

9.8 SAI – SAILFISH

The most recent stock assessments for East and West sailfish were conducted in 2016 (Anon. 2017d) using catch data available to 2014, through a process that included meetings for data preparatory, and a catch rate standardization workshop in May. The previous sailfish stock assessments were conducted in 2009 (Anon. 2010a).

SAI-1. Biology

Sailfish have a mainly pan-tropical distribution in the Atlantic Ocean, with occasional catches reported from temperate waters. Based on life history information, migration rates and geographic distribution of catch, ICCAT has established two management units for sailfish, eastern and western Atlantic stocks (**SAI-Figure 1**). However, a recent preliminary study investigating genetic differentiation among groups of Atlantic sailfish suggests genetic stock structure between both the eastern and western Atlantic, and northern and southern hemispheres, suggesting the need for further investigations to elucidate and confirm the presence of additional stock structure that may influence future assessments.

Sailfish is more coastally oriented than other billfish species. Conventional tagging data suggests they move shorter distances than the other billfish (**SAI-Figure 2**). Temperature preferences for adult sailfish appear to be in the range of 25-28°C. Sailfish generally seek out the warmest water available, and electronic tagging studies indicate that about 96% of darkness, 86% of twilight, and 82% of daylight hours are spent near the surface (Hoolihan *et al.*, 2011). Vertical habitat use is more complex however, with frequent short duration excursions to deeper depths in excess of 100 m, with some dives as deep as 350 m.

Sailfish grow rapidly and reach a maximum size of 160 cm for males and 220 cm for females, with a mean maximum age of at least 12 years. A new length at 50% maturity (L50) has been estimated for West Atlantic female sailfish (146.12 cm LJFL); while the previous L50 value used for western sailfish males remains at 135.7 cm LJFL. No values are currently available for eastern Atlantic sailfish.

Sailfish spawn over a wide area and year around. For the western stock, evidence of spawning has been detected in the Straits of Florida, and off the Venezuelan, Guyanese and Surinamese coasts. In the southwestern Atlantic, spawning has been confirmed off the southern coast of Brazil between 20° and 27°S. Additional spawning areas occur in the eastern Atlantic off Senegal and Côte d'Ivoire. Timing of spawning can differ between regions; from the Florida Straits to the areas off Guyana western Atlantic sailfish spawn in the second and third quarter of the year, while in the southwestern Atlantic they spawn during the austral summer.

SAI-2. Fisheries indicators

Sailfish are targeted by coastal artisanal and recreational fleets and are captured to a lesser extent as by-catch in longline and purse seine fisheries (**SAI-Figure 3**). Historically, catches of sailfish were reported together with spearfish by many longline fleets. In 2009 these catches were separated by the Committee (**SAI-Table 1**).

East Atlantic

The eastern stock is exploited by surface fisheries, mainly artisanal gillnet and troll, and to a lesser degree by purse seine, as well as longline and recreational fisheries. The main surface fisheries are carried out by the artisanal fleets of Côte d'Ivoire, Ghana and Senegal followed by the EU mixed flags fleets (France and Spain) in the Gulf of Guinea and in the waters of the tropical eastern Atlantic. The main longline fleets are EU-Spain, Japan and Chinese Taipei fleets which operate in the central, eastern and western Atlantic. Total reported landings, increased abruptly after 1973, to peak above 5,000 t in 1975-1976, remaining relatively high (>2000 t), largely due to the incorporation of artisanal fishing effort by the traditional surface (gillnet and troll) fisheries (**SAI-Table 1**; **SAI-Figure 3a**). A generally decreasing trend in catch is apparent since 2008, mainly due to a decreased catch by the surface fisheries (gillnet and purse seine) (**SAI-Figure 3a**). Preliminary Task I catches of sailfish east in 2018 were 1,183 t, compared to 1,650 t reported for 2017 (**SAI-Table 1**).

West Atlantic

The western stock is exploited by longline, recreational fisheries, and by surface fisheries, mainly artisanal drift-gillnet. The main longline fleets include Brazil, EU-Spain, Venezuela and Grenada, which operate in the western and central Atlantic. The main surface fisheries are carried out by the artisanal fleets of Grenada and Venezuela in the Caribbean Sea and waters of the tropical western Atlantic.

Total reported landings steadily increased since 1960 to peak 2,060 t in 2002 (**SAI-Figure 3b**). A steep decreasing trend of catch is observed from 2005, mainly due to a decreased catch by the surface (artisanal drift-gillnet) fisheries. Preliminary Task I catches of sailfish west in 2018 were 1,250 t, compared to 1,080 t reported for 2017 (**SAI-Table 1**).

Although there has been some progress, historical catches of unclassified billfish continue to be reported to the Committee, confounding sailfish catch estimates. Catch reports from countries that have historically been known to land sailfish continue to suffer from gaps and there is increasing *ad hoc* evidence of unreported landings in some other countries. These considerations provide support to the idea that the historical catch of sailfish has been under-reported, especially in recent times where more and more fleets encounter sailfish as by-catch or direct targeting.

Several standardized CPUE data series were used in 2016 for the Atlantic sailfish stock assessment. For the eastern Atlantic stock, the eight indices of abundance used were: Côte d'Ivoire, Ghana, and Senegal artisanal, Chinese Taipei longline, Japan longline (early and late), EU-Portugal longline, and EU-Spain longline; for the western Atlantic stock, the eleven indices used were: Brazilian longline, Brazilian rod & reel, Chinese Taipei longline, Japanese longline (early and late), EU-Spain longline, US longline observer, US rod & reel, Venezuelan longline, Venezuelan rod & reel, and Venezuelan artisanal (**SAI-Figure 4**). For both stocks, the available CPUE time series showed a mixture of both decreasing and increasing trends, which demonstrated a potential conflict in the indicators of stock abundance. For this reason, CPUE time series were put into two groups, each based on the similarity of their indication of stock abundance (i.e., increasing or decreasing). In the assessment, these CPUE groups were considered as alternatives for the surplus production and Stock Synthesis models.

SAI-3. State of the stocks

Important progress was made on the integration of new data sources, in particular standardized catch rate data, size data, and modeling approaches, in the 2016 assessment of the status of the stocks of Atlantic sailfish. For both stocks (East and West), uncertainty in data inputs and model configuration was explored through sensitivity analysis. They revealed that results were sensitive to structural assumptions of the models. The production model formulations and the Stock Synthesis model (applied for the western stock) had varying degrees of difficulty fitting the decreasing or increasing trends in the CPUE series. Overall, assessment results were uncertain and should be interpreted with caution.

East Atlantic

The Bayesian surplus production model, the production and the Stock Reduction Analysis models showed similar trends in biomass trajectories and fishing mortality levels; trends in abundance suggest that the stock suffered their greatest declines in abundance prior to 1990. Different model runs indicate a declining/increasing trend in recent years depending on the CPUE series selected. All the scenarios considered for advice using the surplus production models indicated that the stock is overfished (0.27-0.71 B_{MSY}), but overfishing status is uncertain (0.33-2.85 F_{MSY}) (**SAI-Figure 5**).

West Atlantic

The production and the Bayesian surplus production models examined were heavily influenced by the priors used in the models. Neither model could provide stock status due to the large uncertainty in benchmark estimates, and generally poor model convergence. The point estimates of both Stock Synthesis models indicated that the stock is neither overfished nor experiencing overfishing (**SAI-Figure 6**). In contrast, the Stock Reduction Analysis model indicated that the stock was overfished with overfishing occurring (0.23-0.61 B_{MSY} ; 0.69-2.45 F_{MSY}). However, due to the large degree of uncertainty in the Stock Reduction Analysis results, the Stock Synthesis models were used for management recommendations.

SAI-4. Outlook

Both the eastern and western sailfish stocks may have been reduced to stock sizes below B_{MSY} . There is considerable uncertainty on the level of reduction. The results for the eastern stock were more pessimistic than those for the western stock in that more of the results indicated recent stock biomass below B_{MSY} . Therefore, there is particular concern over the outlook for the eastern stock.

Due to the difficulty of determining current status for both the eastern and western Atlantic stocks, the Committee considered that it was not appropriate to conduct quantitative projections of future stock condition based on the range of scenarios considered at the stock assessment meeting.

SAI-5. Effect of current regulations

In 2016, the Commission established catch limits for both sailfish stocks [Rec. 16-11], and included several provisions that would allow the Committee to enhance data collection initiatives to reduce fishing mortality estimates and overcome data gap issues in all fisheries.

East Atlantic

It was established in Rec 16-11 that if the total catch harvested any year exceeds 1,271 t (67% of the average estimate of the Maximum Sustainable Yield), the Commission shall review the recommendation and effectiveness of this, while the catch in 2017 did exceed this amount, preliminary catches in 2018 did not.

West Atlantic

It was established in Rec 16-11 that if the total catch harvested any year exceeds 1,030 t (67% of the average estimate of the Maximum Sustainable Yield), the Commission shall review the recommendation and effectiveness of this, the current catch levels in 2017 and preliminary catches in 2018 have exceeded this level.

In line with other ICCAT conservation measures, some countries have established domestic regulations to limit the catch of sailfish. Among these regulations are: the requirement of releasing all billfish from longline vessels, minimum size restrictions, use of circle hooks and catch and release strategies in sport fisheries.

Currently, four ICCAT Contracting Parties (Brazil, Canada, Mexico, and the United States) mandate or encourage the use of circle hooks on their pelagic longline fleets. Recent research has demonstrated that in some longline fisheries the use of non-offset circle hooks resulted in a reduction of billfish mortality, while the catch rates of several of the target species remained the same or were greater than the catch rates observed with the use of conventional J hooks or offset circle hooks.

SAI-6. Management recommendations

Considerable uncertainty still remains in the assessments of both the eastern and western stocks. Available abundance indices demonstrate conflicting trends for both stocks, and there are concerns that reported catches, including dead discards, may be incomplete. Nevertheless, it should be noted that there have been significant improvements since the last assessment. There were more abundance indices available, and the standardizations have seen general improvement, fostered in part by the CPUE workshop held in advance of this meeting. As was the case during the 2009 Sailfish Stock Assessment Session (Anon. 2010a), the results for the eastern stock were more pessimistic than the western stock in that more of the results indicated recent stock biomass below B_{MSY} .

East Atlantic

The eastern Atlantic sailfish stock appears to have declined markedly since the 1970s, reaching a low in the early 1990s. There is broad agreement across model results that the stock is currently overfished. Since 2010, catches appear to have declined substantially. However, models disagree whether overfishing is occurring and whether the stock is recovering.

The Committee has not new management recommendation.

West Atlantic

The Committee has not new management recommendation.

| ATLANTIC SAILFISH SUMMARY | | |
|---|--|----------------------------|
| | West Atlantic | East Atlantic |
| Maximum Sustainable Yield (MSY) | 1,438-1,636 t ^{1,2} | 1,635-2,157 t ³ |
| Current Yield (2018) | 1,250 t ⁴ | 1,183 t ⁴ |
| SSB ₂₀₁₄ /SSB _{MSY} | 1.81 (0.51-2.57) ¹ 1.16 (0.18-1.69) ² | |
| B ₂₀₁₄ /B _{MSY} | | 0.22-0.70 ³ |
| F ₂₀₁₄ /F _{MSY} | 0.33 (0.25 – 0.57) ¹ 0.63 (0.42 – 2.02) ² | 0.33-2.85 ³ |
| Overfished | Not likely | YES |
| Overfishing | Not likely | Possibly |
| Management Measures in Effect: | Recommendation [Rec. 16-11]. Limit Atlantic sailfish catches of either stock to the level of 67% of MSY. | |

¹ Stock Synthesis estimate utilizing increasing CPUE trends, with approximate 95% confidence intervals.

² Stock Synthesis estimate utilizing decreasing CPUE trends, estimate with approximate 95% confidence intervals.

³ Range obtained of plausible estimates from bootstrapped Production Bayesian surplus, production, and Stock Reduction Analysis models.

⁴2018 yield should be considered provisional.

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SAI-Table 1. Estimated catches (t) of Atlantic sailfish (*Istiophorus albicans*) by area, gear and flag. (v2, 2019-10-02)SAI-Tableau 1. Prises estimées (t) de voilier de l'Atlantique (*Istiophorus albicans*) par zone, engin et pavillon.(v2, 2019-10-02)SAI-Tabla 1. Capturas estimadas (t) de pez vela del Atlántico (*Istiophorus albicans*) por area, arte, y bandera. (v2, 2019-10-02)

| | | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | |
|-------------|-----|----------------------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| TOTAL | | | 2292 | 2445 | 3023 | 2604 | 2978 | 2922 | 3976 | 4603 | 4411 | 4137 | 4339 | 4059 | 3854 | 4137 | 3962 | 3753 | 3082 | 2888 | 2866 | 2324 | 2022 | 2144 | 2636 | 2730 | 2434 | |
| ATE | | | 1171 | 1231 | 1880 | 1347 | 1363 | 1342 | 1980 | 2805 | 2351 | 2639 | 2612 | 2220 | 1916 | 2577 | 2229 | 2129 | 1853 | 1553 | 1591 | 1339 | 1163 | 1246 | 1422 | 1650 | 1183 | |
| ATW | | | 1121 | 1214 | 1143 | 1257 | 1615 | 1580 | 1996 | 1797 | 2060 | 1498 | 1727 | 1839 | 1939 | 1561 | 1733 | 1624 | 1229 | 1335 | 1275 | 985 | 859 | 898 | 1214 | 1080 | 1250 | |
| Landings | ATE | Longline | 234 | 261 | 729 | 216 | 275 | 273 | 198 | 568 | 756 | 497 | 335 | 319 | 580 | 590 | 628 | 622 | 514 | 546 | 543 | 457 | 423 | 436 | 338 | 375 | 497 | |
| | | Other surf. | 871 | 836 | 970 | 644 | 859 | 883 | 1231 | 1470 | 1496 | 1860 | 2057 | 1758 | 1289 | 1798 | 1493 | 932 | 900 | 870 | 985 | 754 | 730 | 749 | 1082 | 1175 | 682 | |
| | | Sport (HL+RR) | 67 | 135 | 182 | 488 | 228 | 186 | 551 | 767 | 98 | 282 | 219 | 143 | 46 | 189 | 108 | 575 | 439 | 136 | 58 | 128 | 10 | 56 | 0 | 94 | 1 | |
| | ATW | Longline | 651 | 581 | 453 | 641 | 1033 | 1102 | 1711 | 1660 | 1636 | 1161 | 1271 | 1704 | 1737 | 1299 | 1406 | 1153 | 1131 | 1213 | 1081 | 880 | 730 | 884 | 1184 | 1052 | 1231 | |
| | | Other surf. | 225 | 256 | 390 | 209 | 287 | 244 | 163 | 66 | 311 | 331 | 449 | 131 | 194 | 248 | 310 | 457 | 92 | 102 | 154 | 86 | 107 | 1 | 8 | 10 | 9 | |
| | | Sport (HL+RR) | 217 | 348 | 230 | 350 | 267 | 163 | 76 | 60 | 106 | 0 | 0 | 0 | 2 | 6 | 7 | 4 | 2 | 10 | 19 | 7 | 12 | 5 | 15 | 11 | 4 | |
| Discards | ATE | Longline | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 6 | 1 | 4 | 2 | |
| | | Other surf. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | | |
| | ATW | Longline | 28 | 29 | 69 | 57 | 27 | 72 | 45 | 11 | 7 | 5 | 7 | 3 | 5 | 8 | 9 | 10 | 4 | 10 | 20 | 12 | 11 | 7 | 7 | 7 | 7 | |
| Other surf. | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Landings | ATE | CP | Belize | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | |
| | | Cape Verde | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | China PR | 3 | 3 | 3 | 3 | 5 | 9 | 4 | 5 | 11 | 4 | 4 | 8 | 16 | 8 | 1 | 4 | 5 | 2 | 4 | 1 | 1 | 2 | 2 | 4 | 2 | |
| | | Curaçao | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| | | Côte d'Ivoire | 54 | 66 | 91 | 65 | 35 | 80 | 45 | 47 | 65 | 121 | 73 | 93 | 78 | 52 | 448 | 74 | 24 | 108 | 192 | 80 | 99 | 55 | 38 | 405 | 35 | |
| | | EU.España | 8 | 13 | 42 | 48 | 15 | 20 | 8 | 195 | 245 | 197 | 169 | 202 | 214 | 227 | 239 | 318 | 206 | 197 | 257 | 229 | 302 | 333 | 225 | 236 | 277 | |
| | | EU.France | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11 | 8 | | |
| | | EU.Portugal | 1 | 2 | 1 | 2 | 27 | 53 | 13 | 4 | 10 | 13 | 19 | 31 | 137 | 43 | 49 | 131 | 170 | 121 | 72 | 109 | 33 | 41 | 30 | 27 | 123 | |
| | | EU.United Kingdom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | El Salvador | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| | | Gabon | 3 | 110 | 218 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 5 | 0 | |
| | | Ghana | 450 | 353 | 303 | 196 | 351 | 305 | 275 | 568 | 592 | 566 | 521 | 542 | 282 | 420 | 342 | 358 | 417 | 299 | 201 | 220 | 191 | 99 | 238 | 267 | 82 | |
| | | Guatemala | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | Guinea Ecuatorial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 3 | 0 | 0 | 0 | |
| | | Honduras | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | Japan | 45 | 52 | 47 | 19 | 58 | 16 | 26 | 6 | 20 | 22 | 70 | 50 | 62 | 144 | 199 | 94 | 115 | 143 | 157 | 71 | 59 | 36 | 52 | 45 | 47 | |
| | | Korea Rep. | 5 | 5 | 11 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 10 | 1 | 6 | 10 | 2 | 6 | 15 | 9 | |
| | | Liberia | 0 | 33 | 85 | 43 | 136 | 122 | 154 | 56 | 133 | 127 | 106 | 122 | 118 | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 11 | |
| | | Maroc | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | Panama | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| | | Russian Federation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | S. Tomé e Príncipe | 88 | 92 | 96 | 139 | 141 | 141 | 136 | 136 | 136 | 515 | 346 | 292 | 384 | 114 | 119 | 121 | 124 | 127 | 131 | 134 | 312 | 212 | 219 | 248 | | |
| | | Senegal | 162 | 167 | 240 | 560 | 260 | 238 | 786 | 953 | 240 | 673 | 567 | 463 | 256 | 737 | 446 | 630 | 484 | 174 | 247 | 165 | 37 | 60 | 586 | 301 | 313 | |
| | | Sierra Leone | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | South Africa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | St. Vincent and Grenadines | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| | | U.S.S.R. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | NCC | Chinese Taipei | 38 | 58 | 24 | 56 | 44 | 66 | 45 | 50 | 62 | 49 | 15 | 25 | 36 | 109 | 121 | 80 | 21 | 52 | 54 | 42 | 17 | 21 | 23 | 26 | 21 | |
| | NCO | Benin | 20 | 20 | 19 | 6 | 4 | 5 | 5 | 12 | 2 | 2 | 5 | 3 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | Cuba | 83 | 72 | 533 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

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| | | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | | |
|-----------------------|----------------|----------------------------|--------------------|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|---|
| ATW | CP | Mixed flags (FR+ES) | 160 | 128 | 97 | 110 | 138 | 131 | 353 | 400 | 365 | 413 | 336 | 264 | 274 | 205 | 251 | 308 | 265 | 275 | 275 | 275 | 275 | 275 | 0 | 0 | | | |
| | | NEI (BIL) | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 269 | 408 | 213 | 55 | 1 | 105 | 43 | 20 | 11 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | NEI (ETRO) | 51 | 57 | 69 | 86 | 127 | 120 | 77 | 43 | 3 | 2 | 16 | 7 | 8 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | Togo | 0 | 0 | 0 | 9 | 22 | 36 | 23 | 62 | 55 | 95 | 135 | 47 | 31 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | Barbados | 46 | 74 | 25 | 71 | 58 | 44 | 44 | 42 | 26 | 27 | 26 | 42 | 58 | 42 | 0 | 0 | 18 | 36 | 36 | 39 | 44 | 54 | 56 | 42 | 20 | | |
| | | Belize | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 12 | 0 | 0 | 52 | 8 | 7 | 4 | 3 | 0 | 11 | 0 | 62 | |
| | | Brazil | 129 | 245 | 310 | 137 | 184 | 356 | 598 | 412 | 547 | 585 | 534 | 416 | 139 | 123 | 268 | 433 | 71 | 138 | 108 | 76 | 57 | 72 | 59 | 39 | 43 | | |
| | | China PR | 3 | 3 | 3 | 3 | 3 | 9 | 4 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 3 | 6 | 2 | | |
| | | Curaçao | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | EU.España | 19 | 36 | 5 | 20 | 42 | 7 | 14 | 309 | 414 | 183 | 160 | 89 | 134 | 214 | 361 | 412 | 275 | 190 | 184 | 203 | 244 | 311 | 207 | 454 | 256 | | |
| | | EU.France | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| | | EU.Portugal | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 12 | 12 | 110 | 18 | 53 | 101 | 20 | 19 | 9 | 2 | 0 | 0 | 0 | 0 | 1 | 37 | | |
| | | El Salvador | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | Grenada | 151 | 119 | 56 | 83 | 151 | 148 | 164 | 187 | 151 | 171 | 112 | 147 | 159 | 174 | 216 | 183 | 191 | 191 | 191 | 191 | 191 | 191 | 191 | 0 | 0 | | |
| | | Japan | 8 | 2 | 4 | 17 | 3 | 10 | 12 | 3 | 3 | 10 | 5 | 22 | 4 | 1 | 33 | 43 | 36 | 12 | 16 | 7 | 11 | 12 | 13 | 7 | 3 | | |
| | | Korea Rep. | 4 | 4 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 40 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | |
| | | Mexico | 19 | 19 | 10 | 9 | 65 | 40 | 118 | 36 | 34 | 45 | 51 | 55 | 41 | 46 | 45 | 48 | 34 | 32 | 51 | 63 | 42 | 35 | 47 | 51 | 24 | | |
| | | Panama | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 415 | 0 | 461 | | |
| | | St. Vincent and Grenadines | 4 | 2 | 1 | 3 | 2 | 1 | 0 | 2 | 164 | 3 | 86 | 73 | 59 | 18 | 13 | 8 | 7 | 4 | 4 | 3 | 4 | 1 | 85 | 8 | 10 | | |
| | | Trinidad and Tobago | 2 | 1 | 4 | 10 | 25 | 37 | 3 | 7 | 6 | 8 | 10 | 9 | 17 | 13 | 32 | 16 | 16 | 38 | 72 | 34 | 29 | 51 | 53 | 63 | 51 | | |
| | | U.S.A. | 180 | 348 | 232 | 349 | 267 | 163 | 76 | 58 | 103 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 7 | 3 | 2 | 2 | 3 | 3 | 3 | | |
| | | UK.British Virgin Islands | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | Venezuela | 223 | 180 | 255 | 279 | 515 | 367 | 261 | 249 | 277 | 327 | 509 | 607 | 1042 | 549 | 382 | 416 | 498 | 590 | 543 | 341 | 210 | 152 | 246 | 387 | 262 | | |
| | | NCC | | Chinese Taipei | 117 | 19 | 19 | 2 | 65 | 17 | 11 | 33 | 31 | 13 | 8 | 21 | 5 | 14 | 10 | 11 | 6 | 8 | 26 | 6 | 3 | 6 | 5 | 5 | 5 |
| | | NCO | Aruba | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | Cuba | 46 | 37 | 37 | 40 | 28 | 196 | 208 | 68 | 32 | 18 | 50 | 72 | 47 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | Dominica | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 0 | 1 | 0 | 3 | 3 | 4 | 2 | 0 | 2 | 0 | 0 | 5 | 3 | 3 | 0 | | |
| | | | Dominican Republic | 90 | 40 | 40 | 101 | 89 | 27 | 67 | 81 | 260 | 91 | 144 | 165 | 133 | 147 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| NEI (BIL) | 0 | | 0 | 0 | 0 | 0 | 0 | 297 | 268 | 0 | 0 | 0 | 68 | 81 | 252 | 17 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| NEI (ETRO) | 27 | | 30 | 36 | 46 | 67 | 64 | 41 | 23 | 1 | 1 | 9 | 4 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Saint Kitts and Nevis | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | | |
| Seychelles | 0 | | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| Sta. Lucia | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 2 | 3 | 2 | 3 | 1 | 1 | 4 | 2 | | | |
| Discards | ATE | | CP | Curaçao | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | EU.España | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | EU.France | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | | | |
| | El Salvador | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | Guatemala | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | Korea Rep. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | Panama | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | NCC | Chinese Taipei | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 6 | 1 | 4 | 2 | | | |
| | ATW | CP | Brazil | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | EU.France | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Korea Rep. | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Mexico | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| U.S.A. | | 28 | 29 | 69 | 57 | 27 | 72 | 45 | 11 | 7 | 5 | 7 | 4 | 5 | 7 | 10 | 10 | 4 | 10 | 19 | 11 | 11 | 6 | 7 | 6 | 6 | | | |
| NCC | Chinese Taipei | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | | | |

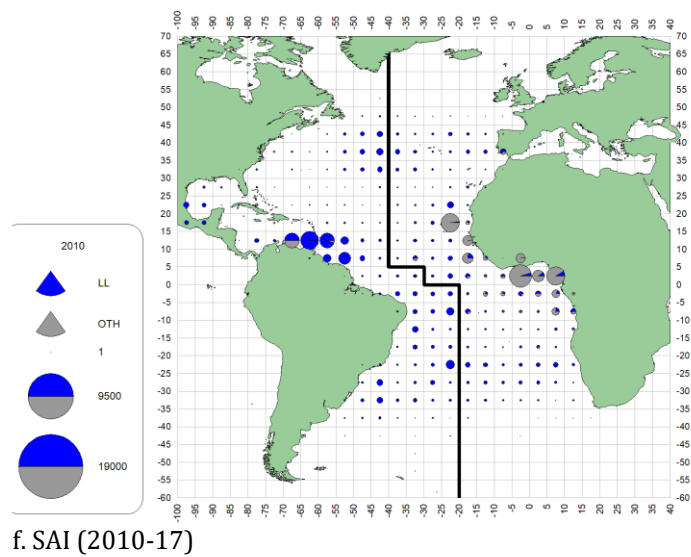
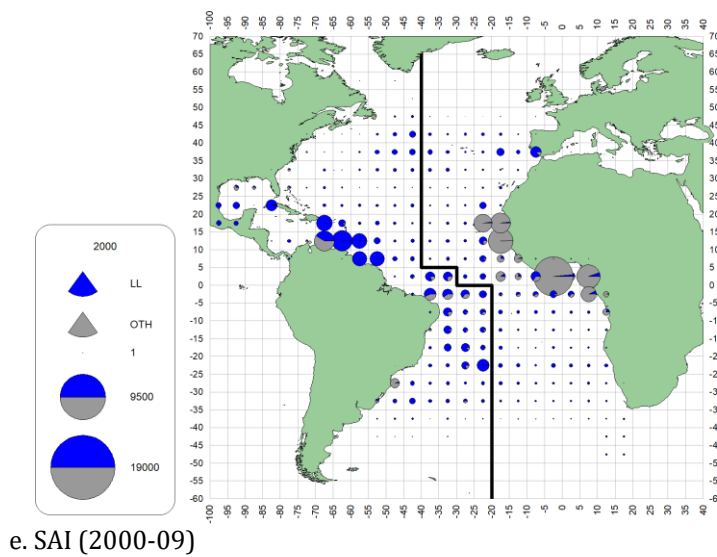
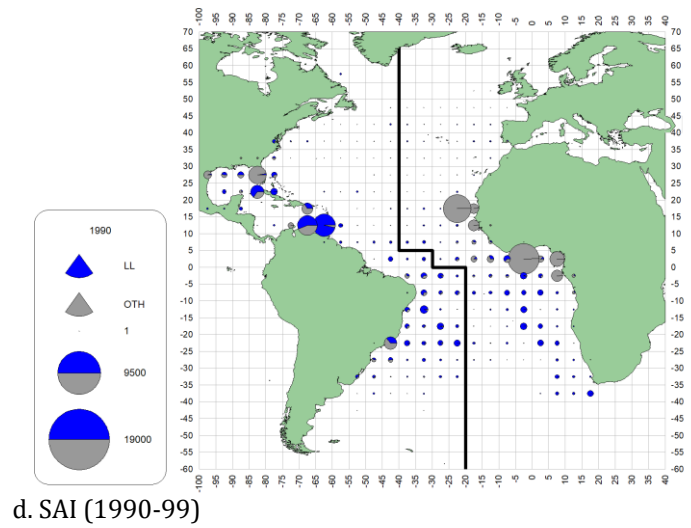
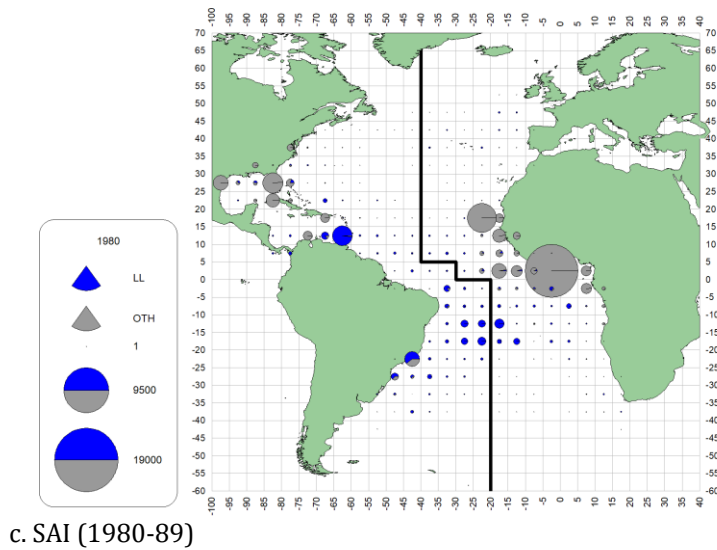
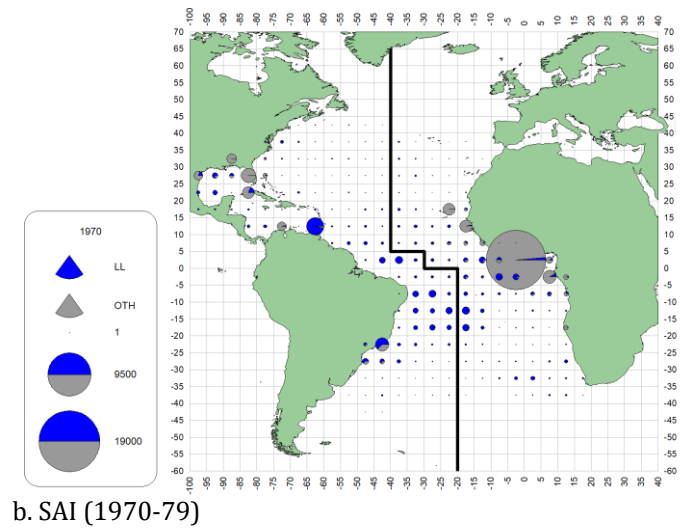
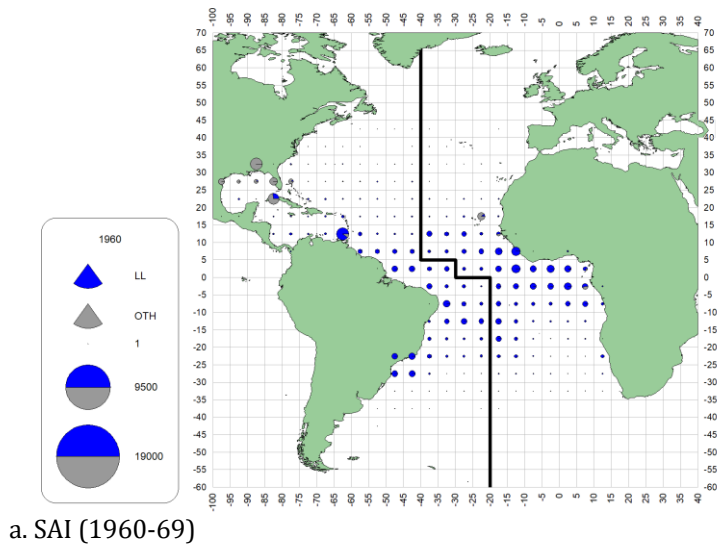
2019 SCRS REPORT

SPF-Table 1. Estimated catches (t) of longbill spearfish (*Tetrapturus pfluegeri*) by area, gear and flag (v2, 2019-10-02)

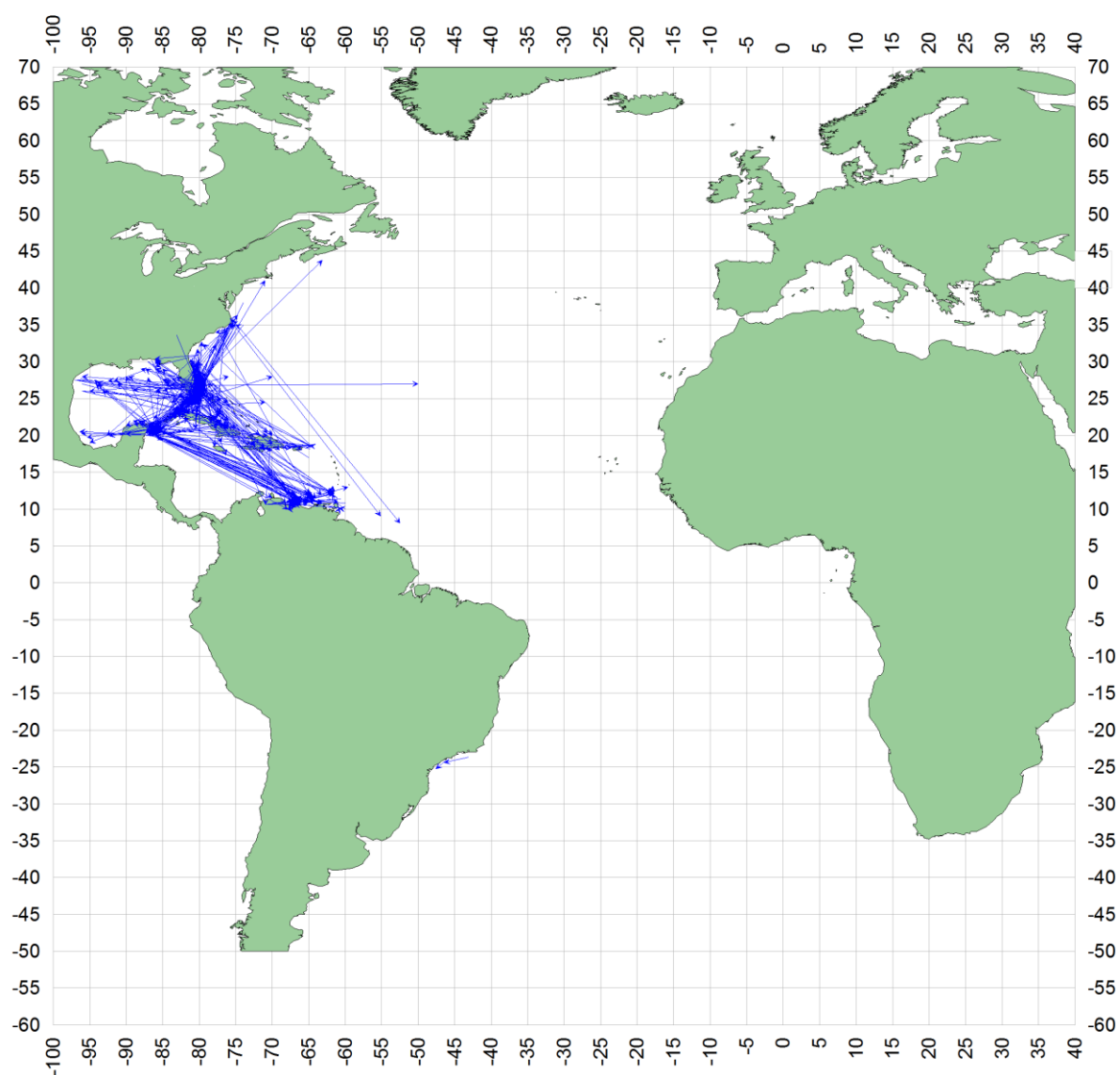
SPF-Tableau 1. Prises estimées (t) de makaira bécume (*Tetrapturus pfluegeri*) par zone, engin et pavillon.(v2, 2019-10-02)

SPF-Tabla 1. Capturas estimadas (t) de aguja picuda (*Tetrapturus pfluegeri*) por area, arte y bandera. (v2, 2019-10-02)

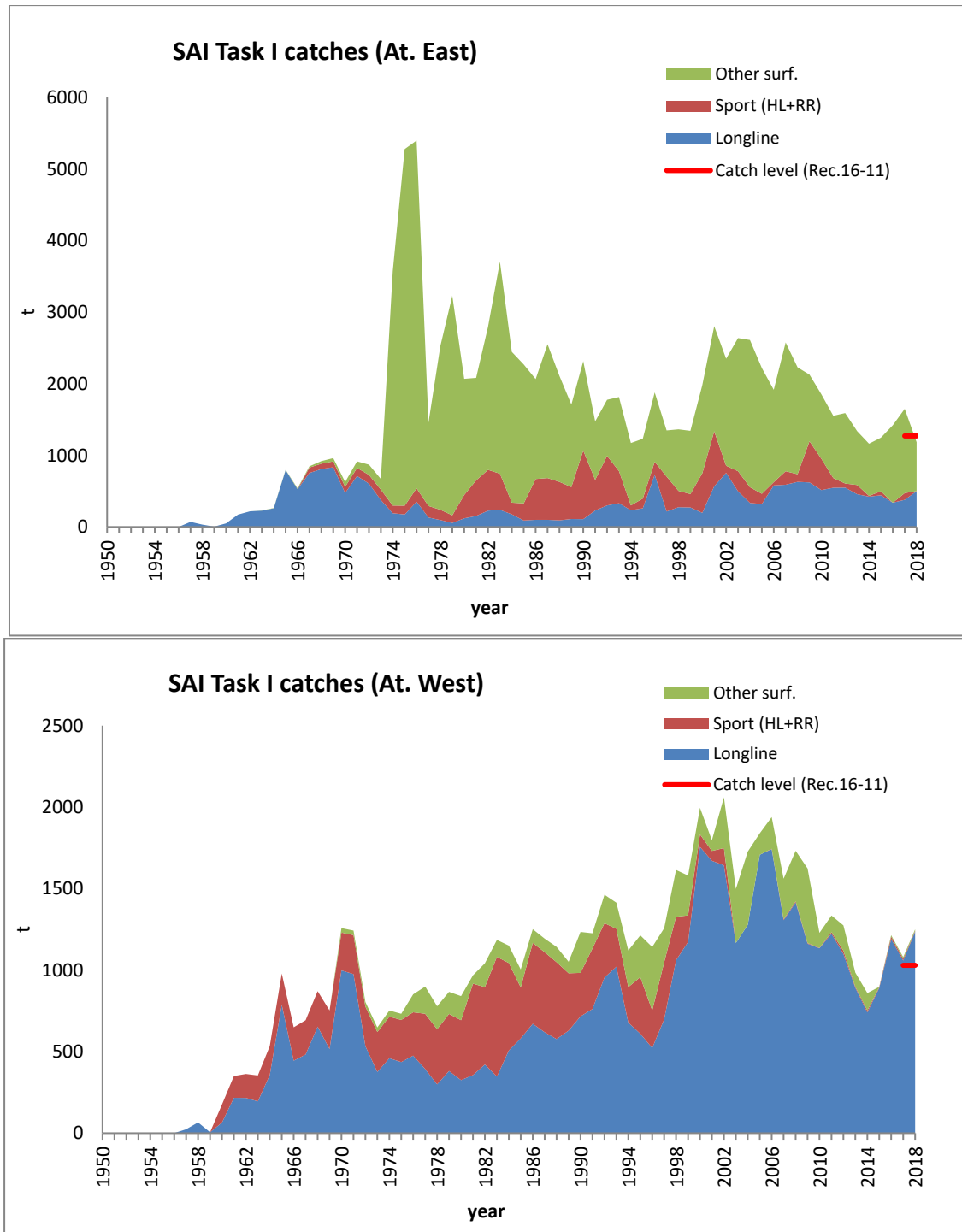
| | | | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | |
|---------------|----------------|----------------|----------------------------|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| TOTAL | | | | 320 | 240 | 165 | 201 | 266 | 306 | 278 | 188 | 179 | 133 | 188 | 169 | 340 | 167 | 166 | 140 | 245 | 153 | 229 | 447 | 52 | 80 | 76 | 350 | 163 | |
| ATE | | | | 198 | 207 | 128 | 194 | 192 | 257 | 181 | 81 | 84 | 54 | 51 | 68 | 84 | 66 | 60 | 78 | 128 | 73 | 170 | 95 | 16 | 18 | 15 | 29 | 36 | |
| ATW | | | | 122 | 33 | 37 | 7 | 74 | 50 | 97 | 107 | 95 | 79 | 137 | 101 | 256 | 102 | 106 | 62 | 117 | 80 | 58 | 352 | 36 | 62 | 62 | 321 | 127 | |
| Landings | ATE | Longline | | 100 | 129 | 69 | 126 | 106 | 176 | 121 | 81 | 84 | 54 | 51 | 68 | 84 | 66 | 60 | 78 | 128 | 73 | 170 | 95 | 16 | 18 | 14 | 29 | 23 | |
| | | | Other surf. | 98 | 78 | 59 | 68 | 86 | 81 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | ATW | Longline | 122 | 26 | 34 | 7 | 74 | 50 | 97 | 107 | 95 | 79 | 137 | 101 | 256 | 102 | 106 | 62 | 117 | 80 | 58 | 337 | 30 | 59 | 61 | 320 | 127 | | |
| | | Other surf. | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Sport (HL+RR) | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 6 | 0 | 0 | 0 | 0 | | | |
| Discards | ATE | Longline | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | |
| | | Other surf. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | ATW | Longline | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | |
| Landings | ATE | CP | China PR | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | EU.España | 0 | 5 | 1 | 1 | 9 | 31 | 17 | 9 | 6 | 5 | 0 | 3 | 3 | 0 | 2 | 7 | 32 | 12 | 10 | 9 | 13 | 17 | 10 | 13 | 13 | |
| | | | EU.France | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | EU.Portugal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 8 | 2 | 6 | 25 | 9 | 20 | 0 | 0 | 0 | 0 | 1 | 4 | |
| | | | Japan | 36 | 26 | 25 | 30 | 22 | 33 | 29 | 20 | 16 | 25 | 36 | 40 | 21 | 36 | 53 | 59 | 49 | 39 | 134 | 85 | 3 | 0 | 4 | 2 | 4 | |
| | | | Korea Rep. | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | Senegal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | South Africa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | St. Vincent and Grenadines | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| | | | NCC | Chinese Taipei | 63 | 97 | 41 | 94 | 73 | 112 | 75 | 52 | 62 | 25 | 15 | 25 | 37 | 22 | 2 | 6 | 16 | 9 | 6 | 0 | 0 | 1 | 0 | 1 | 2 |
| | | | NCO | Mixed flags (FR+ES) | 98 | 78 | 59 | 68 | 86 | 81 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | NEI (BIL) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ATW | CP | Belize | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | Brazil | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 56 | 39 | 3 | 0 | 0 | 5 | 4 | 0 | 0 | 0 | 24 | 4 | 325 | 6 | 6 | 0 | 0 | 0 | |
| | | | China PR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | | |
| | | | EU.España | 0 | 1 | 0 | 0 | 0 | 22 | 47 | 20 | 5 | 21 | 0 | 5 | 14 | 0 | 2 | 5 | 0 | 10 | 10 | 9 | 11 | 19 | 14 | 259 | 19 | |
| | | | EU.Portugal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 15 | 44 | 10 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | |
| | | | Japan | 2 | 3 | 4 | 1 | 8 | 11 | 11 | 3 | 12 | 40 | 41 | 58 | 54 | 25 | 45 | 26 | 57 | 12 | 13 | 3 | 1 | 0 | 0 | 0 | 0 | |
| | | | Korea Rep. | 4 | 4 | 10 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | Mexico | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 2 | |
| | | | St. Vincent and Grenadines | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82 | 0 | 135 | 23 | 13 | 7 | 8 | 5 | 4 | 3 | 3 | 1 | 7 | 52 | 84 |
| | | | Trinidad and Tobago | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | U.S.A. | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | UK.Bermuda | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | Venezuela | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 0 | 3 | 3 | 17 | 5 | 15 | 3 | 14 | 24 | 12 | 24 | 11 | 13 | 32 | 35 | 6 | 6 | |
| | | | NCC | Chinese Taipei | 116 | 19 | 18 | 2 | 64 | 16 | 11 | 24 | 39 | 12 | 11 | 20 | 17 | 20 | 0 | 0 | 5 | 12 | 3 | 1 | 3 | 1 | 1 | 1 | 1 |
| | | | NCO | Dominica | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| | | | | NEI (BIL) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Discards | ATE | CP | EU.France | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | Japan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | | |
| | NCC | Chinese Taipei | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| | ATW | CP | U.S.A. | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| NCC | Chinese Taipei | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | | | |



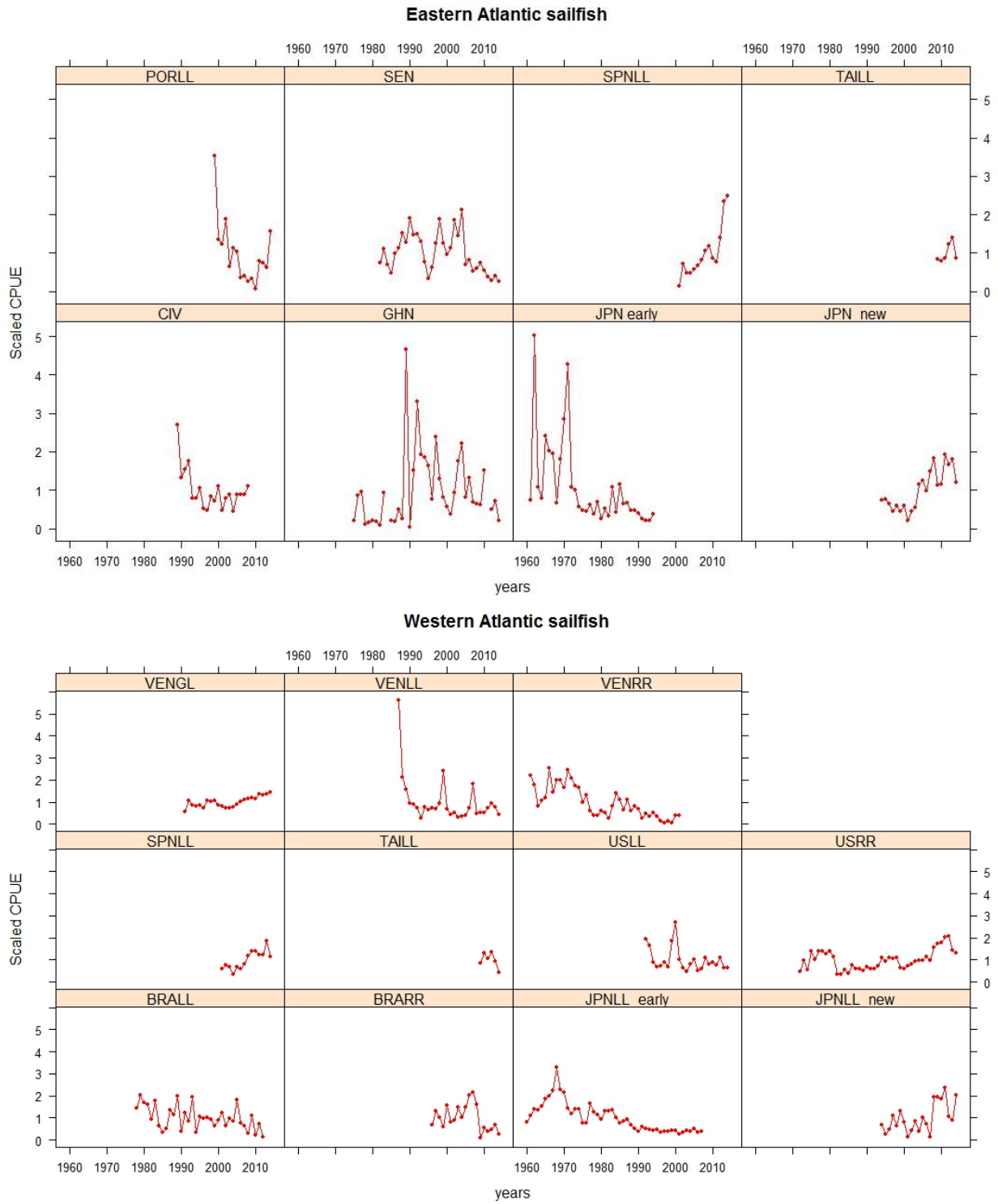
SAI-Figure 1. Geographic distribution of sailfish total catches by decade (last decade only covers 8 years). The dark line denotes the separation between stocks.



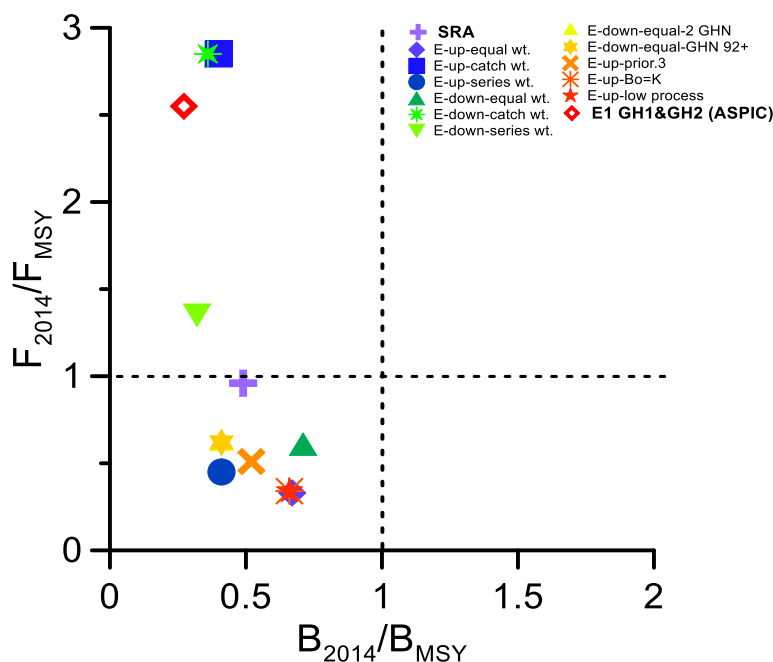
SAI-Figure 2. Conventional tag returns for Atlantic sailfish. Lines join the locations of release and recapture.



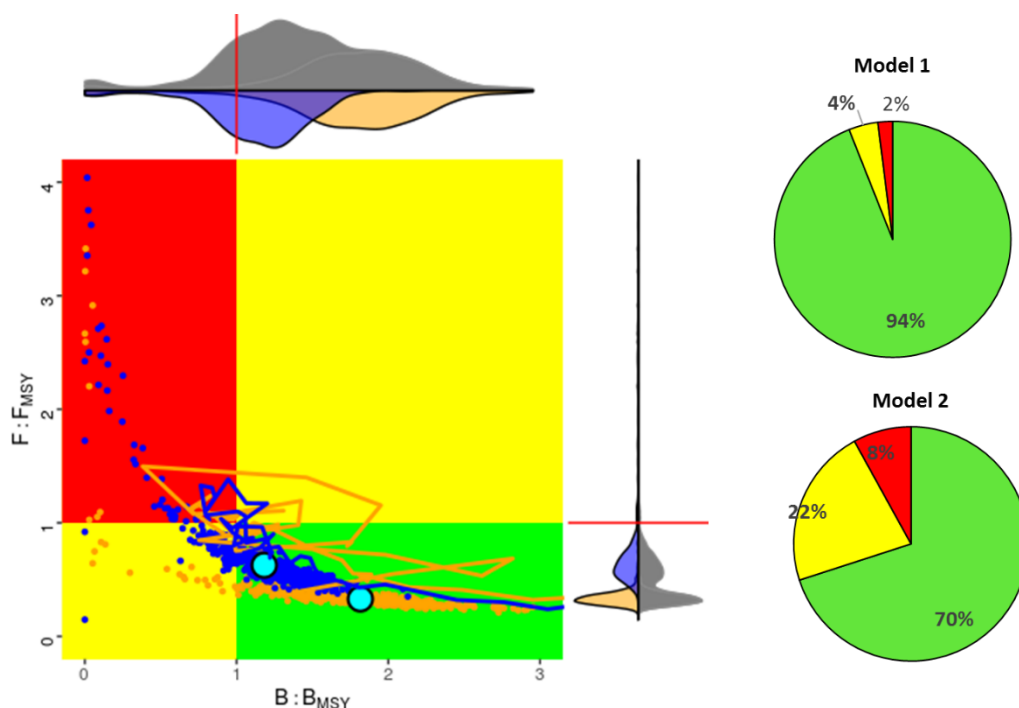
SAI-Figure 3. Task I catches of sailfish for each of the two Atlantic stocks, East and West. In 2017 catch levels of 1271 t and 1030 t that triggers the review of Rec 16-11 were implemented, for East and West stocks, respectively.



SAI-Figure 4. Relative abundance indices used in the assessments of eastern and western Atlantic sailfish stocks. All indices were scaled to the mean of each series prior to graphing.



SAI-Figure 5. Phase plot summarizing scenario outputs for the current (2014) stock status of Sailfish east (SAI_east). Stock Reduction Analysis; E-up-equal wt to E-up-low process are Bayesian surplus production model runs, E1 GH1&GH2 is Production base case model run.



SAI-Figure 6. Kobe plot (left) summarizing stock status of Sailfish_west based on Stock Synthesis models with increasing CPUE trends (Model 1) and with decreasing CPUE trends (Model 2). The estimated trajectories and uncertainty points for Model 1 are shown in golden yellow, and in blue for Model 2. The marginal densities plots for stock relative to B_{MSY} and harvest rate relative to F_{MSY} are also shown (top and right of large panel); the upper part (grey) are combined probabilities for both Stock Synthesis models, and the lower part (colored) are individual probabilities of Model 1 and Model 2. The red lines represent the benchmark levels (ratios equal to 1.0). Pie charts showing summary of current stock status estimates for the Sailfish_west stock based on Stock Synthesis models.