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93RD MEETING

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DOCUMENT IATTC-93 INF-A
RESPONSES TO REQUESTS FOR DATA AND ANALYSES

This document contains the staff's responses to requests for data and analyses made in preparation for the discussions at the 93rd meeting of the IATTC. Also included are follow-ups to requests and recommendations for action made during the 9th meeting of the Scientific Advisory Committee in May 2018 (SAC-09).

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1. REQUESTS BY CPCs

1.1. Colombia

- 1. **COL-01:** Include data for 2018 to date in the response to the European Union’s request for information on the evolution of sets during 2008-2017.

Response: For evolution of sets during 2008-2017, see response to request [EUR-01](#). [Figure COL-01](#) shows the evolution of the number of sets, by type, from the most current data available for 2018. Data for observed trips are reported weekly by observers at sea; data for unobserved trips are collected from vessel logbooks, and added to the database typically 2-3 months after the end of the trip. Since most Class 1-5 vessels do not carry observers, this delay in receiving the data is likely the reason for an apparent decrease in sets in the most recent months.

- 2. **COL-02:** Present alternative spatiotemporal closures, specifically for bigeye, as at IATTC-92.

Response: The staff is preparing a summary of previous work on this matter. In general, to achieve meaningful reductions of catches of bigeye or yellowfin, spatial closures need to cover large areas for long periods. The staff’s research into a spatially-structured stock assessment of bigeye, for example, may be informative about spatial management in the future.

1.2. Ecuador

- 1. **ECU-01:** A scientific report on the assessment status of the bigeye and yellowfin stocks, under the same structure elaborated in previous years, excluding the new partial data for the longline fleet, referred to at SAC-09.

Response: Table [ECU-01](#) shows the management quantities for bigeye and yellowfin with the longline CPUE and length composition data removed cumulatively one quarter at a time. Removing the data for quarter 4 of 2016 for bigeye appears to have the greatest impact.

2. **ECU-02:** An assessment report on the tropical tunas stocks that includes new data, with possible new recommendations for conservation measures, provided that:

- a. All the data for the longline fleet operating in the EPO is included with a suitable validation of the quality of these data, as is done at IATTC with the on-board observers.

Response: This is currently not possible due to the low coverage and inconsistency among CPCs in reporting data from longline observer programs (see [SAC-09 INF A](#)). The staff's workplan to improve the assessment of bigeye tuna ([IATTC-93-06b](#)) includes several activities aimed at investigating and resolving potential issues related to longline data ([IATTC-93-06c](#): Projects H.1.c and H.1.d).

- b. The substantial uncertainties of the model are reduced to the minimum possible, working to incorporate a greater amount of information, in accordance with a work plan duly approved by the Commission.

Response: The staff has elaborated a work plan to improve the bigeye assessment ([IATTC-93-06b](#)).

- c. The effects of conservation measures approved in 2017 to reduce tuna catch levels in the EPO are assessed.

Response: This information is presented in the stock assessment reports via the fishing mortality (F) multiplier and the comparison of population projections based on current F and F_{MSY} .

In response to this request, additional projections were carried out to determine the impact of the 10-day closure extension in C-17-02. Without the extension, fishing mortality by vessels subject to the closure would be 3.4% higher, and the spawning biomass would be 0.1% and 2.5% (2018) and 5.3% and 3.4% (long-term) lower for bigeye and yellowfin, respectively. The purse-seine catches of bigeye and yellowfin would increase by 2.5% and 2.4%, respectively, in 2018, and in the long term would increase slightly for bigeye and decrease slightly for yellowfin, but longline catches would decrease.

- d. A joint scientific report with WCPFC scientists on the status of bigeye tuna in the entire Pacific Ocean is developed.

Response: The staff's proposed work plan to improve the bigeye assessment ([IATTC-93-06b](#)) includes continued collaboration with SPC scientists on a Pacific-wide assessment of the species (Project H.7.a).

3. **ECU-04:** A detailed scientific analysis on the basis and motivation for recommending a limit on sets on unassociated schools.

Response: As elaborated in Document [IATTC-93-04](#), given the results of the indicator analysis of the status of bigeye and skipjack stocks, there is concern over the increased fishing mortality of these species due to increases in the number of floating object sets. Fleet capacity, fishing days, and FAD deployments are all restricted; the only unrestricted component is the numbers of sets. However, because of the difficulties of distinguishing floating-object and unassociated sets, it is not practical to limit either type of set by itself; therefore, a combined limit is recommended.

1.3. European Union

1. **EUR-01:** Evolution of the number of sets by set type in the last ten years: total and by CPC.

Response: See Tables [EUR-01a-c](#), Figure [EUR-01](#).

2. **EUR-02:** Evolution of tropical tuna catches by species, set type, and CPC in the last ten years.

Response: See Tables [EUR-02a-j](#).

3. **EUR-03:** Available scientific evidence on the link between the number of sets and fishing mortality, catch or any measurable deriving conservation benefit for bigeye in the IATTC fishery.

Response: The relationship between fishing mortality, the number of sets, and various other factors related to the operation of the fleets is still not fully understood. A research project is currently underway to address this question ([IATTC-93-06b](#): Project J.2.a). However, number of sets is the remaining uncontrolled variable potentially allowing for an increase in fishing mortality which will compromise the effects of C-17-02.

4. **EUR-04:** The probability associated with meeting the target reference points and/or breaching the limit reference points for tropical tuna stocks.

Response: Using the approximation based on a likelihood profile for average recruitment in the absence of fishing (R_0), the probability of exceeding the target and limit biomass (SSB) and fishing mortality (F) reference points for bigeye and yellowfin is as follows:

| | Target | | Limit | |
|-----------|-----------|-------------|-------------|---------------|
| | F_{MSY} | SSB_{MSY} | F_{limit} | SSB_{limit} |
| Bigeye | 0.84 | 0.44 | 0 | 0 |
| Yellowfin | 0.54 | 0.03 | 0 | 0 |

5. **EUR-05:** The detailed Strategic Science Plan, including comments made by the SAC, in order to provide feedback before it is presented to the Commission at the annual meeting.

Response: A revised draft Strategic Science Plan (SSP) was circulated on 6 July 2018. An updated version is available on the IATTC website ([IATTC-93-06a](#)), as are the staff's current research activities and work plans ([IATTC-93-06b](#)) and unfunded research proposals ([IATTC-93-06b](#)).

1.4. Mexico

MEX-01: Mexico requested that the length-composition data for Pacific bluefin tuna, 2012-2017, provided by Mexico to the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), be provided to the IATTC.

Response: See Figure MEX-01.

1.5. United States

USA-01: At SAC-09, the United States expressed concern about the apparent 'race to fish' resulting from the catch limit in C-17-01, and asked about the effect on catch; specifically, separate analyses of the first and second semesters of the year.

Response: The number of floating-object sets was higher in August-September, during the first closure period (29 July-8 October), indicating that more vessels chose the second closure period than in previous years (Figure [USA-01](#)).

2. SAC RECOMMENDATIONS

| | Recommendation | Progress |
|----|--|---|
| 2 | South Pacific albacore. Recent assessments of south Pacific albacore, which are conducted by SPC, have not considered the fisheries data in all the EPO, and there are no plans to include these data in the upcoming 2018 assessment. Thus, the eastern part of the stock will remain effectively unassessed. The SAC recommends that the IATTC staff work with SPC to ensure that the entire South Pacific be included in future assessments. | A proposal for a South Pacific albacore stock assessment is included in the Strategic Science Plan (IATTC-93-06c : Project H.7.c). |
| 3 | Strategic Science Plan. The SAC recognizes the importance and welcomes the presentation of the first draft of the Strategic Science Plan, and requests the scientific staff to send the detailed Plan to the CPCs to receive their feedback before being presented to the Commission in 2018. | A revised draft SSP was circulated to CPCs on 6 July 2018. An updated version of this draft is now available on the IATTC website, in preparation for the discussions at the upcoming Annual Meeting (document IATTC-93-06a). Two additional documents detail the staff's current research activities and work plans (IATTC-93-06b) and hitherto unfunded research proposals (IATTC-93-06c). |
| 4 | Bigeye growth. The SAC recommends that a joint IATTC-WCPFC workshop of experts be convened to analyze methodologies of age and growth determination of tunas, with priority to bigeye tuna. | A proposal for a workshop is included in the SSP (IATTC-93-06c : Project E.2.b). |
| 5 | Tagging program. The SAC notes that a well-designed, large-scale tagging program is essential to both developing a fully-integrated assessment model for skipjack tuna and improving the bigeye tuna assessment model. Therefore, the SAC supports the development of such a tagging program and recommends that funding be provided for this project. | A proposal for a multi-year tuna tagging study is included in the SSP (IATTC-93-06c : Project E.4.a). The project is described in detail in Appendix 2 of Document CAF-05-04 . |
| 7 | That resources be provided to extend the electronic monitoring (EM) pilot project to vessels of all capacity classes. | A proposal for a pilot study of EM on class-6 vessels is included in the SSP (IATTC-93-06c : Project D.2.c). |
| 11 | Scientists-managers dialogue. In order to support the establishment of harvest strategies, including an MSE process, the SAC recommends that the Commission create a dedicated working group to facilitate dialogue among scientists, managers, and other stakeholders. | A work plan for MSE is included in the SSP (IATTC-93-06b ; work plan C.2) |

Tables and Figures

TABLE ECU-01. Effect on estimated management quantities for bigeye (BET) and yellowfin (YFT) tunas of removing longline CPUE and length-composition data cumulatively, one quarter (Q) at a time. Bigeye results are based on corrected longline data for one CPC received after the base case assessment was conducted for SAC-09.

TABLA ECU-01. Efecto sobre las cantidades de ordenación estimadas para los atunes patudo (BET) y aleta amarilla (YFT) de eliminar los datos de CPUE palangrera y composición por tallas acumulativamente, un trimestre (Q) a la vez. Los resultados para el patudo se basan en datos de palangre corregidos de un CPC recibidos después de realizar la evaluación de caso base para SAC-09.

| | Base case Caso base | Removed-Eliminado | | | |
|--|------------------------|-------------------|----------------|--------------------|-----------------------------|
| | | Q3 2017 | Q2, Q3 2017 | Q1, Q2, Q3 2017 | Q4 2016; Q1, Q2, Q3 2017 |
| BET | | | | | |
| MSY-RMS (t) | 92,986 | 94,800 | 94,455 | 93,764 | 91,285 |
| $B_{MSY}-B_{RMS}$ (t) | 365,669 | 370,317 | 369,583 | 367,108 | 359,247 |
| $S_{MSY}-S_{RMS}$ (t) | 92,404 | 93,316 | 93,196 | 92,605 | 90,827 |
| $B_{MSY}/B_0-B_{RMS}/B_0$ | 0.25 | 0.26 | 0.26 | 0.26 | 0.25 |
| $S_{MSY}/S_0-S_{RMS}/S_0$ | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| $C_{recent}/MSY-C_{recente}/RMS$ | 1.1 | 1.07 | 1.08 | 1.09 | 1.12 |
| $B_{recent}/B_{MSY}-B_{recente}/B_{RMS}$ | 0.94 | 0.99 | 0.98 | 0.95 | 0.85 |
| $S_{recent}/S_{MSY}-S_{recente}/S_{RMS}$ | 1.06 | 1.09 | 1.08 | 1.05 | 0.96 |
| <i>F</i> multiplier Multiplicador de <i>F</i> | 0.89 | 0.94 | 0.93 | 0.9 | 0.81 |
| YFT | | | | | |
| MSY-RMS (t) | 264,283 | 263,527 | 263,241 | 258,764 | 263,342 |
| $B_{MSY}-B_{RMS}$ (t) | 376,696 | 375,832 | 375,471 | 370,944 | 375,992 |
| $S_{MSY}-S_{RMS}$ (t) | 3,634 | 3,627 | 3,624 | 3,571 | 3,628 |
| $B_{MSY}/B_0-B_{RMS}/B_0$ | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| $S_{MSY}/S_0-S_{RMS}/S_0$ | 0.27 | 0.27 | 0.27 | 0.26 | 0.27 |
| $C_{recent}/MSY-C_{recente}/RMS$ | 0.85 | 0.86 | 0.86 | 0.87 | 0.86 |
| $B_{recent}/B_{MSY}-B_{recente}/B_{RMS}$ | 1.35 | 1.28 | 1.25 | 1.08 | 1.37 |
| $S_{recent}/S_{MSY}-S_{recente}/S_{RMS}$ | 1.08 | 1.01 | 0.98 | 1.04 | 1.11 |
| <i>F</i> multiplier Multiplicador de <i>F</i> | 0.99 | 0.97 | 0.96 | 1.02 | 1.03 |

TABLE EUR-01a. Number of sets by Class 2-5 purse-seine vessels in the EPO, by set type and vessel flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object.

TABLA EUR-01a. Número de lances por buques cerqueros de clases 2-5 en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|-----|------|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-------|
| DEL | 2008 | | | | | | | 1 | | | | | | | | 1 |
| | 2009 | | | | | | | | | | | | | | | |
| | 2010 | | | 3 | | | | | | | | | | | | 3 |
| | 2011 | | | | | | | | | | | | | | | |
| | 2012 | | | | | | | | | | | | | | | |
| | 2013 | | | | | | | | | | | | | | | |
| | 2014 | | | | | | | | | | | | | | | |
| | 2015 | | | | | | | | | | | | | | | |
| | 2016 | | | | | | | | | | | | | | | |
| | 2017 | | | | | | | | | | | | | | | |
| NOA | 2008 | 4 | 67 | 3349 | | | | 1618 | | 25 | | | 12 | | | 5075 |
| | 2009 | 23 | 149 | 2791 | | | | 653 | | 41 | | | 31 | | | 3688 |
| | 2010 | 133 | 125 | 1614 | | | | 705 | | 4 | | | | | | 2581 |
| | 2011 | | 71 | 2031 | | | | 494 | | 32 | | | | | | 2628 |
| | 2012 | | 122 | 2206 | | | | 625 | | | 11 | | | | | 2964 |
| | 2013 | | 152 | 2328 | | | | 552 | | | 64 | | | | | 3096 |
| | 2014 | | 212 | 1816 | | | | 388 | | | 1 | | | | | 2417 |
| | 2015 | | 160 | 2535 | | | | 302 | | | 99 | | | | | 3096 |
| | 2016 | | 54 | 1587 | | | | 507 | | | | | | | | 2148 |
| | 2017 | | 26 | 1512 | | | | 304 | | | | | | | | 1842 |
| OBJ | 2008 | | 139 | 1643 | | | | 49 | | 66 | 12 | | | | | 1909 |
| | 2009 | 3 | 91 | 1853 | | | | 19 | | 40 | 61 | | | | | 2067 |
| | 2010 | 14 | 71 | 2102 | | | | 10 | | 35 | 56 | | | | | 2288 |
| | 2011 | 5 | 136 | 2158 | | | | 21 | | 28 | | | | | | 2348 |
| | 2012 | | 81 | 2941 | | | | 12 | | | | | | | | 3034 |
| | 2013 | | 124 | 2897 | | | | 56 | | | 36 | | | | | 3113 |
| | 2014 | | 178 | 3604 | | | | 51 | | | 9 | | | | | 3842 |
| | 2015 | | 229 | 3113 | | | | | | | 91 | | | | | 3433 |
| | 2016 | | 305 | 3687 | | | | | | | | | | | | 3992 |
| | 2017 | | 199 | 3802 | | | | | | | | | | | | 4001 |

TABLE EUR-01b. Number of sets by Class-6 purse-seine vessels in the EPO, by set type and vessel flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object.

TABLA EUR-01b. Número de lances por buques cerqueros de clase 6 en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|------|------|-----|-----|-----|------|-----|------|-----|-----|-----|------|-----|-------|
| DEL | 2008 | | 1011 | 29 | | 122 | | 5272 | 337 | 1350 | | 57 | | 1063 | | 9241 |
| | 2009 | | 1421 | | | 142 | | 5778 | 441 | 1582 | | 64 | | 1482 | | 10910 |
| | 2010 | | 1201 | 1 | | 71 | | 6400 | 605 | 1505 | | 24 | | 1839 | | 11646 |
| | 2011 | | 787 | | | 150 | | 6422 | 444 | 620 | | 39 | | 1142 | | 9604 |
| | 2012 | | 816 | 4 | | 118 | | 5840 | 474 | 548 | | 32 | | 1388 | | 9220 |
| | 2013 | | 839 | 55 | | 206 | | 6881 | 472 | 669 | | | | 1614 | | 10736 |
| | 2014 | | 819 | 75 | | 224 | | 7729 | 410 | 705 | | | | 1420 | | 11382 |
| | 2015 | | 855 | 131 | | 145 | | 6914 | 424 | 959 | | | | 1592 | | 11020 |
| | 2016 | | 795 | 159 | | 121 | | 7022 | 649 | 739 | | | | 1734 | | 11219 |
| | 2017 | | 514 | 89 | | | | 6018 | 547 | 523 | | | 1 | 1164 | | 8856 |
| NOA | 2008 | | 340 | 1804 | 11 | 105 | 117 | 1622 | 181 | 1028 | | 151 | | 718 | 136 | 6213 |
| | 2009 | | 287 | 1316 | 1 | 36 | 124 | 872 | 114 | 762 | | 74 | 31 | 414 | 78 | 4109 |
| | 2010 | | 211 | 1168 | 1 | 13 | 12 | 1599 | 73 | 465 | | 47 | | 222 | 74 | 3885 |
| | 2011 | | 395 | 1864 | 1 | 61 | 52 | 1479 | 110 | 528 | | 89 | | 565 | 38 | 5182 |
| | 2012 | | 175 | 1811 | 126 | 60 | | 2123 | 77 | 411 | | 65 | 10 | 511 | | 5369 |
| | 2013 | | 272 | 1627 | | 4 | | 1353 | 54 | 520 | | 22 | | 301 | | 4153 |
| | 2014 | | 102 | 1785 | 20 | 19 | | 969 | 68 | 201 | 28 | 31 | 1 | 142 | | 3366 |
| | 2015 | | 299 | 2948 | 33 | 2 | | 1862 | 26 | 376 | 247 | 2 | 225 | 168 | | 6188 |
| | 2016 | | 166 | 2053 | 2 | 9 | | 1382 | 56 | 499 | 280 | 20 | 504 | 116 | | 5087 |
| | 2017 | | 106 | 2297 | | | | 1541 | 96 | 524 | 253 | 10 | 113 | 56 | | 4996 |
| OBJ | 2008 | | 324 | 3043 | 161 | 124 | 120 | 698 | 100 | 1098 | 55 | 229 | | 500 | 201 | 6653 |
| | 2009 | | 251 | 3527 | 330 | 125 | 107 | 361 | 141 | 1052 | 26 | 294 | 37 | 541 | 285 | 7077 |
| | 2010 | | 343 | 3401 | 116 | 262 | 61 | 185 | 242 | 933 | | 309 | | 280 | 267 | 6399 |
| | 2011 | | 503 | 3702 | 219 | 231 | 17 | 175 | 219 | 898 | | 190 | 56 | 474 | 237 | 6921 |
| | 2012 | | 542 | 4975 | 213 | 104 | | 194 | 185 | 694 | | 248 | 15 | 391 | 49 | 7610 |
| | 2013 | | 507 | 5201 | 126 | 2 | | 219 | 320 | 856 | | 389 | | 327 | 99 | 8046 |
| | 2014 | | 748 | 5533 | 150 | 11 | | 206 | 459 | 945 | | 348 | 17 | 362 | | 8779 |
| | 2015 | | 490 | 6466 | 135 | 15 | | 360 | 117 | 1147 | 14 | 208 | 321 | 126 | | 9399 |
| | 2016 | | 794 | 6429 | 197 | 16 | | 408 | 120 | 1051 | 49 | 264 | 706 | 325 | | 10359 |
| | 2017 | | 1132 | 5978 | 103 | | | 393 | 342 | 1466 | 51 | 269 | 984 | 352 | | 11070 |

TABLE EUR-01c. Number of sets by purse-seine vessels in the EPO, all capacity classes, by set type and vessel flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object.

TABLA EUR-01c. Número de lances por buques cerqueros en el OPO, todas clases de capacidad, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|------|------|------|------|-------|-----|-----|------|------|------|------|-----|-----|------|------|-------|-------|
| DEL | 2008 | | 1011 | 29 | | 122 | | 5273 | 337 | 1350 | | 57 | | 1063 | | 9242 |
| | 2009 | | 1421 | | | 142 | | 5778 | 441 | 1582 | | 64 | | 1482 | | 10910 |
| | 2010 | | 1201 | 4 | | 71 | | 6400 | 605 | 1505 | | 24 | | 1839 | | 11649 |
| | 2011 | | 787 | | | 150 | | 6422 | 444 | 620 | | 39 | | 1142 | | 9604 |
| | 2012 | | 816 | 4 | | 118 | | 5840 | 474 | 548 | | 32 | | 1388 | | 9220 |
| | 2013 | | 839 | 55 | | 206 | | 6881 | 472 | 669 | | | | 1614 | | 10736 |
| | 2014 | | 819 | 75 | | 224 | | 7729 | 410 | 705 | | | | 1420 | | 11382 |
| | 2015 | | 855 | 131 | | 145 | | 6914 | 424 | 959 | | | | 1592 | | 11020 |
| | 2016 | | 795 | 159 | | 121 | | 7022 | 649 | 739 | | | | 1734 | | 11219 |
| 2017 | | 514 | 89 | | | | 6018 | 547 | 523 | | | 1 | 1164 | | 8856 | |
| NOA | 2008 | 4 | 407 | 5153 | 11 | 105 | 117 | 3240 | 181 | 1053 | | 151 | 12 | 718 | 136 | 11288 |
| | 2009 | 23 | 436 | 4107 | 1 | 36 | 124 | 1525 | 114 | 803 | | 74 | 62 | 414 | 78 | 7797 |
| | 2010 | 133 | 336 | 2782 | 1 | 13 | 12 | 2304 | 73 | 469 | | 47 | | 222 | 74 | 6466 |
| | 2011 | | 466 | 3895 | 1 | 61 | 52 | 1973 | 110 | 560 | | 89 | | 565 | 38 | 7810 |
| | 2012 | | 297 | 4017 | 126 | 60 | | 2748 | 77 | 411 | 11 | 65 | 10 | 511 | | 8333 |
| | 2013 | | 424 | 3955 | | 4 | | 1905 | 54 | 520 | 64 | 22 | | 301 | | 7249 |
| | 2014 | | 314 | 3601 | 20 | 19 | | 1357 | 68 | 201 | 29 | 31 | 1 | 142 | | 5783 |
| | 2015 | | 459 | 5483 | 33 | 2 | | 2164 | 26 | 376 | 346 | 2 | 225 | 168 | | 9284 |
| | 2016 | | 220 | 3640 | 2 | 9 | | 1889 | 56 | 499 | 280 | 20 | 504 | 116 | | 7235 |
| 2017 | | 132 | 3809 | | | | 1845 | 96 | 524 | 253 | 10 | 113 | 56 | | 6838 | |
| OBJ | 2008 | | 463 | 4686 | 161 | 124 | 120 | 747 | 100 | 1164 | 67 | 229 | | 500 | 201 | 8562 |
| | 2009 | 3 | 342 | 5380 | 330 | 125 | 107 | 380 | 141 | 1092 | 87 | 294 | 37 | 541 | 285 | 9144 |
| | 2010 | 14 | 414 | 5503 | 116 | 262 | 61 | 195 | 242 | 968 | 56 | 309 | | 280 | 267 | 8687 |
| | 2011 | 5 | 639 | 5860 | 219 | 231 | 17 | 196 | 219 | 926 | | 190 | 56 | 474 | 237 | 9269 |
| | 2012 | | 623 | 7916 | 213 | 104 | | 206 | 185 | 694 | | 248 | 15 | 391 | 49 | 10644 |
| | 2013 | | 631 | 8098 | 126 | 2 | | 275 | 320 | 856 | 36 | 389 | | 327 | 99 | 11159 |
| | 2014 | | 926 | 9137 | 150 | 11 | | 257 | 459 | 945 | 9 | 348 | 17 | 362 | | 12621 |
| | 2015 | | 719 | 9579 | 135 | 15 | | 360 | 117 | 1147 | 105 | 208 | 321 | 126 | | 12832 |
| | 2016 | | 1099 | 10116 | 197 | 16 | | 408 | 120 | 1051 | 49 | 264 | 706 | 325 | | 14351 |
| 2017 | | 1331 | 9780 | 103 | | | 393 | 342 | 1466 | 51 | 269 | 984 | 352 | | 15071 | |

TABLE EUR-02a. Annual retained catches of bigeye tuna in the EPO by Class 2-5 purse-seine vessels, by set type and flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object. Catches are not adjusted for species composition sampling that corrects the observer species identification bias.

TABLA EUR-02a. Capturas retenidas anuales de atún patudo por buques cerqueros de clases 2-5 en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante. No se ajustan las capturas por muestreo de composición por especies que corrige el sesgo de identificación de especies del observador.

| | Year | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|------|------|-----|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|
| DEL | 2008 | | | | | | | | | | | | | | | |
| | 2009 | | | | | | | | | | | | | | | |
| | 2010 | | | | | | | | | | | | | | | |
| | 2011 | | | | | | | | | | | | | | | |
| | 2012 | | | | | | | | | | | | | | | |
| | 2013 | | | | | | | | | | | | | | | |
| | 2014 | | | | | | | | | | | | | | | |
| | 2015 | | | | | | | | | | | | | | | |
| | 2016 | | | | | | | | | | | | | | | |
| | 2017 | | | | | | | | | | | | | | | |
| NOA | 2008 | | | 200 | | | | | | | | | | | | 200 |
| | 2009 | 3 | 2 | 402 | | | | | | | | | | | | 407 |
| | 2010 | 3 | 7 | 285 | | | | | | | | | | | | 295 |
| | 2011 | | 3 | 171 | | | | | | | | | | | | 174 |
| | 2012 | | | 429 | | | | | | | | | | | | 429 |
| | 2013 | | 87 | 259 | | | | | | | | | | | | 346 |
| | 2014 | | | 93 | | | | | | | | | | | | 93 |
| | 2015 | | | 1388 | | | | | | | | | | | | 1388 |
| 2016 | | 5 | 769 | | | | | | | | | | | | 774 | |
| 2017 | | | 294 | | | | | | | | | | | | 294 | |
| OBJ | 2008 | | 699 | 3603 | | | | 27 | | | 27 | | | | | 4356 |
| | 2009 | | 15 | 1846 | | | | | | 9 | 323 | | | | | 2193 |
| | 2010 | | | 2463 | | | | | | 40 | 386 | | | | | 2889 |
| | 2011 | | 330 | 3709 | | | | | | | | | | | | 4039 |
| | 2012 | | 244 | 3319 | | | | | | | | | | | | 3562 |
| | 2013 | | 385 | 3639 | | | | | | | | | | | | 4024 |
| | 2014 | | 200 | 3858 | | | | | | | | | | | | 4058 |
| | 2015 | | 264 | 3221 | | | | | | | | | | | | 3485 |
| 2016 | | 38 | 2367 | | | | | | | | | | | | 2404 | |
| 2017 | | 78 | 3748 | | | | | | | | | | | | 3826 | |

TABLE EUR-02b. Annual retained catches of bigeye tuna in the EPO by Class-6 purse-seine vessels, by set type and flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object. Catches are not adjusted for species composition sampling that corrects the observer species identification bias.

TABLA EUR-02b. Capturas retenidas anuales de atún patudo por buques cerqueros de clase 6 en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante. No se ajustan las capturas por muestreo de composición por especies que corrige el sesgo de identificación de especies del observador.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|------|-------|------|------|------|------|------|------|-----|------|------|------|------|-------|
| DEL | 2008 | | | | | | | | 4 | | | | | | | 4 |
| | 2009 | | 1 | | | | | | | | | | | | | 1 |
| | 2010 | | | | | | | | | | | | | | | |
| | 2011 | | | | | | | 2 | | | | | | | | 2 |
| | 2012 | | | | | | | | | | | | | | | |
| | 2013 | | | | | | | | | | | | | | | |
| | 2014 | | 3 | | | | | | | | | | | | | 3 |
| | 2015 | | 2 | | | | | | | | | | | | | 2 |
| | 2016 | | | 4 | | | | | | | | | | | | 4 |
| | 2017 | | | | | | | | 1 | | | | | | | 1 |
| NOA | 2008 | | 230 | 343 | | | 2 | | | 61 | | | | 161 | 32 | 829 |
| | 2009 | | 8 | 104 | | 3 | 12 | 1 | 31 | 126 | | | | 48 | | 333 |
| | 2010 | | 101 | 198 | | | | | | 18 | | 3 | | 1 | 2 | 323 |
| | 2011 | | 189 | 308 | | | | 3 | | 4 | | 3 | | 101 | | 608 |
| | 2012 | | 10 | 260 | | 14 | | 3 | | 88 | | | | 29 | | 404 |
| | 2013 | | 7 | 215 | | | | | 35 | 478 | | 14 | | 159 | | 908 |
| | 2014 | | 281 | 32 | 18 | | | | 19 | 77 | | | | 70 | | 497 |
| | 2015 | | | 338 | | | | 1 | 10 | 345 | | | | | | 694 |
| | 2016 | | | 171 | | | | 2 | | 512 | 57 | 66 | 18 | | | 826 |
| | 2017 | | 16 | 1489 | | | | 48 | 53 | 269 | | 71 | 2 | 4 | | 1952 |
| OBJ | 2008 | | 3148 | 36225 | 2010 | 1219 | 1422 | 573 | 603 | 8935 | 609 | 2030 | | 2271 | 1405 | 60450 |
| | 2009 | | 1240 | 31942 | 3442 | 1566 | 235 | 1421 | 1000 | 9188 | 126 | 3915 | 121 | 3139 | 2264 | 59599 |
| | 2010 | | 1846 | 26891 | 1251 | 2835 | 149 | 18 | 1717 | 7923 | | 2830 | | 407 | 2097 | 47964 |
| | 2011 | | 1682 | 23542 | 2913 | 1347 | | 153 | 1634 | 6489 | | 2862 | 500 | 330 | 1629 | 43081 |
| | 2012 | | 947 | 36214 | 2864 | 1595 | | 275 | 1102 | 5163 | | 2096 | 88 | 784 | 438 | 51566 |
| | 2013 | | 820 | 31923 | 1615 | | | 37 | 2658 | 6091 | | 3961 | | 684 | 1147 | 48936 |
| | 2014 | | 1324 | 33060 | 2236 | 1 | | 8 | 2743 | 7094 | | 3416 | 89 | 817 | | 50788 |
| | 2015 | | 1932 | 43236 | 919 | 199 | | 307 | 855 | 9998 | | 1920 | 2700 | 229 | | 62295 |
| | 2016 | | 2403 | 34813 | 3261 | 35 | | 529 | 534 | 8593 | 17 | 3516 | 3693 | 657 | | 58051 |
| | 2017 | | 3174 | 35331 | 1919 | | | 729 | 1704 | 9085 | 5 | 2568 | 6027 | 1734 | | 62276 |

TABLE EUR-02c. Annual retained catches of bigeye tuna in the EPO by all purse-seine vessels, by set type and flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object. Catches are not adjusted for species composition sampling that corrects the observer species identification bias.

TABLA EUR-02c. Capturas retenidas anuales de atún patudo por todos buques cerqueros en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante. No se ajustan las capturas por muestreo de composición por especies que corrige el sesgo de identificación de especies del observador.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|------|-------|------|------|------|------|------|------|-----|------|------|------|------|-------|
| DEL | 2008 | | | | | | | | 4 | | | | | | | 4 |
| | 2009 | | 1 | | | | | | | | | | | | | 1 |
| | 2010 | | | | | | | | | | | | | | | |
| | 2011 | | | | | | | 2 | | | | | | | | 2 |
| | 2012 | | | | | | | | | | | | | | | |
| | 2013 | | | | | | | | | | | | | | | |
| | 2014 | | 3 | | | | | | | | | | | | | 3 |
| | 2015 | | 2 | | | | | | | | | | | | | 2 |
| | 2016 | | | 4 | | | | | | | | | | | | 4 |
| | 2017 | | | | | | | | 1 | | | | | | | 1 |
| NOA | 2008 | | 230 | 543 | | | 2 | | | 61 | | | | 161 | 32 | 1029 |
| | 2009 | 3 | 10 | 506 | | 3 | 12 | 1 | 31 | 126 | | | | 48 | | 740 |
| | 2010 | 3 | 108 | 483 | | | | | | 18 | | 3 | | 1 | 2 | 618 |
| | 2011 | | 192 | 479 | | | | 3 | | 4 | | 3 | | 101 | | 782 |
| | 2012 | | 10 | 689 | | 14 | | 3 | | 88 | | | | 29 | | 833 |
| | 2013 | | 94 | 474 | | | | | 35 | 478 | | 14 | | 159 | | 1254 |
| | 2014 | | 281 | 125 | 18 | | | | 19 | 77 | | | | 70 | | 590 |
| | 2015 | | | 1726 | | | | 1 | 10 | 345 | | | | | | 2082 |
| | 2016 | | 5 | 940 | | | | 2 | | 512 | 57 | 66 | 18 | | | 1600 |
| | 2017 | | 16 | 1783 | | | | 48 | 53 | 269 | | 71 | 2 | 4 | | 2246 |
| OBJ | 2008 | | 3847 | 39828 | 2010 | 1219 | 1422 | 600 | 603 | 8935 | 636 | 2030 | | 2271 | 1405 | 64806 |
| | 2009 | | 1255 | 33788 | 3442 | 1566 | 235 | 1421 | 1000 | 9197 | 449 | 3915 | 121 | 3139 | 2264 | 61792 |
| | 2010 | | 1846 | 29354 | 1251 | 2835 | 149 | 18 | 1717 | 7963 | 386 | 2830 | | 407 | 2097 | 50853 |
| | 2011 | | 2012 | 27251 | 2913 | 1347 | | 153 | 1634 | 6489 | | 2862 | 500 | 330 | 1629 | 47120 |
| | 2012 | | 1191 | 39533 | 2864 | 1595 | | 275 | 1102 | 5163 | | 2096 | 88 | 784 | 438 | 55128 |
| | 2013 | | 1205 | 35562 | 1615 | | | 37 | 2658 | 6091 | | 3961 | | 684 | 1147 | 52960 |
| | 2014 | | 1524 | 36918 | 2236 | 1 | | 8 | 2743 | 7094 | | 3416 | 89 | 817 | | 54846 |
| | 2015 | | 2196 | 46457 | 919 | 199 | | 307 | 855 | 9998 | | 1920 | 2700 | 229 | | 65780 |
| | 2016 | | 2441 | 37180 | 3261 | 35 | | 529 | 534 | 8593 | 17 | 3516 | 3693 | 657 | | 60455 |
| | 2017 | | 3252 | 39079 | 1919 | | | 729 | 1704 | 9085 | 5 | 2568 | 6027 | 1734 | | 66102 |

TABLE EUR-02d. Annual retained catches of yellowfin tuna in the EPO by Class-2-5 purse-seine vessels, by set type and flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object. Catches are not adjusted for species composition sampling that corrects the observer species identification bias.

TABLA EUR-02d. Capturas retenidas anuales de atún aleta amarilla por buques cerqueros de clases 2-5 en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante. No se ajustan las capturas por muestreo de composición por especies que corrige el sesgo de identificación de especies del observador.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|-----|-------|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-------|
| DEL | 2008 | | | | | | | | | | | | | | | |
| | 2009 | | | | | | | | | | | | | | | |
| | 2010 | | | | | | | | | | | | | | | |
| | 2011 | | | | | | | | | | | | | | | |
| | 2012 | | | | | | | | | | | | | | | |
| | 2013 | | | | | | | | | | | | | | | |
| | 2014 | | | | | | | | | | | | | | | |
| | 2015 | | | | | | | | | | | | | | | |
| | 2016 | | | | | | | | | | | | | | | |
| | 2017 | | | | | | | | | | | | | | | |
| NOA | 2008 | 1 | 89 | 2635 | | | | 5050 | | 110 | | | | | | 7885 |
| | 2009 | 1 | 437 | 3239 | | | | 1139 | | 127 | | | | | | 4943 |
| | 2010 | 349 | 685 | 4112 | | | | 1489 | | 107 | | | | | | 6742 |
| | 2011 | | 531 | 2239 | | | | 1100 | | 213 | | | | | | 4084 |
| | 2012 | | 579 | 2759 | | | | 863 | | | | | | | | 4201 |
| | 2013 | | 654 | 2108 | | | | 1839 | | | 359 | | | | | 4960 |
| | 2014 | | 922 | 1798 | | | | 636 | | | 3 | | | | | 3359 |
| | 2015 | | 554 | 7478 | | | | 1132 | | | 36 | | | | | 9201 |
| | 2016 | | 113 | 4936 | | | | 1619 | | | | | | | | 6668 |
| | 2017 | | 116 | 4035 | | | | 839 | | | | | | | | 4990 |
| OBJ | 2008 | | 554 | 2980 | | | | 526 | | 469 | 67 | | | | | 4596 |
| | 2009 | | 947 | 3676 | | | | 313 | | 177 | 432 | | | | | 5545 |
| | 2010 | 95 | 281 | 5402 | | | | 246 | | 252 | 461 | | | | | 6737 |
| | 2011 | 25 | 320 | 4983 | | | | 363 | | 285 | | | | | | 5976 |
| | 2012 | | 190 | 6969 | | | | 23 | | | | | | | | 7183 |
| | 2013 | | 436 | 4972 | | | | 251 | | | 69 | | | | | 5728 |
| | 2014 | | 413 | 10542 | | | | 255 | | | 2 | | | | | 11213 |
| | 2015 | | 523 | 9400 | | | | | | | 384 | | | | | 10307 |
| | 2016 | | 350 | 10506 | | | | | | | | | | | | 10856 |
| | 2017 | | 609 | 11218 | | | | | | | | | | | | 11827 |

TABLE EUR-02e. Annual retained catches of yellowfin tuna in the EPO by Class-6 purse-seine vessels, by set type and flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object. Catches are not adjusted for species composition sampling that corrects the observer species identification bias.

TABLA EUR-02e. Capturas retenidas anuales de atún aleta amarilla por buques cerqueros de clase 6 en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante. No se ajustan las capturas por muestreo de composición por especies que corrige el sesgo de identificación de especies del observador.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|-------|-------|------|------|-----|--------|------|-------|------|------|------|-------|------|--------|
| DEL | 2008 | | 18489 | 185 | | 1601 | | 62537 | 5589 | 20878 | | 1759 | | 17074 | | 128112 |
| | 2009 | | 27568 | | | 2392 | | 92213 | 7751 | 25478 | | 1561 | | 26712 | | 183675 |
| | 2010 | | 17946 | | | 725 | | 82476 | 8321 | 20797 | | 649 | | 24810 | | 155724 |
| | 2011 | | 15013 | | | 2175 | | 83136 | 6631 | 12255 | | 1007 | | 16334 | | 136551 |
| | 2012 | | 18867 | 41 | | 2010 | | 76121 | 7032 | 12076 | | 919 | | 20854 | | 137920 |
| | 2013 | | 14443 | 735 | | 3706 | | 97217 | 6945 | 13347 | | | | 22762 | | 159155 |
| | 2014 | | 14502 | 2741 | | 2509 | | 110405 | 6390 | 14912 | | | | 21455 | | 172914 |
| | 2015 | | 14342 | 3338 | | 1802 | | 87996 | 6006 | 21170 | | | | 27014 | | 161668 |
| | 2016 | | 15600 | 4987 | | 1856 | | 75184 | 9373 | 15292 | | | | 21094 | | 143386 |
| | 2017 | | 9698 | 1821 | | | | 66000 | 7710 | 9632 | | | 30 | 14726 | | 109617 |
| NOA | 2008 | | 1410 | 1389 | | 125 | 238 | 9725 | 575 | 4145 | | 1333 | | 2868 | 101 | 21909 |
| | 2009 | | 1679 | 1486 | 14 | 301 | 33 | 5068 | 438 | 7155 | | 93 | 95 | 1679 | 9 | 18050 |
| | 2010 | | 2234 | 4107 | | 132 | 221 | 14823 | 1110 | 6631 | | 15 | | 3318 | 170 | 32761 |
| | 2011 | | 2375 | 2902 | 26 | 135 | 350 | 14578 | 909 | 2629 | | 733 | | 1376 | 10 | 26023 |
| | 2012 | | 602 | 1757 | | 533 | | 16422 | 593 | 1873 | | 225 | 8 | 1317 | | 23330 |
| | 2013 | | 330 | 1894 | | | | 13949 | 797 | 1482 | | 408 | | 2127 | | 20987 |
| | 2014 | | 748 | 2871 | 74 | 124 | | 9788 | 593 | 1735 | 532 | 97 | | 935 | | 17497 |
| | 2015 | | 1342 | 5925 | 13 | 70 | | 17053 | 444 | 2690 | 273 | | 2207 | 3069 | | 33086 |
| | 2016 | | 334 | 6960 | | 93 | | 16262 | 995 | 2848 | 525 | 48 | 240 | 946 | | 29251 |
| | 2017 | | 197 | 8158 | | | | 12131 | 677 | 3116 | 1041 | 135 | 360 | 199 | | 26014 |
| OBJ | 2008 | | 794 | 13879 | 1095 | 231 | 554 | 4211 | 375 | 4812 | 217 | 1877 | | 2745 | 985 | 31775 |
| | 2009 | | 482 | 14740 | 1655 | 1752 | 462 | 1858 | 398 | 4216 | 166 | 1833 | 535 | 2689 | 907 | 31693 |
| | 2010 | | 1223 | 12429 | 630 | 2126 | 192 | 1767 | 1204 | 4684 | | 1865 | | 1031 | 778 | 27929 |
| | 2011 | | 1199 | 18657 | 1274 | 1528 | 267 | 1483 | 1023 | 5459 | | 1817 | 295 | 2156 | 1559 | 36717 |
| | 2012 | | 1157 | 17637 | 1255 | 928 | | 1589 | 399 | 4082 | | 2086 | 73 | 2286 | 32 | 31524 |
| | 2013 | | 1385 | 16707 | 594 | 10 | | 2486 | 757 | 4431 | | 1654 | | 1444 | 421 | 29889 |
| | 2014 | | 2159 | 20681 | 827 | 66 | | 2301 | 1329 | 4146 | | 2742 | 228 | 2026 | | 36505 |
| | 2015 | | 1100 | 21360 | 471 | 12 | | 2353 | 315 | 3745 | 49 | 2465 | 1156 | 683 | | 33709 |
| | 2016 | | 2964 | 26948 | 1613 | 54 | | 1960 | 886 | 4531 | 209 | 2306 | 3446 | 1839 | | 46756 |
| | 2017 | | 4775 | 27685 | 466 | | | 2390 | 1247 | 7370 | 528 | 2991 | 4156 | 1751 | | 53360 |

TABLE EUR-02f. Annual retained catches of yellowfin tuna in the EPO by all purse-seine vessels, by set type and flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object. Catches are not adjusted for species composition sampling that corrects the observer species identification bias.

TABLA EUR-02f. Capturas retenidas anuales de atún patudo por todos buques cerqueros en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante. No se ajustan las capturas por muestreo de composición por especies que corrige el sesgo de identificación de especies del observador.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|-------|-------|------|------|-----|--------|------|-------|------|------|------|-------|------|--------|
| DEL | 2008 | | 18489 | 185 | | 1601 | | 62537 | 5589 | 20878 | | 1759 | | 17074 | | 128112 |
| | 2009 | | 27568 | | | 2392 | | 92213 | 7751 | 25478 | | 1561 | | 26712 | | 183675 |
| | 2010 | | 17946 | | | 725 | | 82476 | 8321 | 20797 | | 649 | | 24810 | | 155724 |
| | 2011 | | 15013 | | | 2175 | | 83136 | 6631 | 12255 | | 1007 | | 16334 | | 136551 |
| | 2012 | | 18867 | 41 | | 2010 | | 76121 | 7032 | 12076 | | 919 | | 20854 | | 137920 |
| | 2013 | | 14443 | 735 | | 3706 | | 97217 | 6945 | 13347 | | | | 22762 | | 159155 |
| | 2014 | | 14502 | 2741 | | 2509 | | 110405 | 6390 | 14912 | | | | 21455 | | 172914 |
| | 2015 | | 14342 | 3338 | | 1802 | | 87996 | 6006 | 21170 | | | | 27014 | | 161668 |
| | 2016 | | 15600 | 4987 | | 1856 | | 75184 | 9373 | 15292 | | | | 21094 | | 143386 |
| | 2017 | | 9698 | 1821 | | | | 66000 | 7710 | 9632 | | | 30 | 14726 | | 109617 |
| NOA | 2008 | 1 | 1499 | 4024 | | 125 | 238 | 14775 | 575 | 4255 | | 1333 | | 2868 | 101 | 29794 |
| | 2009 | 1 | 2116 | 4725 | 14 | 301 | 33 | 6207 | 438 | 7282 | | 93 | 95 | 1679 | 9 | 22993 |
| | 2010 | 349 | 2919 | 8219 | | 132 | 221 | 16312 | 1110 | 6738 | | 15 | | 3318 | 170 | 39503 |
| | 2011 | | 2906 | 5141 | 26 | 135 | 350 | 15678 | 909 | 2842 | | 733 | | 1376 | 10 | 30107 |
| | 2012 | | 1181 | 4516 | | 533 | | 17285 | 593 | 1873 | | 225 | 8 | 1317 | | 27531 |
| | 2013 | | 984 | 4002 | | | | 15788 | 797 | 1482 | 359 | 408 | | 2127 | | 25947 |
| | 2014 | | 1670 | 4669 | 74 | 124 | | 10424 | 593 | 1735 | 535 | 97 | | 935 | | 20856 |
| | 2015 | | 1896 | 13403 | 13 | 70 | | 18185 | 444 | 2690 | 309 | | 2207 | 3069 | | 42287 |
| | 2016 | | 447 | 11896 | | 93 | | 17881 | 995 | 2848 | 525 | 48 | 240 | 946 | | 35919 |
| | 2017 | | 313 | 12193 | | | | 12970 | 677 | 3116 | 1041 | 135 | 360 | 199 | | 31004 |
| OBJ | 2008 | | 1348 | 16859 | 1095 | 231 | 554 | 4737 | 375 | 5281 | 284 | 1877 | | 2745 | 985 | 36371 |
| | 2009 | | 1429 | 18416 | 1655 | 1752 | 462 | 2171 | 398 | 4393 | 598 | 1833 | 535 | 2689 | 907 | 37238 |
| | 2010 | 95 | 1504 | 17831 | 630 | 2126 | 192 | 2013 | 1204 | 4936 | 461 | 1865 | | 1031 | 778 | 34666 |
| | 2011 | 25 | 1519 | 23640 | 1274 | 1528 | 267 | 1846 | 1023 | 5744 | | 1817 | 295 | 2156 | 1559 | 42693 |
| | 2012 | | 1347 | 24606 | 1255 | 928 | | 1612 | 399 | 4082 | | 2086 | 73 | 2286 | 32 | 38707 |
| | 2013 | | 1821 | 21679 | 594 | 10 | | 2737 | 757 | 4431 | 69 | 1654 | | 1444 | 421 | 35617 |
| | 2014 | | 2572 | 31223 | 827 | 66 | | 2556 | 1329 | 4146 | 2 | 2742 | 228 | 2026 | | 47718 |
| | 2015 | | 1623 | 30760 | 471 | 12 | | 2353 | 315 | 3745 | 433 | 2465 | 1156 | 683 | | 44015 |
| | 2016 | | 3314 | 37454 | 1613 | 54 | | 1960 | 886 | 4531 | 209 | 2306 | 3446 | 1839 | | 57612 |
| | 2017 | | 5384 | 38904 | 466 | | | 2390 | 1247 | 7370 | 528 | 2991 | 4156 | 1751 | | 65187 |

TABLE EUR-02g. Annual retained catches of skipjack tuna in the EPO by Class-2-5 purse-seine vessels, by set type and flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object. Catches are not adjusted for species composition sampling that corrects the observer species identification bias.

TABLA EUR-02g. Capturas retenidas anuales de atún barrilete por buques cerqueros de clases 2-5 en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante. No se ajustan las capturas por muestreo de composición por especies que corrige el sesgo de identificación de especies del observador.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|------|-------|-----|-----|-----|------|-----|------|------|-----|-----|-----|-----|-------|
| DEL | 2008 | | | | | | | | | | | | | | | |
| | 2009 | | | | | | | | | | | | | | | |
| | 2010 | | | | | | | | | | | | | | | |
| | 2011 | | | | | | | | | | | | | | | |
| | 2012 | | | | | | | | | | | | | | | |
| | 2013 | | | | | | | | | | | | | | | |
| | 2014 | | | | | | | | | | | | | | | |
| | 2015 | | | | | | | | | | | | | | | |
| | 2016 | | | | | | | | | | | | | | | |
| | 2017 | | | | | | | | | | | | | | | |
| NOA | 2008 | | 733 | 33753 | | | | 1730 | | 519 | | | | | | 36735 |
| | 2009 | 221 | 998 | 25517 | | | | 744 | | 635 | | | | | | 28116 |
| | 2010 | 319 | 485 | 9970 | | | | 718 | | 123 | | | | | | 11615 |
| | 2011 | | 608 | 22302 | | | | 927 | | 547 | | | | | | 24383 |
| | 2012 | | 640 | 19476 | | | | 1208 | | | | | | | | 21324 |
| | 2013 | | 1319 | 23709 | | | | 1237 | | | 339 | | | | | 26604 |
| | 2014 | | 801 | 15217 | | | | 487 | | | | | | | | 16505 |
| | 2015 | | 1108 | 20275 | | | | 41 | | | 1523 | | | | | 22946 |
| | 2016 | | 137 | 13293 | | | | 25 | | | | | | | | 13454 |
| | 2017 | | 153 | 14779 | | | | 981 | | | | | | | | 15912 |
| OBJ | 2008 | | 3080 | 15906 | | | | 595 | | 1261 | 99 | | | | | 20941 |
| | 2009 | 5 | 634 | 17413 | | | | 53 | | 937 | 256 | | | | | 19297 |
| | 2010 | 4 | 488 | 15777 | | | | 128 | | 448 | 534 | | | | | 17379 |
| | 2011 | 275 | 1821 | 28079 | | | | 22 | | 590 | | | | | | 30787 |
| | 2012 | | 839 | 24343 | | | | 70 | | | | | | | | 25252 |
| | 2013 | | 1538 | 29684 | | | | 378 | | | 656 | | | | | 32256 |
| | 2014 | | 2639 | 30461 | | | | 374 | | | 75 | | | | | 33549 |
| | 2015 | | 1719 | 19789 | | | | | | | 369 | | | | | 21877 |
| | 2016 | | 2464 | 22114 | | | | | | | | | | | | 24578 |
| | 2017 | | 1716 | 27340 | | | | | | | | | | | | 29056 |

TABLE EUR-02h. Annual retained catches of skipjack tuna in the EPO by Class-6 purse-seine vessels, by set type and flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object. Catches are not adjusted for species composition sampling that corrects the observer species identification bias.

TABLA EUR-02h. Capturas retenidas anuales de atún barrilete por buques cerqueros de clase 6 en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante. No se ajustan las capturas por muestreo de composición por especies que corrige el sesgo de identificación de especies del observador.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|-------|--------|-------|------|------|-------|------|-------|------|-------|-------|-------|------|--------|
| DEL | 2008 | | 316 | 2 | | 3 | | 5273 | 155 | 672 | | 765 | | 1313 | | 8499 |
| | 2009 | | 794 | | | 71 | | 1320 | 70 | 454 | | 13 | | 119 | | 2841 |
| | 2010 | | 114 | | | | | 1157 | 126 | 36 | | 17 | | 203 | | 1653 |
| | 2011 | | 49 | | | | | 3944 | 124 | 149 | | 68 | | 139 | | 4473 |
| | 2012 | | 39 | | | | | 1822 | 74 | 47 | | 14 | | 198 | | 2194 |
| | 2013 | | 288 | 26 | | | | 3752 | 5 | 89 | | | | 62 | | 4222 |
| | 2014 | | 228 | 104 | | 5 | | 3646 | 169 | 239 | | | | 56 | | 4447 |
| | 2015 | | 59 | 24 | | | | 5097 | 15 | 282 | | | | 40 | | 5517 |
| | 2016 | | 50 | 21 | | | | 3020 | 11 | 64 | | | | 7 | | 3173 |
| | 2017 | | 38 | 22 | | | | 1389 | 36 | 70 | | | | 71 | | 1626 |
| NOA | 2008 | | 8888 | 35514 | 187 | 2486 | 2117 | 4839 | 3533 | 18395 | | 3477 | | 13387 | 2658 | 95481 |
| | 2009 | | 4981 | 18455 | 1 | 561 | 1588 | 803 | 1492 | 8605 | | 1970 | 635 | 6841 | 953 | 46885 |
| | 2010 | | 2727 | 12165 | | 123 | 29 | 1519 | 167 | 3911 | | 1389 | | 3316 | 783 | 26129 |
| | 2011 | | 9401 | 34005 | 1 | 1781 | 661 | 3046 | 997 | 11490 | | 2285 | | 13379 | 985 | 78031 |
| | 2012 | | 2282 | 25391 | 6468 | 95 | | 11164 | 1178 | 9556 | | 2736 | 484 | 9812 | | 69166 |
| | 2013 | | 4622 | 25860 | | 115 | | 5898 | 524 | 9931 | | 63 | | 5368 | | 52381 |
| | 2014 | | 1588 | 30439 | 1328 | 325 | | 1233 | 842 | 3665 | 90 | 390 | | 1716 | | 41616 |
| | 2015 | | 4902 | 55915 | 1231 | 66 | | 12522 | 181 | 7436 | 3264 | | 6661 | 2624 | | 94802 |
| | 2016 | | 1686 | 38680 | 2 | 21 | | 4102 | 185 | 8763 | 3159 | 1941 | 14636 | 2019 | | 75194 |
| | 2017 | | 1700 | 48952 | | | | 13104 | 1070 | 12232 | 1996 | 747 | 2307 | 696 | | 82804 |
| OBJ | 2008 | | 9419 | 57909 | 5522 | 1702 | 1425 | 12366 | 2495 | 22225 | 358 | 6309 | | 12745 | 5599 | 138074 |
| | 2009 | | 6519 | 71117 | 10962 | 3130 | 1688 | 5224 | 2848 | 17953 | 97 | 9355 | 976 | 12677 | 4457 | 147003 |
| | 2010 | | 8509 | 60866 | 2953 | 4177 | 1405 | 2665 | 3955 | 16593 | | 10261 | | 5126 | 4965 | 121475 |
| | 2011 | | 11467 | 70601 | 5985 | 6641 | 252 | 2855 | 2822 | 17763 | | 6509 | 1230 | 12367 | 5263 | 143755 |
| | 2012 | | 11462 | 93091 | 10081 | 2171 | | 3058 | 2633 | 16481 | | 7697 | 507 | 9945 | 1184 | 158310 |
| | 2013 | | 13735 | 95940 | 2823 | 19 | | 4039 | 3576 | 20180 | | 8133 | | 11281 | 1286 | 161012 |
| | 2014 | | 16632 | 102627 | 4573 | 236 | | 1497 | 5173 | 17738 | | 8483 | 476 | 10882 | | 168317 |
| | 2015 | | 8394 | 115685 | 10278 | 100 | | 4706 | 1360 | 22710 | 134 | 8579 | 8959 | 2042 | | 182947 |
| | 2016 | | 16638 | 121220 | 9136 | 256 | | 6097 | 1880 | 24178 | 264 | 11470 | 26683 | 6962 | | 224784 |
| | 2017 | | 15910 | 101350 | 3144 | | | 5089 | 5918 | 26370 | 644 | 7385 | 23309 | 6390 | | 195509 |

TABLE EUR-02i. Annual retained catches of skipjack tuna in the EPO by all purse-seine vessels, by set type and flag, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object. Catches are not adjusted for species composition sampling that corrects the observer species identification bias.

TABLA EUR-02i. Capturas retenidas anuales de atún barrilete por todos buques cerqueros en el OPO, por tipo de lance y pabellón del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante. No se ajustan las capturas por muestreo de composición por especies que corrige el sesgo de identificación de especies del observador.

| | | BOL | COL | ECU | ESP | GTM | HND | MEX | NIC | PAN | PER | SLV | USA | VEN | VUT | Total |
|-----|------|-----|-------|--------|-------|------|------|-------|------|-------|------|-------|-------|-------|------|--------|
| DEL | 2008 | | 316 | 2 | | 3 | | 5273 | 155 | 672 | | 765 | | 1313 | | 8499 |
| | 2009 | | 794 | | | 71 | | 1320 | 70 | 454 | | 13 | | 119 | | 2841 |
| | 2010 | | 114 | | | | | 1157 | 126 | 36 | | 17 | | 203 | | 1653 |
| | 2011 | | 49 | | | | | 3944 | 124 | 149 | | 68 | | 139 | | 4473 |
| | 2012 | | 39 | | | | | 1822 | 74 | 47 | | 14 | | 198 | | 2194 |
| | 2013 | | 288 | 26 | | | | 3752 | 5 | 89 | | | | 62 | | 4222 |
| | 2014 | | 228 | 104 | | 5 | | 3646 | 169 | 239 | | | | 56 | | 4447 |
| | 2015 | | 59 | 24 | | | | 5097 | 15 | 282 | | | | 40 | | 5517 |
| | 2016 | | 50 | 21 | | | | 3020 | 11 | 64 | | | | 7 | | 3173 |
| | 2017 | | 38 | 22 | | | | 1389 | 36 | 70 | | | | 71 | | 1626 |
| NOA | 2008 | | 9621 | 69267 | 187 | 2486 | 2117 | 6569 | 3533 | 18914 | | 3477 | | 13387 | 2658 | 132216 |
| | 2009 | 221 | 5979 | 43972 | 1 | 561 | 1588 | 1547 | 1492 | 9240 | | 1970 | 635 | 6841 | 953 | 75001 |
| | 2010 | 319 | 3212 | 22135 | | 123 | 29 | 2237 | 167 | 4034 | | 1389 | | 3316 | 783 | 37744 |
| | 2011 | | 10009 | 56307 | 1 | 1781 | 661 | 3973 | 997 | 12037 | | 2285 | | 13379 | 985 | 102414 |
| | 2012 | | 2922 | 44867 | 6468 | 95 | | 12372 | 1178 | 9556 | | 2736 | 484 | 9812 | | 90490 |
| | 2013 | | 5941 | 49569 | | 115 | | 7135 | 524 | 9931 | 339 | 63 | | 5368 | | 78985 |
| | 2014 | | 2389 | 45656 | 1328 | 325 | | 1720 | 842 | 3665 | 90 | 390 | | 1716 | | 58121 |
| | 2015 | | 6010 | 76190 | 1231 | 66 | | 12563 | 181 | 7436 | 4787 | | 6661 | 2624 | | 117748 |
| | 2016 | | 1823 | 51973 | 2 | 21 | | 4127 | 185 | 8763 | 3159 | 1941 | 14636 | 2019 | | 88648 |
| | 2017 | | 1853 | 63730 | | | | 14085 | 1070 | 12232 | 1996 | 747 | 2307 | 696 | | 98716 |
| OBJ | 2008 | | 12499 | 73815 | 5522 | 1702 | 1425 | 12961 | 2495 | 23486 | 457 | 6309 | | 12745 | 5599 | 159015 |
| | 2009 | 5 | 7153 | 88530 | 10962 | 3130 | 1688 | 5277 | 2848 | 18890 | 353 | 9355 | 976 | 12677 | 4457 | 166300 |
| | 2010 | 4 | 8997 | 76643 | 2953 | 4177 | 1405 | 2793 | 3955 | 17041 | 534 | 10261 | | 5126 | 4965 | 138854 |
| | 2011 | 275 | 13288 | 98680 | 5985 | 6641 | 252 | 2877 | 2822 | 18353 | | 6509 | 1230 | 12367 | 5263 | 174542 |
| | 2012 | | 12301 | 117434 | 10081 | 2171 | | 3128 | 2633 | 16481 | | 7697 | 507 | 9945 | 1184 | 183562 |
| | 2013 | | 15273 | 125624 | 2823 | 19 | | 4417 | 3576 | 20180 | 656 | 8133 | | 11281 | 1286 | 193268 |
| | 2014 | | 19271 | 133088 | 4573 | 236 | | 1871 | 5173 | 17738 | 75 | 8483 | 476 | 10882 | | 201866 |
| | 2015 | | 10113 | 135474 | 10278 | 100 | | 4706 | 1360 | 22710 | 503 | 8579 | 8959 | 2042 | | 204824 |
| | 2016 | | 19102 | 143334 | 9136 | 256 | | 6097 | 1880 | 24178 | 264 | 11470 | 26683 | 6962 | | 249362 |
| | 2017 | | 17626 | 128689 | 3144 | | | 5089 | 5918 | 26370 | 644 | 7385 | 23309 | 6390 | | 224564 |

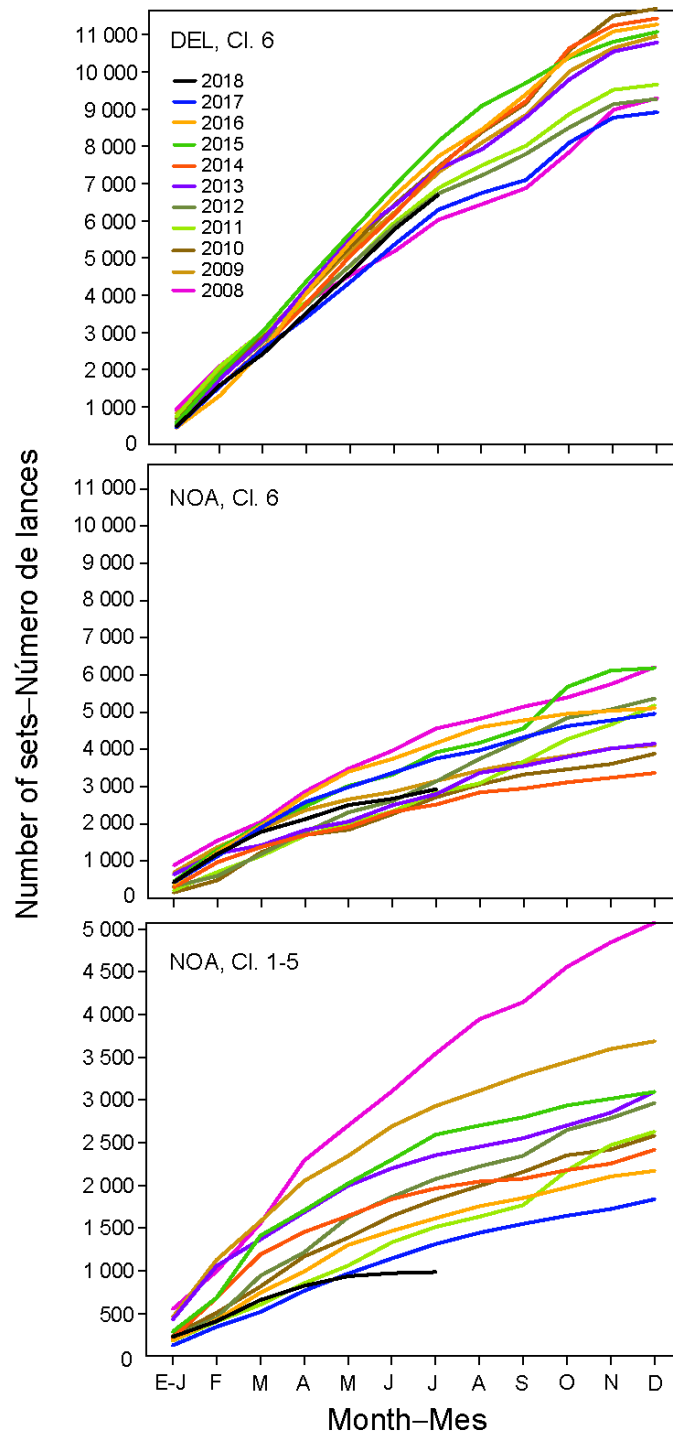


FIGURE COL-01. Cumulative number of sets, by month, 2008-2018: dolphin (DEL) sets, Class-6 vessels (top); unassociated (NOA) sets, Class-6 vessels (center); unassociated (NOA) sets, Class-1-5 vessels (bottom).

FIGURA COL-01. Número acumulativo de lances, por mes, 2008-2018: lances sobre delfines (DEL), buques de clase 6 (arriba); lances no asociados (NOA), buques de clase 6 (centro); lances no asociados (NOA), buques de clases 1-5 (abajo).

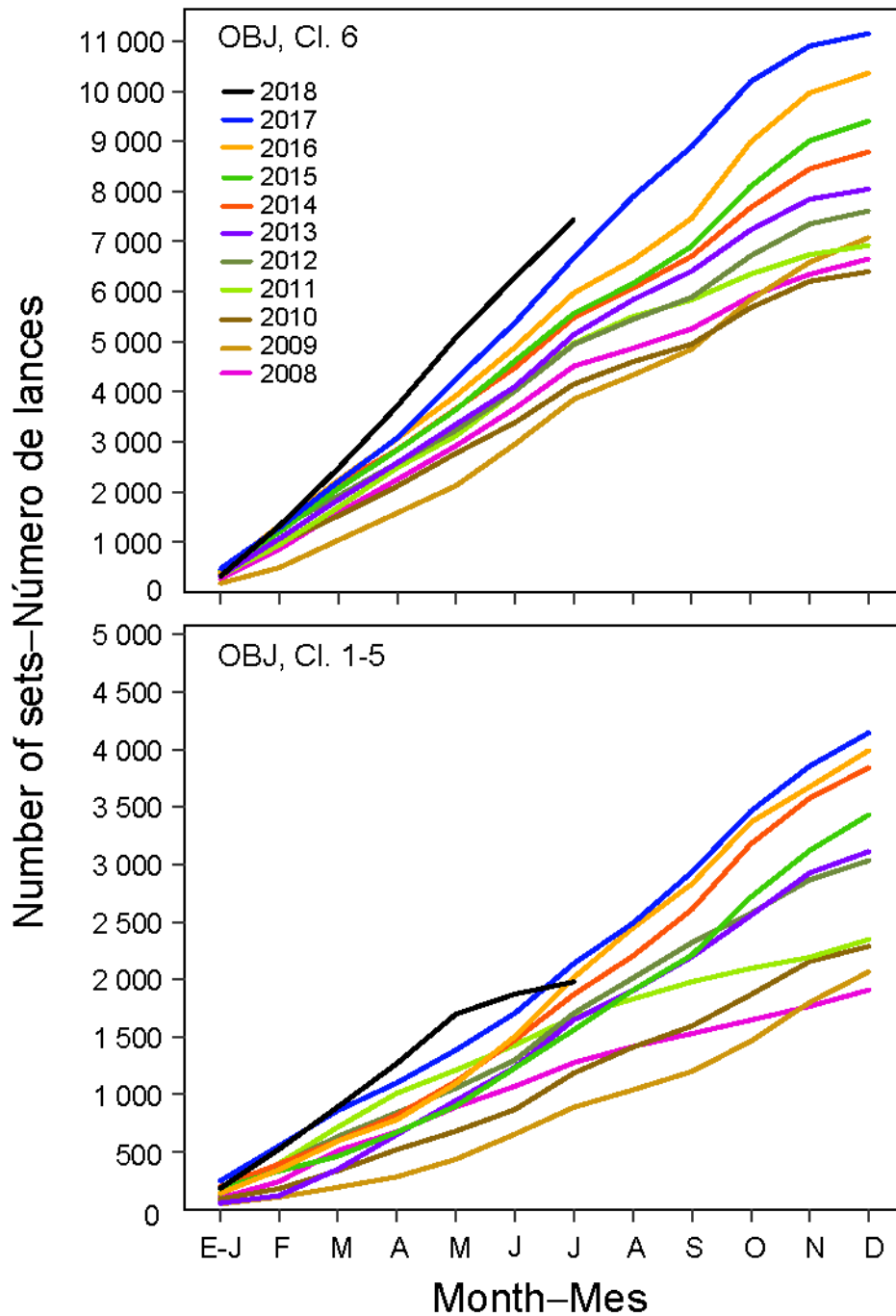


FIGURE COL-01 (cont.). Cumulative number of floating-object (OBJ) sets, by month, 2008-2018: Class-6 vessels (top); Class-1-5 vessels (bottom).

FIGURA COL-01 (continuación). Número acumulativo de lances sobre objetos flotantes (OBJ), por mes, 2008-2018: buques de clase 6 (arriba); buques de clases 1-5 (abajo).

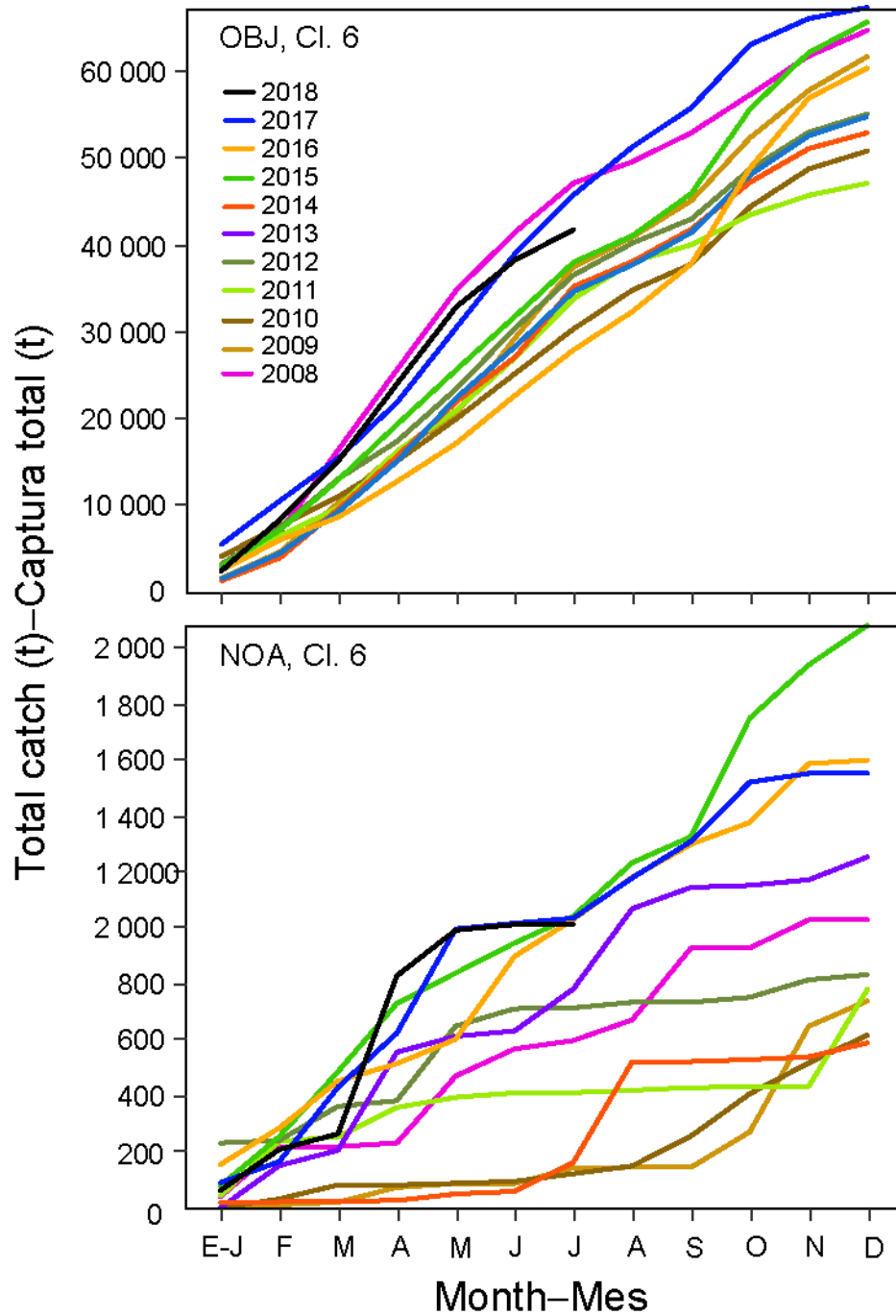


FIGURE COL-01 (cont.). Cumulative catch of bigeye tuna in the floating-object (OBJ; top) and unassociated (NOA; bottom) purse-seine fisheries, by month, 2008-2018.

FIGURA COL-01 (continuación). Captura acumulativa de atún patudo en las pesquerías cercoeras sobre objetos flotantes (OBJ; arriba) y no asociados (NOA; abajo), por mes, 2008-2018.

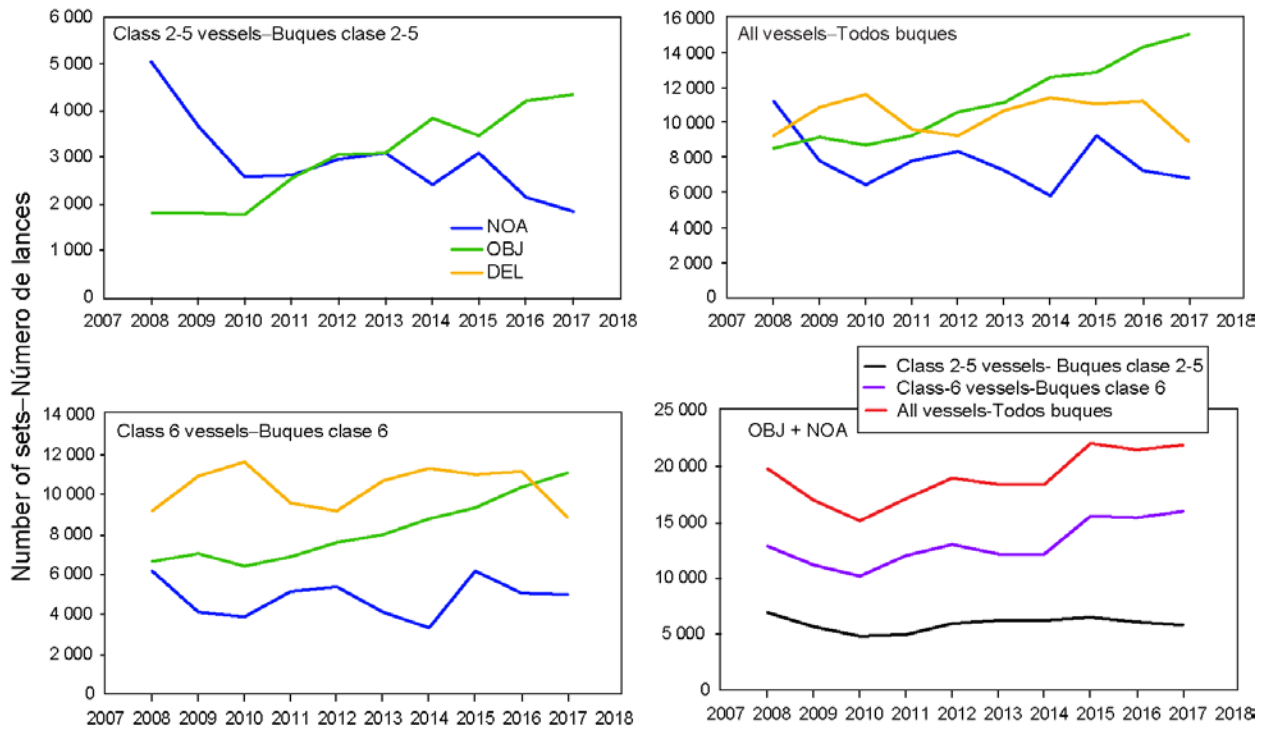


FIGURE EUR-01. Number of sets by purse-seine vessels in the EPO, by set type and vessel capacity class, 2008-2017. Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object.

FIGURA EUR-01. Número de lanças por buques cerqueros en el OPO, por tipo de lance y clase de capacidad del buque, 2008-2017. Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante.

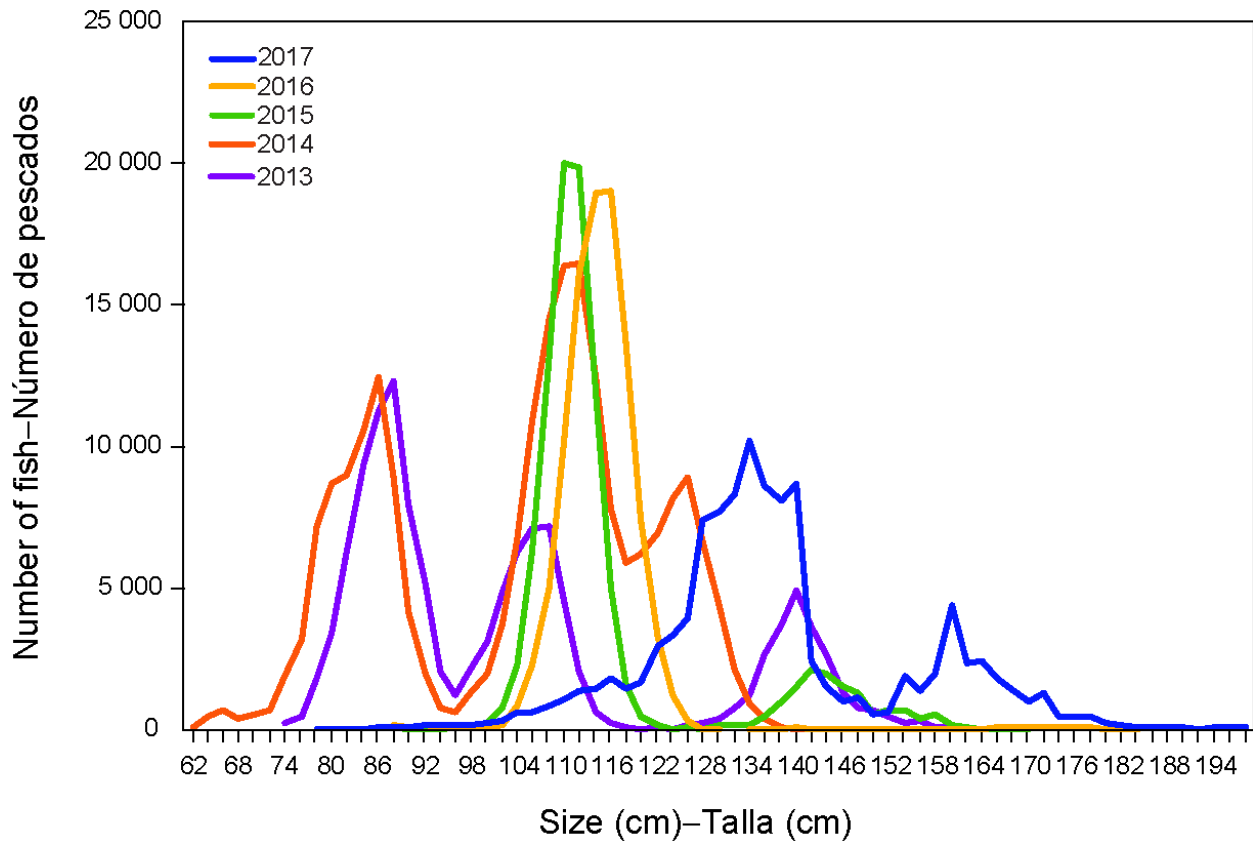


FIGURE MEX-01: Raised length compositions of Pacific bluefin tuna caught in the Mexican purse-seine fishery, 2013-2017.

FIGURA MEX-01: Composiciones por talla extendidas del atún aleta azul del Pacífico capturado por la flota cerquera mexicana, 2013-2017.

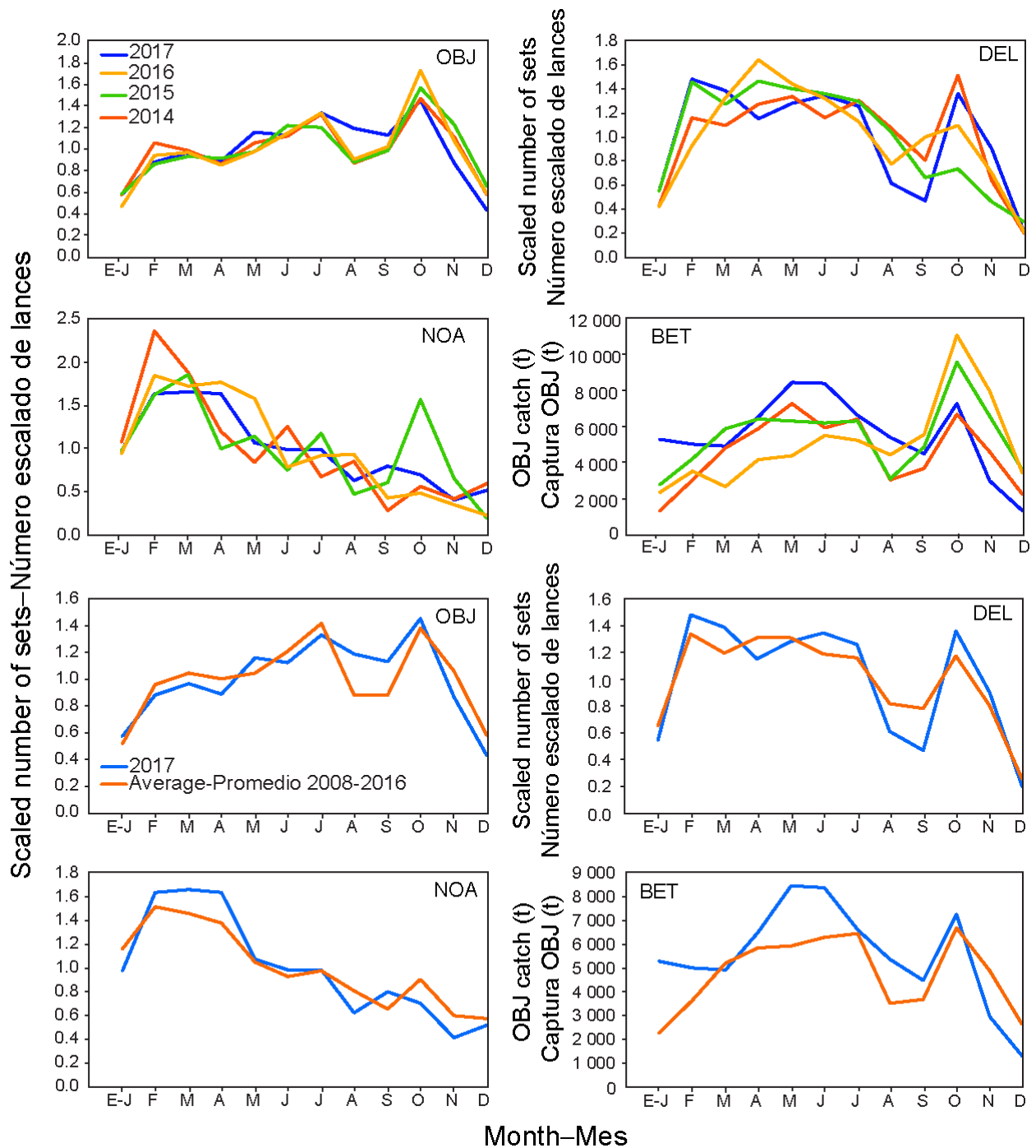


FIGURE USA-01: Comparison of monthly number of sets, by type, and catch of bigeye in floating-object sets, between 2017 and 2014, 2015, and 2016 (top) and 2008-2016 average (bottom). Set types: DEL: dolphin; NOA: unassociated; OBJ: floating object.

FIGURA USA-01: Comparación del número mensual de lances, por tipo, y la captura de patudo en lances sobre objetos flotantes, entre 2017 y 2014, 2015, y 2016 (arriba) y el promedio de 2008-2016 (abajo). Tipos de lance: DEL: delfín; NOA: no asociado; OBJ: objeto flotante.