Name</b>	Squalus acanthias
<b>Current Assess ID</b>	NEFSC-SDOGATLC-1968-2018-SISIMP2021
<b>Area</b>	Atlantic Coast
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2006, 2018, 2015

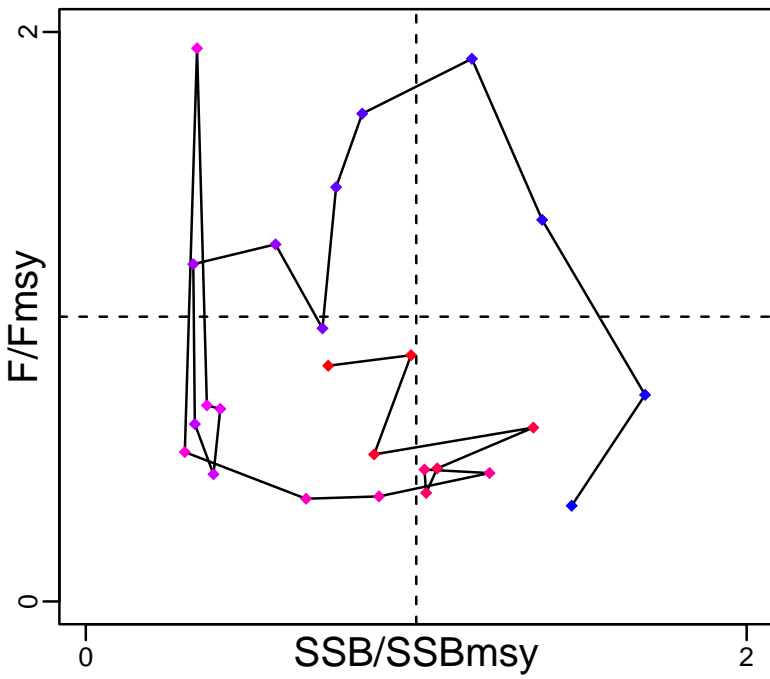
Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-MT	2018	159,300
<b>Fmsy</b>	Fmsy-1/yr	2018	0.244
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	SSBlim-MT	2018	79,600
<b>Flim</b>	Flim-1/yr	2015	0.244
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2006	454,000	-	-
<b>SSB</b>	SSB-MT	2018	106,753	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-MT	2018	1510	-	-
<b>F</b>	F-1/yr	2018	0.202	-	-
<b>ER</b>	ER-ratio	2006	0.017	-	-
<b>TC</b>	TC-MT	2018	14,326		
<b>TL</b>	TL-MT	2006	3020		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSB-MT/SSBmsy-MT	2018	0.67		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2018	0.828		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

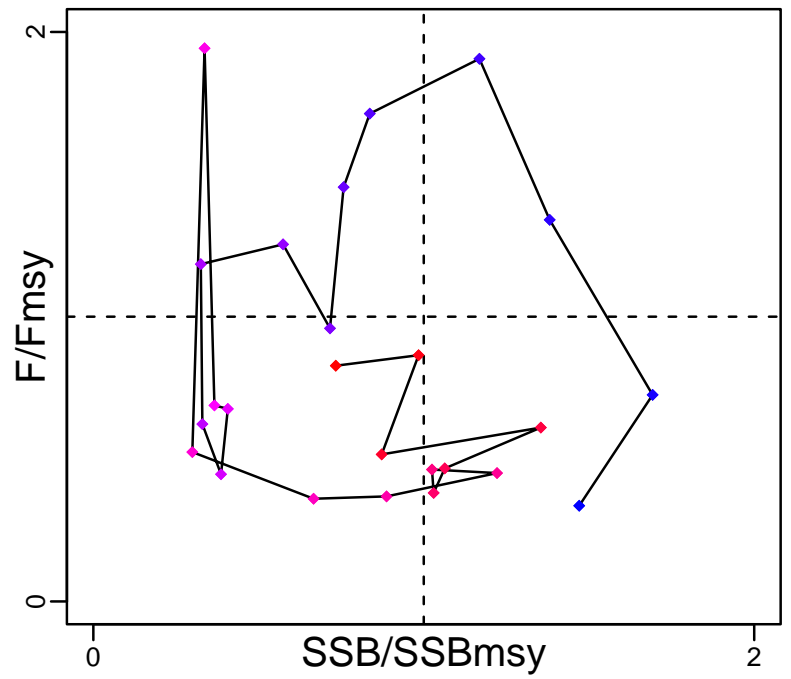


# Spiny dogfish Atlantic Coast [SDOGATLC]

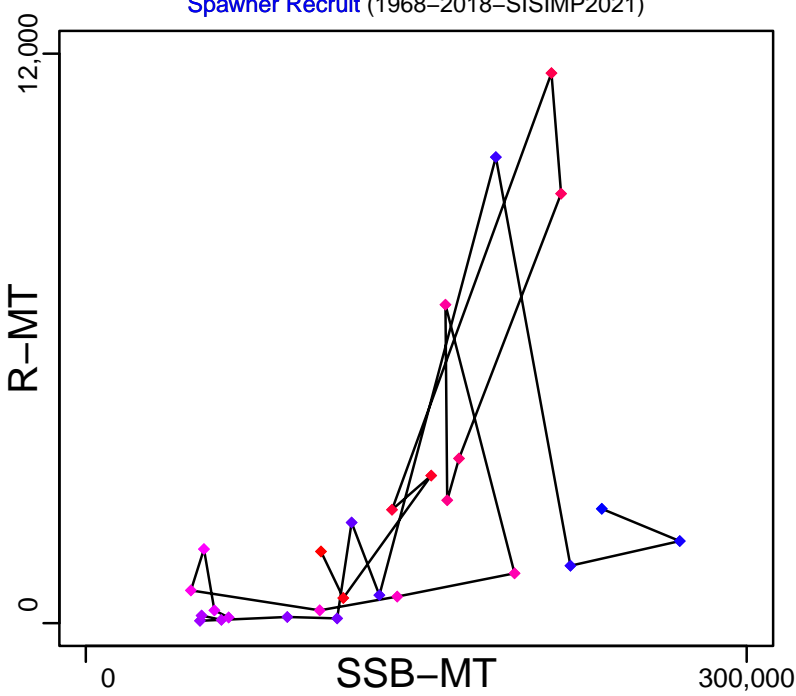
Kobe MSY<sub>pref</sub> (1968–2018–SISIMP2021)



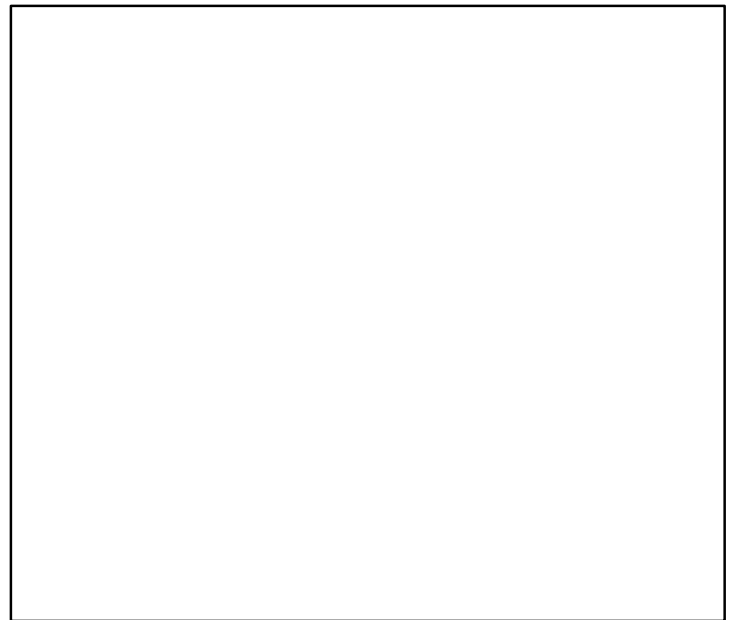
Kobe MGT<sub>pref</sub> (1968–2018–SISIMP2021)



Spawner Recruit (1968–2018–SISIMP2021)



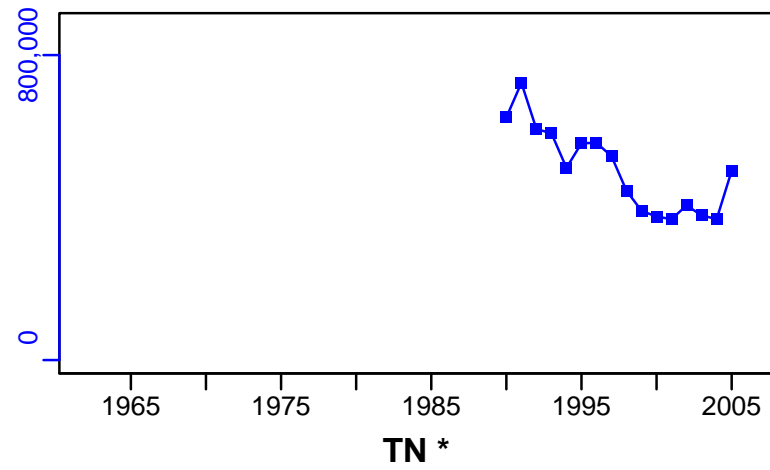
Production\*



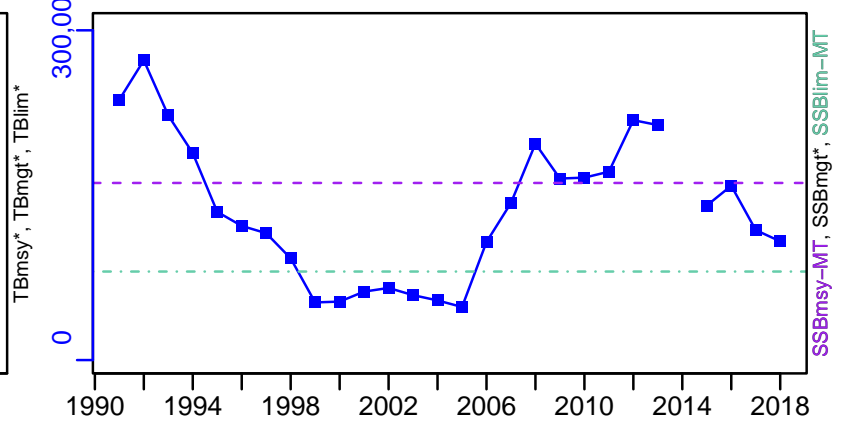
◆ Start Year ◆ End Year \* No Data

# Spiny dogfish Atlantic Coast [SDOGATLC]

TB-MT (1962–2006–SOSEBEE)



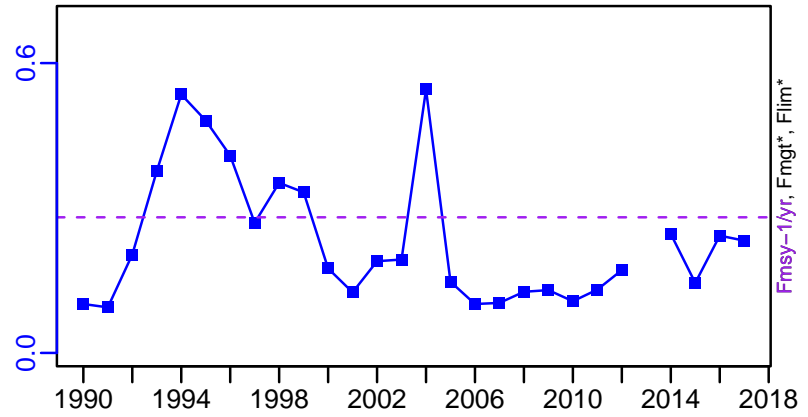
SSB-MT (1968–2018–SISIMP2021)



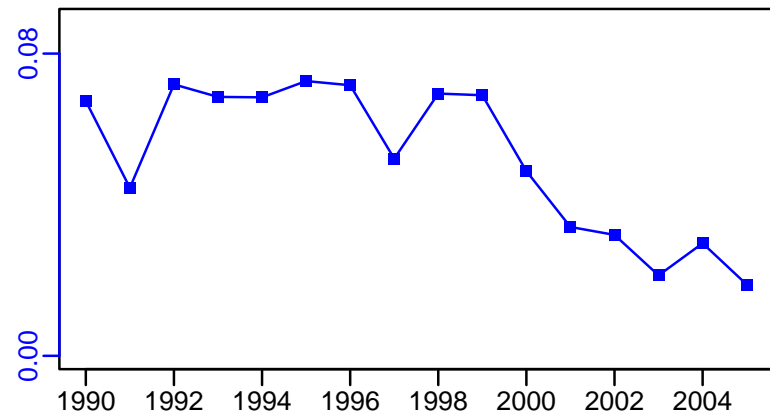
TN \*



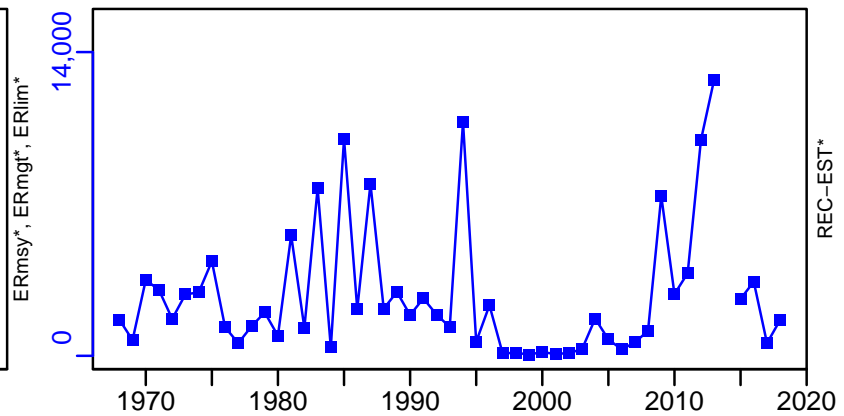
F-1/yr (1968–2018–SISIMP2021)



ER-ratio (1962–2006–SOSEBEE)



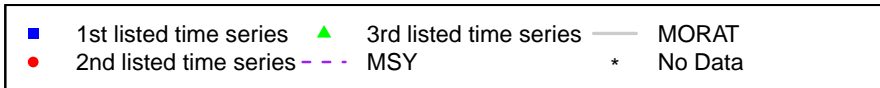
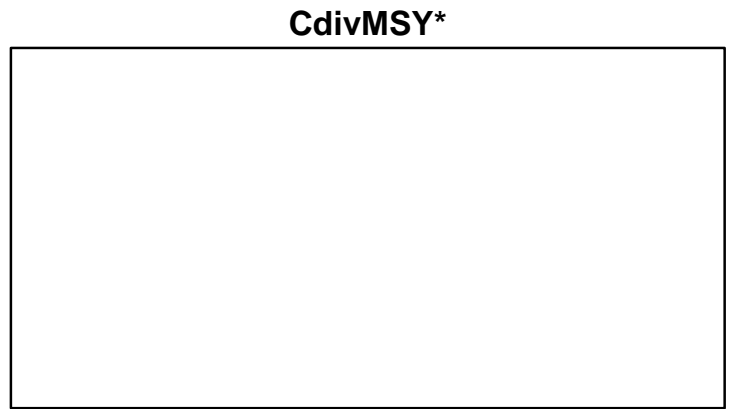
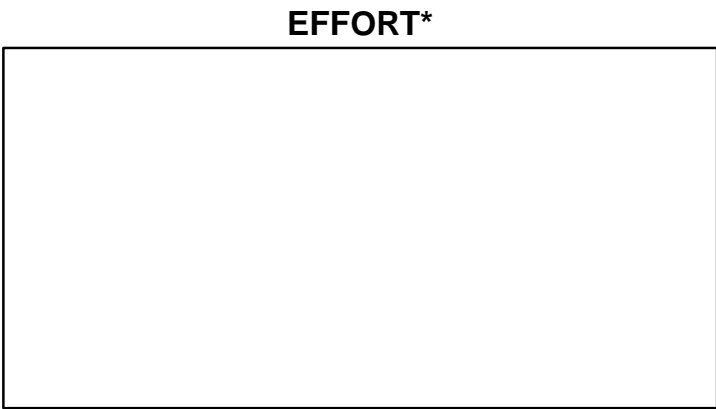
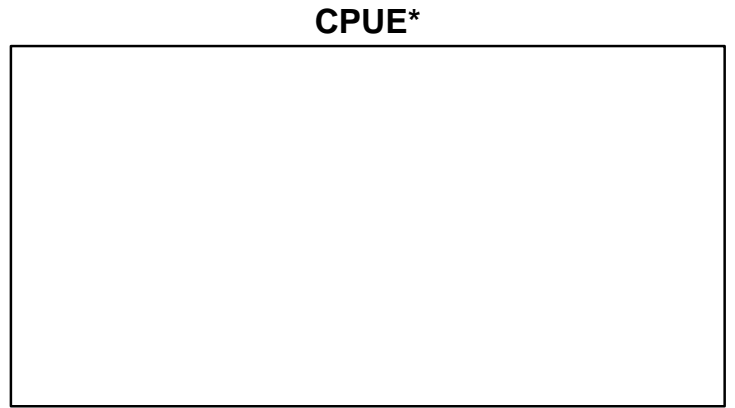
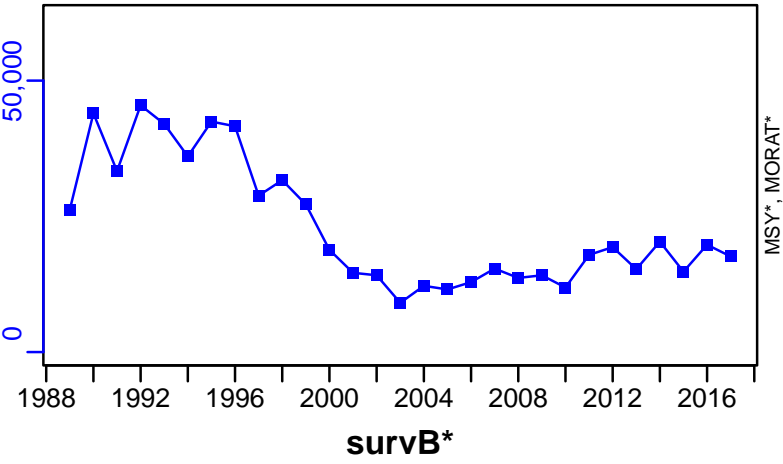
R-MT (1968–2018–SISIMP2021)



# Spiny dogfish Atlantic Coast [SDOGATLC]

TC-MT, TL\*, RecC\* (1968-2018-SISIMP2021)

TAC\*, Cpair\*, Cadv\*



## Spiny dogfish Black Sea [SDOGBLKGSA29]

Metadata	
<b>Scientific Name</b>	Squalus acanthias
<b>Current Assess ID</b>	STECF-SDOGBLKGSA29-1989-2016-MEDIMP2021-2
<b>Area</b>	Black Sea
<b>Management Authority</b>	General Fisheries Council for the Mediterranean, DG MARE, and national states
<b>Assessor</b>	Scientific, Technical and Economic Committee for Fisheries
<b>Asmts in RAM</b>	2011, 2014, 2016

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	-	-	-
<b>Fmsy</b>	-	-	-
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	Fmgt-1/yr	2016	0.08
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	M-1/yr	2011	0.15
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSB-MT	2016	703	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2016	65,271	-	-
<b>F</b>	F-1/yr	2016	0.939	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	TC-MT	2016	137		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	-	-	-		
<b>F/Fmsy</b>	-	-	-		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	F-1/yr/Fmgt-1/yr	2016	11.735		
<b>ER/ERmgt</b>	-	-	-		

Spiny dogfish Black Sea [SDOGBLKGSA29]

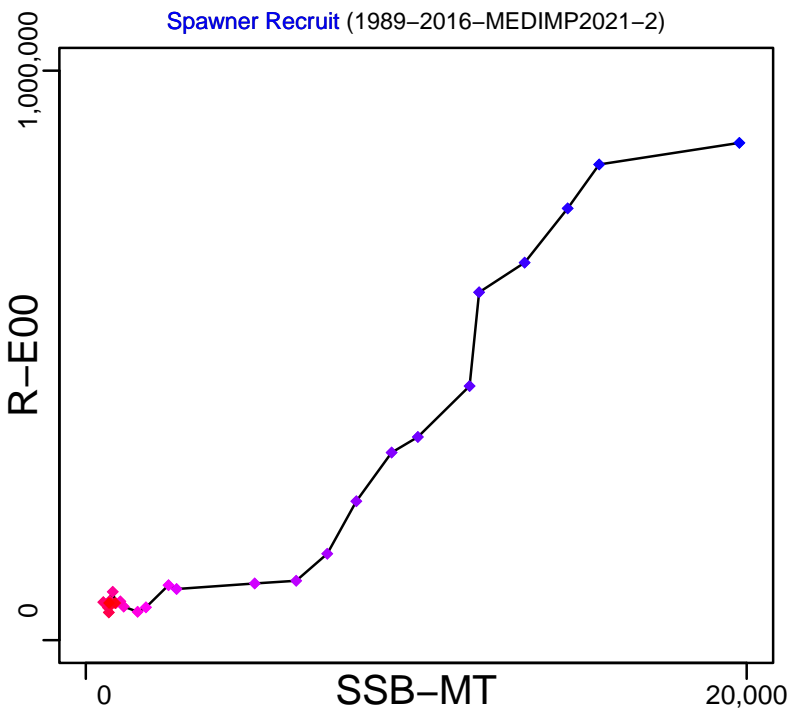
Kobe MSY\*



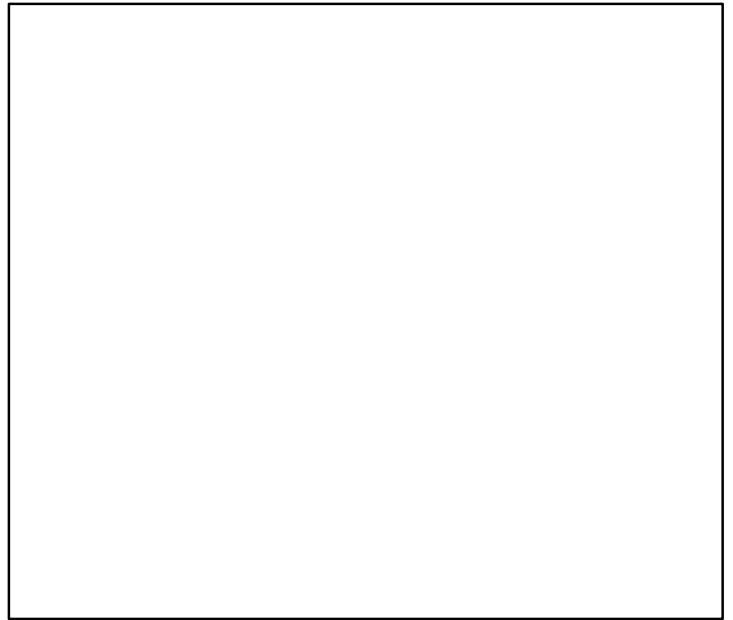
Kobe MGT\*



Spawner Recruit (1989–2016–MEDIMP2021–2)



Production\*



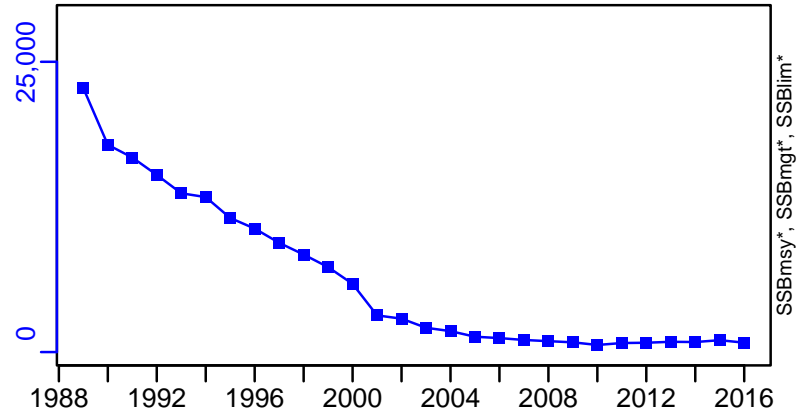
◆ Start Year ◆ End Year \* No Data

# Spiny dogfish Black Sea [SDOGBLKGS29]

TB\*



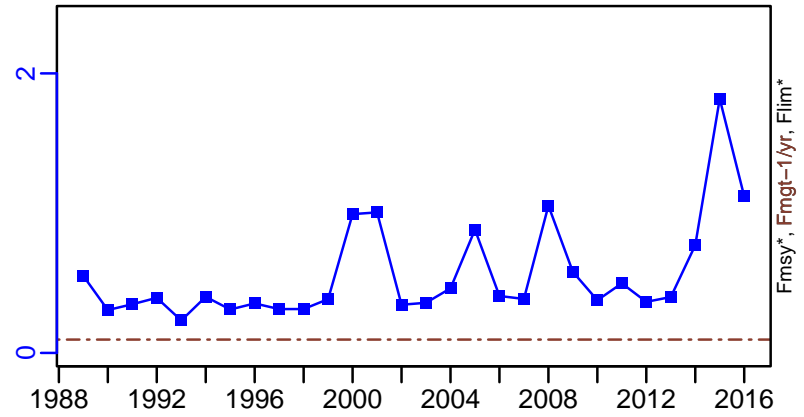
SSB-MT (1989-2016-MEDIMP2021-2)



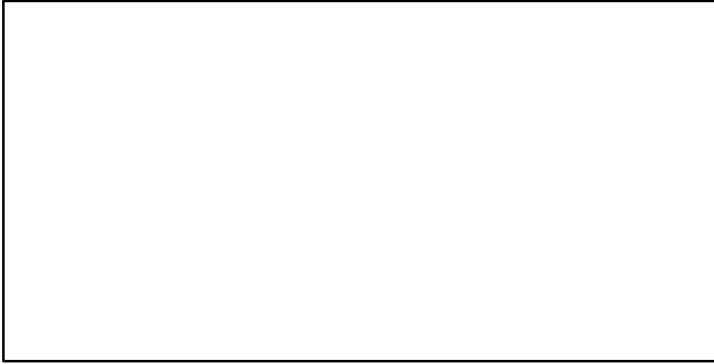
TN \*



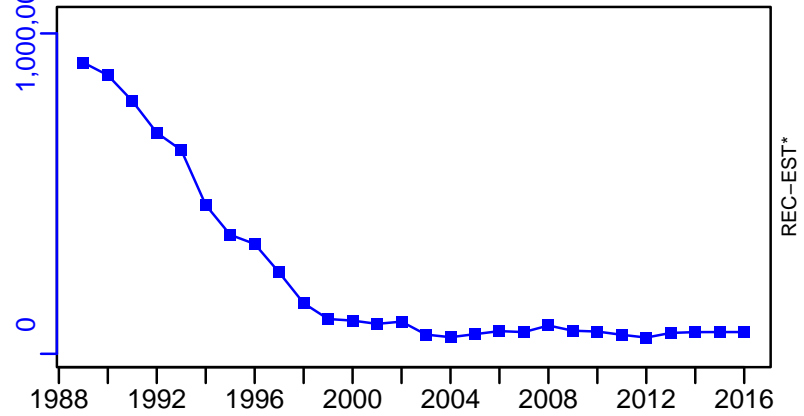
F-1/yr (1989-2016-MEDIMP2021-2)



ER\*

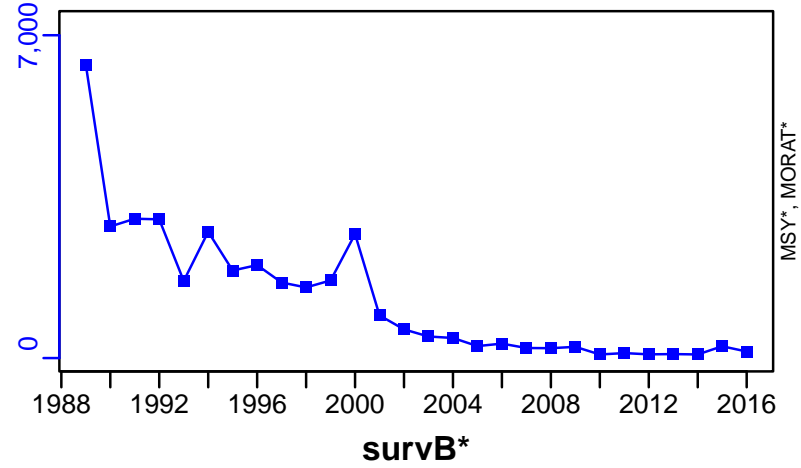


R-E00 (1989-2016-MEDIMP2021-2)



# Spiny dogfish Black Sea [SDOGBLKGSA29]

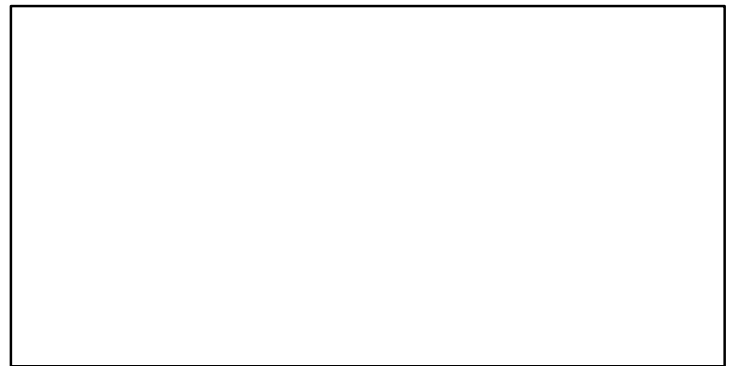
TC-MT, TL\*, RecC\* (1989-2016-MEDIMP2021-2)



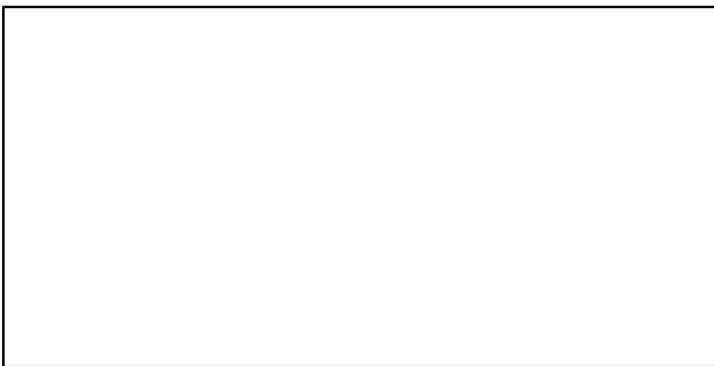
TAC\*, Cpair\*, Cadv\*



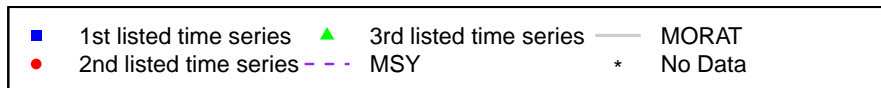
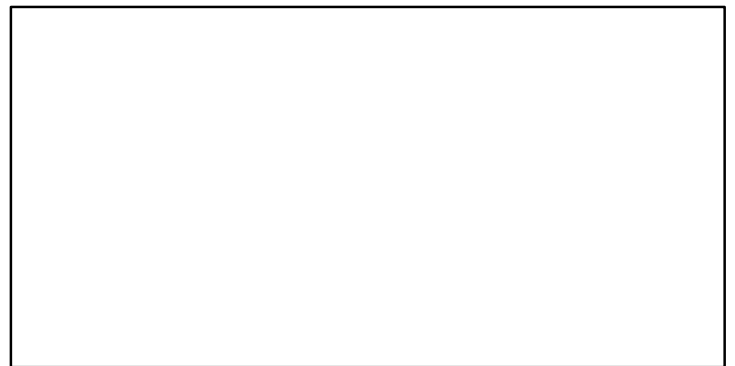
CPUE\*



EFFORT\*



CdivMSY\*



## Sandy ray ICES 6-7 [SDRAYVI-VII]

Metadata	
<b>Scientific Name</b>	Leucoraja circularis
<b>Current Assess ID</b>	WGEF-SDRAYVI-VII-2009-2015-ICESIMP2018
<b>Area</b>	ICES 6-7
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	63		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



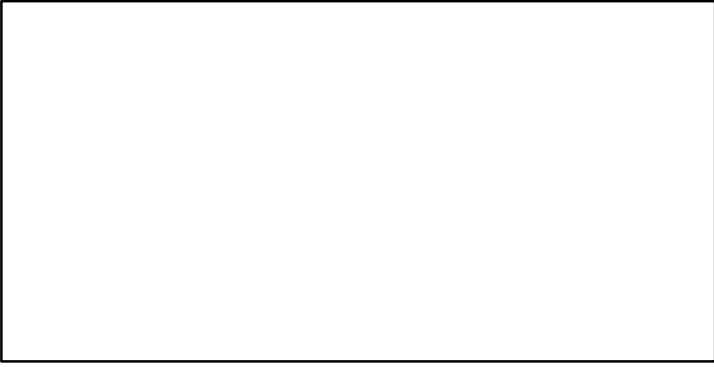
Production\*



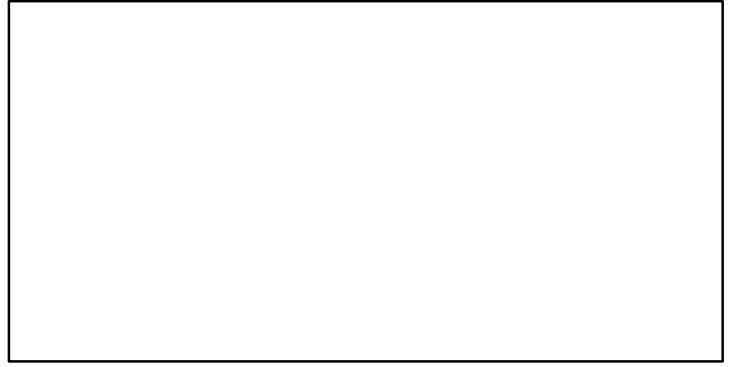
◆ Start Year   ◆ End Year   \* No Data

Sandy ray ICES 6–7 [SDRAYVI–VII]

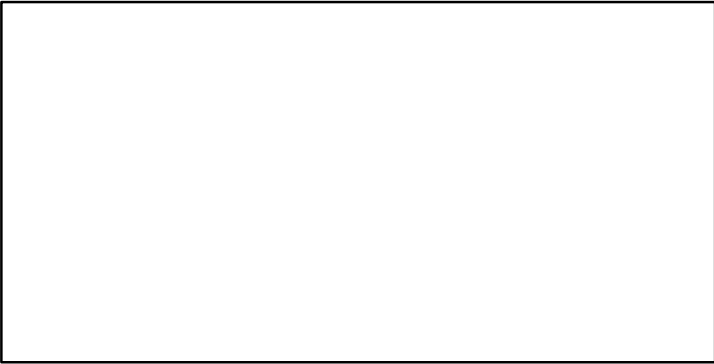
**TB\***



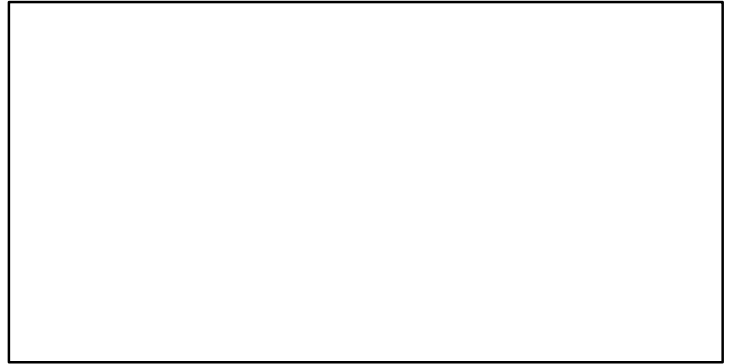
**SSB\***



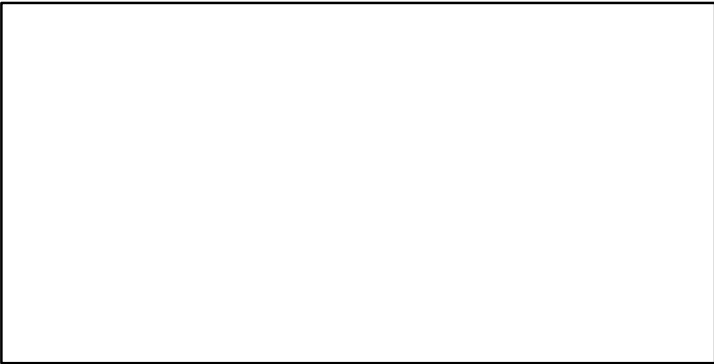
**TN \***



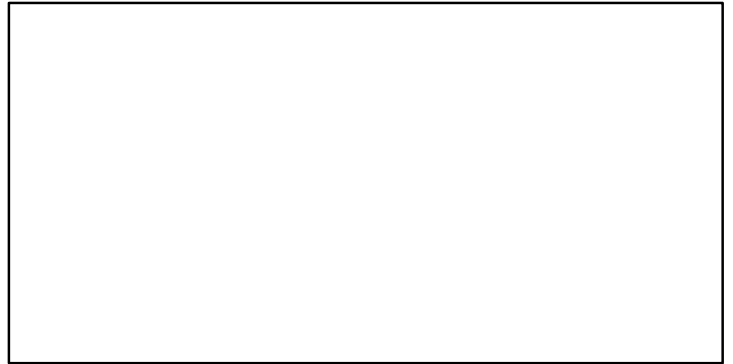
**F\***



**ER\***

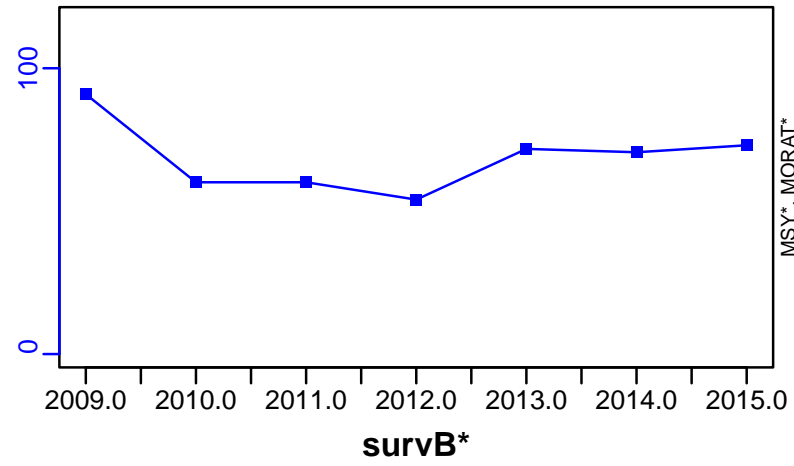


**Recruits\***

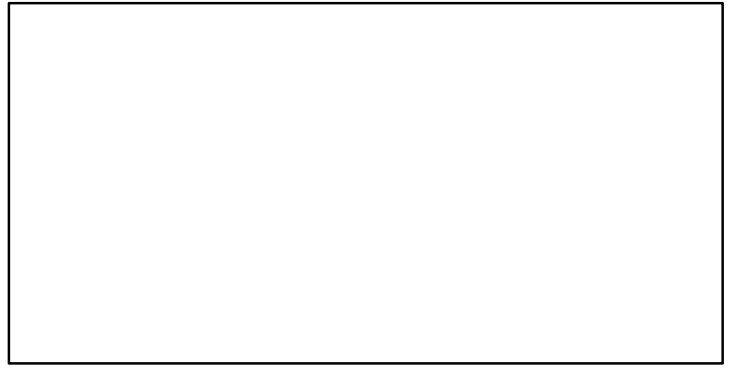


Sandy ray ICES 6–7 [SDRAYVI–VII]

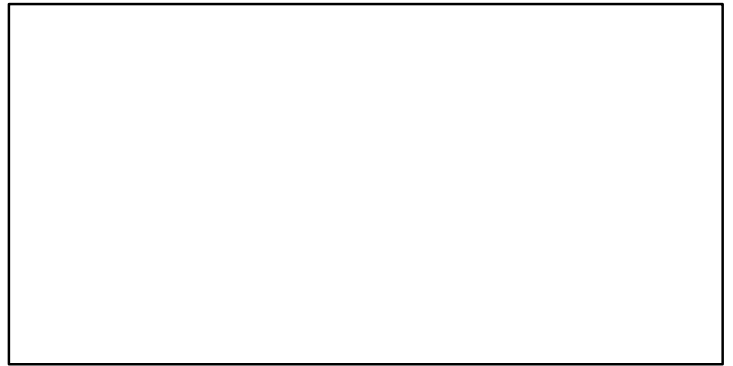
TL–MT, TC\*, RecC\* (2009–2015–ICESIMP2018)



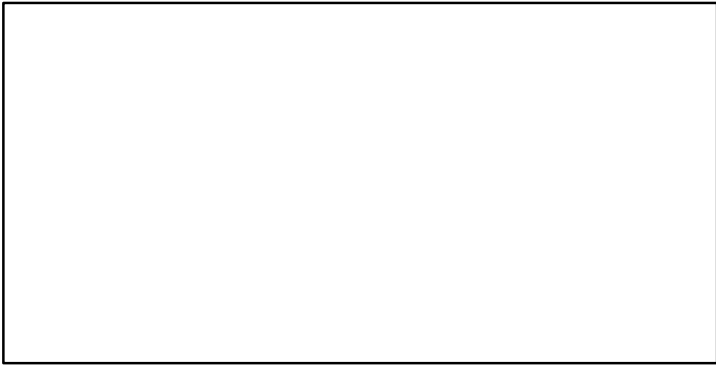
TAC\*, Cpair\*, Cadv\*



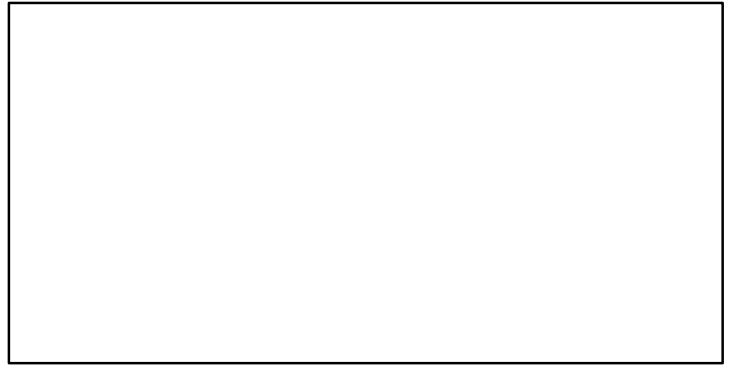
CPUE\*



EFFORT\*



CdivMSY\*



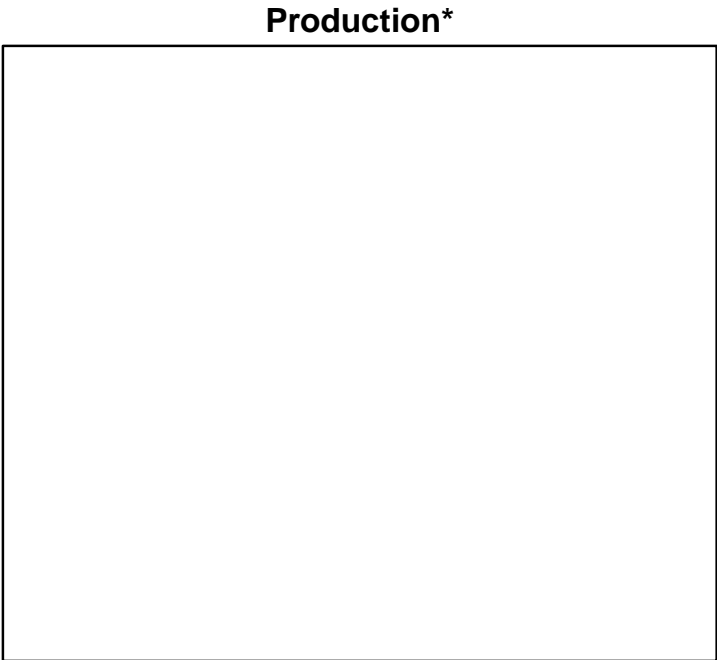
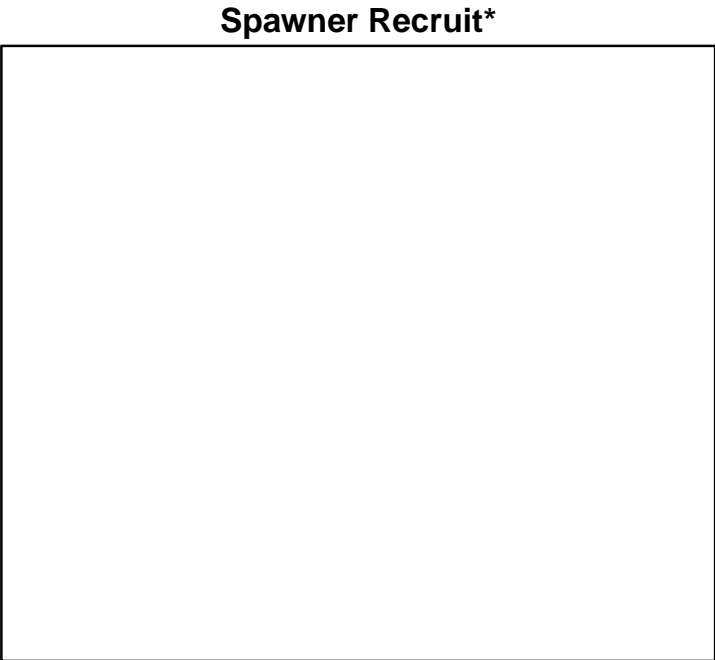
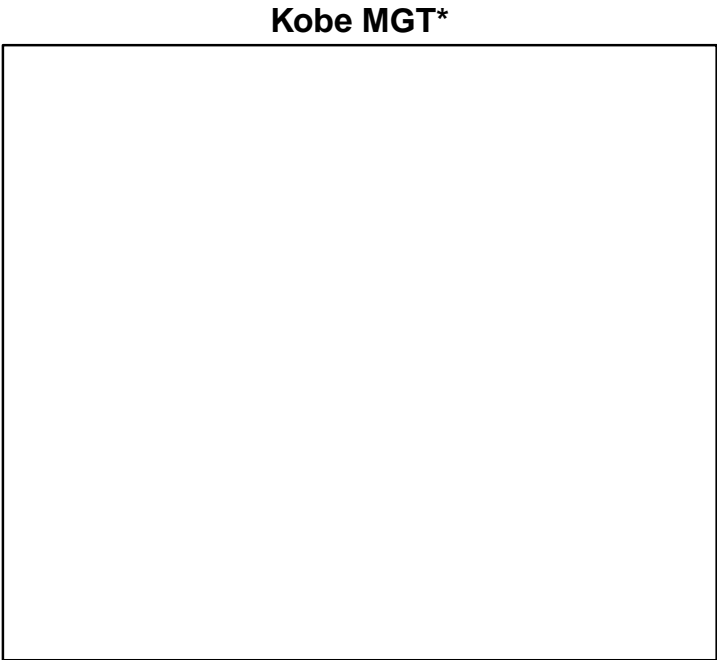
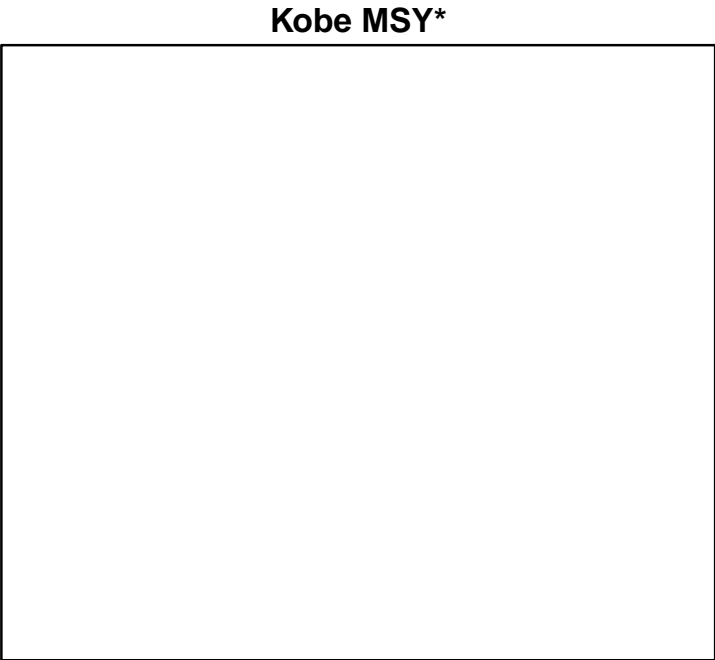
■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - MSY    \* No Data

## Smalleyed ray ICES 7de [SERAYVIIde]

Metadata	
<b>Scientific Name</b>	Raja microocellata
<b>Current Assess ID</b>	WGEF-SERAYVIIde-2009-2015-ICESIMP2018
<b>Area</b>	ICES 7de
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	56		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



◆ Start Year   ◆ End Year   \* No Data

TB\*



SSB\*



TN \*



F\*



ER\*



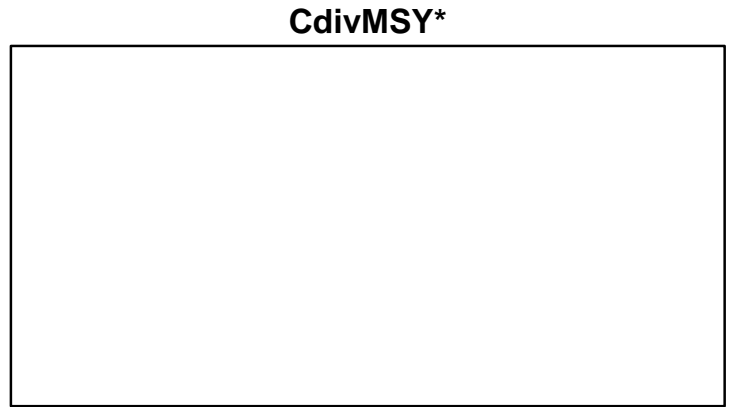
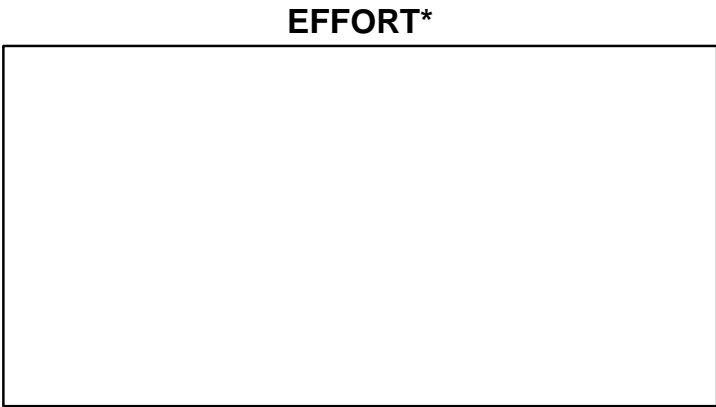
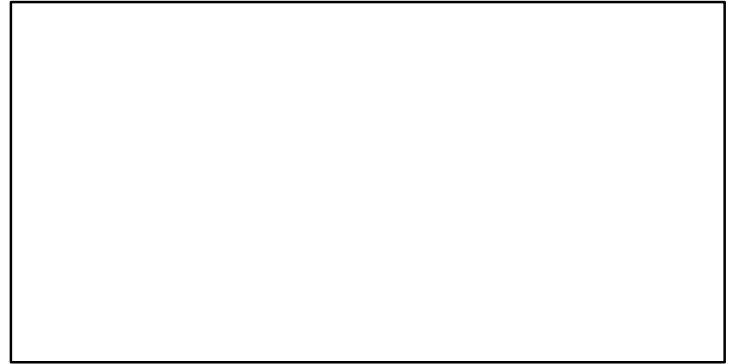
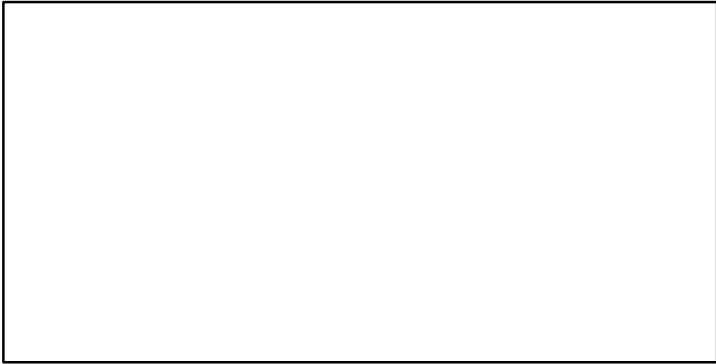
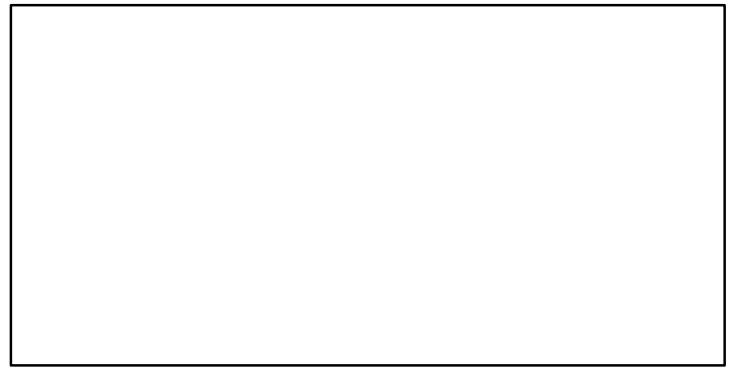
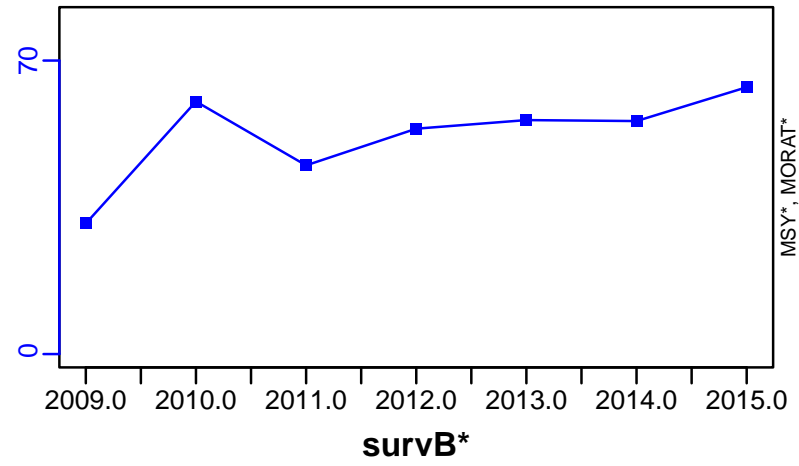
Recruits\*



Smalleyed ray ICES 7de [SERAYVIIde]

TL-MT, TC\*, RecC\* (2009–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



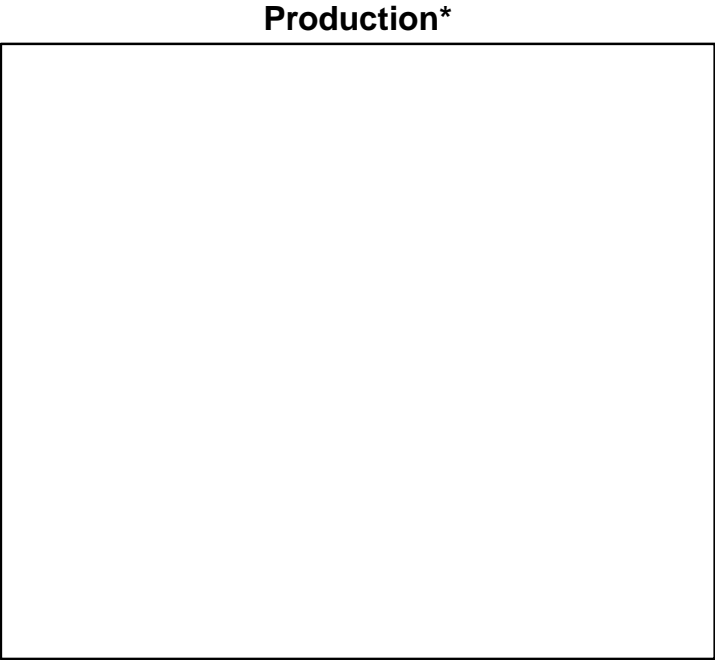
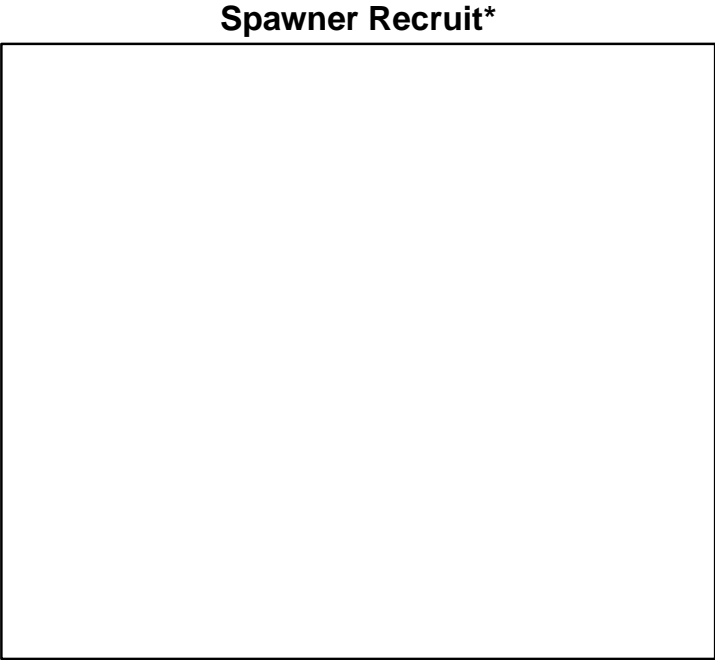
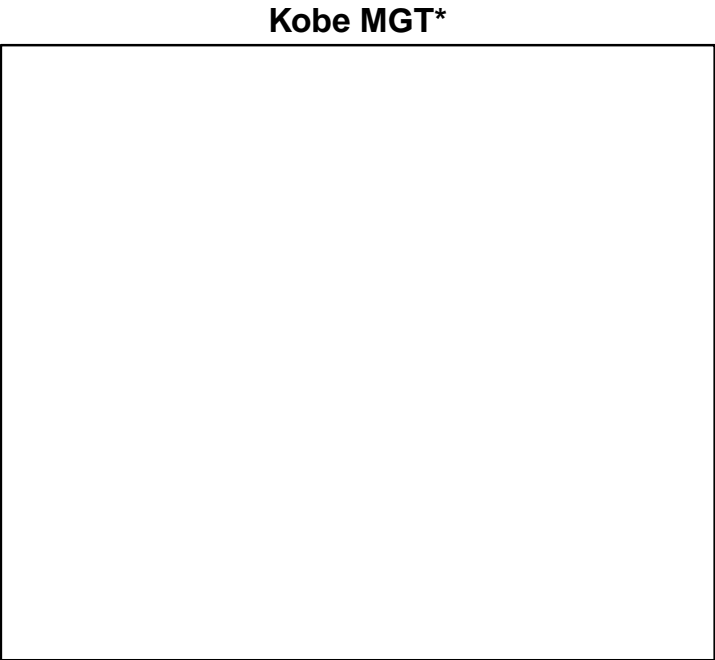
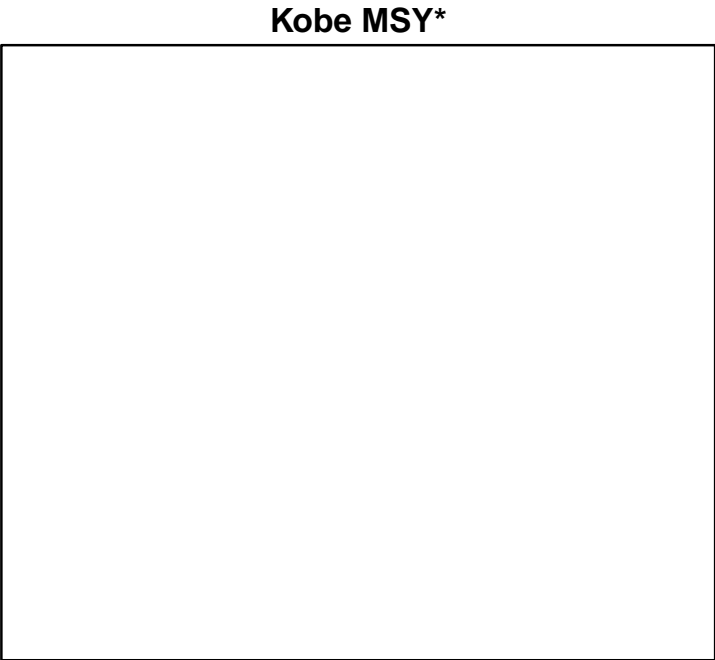
## Smalleyed ray Celtic Sea [SERAYVII-f-g]

Metadata	
<b>Scientific Name</b>	Raja microocellata
<b>Current Assess ID</b>	WGEF-SERAYVII-f-g-1993-2015-ICESIMP2018
<b>Area</b>	Celtic Sea
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	2.03	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	208		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

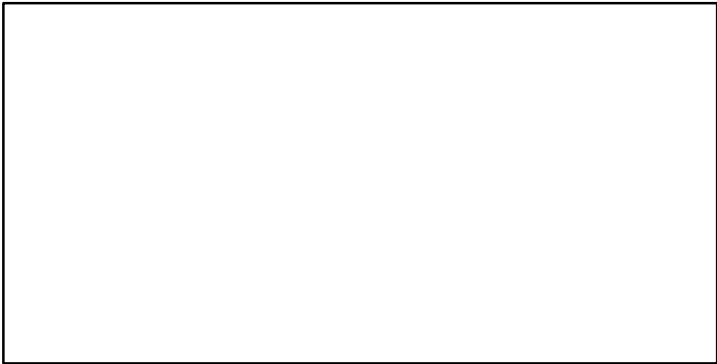




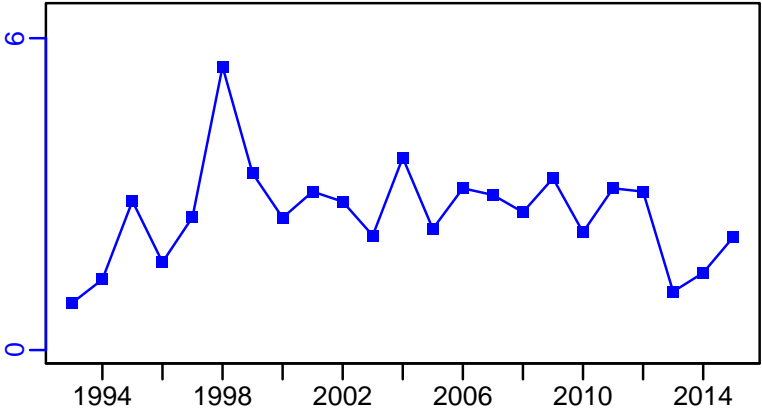
◆ Start Year   ◆ End Year   \* No Data

Smalleyed ray Celtic Sea [SERAYVIIIf-g]

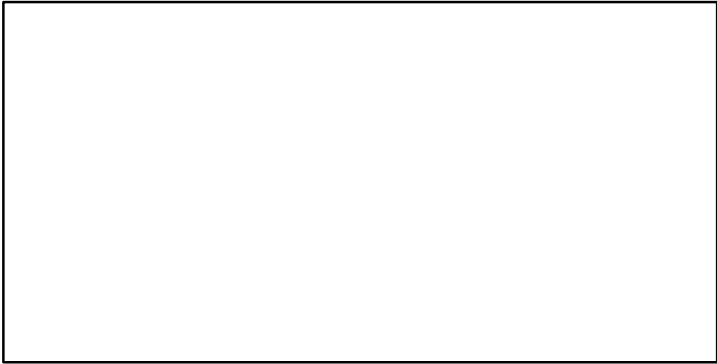
TB\*



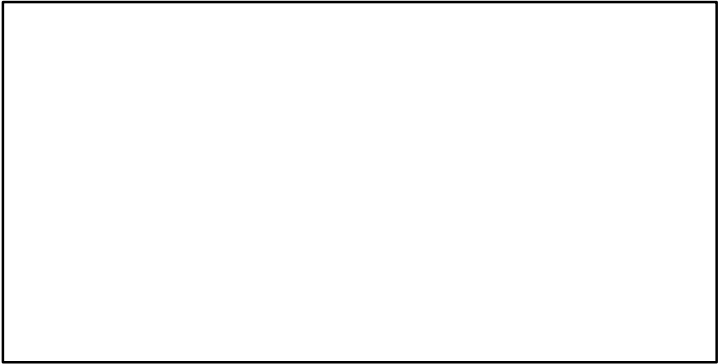
SSB-index (1993–2015–ICESIMP2018)



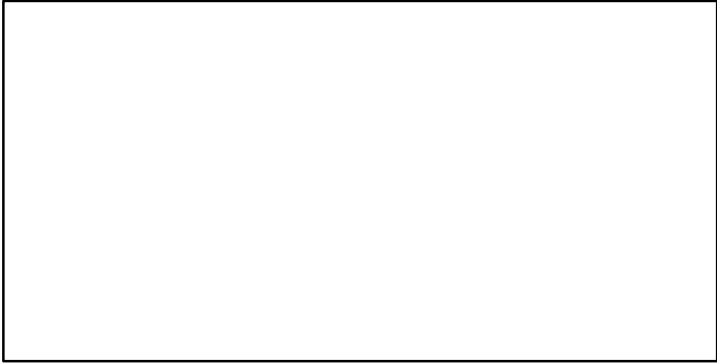
TN \*



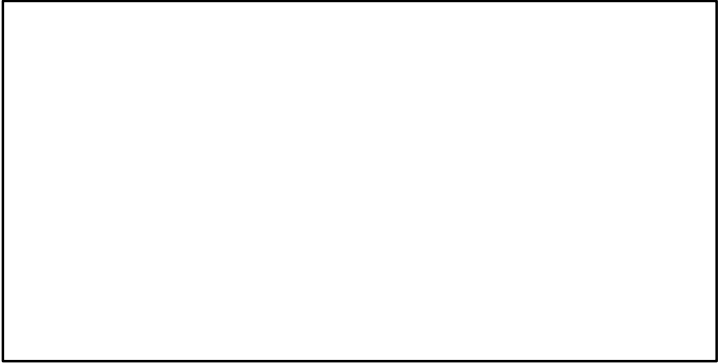
F\*



ER\*



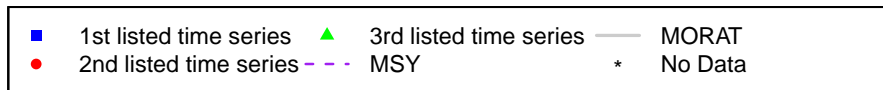
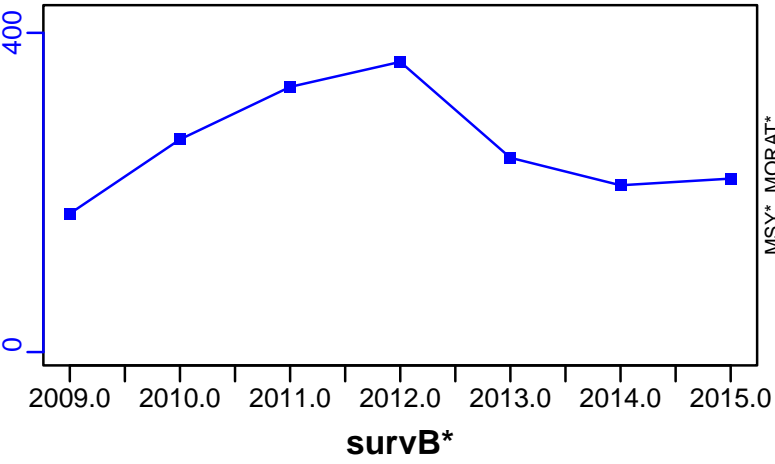
Recruits\*



# Smalleyed ray Celtic Sea [SERAYVIIIf-g]

TL-MT, TC\*, RecC\* (1993-2015-ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Shortfin mako Northern Atlantic [SFMAKONATL]

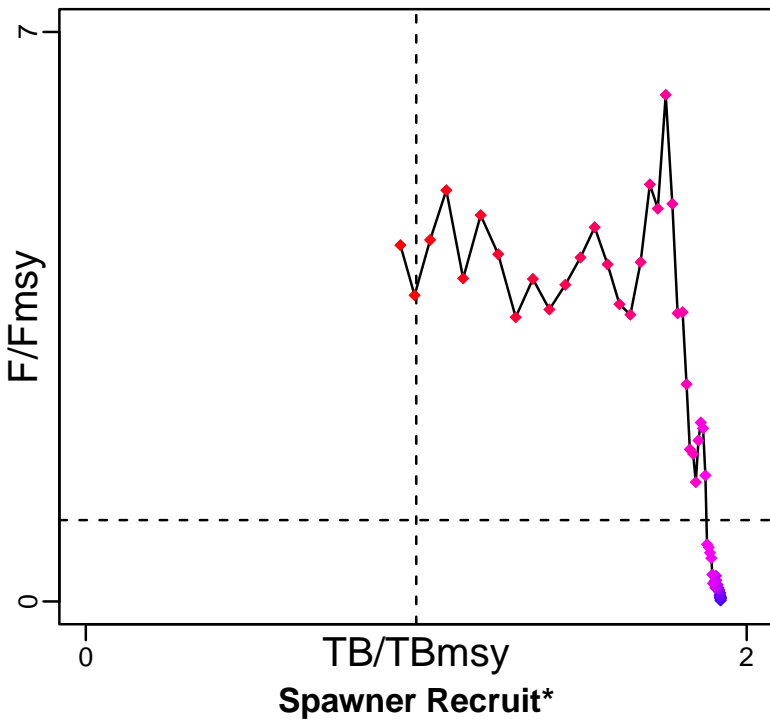
Metadata	
<b>Scientific Name</b>	Isurus oxyrinchus
<b>Current Assess ID</b>	ICCAT-SFMAKONATL-1950-2018-PONS
<b>Area</b>	Northern Atlantic
<b>Management Authority</b>	International Commission for the Conservation of Atlantic Tunas
<b>Assessor</b>	International Commission for the Conservation of Atlantic Tunas
<b>Asmts in RAM</b>	2018

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

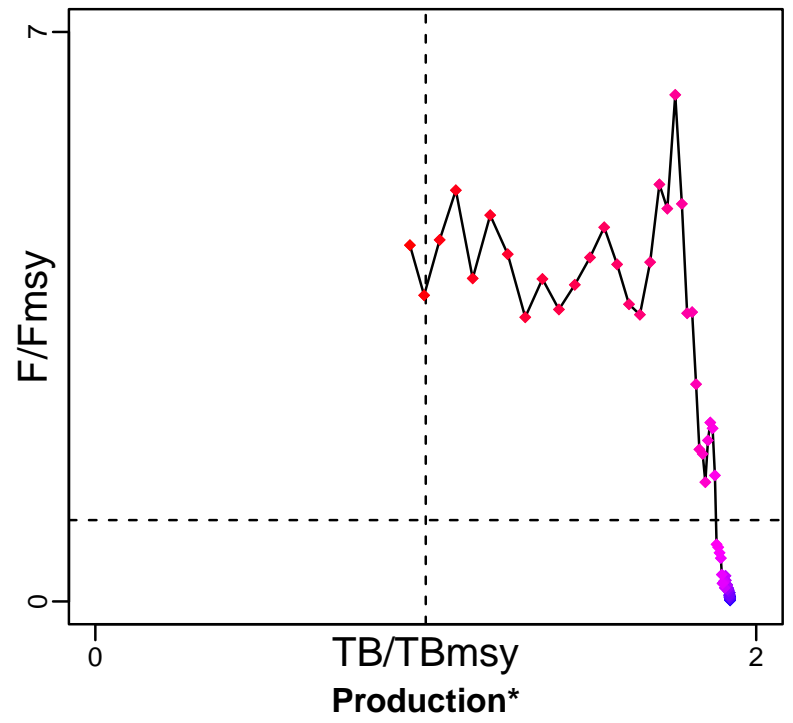
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	2396		
TB/TBmsy	TBdivTBmsy-dimensionless	2018	0.952		
SSB/SSBmsy	-	-	-		
F/Fmsy	FdivFmsy-dimensionless	2018	4.379		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

# Shortfin mako Northern Atlantic [SFMAKONATL]

Kobe MSY<sub>pref</sub> (1950–2018–PONS)



Kobe MGT<sub>pref</sub> (1950–2018–PONS)



◆ Start Year ◆ End Year \* No Data

Shortfin mako Northern Atlantic [SFMAKONATL]

TB\*



SSB\*



TN \*



F\*



ER\*

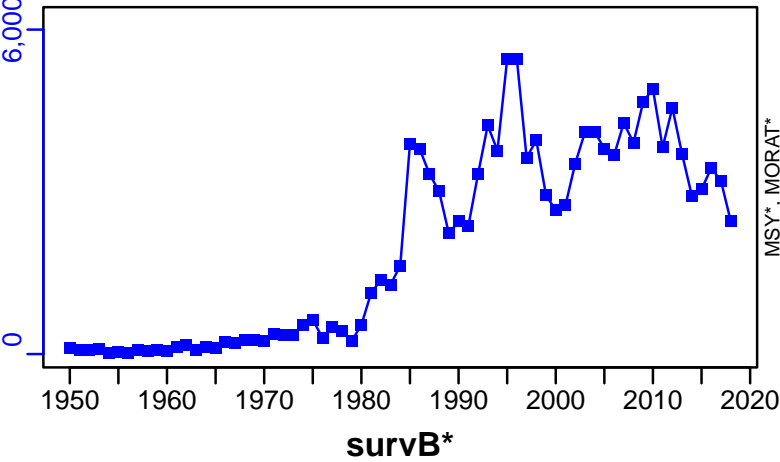


Recruits\*



Shortfin mako Northern Atlantic [SFMAKONATL]

TL–MT, TC\*, RecC\* (1950–2018–PONS)



TAC\*, Cpair\*, Cadv\*



CPUE\*



EFFORT\*



CdivMSY\*



## Shortfin mako North Pacific [SFMAKONPAC]

Metadata	
<b>Scientific Name</b>	Isurus oxyrinchus
<b>Current Assess ID</b>	SPC-SFMAKONPAC-1975-2016-SMITH
<b>Area</b>	North Pacific
<b>Management Authority</b>	Western and Central Pacific Fisheries Commission
<b>Assessor</b>	Secretariat of the Pacific Community
<b>Asmts in RAM</b>	2007, 2016

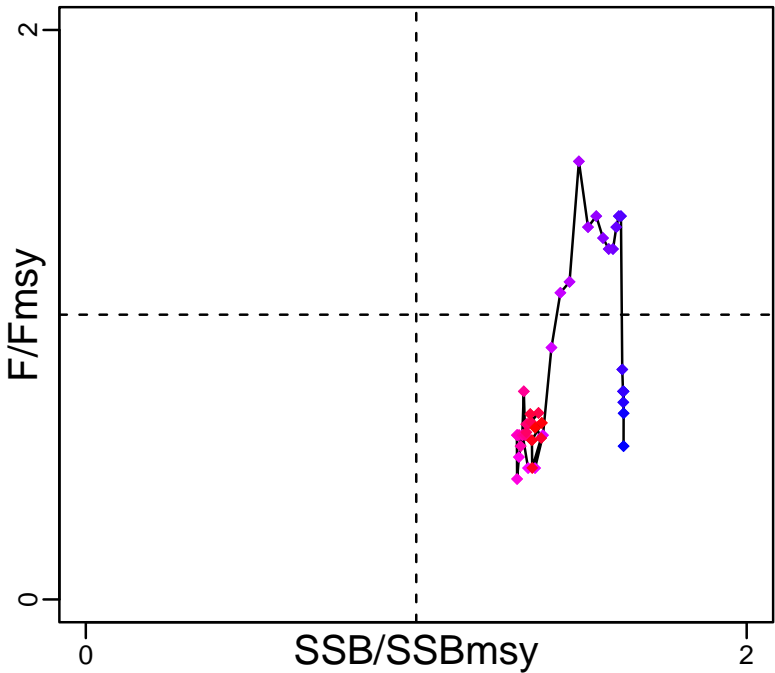
Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-E00	2007	633,700
<b>Fmsy</b>	Fmsy-extr-1/yr	2016	0.263
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2016	3127
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSB-E00	2016	859,000	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2007	1,020,600	-	0
<b>F</b>	F-1/yr	2016	0.145	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	TC-MT	2016	2360		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSBdivSSBmsy-dimensionless	2016	1.36		
<b>F/Fmsy</b>	FdivFmsy-dimensionless	2016	0.603		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

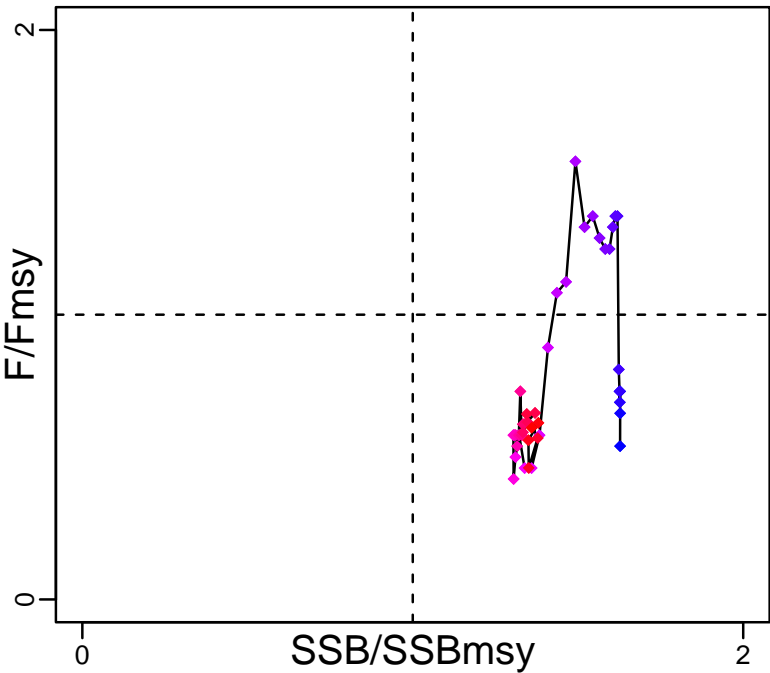


Shortfin mako North Pacific [SFMAKONPAC]

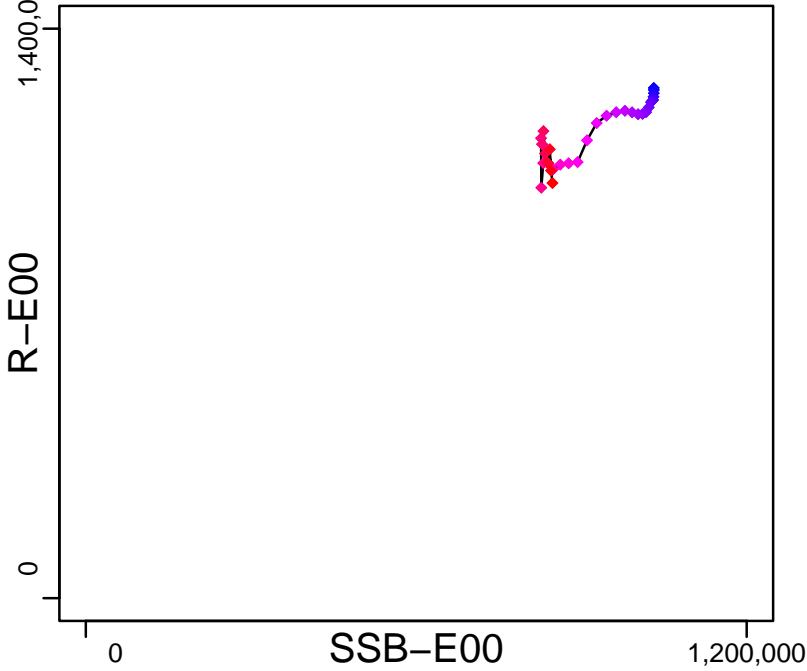
Kobe MSYpref (1975–2016–SMITH)



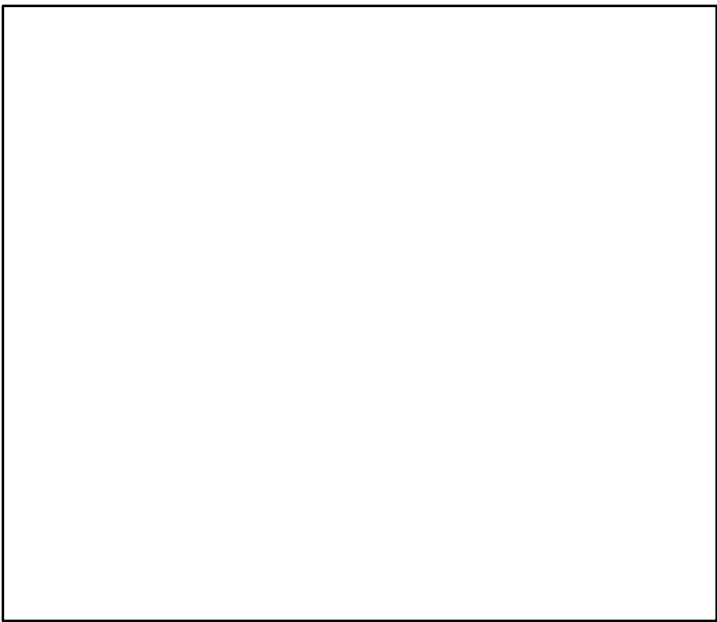
Kobe MGTpref (1975–2016–SMITH)



Spawner Recruit (1975–2007–SISIMP2021)



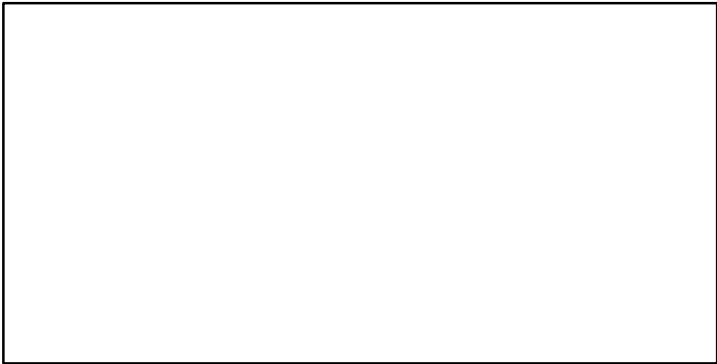
Production\*



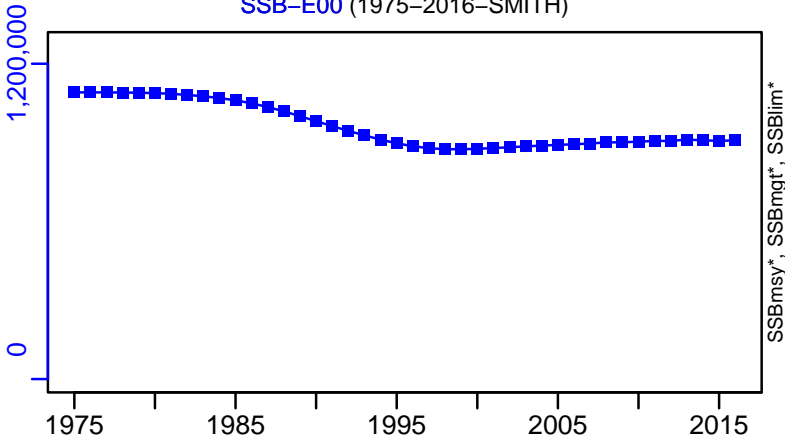
◆ Start Year ◆ End Year \* No Data

Shortfin mako North Pacific [SFMAKONPAC]

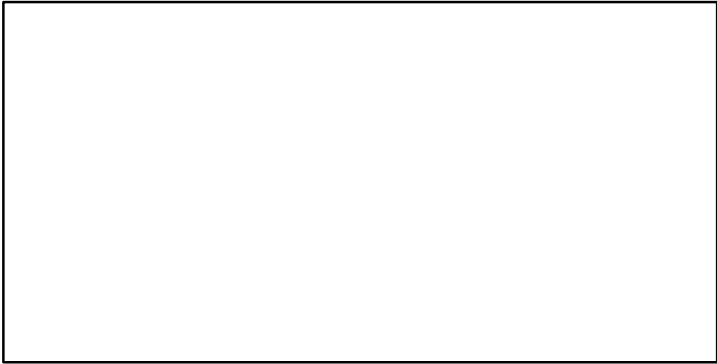
TB\*



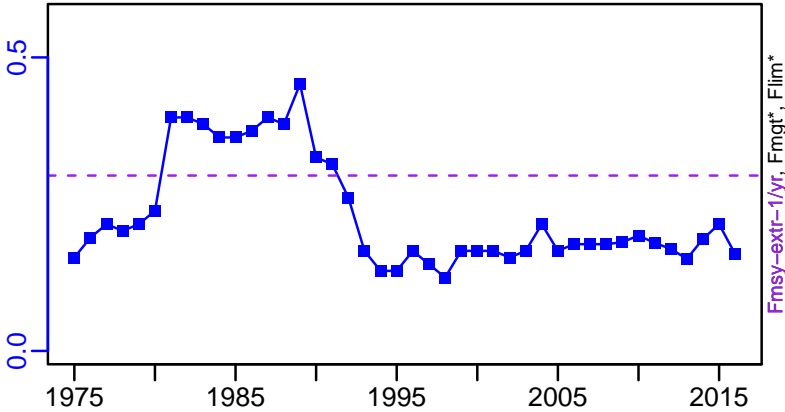
SSB-E00 (1975–2016–SMITH)



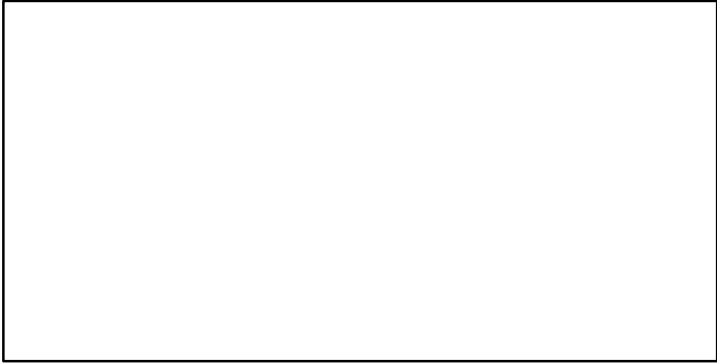
TN \*



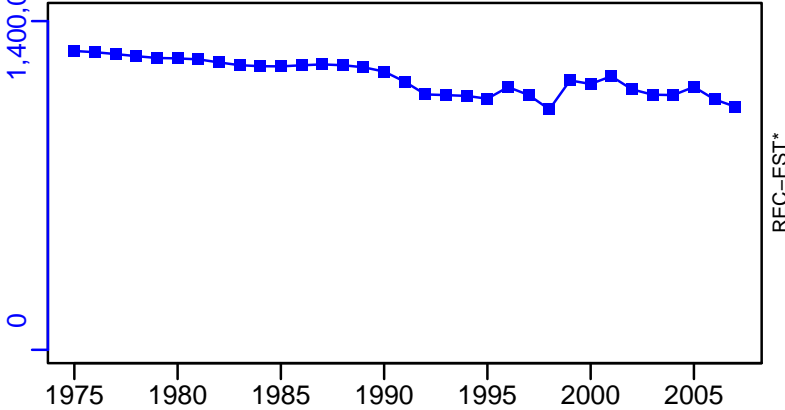
F-1/yr (1975–2016–SMITH)



ER\*

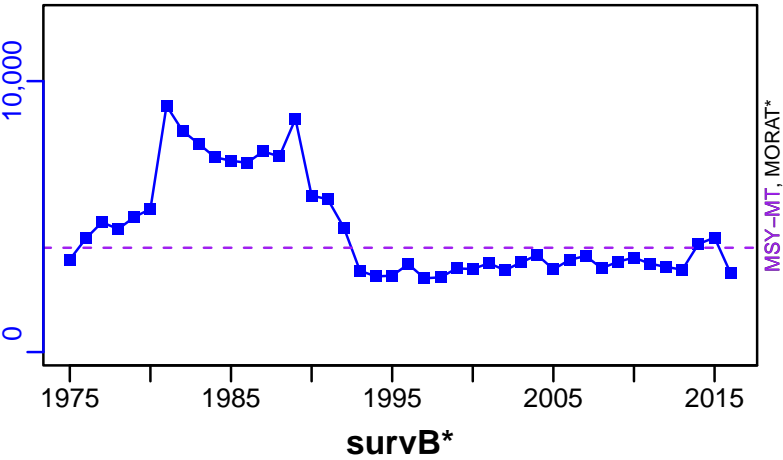


R-E00 (1975–2007–SISIMP2021)



Shortfin mako North Pacific [SFMAKONPAC]

TC-MT, TL\*, RecC\* (1975-2016-SMITH)



TAC\*, Cpair\*, Cadv\*



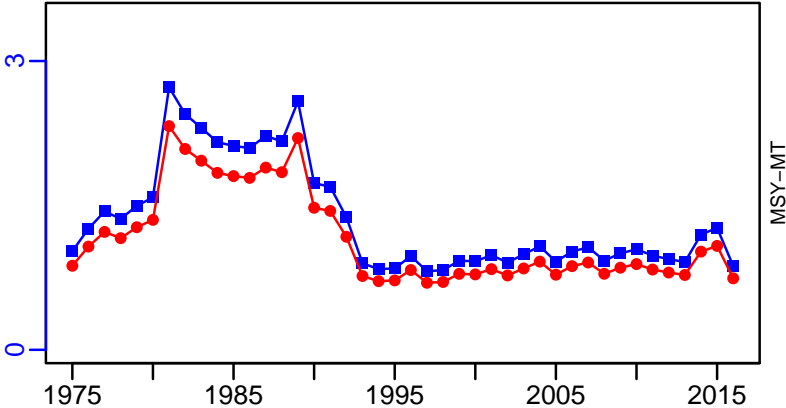
CPUE\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1975-2016-SMITH)



## Shortfin mako Northwest Pacific Ocean [SFMAKONWPAC]

Metadata	
<b>Scientific Name</b>	Isurus oxyrinchus
<b>Current Assess ID</b>	IMARM-SFMAKONWPAC-1990-2003-FAUCONNET
<b>Area</b>	Nothwest Pacific Ocean
<b>Management Authority</b>	Unknown management body
<b>Assessor</b>	Institute of Marine Affairs and Resource Management - National Taiwan Ocean University, 2 Pei-Ning Road, Keelung 20224, Taiwan
<b>Asmts in RAM</b>	2003

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	F-female-1/yr	2003	0.09	-	0 to 22
ER	-	-	-	-	-
TC	TC-E00	2003	13,000		
TL	TL-MT	2003	754		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



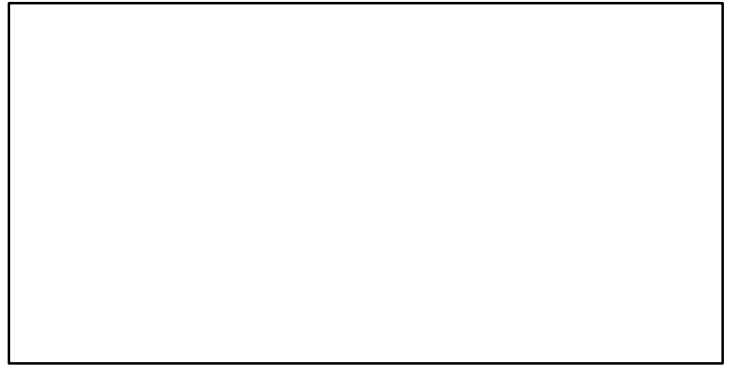
◆ Start Year   ◆ End Year   \* No Data

# Shortfin mako Northwest Pacific Ocean [SFMAKONWPAC]

TB\*



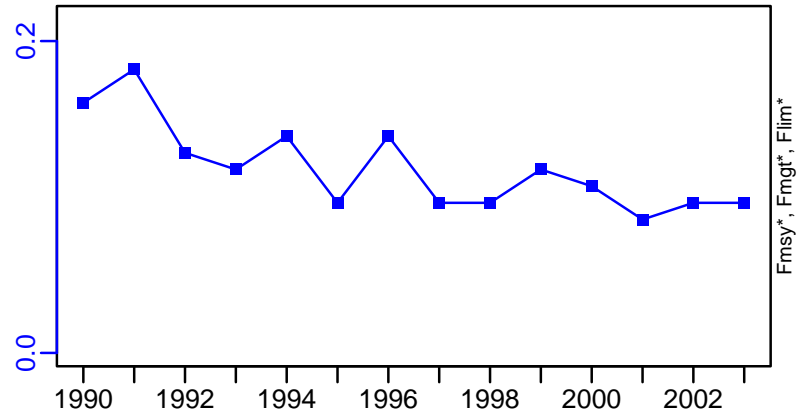
SSB\*



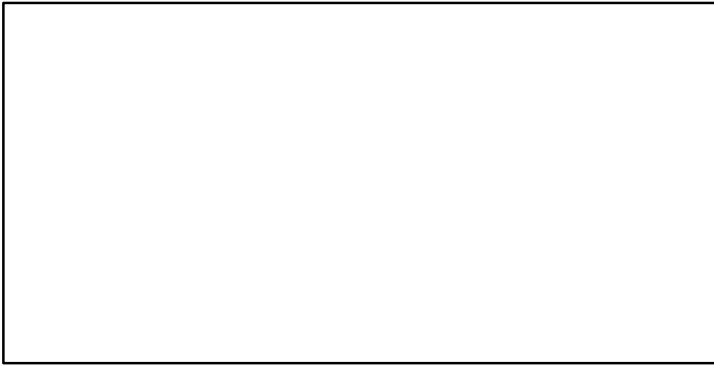
TN \*



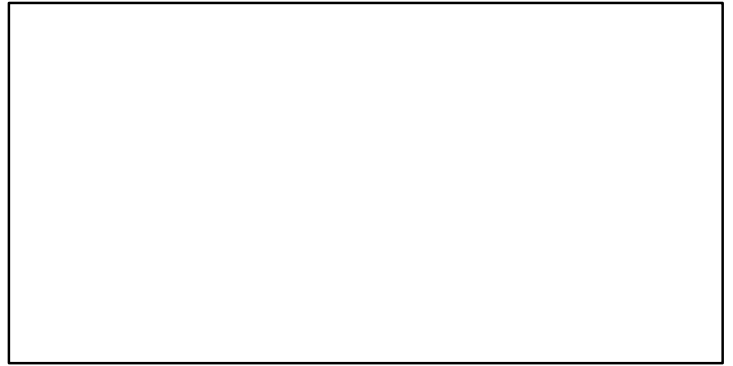
F-female-1/yr (1990–2003–FAUCONNET)



ER\*



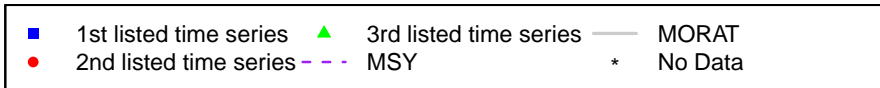
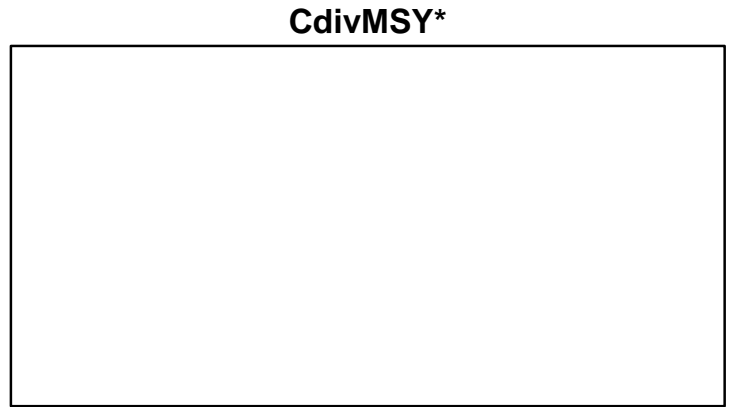
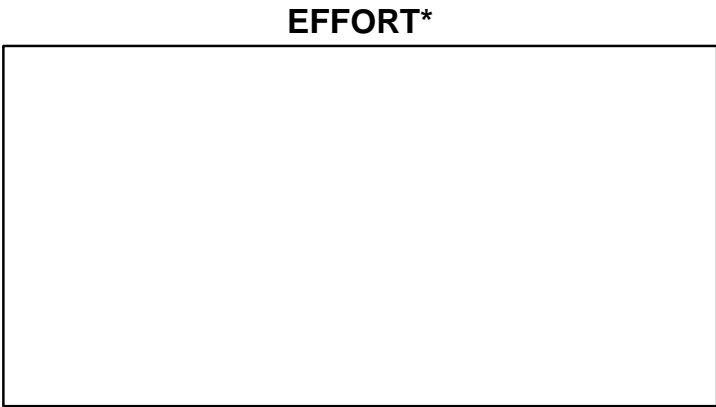
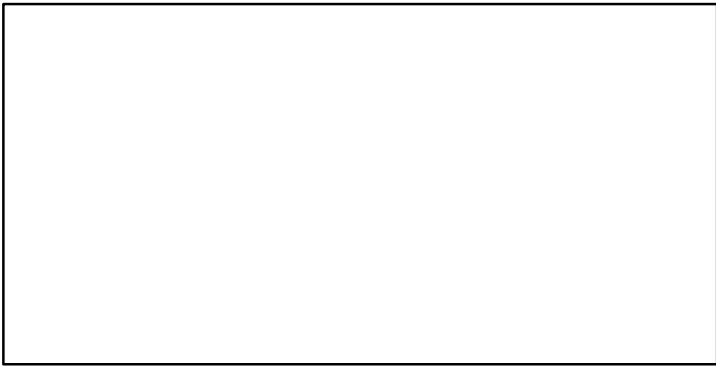
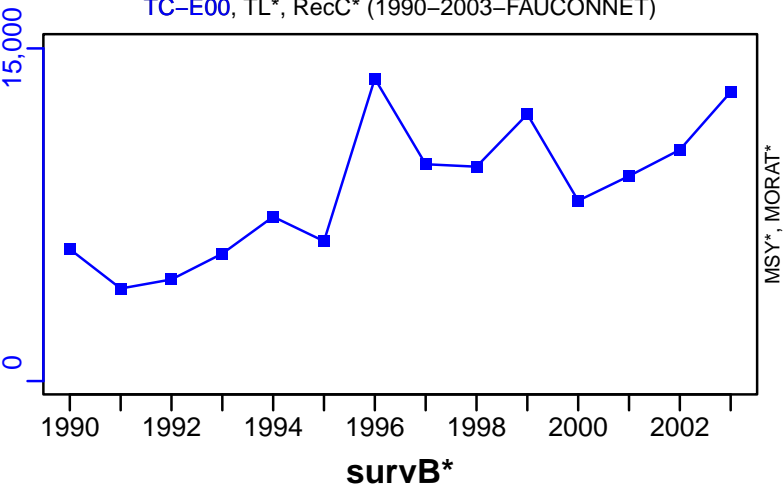
Recruits\*



# Shortfin mako Northwest Pacific Ocean [SFMAKONWPAC]

TC-E00, TL\*, RecC\* (1990–2003–FAUCONNET)

TAC\*, Cpair\*, Cadv\*



## Shortfin mako South Atlantic [SFMAKOSATL]

Metadata	
<b>Scientific Name</b>	Isurus oxyrinchus
<b>Current Assess ID</b>	ICCAT-SFMAKOSATL-1971-2018-PONS
<b>Area</b>	South Atlantic
<b>Management Authority</b>	International Commission for the Conservation of Atlantic Tunas
<b>Assessor</b>	International Commission for the Conservation of Atlantic Tunas
<b>Asmts in RAM</b>	2018

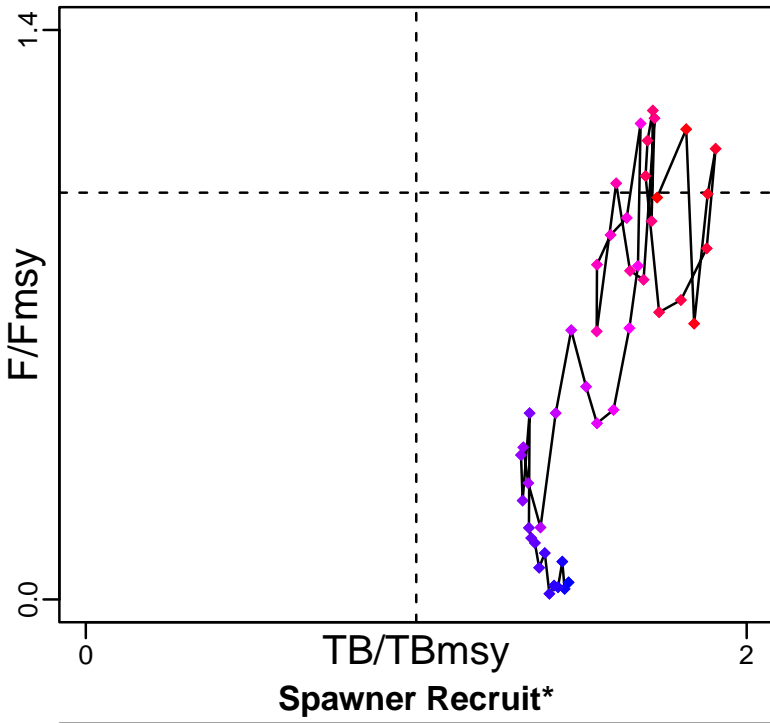
Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	3158		
TB/TBmsy	TBdivTBmsy-dimensionless	2018	1.729		
SSB/SSBmsy	-	-	-		
F/Fmsy	FdivFmsy-dimensionless	2018	0.988		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

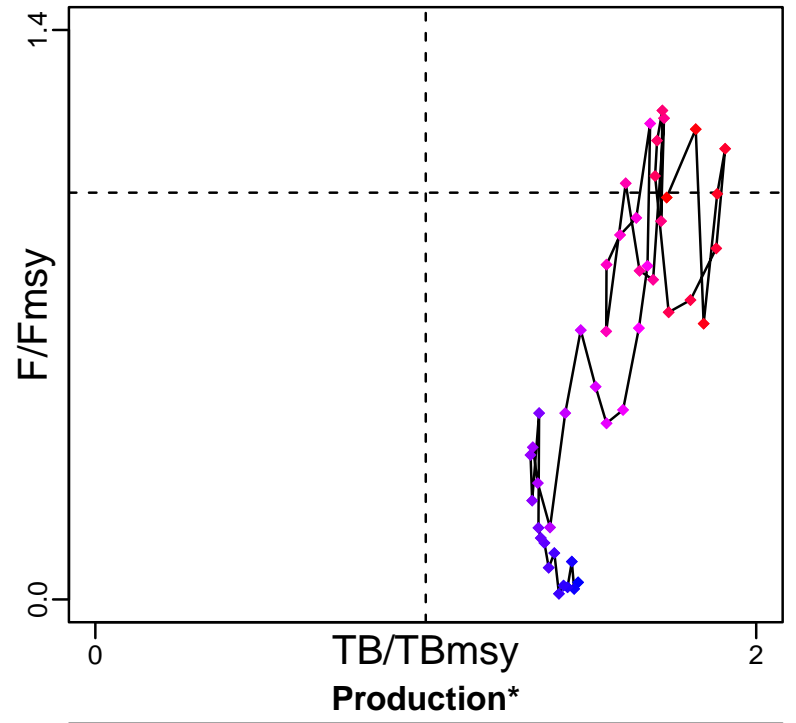


# Shortfin mako South Atlantic [SFMAKOSATL]

Kobe MSYpref (1971–2018–PONS)



Kobe MGTpref (1971–2018–PONS)



◆ Start Year ◆ End Year \* No Data

Shortfin mako South Atlantic [SFMAKOSATL]

TB\*



SSB\*



TN \*



F\*



ER\*



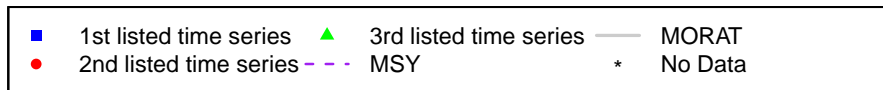
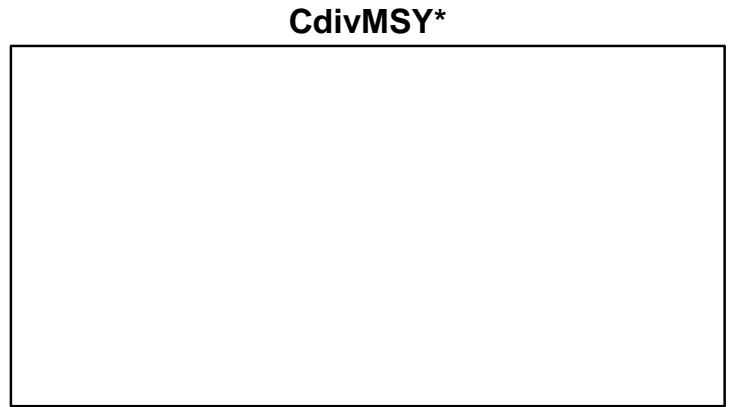
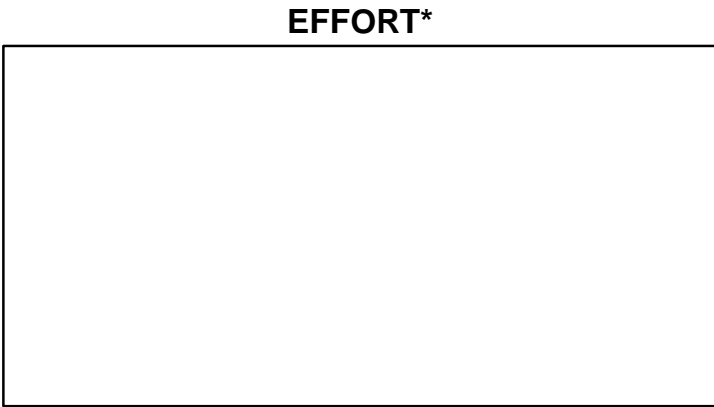
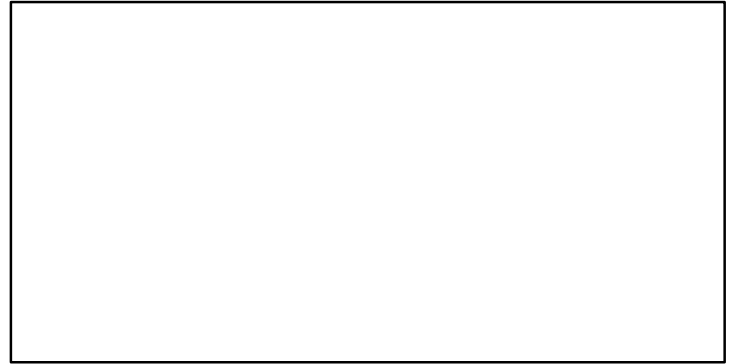
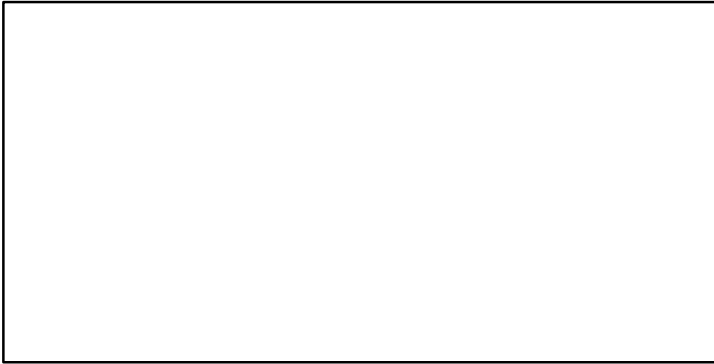
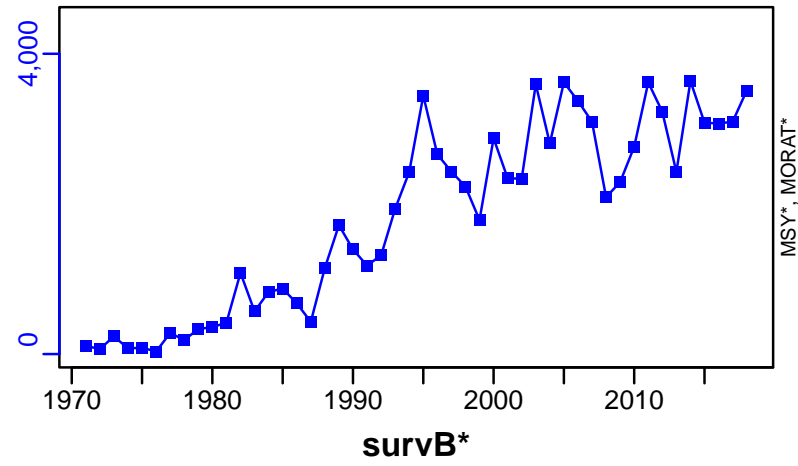
Recruits\*



# Shortfin mako South Atlantic [SFMAKOSATL]

TL-MT, TC\*, RecC\* (1971-2018-PONS)

TAC\*, Cpair\*, Cadv\*



## Shagreen ray ICES 6-7 [SGRAYVI-VII]

Metadata	
<b>Scientific Name</b>	Leucoraja fullonica
<b>Current Assess ID</b>	WGEF-SGRAYVI-VII-2009-2015-ICESIMP2018
<b>Area</b>	ICES 6-7
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	196		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

TB\*



SSB\*



TN \*



F\*



ER\*



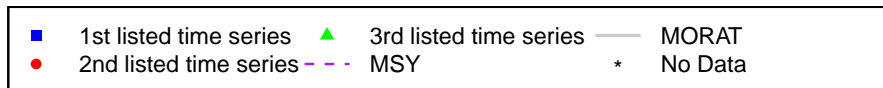
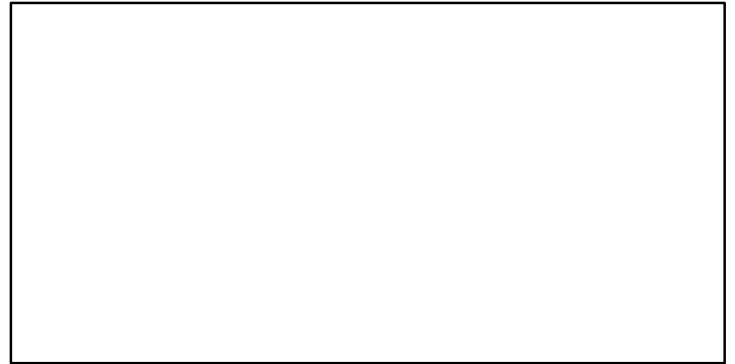
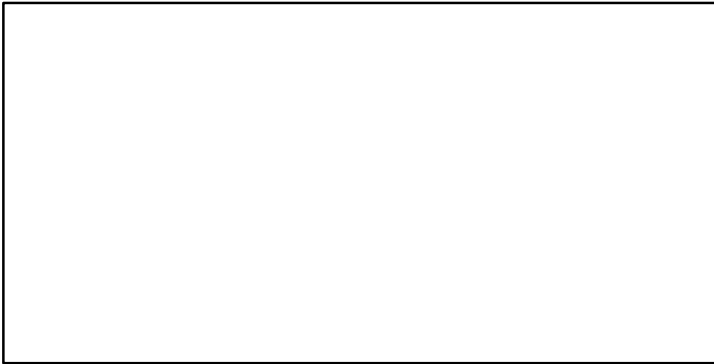
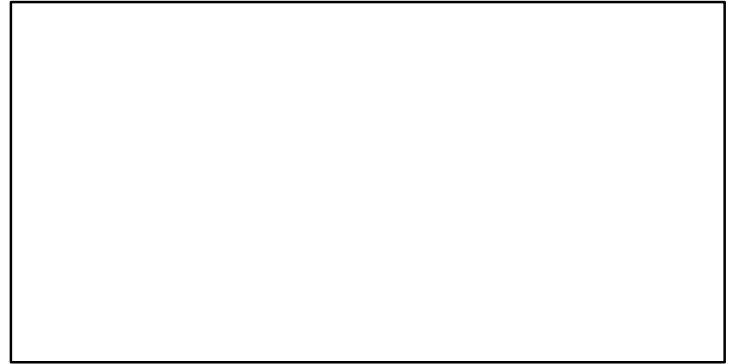
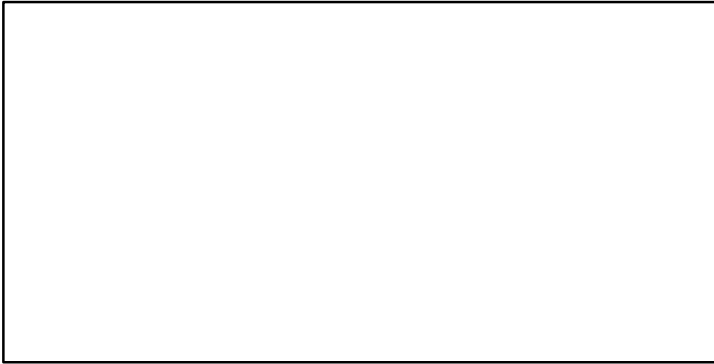
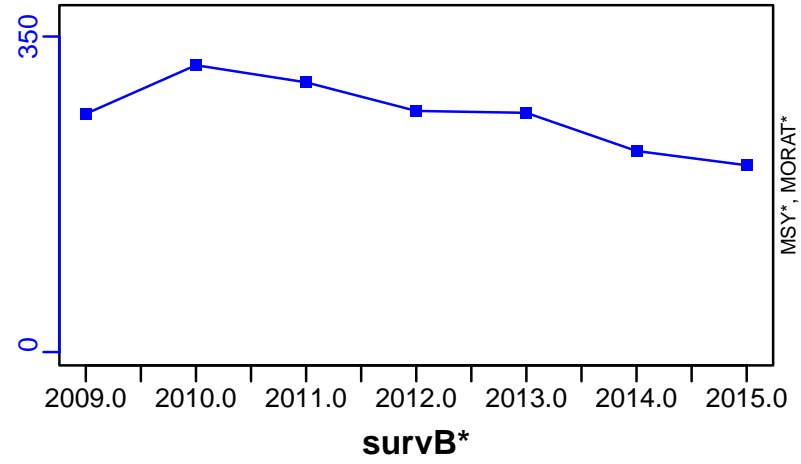
Recruits\*



Shagreen ray ICES 6–7 [SGRAYVI–VII]

TL–MT, TC\*, RecC\* (2009–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Smooth hound Northeast Atlantic [SHSPNEATL]

Metadata	
<b>Scientific Name</b>	Mustelus spp
<b>Current Assess ID</b>	WGEF-SHSPNEATL-1997-2018-ICESIMP2021
<b>Area</b>	Northeast Atlantic
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018, 2016

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	2.33	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	3684		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



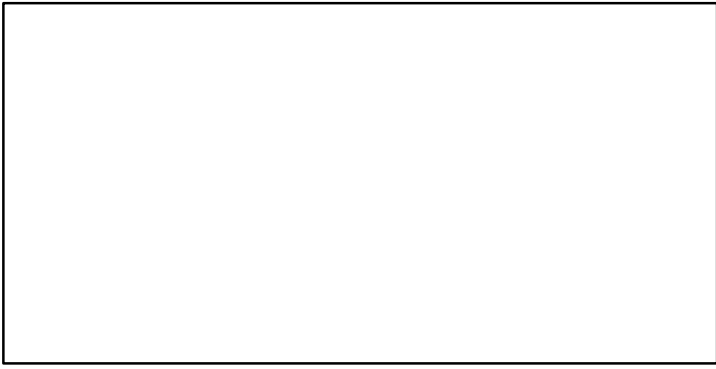
Production\*



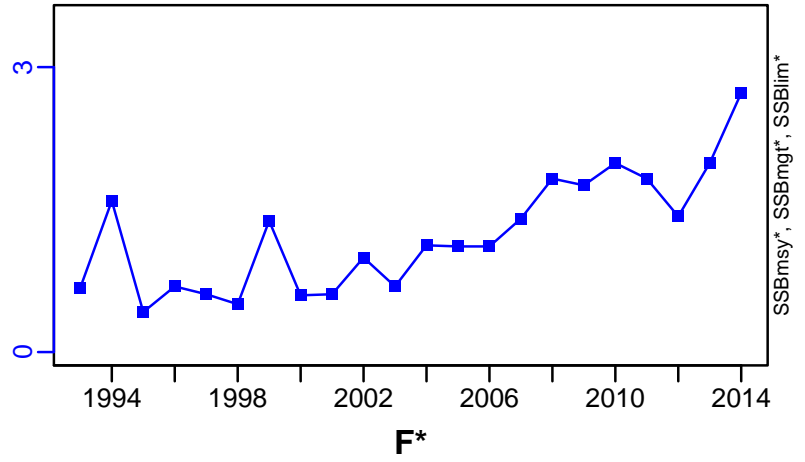
◆ Start Year   ◆ End Year   \* No Data

# Smooth hound Northeast Atlantic [SHSPNEATL]

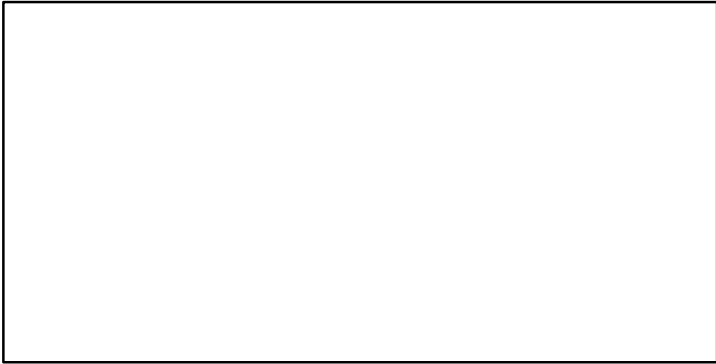
TB\*



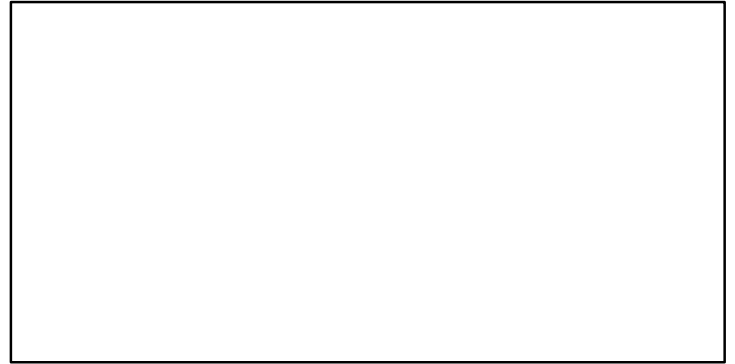
SSB-index (1993–2014–ICESIMP2018)



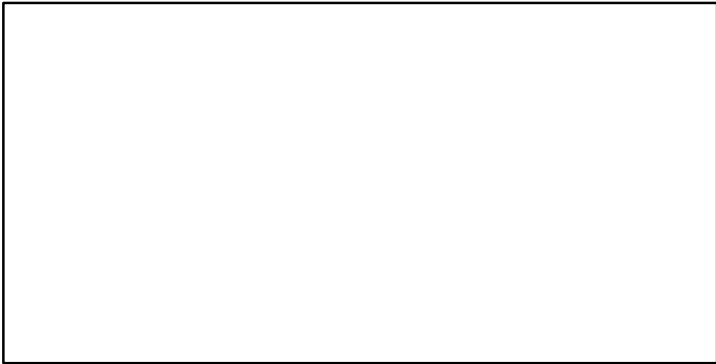
TN \*



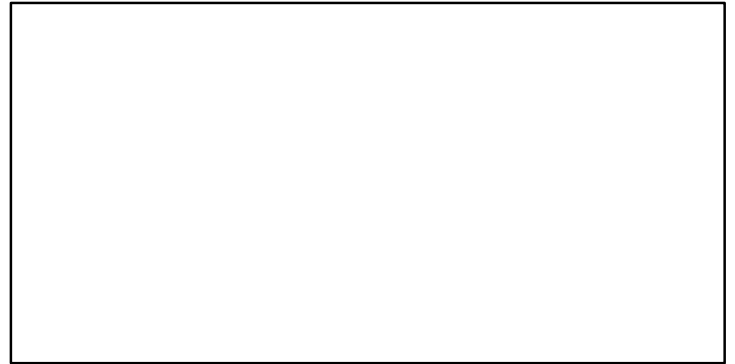
F\*



ER\*

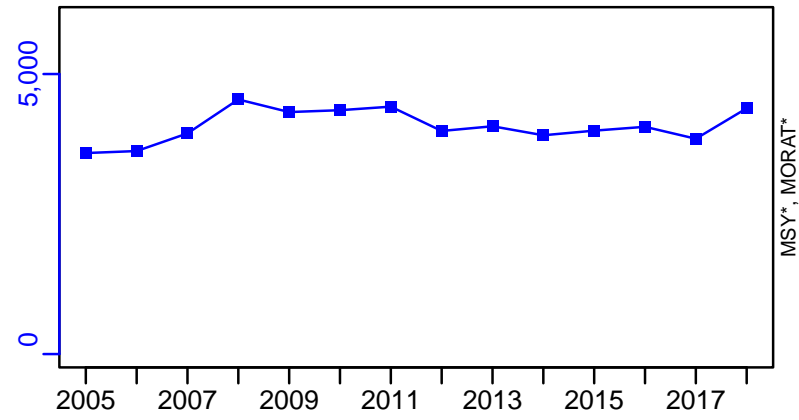


Recruits\*



# Smooth hound Northeast Atlantic [SHSPNEATL]

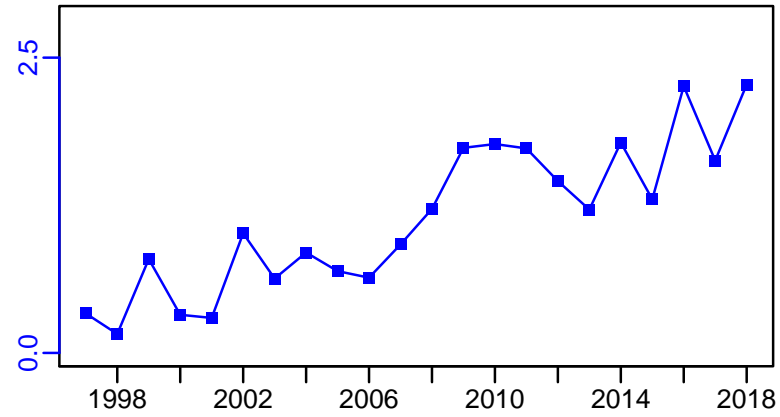
TL-MT, TC\*, RecC\* (1997–2018–ICESIMP2021)



TAC\*, Cpair\*, Cadv\*



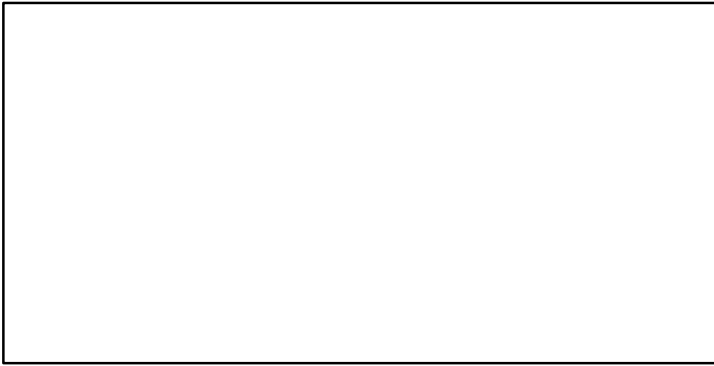
survB-index (1997–2018–ICESIMP2021)



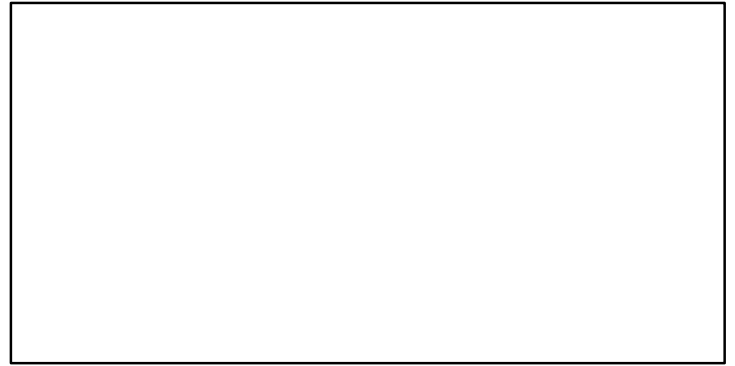
CPUE\*



EFFORT\*



CdivMSY\*



## Silky shark Central Western Pacific Ocean [SLKSHARCWPAC]

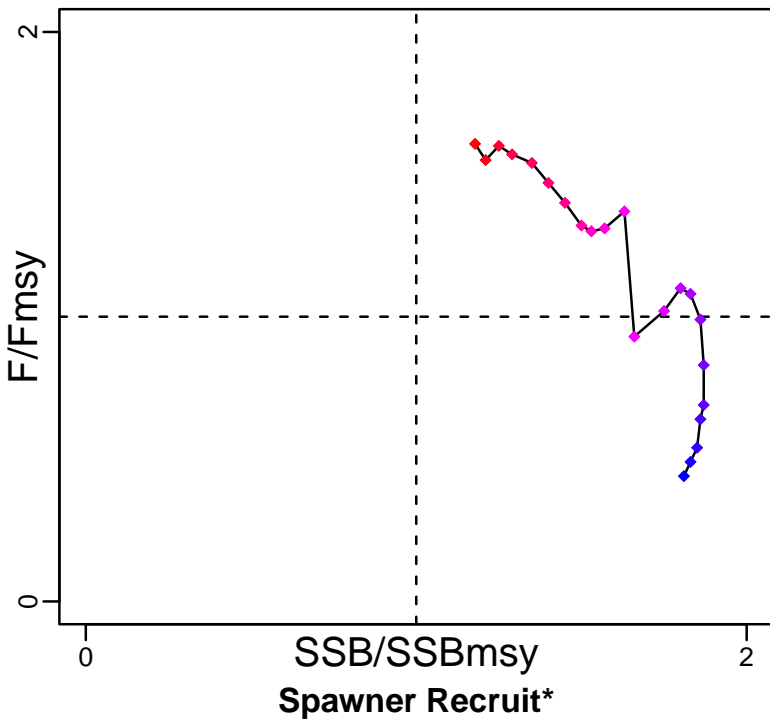
Metadata	
<b>Scientific Name</b>	Carcharhinus falciformis
<b>Current Assess ID</b>	SPC-SLKSHARCWPAC-1995-2016-SMITH
<b>Area</b>	Central Western Pacific Ocean
<b>Management Authority</b>	Western and Central Pacific Fisheries Commission
<b>Assessor</b>	Secretariat of the Pacific Community
<b>Asmts in RAM</b>	2016

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-extr-MT	2016	4720
<b>Fmsy</b>	Fmsy-extr-1/yr	2016	0.195
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2016	12,162
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

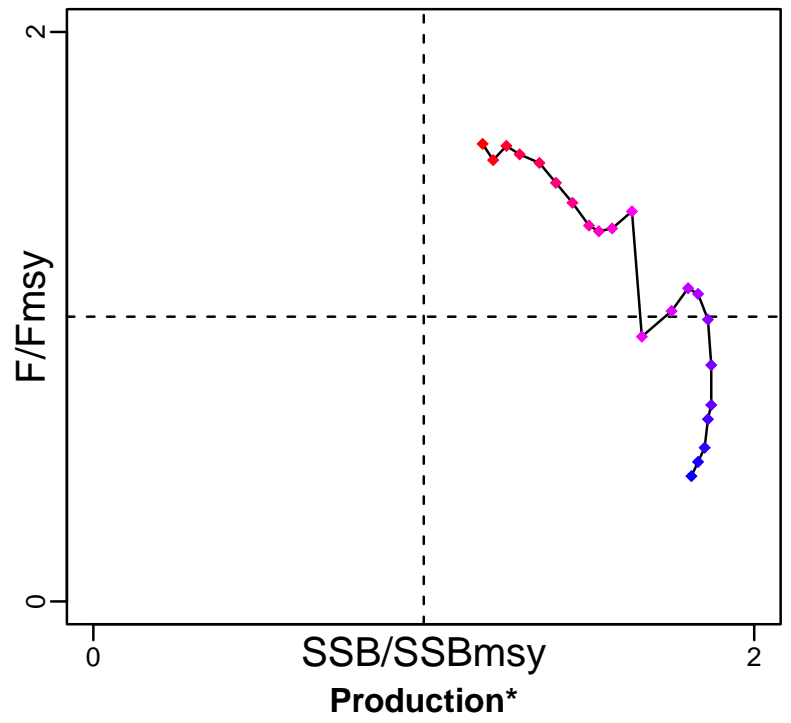
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2016	33,700	-	-
<b>SSB</b>	SSB-MT	2016	5560	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2016	0.313	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	TC-MT	2016	22,503		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSBdivSSBmsy-dimensionless	2016	1.178		
<b>F/Fmsy</b>	FdivFmsy-dimensionless	2016	1.607		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

Silky shark Central Western Pacific Ocean [SLKSHARCWPAC]

Kobe MSYpref (1995–2016–SMITH)



Kobe MGTpref (1995–2016–SMITH)

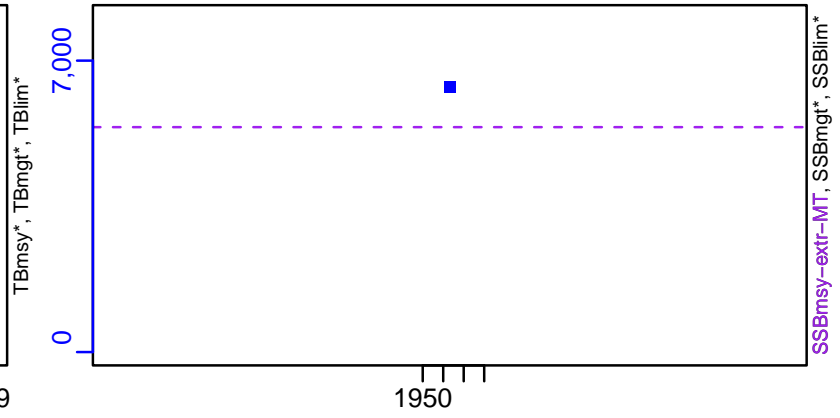
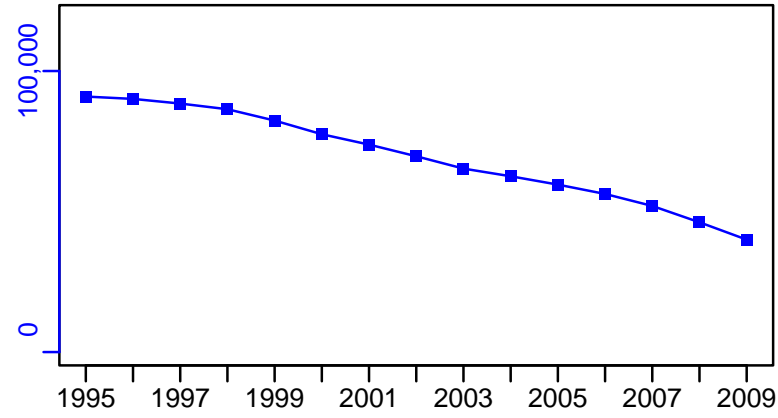


◆ Start Year ◆ End Year \* No Data

# Silky shark Central Western Pacific Ocean [SLKSHARCWPAC]

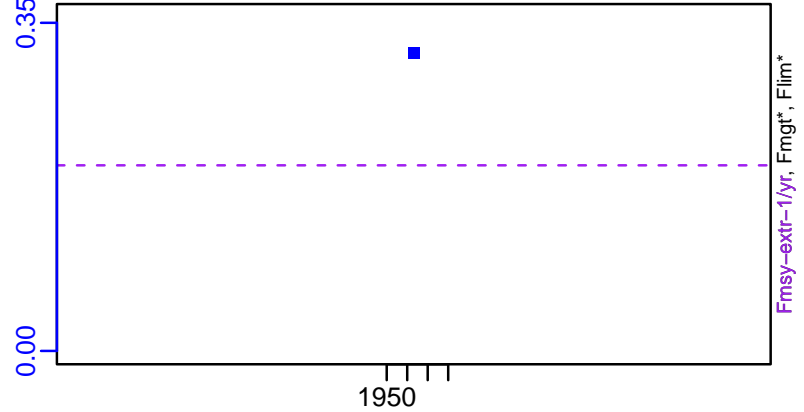
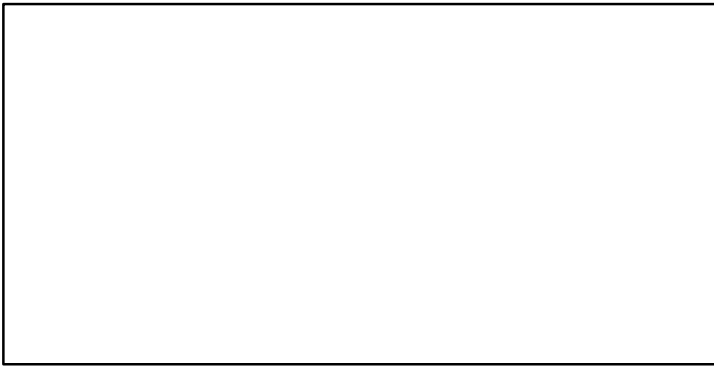
TB-MT (1995–2016–SMITH)

SSB-MT (1995–2016–SMITH)



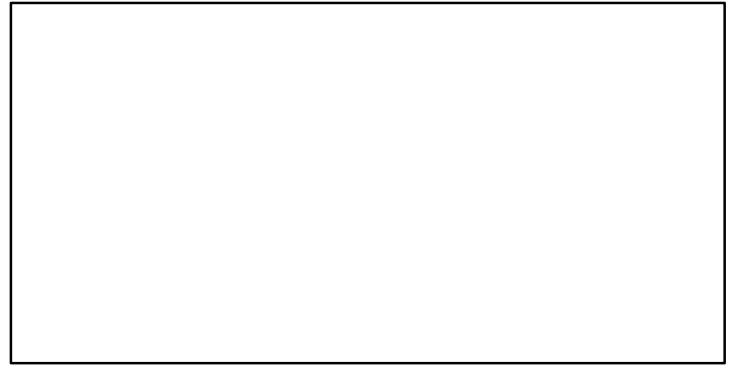
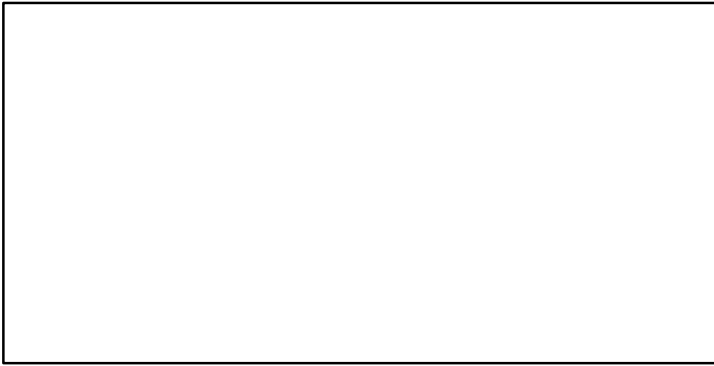
TN \*

F-1/yr (1995–2016–SMITH)



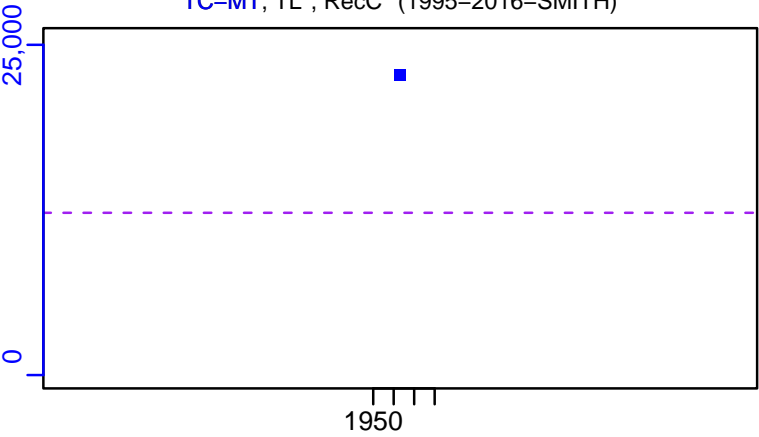
ER\*

Recruits\*

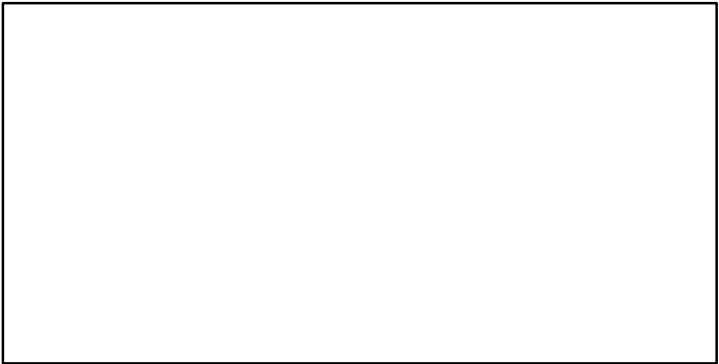


Silky shark Central Western Pacific Ocean [SLKSHARCWPAC]

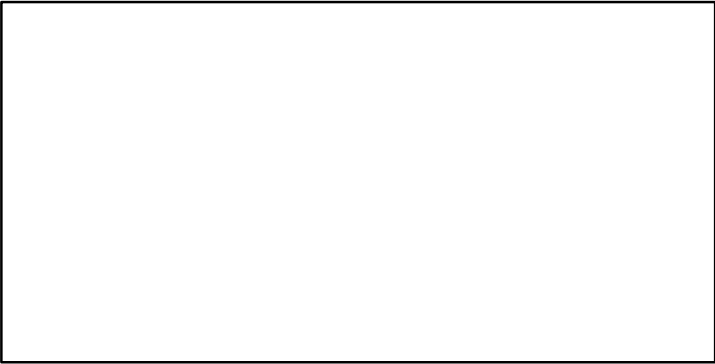
TC-MT, TL\*, RecC\* (1995-2016-SMITH)



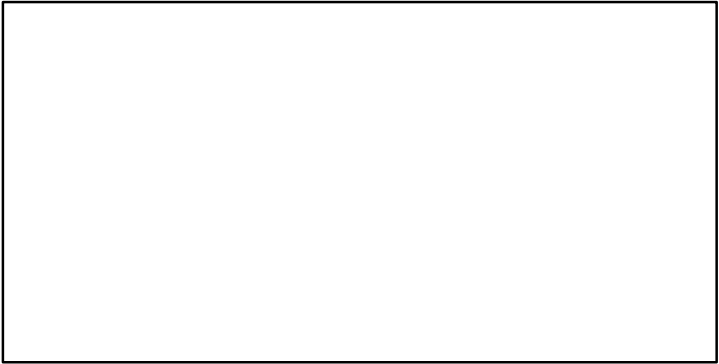
TAC\*, Cpair\*, Cadv\*



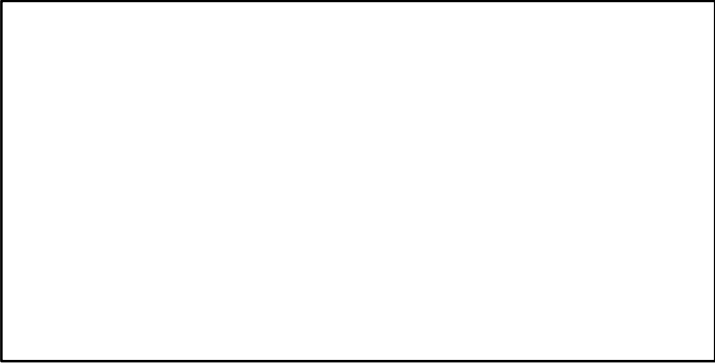
survB\*



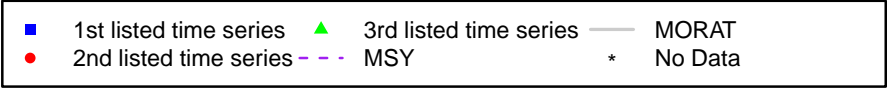
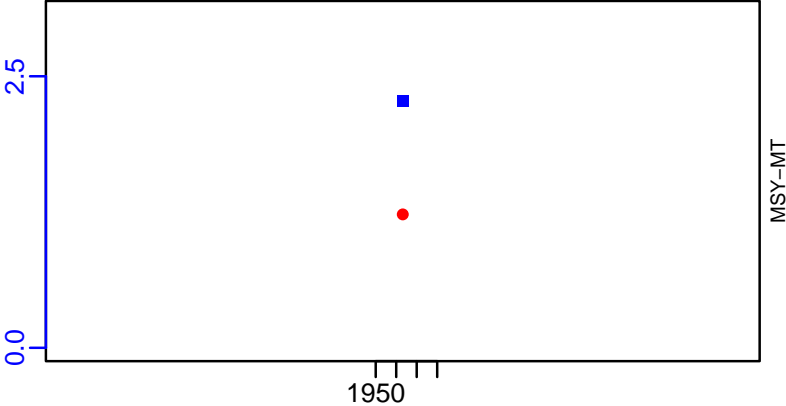
CPUE\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1995-2016-SMITH)



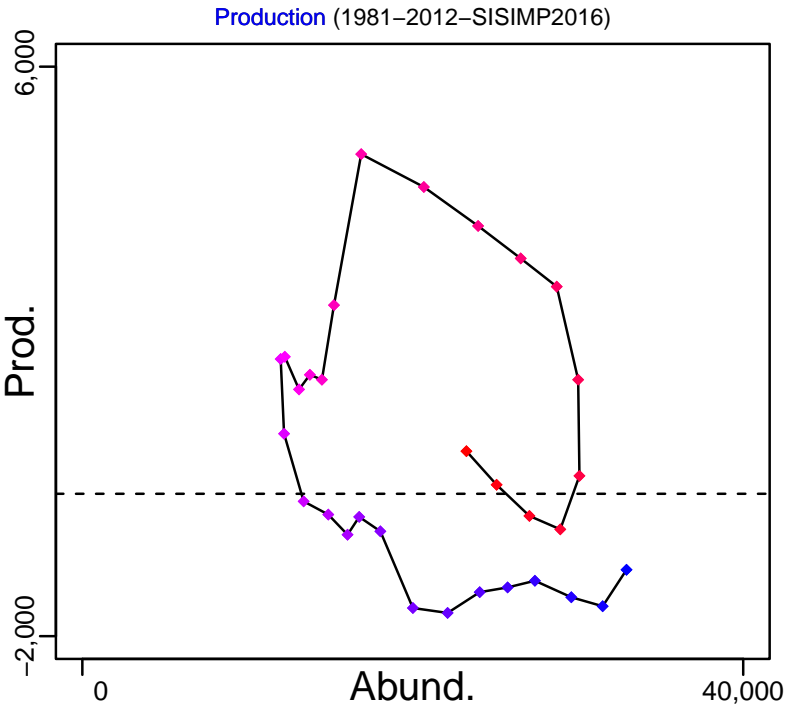
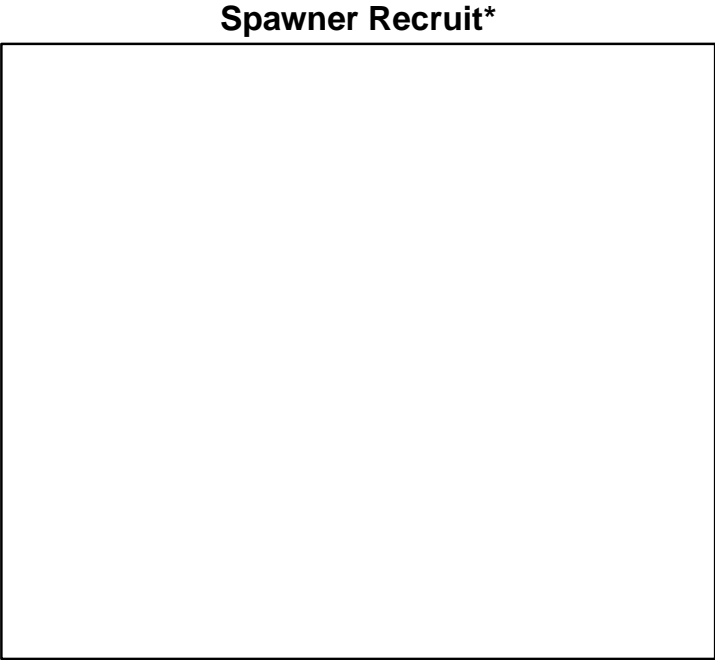
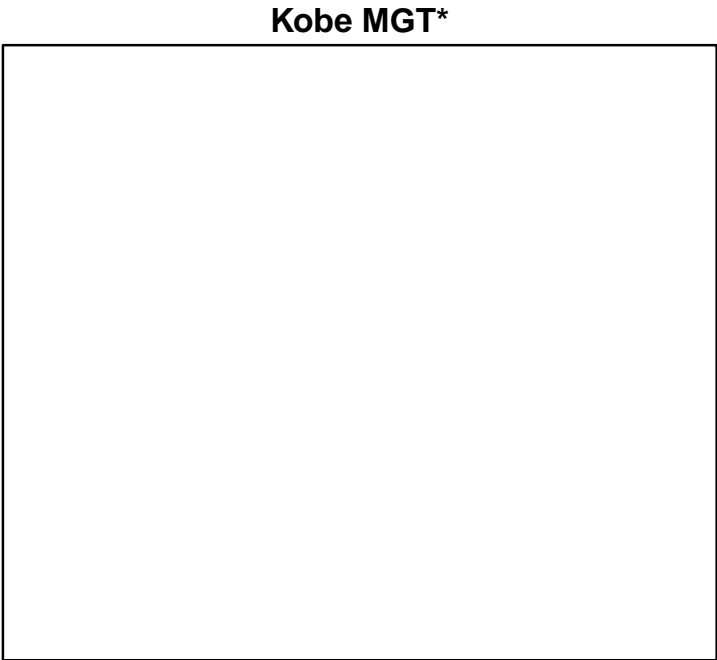
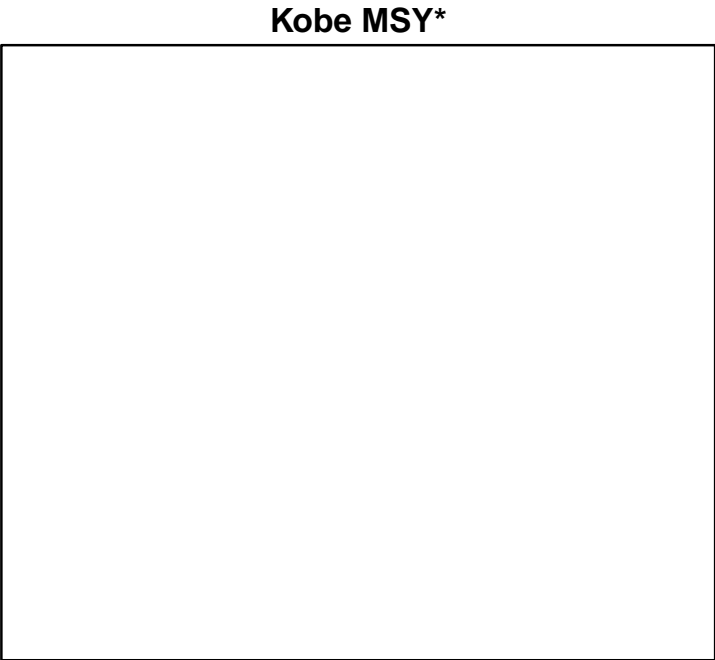
## Smooth dogfish Atlantic [SMDOGATL]

Metadata	
<b>Scientific Name</b>	Mustelus canis
<b>Current Assess ID</b>	SEFSC-SMDOGATL-1981-2012-SISIMP2016
<b>Area</b>	Atlantic
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2012

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-E00pups	2012	4,746,000
<b>Fmsy</b>	-	-	-
<b>ERmsy</b>	ERmsy-ratio	2012	0.129
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	SSBlim-E00pups	2012	3,701,000
<b>Flim</b>	-	-	-
<b>ERlim</b>	ERlim-ratio	2012	0.129

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2012	22,340	-	-
<b>SSB</b>	SSB-E00pups	2012	10,800,000	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	-	-	-	-	-
<b>ER</b>	ER-ratio	2012	0.102	-	-
<b>TC</b>	TC-MT	2012	1451		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	-	-	-		
<b>F/Fmsy</b>	-	-	-		
<b>ER/ERmsy</b>	ER-ratio/ERmsy-ratio	2012	0.791		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

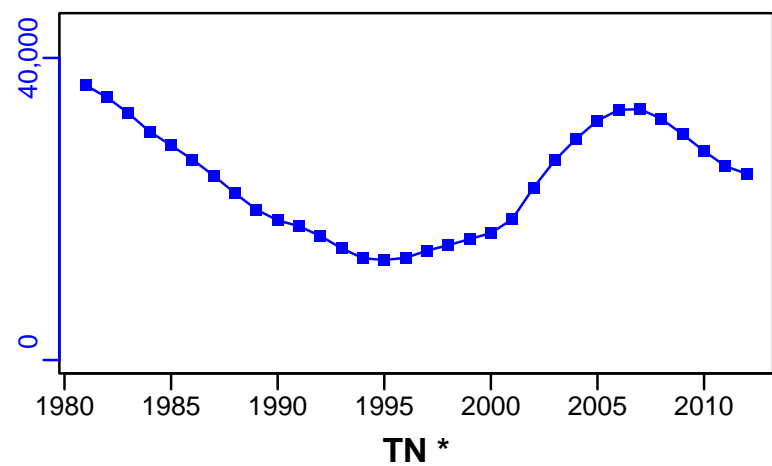




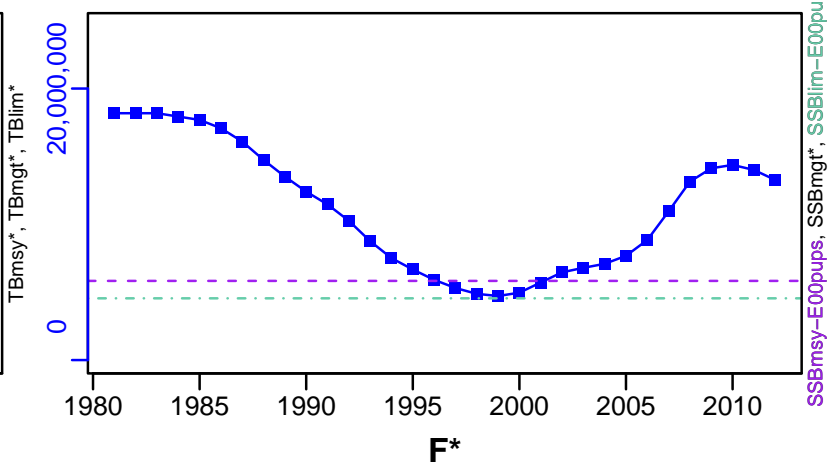
◆ Start Year ◆ End Year \* No Data

# Smooth dogfish Atlantic [SMDOGATL]

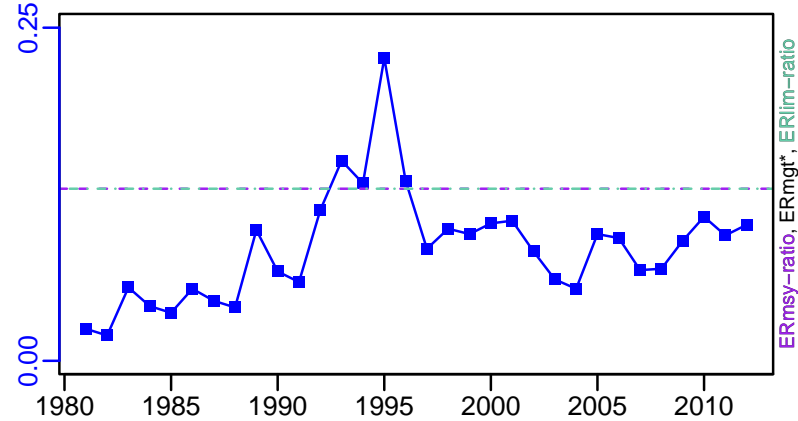
TB-MT (1981–2012–SISIMP2016)



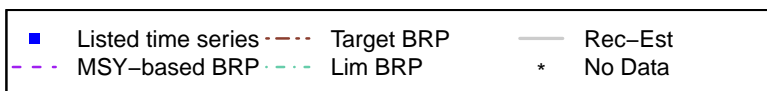
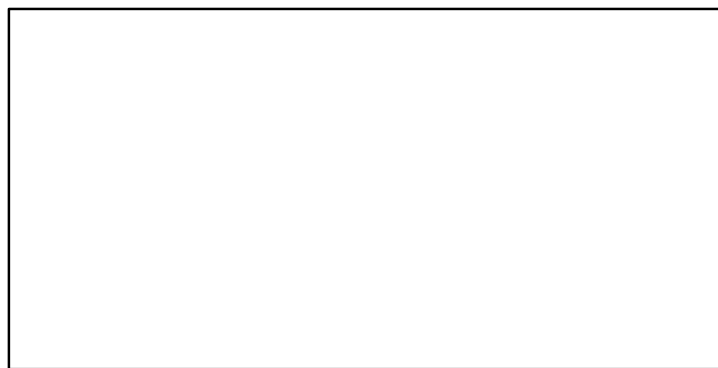
SSB-E00pups (1981–2012–SISIMP2016)



ER-ratio (1981–2012–SISIMP2016)

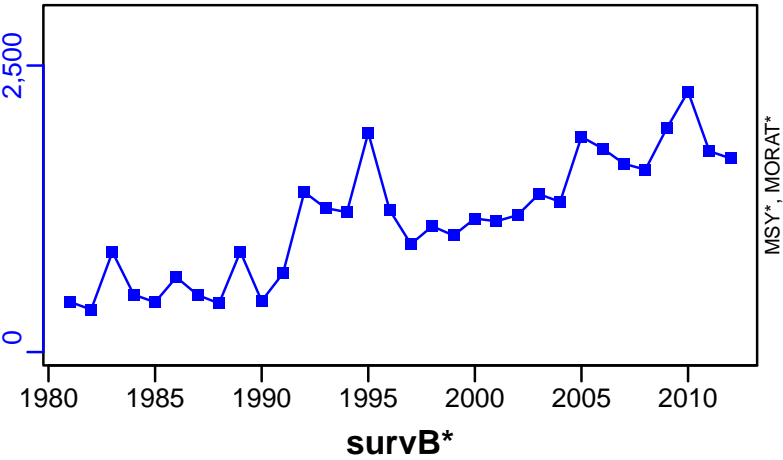


Recruits\*



Smooth dogfish Atlantic [SMDOGATL]

TC-MT, TL\*, RecC\* (1981-2012-SISIMP2016)



TAC\*, Cpair\*, Cadv\*



CPUE\*



EFFORT\*



CdivMSY\*



## Smooth skate NAFO Division 2J3K [SMOOTHSKA2J3K]

Metadata	
<b>Scientific Name</b>	Malacoraja senta
<b>Current Assess ID</b>	DFO-NFLD-SMOOTHSKA2J3K-1981-2012-OSGOOD
<b>Area</b>	NAFO Division 2J3K
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Newfoundland Region
<b>Asmts in RAM</b>	2012

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2012	0.021		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



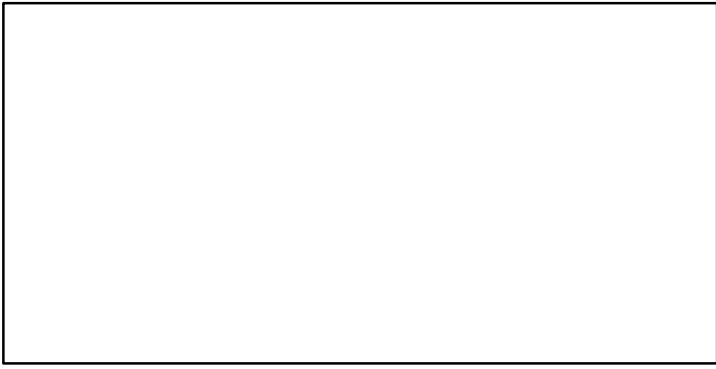
**Production\***



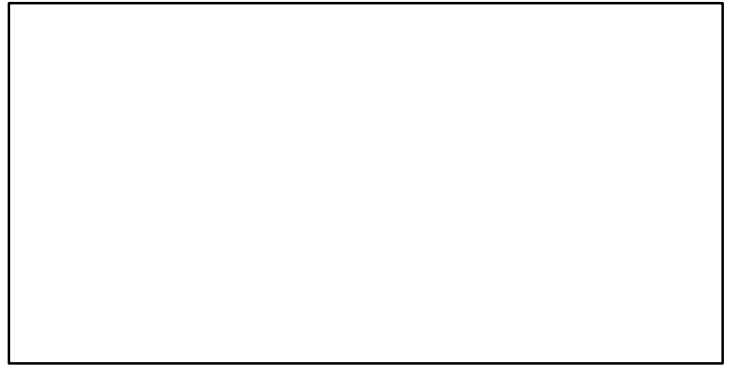
◆ Start Year ◆ End Year * No Data
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Smooth skate NAFO Division 2J3K [SMOOTHSKA2J3K]

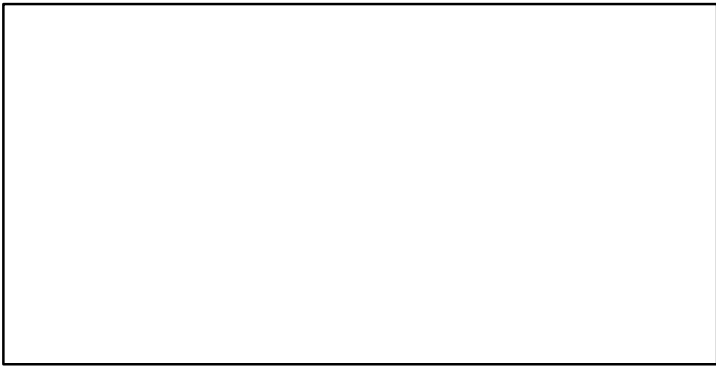
**TB\***



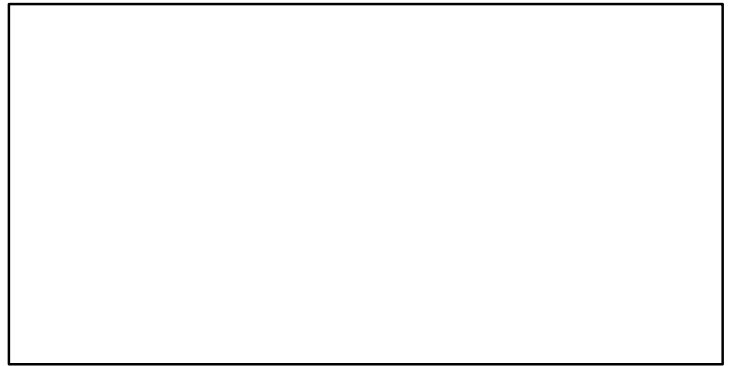
**SSB\***



**TN \***



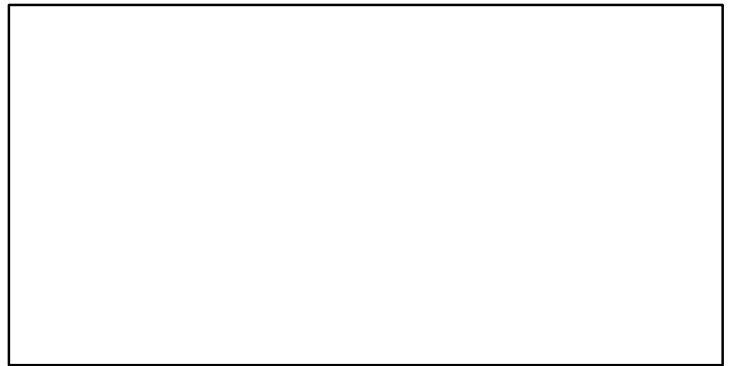
**F\***



**ER\***

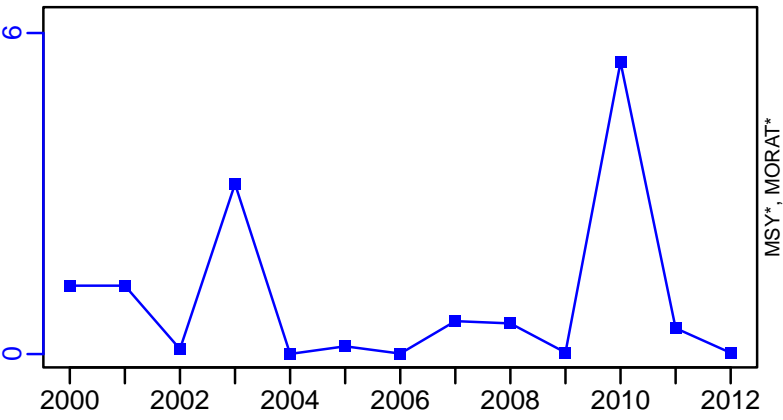


**Recruits\***



# Smooth skate NAFO Division 2J3K [SMOOTHSKA2J3K]

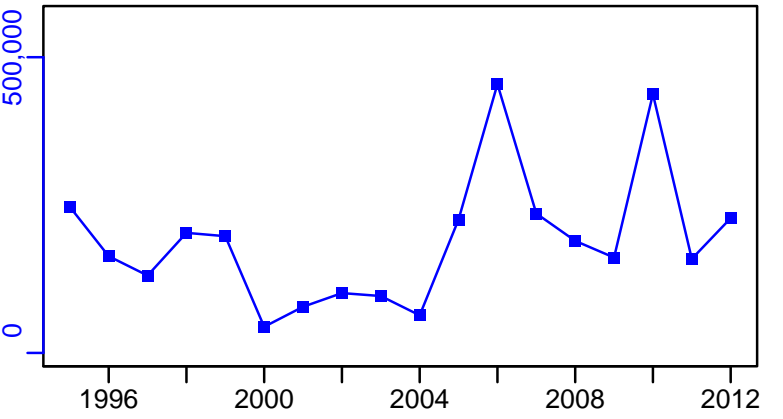
TC-MT, TL\*, RecC\* (1981-2012-OSGOOD)



TAC\*, Cpair\*, Cadv\*



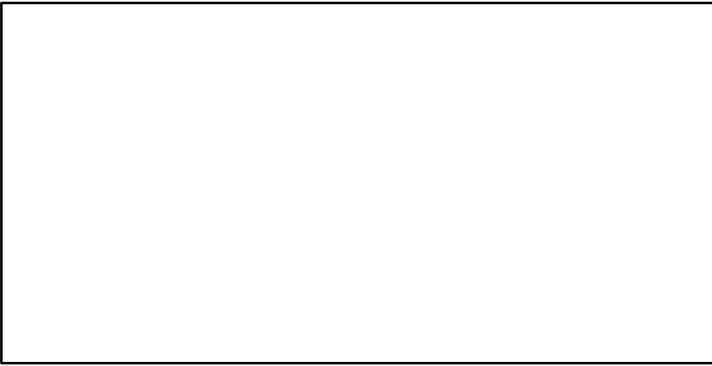
survB-MT (1981-2012-OSGOOD)



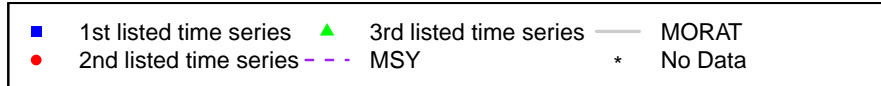
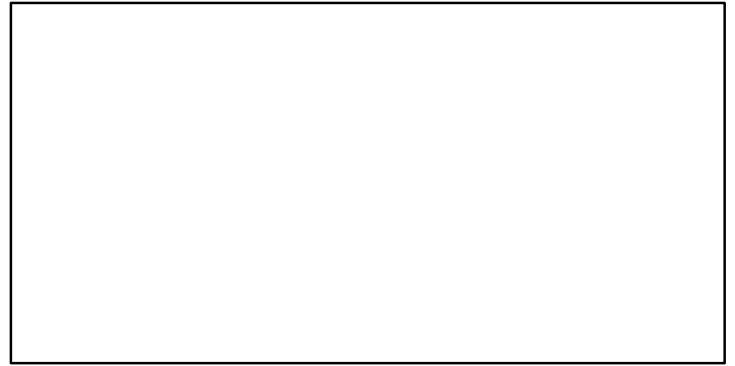
CPUE\*



EFFORT\*



CdivMSY\*



## Smooth skate Southern Gulf of St. Lawrence [SMOOTHSKA4T]

Metadata	
<b>Scientific Name</b>	Malacoraja senta
<b>Current Assess ID</b>	DFO-NFLD-SMOOTHSKA4T-1971-2010-OSGOOD
<b>Area</b>	Southern Gulf of St. Lawrence
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Newfoundland Region
<b>Asmts in RAM</b>	2010

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	MSY-MT	2010	120
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2010	24		
TL	TL-MT	2010	0.56		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

TB\*



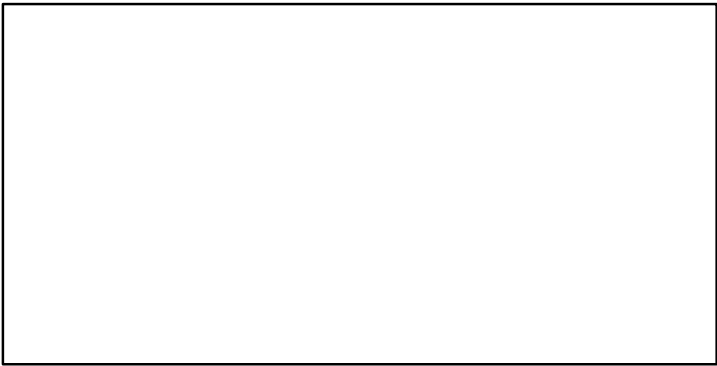
SSB\*



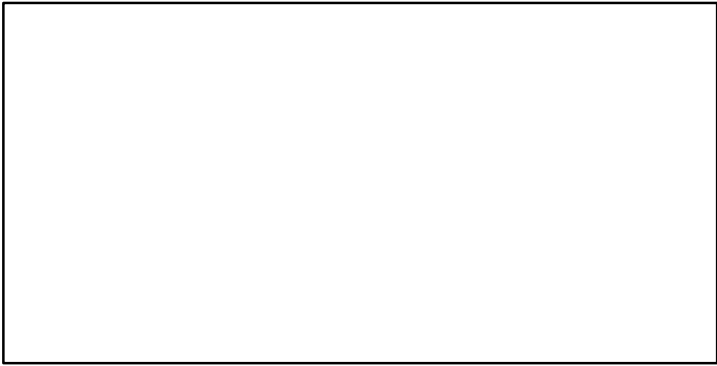
TN \*



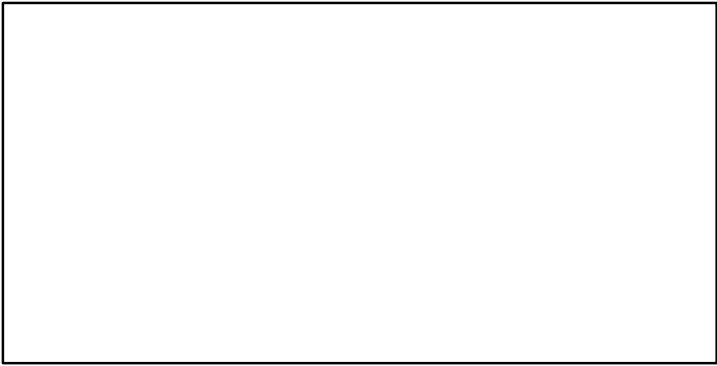
F\*



ER\*

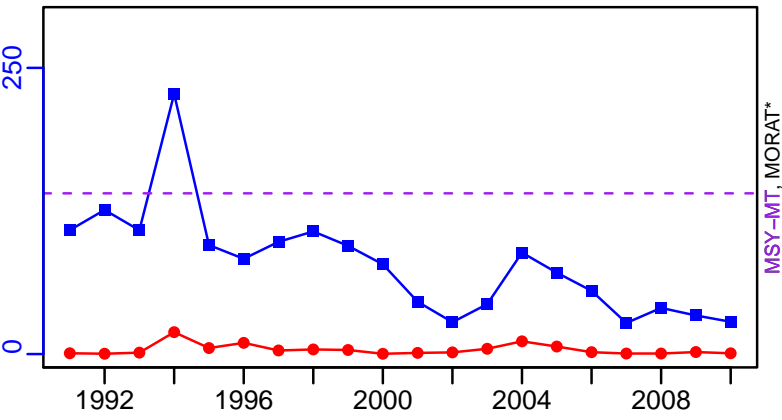


Recruits\*



# Smooth skate Southern Gulf of St. Lawrence [SMOOTHKA4T]

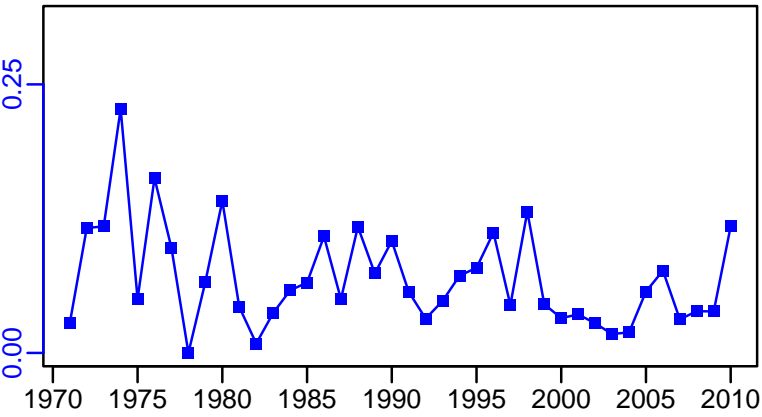
TC-MT, TL-MT, RecC\* (1971-2010-OSGOOD)



TAC\*, Cpair\*, Cadv\*



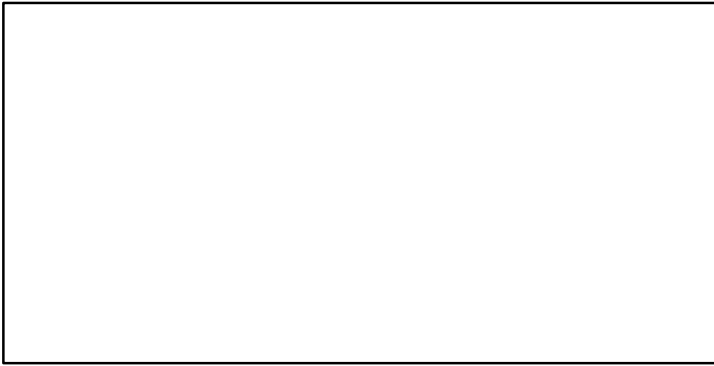
survB-kg/tow (1971-2010-OSGOOD)



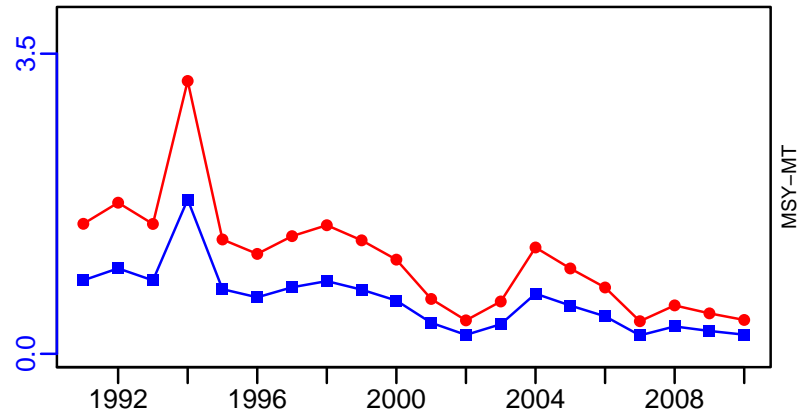
CPUE\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1971-2010-OSGOOD)



■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - - MSY    \* No Data

## Atlantic sharpnose shark Atlantic [SNOSESHARATL]

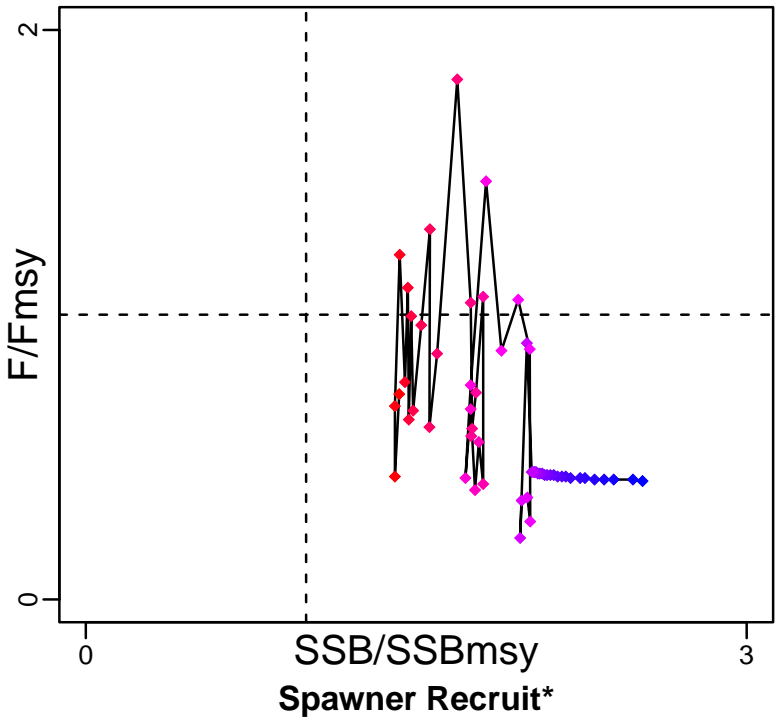
Metadata	
<b>Scientific Name</b>	Rhizoprionodon terraenovae
<b>Current Assess ID</b>	SEFSC-SNOSESHARATL-1950-2005-FAUCONNET
<b>Area</b>	Atlantic
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southeast Fisheries Science Center
<b>Asmts in RAM</b>	2005

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSFmsy-E00	2005	4,590,000
<b>Fmsy</b>	Fmsy-1/yr	2005	0.19
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2005	1270
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

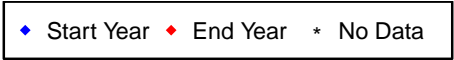
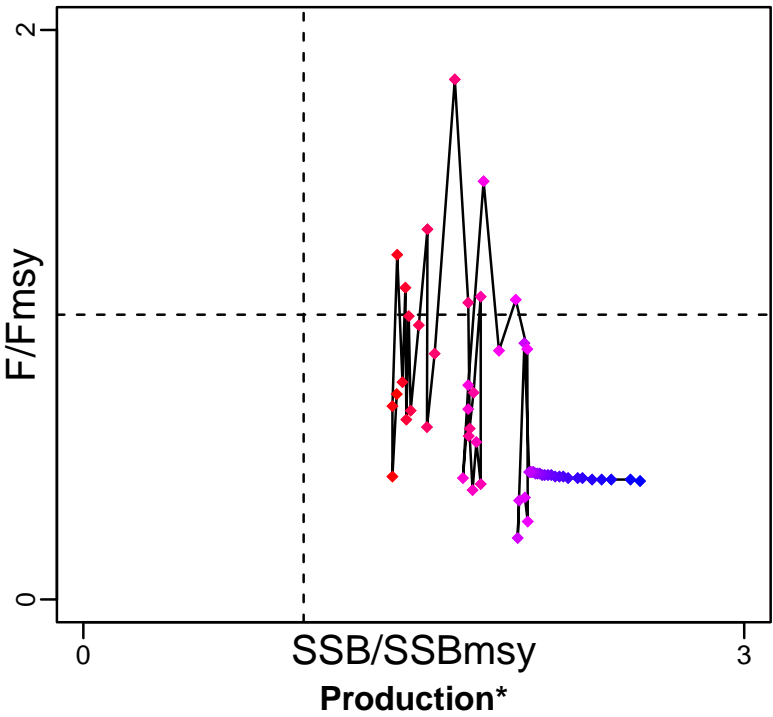
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSF-E00	2005	6,530,000	Females	2.5
<b>TN</b>	-	-	-	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2005	0.137	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	TC-E00	2005	534,000		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSF-E00/SSFmsy-E00	2005	1.423		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2005	0.721		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

Atlantic sharpnose shark Atlantic [SNOSESHARATL]

Kobe MSYpref (1950–2005–FAUCONNET)



Kobe MGTpref (1950–2005–FAUCONNET)

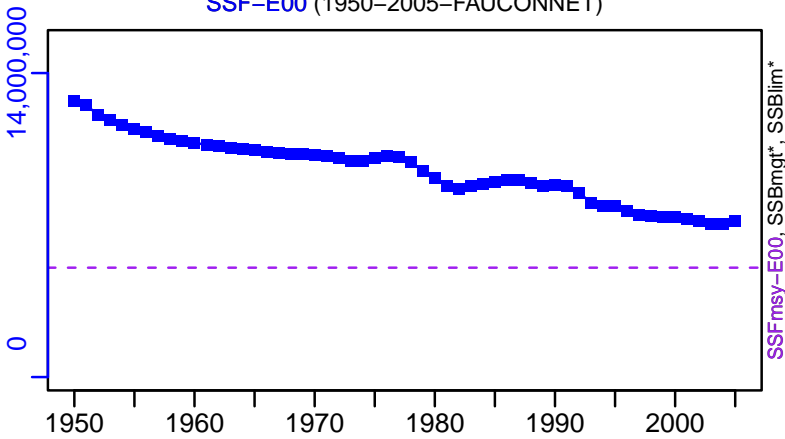


Atlantic sharpnose shark Atlantic [SNOSESHARATL]

TB\*



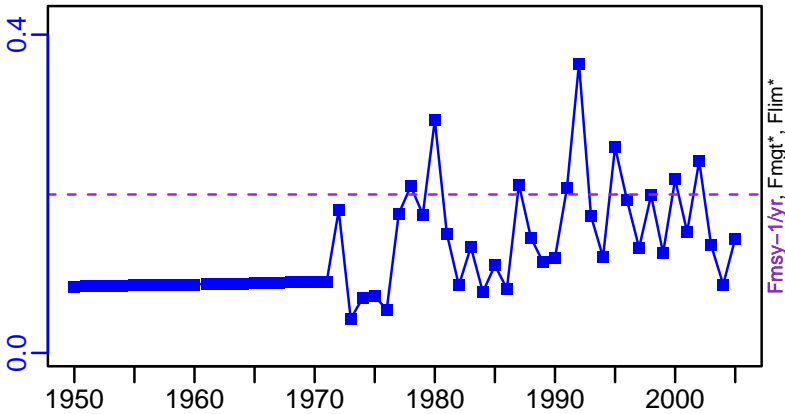
SSF-E00 (1950-2005-FAUCONNET)



TN \*



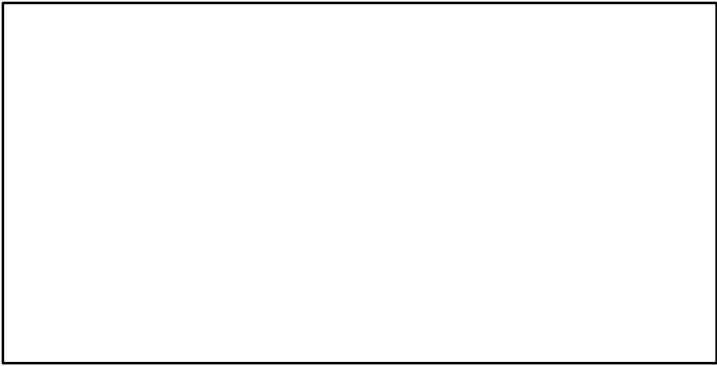
F-1/yr (1950-2005-FAUCONNET)



ER\*

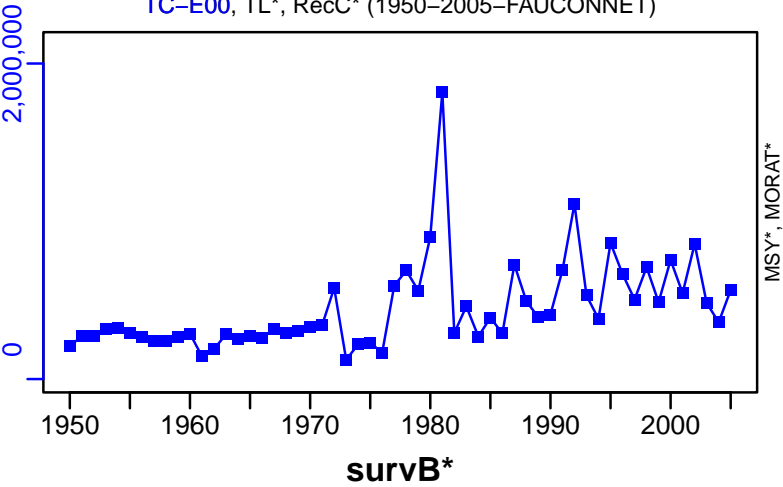


Recruits\*

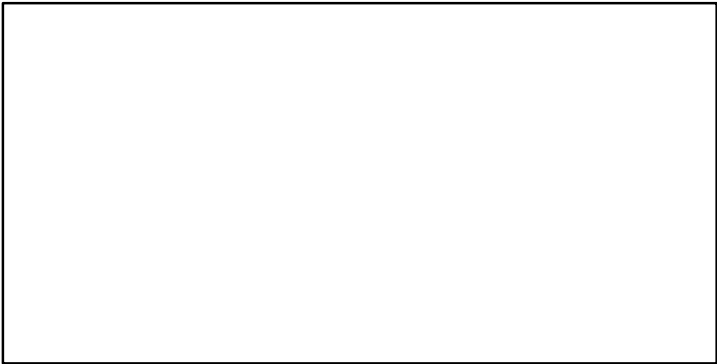


Atlantic sharpnose shark Atlantic [SNOSESHARATL]

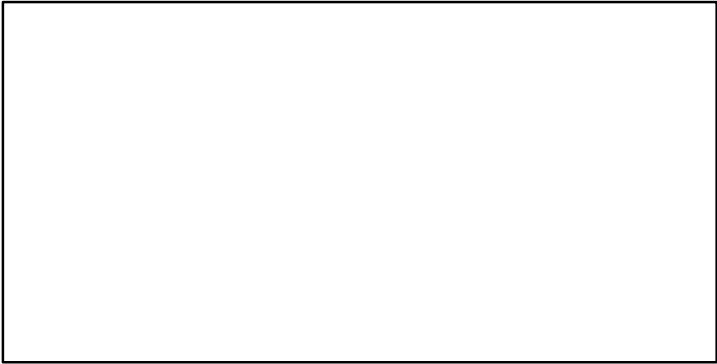
TC-E00, TL\*, RecC\* (1950–2005–FAUCONNET)



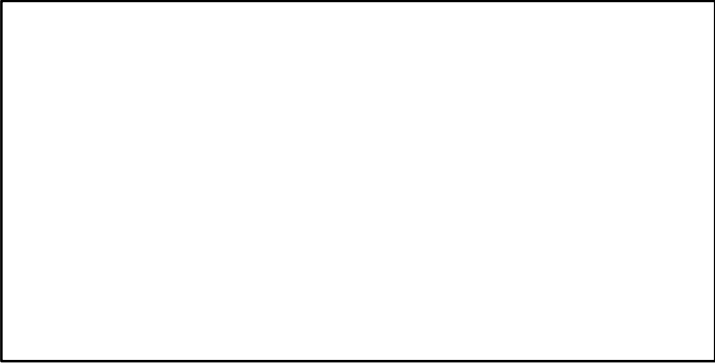
TAC\*, Cpair\*, Cadv\*



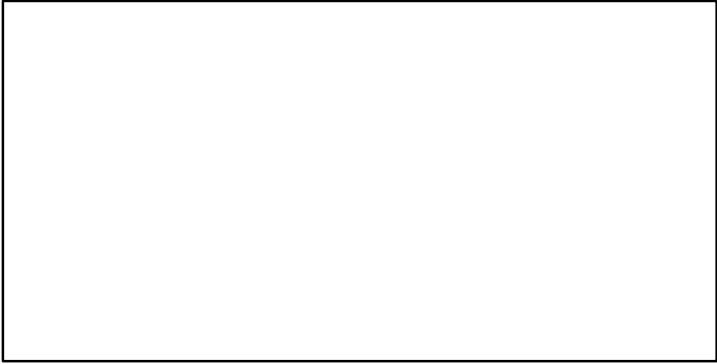
CPUE\*



EFFORT\*



CdivMSY\*



## Spotted ray ICES 3a-4-7d [SPRAYIIIa-IV-VIId]

Metadata	
<b>Scientific Name</b>	Raja montagui
<b>Current Assess ID</b>	WGEF-SPRAYIIIa-IV-VIId-1993-2018-ICESIMP2021
<b>Area</b>	ICES 3a-4-7d
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018, 2016

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

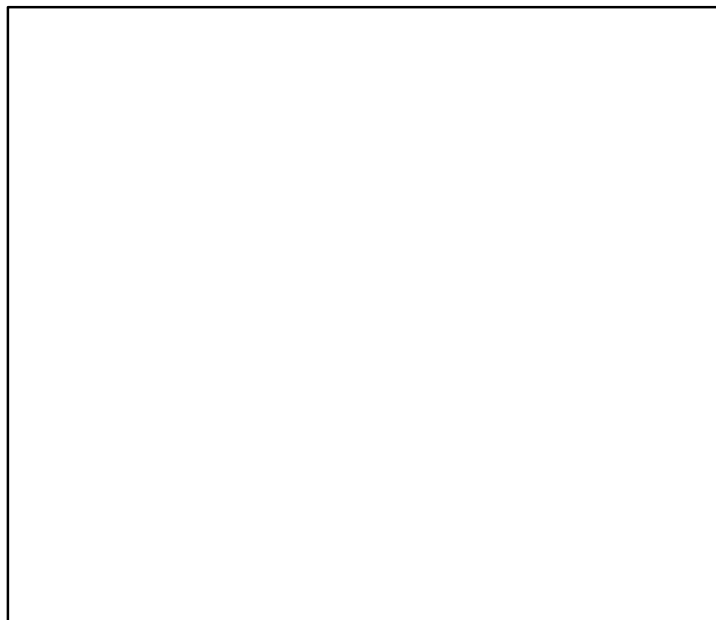
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	2.05	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	355		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



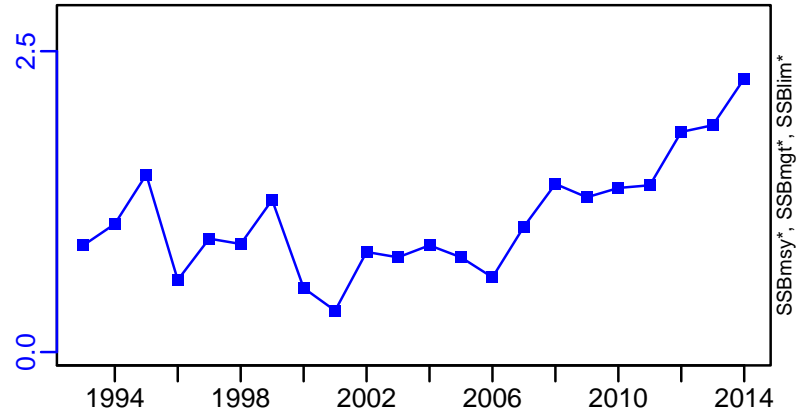
◆ Start Year ◆ End Year \* No Data

Spotted ray ICES 3a–4–7d [SPRAYIIIa–IV–VIIId]

TB\*



SSB-index (1993–2014–ICESIMP2018)



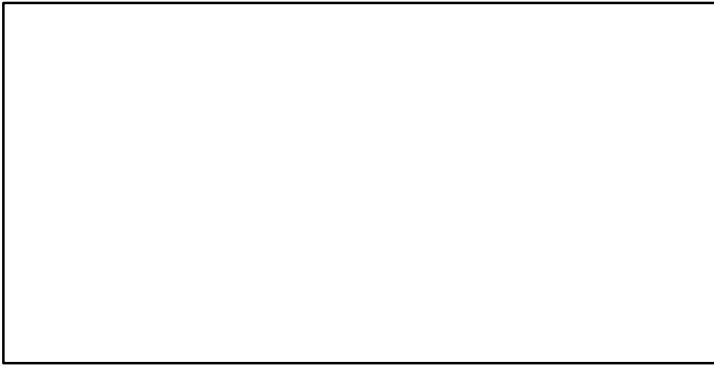
TN \*



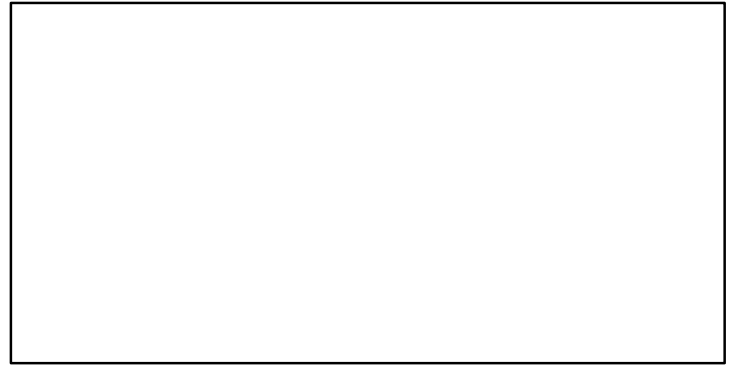
F\*



ER\*

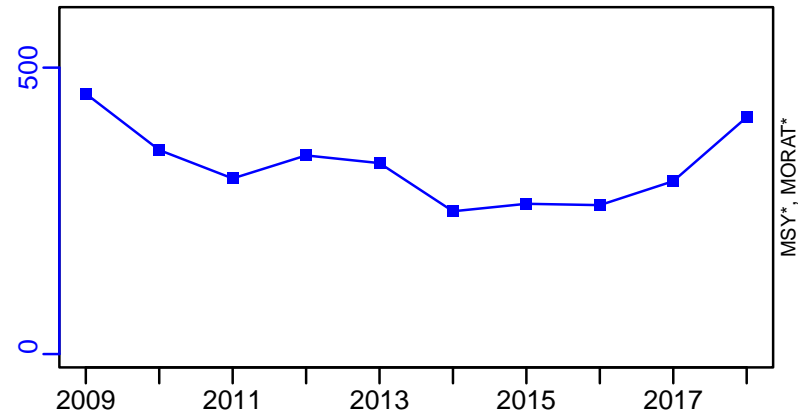


Recruits\*



# Spotted ray ICES 3a–4–7d [SPRAYIIIa–IV–VIIId]

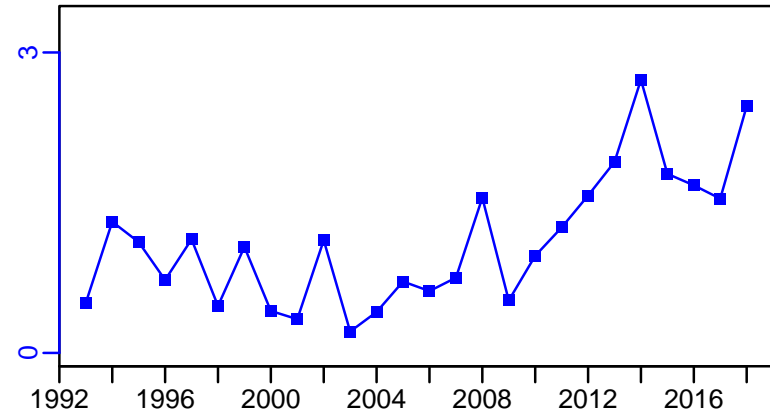
TL–MT, TC\*, RecC\* (1993–2018–ICESIMP2021)



TAC\*, Cpair\*, Cadv\*



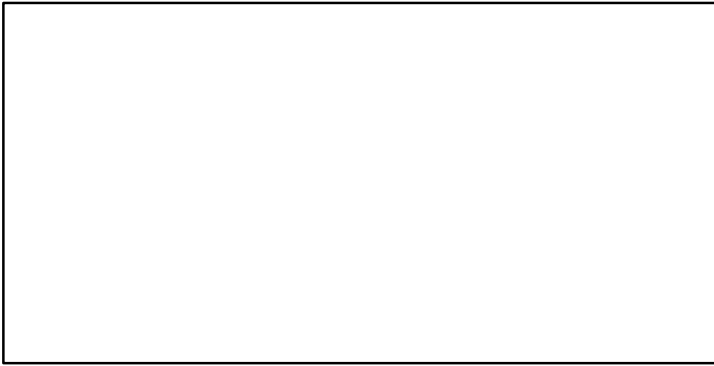
survB–index (1993–2018–ICESIMP2021)



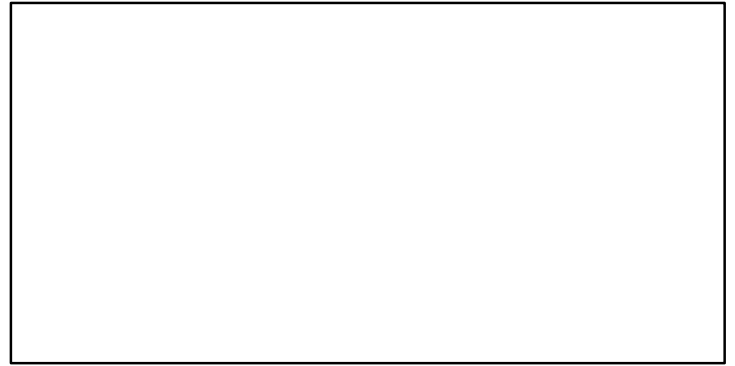
CPUE\*



EFFORT\*



CdivMSY\*



## Spotted ray Portuguese Waters -East [SPRAYIXa]

Metadata	
<b>Scientific Name</b>	Raja montagui
<b>Current Assess ID</b>	WGEF-SPRAYIXa-2003-2015-ICESIMP2018
<b>Area</b>	Portuguese Waters -East
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	2.35	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	68		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

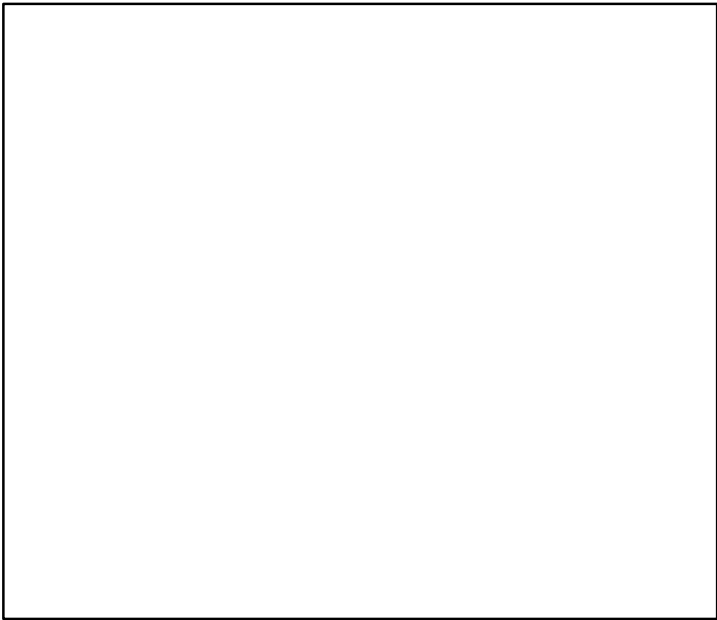
Kobe MSY\*



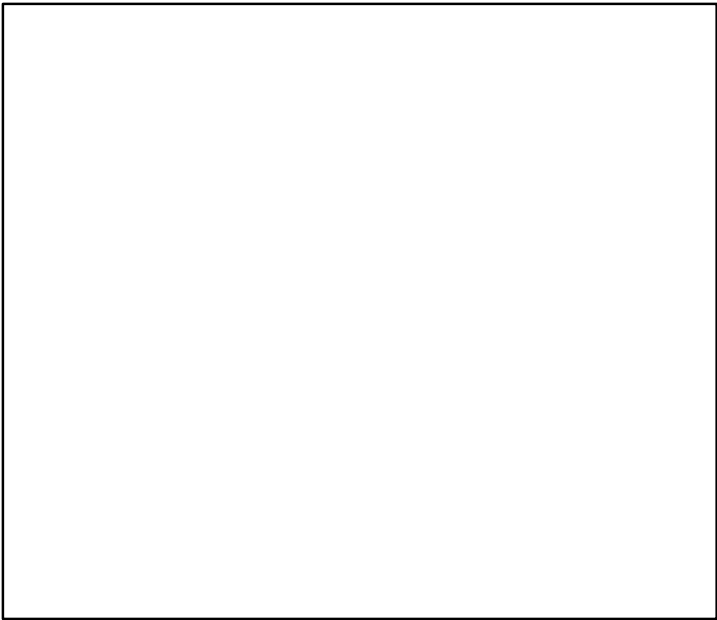
Kobe MGT\*



Spawner Recruit\*



Production\*



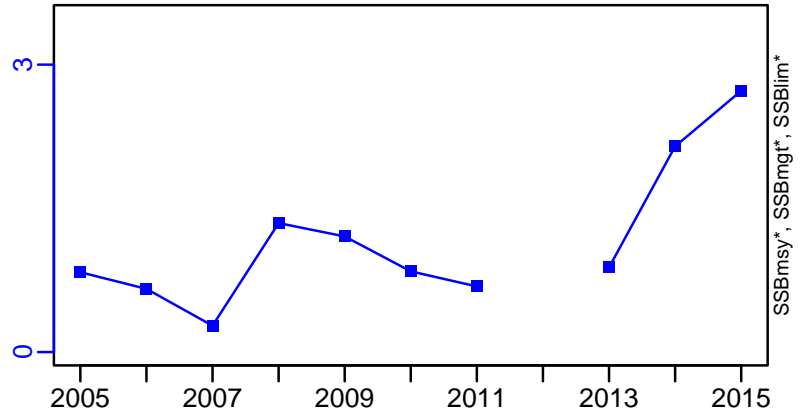
◆ Start Year   ◆ End Year   \* No Data

Spotted ray Portuguese Waters –East [SPRAYIXa]

TB\*



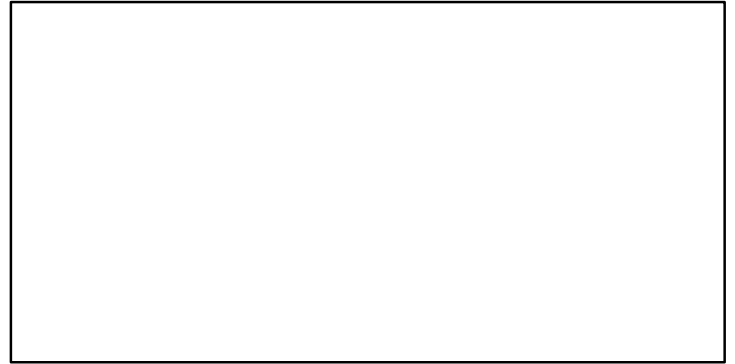
SSB-index (2003–2015–ICESIMP2018)



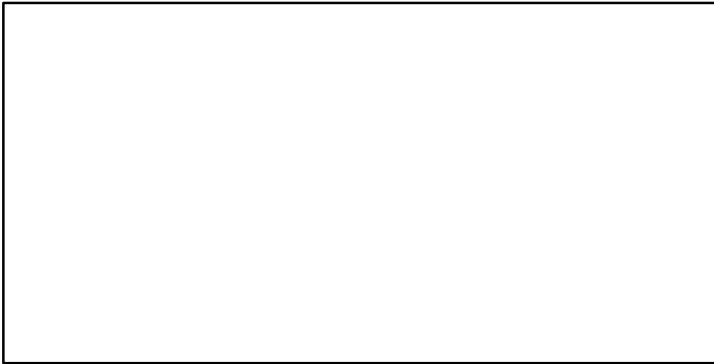
TN \*



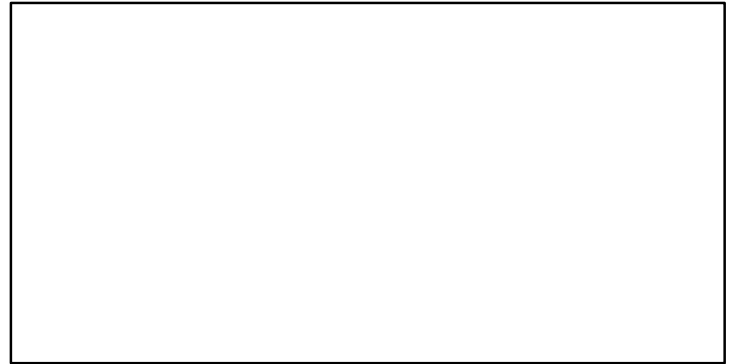
F\*



ER\*



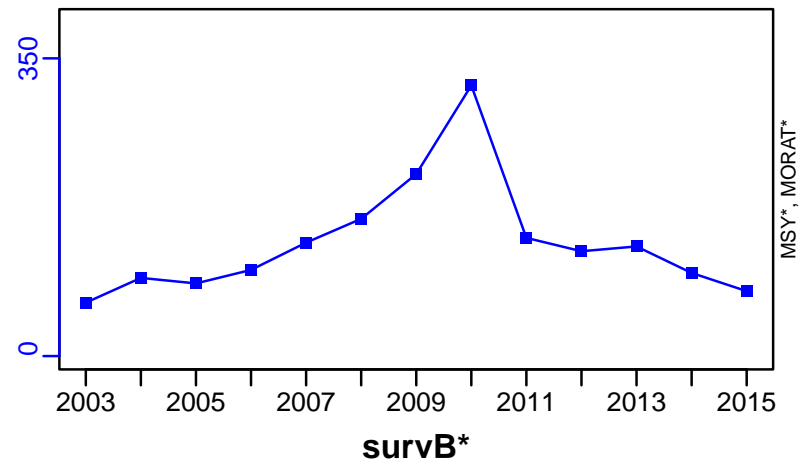
Recruits\*



# Spotted ray Portuguese Waters –East [SPRAYIXa]

TL–MT, TC\*, RecC\* (2003–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Spotted ray ICES 7aefgh [SPRAYVIIaefgh]

Metadata	
<b>Scientific Name</b>	Raja montagui
<b>Current Assess ID</b>	WGEF-SPRAYVIIaefgh-1993-2015-ICESIMP2018
<b>Area</b>	ICES 7aefgh
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	7	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	837		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



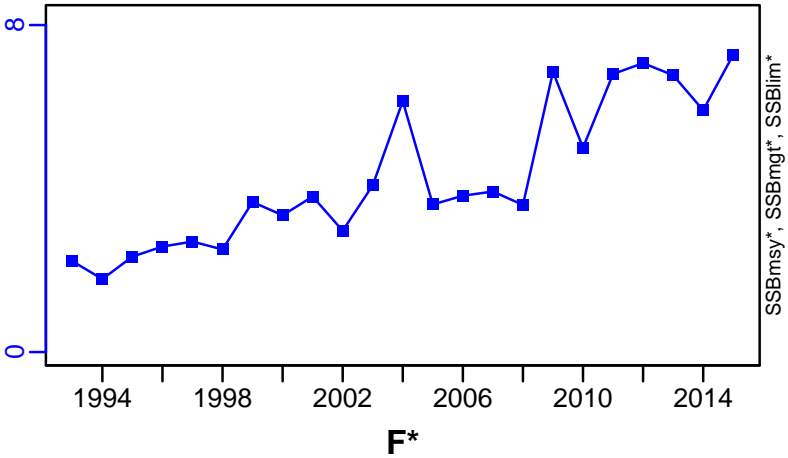
◆ Start Year   ◆ End Year   \* No Data

Spotted ray ICES 7aefgh [SPRAYVIIaefgh]

TB\*



SSB-index (1993–2015–ICESIMP2018)



TN \*



F\*



ER\*

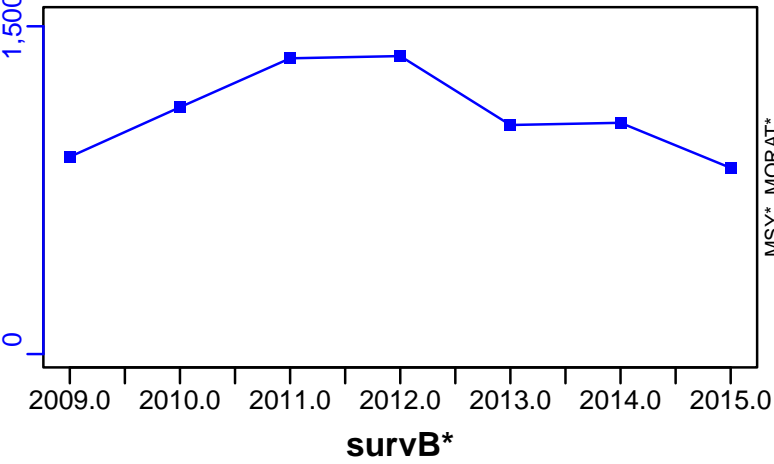


Recruits\*

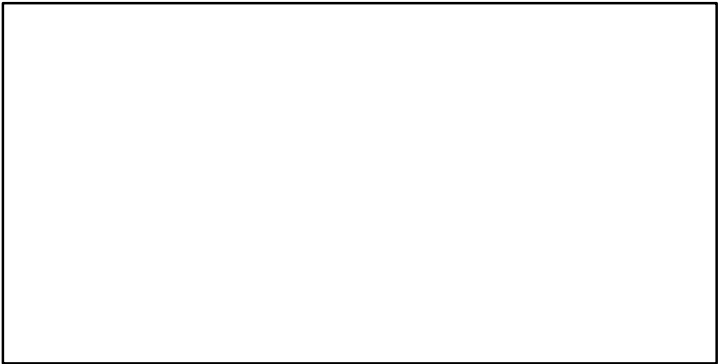


Spotted ray ICES 7aefgh [SPRAYVIIaefgh]

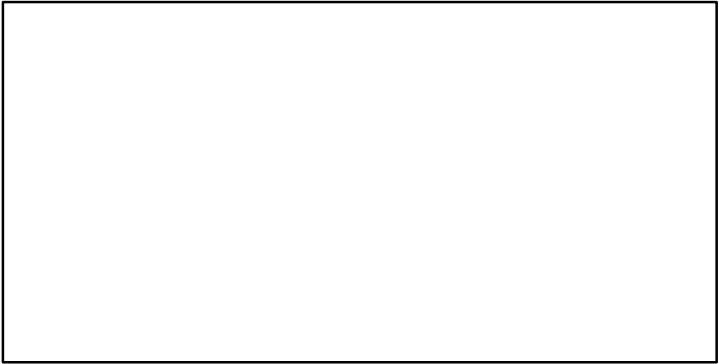
TL-MT, TC\*, RecC\* (1993-2015-ICESIMP2018)



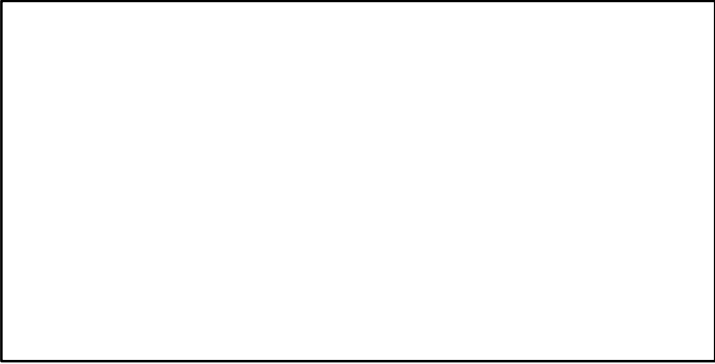
TAC\*, Cpair\*, Cadv\*



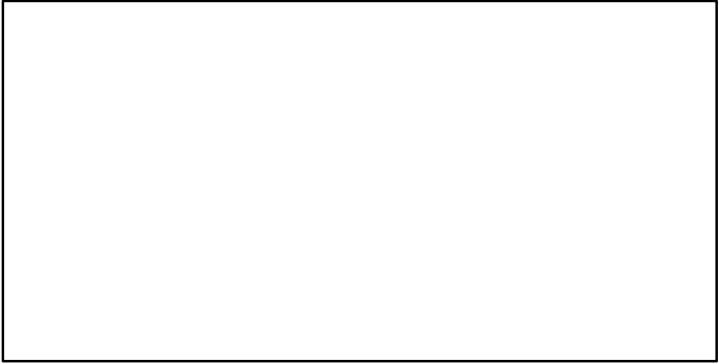
CPUE\*



EFFORT\*



CdivMSY\*



## Spotted ray Bay of Biscay [SPRAYVIII]

Metadata	
<b>Scientific Name</b>	Raja montagui
<b>Current Assess ID</b>	WGEF-SPRAYVIII-1999-2015-ICESIMP2018
<b>Area</b>	Bay of Biscay
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	1.29	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	176		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



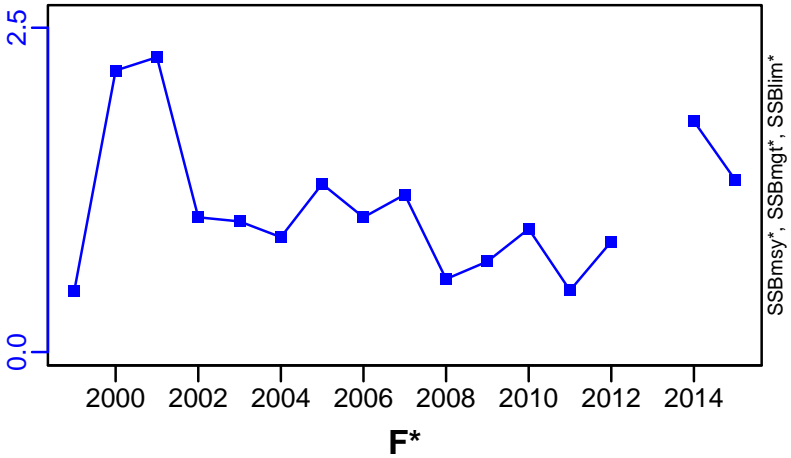
◆ Start Year   ◆ End Year   \* No Data

Spotted ray Bay of Biscay [SPRAYVIII]

TB\*



SSB-index (1999–2015–ICESIMP2018)



TN \*



F\*



ER\*



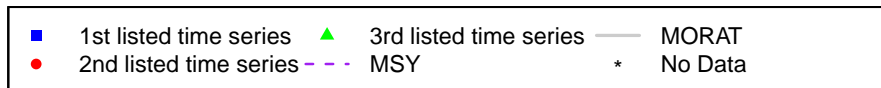
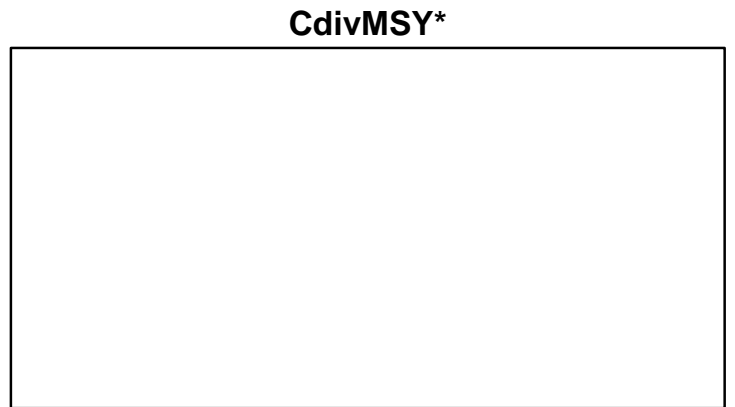
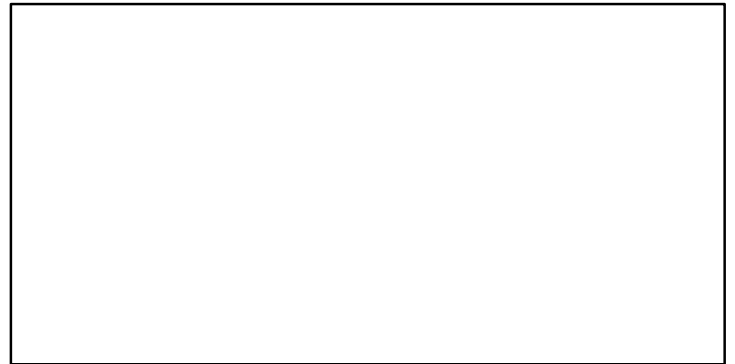
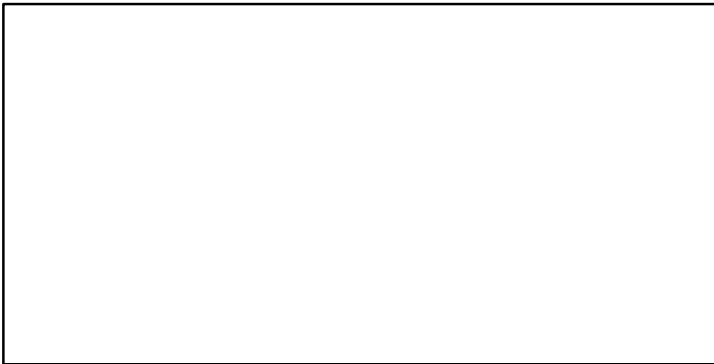
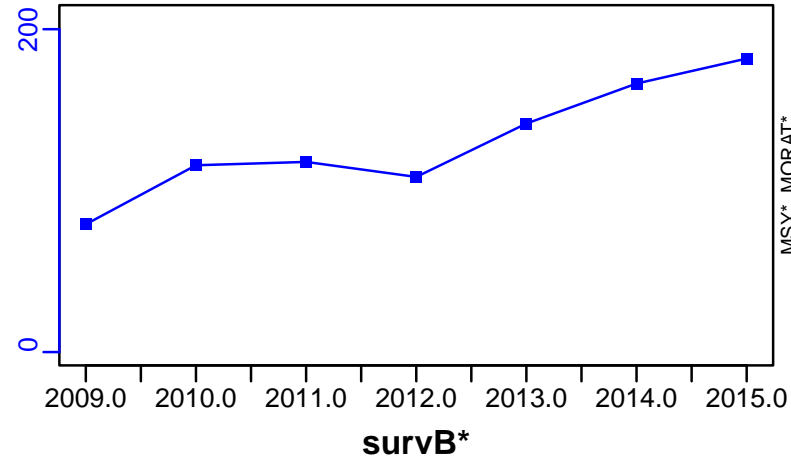
Recruits\*



Spotted ray Bay of Biscay [SPRAYVIII]

TL-MT, TC\*, RecC\* (1999–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Spotted ray ICES 6-7bj [SPRAYVI-VIIbj]

Metadata	
<b>Scientific Name</b>	Raja montagui
<b>Current Assess ID</b>	WGEF-SPRAYVI-VIIbj-2005-2015-ICESIMP2018
<b>Area</b>	ICES 6-7bj
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	9	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	119		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



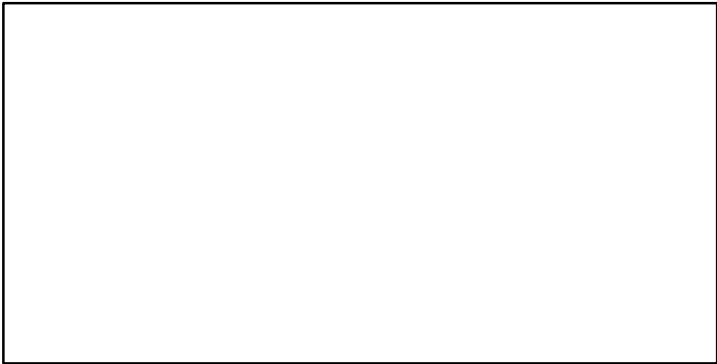
Production\*



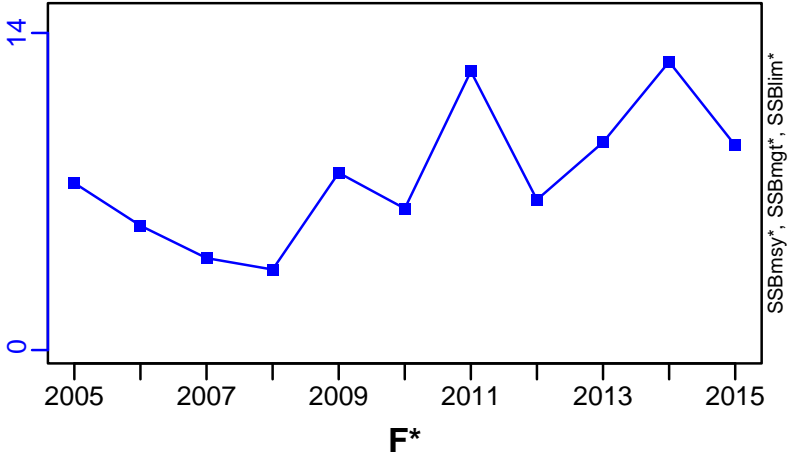
◆ Start Year   ◆ End Year   \* No Data

Spotted ray ICES 6-7bj [SPRAYVI-VIIbj]

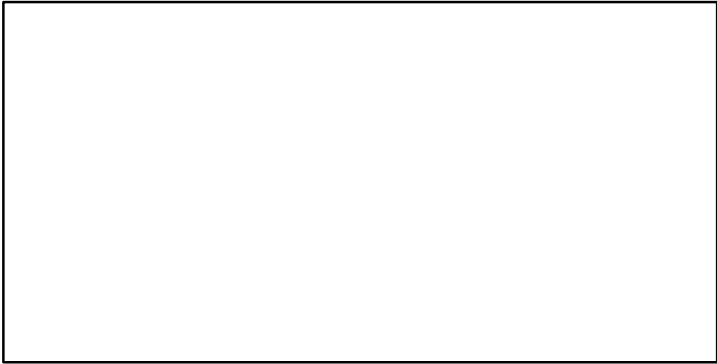
TB\*



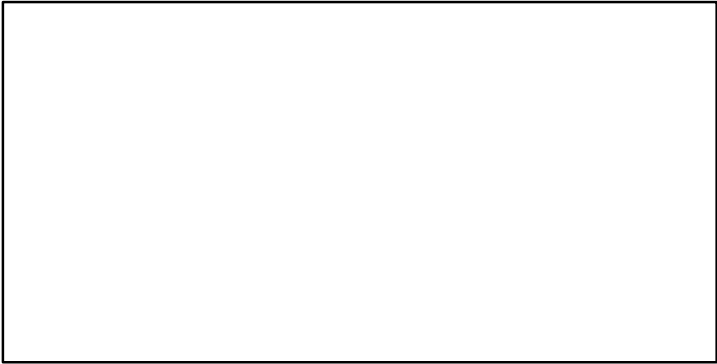
SSB-index (2005-2015-ICESIMP2018)



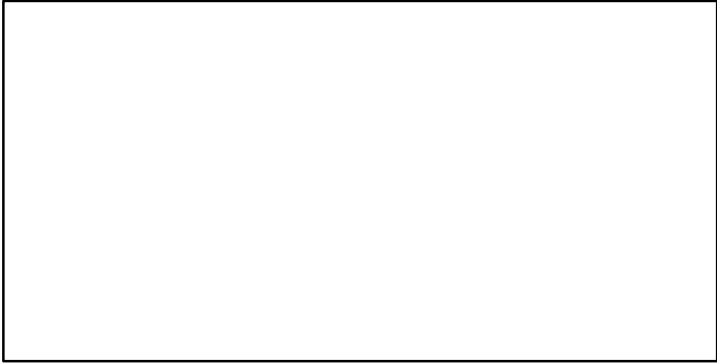
TN \*



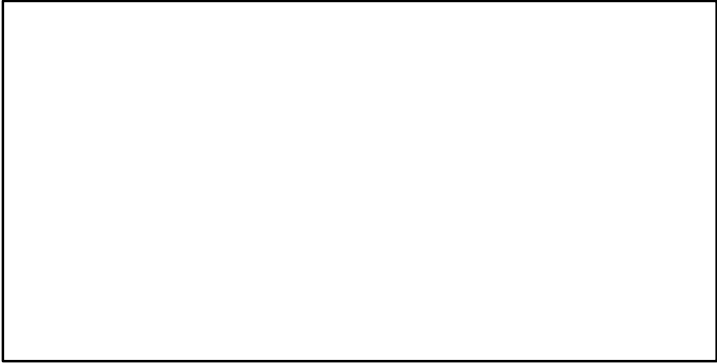
F\*



ER\*



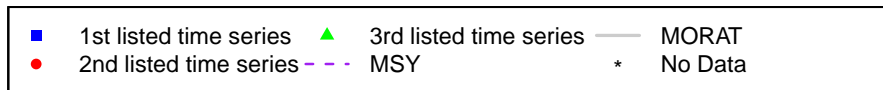
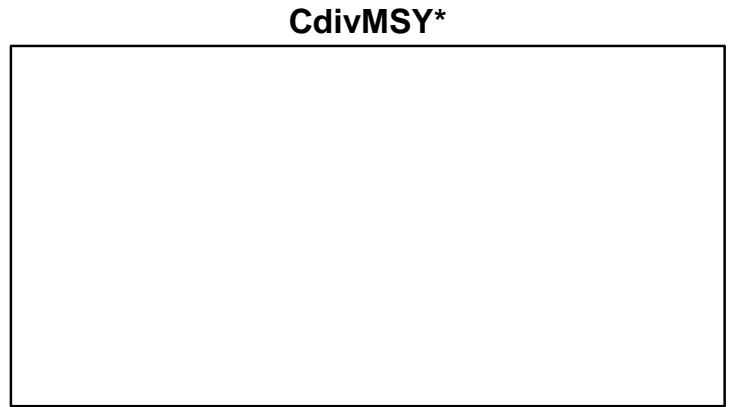
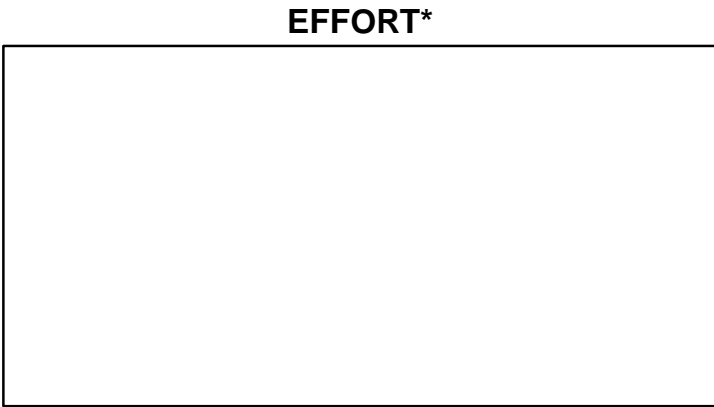
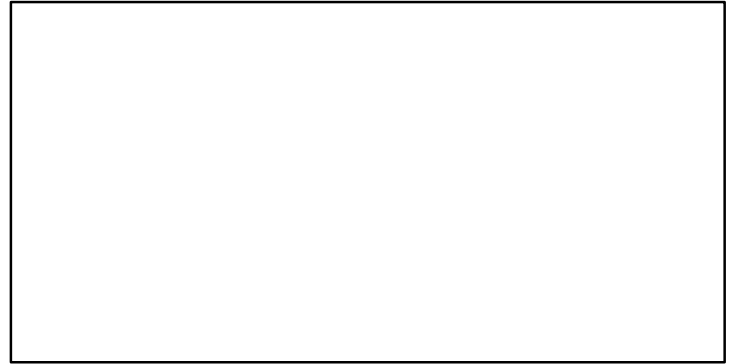
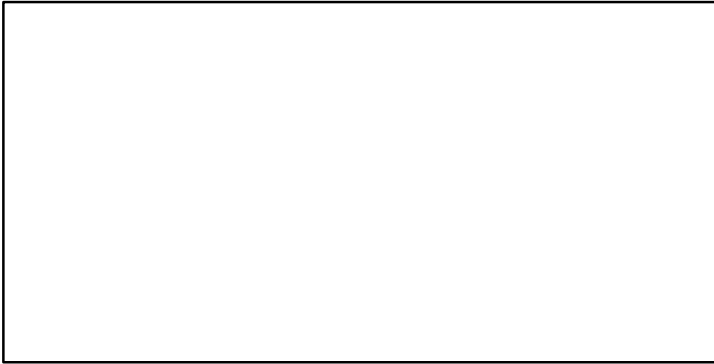
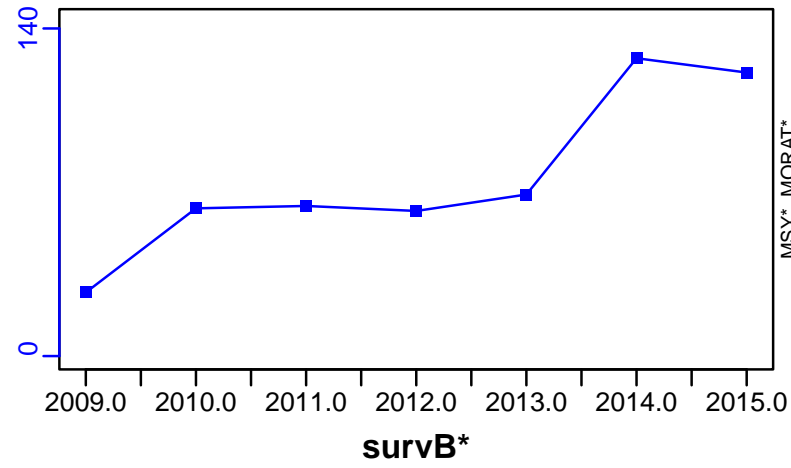
Recruits\*



Spotted ray ICES 6–7bj [SPRAYVI–VIIbj]

TL–MT, TC\*, RecC\* (2005–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Spotted spiny dogfish Pacific Coast [SPSDOGPCOAST]

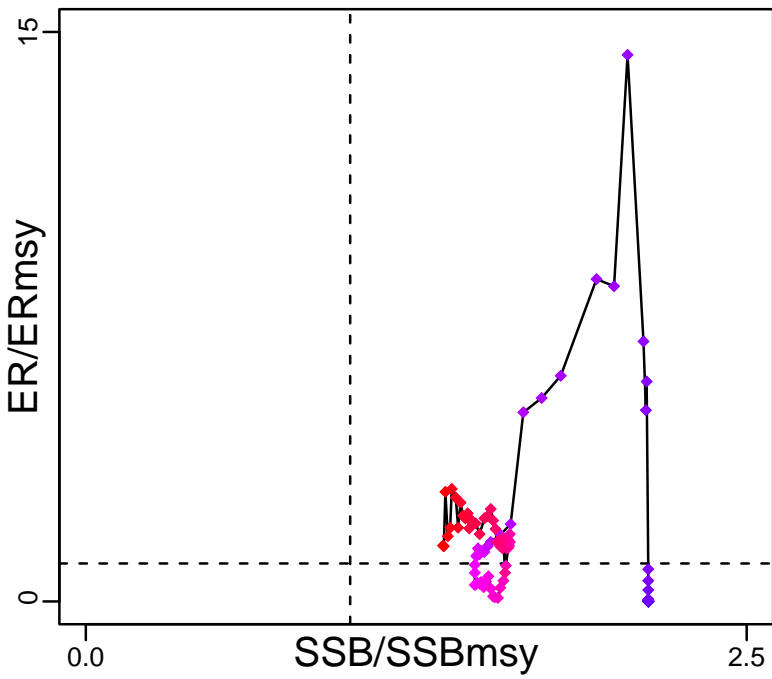
Metadata	
<b>Scientific Name</b>	Squalus suckleyi
<b>Current Assess ID</b>	NWFSC-SPSDOGPCOAST-1916-2011-STACHURA
<b>Area</b>	Pacific Coast
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northwest Fisheries Science Center
<b>Asmts in RAM</b>	2011

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	TBmsy-calc-MT	2011	160,000
<b>SSBmsy</b>	SSFmsy-E00	2011	33,229,000
<b>Fmsy</b>	-	-	-
<b>ERmsy</b>	ERmsy-ratio	2011	0.005
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	TB0-MT	2011	304,105
<b>SSB0</b>	-	-	-
<b>MSY</b>	MSY-MT	2011	848
<b>M</b>	M-1/yr	2011	0.064
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

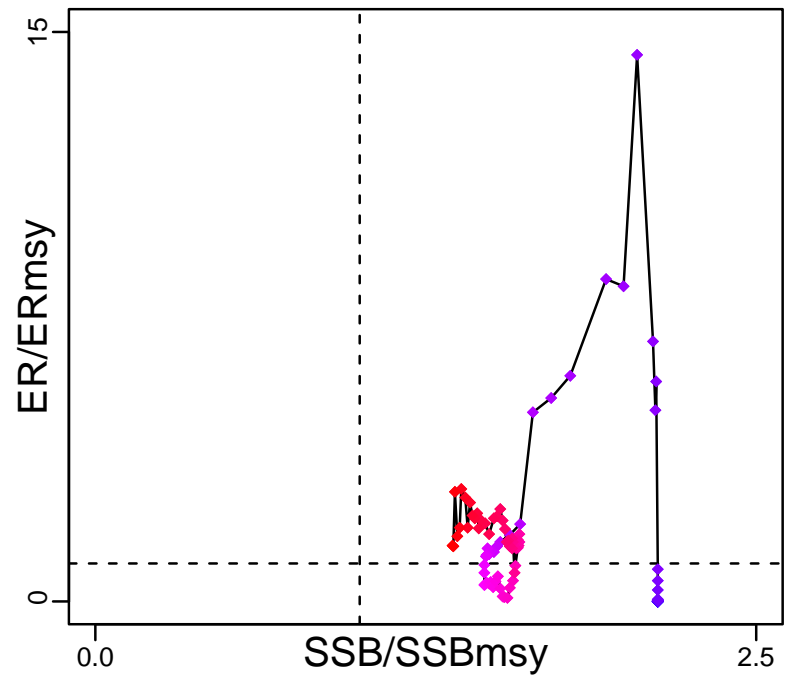
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2011	217,000	-	1+
<b>SSB</b>	SSF-E00	2011	44,600,000	Females	35.5+
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2011	17,500,000	-	0
<b>F</b>	-	-	-	-	-
<b>ER</b>	ER-ratio	2011	0.008	-	-
<b>TC</b>	TC-MT	2011	1160		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	TB-MT/TBmsy-calc-MT	2011	1.356		
<b>SSB/SSBmsy</b>	SSF-E00/SSFmsy-E00	2011	1.342		
<b>F/Fmsy</b>	-	-	-		
<b>ER/ERmsy</b>	ER-ratio/ERmsy-ratio	2011	1.472		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

# Spotted spiny dogfish Pacific Coast [SPSDOGPCOAST]

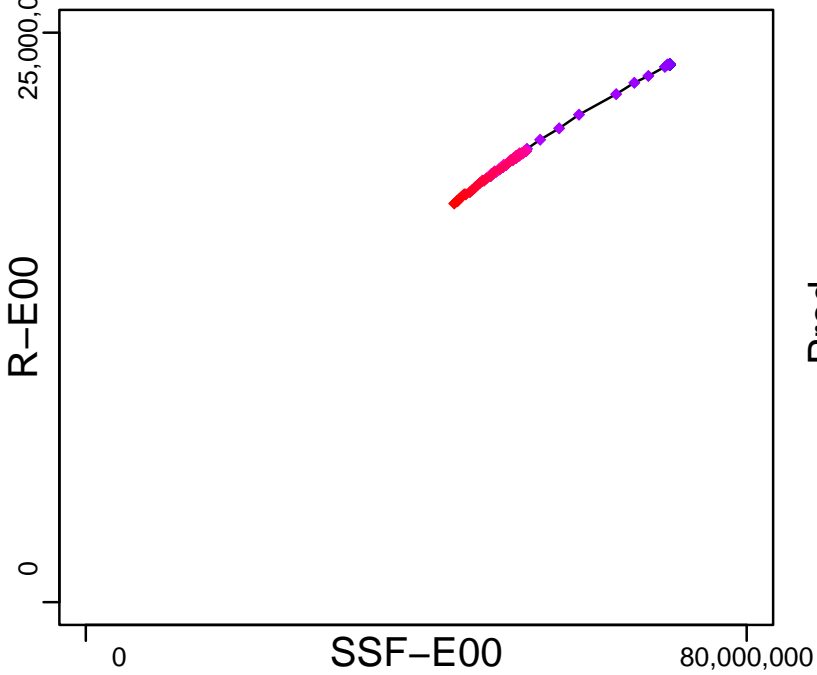
Kobe MSYpref (1916–2011–STACHURA)



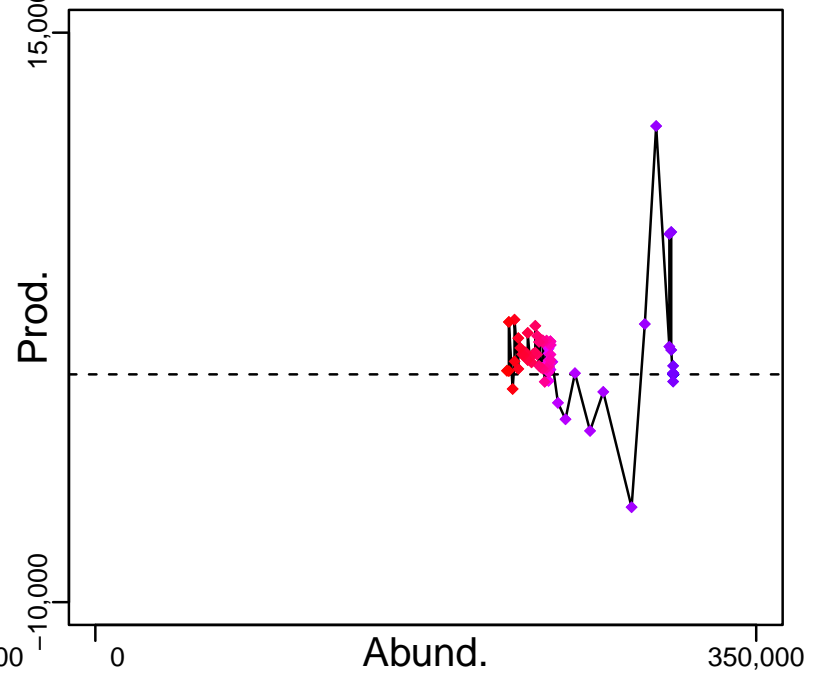
Kobe MGTpref (1916–2011–STACHURA)



Spawner Recruit (1916–2011–STACHURA)



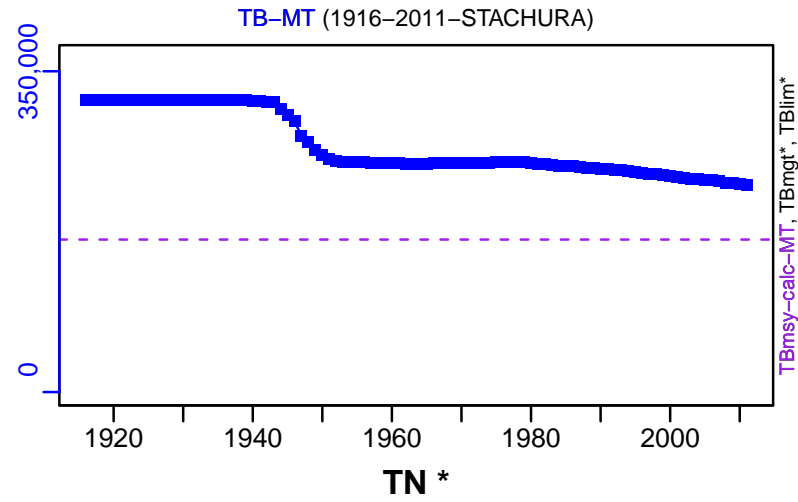
Production (1916–2011–STACHURA)



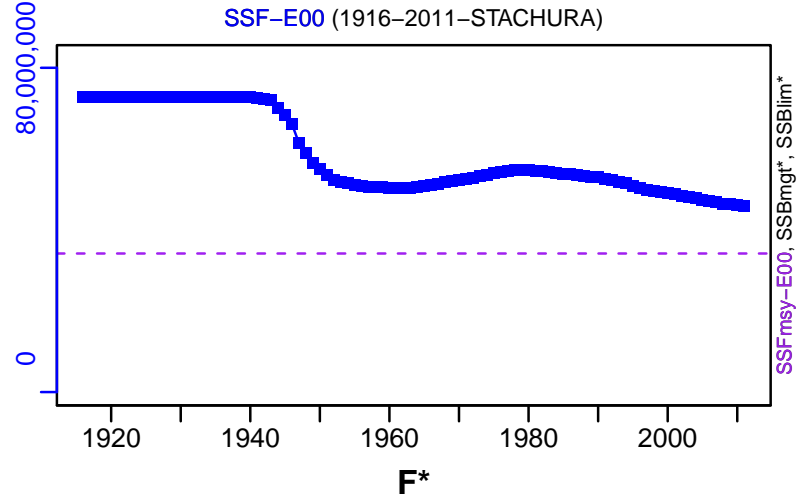
◆ Start Year ◆ End Year \* No Data

# Spotted spiny dogfish Pacific Coast [SPSDOGPCOAST]

TB-MT (1916-2011-STACHURA)



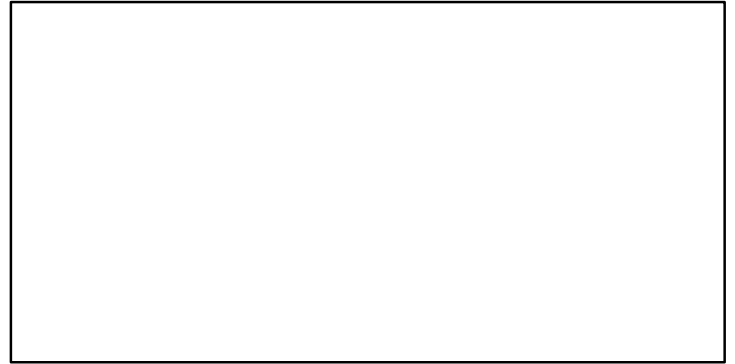
SSF-E00 (1916-2011-STACHURA)



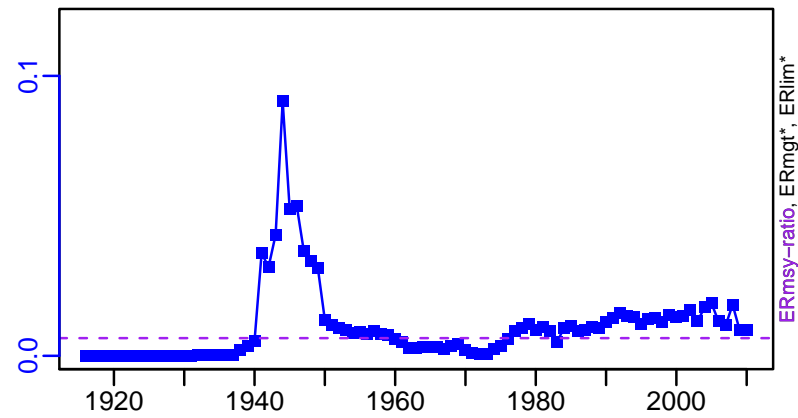
TN \*



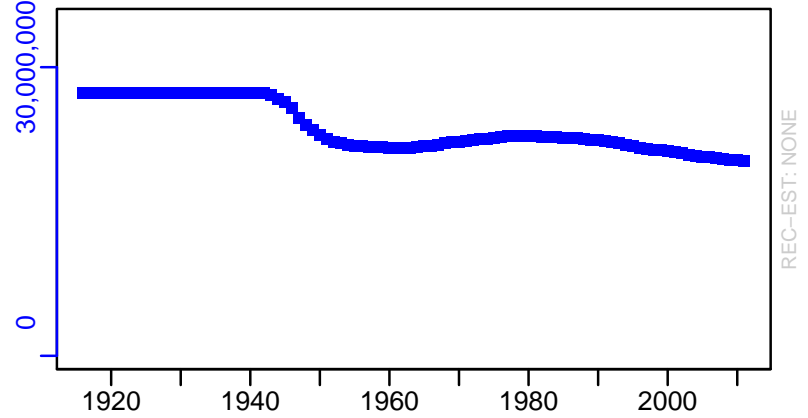
F\*



ER-ratio (1916-2011-STACHURA)



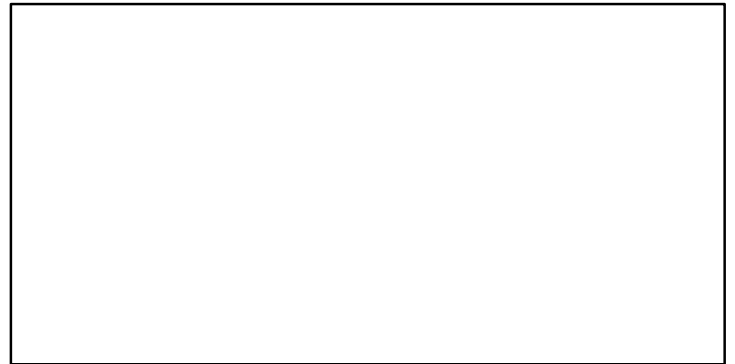
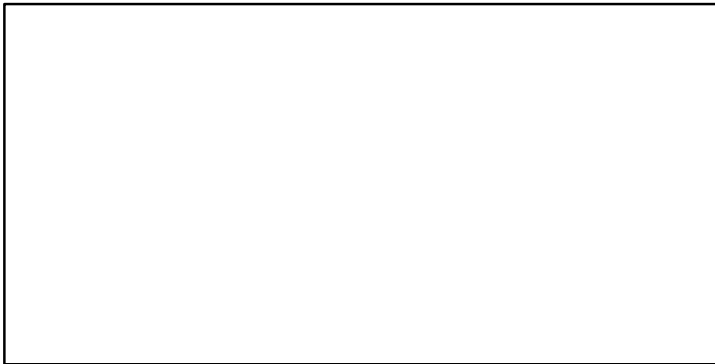
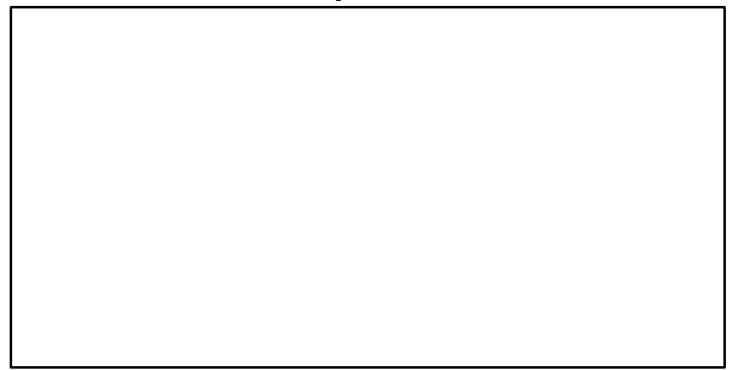
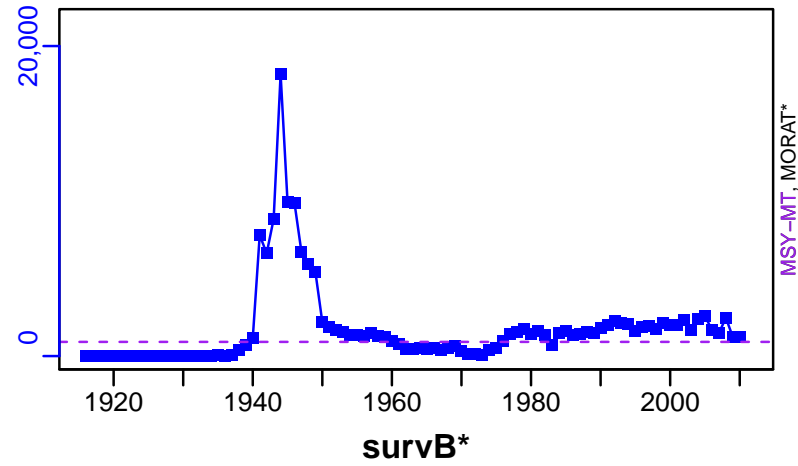
R-E00 (1916-2011-STACHURA)



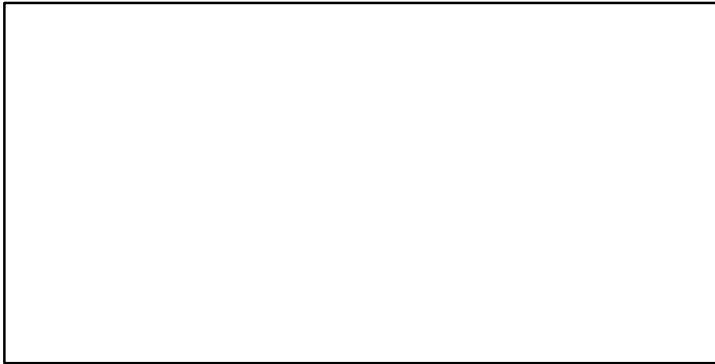
# Spotted spiny dogfish Pacific Coast [SPSDOGPCOAST]

TC-MT, TL\*, RecC\* (1916-2011-STACHURA)

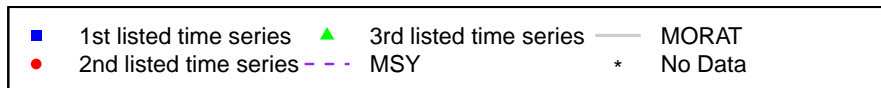
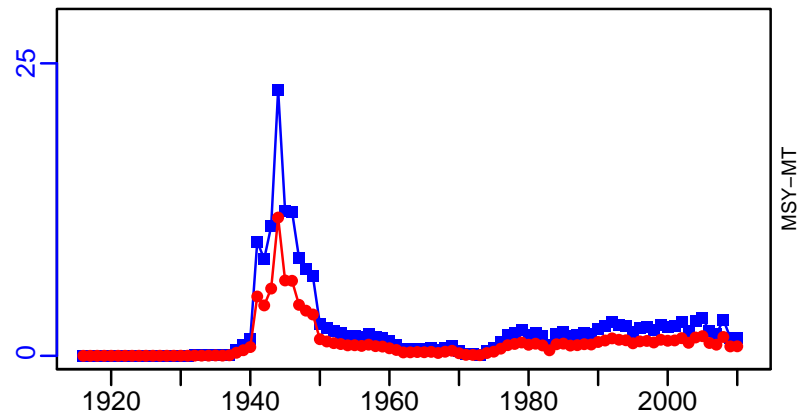
TAC\*, Cpair\*, Cadv\*



EFFORT\*



TC-MT/MSY-MT, CdivMEANC-ratio, (1916-2011-STACHURA)



## Spurdog Northeast Atlantic [SPURDNEATL]

Metadata	
<b>Scientific Name</b>	Squalus acanthias
<b>Current Assess ID</b>	WGEF-SPURDNEATL-1905-2020-ICESIMP2021-2
<b>Area</b>	Northeast Atlantic
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2016, 2020

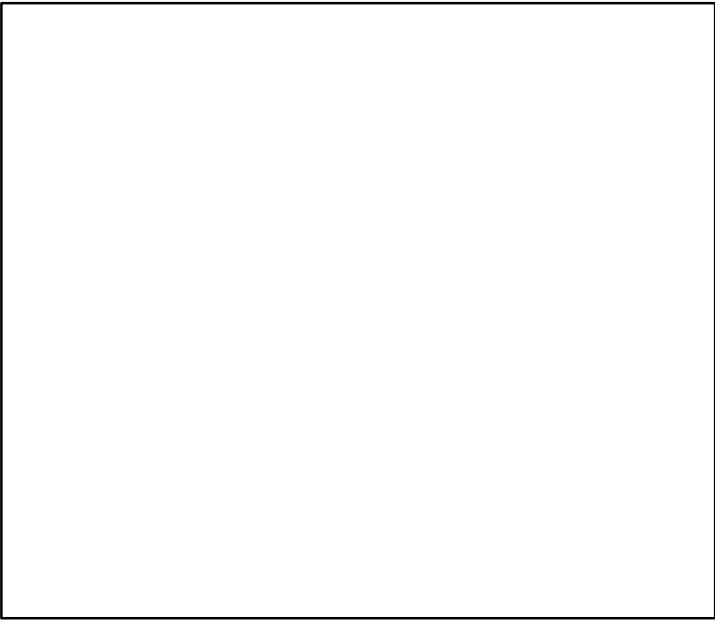
Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	-	-	-
<b>Fmsy</b>	-	-	-
<b>ERmsy</b>	ERmsy-ratio	2014	0.029
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	ERmgt-ratio	2014	0.029
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2020	436,999	-	-
<b>SSB</b>	SSB-MT	2020	74,100	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2020	$1.72 \times 10^8$	-	0
<b>F</b>	F-relative	2020	0.008	-	-
<b>ER</b>	ER-calc-ratio	2020	0.006	-	-
<b>TC</b>	TC-MT	2020	2470		
<b>TL</b>	TL-MT	2020	454		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	-	-	-		
<b>F/Fmsy</b>	-	-	-		
<b>ER/ERmsy</b>	ER-ratio/ERmsy-ratio	2014	0.466		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

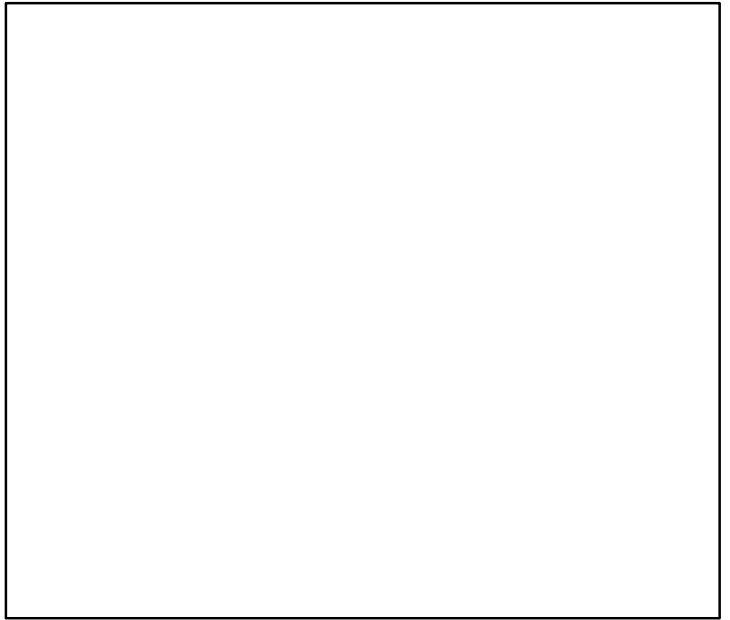


Spurdog Northeast Atlantic [SPURDNEATL]

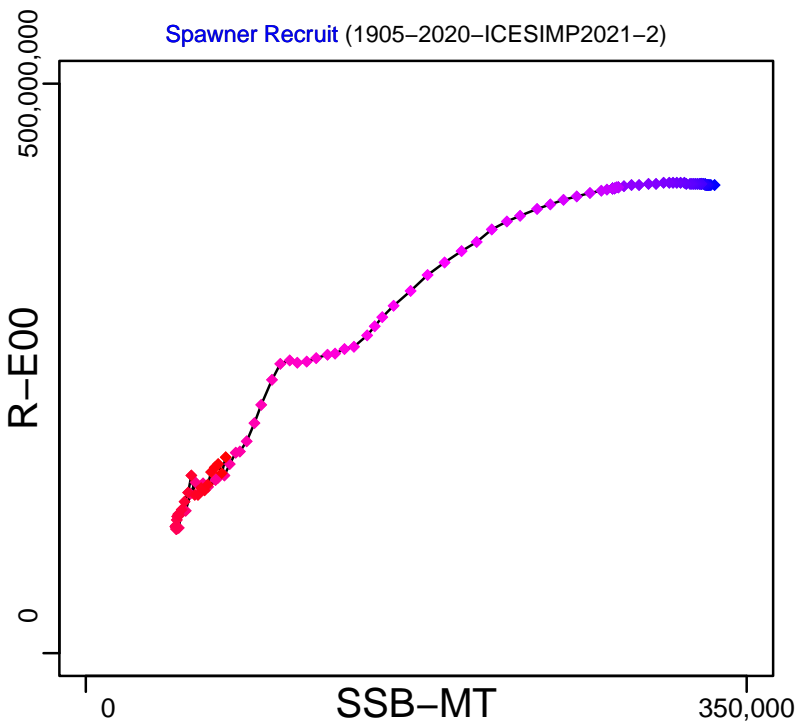
Kobe MSY\*



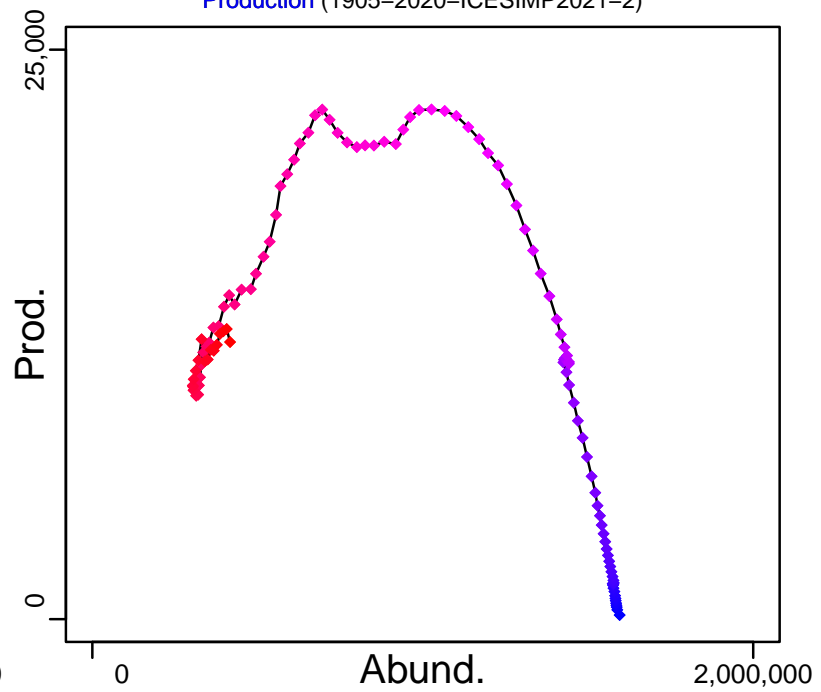
Kobe MGT\*



Spawner Recruit (1905–2020–ICESIMP2021–2)



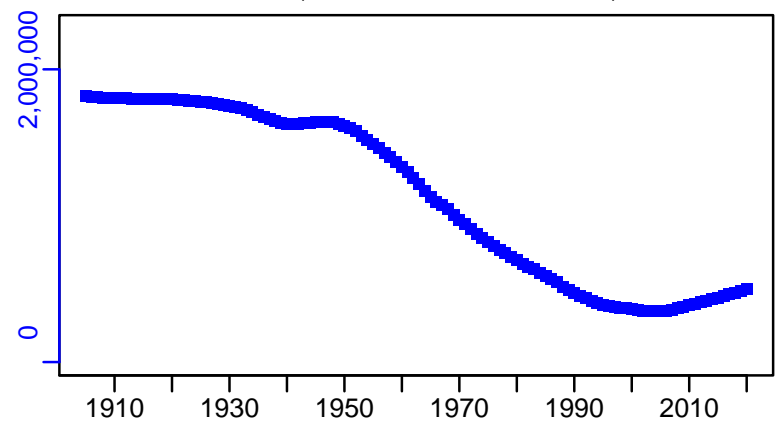
Production (1905–2020–ICESIMP2021–2)



◆ Start Year ◆ End Year \* No Data

# Spurdog Northeast Atlantic [SPURDNEATL]

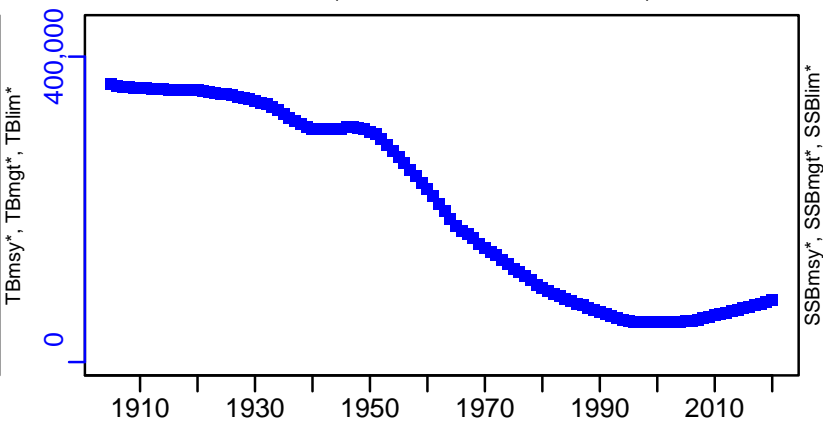
TB-MT (1905-2020-ICESIMP2021-2)



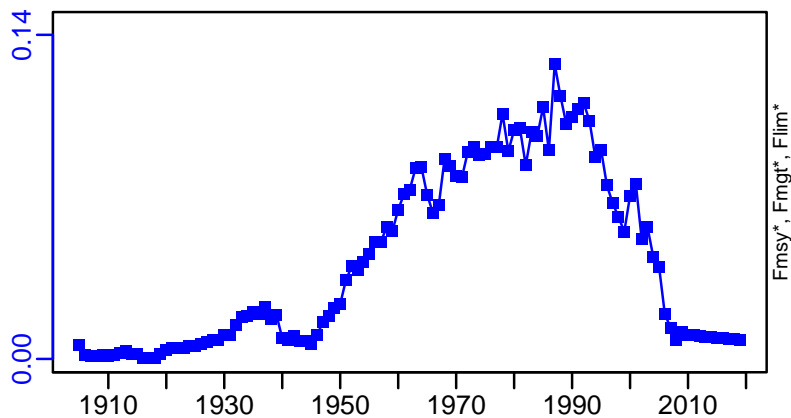
TN \*



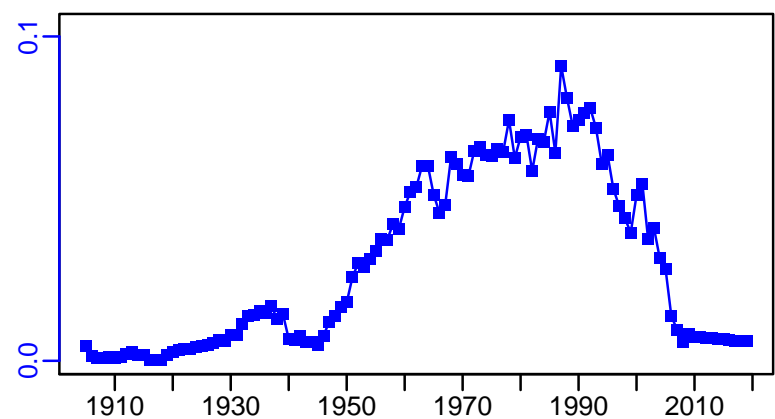
SSB-MT (1905-2020-ICESIMP2021-2)



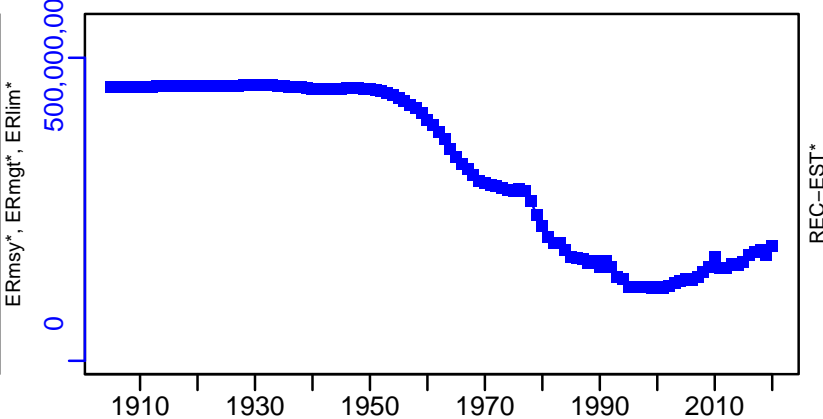
F-relative (1905-2020-ICESIMP2021-2)



ER-calc-ratio (1905-2020-ICESIMP2021-2)

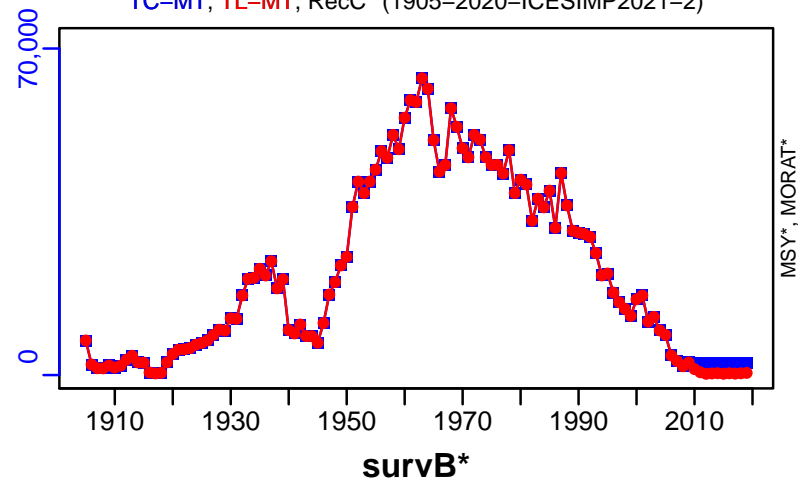


R-E00 (1905-2020-ICESIMP2021-2)

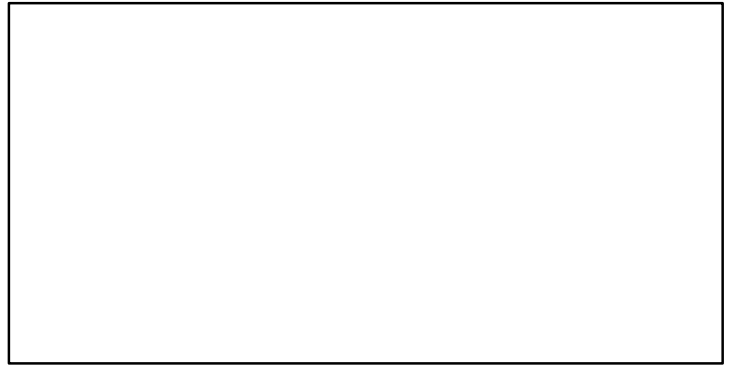


Spurdog Northeast Atlantic [SPURDNEATL]

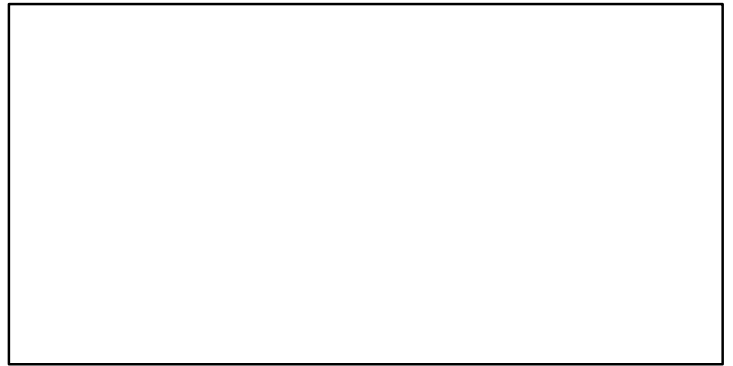
TC-MT, TL-MT, RecC\* (1905–2020–ICESIMP2021–2)



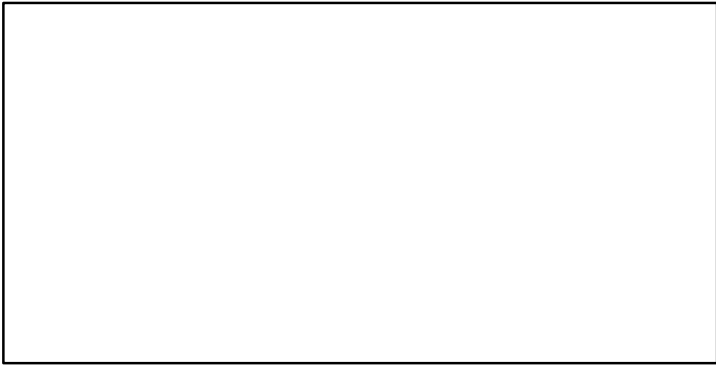
TAC\*, Cpair\*, Cadv\*



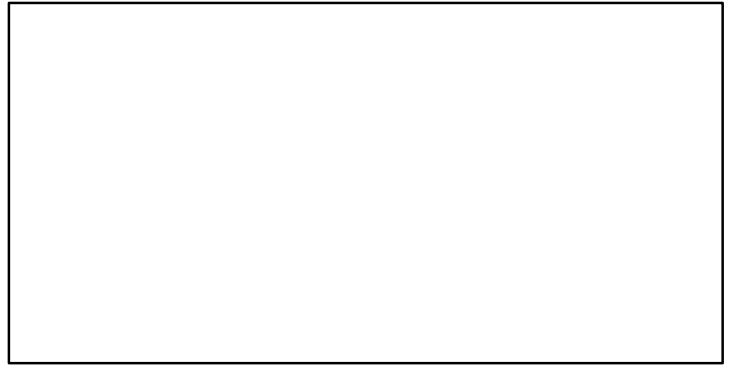
CPUE\*



EFFORT\*



CdivMSY\*



■ 1st listed time series ▲ 3rd listed time series — MORAT  
● 2nd listed time series - - - MSY \* No Data

**Smooth skate Gulf of Maine / Georges Bank-Southern New England  
[SSKAT5YZSNE]**

Metadata	
<b>Scientific Name</b>	Malacoraja senta
<b>Current Assess ID</b>	NEFSC-SSKAT5YZSNE-1965-2019-SISIMP2021-2
<b>Area</b>	Gulf of Maine / Georges Bank-Southern New England
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2005, 2018, 2019

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2019	339		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

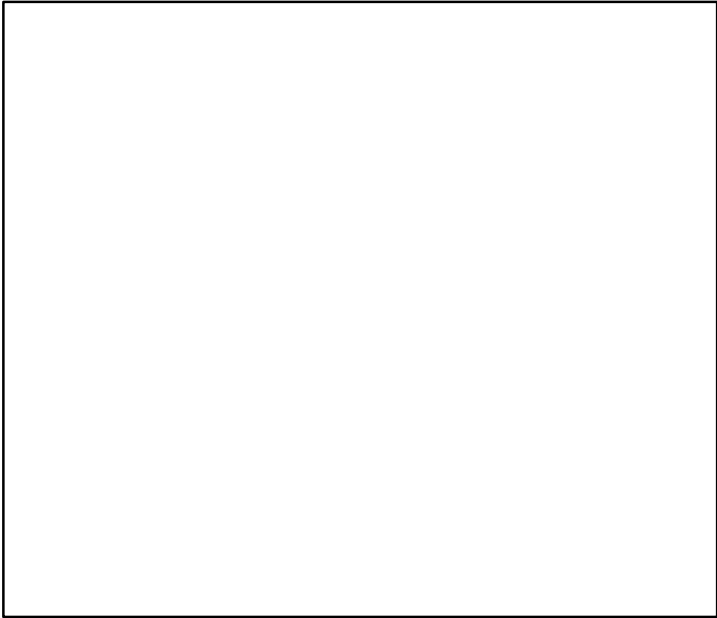
Kobe MSY\*



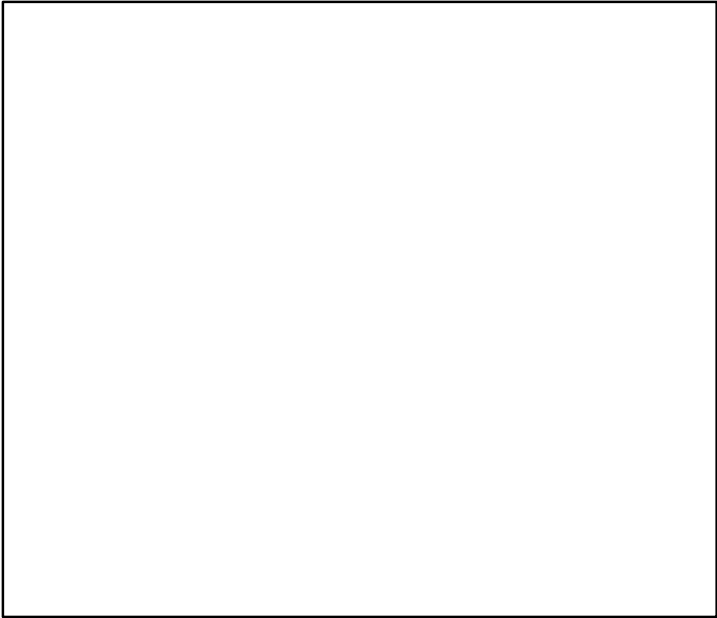
Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



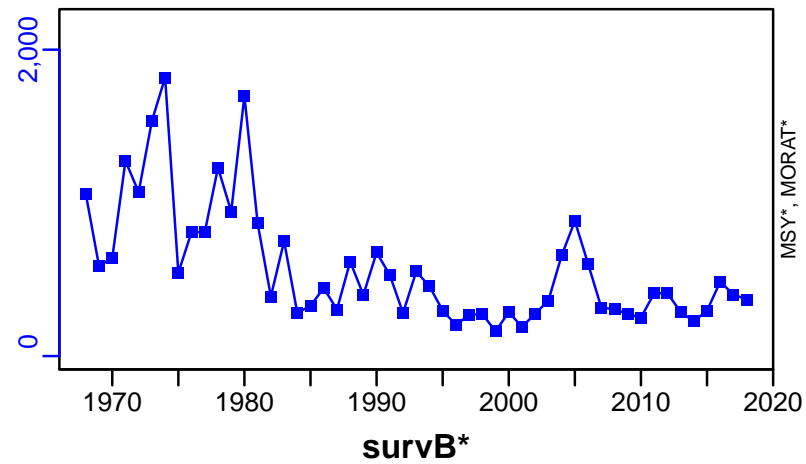
**Recruits\***



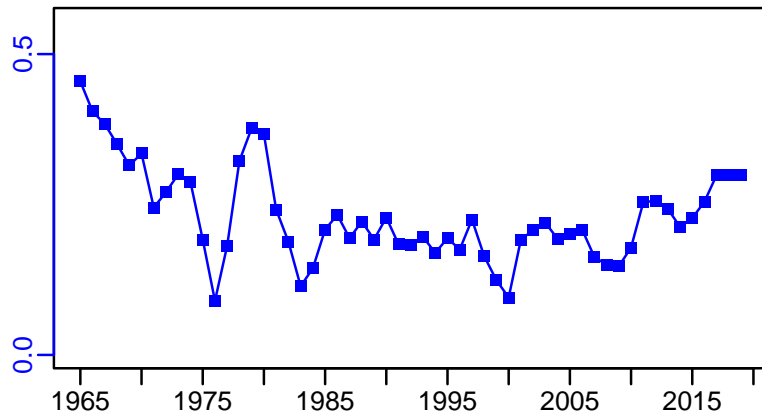
# Smooth skate Gulf of Maine / Georges Bank–Southern New England [SSKAT5YZSNE]

TC–MT, TL\*, RecC\* (1965–2019–SISIMP2021–2)

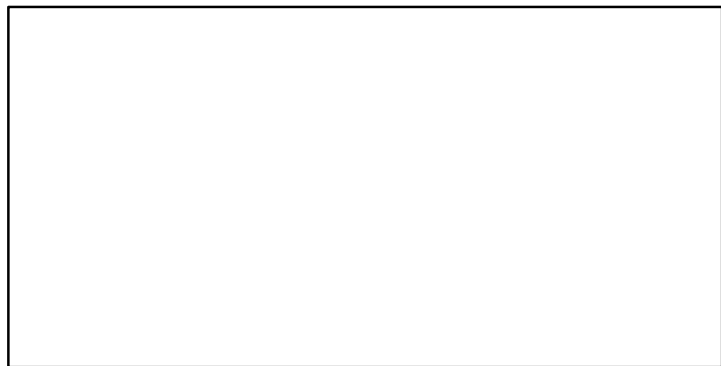
TAC\*, Cpair\*, Cadv\*



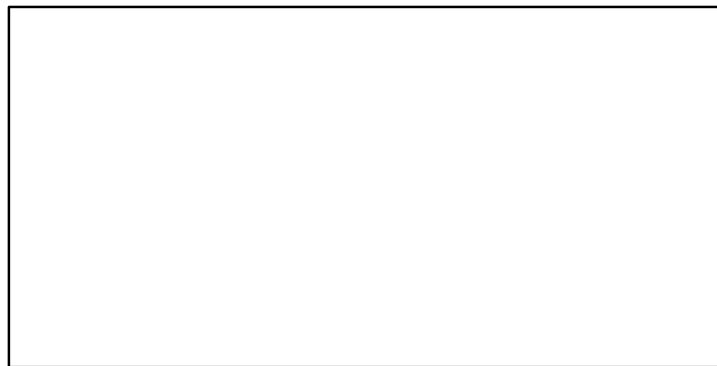
CPUE–index (1965–2019–SISIMP2021–2)



EFFORT\*



CdivMSY\*



■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - - MSY    \* No Data

### Starry ray ICES 2-3a-4 [STRAYII-IIIa-IV]

Metadata	
<b>Scientific Name</b>	Amblyraja radiata
<b>Current Assess ID</b>	WGEF-STRAYII-IIIa-IV-1991-2018-ICESIMP2021
<b>Area</b>	ICES 2-3a-4
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	0.41	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	1.341		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



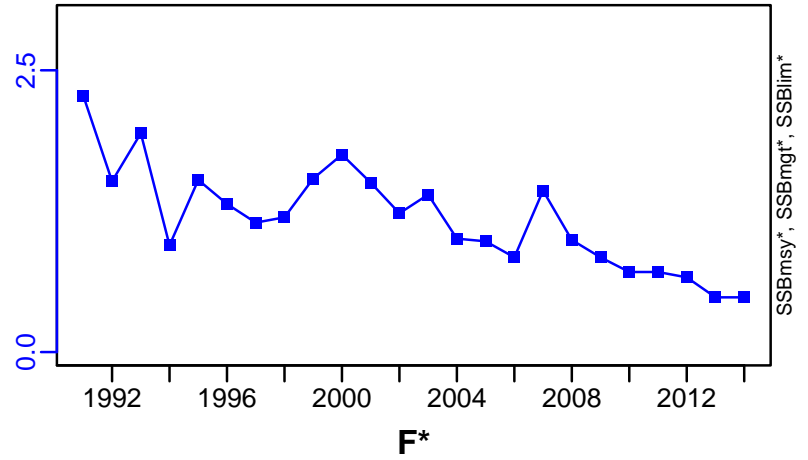
◆ Start Year   ◆ End Year   \* No Data

Starry ray ICES 2–3a–4 [STRAYII–IIIa–IV]

TB\*



SSB-index (1991–2014–ICESIMP2018)



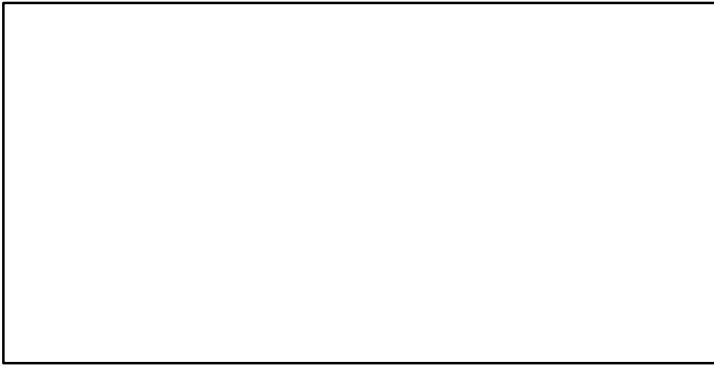
TN \*



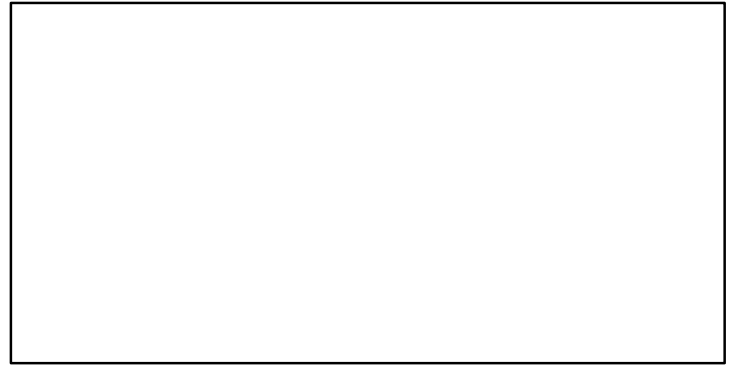
F\*



ER\*



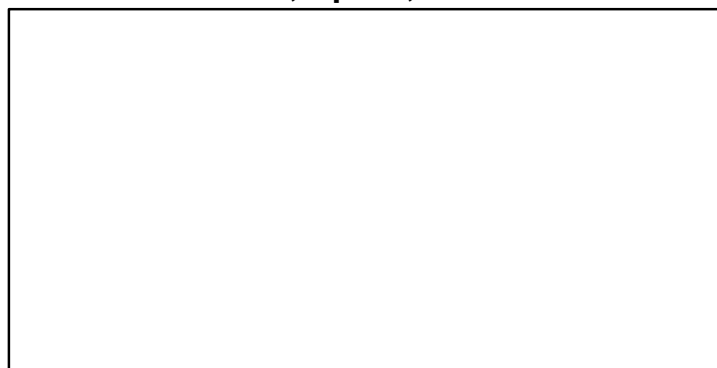
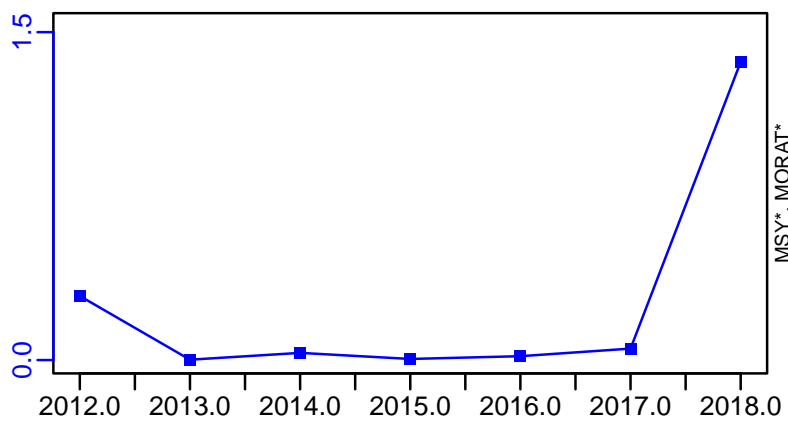
Recruits\*



# Starry ray ICES 2-3a-4 [STRAYII-IIIa-IV]

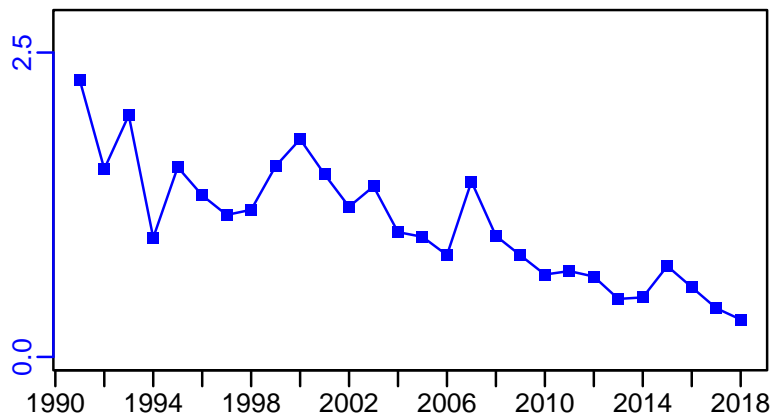
TL-MT, TC\*, RecC\* (1991-2018-ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



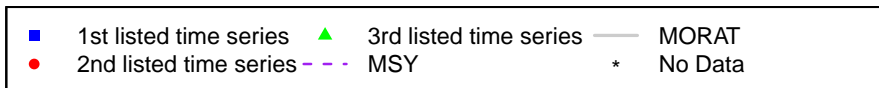
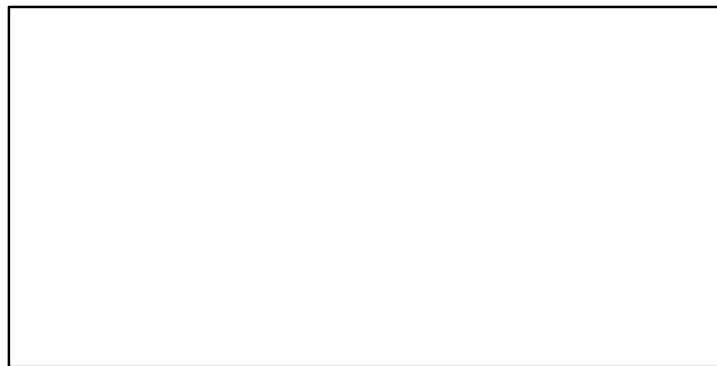
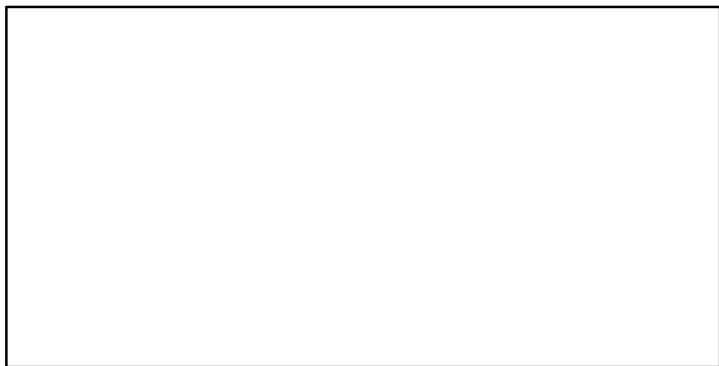
survB-index (1991-2018-ICESIMP2021)

CPUE\*



EFFORT\*

CdivMSY\*



### Thornback skate ICES 3a-4-7d [TBSKAIIIa-IV-VIId]

Metadata	
<b>Scientific Name</b>	Raja clavata
<b>Current Assess ID</b>	WGEF-TBSKAIIIa-IV-VIId-1993-2018-ICESIMP2021
<b>Area</b>	ICES 3a-4-7d
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2018, 2016

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2014	2.84	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	2219		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

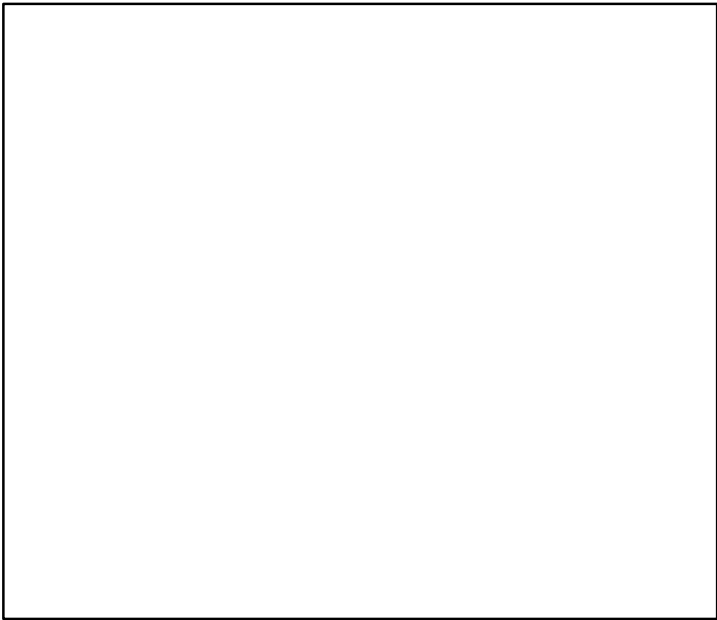
Kobe MSY\*



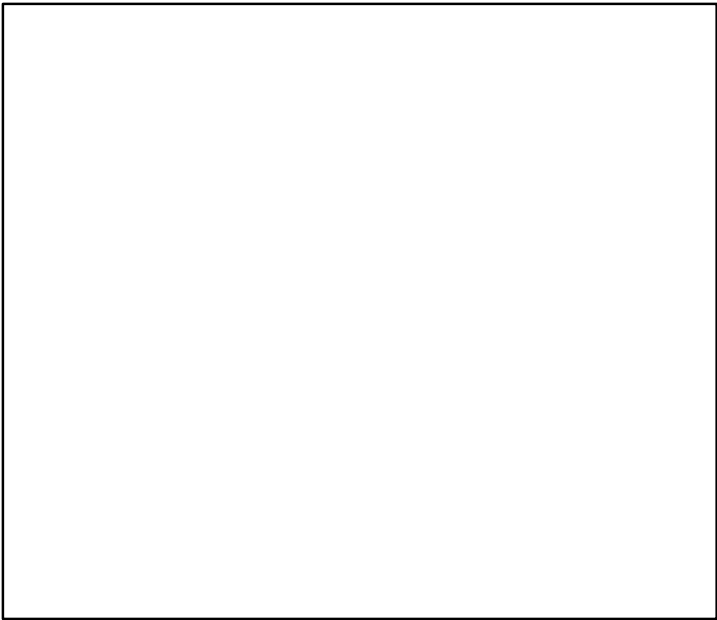
Kobe MGT\*



Spawner Recruit\*



Production\*

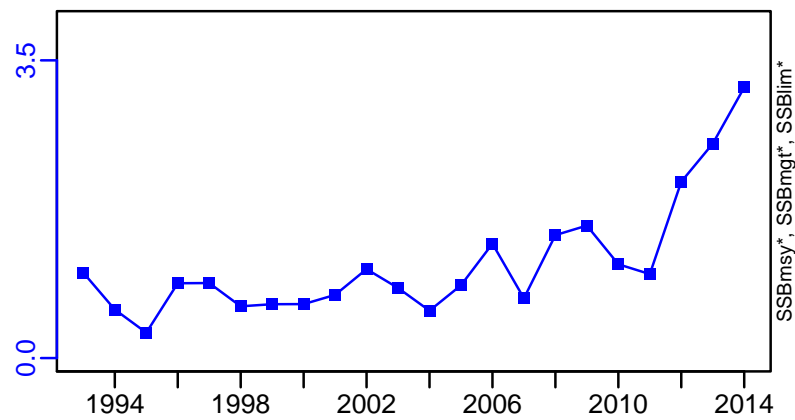


◆ Start Year   ◆ End Year   \* No Data

# Thornback skate ICES 3a–4–7d [TBSKAIIIa–IV–VIIId]

TB\*

SSB-index (1993–2014–ICESIMP2018)



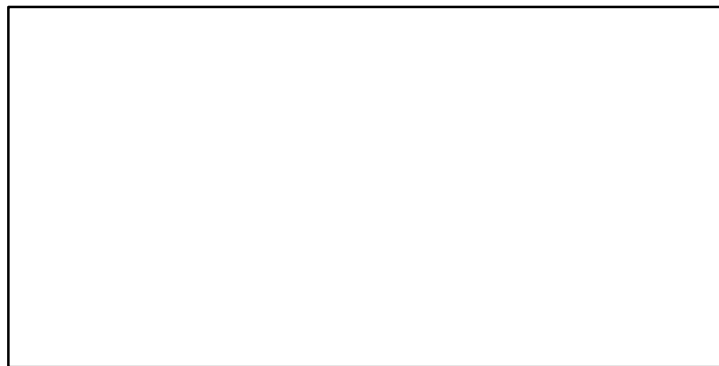
TN \*



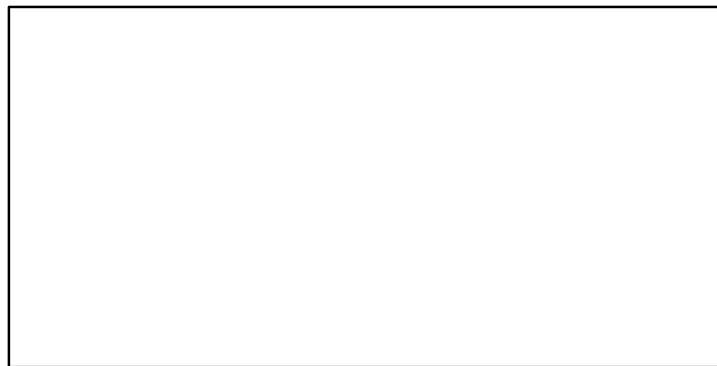
F\*



ER\*



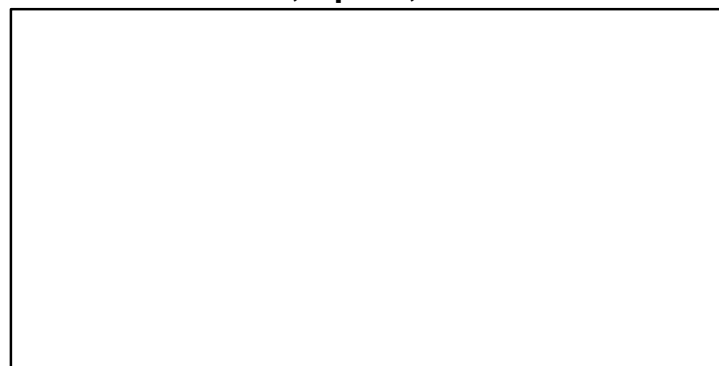
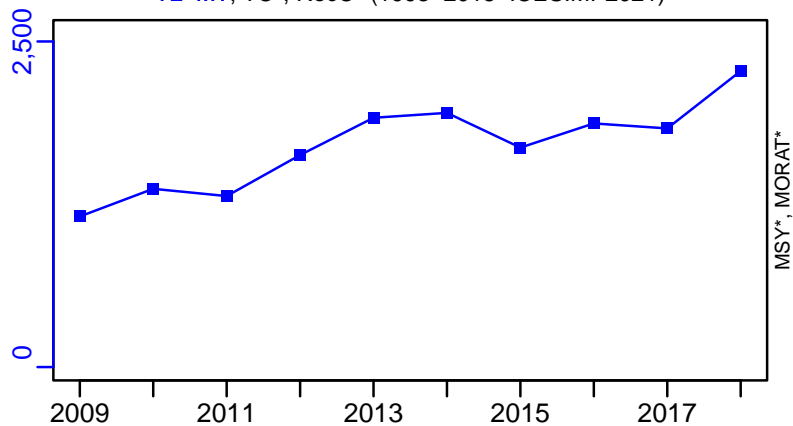
Recruits\*



# Thornback skate ICES 3a–4–7d [TBSKAIIIa–IV–VIIId]

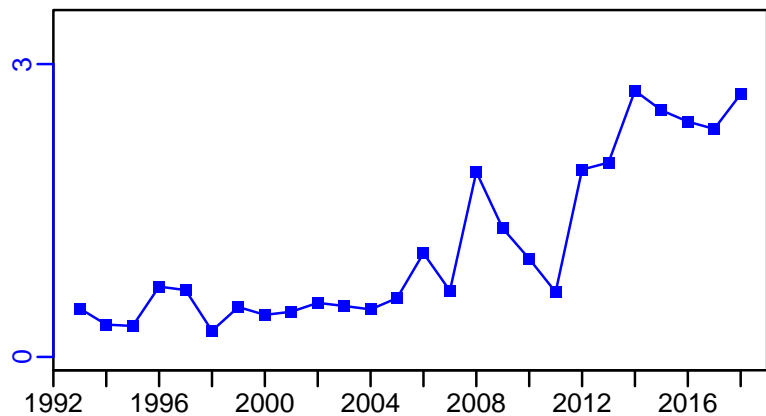
TL–MT, TC\*, RecC\* (1993–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



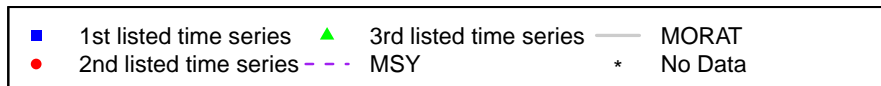
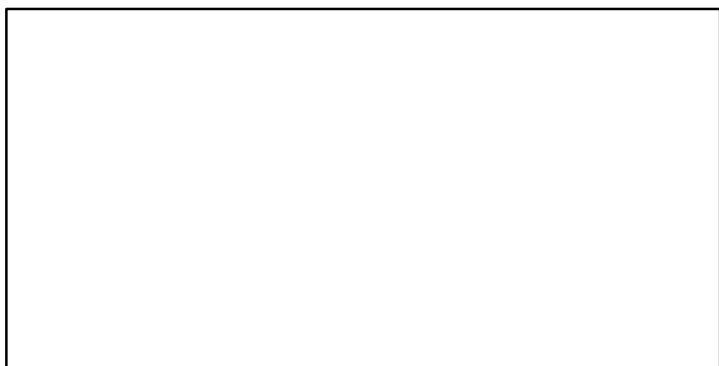
survB–index (1993–2018–ICESIMP2021)

CPUE\*



EFFORT\*

CdivMSY\*



## Thornback skate Portugese Waters -East [TBSKAIXa]

Metadata	
<b>Scientific Name</b>	Raja clavata
<b>Current Assess ID</b>	WGEF-TBSKAIXa-1997-2015-ICESIMP2018
<b>Area</b>	Portugese Waters -East
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	1.93	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	724		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



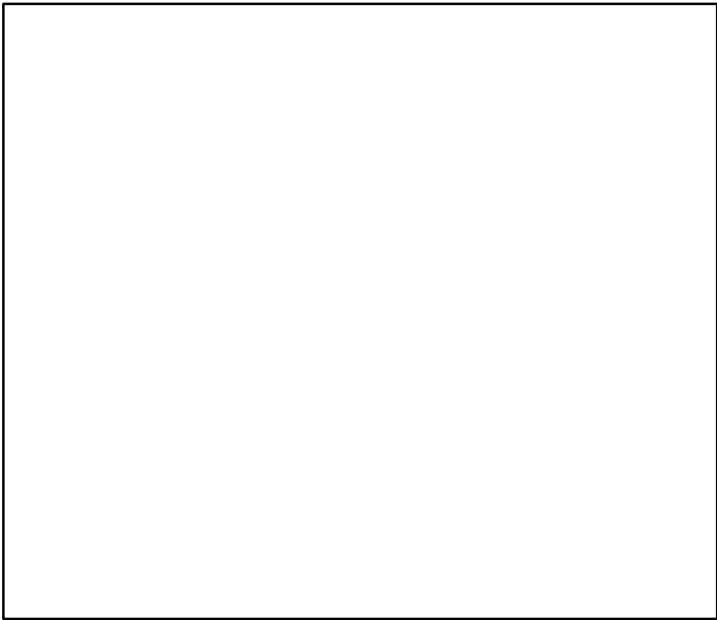
Kobe MSY\*



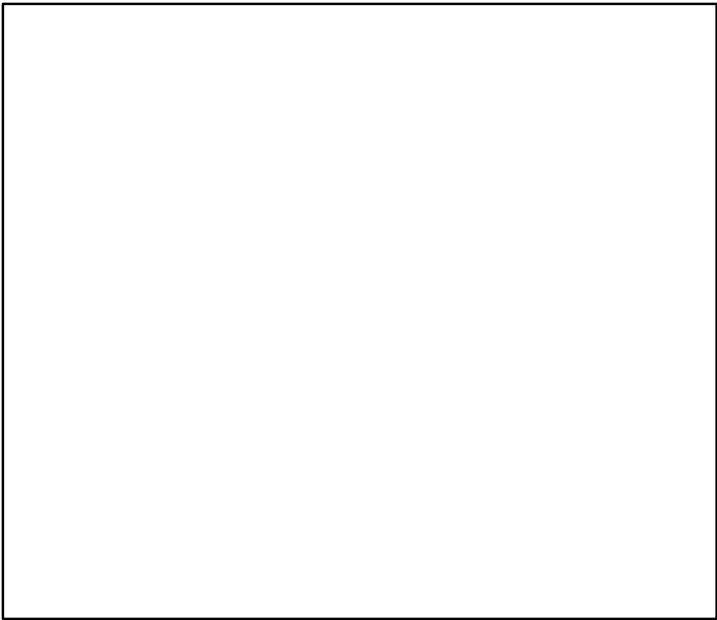
Kobe MGT\*



Spawner Recruit\*



Production\*

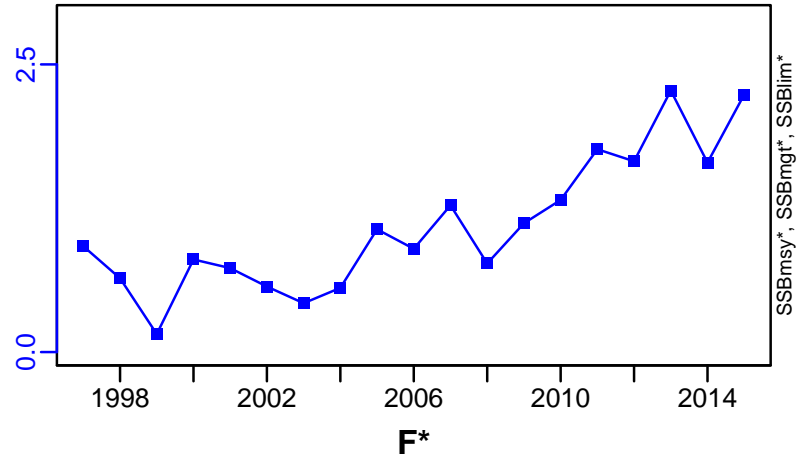
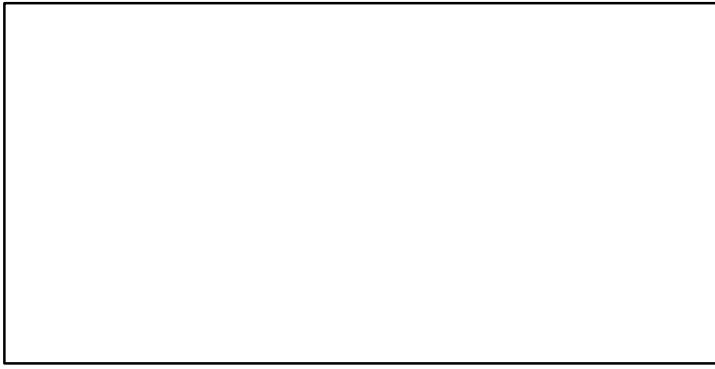


◆ Start Year   ◆ End Year   \* No Data

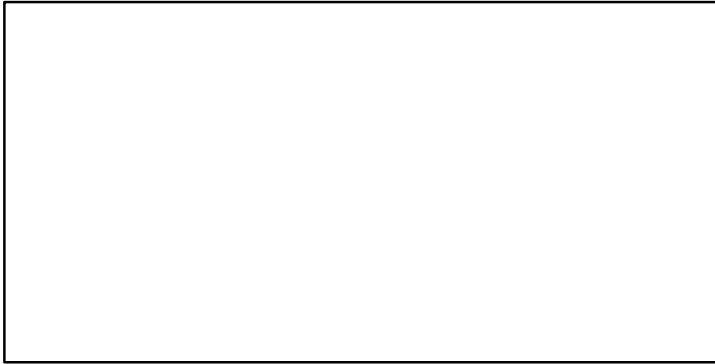
# Thornback skate Portugese Waters –East [TBSKAIXa]

TB\*

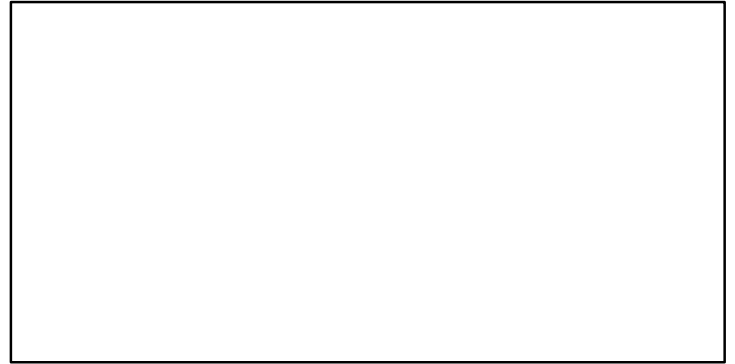
SSB-index (1997–2015–ICESIMP2018)



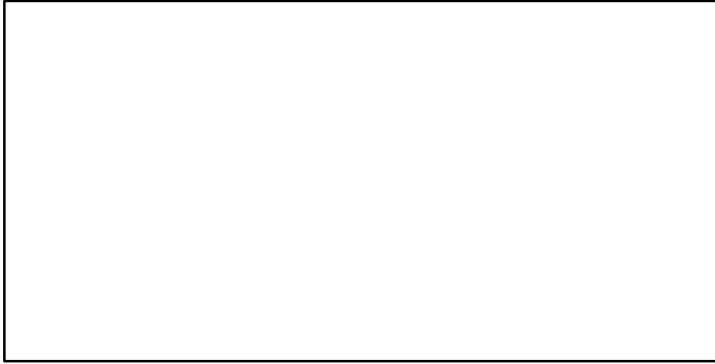
TN \*



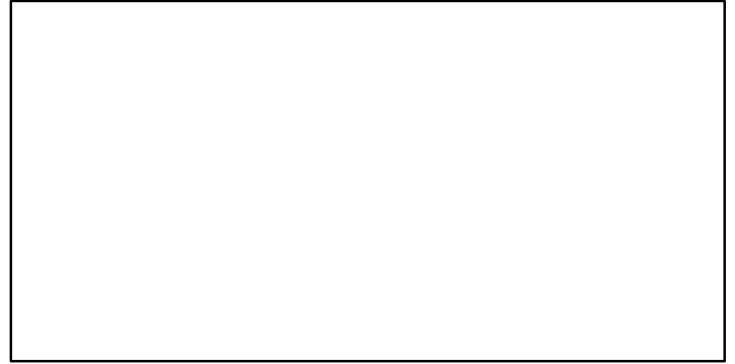
F\*



ER\*



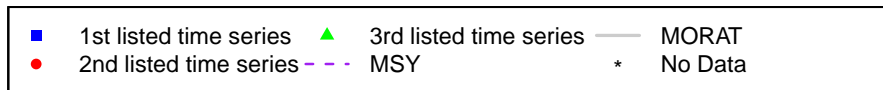
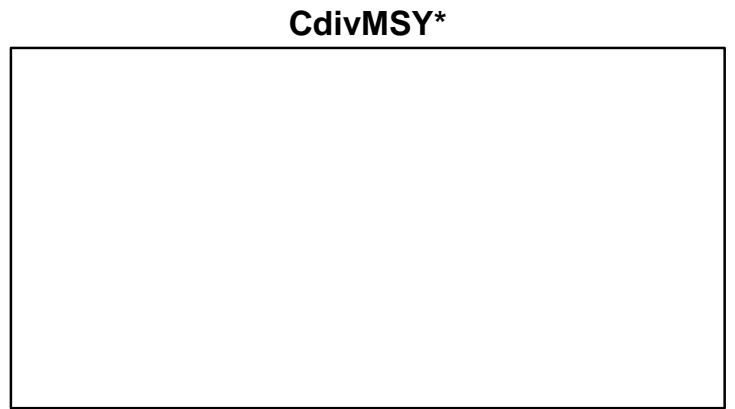
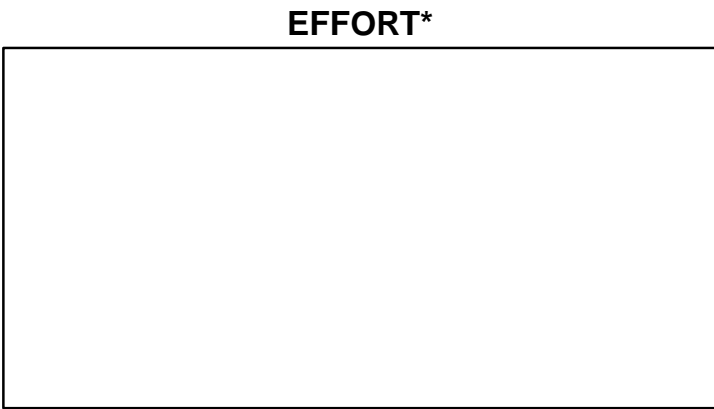
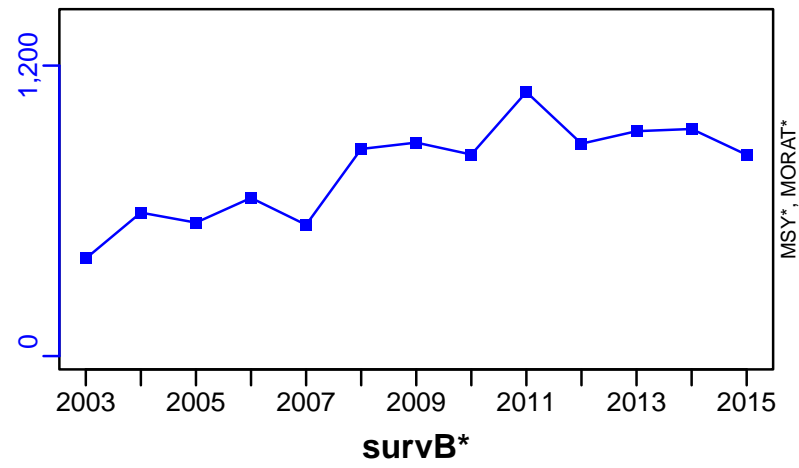
Recruits\*



# Thornback skate Portuguese Waters –East [TBSKAIXa]

TL–MT, TC\*, RecC\* (1997–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



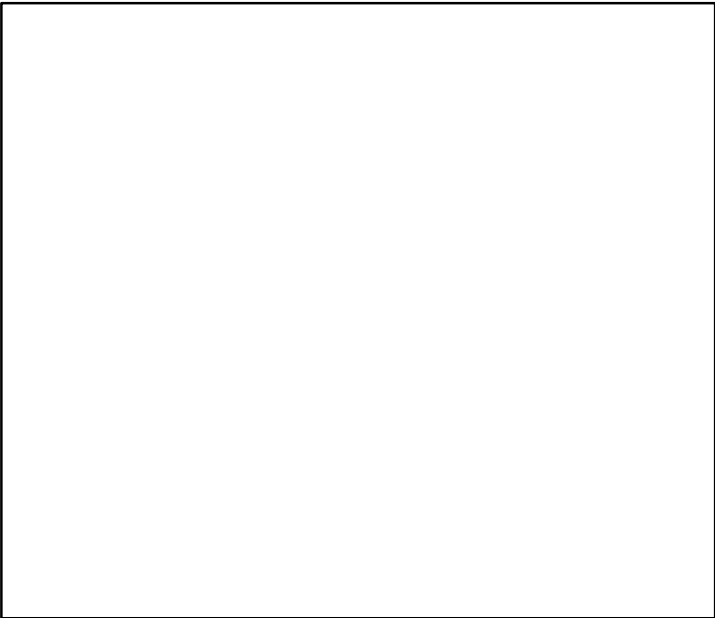
## Thornback skate Black Sea [TBSKAMEDGSA29]

Metadata	
<b>Scientific Name</b>	Raja clavata
<b>Current Assess ID</b>	STECF-TBSKAMEDGSA29-2008-2014-OSIO
<b>Area</b>	Black Sea
<b>Management Authority</b>	General Fisheries Council for the Mediterranean, DG MARE, and national states
<b>Assessor</b>	Scientific, Technical and Economic Committee for Fisheries
<b>Asmts in RAM</b>	2014

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	-	-	-
<b>Fmsy</b>	-	-	-
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	Fmgt-1/yr	2014	0.16
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	-	-	-
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	-	-	-	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	-	-	-	-	-
<b>F</b>	F-1/yr	2014	0.21	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	TC-MT	2014	96		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	-	-	-		
<b>F/Fmsy</b>	-	-	-		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	F-1/yr/Fmgt-1/yr	2014	1.312		
<b>ER/ERmgt</b>	-	-	-		

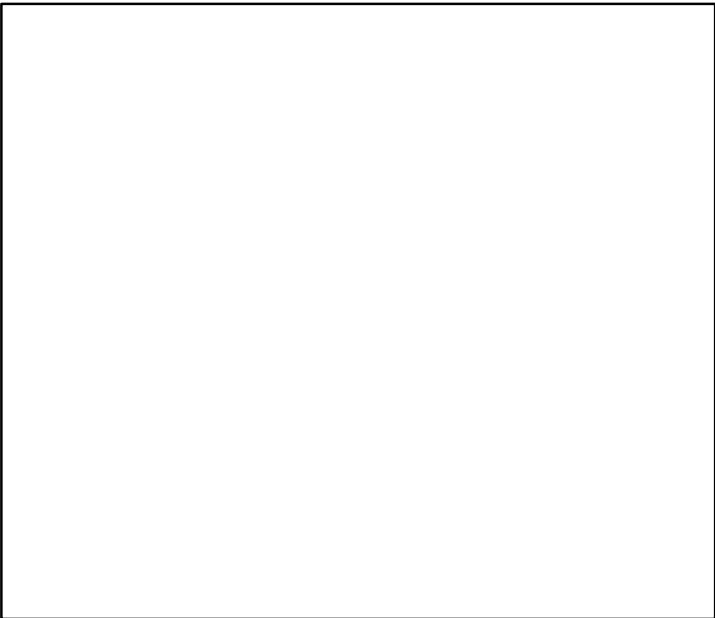
Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

Thornback skate Black Sea [TBSKAMEDGSA29]

TB\*



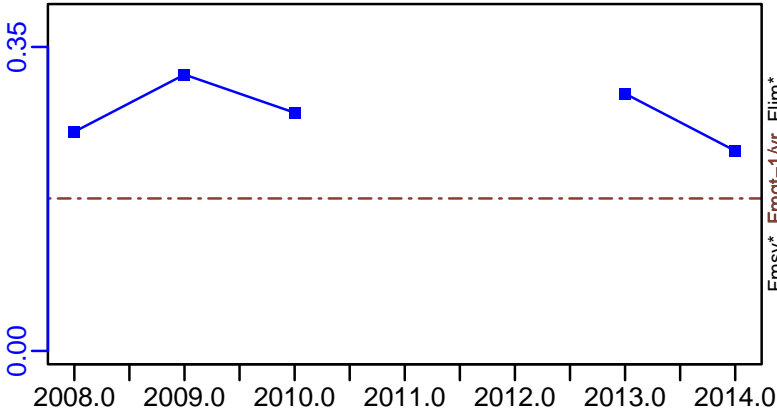
SSB\*



TN \*



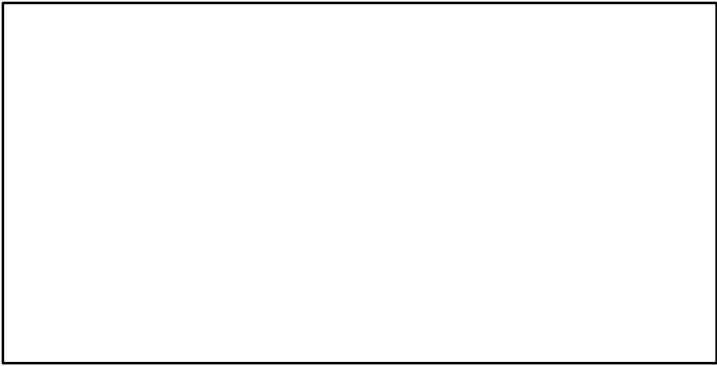
F-1/yr (2008–2014–OSIO)



ER\*



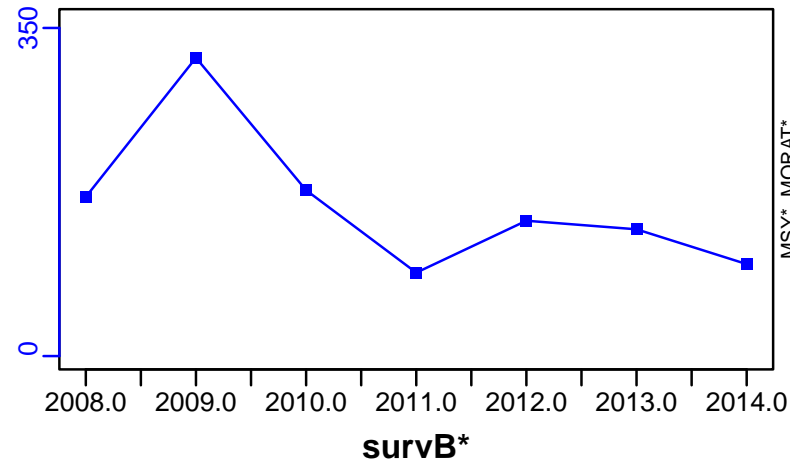
Recruits\*



# Thornback skate Black Sea [TBSKAMEDGSA29]

TC-MT, TL\*, RecC\* (2008–2014–OSIO)

TAC\*, Cpair\*, Cadv\*



## Thornback skate ICES 6 [TBSKAVI]

Metadata	
<b>Scientific Name</b>	Raja clavata
<b>Current Assess ID</b>	WGEF-TBSKAVI-2005-2015-ICESIMP2018
<b>Area</b>	ICES 6
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	8	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	241		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



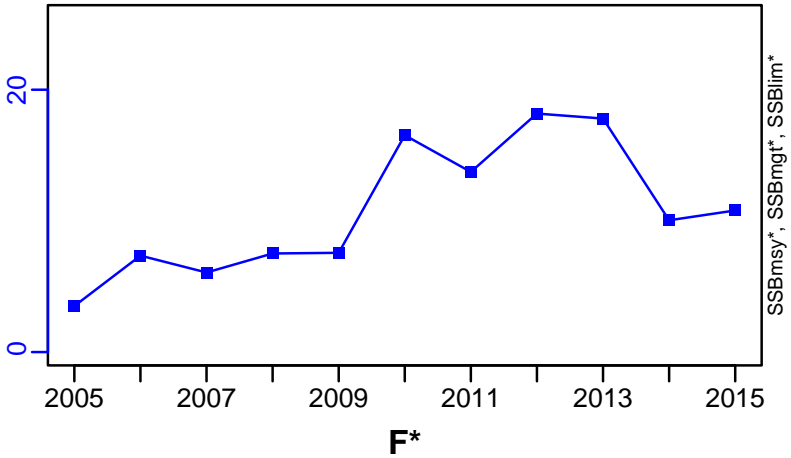
◆ Start Year   ◆ End Year   \* No Data

Thornback skate ICES 6 [TBSKAVI]

TB\*



SSB-index (2005–2015–ICESIMP2018)



TN \*



F\*



ER\*



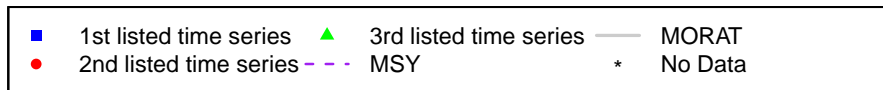
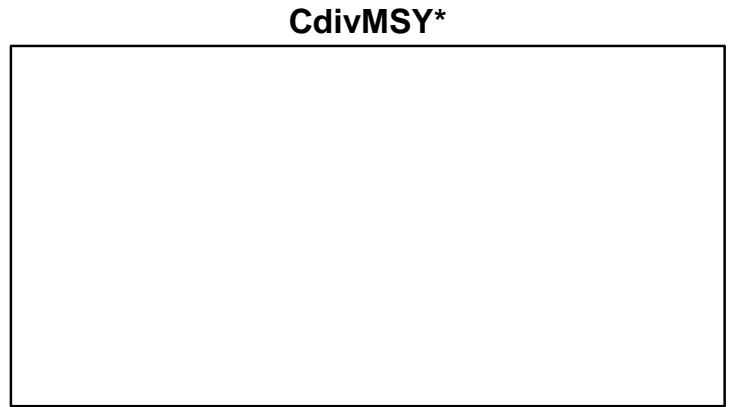
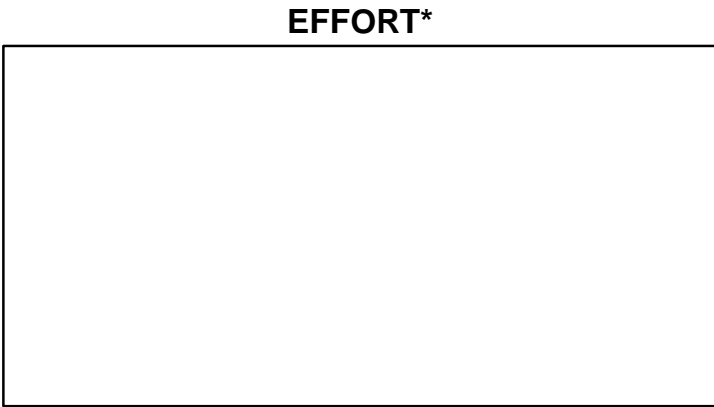
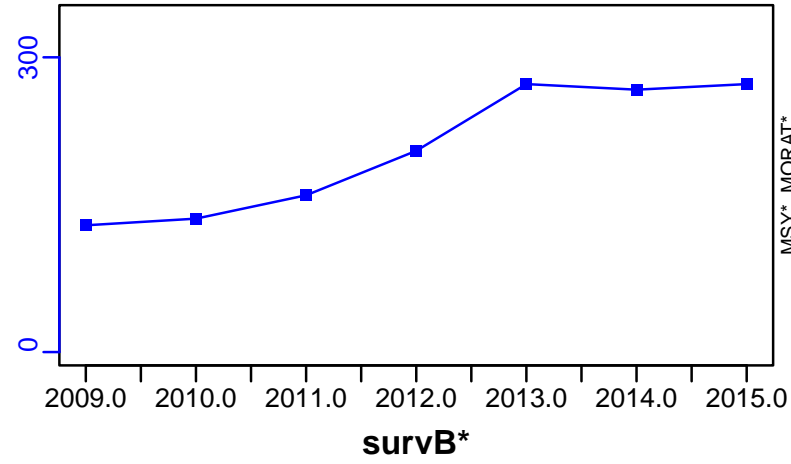
Recruits\*



# Thornback skate ICES 6 [TBSKAVI]

TL-MT, TC\*, RecC\* (2005–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



### Thornback skate ICES 7afg [TBSKAVIIafg]

Metadata	
<b>Scientific Name</b>	Raja clavata
<b>Current Assess ID</b>	WGEF-TBSKAVIIafg-1993-2015-ICESIMP2018
<b>Area</b>	ICES 7afg
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	9	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	893		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

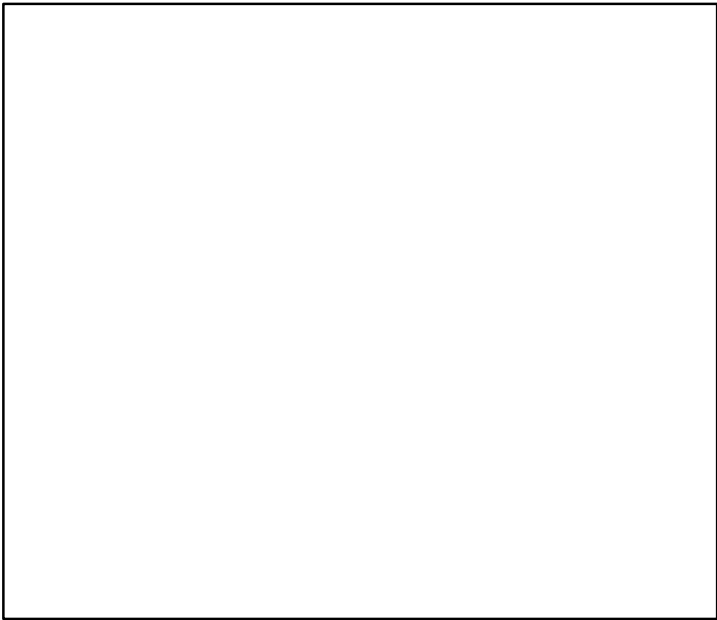
Kobe MSY\*



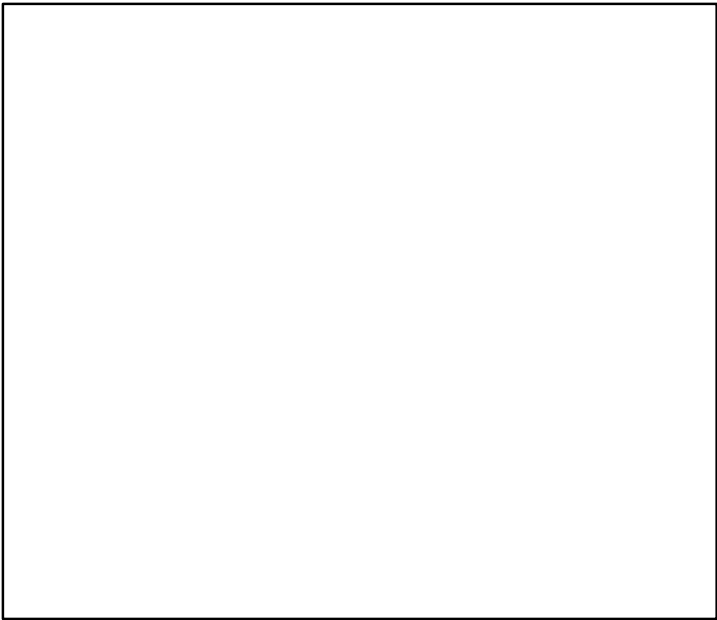
Kobe MGT\*



Spawner Recruit\*



Production\*



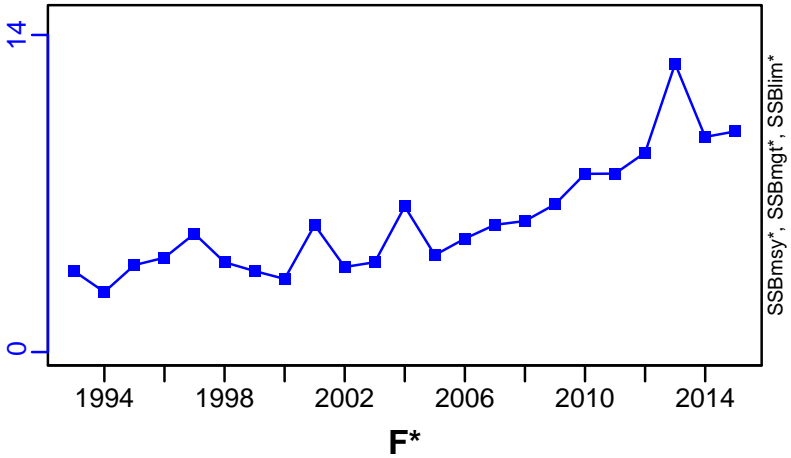
◆ Start Year   ◆ End Year   \* No Data

Thornback skate ICES 7afg [TBSKAVIIafg]

TB\*



SSB-index (1993–2015–ICESIMP2018)



TN \*



F\*



ER\*



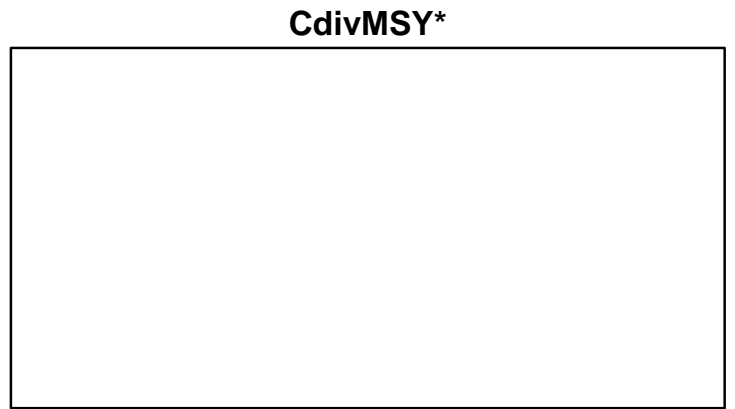
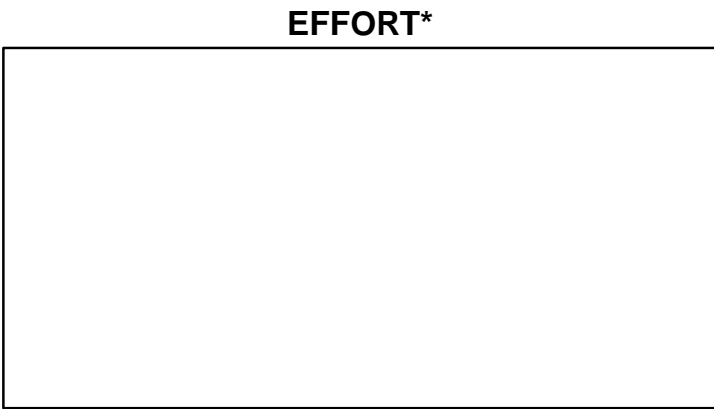
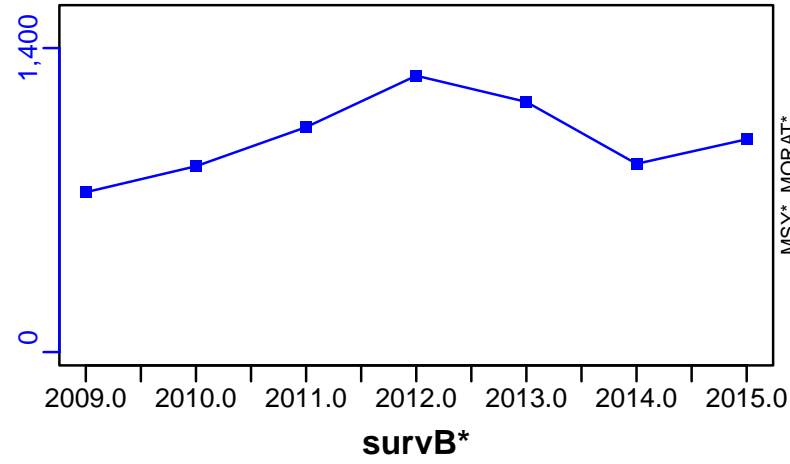
Recruits\*



# Thornback skate ICES 7afg [TBSKAVIIafg]

TL-MT, TC\*, RecC\* (1993–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Thornback skate Western English Channel [TBSKAVIle]

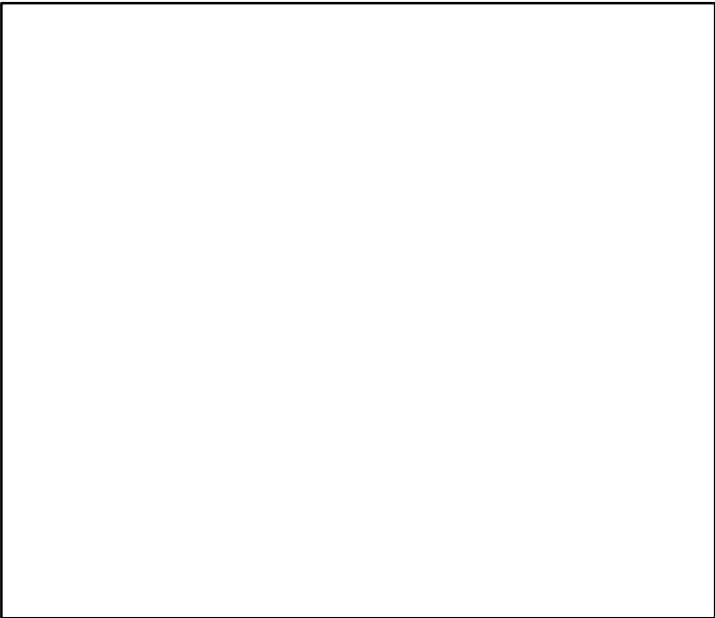
Metadata	
<b>Scientific Name</b>	Raja clavata
<b>Current Assess ID</b>	WGEF-TBSKAVIle-2009-2015-ICESIMP2018
<b>Area</b>	Western English Channel
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

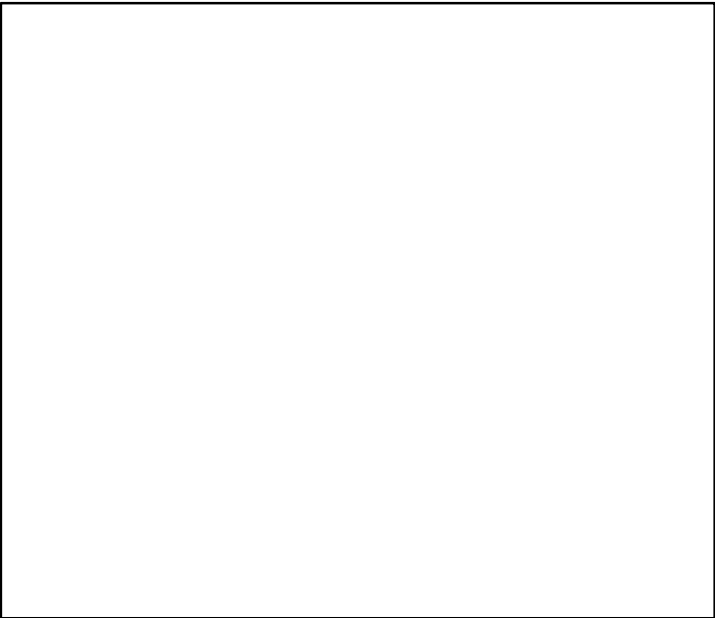
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2015	391		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



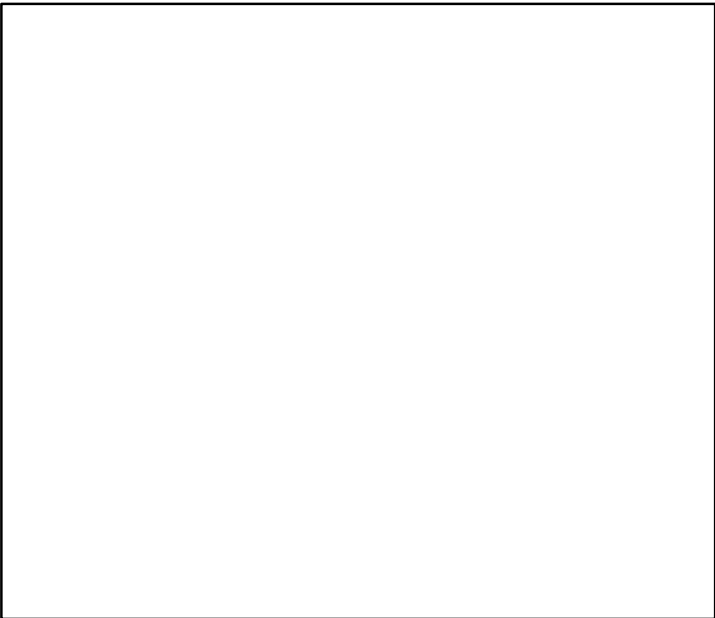
**Kobe MSY\***



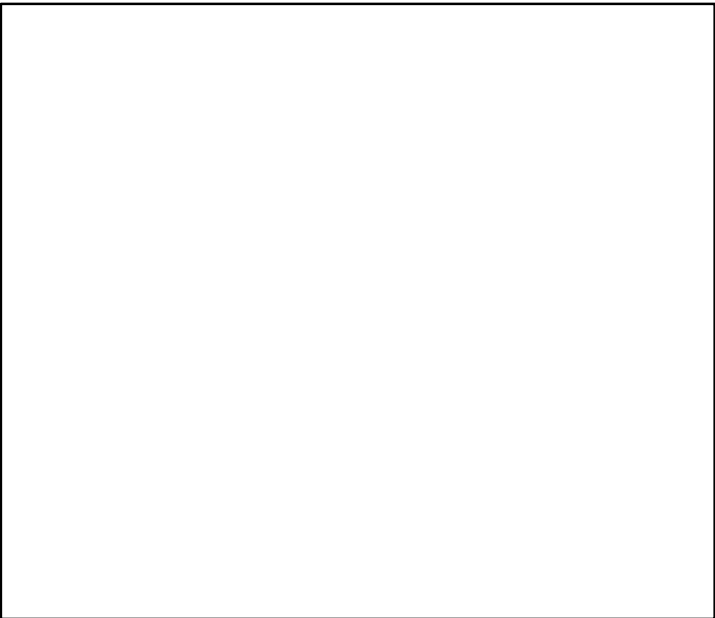
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year    ◆ End Year    \* No Data

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



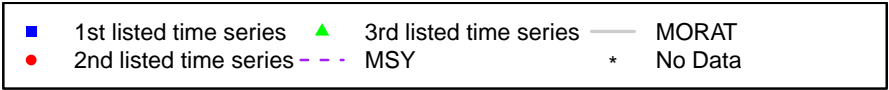
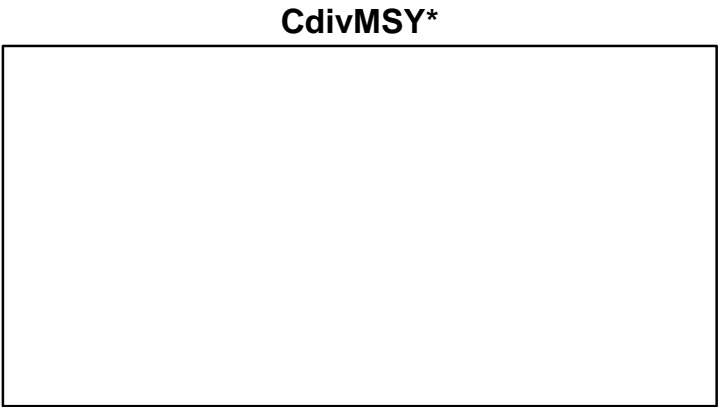
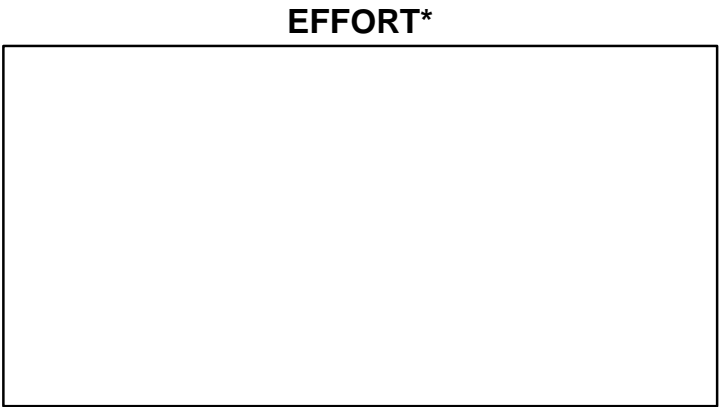
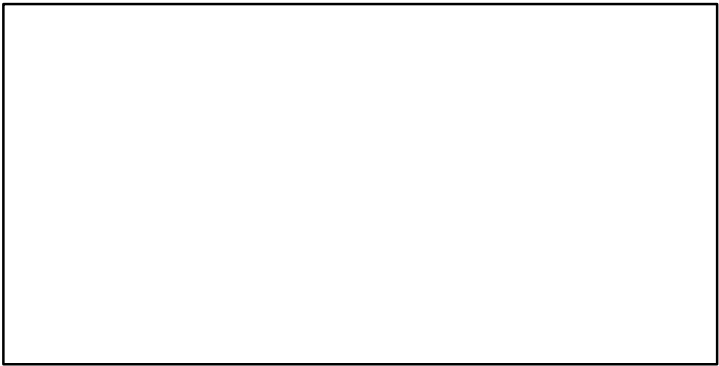
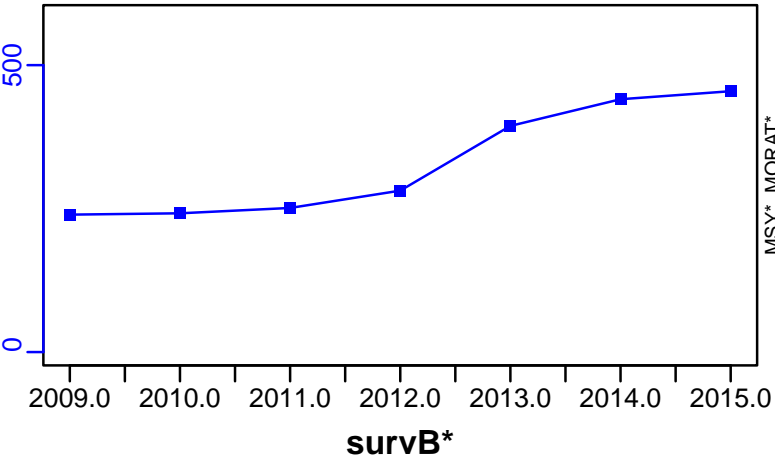
**Recruits\***



# Thornback skate Western English Channel [TBSKAVIle]

TL-MT, TC\*, RecC\* (2009–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Thornback skate Bay of Biscay [TBSKAVIII]

Metadata	
<b>Scientific Name</b>	Raja clavata
<b>Current Assess ID</b>	WGEF-TBSKAVIII-1999-2015-ICESIMP2018
<b>Area</b>	Bay of Biscay
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	1.04	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2015	400		
TL	TL-MT	2015	395		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



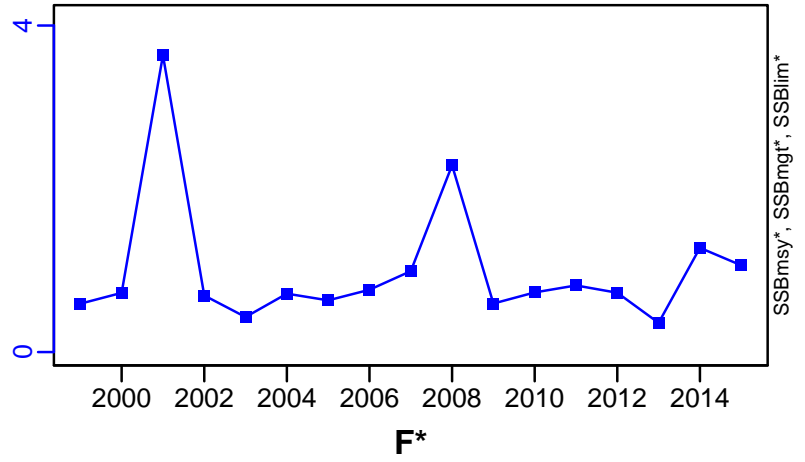
◆ Start Year ◆ End Year \* No Data

# Thornback skate Bay of Biscay [TBSKAVIII]

TB\*



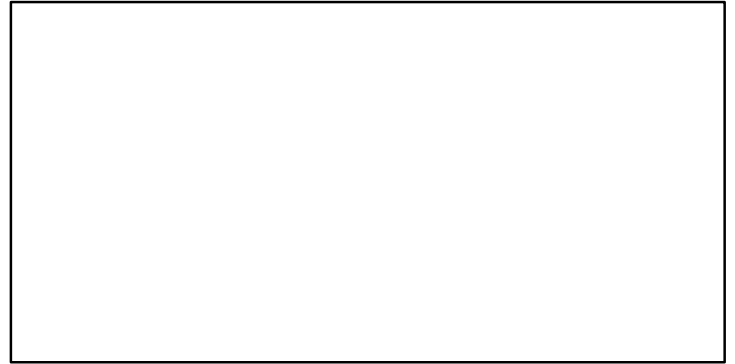
SSB-index (1999–2015–ICESIMP2018)



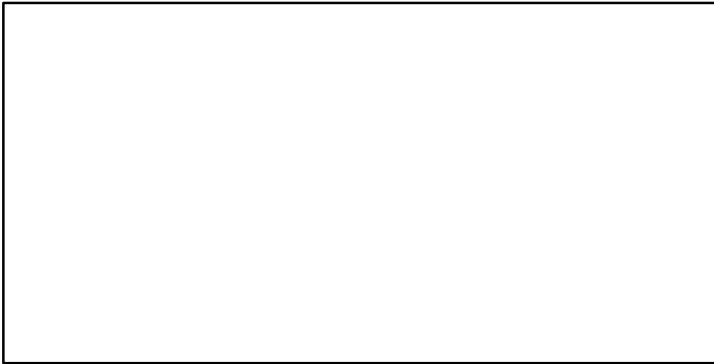
TN \*



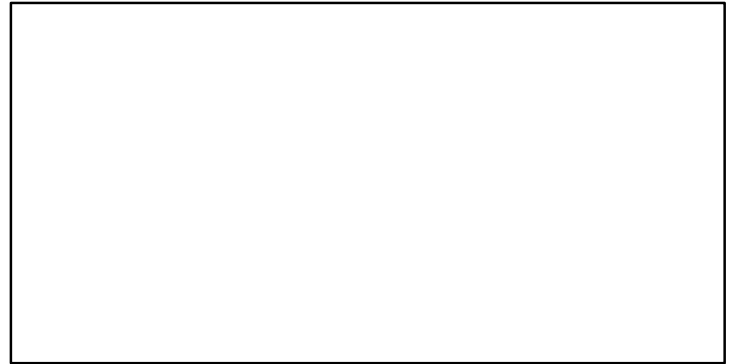
F\*



ER\*



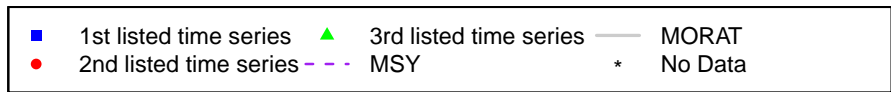
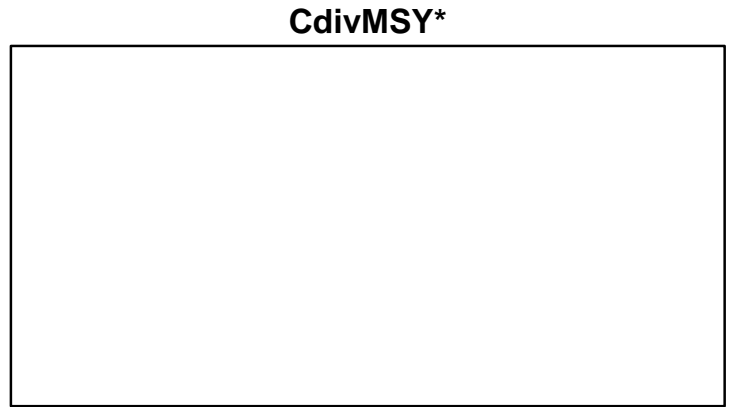
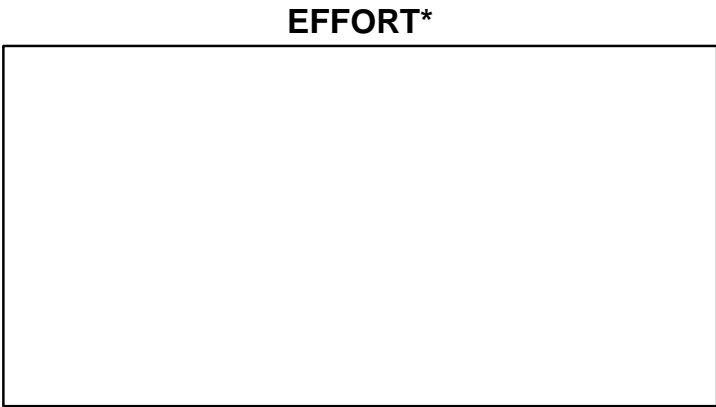
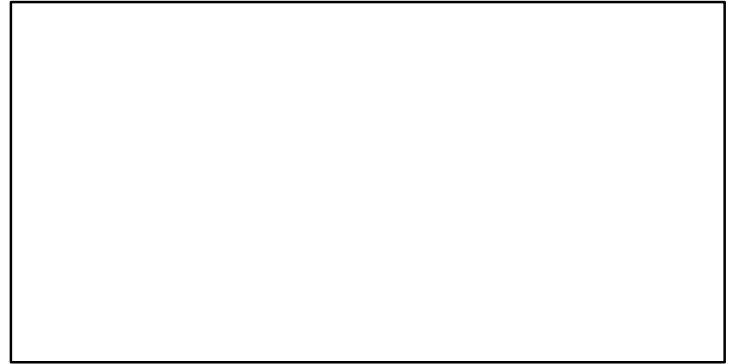
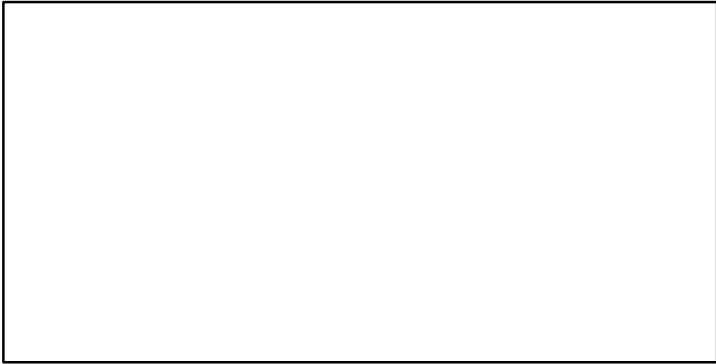
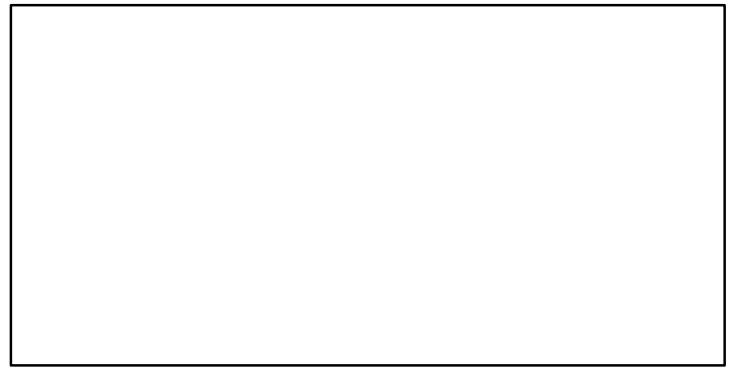
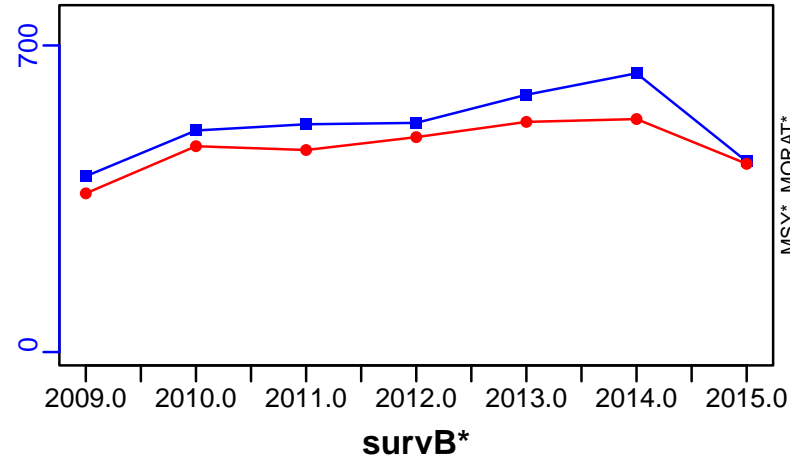
Recruits\*



# Thornback skate Bay of Biscay [TBSKAVIII]

TC-MT, TL-MT, RecC\* (1999–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Thresher shark North Pacific [THRSHARNPAC]

Metadata	
<b>Scientific Name</b>	Alopias vulpinus
<b>Current Assess ID</b>	SWFSC-THRSHARNPAC-1969-2014-SISIMP2021
<b>Area</b>	North Pacific
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Southwest Fisheries Science Center
<b>Asmts in RAM</b>	2014

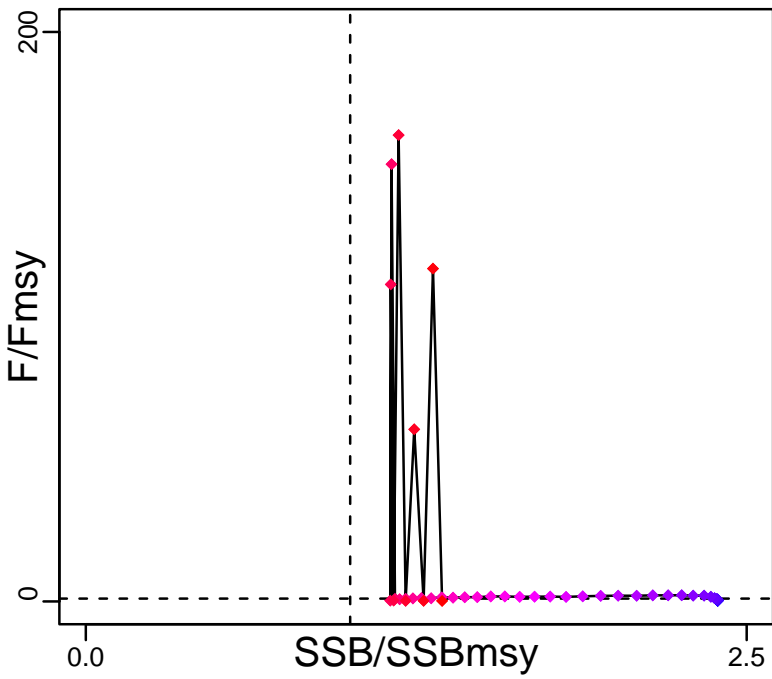
Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-E00	2014	101,500
<b>Fmsy</b>	Fmsy-1/yr	2014	0.45
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	-	-	-
<b>Fmgt</b>	-	-	-
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	-	-	-
<b>MSY</b>	-	-	-
<b>M</b>	-	-	-
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	SSBlim-E00	2014	97,500
<b>Flim</b>	Flim-1/yr	2014	0.45
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	-	-	-	-	-
<b>SSB</b>	SSB-E00	2014	136,800	-	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2014	180	-	-
<b>F</b>	F-1/yr	2014	0.09	-	-
<b>ER</b>	-	-	-	-	-
<b>TC</b>	-	-	-		
<b>TL</b>	-	-	-		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSB-E00/SSBmsy-E00	2014	1.348		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2014	0.2		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	-	-	-		
<b>F/Fmgt</b>	-	-	-		
<b>ER/ERmgt</b>	-	-	-		

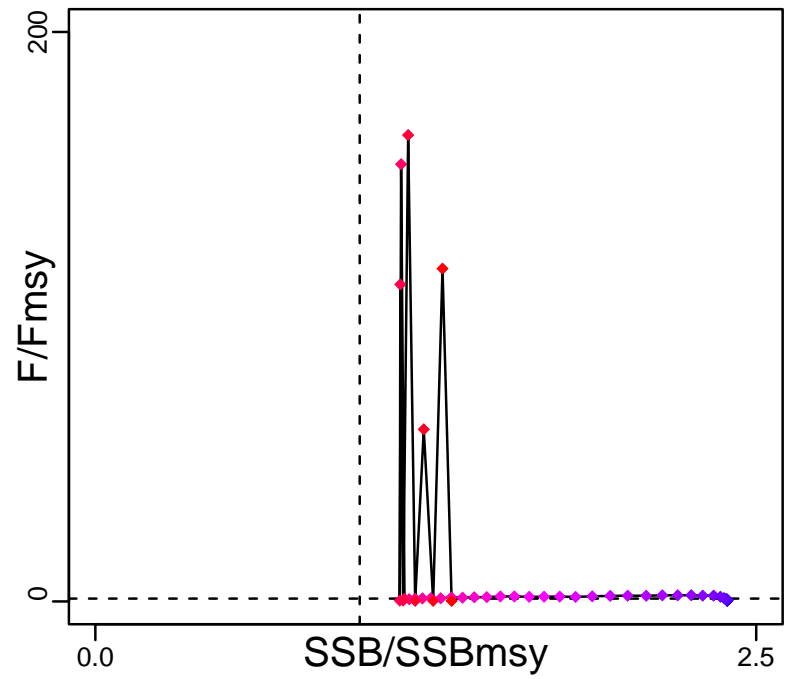


# Thresher shark North Pacific [THRSHARNPAC]

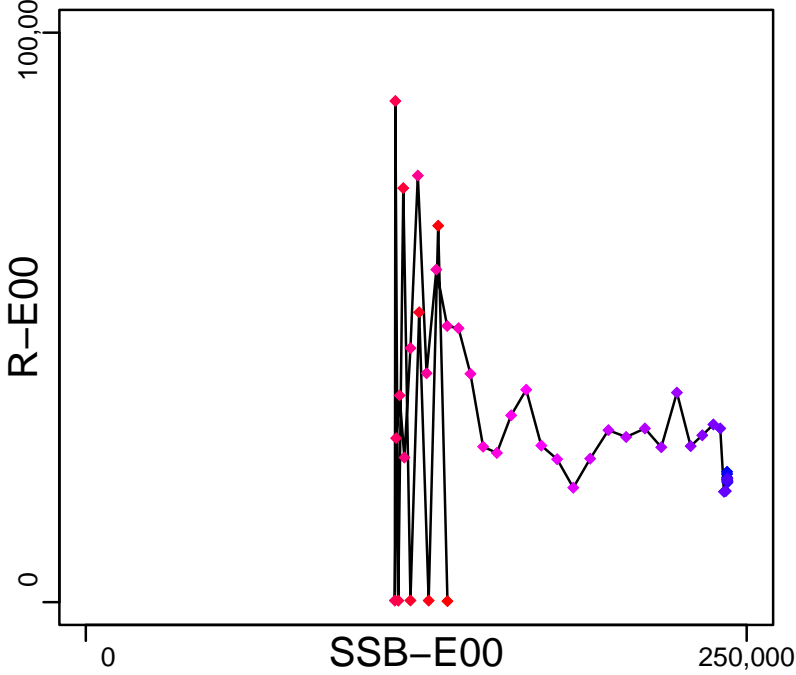
Kobe MSYpref (1969–2014–SISIMP2021)



Kobe MGTpref (1969–2014–SISIMP2021)



Spawner Recruit (1969–2014–SISIMP2021)



Production\*



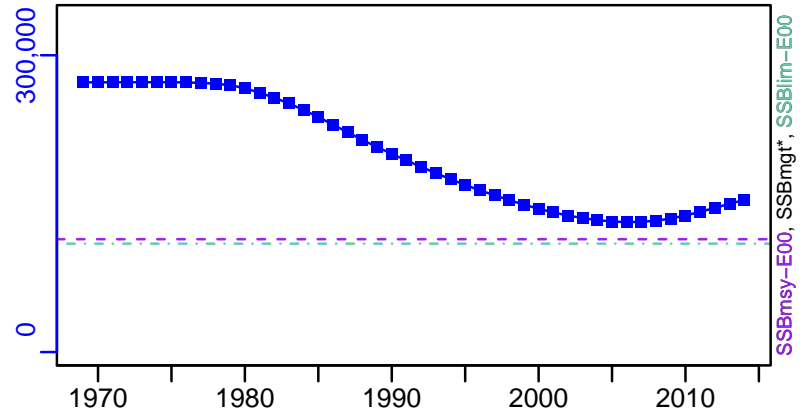
◆ Start Year ◆ End Year \* No Data

# Thresher shark North Pacific [THRSHARNPAC]

TB\*



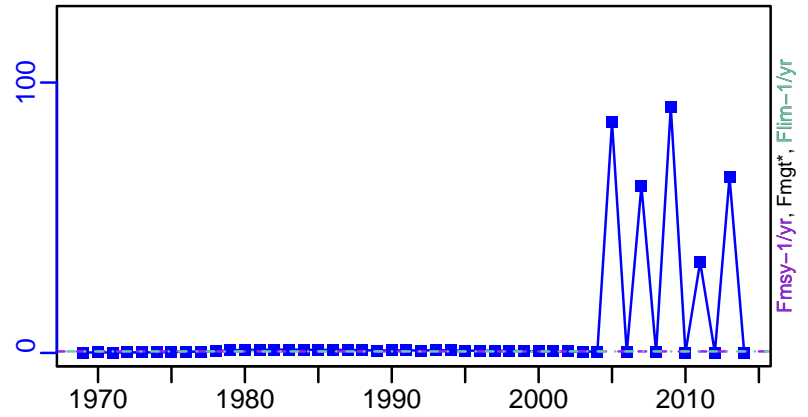
SSB-E00 (1969-2014-SISIMP2021)



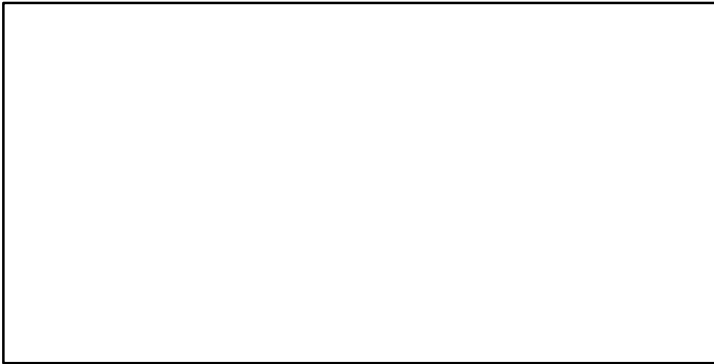
TN \*



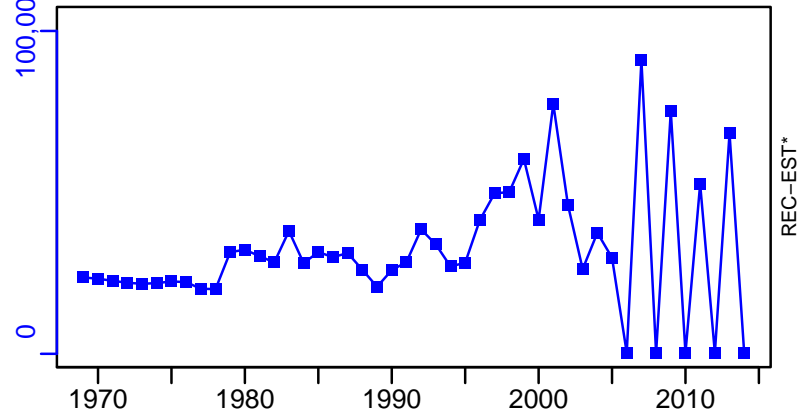
F-1/yr (1969-2014-SISIMP2021)



ER\*



R-E00 (1969-2014-SISIMP2021)



Thresher shark North Pacific [THRSHARNPAC]

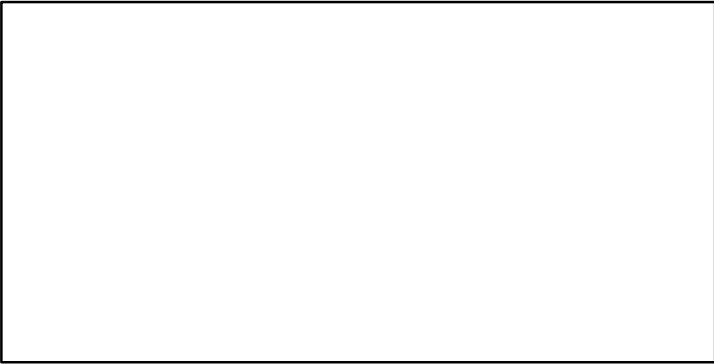
**TC\*, TL\*, RecC\***



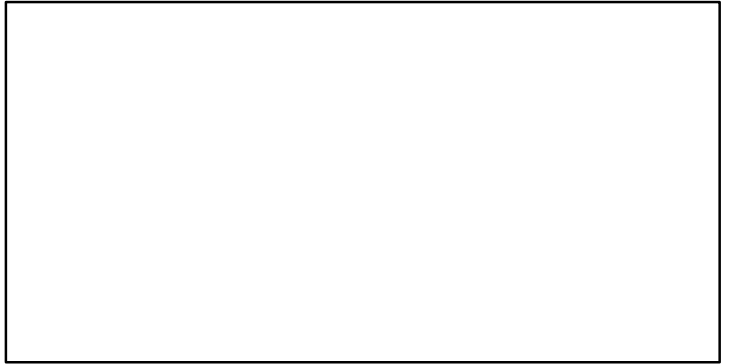
**TAC\*, Cpair\*, Cadv\***



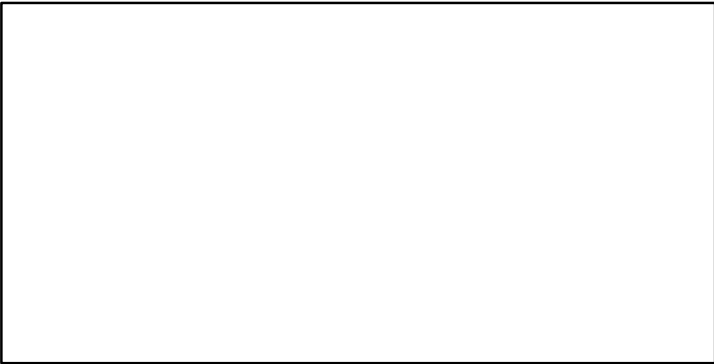
**survB\***



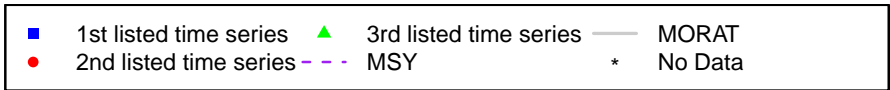
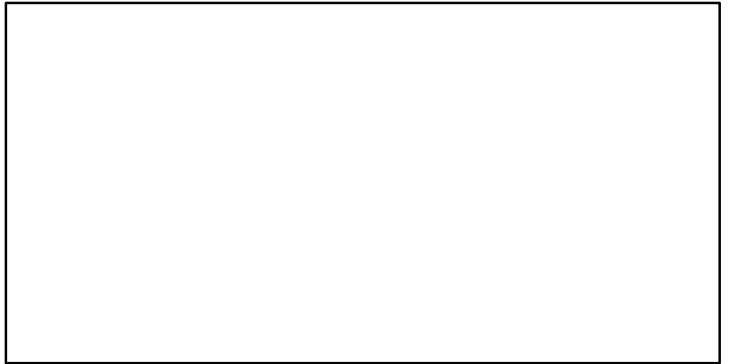
**CPUE\***



**EFFORT\***



**CdivMSY\***



## Tope shark Northeast Atlantic [TPSHARNEATL]

Metadata	
<b>Scientific Name</b>	Galeorhinus galeus
<b>Current Assess ID</b>	WGEF-TPSHARNEATL-2005-2018-ICESIMP2021
<b>Area</b>	Northeast Atlantic
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2014, 2016, 2018

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2018	452		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

Tope shark Northeast Atlantic [TPSHARNEATL]

TB\*



SSB\*



TN \*



F\*



ER\*



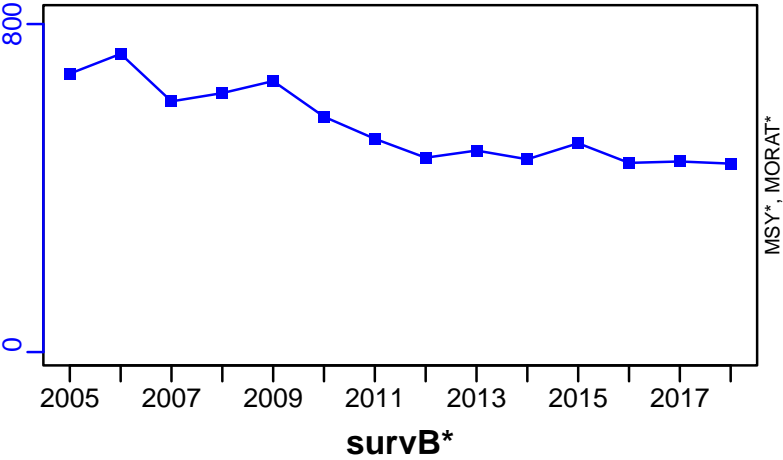
Recruits\*



■ Listed time series	- - - Target BRP	— Rec-Est
- - - MSY-based BRP	· · · Lim BRP	* No Data

Tope shark Northeast Atlantic [TPSHARNEATL]

TL-MT, TC\*, RecC\* (2005–2018–ICESIMP2021)



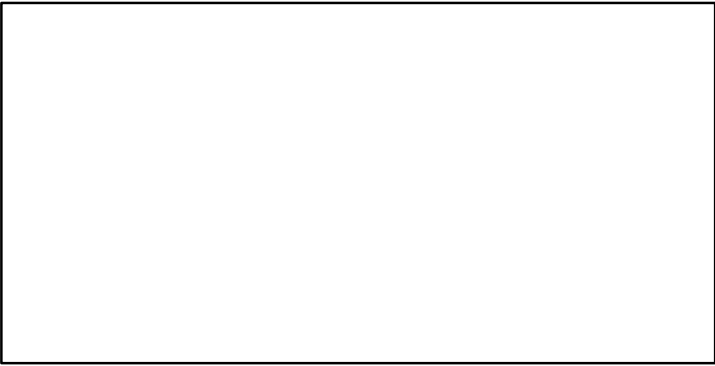
TAC\*, Cpair\*, Cadv\*



CPUE\*



EFFORT\*



CdivMSY\*



## Thorny skate Grand Bank and St Pierre Bank [TSKA3LNOPs]

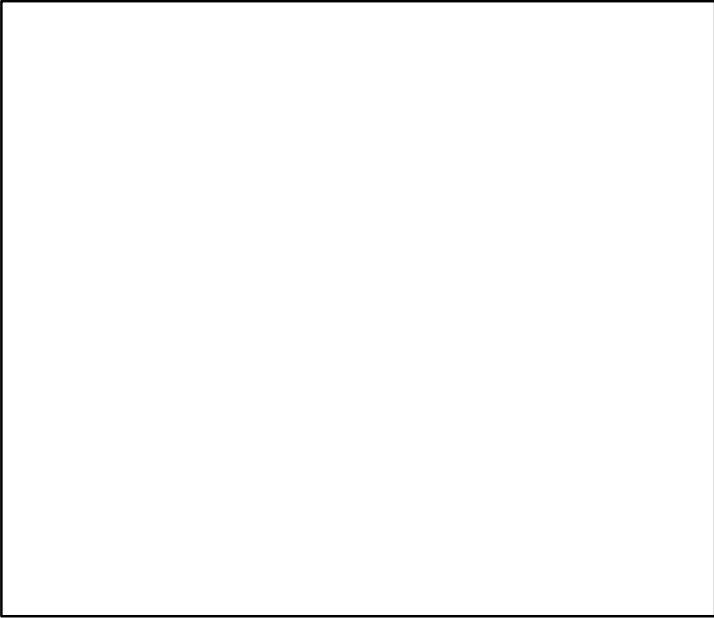
Metadata	
<b>Scientific Name</b>	Amblyraja radiata
<b>Current Assess ID</b>	NAFO-SC-TSKA3LNOPs-1960-2014-OSGOOD
<b>Area</b>	Grand Bank and St Pierre Bank
<b>Management Authority</b>	Northwest Atlantic Fisheries Organization
<b>Assessor</b>	NAFO Scientific Council
<b>Asmts in RAM</b>	2014

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	MSY-MT	2014	6653
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

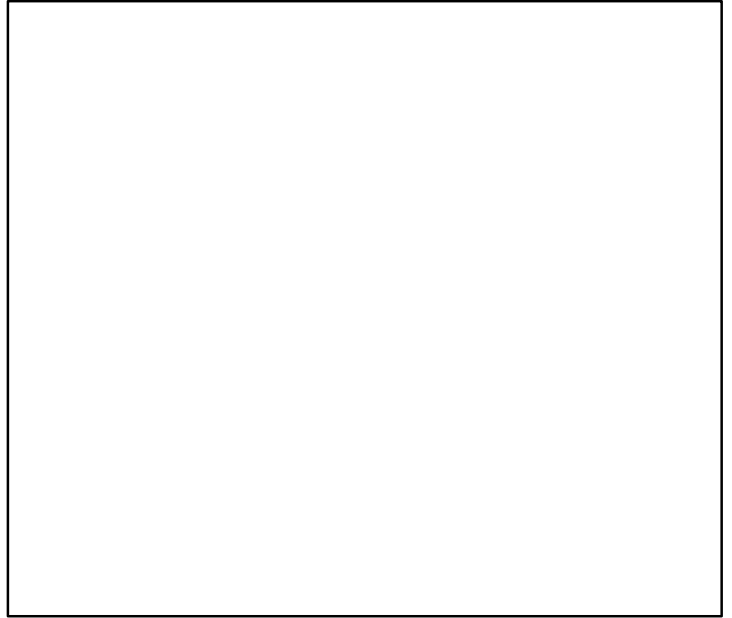
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	R-index	2014	1.74	Both	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	-	-	-		
TL	TL-MT	2014	4640		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



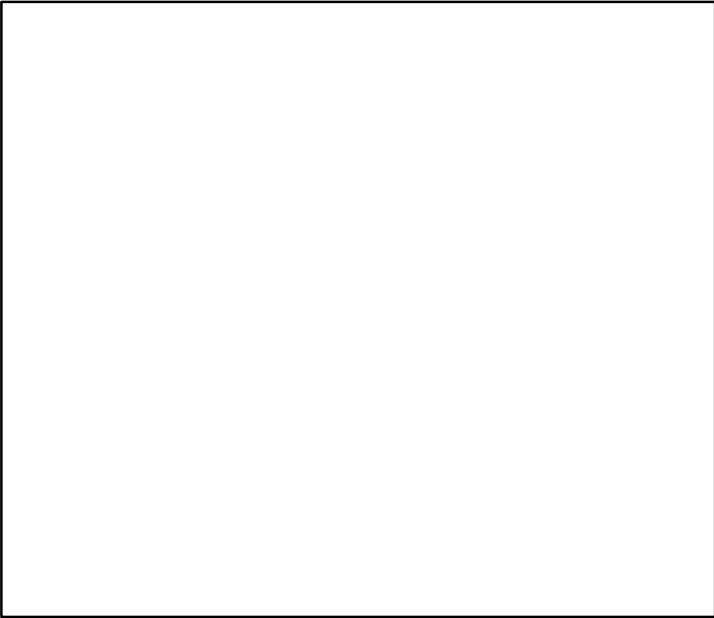
**Kobe MSY\***



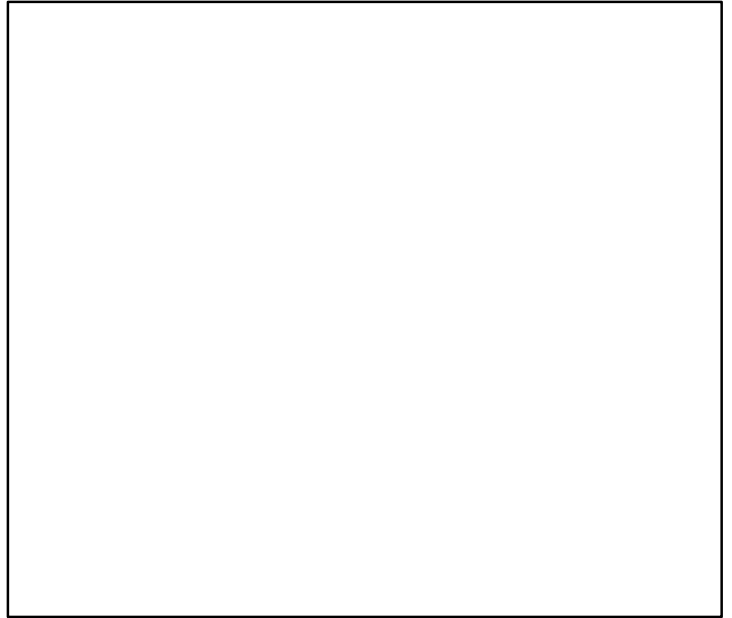
**Kobe MGT\***



**Spawner Recruit\***



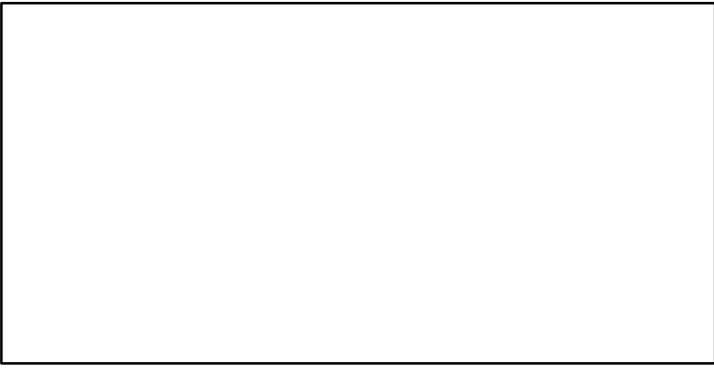
**Production\***



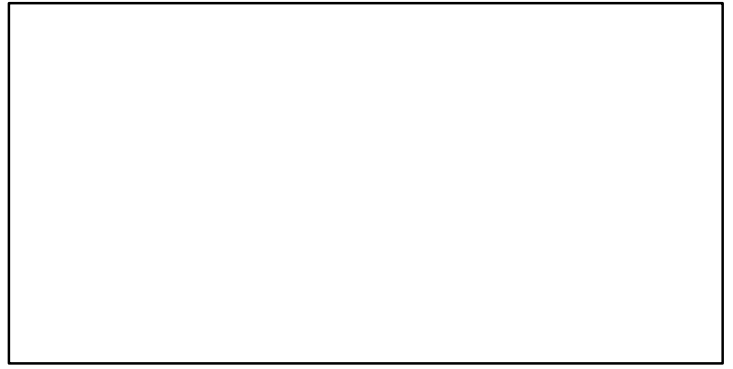
◆ Start Year ◆ End Year \* No Data

Thorny skate Grand Bank and St Pierre Bank [TSKA3LNOPs]

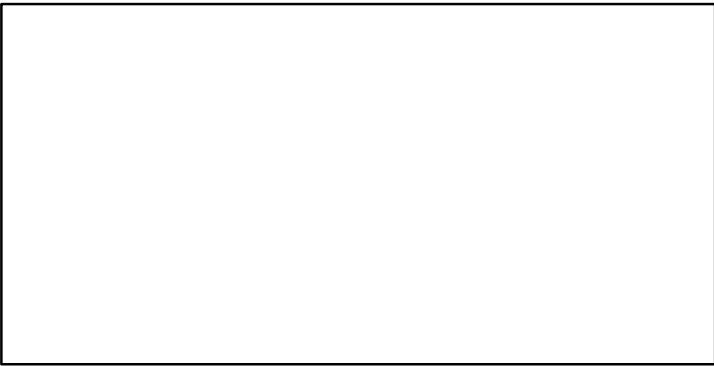
TB\*



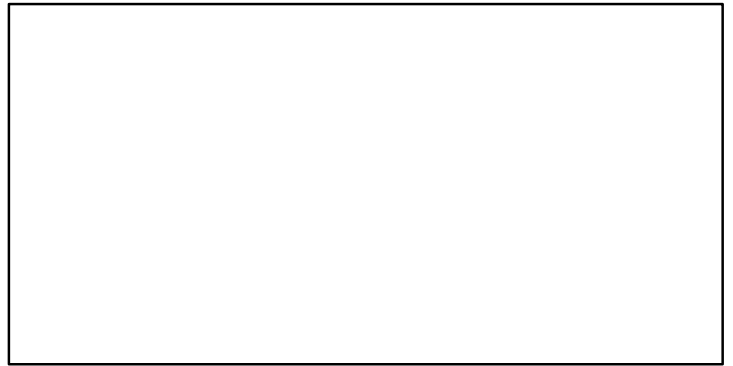
SSB\*



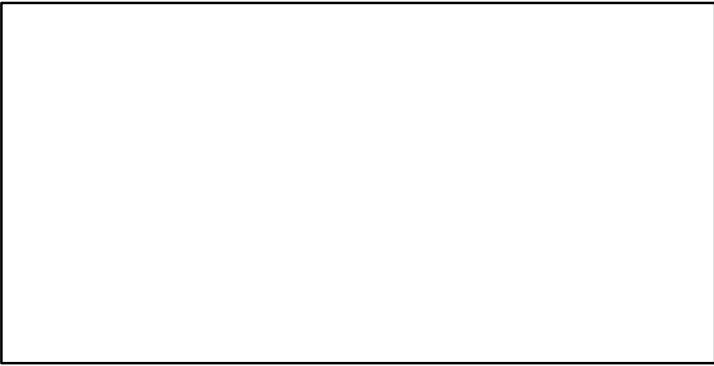
TN \*



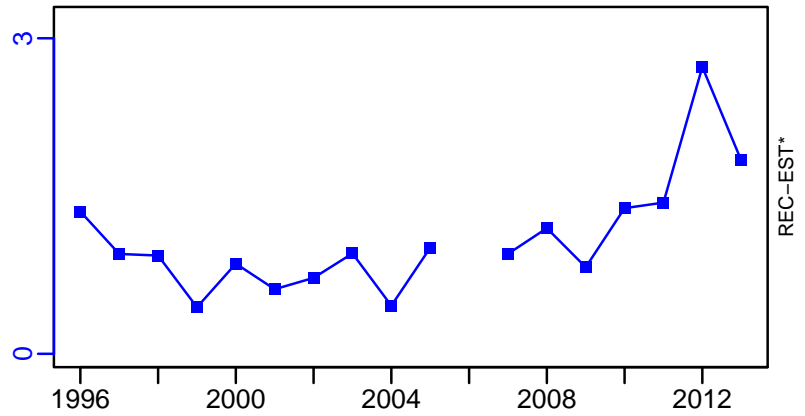
F\*



ER\*

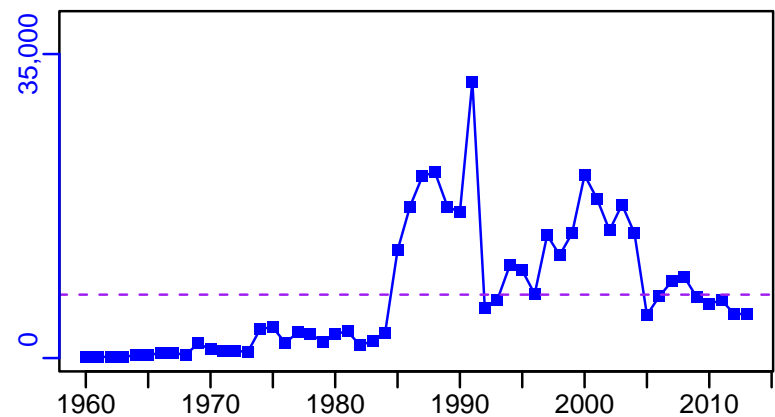


R-index (1960–2014–OSGOOD)

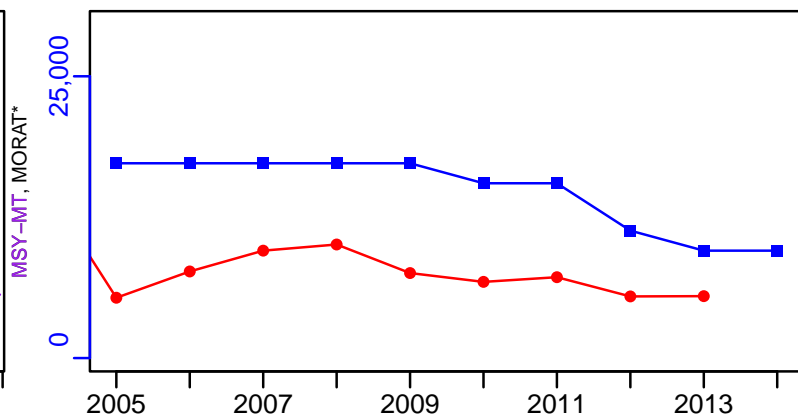


# Thorny skate Grand Bank and St Pierre Bank [TSKA3LNOPs]

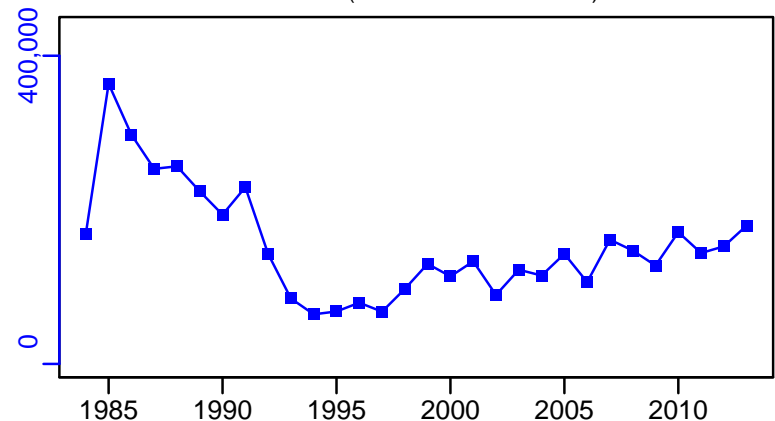
TL-MT, TC\*, RecC\* (1960–2014–OSGOOD)



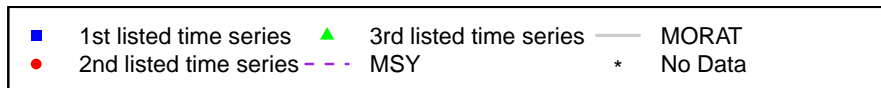
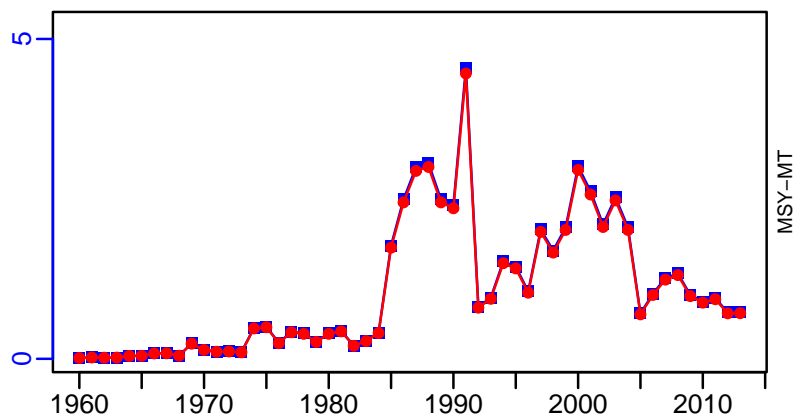
TAC-MT, Cpair-MT, Cadv\* (1960–2014–OSGOOD)



survB-MT (1960–2014–OSGOOD)



TL-MT/MSY-MT, CdivMEANC-ratio, (1960–2014–OSGOOD)



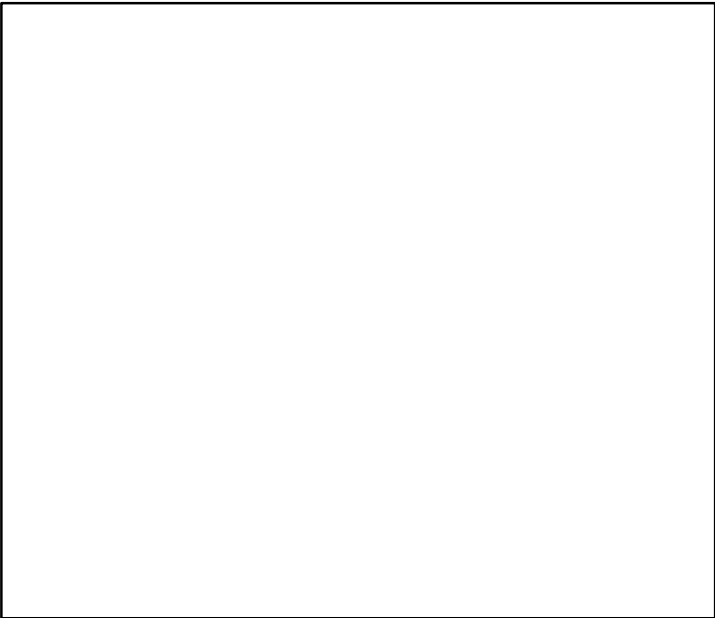
## Thorny skate Southern Gulf of St. Lawrence [TSKA4T]

Metadata	
<b>Scientific Name</b>	Amblyraja radiata
<b>Current Assess ID</b>	DFO-SG-TSKA4T-1971-2010-OSGOOD
<b>Area</b>	Southern Gulf of St. Lawrence
<b>Management Authority</b>	Department of Fisheries and Oceans, Canada national management
<b>Assessor</b>	Department of Fisheries and Oceans - Southern Gulf Region
<b>Asmts in RAM</b>	2010

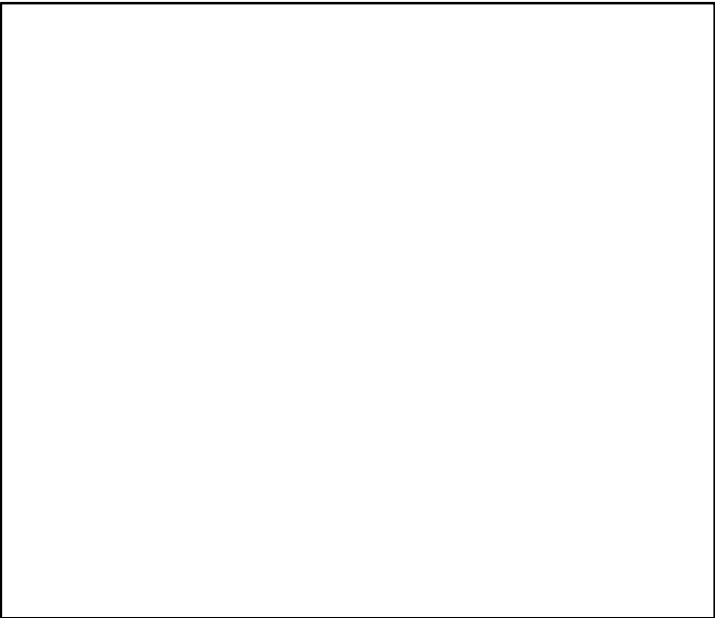
Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2010	42		
TL	TL-MT	2010	1.22		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

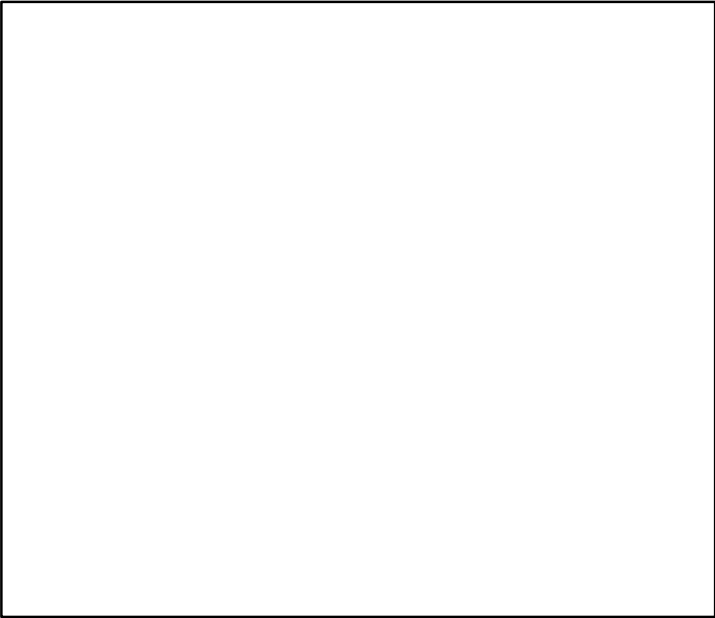
Kobe MSY\*



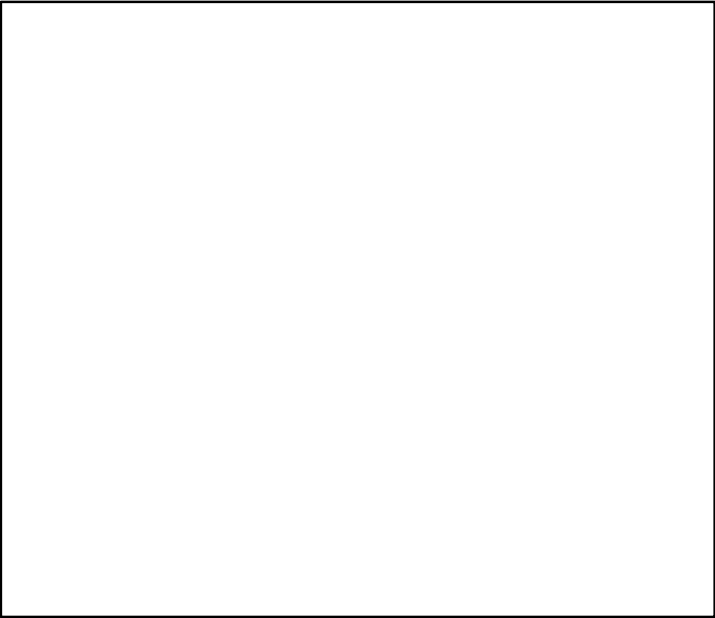
Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year   ◆ End Year   \* No Data

TB\*



SSB\*



TN \*



F\*



ER\*

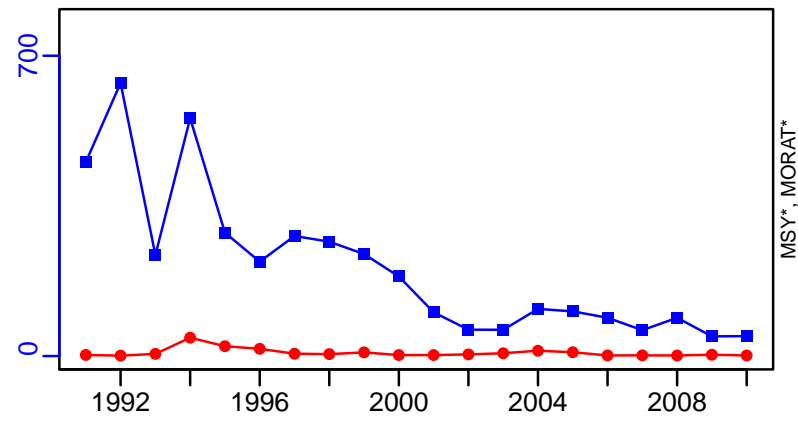


Recruits\*



# Thorny skate Southern Gulf of St. Lawrence [TSKA4T]

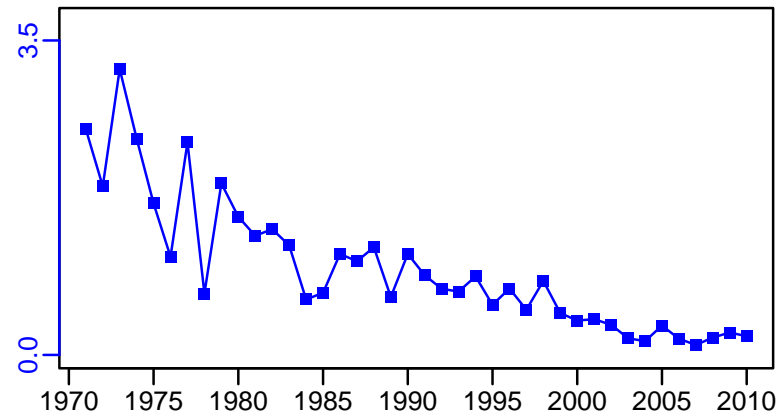
TC-MT, TL-MT, RecC\* (1971-2010-OSGOOD)



TAC\*, Cpair\*, Cadv\*



survB-kg/tow (1971-2010-OSGOOD)



CPUE\*



EFFORT\*



CdivMSY\*



■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - - MSY    \* No Data

**Thorny skate Gulf of Maine / Georges Bank-Southern New England  
[TSKAT5YZSNE]**

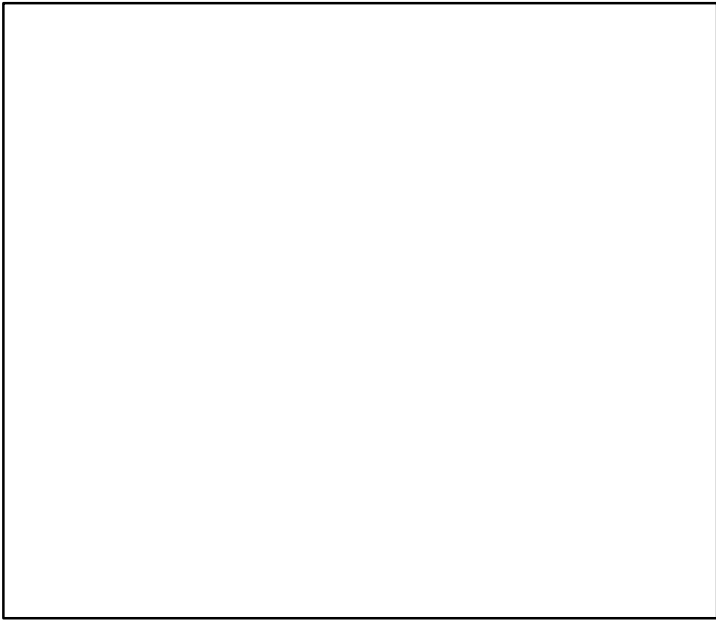
Metadata	
<b>Scientific Name</b>	Amblyraja radiata
<b>Current Assess ID</b>	NEFSC-TSKAT5YZSNE-1965-2019-SISIMP2021-2
<b>Area</b>	Gulf of Maine / Georges Bank-Southern New England
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2005, 2018, 2019

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

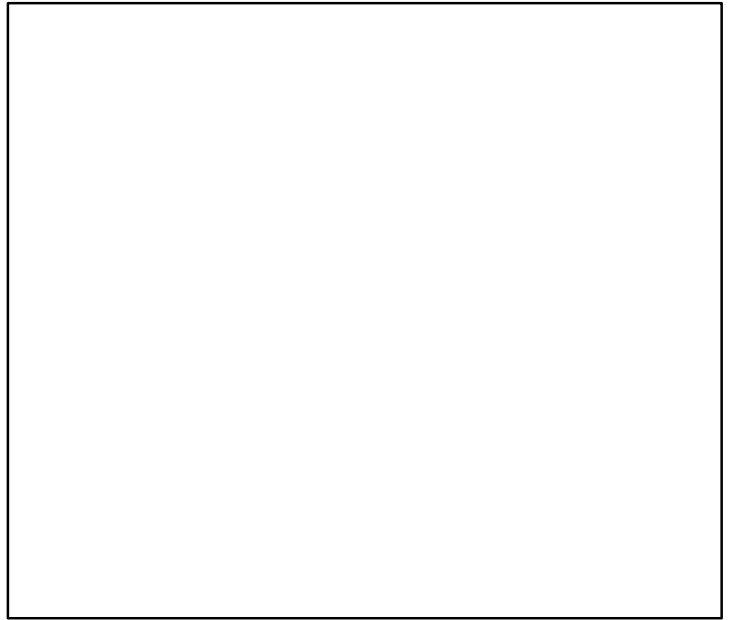
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2019	167		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



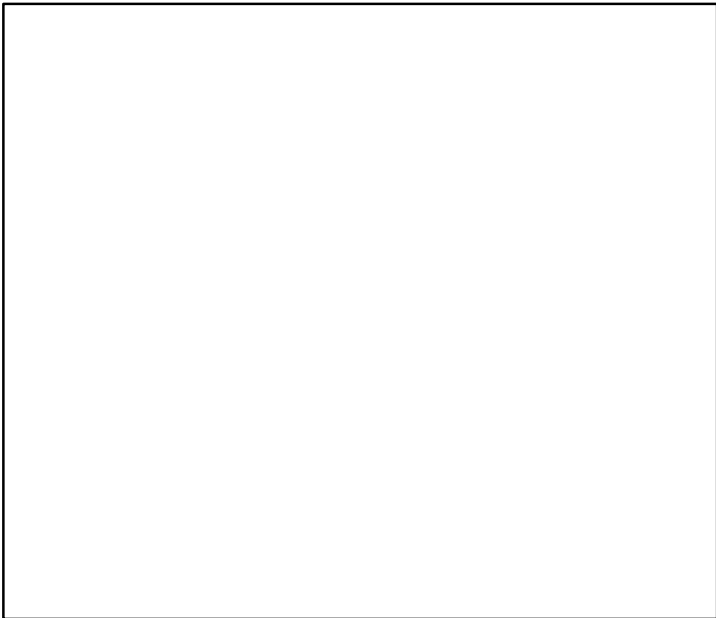
**Kobe MSY\***



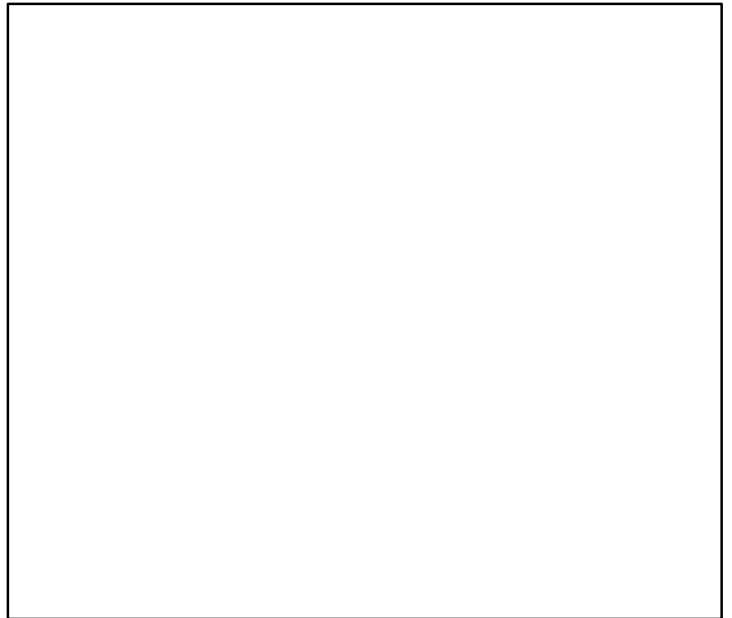
**Kobe MGT\***



**Spawner Recruit\***



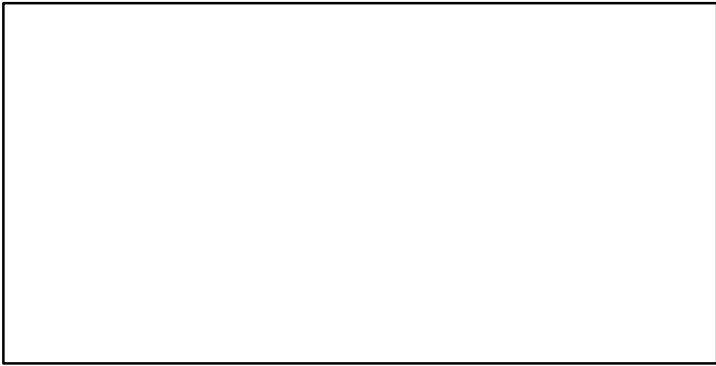
**Production\***



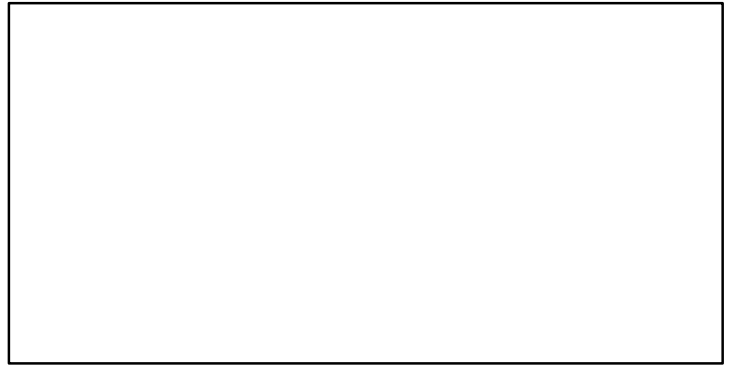
◆ Start Year ◆ End Year \* No Data

Thorny skate Gulf of Maine / Georges Bank–Southern New England [TSKAT5YZSNE]

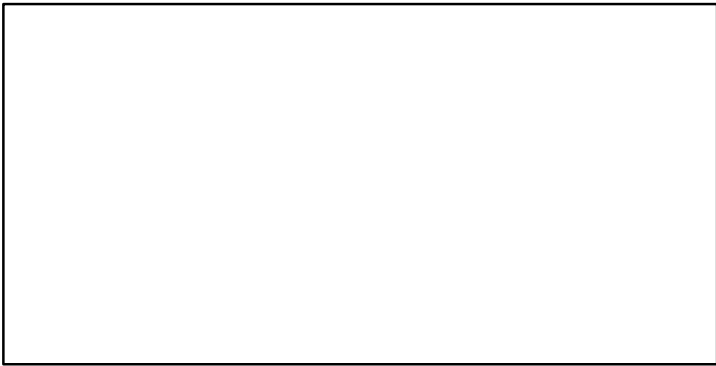
**TB\***



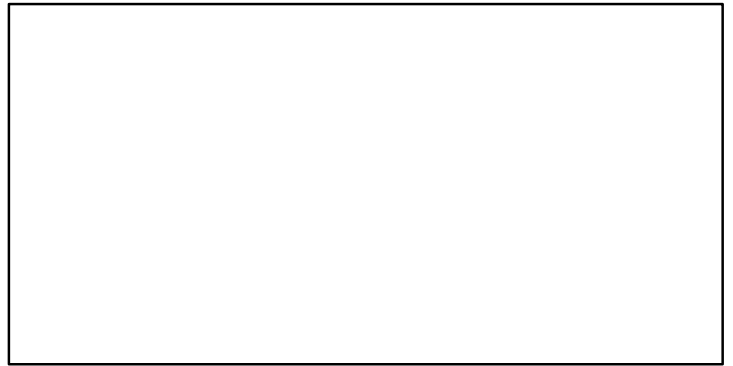
**SSB\***



**TN \***



**F\***



**ER\***



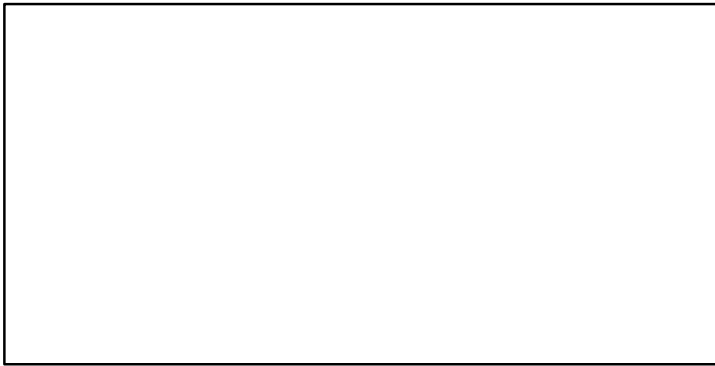
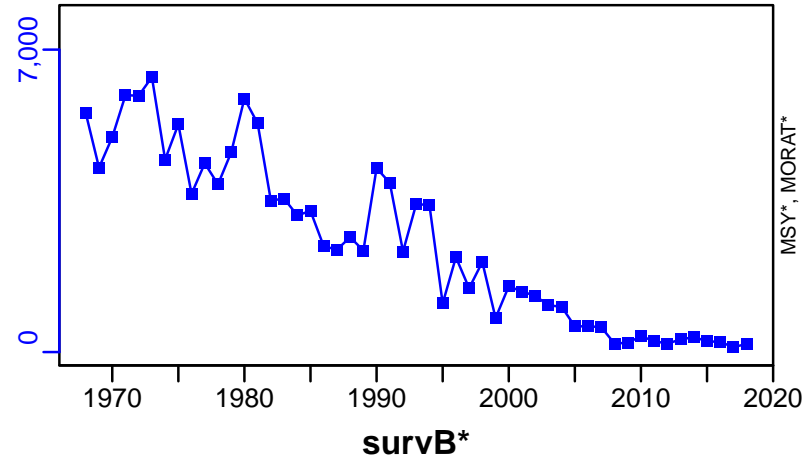
**Recruits\***



# Thorny skate Gulf of Maine / Georges Bank–Southern New England [TSKAT5YZSNE]

TC–MT, TL\*, RecC\* (1965–2019–SISIMP2021–2)

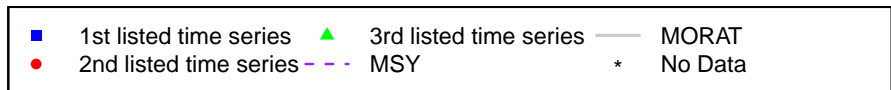
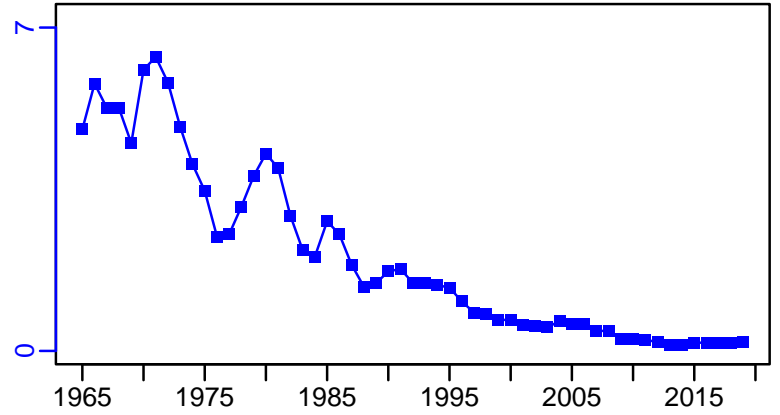
TAC\*, Cpair\*, Cadv\*



EFFORT\*



CPUE–index (1965–2019–SISIMP2021–2)



## Undulate ray ICES 7de [URAYVIIde]

Metadata	
<b>Scientific Name</b>	Raja undulata
<b>Current Assess ID</b>	WGEF-URAYVIIde-2008-2017-ICESIMP2018
<b>Area</b>	ICES 7de
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2015, 2017

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	SSB-index	2015	912	Both	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2017	1380		
TL	TL-MT	2017	139		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

Kobe MSY\*



Kobe MGT\*



Spawner Recruit\*



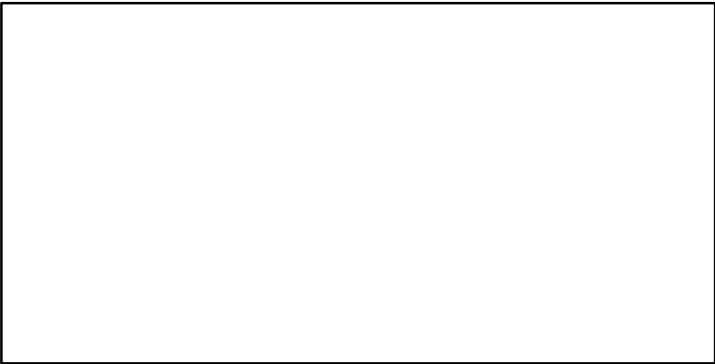
Production\*



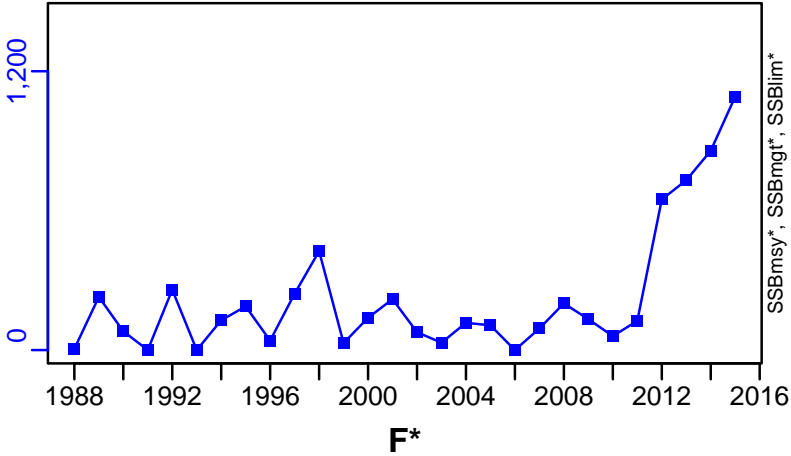
◆ Start Year ◆ End Year \* No Data

Undulate ray ICES 7de [URAYVIIde]

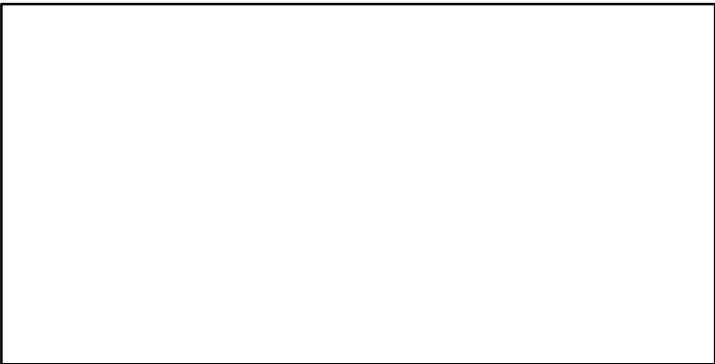
TB\*



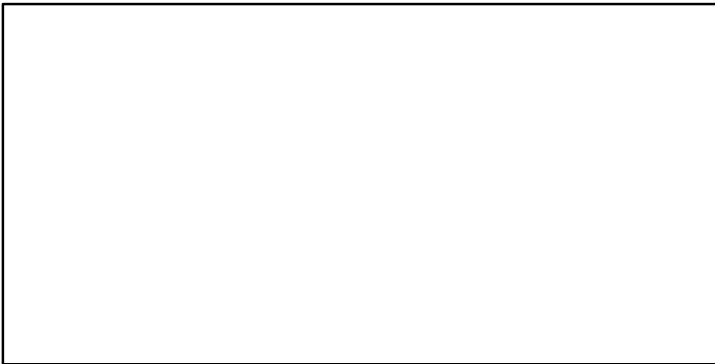
SSB-index (1988–2015–ICESIMP2018)



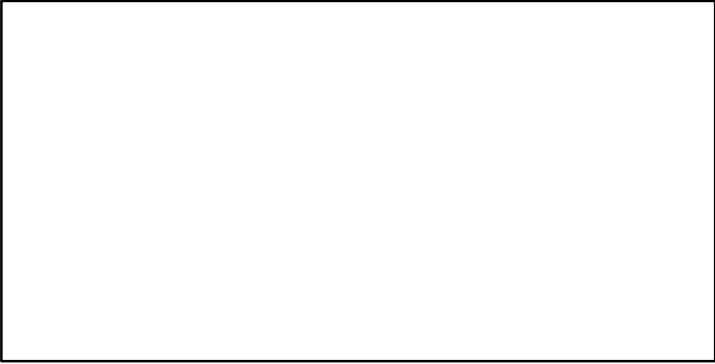
TN \*



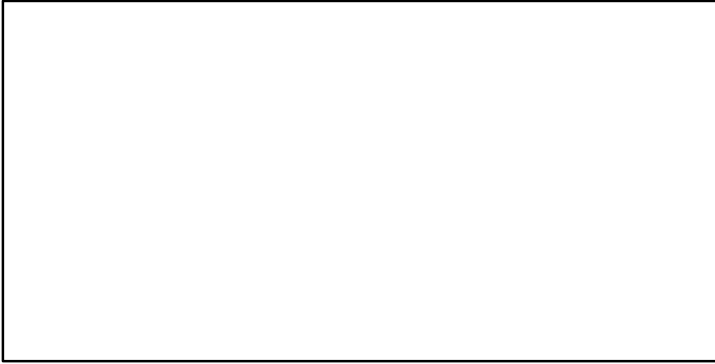
F\*



ER\*

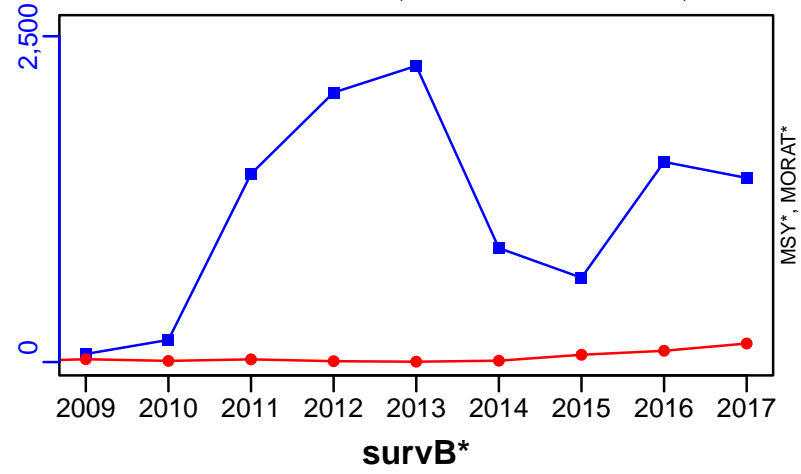


Recruits\*



# Undulate ray ICES 7de [URAYVIIde]

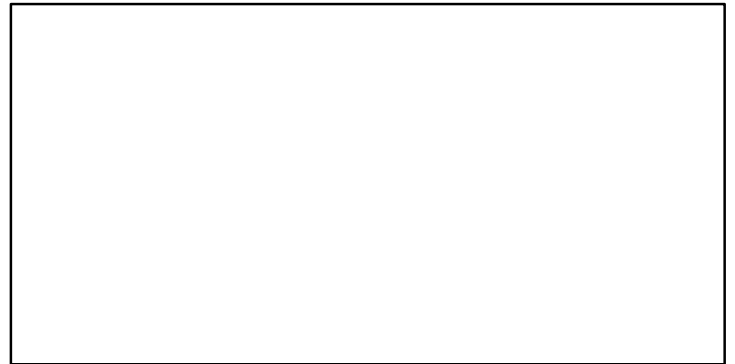
TC-MT, TL-MT, RecC\* (2008–2017–ICESIMP2018)



TAC\*, Cpair\*, Cadv\*



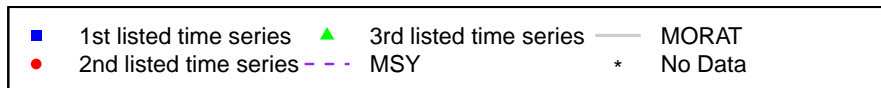
CPUE\*



EFFORT\*



CdivMSY\*



## Undulate ray ICES 8ab [URAYVIIIab]

Metadata	
<b>Scientific Name</b>	Raja undulata
<b>Current Assess ID</b>	WGEF-URAYVIIIab-2009-2017-ICESIMP2018
<b>Area</b>	ICES 8ab
<b>Management Authority</b>	International Council for the Exploration of the Sea
<b>Assessor</b>	Working Group on Elasmobranch Fishes
<b>Asmts in RAM</b>	2017

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2017	336		
TL	TL-MT	2017	22		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ◆ End Year \* No Data

TB\*



SSB\*



TN \*



F\*



ER\*

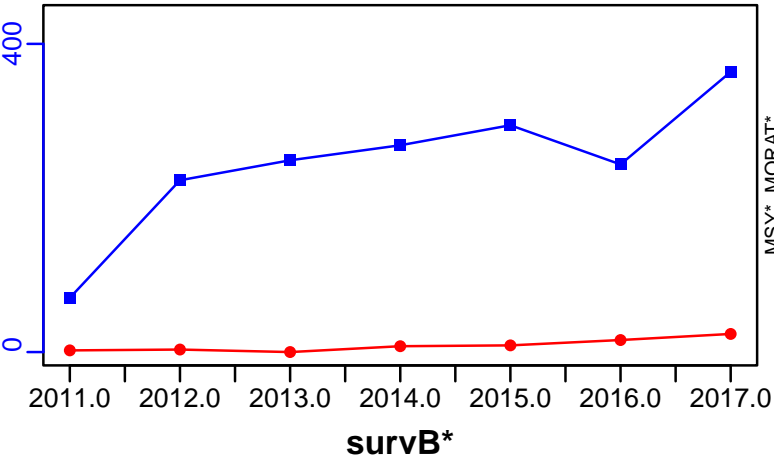


Recruits\*



Undulate ray ICES 8ab [URAYVIIIab]

TC-MT, TL-MT, RecC\* (2009–2017–ICESIMP2018)



TAC\*, Cpair\*, Cadv\*



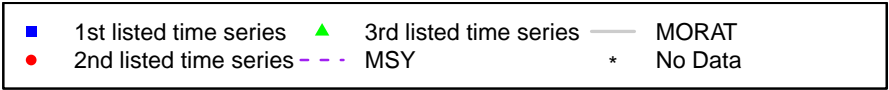
CPUE\*



EFFORT\*



CdivMSY\*



## Winter skate Gulf of Maine / Cape Hatteras [WSKAT5YCHATT]

Metadata	
<b>Scientific Name</b>	Leucoraja ocellata
<b>Current Assess ID</b>	NEFSC-WSKAT5YCHATT-1967-2005-SOSEBEE
<b>Area</b>	Gulf of Maine / Cape Hatteras
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2005

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2005	3360		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		

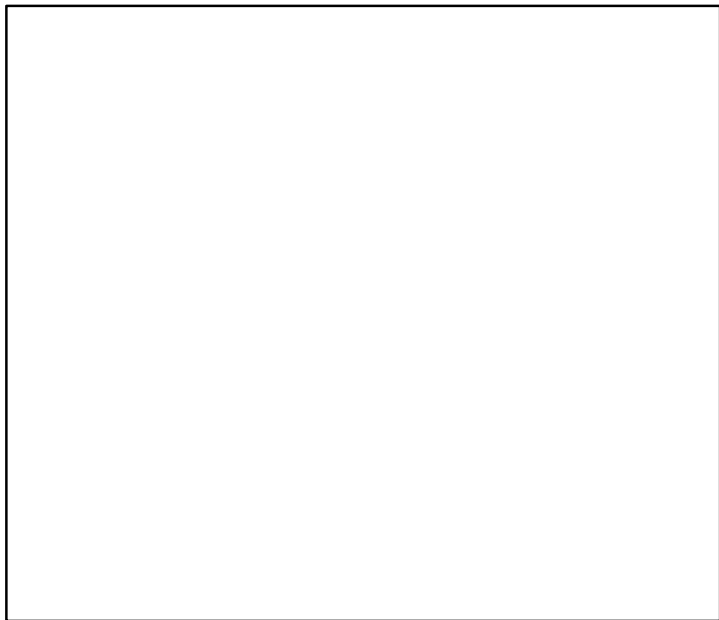
**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



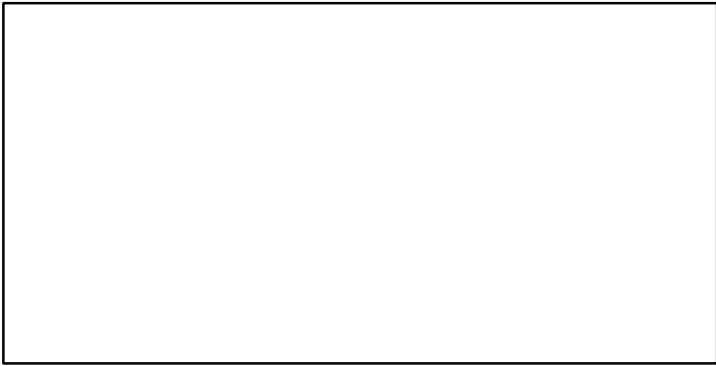
**Production\***



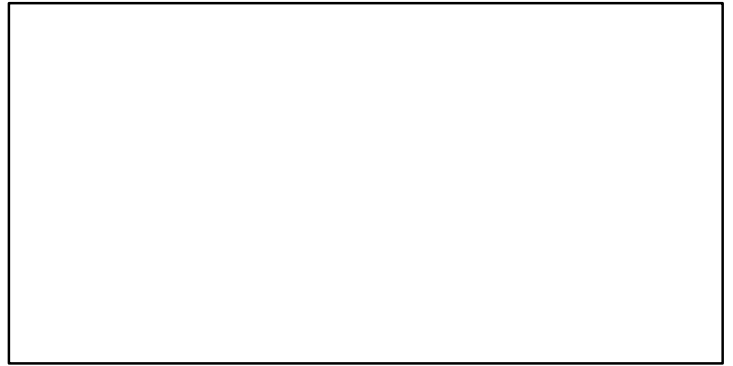
◆ Start Year   ◆ End Year   \* No Data

Winter skate Gulf of Maine / Cape Hatteras [WSKAT5YCHATT]

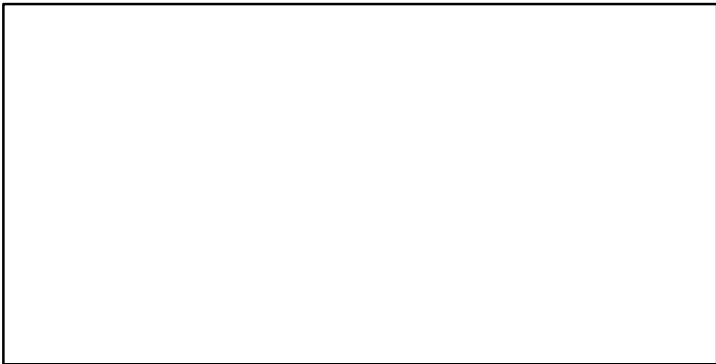
**TB\***



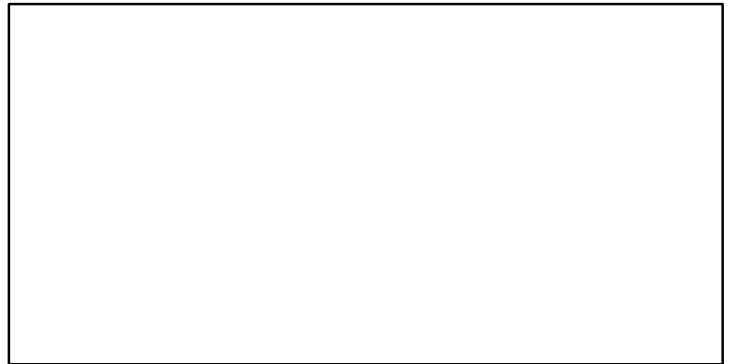
**SSB\***



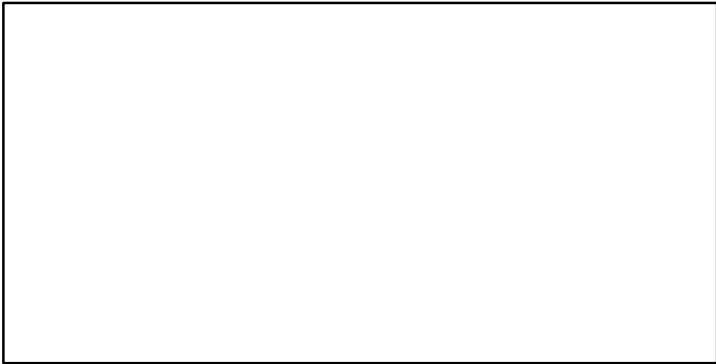
**TN \***



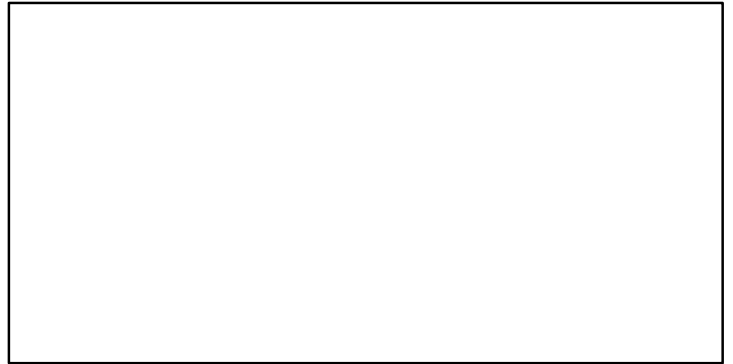
**F\***



**ER\***



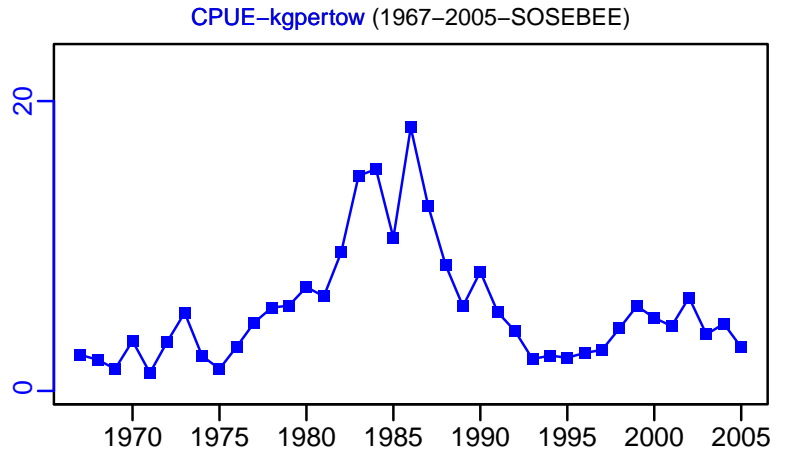
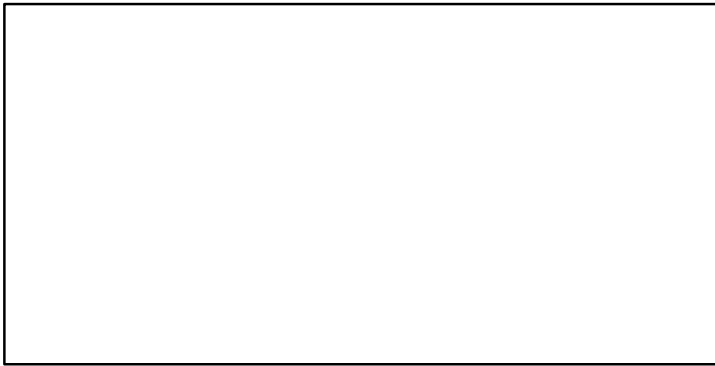
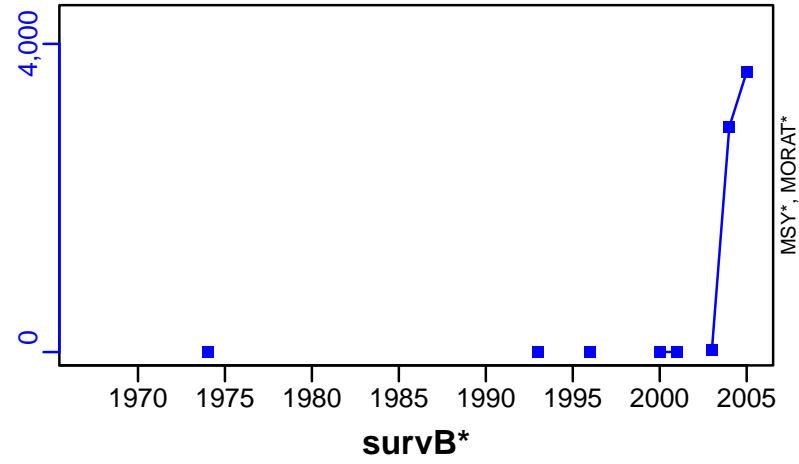
**Recruits\***



# Winter skate Gulf of Maine / Cape Hatteras [WSKAT5YCHATT]

TC-MT, TL\*, RecC\* (1967-2005-SOSEBEE)

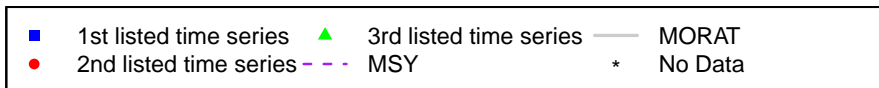
TAC\*, Cpair\*, Cadv\*



EFFORT\*



CdivMSY\*



## Winter skate Georges Bank-Southern New England [WSKAT5ZSNE]

Metadata	
<b>Scientific Name</b>	Leucoraja ocellata
<b>Current Assess ID</b>	NEFSC-WSKAT5ZSNE-1968-2019-SISIMP2021-2
<b>Area</b>	Georges Bank-Southern New England
<b>Management Authority</b>	National Marine Fisheries Service, US national management
<b>Assessor</b>	Northeast Fisheries Science Center
<b>Asmts in RAM</b>	2018, 2019

Reference Points			
Type	ID	Asmt Year	Value
TBmsy	-	-	-
SSBmsy	-	-	-
Fmsy	-	-	-
ERmsy	-	-	-
TBmgt	-	-	-
SSBmgt	-	-	-
Fmgt	-	-	-
ERmgt	-	-	-
TB0	-	-	-
SSB0	-	-	-
MSY	-	-	-
M	-	-	-
TBlim	-	-	-
SSBlim	-	-	-
Flim	-	-	-
ERlim	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
TB	-	-	-	-	-
SSB	-	-	-	-	-
TN	-	-	-	-	-
R	-	-	-	-	-
F	-	-	-	-	-
ER	-	-	-	-	-
TC	TC-MT	2019	10,200		
TL	-	-	-		
TB/TBmsy	-	-	-		
SSB/SSBmsy	-	-	-		
F/Fmsy	-	-	-		
ER/ERmsy	-	-	-		
TB/TBmgt	-	-	-		
SSB/SSBmgt	-	-	-		
F/Fmgt	-	-	-		
ER/ERmgt	-	-	-		



**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year    ◆ End Year    \* No Data

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



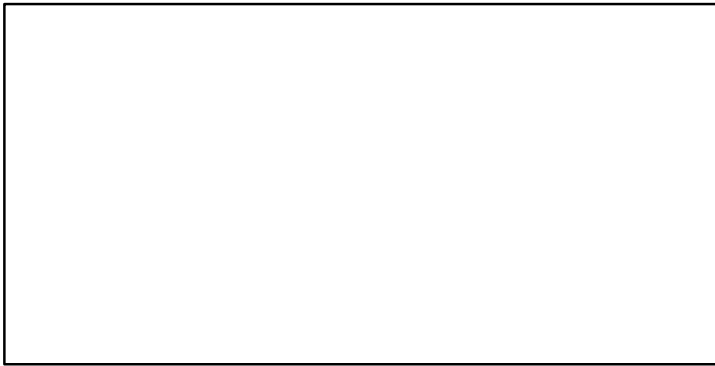
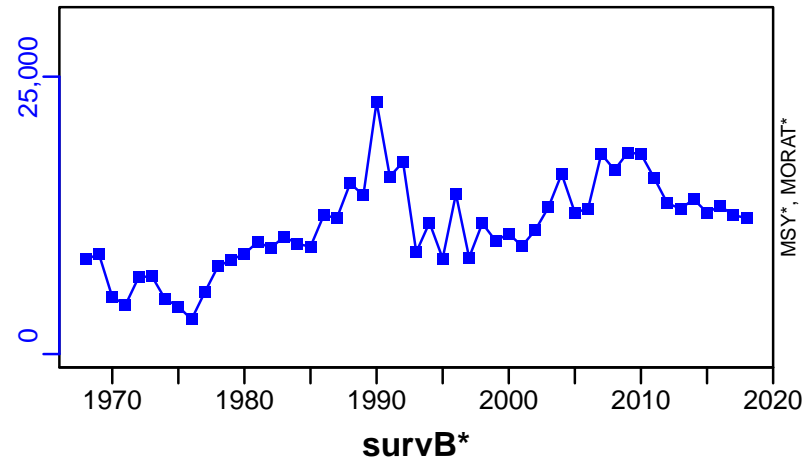
**Recruits\***



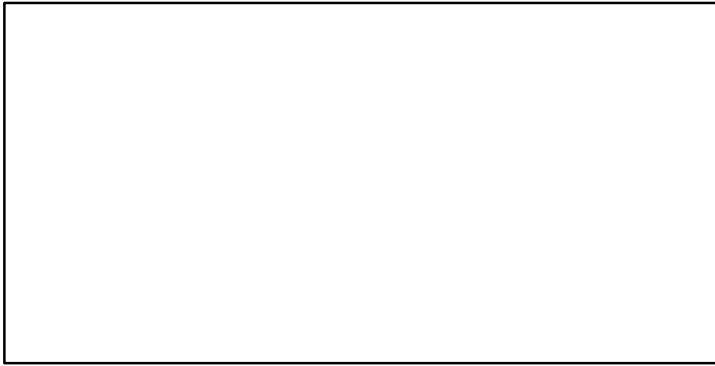
# Winter skate Georges Bank–Southern New England [WSKAT5ZSNE]

TC–MT, TL\*, RecC\* (1968–2019–SISIMP2021–2)

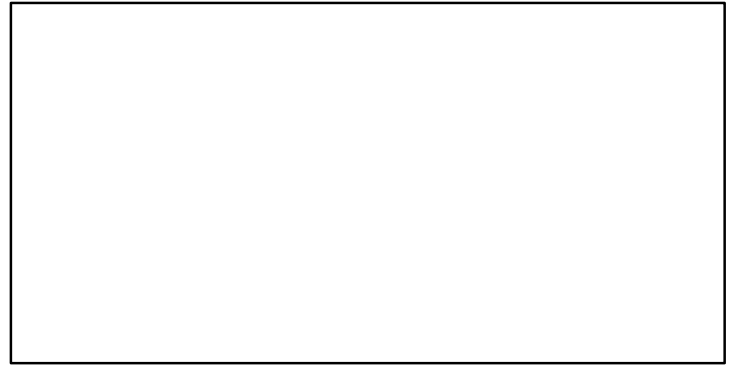
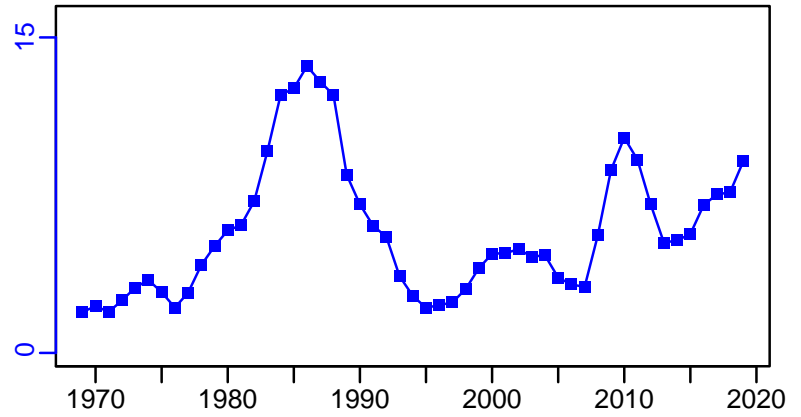
TAC\*, Cpair\*, Cadv\*



EFFORT\*



CPUE–index (1968–2019–SISIMP2021–2)



## Yellownose skate Central-Southern Chile [YNOSESKACSCH]

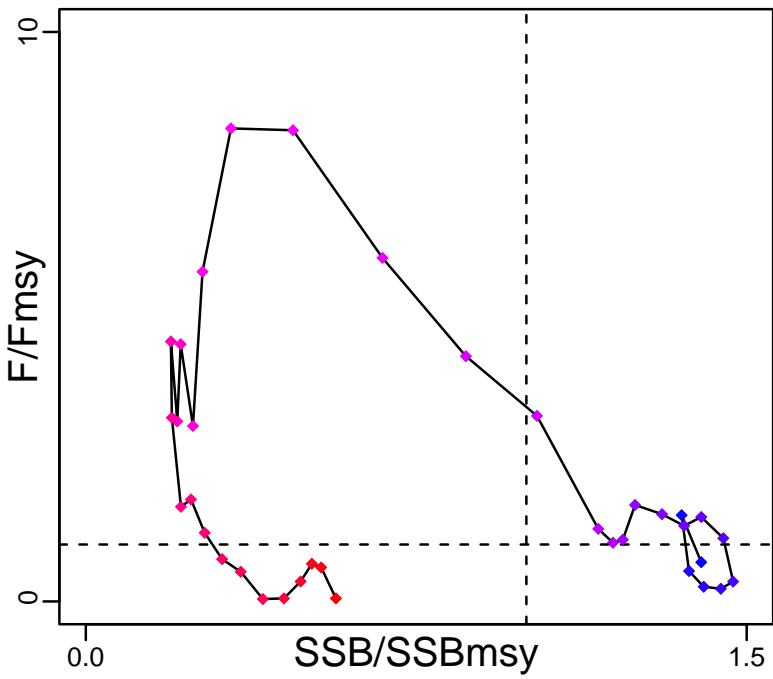
Metadata	
<b>Scientific Name</b>	Zearaja chilensis
<b>Current Assess ID</b>	IFOPCH-YNOSESKACSCH-1978-2014-PARMA
<b>Area</b>	Central-Southern Chile
<b>Management Authority</b>	Subsecretaria de Pesca
<b>Assessor</b>	Instituto de Fomento Pesquero - Chilean Fisheries Development Institute
<b>Asmts in RAM</b>	2014

Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-pr-MT	2014	1797
<b>Fmsy</b>	Fmsy-1/yr	2014	0.062
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	SSBmgt-MT	2014	1797
<b>Fmgt</b>	Fmgt-1/yr	2014	0.062
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	SSB0-MT	2014	3993
<b>MSY</b>	-	-	-
<b>M</b>	M-1/yr	2014	0.14
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	SSBlim-MT	2014	898
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

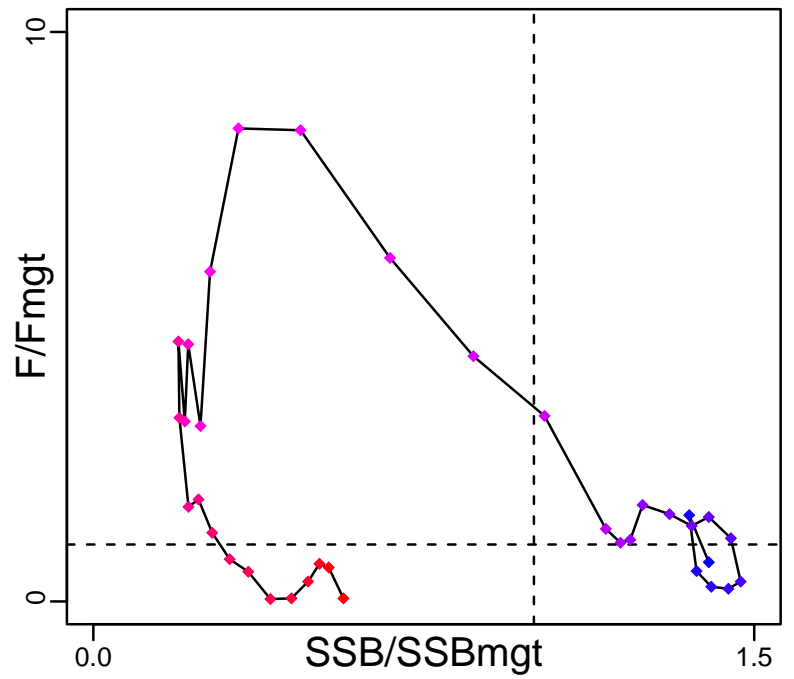
Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2014	6090	-	-
<b>SSB</b>	SSB-MT	2014	1020	Females	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2014	253,000	-	1
<b>F</b>	F-1/yr	2014	0.003	Females	-
<b>ER</b>	ER-calc-ratio	2014	0.002	-	-
<b>TC</b>	-	-	-		
<b>TL</b>	TL-MT	2014	15		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSB-MT/SSBmsy-pr-MT	2014	0.568		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2014	0.053		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	SSB-MT/SSBmgt-MT	2014	0.568		
<b>F/Fmgt</b>	F-1/yr/Fmgt-1/yr	2014	0.053		
<b>ER/ERmgt</b>	-	-	-		

# Yellownose skate Central–Southern Chile [YNOSESKACSCH]

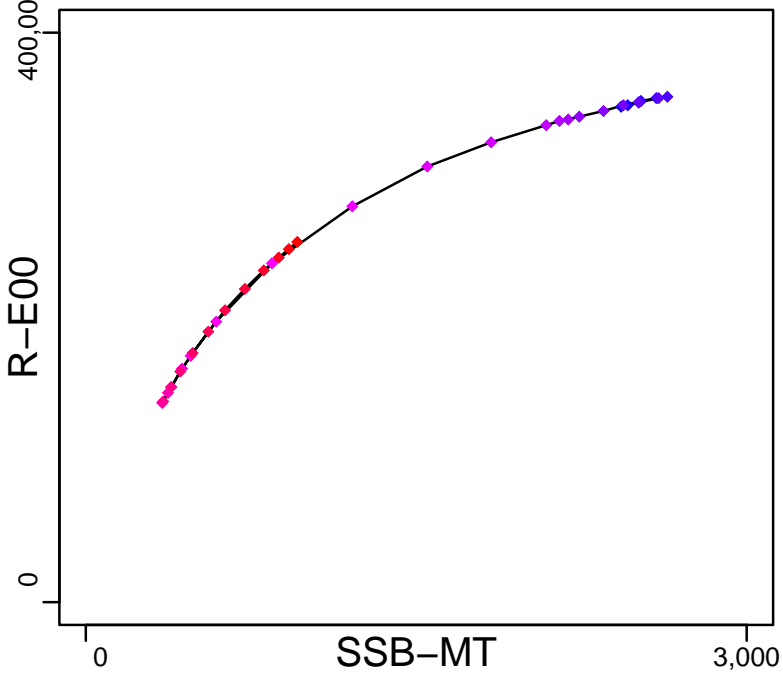
Kobe MSYpref (1978–2014–PARMA)



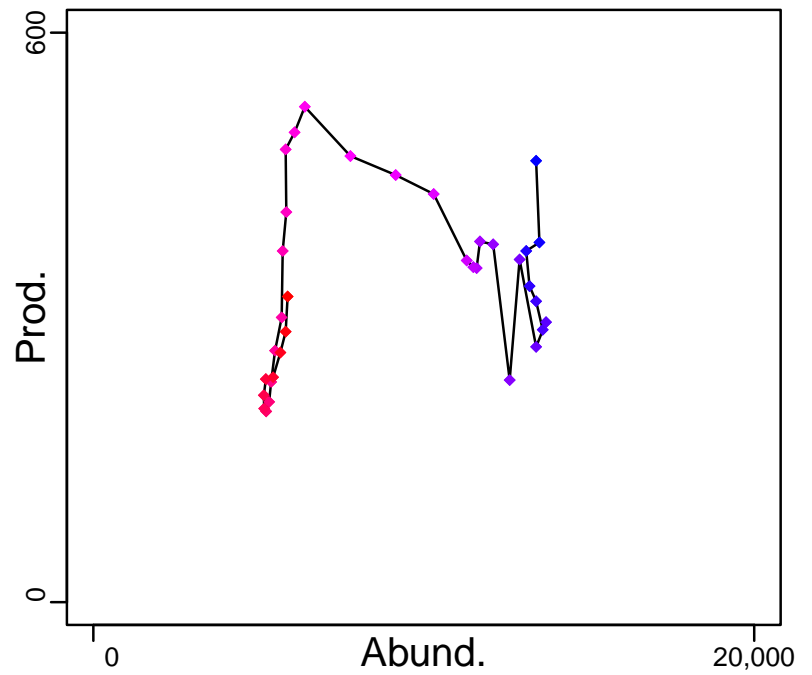
Kobe MGTpref (1978–2014–PARMA)



Spawner Recruit (1978–2014–PARMA)



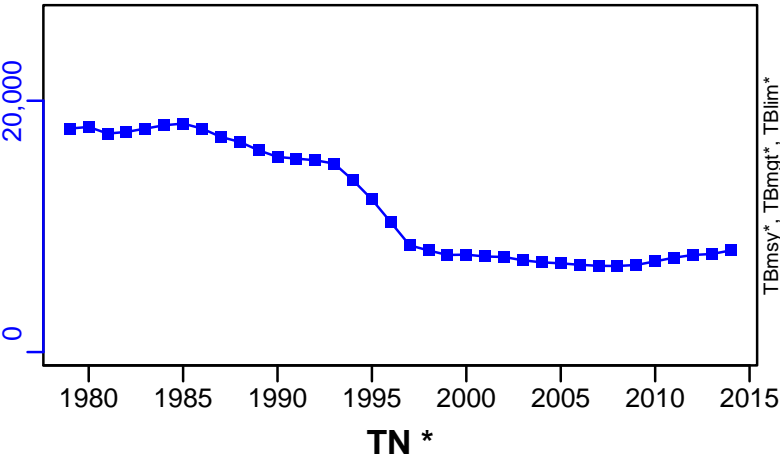
Production (1978–2014–PARMA)



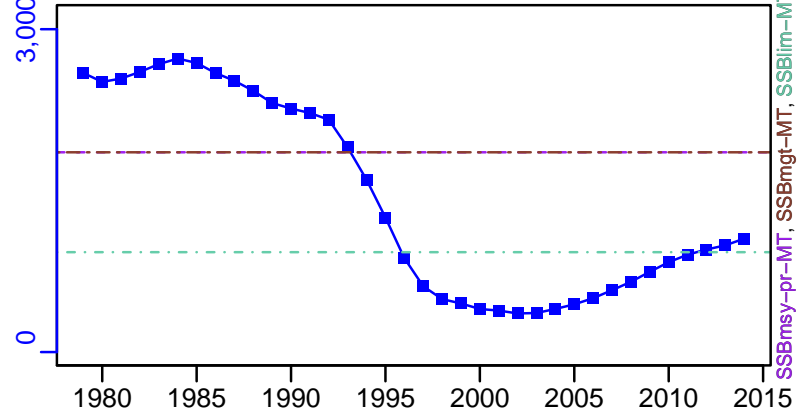
◆ Start Year ◆ End Year \* No Data

# Yellownose skate Central–Southern Chile [YNOSESKACSCH]

TB–MT (1978–2014–PARMA)



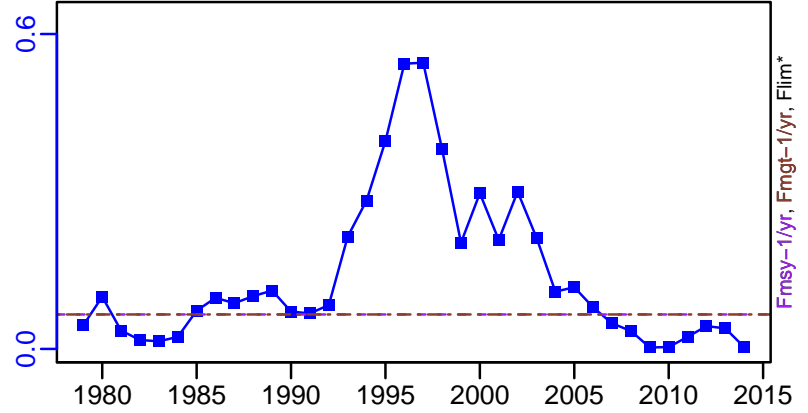
SSB–MT (1978–2014–PARMA)



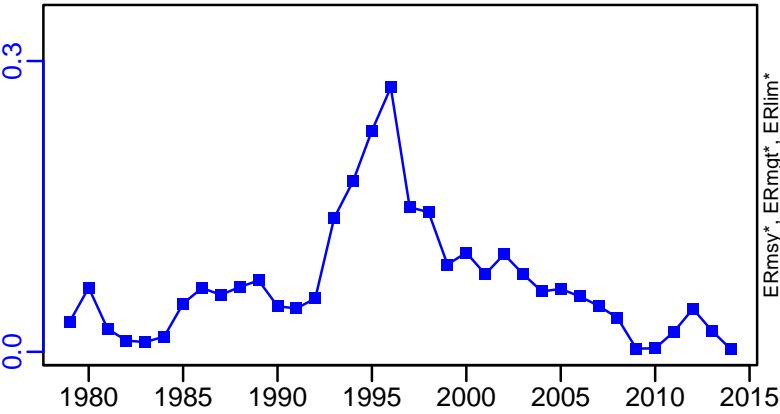
TN \*



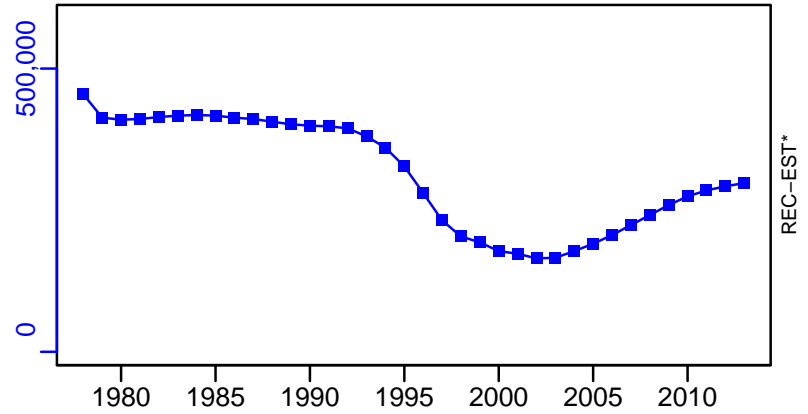
F–1/yr (1978–2014–PARMA)



ER–calc–ratio (1978–2014–PARMA)



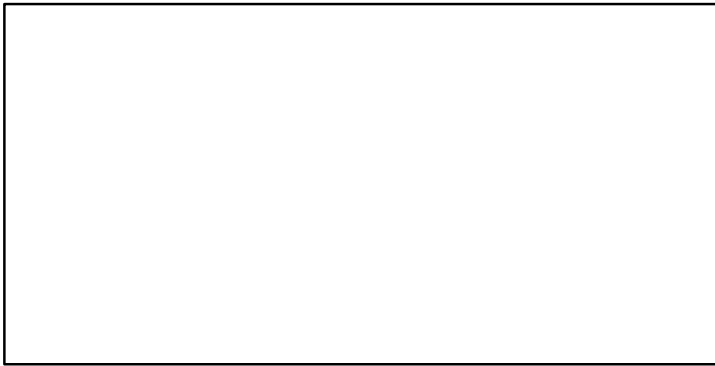
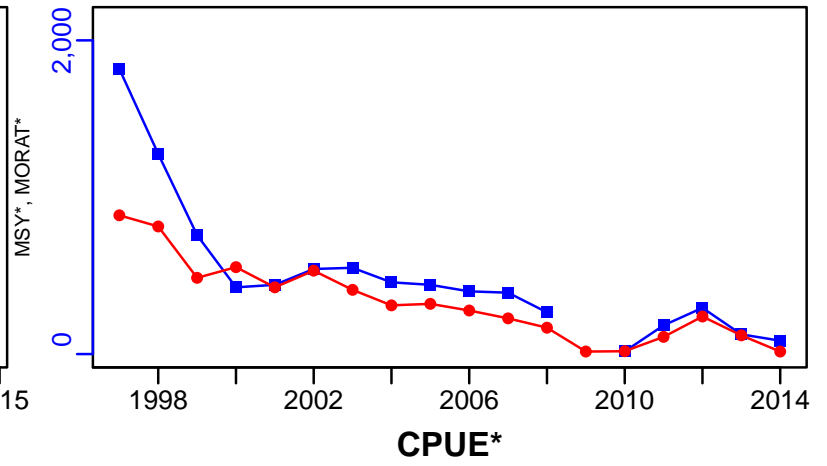
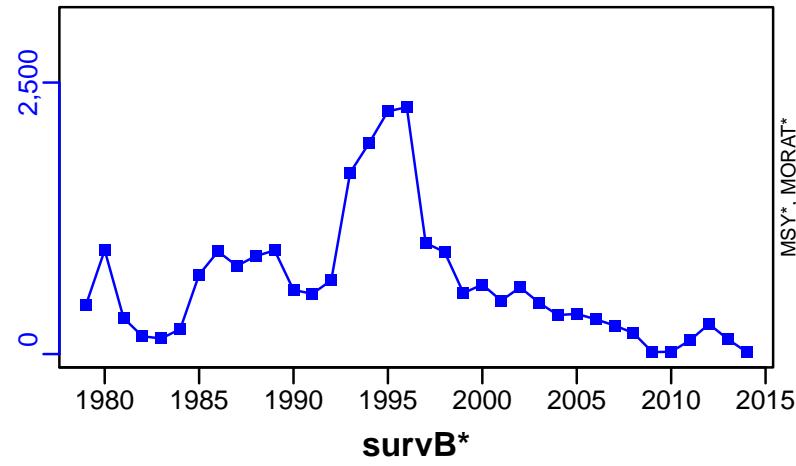
R–E00 (1978–2014–PARMA)



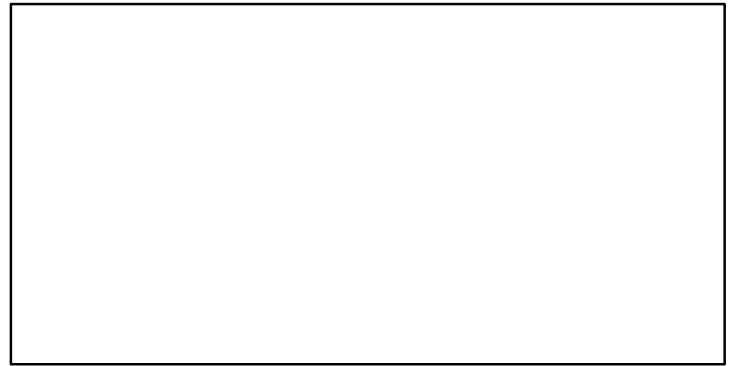
# Yellownose skate Central–Southern Chile [YNOSESKACSCH]

TL–MT, TC\*, RecC\* (1978–2014–PARMA)

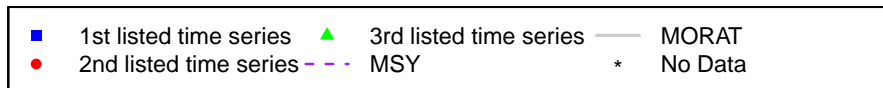
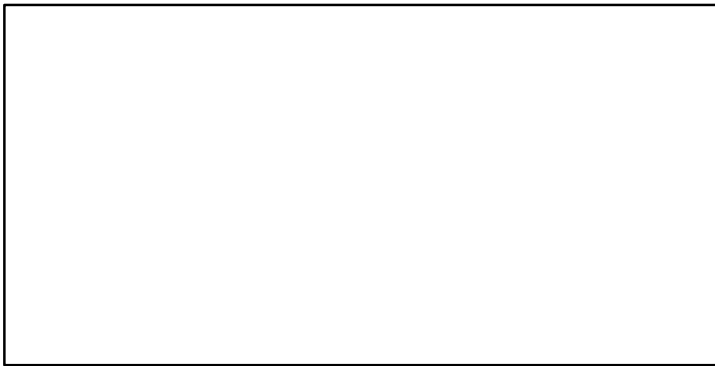
TAC–MT, Cpair–MT, Cadv\* (1978–2014–PARMA)



EFFORT\*



CdivMSY\*



## Yellownose skate Southern Chile [YNOSESKASCH]

Metadata	
<b>Scientific Name</b>	Zearaja chilensis
<b>Current Assess ID</b>	IFOPCH-YNOSESKASCH-1978-2014-PARMA
<b>Area</b>	Southern Chile
<b>Management Authority</b>	Subsecretaria de Pesca
<b>Assessor</b>	Instituto de Fomento Pesquero - Chilean Fisheries Development Institute
<b>Asmts in RAM</b>	2014

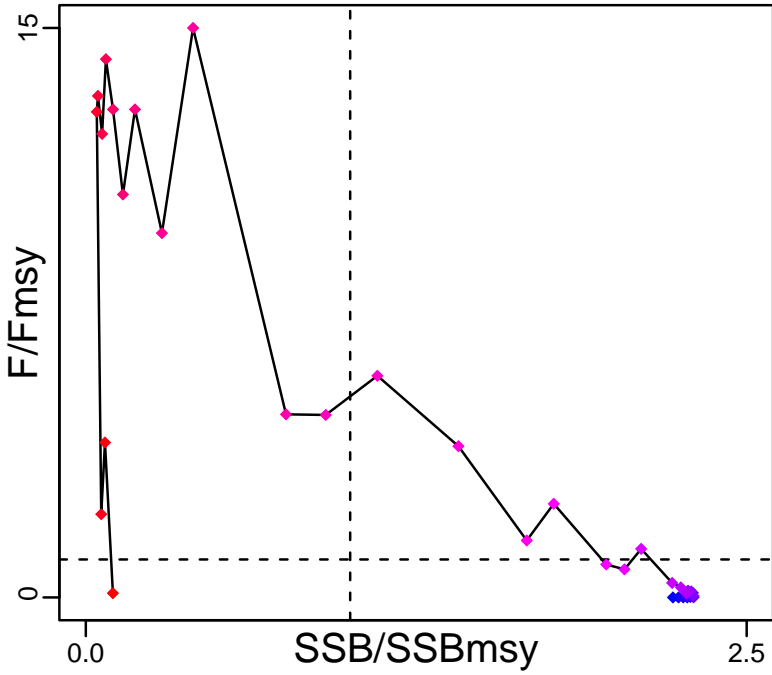
Reference Points			
Type	ID	Asmt Year	Value
<b>TBmsy</b>	-	-	-
<b>SSBmsy</b>	SSBmsy-pr-MT	2014	3327
<b>Fmsy</b>	Fmsy-1/yr	2014	0.062
<b>ERmsy</b>	-	-	-
<b>TBmgt</b>	-	-	-
<b>SSBmgt</b>	SSBmgt-MT	2014	3327
<b>Fmgt</b>	Fmgt-1/yr	2014	0.062
<b>ERmgt</b>	-	-	-
<b>TB0</b>	-	-	-
<b>SSB0</b>	SSB0-MT	2014	7394
<b>MSY</b>	-	-	-
<b>M</b>	M-1/yr	2014	0.14
<b>TBlim</b>	-	-	-
<b>SSBlim</b>	SSBlim-MT	2014	1664
<b>Flim</b>	-	-	-
<b>ERlim</b>	-	-	-

Time Series					
Type	ID	Asmt Year	Curr Value	Sex	Age
<b>TB</b>	TB-MT	2014	3850	-	-
<b>SSB</b>	SSB-MT	2014	341	Females	-
<b>TN</b>	-	-	-	-	-
<b>R</b>	R-E00	2014	113	-	1
<b>F</b>	F-1/yr	2014	0.007	Females	-
<b>ER</b>	ER-calc-ratio	2014	0.004	-	-
<b>TC</b>	-	-	-		
<b>TL</b>	TL-MT	2014	16		
<b>TB/TBmsy</b>	-	-	-		
<b>SSB/SSBmsy</b>	SSB-MT/SSBmsy-pr-MT	2014	0.102		
<b>F/Fmsy</b>	F-1/yr/Fmsy-1/yr	2014	0.112		
<b>ER/ERmsy</b>	-	-	-		
<b>TB/TBmgt</b>	-	-	-		
<b>SSB/SSBmgt</b>	SSB-MT/SSBmgt-MT	2014	0.102		
<b>F/Fmgt</b>	F-1/yr/Fmgt-1/yr	2014	0.112		
<b>ER/ERmgt</b>	-	-	-		

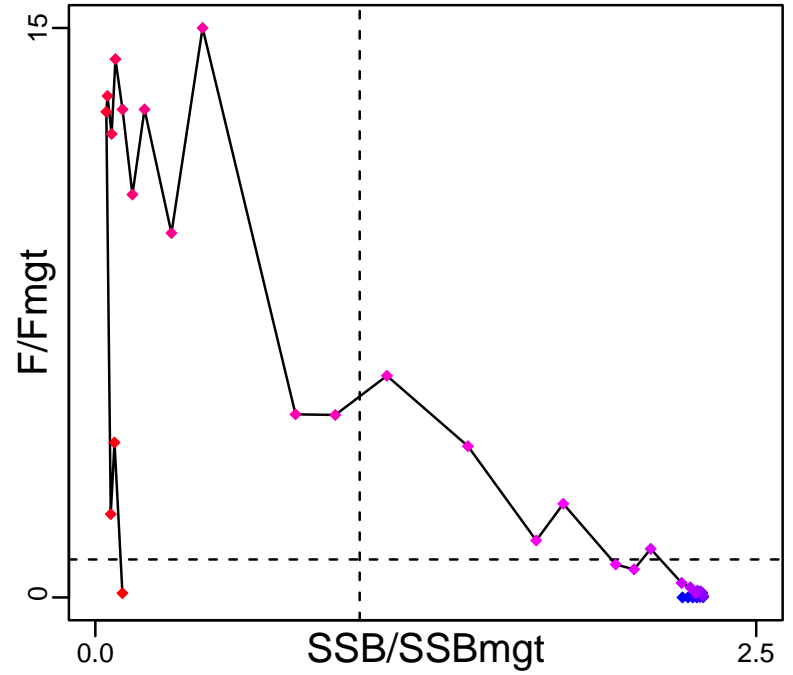


# Yellownose skate Southern Chile [YNOSESKASCH]

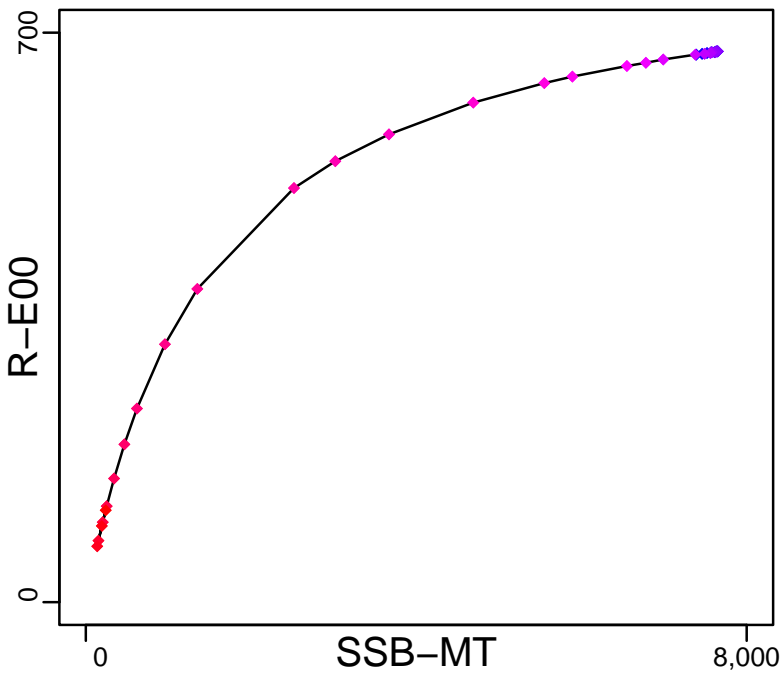
Kobe MSYpref (1978–2014–PARMA)



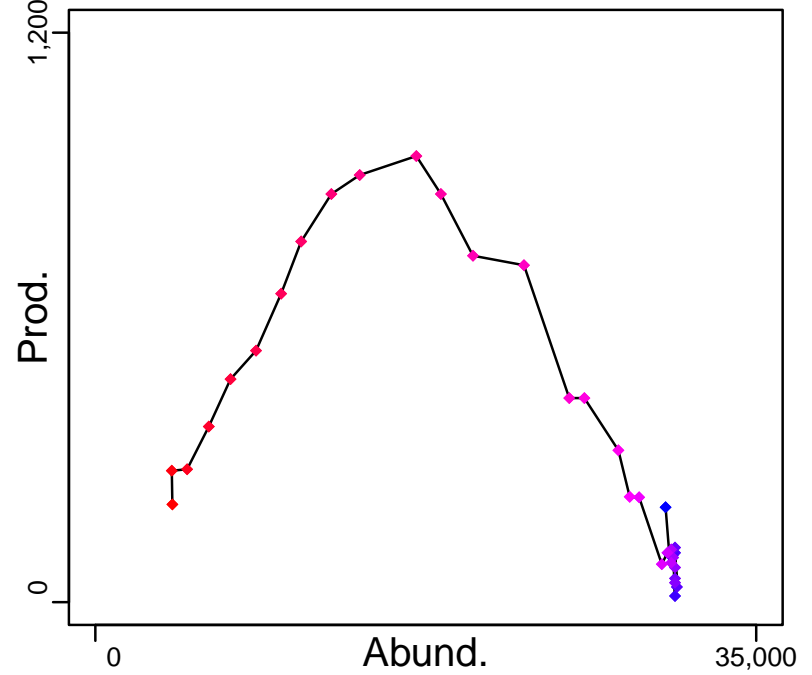
Kobe MGTpref (1978–2014–PARMA)



Spawner Recruit (1978–2014–PARMA)



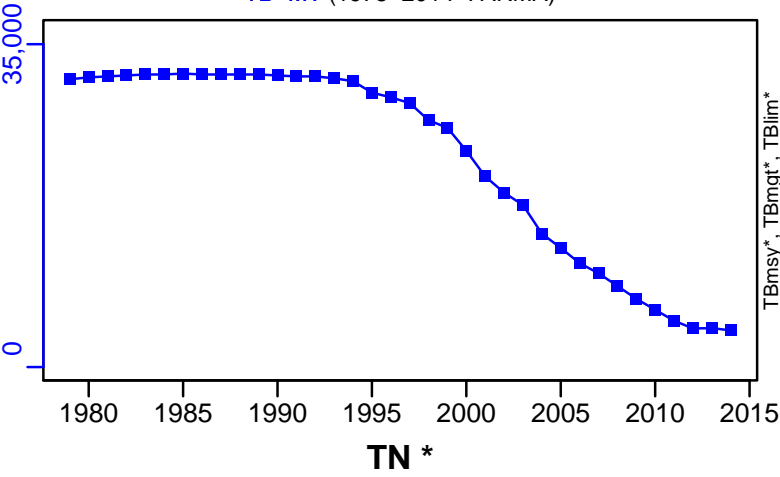
Production (1978–2014–PARMA)



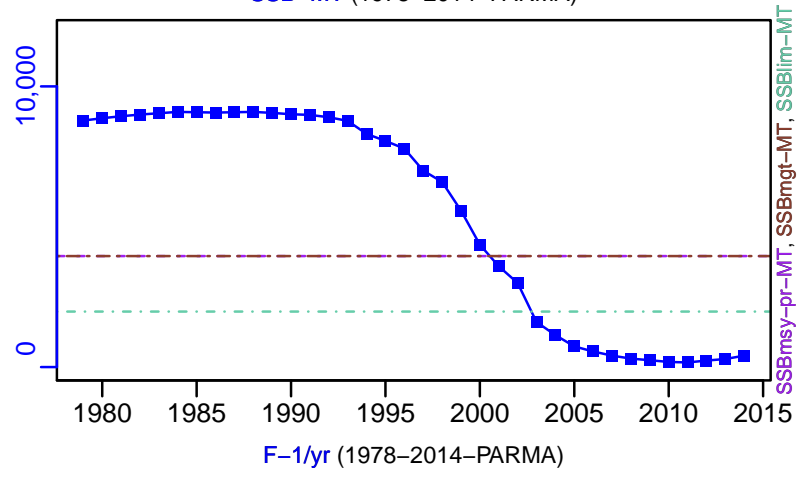
◆ Start Year ◆ End Year \* No Data

# Yellownose skate Southern Chile [YNOSESKASCH]

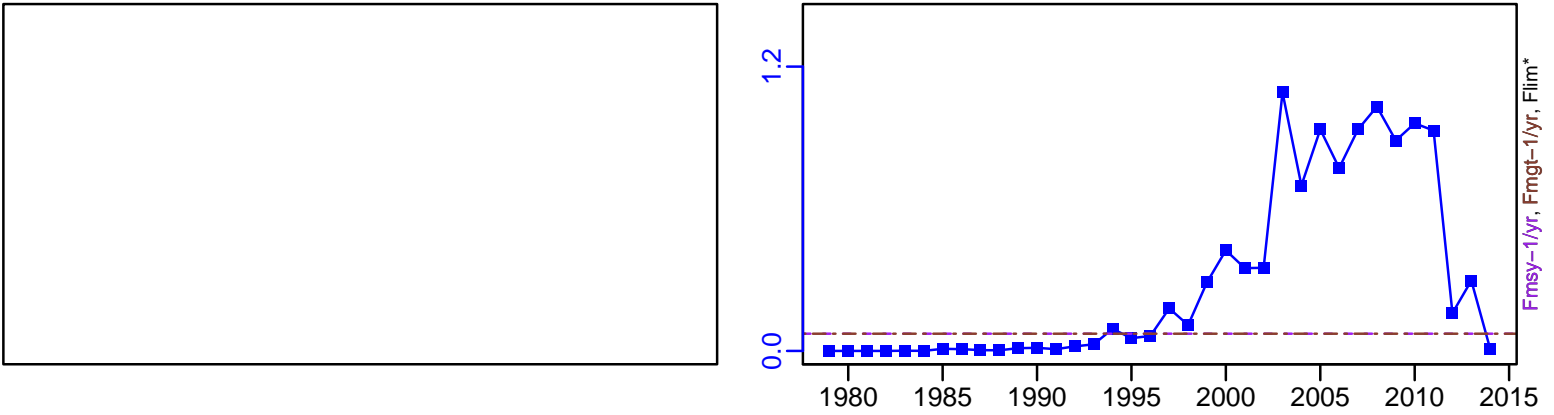
TB-MT (1978-2014-PARMA)



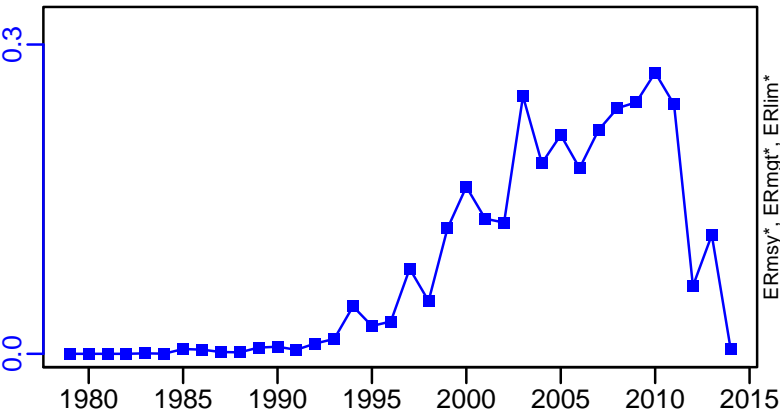
SSB-MT (1978-2014-PARMA)



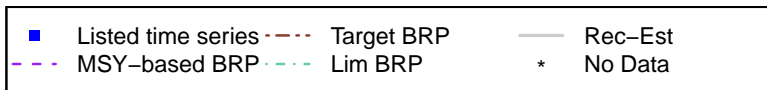
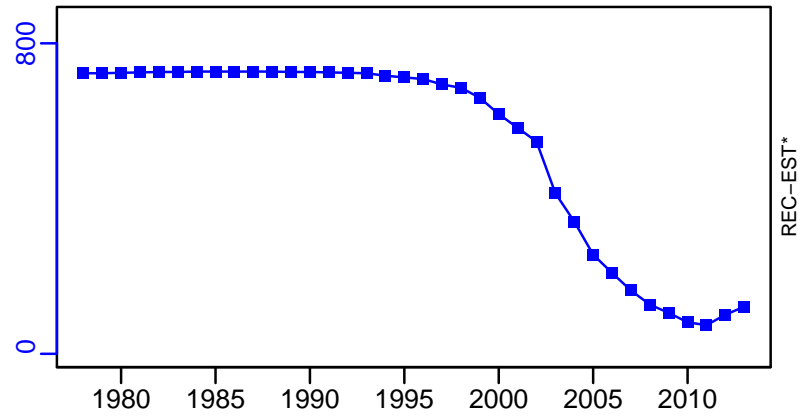
F-1/yr (1978-2014-PARMA)



ER-calc-ratio (1978-2014-PARMA)



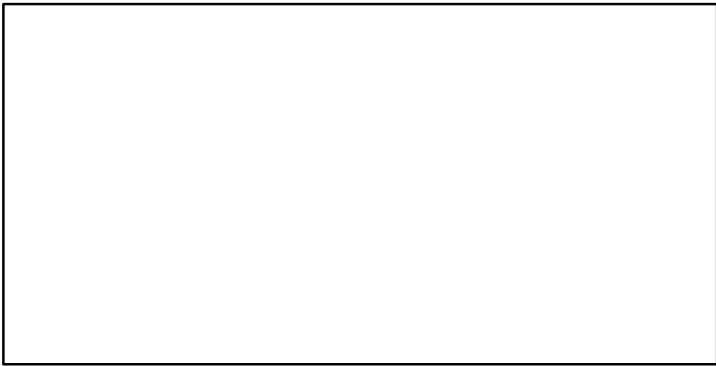
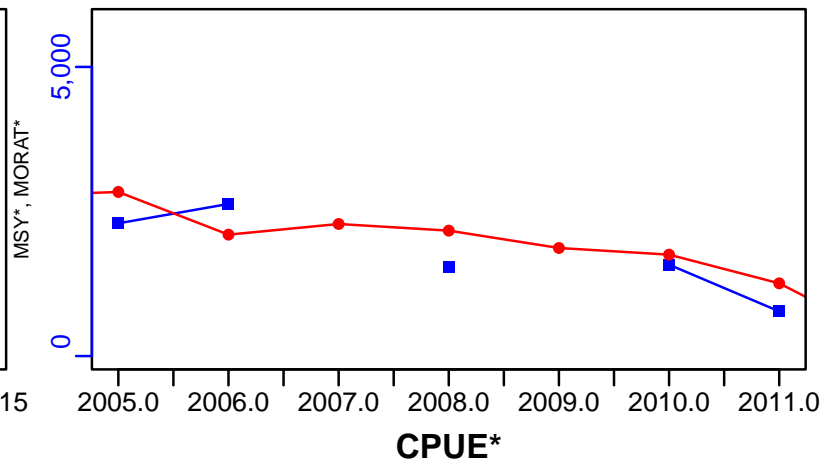
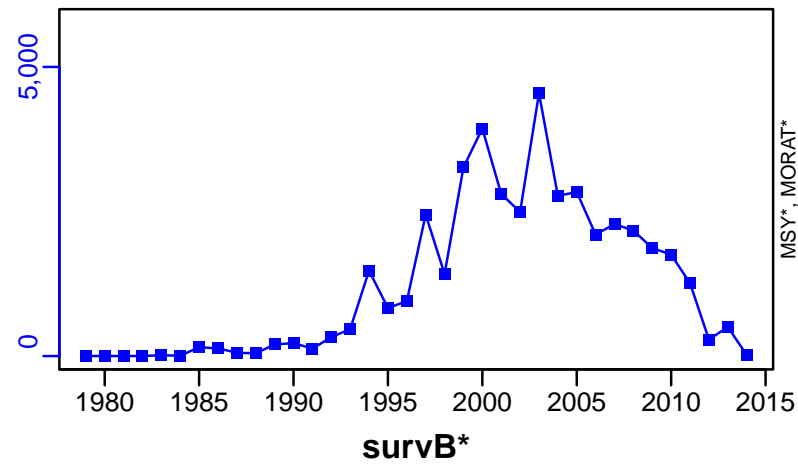
R-E00 (1978-2014-PARMA)



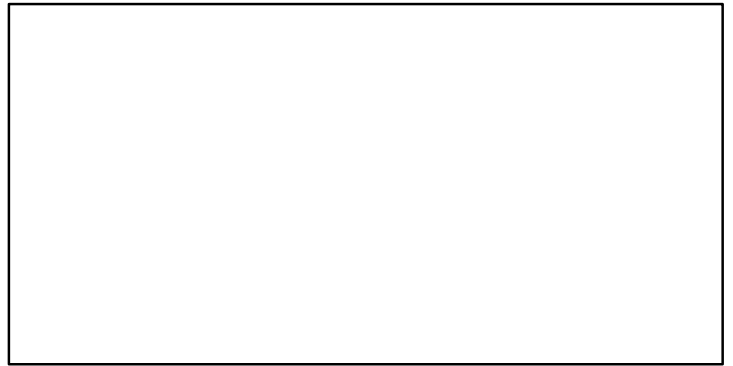
# Yellownose skate Southern Chile [YNOSESKASCH]

TL-MT, TC\*, RecC\* (1978–2014–PARMA)

TAC-MT, Cpair-MT, Cadv\* (1978–2014–PARMA)



EFFORT\*



CdivMSY\*

