

STATISTICS OF THE EUROPEAN AND ASSOCIATED PURSE SEINE FISHING FLEET IN THE ATLANTIC OCEAN (1991-2015)

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SUMMARY

The document presents an overall summary of the fishing activities of the European and assimilated purse seine fleet operating in the eastern Atlantic Ocean over the period 1991-2015. We describe the annual changes in fleet technical characteristics (carrying capacity, size), fishing effort (fishing and searching days), extent of fishing grounds, catches and nominal Catch per Unit Effort by species, as well as the average individual weight by species. Maps are also presented indicating the fishing effort distribution in the Atlantic, as well as the spatio-temporal distribution of European and assimilated purse seine catches in 2015 compared to previous years (2010-2014).

RÉSUMÉ

Le document présente un résumé général des activités de pêche de la flottille de senneurs européens et assimilés qui opérait dans l'océan Atlantique Est au cours de la période 1991-2015. Nous décrivons les changements annuels survenus dans les caractéristiques techniques de la flottille (capacité de transport, taille), l'effort de pêche (jours de pêche et jours de recherche), étendue des zones de pêche, prises et capture nominale par unité d'effort par espèce, ainsi que poids individuel moyen par espèce. Des cartes sont également présentées indiquant la distribution de l'effort de pêche dans l'Atlantique, ainsi que la distribution spatio-temporelle des prises des senneurs européens et assimilés en 2015 par rapport aux années antérieures (2010-2014).

RESUMEN

Este documento presenta un resumen global de las actividades pesqueras de la flota de cerco europea y asociada que operó en el Atlántico oriental durante el periodo 1991-2015. Se describen los cambios anuales en las características técnicas de la flota (capacidad de transporte, tamaño), el esfuerzo pesquero (días de búsqueda y de pesca), la magnitud de los caladeros, las capturas y la captura por unidad de esfuerzo nominal por especies, así como el peso medio individual por especies. También se presentan mapas de pesca que indican la distribución del esfuerzo pesquero en el Atlántico, así como la distribución espacial y temporal de las capturas de cerco de la flota europea y asimilada en 2015, en comparación con años previos (2010-2014).

KEYWORDS

Tuna fishery, yellowfin, skipjack, purse seiners, catch/effort, species composition, size composition

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Table 1. Catches by species (tones) of European and associated purse-seine fleet.

| ALL | | | | | | |
|------------|-------|--------|-------|------|--------|--------|
| Year | YFT | SKJ | BET | ALB | Others | Total |
| 1991 | 92476 | 125536 | 14188 | 416 | 1735 | 234351 |
| 1992 | 96706 | 87244 | 18230 | 2518 | 1255 | 205952 |
| 1993 | 90102 | 124875 | 30857 | 1450 | 1246 | 248530 |
| 1994 | 88062 | 105633 | 32379 | 1079 | 2239 | 229391 |
| 1995 | 84684 | 99208 | 25096 | 412 | 2302 | 211703 |
| 1996 | 82476 | 83928 | 25006 | 258 | 3799 | 195468 |
| 1997 | 68311 | 60204 | 15918 | 118 | 2733 | 147284 |
| 1998 | 73339 | 56439 | 12622 | 434 | 3065 | 145898 |
| 1999 | 58248 | 76845 | 15593 | 264 | 2004 | 152955 |
| 2000 | 64190 | 64493 | 13698 | 32 | 1741 | 144154 |
| 2001 | 77098 | 60918 | 14030 | 24 | 2460 | 154531 |
| 2002 | 75207 | 48068 | 14282 | 39 | 1008 | 138604 |
| 2003 | 66043 | 73424 | 14303 | 308 | 1561 | 155639 |
| 2004 | 53206 | 77033 | 10816 | 19 | 1784 | 142858 |
| 2005 | 49326 | 58509 | 9685 | 533 | 1528 | 119581 |
| 2006 | 49892 | 47556 | 10919 | 441 | 1216 | 110024 |
| 2007 | 43183 | 54178 | 10794 | 45 | 1972 | 110172 |
| 2008 | 62576 | 58269 | 12603 | 76 | 1802 | 135326 |
| 2009 | 67103 | 62960 | 16790 | 149 | 2578 | 149581 |
| 2010 | 62071 | 75957 | 19090 | 303 | 2329 | 159749 |
| 2011 | 51577 | 84445 | 21368 | 146 | 1967 | 159503 |
| 2012 | 56949 | 95341 | 17681 | 360 | 3112 | 173443 |
| 2013 | 50161 | 121364 | 16606 | 110 | 3454 | 191695 |
| 2014 | 53592 | 116788 | 18901 | 50 | 4746 | 194077 |
| 2015 | 62792 | 121607 | 17587 | 241 | 4753 | 206981 |

Table 2. Catches by species (tones), on logs, of European and associated purse-seine fleet.

| Objects | | | | | | |
|----------------|-------|--------|-------|-----|--------|--------|
| Year | YFT | SKJ | BET | ALB | Others | TOTAL |
| 1991 | 15775 | 82330 | 12193 | 6 | 970 | 111274 |
| 1992 | 18121 | 65424 | 14660 | 24 | 695 | 98925 |
| 1993 | 19653 | 76822 | 22215 | 6 | 798 | 119495 |
| 1994 | 23400 | 67023 | 26478 | 0 | 1515 | 118416 |
| 1995 | 21245 | 75704 | 21598 | 5 | 1937 | 120490 |
| 1996 | 20246 | 71203 | 21860 | 0 | 3053 | 116362 |
| 1997 | 12378 | 38590 | 13280 | 0 | 2227 | 66475 |
| 1998 | 10869 | 29833 | 10383 | 0 | 1904 | 52989 |
| 1999 | 12360 | 39971 | 12695 | 181 | 985 | 66192 |
| 2000 | 12885 | 45054 | 11164 | 0 | 1487 | 70590 |
| 2001 | 11665 | 45584 | 11611 | 1 | 2222 | 71084 |
| 2002 | 11526 | 36947 | 11262 | 3 | 881 | 60620 |
| 2003 | 12660 | 43940 | 11198 | 101 | 1014 | 68914 |
| 2004 | 11913 | 52419 | 9086 | 0 | 1267 | 74685 |
| 2005 | 10818 | 48329 | 7827 | 28 | 1442 | 68443 |
| 2006 | 10328 | 40887 | 6479 | 1 | 1148 | 58843 |
| 2007 | 9921 | 50364 | 7597 | 2 | 1956 | 69841 |
| 2008 | 14256 | 51671 | 10335 | 5 | 1639 | 77906 |
| 2009 | 12191 | 58190 | 12744 | 1 | 2365 | 85490 |
| 2010 | 15890 | 68124 | 14960 | 13 | 2222 | 101208 |
| 2011 | 13260 | 77429 | 17778 | 16 | 1782 | 110266 |
| 2012 | 13357 | 88983 | 13458 | 15 | 2822 | 118635 |
| 2013 | 11100 | 107755 | 13980 | 15 | 3121 | 135971 |
| 2014 | 15654 | 110118 | 14597 | 19 | 4513 | 144902 |
| 2015 | 20062 | 112079 | 15357 | 21 | 4474 | 151994 |

Table 3. Catches by species (tones), on free schools, of European and associated purse-seine fleet.

| Free School | | | | | | |
|--------------------|-------|-------|------|------|--------|--------|
| Year | YFT | SKJ | BET | ALB | Others | TOTAL |
| 1991 | 76701 | 43206 | 1995 | 410 | 764 | 123077 |
| 1992 | 78585 | 21819 | 3569 | 2494 | 560 | 107027 |
| 1993 | 70448 | 48053 | 8642 | 1444 | 448 | 129035 |
| 1994 | 64662 | 38610 | 5901 | 1079 | 724 | 110975 |
| 1995 | 63439 | 23504 | 3497 | 407 | 365 | 91213 |
| 1996 | 62230 | 12725 | 3146 | 258 | 746 | 79106 |
| 1997 | 55933 | 21615 | 2638 | 118 | 505 | 80809 |
| 1998 | 62470 | 26605 | 2239 | 434 | 1161 | 92909 |
| 1999 | 45888 | 36874 | 2898 | 83 | 1020 | 86764 |
| 2000 | 51305 | 19439 | 2534 | 32 | 254 | 73564 |
| 2001 | 65433 | 15334 | 2419 | 23 | 238 | 83446 |
| 2002 | 63681 | 11121 | 3020 | 36 | 126 | 77984 |
| 2003 | 53382 | 29483 | 3105 | 207 | 547 | 86725 |
| 2004 | 41294 | 24614 | 1730 | 19 | 517 | 68173 |
| 2005 | 38508 | 10180 | 1859 | 505 | 86 | 51138 |
| 2006 | 39564 | 6669 | 4440 | 440 | 69 | 51181 |
| 2007 | 33261 | 3814 | 3197 | 43 | 15 | 40331 |
| 2008 | 48320 | 6598 | 2268 | 71 | 163 | 57420 |
| 2009 | 54912 | 4771 | 4047 | 148 | 213 | 64091 |
| 2010 | 46181 | 7833 | 4130 | 291 | 107 | 58541 |
| 2011 | 38316 | 7016 | 3590 | 130 | 185 | 49237 |
| 2012 | 43592 | 6358 | 4223 | 345 | 290 | 54808 |
| 2013 | 39061 | 13609 | 2626 | 95 | 333 | 55724 |
| 2014 | 37934 | 6564 | 4292 | 31 | 232 | 49053 |
| 2015 | 42679 | 9288 | 2229 | 220 | 279 | 54694 |

Table 4. Purse seine number by size categories and carrying capacity of the European and associated fleet.

| <i>Year</i> | <i>50-400</i> | <i>401-600</i> | <i>601-800</i> | <i>801-1200</i> | <i>1201-2000</i> | <i>> 2000</i> | <i>Total</i> | <i>C. capacity</i> |
|-------------|---------------|----------------|----------------|-----------------|------------------|------------------|--------------|--------------------|
| 1991 | 5 | 28 | 11 | 18 | 8 | 1 | 71 | 41978 |
| 1992 | 3 | 27 | 9 | 16 | 9 | 1 | 65 | 44296 |
| 1993 | 3 | 24 | 10 | 16 | 10 | 1 | 64 | 41227 |
| 1994 | 3 | 24 | 9 | 14 | 8 | 1 | 59 | 41122 |
| 1995 | 1 | 24 | 9 | 14 | 7 | 0 | 55 | 38196 |
| 1996 | 2 | 23 | 9 | 13 | 7 | 0 | 54 | 35775 |
| 1997 | 1 | 23 | 9 | 13 | 6 | 0 | 52 | 30907 |
| 1998 | 1 | 20 | 7 | 10 | 5 | 1 | 44 | 29988 |
| 1999 | 1 | 21 | 5 | 9 | 5 | 0 | 41 | 25877 |
| 2000 | 1 | 20 | 7 | 10 | 3 | 0 | 41 | 27385 |
| 2001 | 1 | 18 | 7 | 12 | 6 | 0 | 44 | 30714 |
| 2002 | 1 | 19 | 5 | 10 | 6 | 0 | 41 | 25036 |
| 2003 | 1 | 16 | 3 | 11 | 4 | 0 | 35 | 25681 |
| 2004 | 1 | 14 | 3 | 11 | 5 | 0 | 34 | 25311 |
| 2005 | 0 | 10 | 2 | 10 | 5 | 0 | 27 | 21856 |
| 2006 | 0 | 10 | 2 | 7 | 5 | 0 | 24 | 17574 |
| 2007 | 0 | 9 | 3 | 8 | 7 | 0 | 27 | 19104 |
| 2008 | 0 | 9 | 4 | 9 | 9 | 0 | 31 | 23211 |
| 2009 | 0 | 7 | 4 | 14 | 11 | 0 | 36 | 30415 |
| 2010 | 0 | 6 | 4 | 13 | 11 | 0 | 34 | 32213 |
| 2011 | 0 | 6 | 4 | 13 | 10 | 0 | 33 | 31417 |
| 2012 | 0 | 5 | 4 | 13 | 10 | 0 | 32 | 29557 |
| 2013 | 0 | 5 | 4 | 14 | 9 | 0 | 32 | 29328 |
| 2014 | 0 | 5 | 3 | 10 | 18 | 0 | 36 | 34337 |
| 2015 | 1 | 0 | 4 | 9 | 23 | 1 | 38 | 41446 |

Table 5. Purse seine number from the European and associated fleet according to their flag.

| Flag | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Neth. Antilles | | | | | | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 2 | |
| Belize | | | | | | | | 1 | | 1 | 1 | | | | | | | | 2 | 1 | 1 | 1 | 1 | 3 | 2 |
| Cape Verde | | | | | | | | | | | | | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 4 |
| Curaçao | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| El Salvador | | | | | | | | | | | 1 | | | | | | | | | | | | | | 2 |
| Spain | 37 | 37 | 30 | 30 | 24 | 24 | 20 | 19 | 19 | 19 | 17 | 16 | 15 | 15 | 10 | 8 | 13 | 15 | 16 | 15 | 15 | 14 | 14 | 15 | 12 |
| France | 23 | 17 | 18 | 18 | 17 | 16 | 19 | 15 | 15 | 14 | 17 | 17 | 14 | 12 | 9 | 7 | 5 | 7 | 10 | 10 | 9 | 9 | 9 | 9 | 9 |
| Ghana | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | |
| Guatemala | | | | | | | | | | | | | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| Guinea Conakry | | | | | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | |
| Honduras | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Italy | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| Liberia | | | | 2 | 1 | | | | | | | | | | | | | | | | | | | | |
| Malaysia | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Malta | 1 | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Morocco | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | | | |
| Norway | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Panama | 7 | 5 | 7 | 7 | 6 | 5 | 2 | 1 | 1 | 1 | 1 | 1 | | | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 3 |
| Seychelles | | | | | 1 | | | | | | 1 | 1 | | | | | | | | | | | | | |
| St. Vincent | 2 | 4 | 4 | 2 | 3 | 2 | 2 | 3 | 1 | 3 | 3 | | | | | | | | | | | | | | |
| Vanuatu | | 1 | 2 | 2 | 2 | 2 | 2 | 1 | | | | | | | | | | | | | | | | | |
| Venezuela | | | | | | | | | | | | 2 | 1 | | | | | | | | | | | | |
| Total Ps | 73 | 67 | 64 | 62 | 57 | 55 | 53 | 45 | 41 | 43 | 46 | 41 | 36 | 34 | 28 | 25 | 27 | 31 | 37 | 35 | 33 | 32 | 32 | 36 | 38 |

Table 6. Carrying capacity and fishing efforts (raw fishing days and searching days) of the European and associated purse seine fleet.

| Year | C.Capacity | F. days | S. days |
|------|------------|---------|---------|
| 1991 | 41978 | 15636 | 13712 |
| 1992 | 44296 | 17459 | 15891 |
| 1993 | 41227 | 16428 | 14677 |
| 1994 | 41122 | 15905 | 14233 |
| 1995 | 38196 | 14789 | 13089 |
| 1996 | 35775 | 14672 | 13118 |
| 1997 | 30907 | 12784 | 11554 |
| 1998 | 29988 | 12594 | 11223 |
| 1999 | 25877 | 11732 | 10579 |
| 2000 | 27385 | 10579 | 9396 |
| 2001 | 30714 | 11346 | 10123 |
| 2002 | 25036 | 9826 | 8818 |
| 2003 | 25681 | 8964 | 7741 |
| 2004 | 25311 | 8522 | 7557 |
| 2005 | 21856 | 7115 | 6259 |
| 2006 | 17574 | 5727 | 5036 |
| 2007 | 19104 | 6130 | 5385 |
| 2008 | 23211 | 7086 | 6098 |
| 2009 | 30425 | 8850 | 7623 |
| 2010 | 32213 | 9262 | 8257 |
| 2011 | 31417 | 8956 | 7567 |
| 2012 | 29557 | 8556 | 7182 |
| 2013 | 29328 | 8255 | 7773 |
| 2014 | 32026 | 9577 | 8201 |
| 2015 | 41446 | 10207 | 9746 |

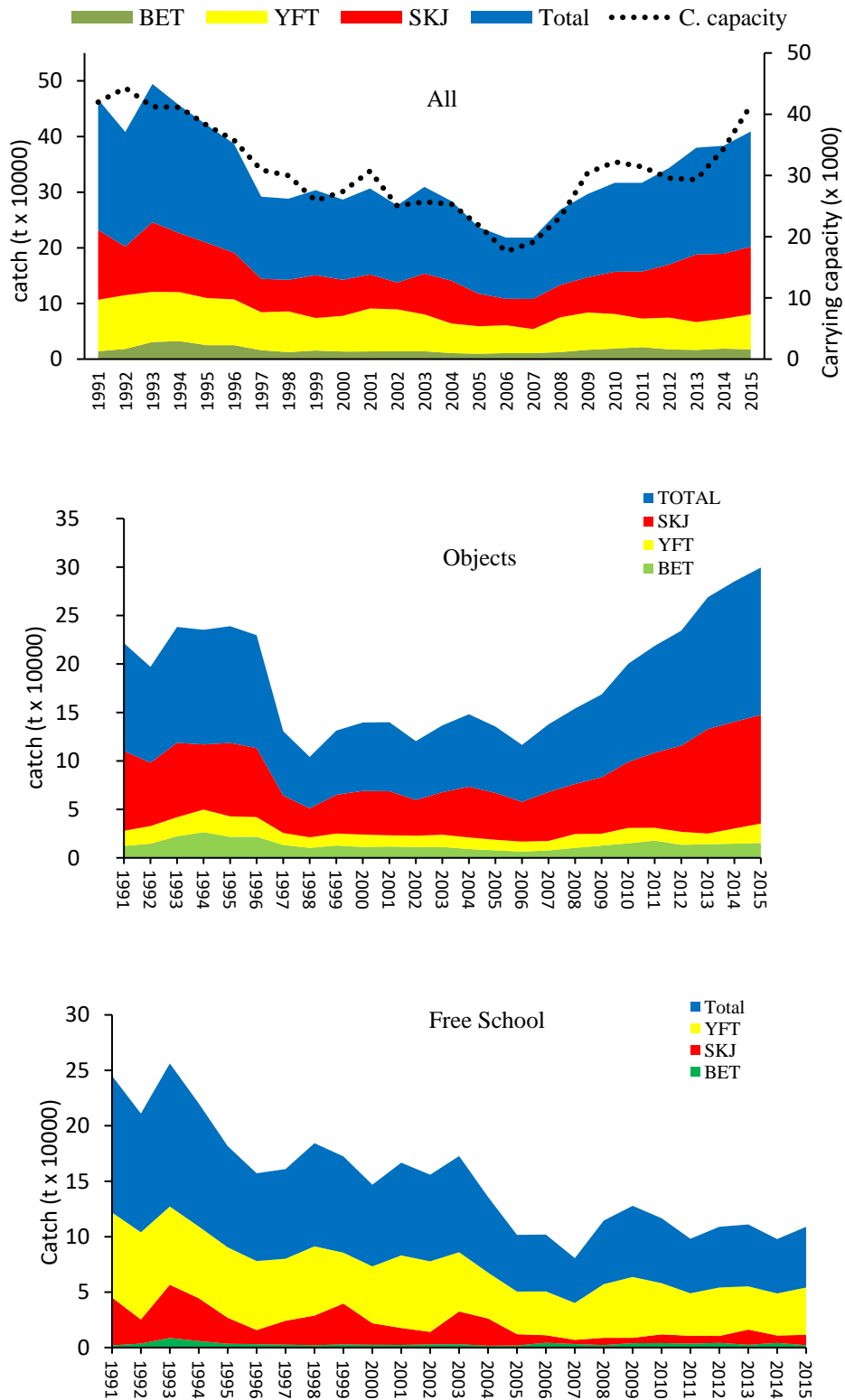


Figure 1. Catches by species and fishing effort in searching days of the European and associated purse-seine fleet according to their fishing mode: combined (top), Objets (middles) and free schools (bottom).

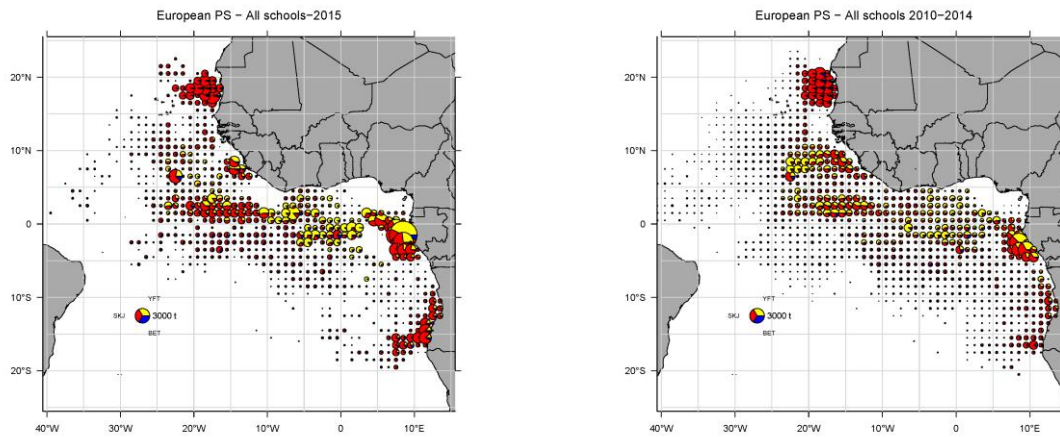


Figure 2. Distribution of the catches by species of the European and associated purse-seine fleet in 2015 (left) and on average over the 2010-2014 period (right).

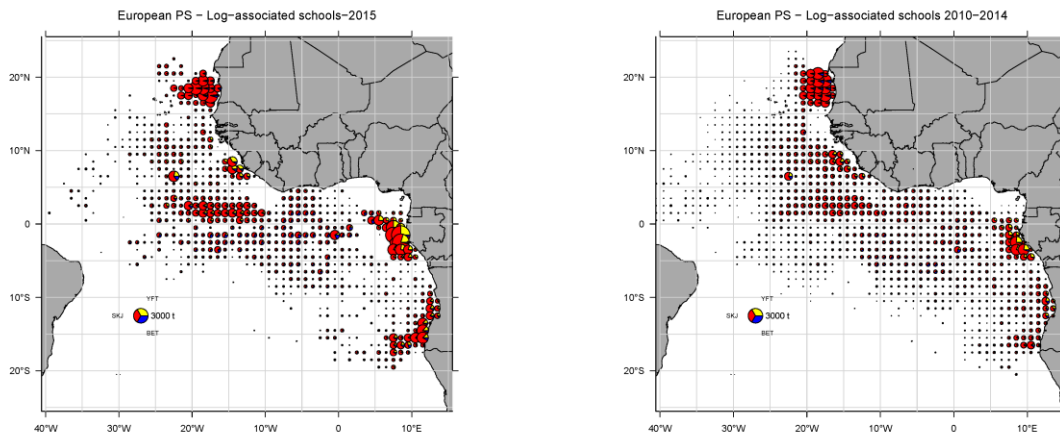


Figure 3. Distribution of the catches by species of the European and associated purse-seine fleet, on log schools, in 2015 (left) and on average over the 2010-2014 period (right).

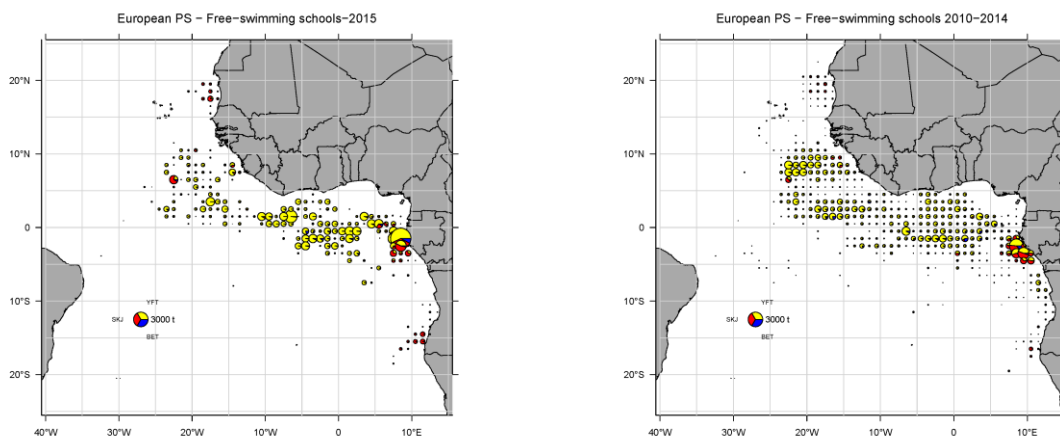


Figure 4. Distribution of the catches by species of the European and associated purse-seine fleet, on free schools, in 2015 (left) and on average over the 2010-2014 period (right).

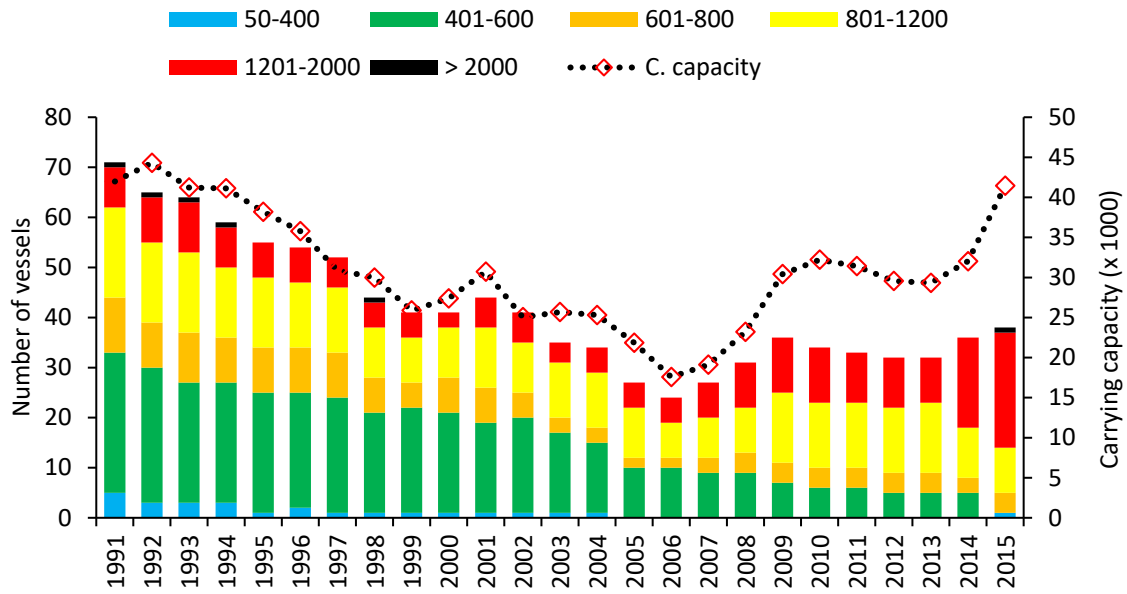


Figure 5. Boats number, TJB category and carrying capacity of European and associated purse-seine fleet.

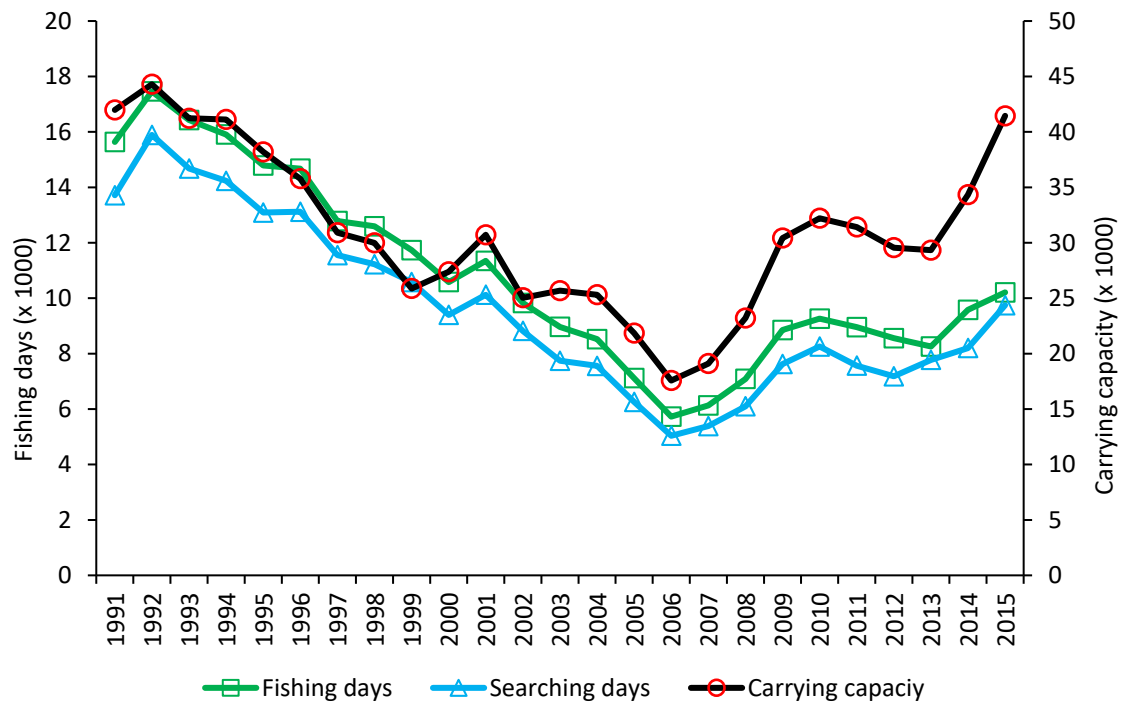


Figure 6. Fishing effort of European and Associated purse-seine fleet in number of fishing days, searching days and carrying capacity.

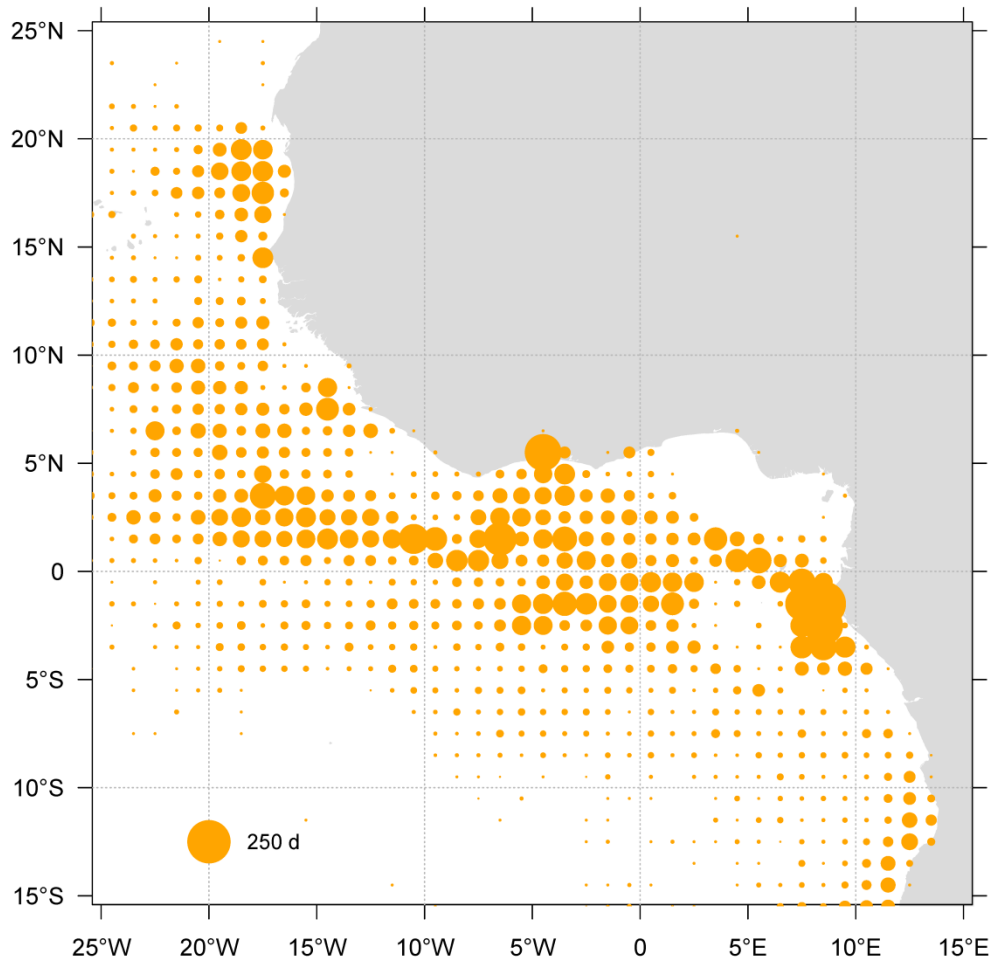


Figure 7. Distribution of the fishing effort (day at sea European and Associated purse-seine fleet in 2015).

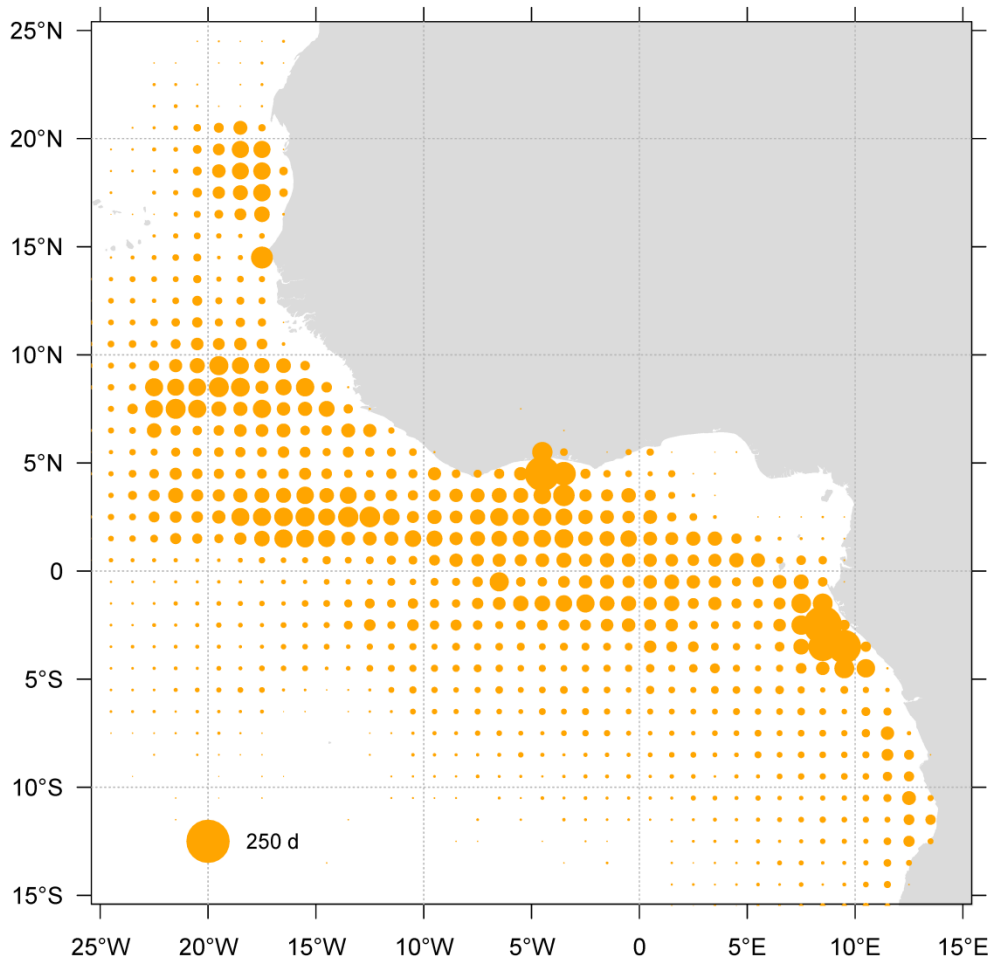


Figure 8. Distribution of the fishing effort (day at sea European and Associated purse-seine fleet in the period 2010-2004.