AGREEMENT ON THE INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

47TH MEETING OF THE PARTIES

La Jolla, California (USA)
10-11 October 2023

DOCUMENT AIDCP-47-02

REPORT ON THE INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

1. INTRODUCTION

In the eastern Pacific Ocean (EPO), schools of yellowfin tuna frequently associate with marine mammals, especially spotted, spinner, and common dolphins. When the purse-seine fishery for tunas in the EPO began around 1960, the fishermen found that their catches of yellowfin in the EPO could be maximized by setting these nets around a herd of dolphins and the associated school of tunas. However, releasing the dolphins while retaining the tuna proved more difficult, and in the early years of the fishery many dolphins died during this process. As techniques and equipment to solve this problem were developed, this mortality fell, gradually at first and dramatically in the 1990s, thanks to the combined efforts of the fishing industry, governments, the Inter-American Tropical Tuna Commission (IATTC), non-governmental environmental organizations, and other interested parties.

The 1992 La Jolla Agreement provided a framework for international efforts to reduce this mortality and introduced novel and effective measures as Dolphin Mortality Limits (DMLs) for individual vessels and the establishment of the International Review Panel to monitor the performance and compliance of the fishing fleet. The Agreement on the International Dolphin Conservation Program (AIDCP), which built on and formalized the provisions of the La Jolla Agreement, was signed in May 1998 and entered into force in February 1999. The Parties to the AIDCP committed to *"ensure the sustainability of tuna stocks in the eastern Pacific Ocean and to progressively reduce the incidental dolphin mortalities in the tuna fishery of the eastern Pacific Ocean to levels approaching zero and to avoid, reduce and minimize the incidental catch and the discard of juvenile tuna and the incidental catch of non-target species, taking into consider-ation the interrelationship among species in the ecosystem."*

As of 1 September 2023, Belize, Colombia, Costa Rica, Ecuador, El Salvador, the European Union, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, the United States, and Venezuela have ratified or acceded to the Agreement. Bolivia and Vanuatu are applying the AIDCP provisionally. At the request of the Parties and in compliance with Article VII, paragraph 1 (t) of the Antigua Convention, the IATTC provides the Secretariat for the AIDCP including support for implementation of the Agreement, which comprises the coordination of the On-Board Observer Program and the Tuna Tracking and Verification System.

2. THE ON-BOARD OBSERVER PROGRAM

The AIDCP On-Board Observer Program is composed of the IATTC observer program and the national observer programs of Colombia (Programa Nacional de Observadores de Colombia, PNOC), Ecuador (Programa Nacional de Observadores Pesqueros de Ecuador; PROBECUADOR), the European Union (Programa Nacional de Observadores de Túnidos, Océano Pacífico; PNOT), Mexico (Programa Nacional de Aprovechamiento del Atún y Protección de Delfines; PNAAPD), Nicaragua (Programa Nacional de Observadores de Nicaragua; PRONAON, administered by the Programa Nacional de Observadores Panameños, (PRONAOP), Panama (PRONAOP), and Venezuela (Programa Nacional de Observadores de Venezuela; PNOV). Additionally, at its 82nd meeting in July 2011, the IATTC agreed on a Memorandum of Cooperation (MOC) with the Western and Central Pacific Fisheries Commission (WCPFC) for cross-endorsement of observers from the IATTC program and the WCPFC's Regional Observer Program to monitor vessels that fish or transit the high-seas or other specified areas in the Convention Areas of both organizations, however in 2022 no cross-endorsed observers were placed.

2.1. Observer coverage

The AIDCP requires that observers are placed aboard 100% of trips in the Agreement Area by purse-seine vessels of carrying capacity greater than 363 metric tons (Class 6). However, the challenges presented by the COVID-19 pandemic beginning in March 2020 have made necessary several adaptations and deviations from the typical implementation of this observer coverage requirement.

The Chairs of the AIDCP Meeting of the Parties and of the IATTC, through circular memorandum ref. 0150-420 dated 30 March 2020, after contacting and consulting with a number of the Parties and convinced that priority must be given to the right to food security and the need to continue ensuring the provision of food to the people, made a number of recommendations aiming at exempting any vessel for which it is impossible to place an observer on board in compliance with the applicable IATTC and AIDCP rules from its corresponding obligations.

After extensive consultations with the Parties, these recommendations were developed and formalized in a document entitled *COVID-19 Pandemic Exemption Procedure for the Operation of On-Board Observers*, which was circulated through memorandum ref. 0170-420 dated 14 April 2020 (Annex 1). This exemption procedure was extended several times during 2020, 2021 and 2022. The last approved extension on the matter, as requested by the IATTC and the AIDCP chairs extended these provisions through 31 December 2022.

The application of the above stated exceptional procedure had an adverse effect on the level of sampling coverage under the AIDCP. Under normal circumstances, consistent with the provisions of the AIDCP, national observer programs would have covered a specific percentage of the trips made by the various fleets. Normally, the Ecuadorian national program would have a goal of placing observers aboard 33% of the trips by Ecuadorian vessels while the Colombian, European Union, Mexican, Nicaraguan, Panamanian, and Venezuelan national programs each would have a goal of placing observers aboard 50% of the trips by their respective fleets.

The IATTC program would have covered the remainder of the trips by vessels of these seven fleets, plus 100% of the trips by vessels of other fleets, which represented a total of 56.9% of all trips.

As shown in Table 1, during 2022, observers completed 791 (97.2%) of the 814 fishing trips made in the Agreement Area by Class-6 vessels operating under the flags of Colombia, Ecuador, El Salvador, European Union (Spain), Mexico, Nicaragua, Panama, Peru, the United States, and Venezuela (Table 1). The difference was 23 trips on which a waiver of the AIDCP requirement to place an observer onboard was issued for a vessel operating in the Agreement area, for the following reasons:

1. No observers are available in the area or port of departure of the vessel.
2. Local or international travel/emigration restrictions at the point of embarkation or anticipated port of disembarkation present obstacles that cannot be overcome or create uncertainties in terms of getting the observer home after the end of the trip.

3. The vessel has experienced contagion onboard in a recent trip and there are no observers available that would accept deployments under those circumstances and the observer program is supportive of this decision.

Twelve of the 23 trips identified above would fit in the first category, and the rest would fit the second category. No cases fit the third category. This represents a marked decrease in the number of exemptions certified in 2022, of which there were 50. Section 7 provides details of the implementation of these waiver certification procedures and accompanying requirements.

There were eight trips in which observers were deployed on vessels of Class-size 5, under the provision of Resolution C-12-08 for vessels with sealed wells.

2.2. Observer training

The IATTC staff conducted an observer training course from 7-24 March 2022 in Manta, Ecuador, for 15 observers of the Tuna Conservation Group (TUNACONS), with the financial support of the Group. TUNACONS was established by several Ecuadorian companies to promote a Fisheries Improvement Project aimed at developing a Certification Process under Marine Stewardship Council standards. TUNACONS will also provide to the IATTC observer data, consistent with AIDCP standards and requirements, from vessels under 363 t that voluntarily carry observers aboard.

The IATTC staff also conducted an observer training course in Manta, Ecuador, 8-25 August, 2022 with 15 observers for the IATTC program and 4 observers for PROBECUADOR.

3. DOLPHIN MORTALITY

3.1. Dolphin Mortality Limits (DMLs)

3.1.1. 2022 DMLs

The overall dolphin mortality limit (DML) for the international fleet in 2022 was 5,000 animals, and the unreserved portion of 4,900 was divided among 110 qualified vessels that requested DMLs.

As with many aspects of the program stated in this report, the statistics presented here are incomplete because of the certified observer exemptions provided. As a result of these exemptions in 2022, observer coverage was absent or incomplete for 23 trips of Class-6 vessels. The procedure required vessels to self-report fishing activity, catch of targeted species as well as non-targeted species and bycatch including dolphin mortality. However, because the source of the dolphin mortality information of these trips is not independently assessed, as it is with observed trips, the data reported here do not consider self-reported dolphin mortality, if provided. Instead, dolphin mortality for 2022 is estimated, based on statistical analysis of observer data extrapolated to the entirety of the fleet's activity.

The distribution of dolphin mortalities in the fishery is shown in Figure 1. The average individual-vessel DML (ADML), based on 110DML requests, was 44. No vessels renounced its DML. Additionally, 11 vessels that did not utilize their DMLs prior to 1 April were allowed to keep them for the remainder of the year under the *force majeure* exemption allowed by the AIDCP, but five of these DMLs were not utilized. One vessel lost its DML due to no utilization prior to 1 April. Two vessels were granted a second-semester DML, and both were utilized. Two vessels were assigned DMLs from the Reserve DML Allocation (RDA) managed at the discretion of the Director, in accordance with paragraph 7, Section I of Appendix IV of the AIDCP, and both were utilized. No vessel exceeded its DML in 2022.

3.1.2. 2023 DMLs

The Parties requested 113 DMLs for 2023 from the unreserved portion (4,900) of the overall fleet mortality limit. As of 20 September, the utilization of these DMLs is as follows:

DML (Limit per vessel)	Assigned	Utilized by April 1 Oct 1	Re-nounced	Lost due to no utilization	Exempt due to *force majeure*
Full year (43)	113	98	2	0	13
Second semester		N/A	N/A	N/A	N/A
RDA	2	1	0	0	0

3.2. Estimates of the mortality of dolphins in 2022 due to fishing

The estimate of the mortality of dolphins in the fishery in 2022 is 965 animals (Table 2), compared to 725 mortalities recorded in 2021. The mortalities for 1979-2022, by species and stock, are shown in Table 3, and the standard errors of these estimates are shown in Table 4. The estimates for 1979-1992 are based on a mortality-per-set ratio, while the mortalities for 1993-2022 are sums of the observed mortalities recorded by the AIDCP On-Board Observer Program, except where observed mortalities have been adjusted for unobserved trips first in 2001-2003, and more recently starting in 2020-2022 because of the pandemic.

The mortalities of the principal dolphin species affected by the fishery have declined since the early 1990s (Figures 2-3), however the estimated mortality increased in 2022 to the highest levels since 2014. Estimates of the abundances of the various stocks of dolphins and the relative mortalities (mortality/abundance) are also presented in Table 2.

The number of sets on dolphin-associated schools of tuna made by Class-6 vessels was 10,614 in 2022, compared to 9,887 in 2021, and this type of set accounted for 38.6% of the total number of sets made in 2022, compared to 38.2% in 2021. The average mortality per set was 0.091 dolphins in 2022, compared to 0.073 dolphins in 2021. The trends in the numbers of sets on dolphin-associated fish, mortality per set, and total mortality in recent years are shown in Figure 3.

The catches of dolphin-associated yellowfin increased by 10.6% in 2022, as compared to 2021. The percentage of the catch of yellowfin taken in dolphin sets was 65% of the total catch in 2022, compared to 62% in 2021 and 71% in 2020. The average catch of yellowfin per dolphin set increased to 16.6 metric tons per set in 2022, compared to 16 metric tons in 2021, and 15.3 metric tons in 2020. The mortality of dolphins per metric ton of yellowfin caught was 0.0054 in 2022, which is about the same rate as in 2021 (0.0046).

Despite yearly fluctuations, the overall, long-term decrease in the mortality per set is the result of efforts by the fishermen to better manage the factors that bring about mortalities of dolphins. Indicative of this effort is the number of sets without mortalities, which has risen from 38% in 1986 to 96% in 2022, and the average number of dolphins left in the net after backdown, which has decreased from 6.0 in 1986 to 0.1 or less since 2001and rates of 0.0 for 2020, 2021 and 2022 (Table 5). The factors under the control of the fishermen which are likely to affect the mortality of dolphins per set include the occurrence of malfunctions, especially those which lead to net canopies and net collapses, and the time it takes to complete the backdown maneuver (Table 5). The percentage of sets with major mechanical malfunctions has decreased from an average of approximately 11% during the late 1980s to less than 5% during 1998-2022; in the same period the percentage of sets with net collapses decreased from about 30% to less than 2%, and that of net canopies from about 20% to less than 2%. Although the chance of dolphin mortality increases with the duration of the backdown maneuver, the average backdown time has changed little since 1986.

3.3. Reports of dolphin mortality by observers at sea

The AIDCP requires the Parties to establish a system, based on real-time observer reporting, to ensure effective implementation and compliance with per-stock, per-year dolphin mortality caps. Observers prepare weekly reports of dolphin mortality, by stock, which are then transmitted to the Secretariat via e-mail, fax, or radio. In June 2003 the Meeting of the Parties adopted Resolution A-03-02, which makes the vessel personnel responsible for transmitting these reports. During 2021 the reporting rate of observed trips was 100% (Table 6).

Since 1 January 2001, the Secretariat has been tracking the cumulative mortality for the seven stocks of dolphins most frequently associated with the fishery. The most recent reported mortalities are shown in Table 7.

4. DISTRIBUTION OF FISHING EFFORT

Figures 4-6 compare the spatial distributions of fishing effort in the Agreement Area by vessels carrying observers, in numbers of sets, by type, in 2021 and 2022. Overall, the distributions across all set types are substantially similar. The density of sets made in association with floating objects in 2022 appears to have increased some in the near-equatorial areas between approximately 90˚-100 ˚ W and a slight decrease to the east of Galapagos, as compared with 2021. The density of unassociated sets off the coast of South America shifted slightly, but there was also an increase in unassociated sets off the coast of the Baja California Peninsula.

5. INTERNATIONAL REVIEW PANEL

The International Review Panel (IRP) follows a general procedure for reporting to the governments concerned non-compliance by their vessels with measures established by the AIDCP. During each fishing trip, the observer prepares a summary of information pertinent to dolphin mortalities, and this is sent by the Secretariat to the government with jurisdiction over the vessel. Several categories of possible infractions are automatically reported to the government with jurisdiction over the vessel in question; the IRP reviews the observer data for other cases at its meetings, and any cases identified as possible infractions are likewise reported to the relevant government. Governments report back to the IRP on actions taken regarding these possible infractions.

The IRP met on 25 July 2022 in Phoenix, Arizona and on 17-18 October 2022 in La Jolla, California, USA. The minutes of IRP meetings are available on the IATTC website, along with the other documents posted for each set of meetings. Tables 8-9 and Appendix A of this report summarize possible infractions identified by the Panel at these meetings and subsequent action taken by the governments.

6. TUNA TRACKING AND VERIFICATION

The System for Tracking and Verifying Tuna, established in accordance with Article V.1.f of the AIDCP, enables “dolphin-safe” tuna, defined as tuna caught in sets without mortality or serious injury of dolphins, to be identified and tracked from the time it is caught through unloading, processing, and sale. The Tuna Tracking Forms (TTFs), completed at sea by observers, designate the tuna caught as dolphin safe (Form ‘A’) or non-dolphin safe (Form ‘B’). This, in turn, allows for the verification of the dolphin-safe status of any tuna caught by a vessel covered by the AIDCP. This framework, administered by the Secretariat, also allows each Party to establish its own tracking and verification program, implemented and operated by a designated national authority. These programs include periodic audits and spot checks for tuna at the points of capture, landing, and processing, and provide mechanisms for communication and cooperation between and among national authorities, and timely access to relevant data. Each Party is required to provide the Secretariat with a report detailing its tracking and verification program.

A total of 588 trips by vessels fishing in the Agreement Area that arrived between 26 August 2022 and 25 May 2023 with an IDCP observer aboard were issued TTFs. Among these, by 5 July 2023, 584 TTF (99%) were transmitted to the Secretariat by the respective national authority. In addition, during the period of this report the Secretariat received 247 copies of *dolphin safe* certificates, and 225 certificates were considered valid. Finally, in six of the TTFs involved in the certification the certified weight exceeded by 10% the tuna considered as *dolphin safe* in the corresponding TTF. The Secretariat notified the corresponding national authority of this issue. In response to these cases, the respective national authority has provided the Secretariat with the investigation results conducted during this inquiry. Subsequently, the Secretariat confirmed the validity of these certificates.

7. RESOLUTIONS, AMENDMENTS AND OTHER DECISIONS AFFECTING THE OPERATION OF THE IDCP

7.1. Implementation of observer waiver certification process

As noted in Section 2.1, the Parties to the AIDCP and the CPCs of the IATTC enacted a procedure to waive the requirement for observers on Class-6 vessels, under certain circumstances due to restrictions created by the pandemic and based on the assessment of observer programs. As noted above, this procedure was discontinued at the end of 2022, after having been utilized sparingly in the previous year. Observer coverage on Class-6 purse-seine vessels remained high, rebounding to over 97% in 2022, up from 94% in 2021. Twenty-three certificates were issued for trips that started in 2022.

Flag	Observer unavailable	Travel restrictions	Contagion
Colombia	-	-	-
Ecuador	6	-	-
El Salvador	-	-	-
European Union (ESP)	-	5	-
Mexico	-	-	-
Nicaragua	1	-	-
Panama	-	-	-
Peru	2	-	-
United States	-	6	-
Venezuela	3	-	-
Total	**12**	**11**	**-**

The Secretariat notes that despite the possibility of waiving the observer requirement when this procedure was implemented, some vessels may have elected to wait for an observer to become available rather than departing without an observer.

As noted in Section 3.1.1, the exemption procedure requires "*AIDCP Parties and IATTC Members … to collect, record and report data and information for each trip, in simplified forms, exclusively data on tuna catches and bycatch of other species (including dolphin mortality), by gear, fishing area and type of set, in accordance with the forms used by the IATTC until such time as it is possible to resume normal deployment of on-board observers.*"

IATTC staff prepared electronic forms that are easy to complete with simple instructions included, for operators to comply with this requirement. These data provision requirements were met for 100% of vessels fishing with a certified observer waiver in 2022.

7.2. Resolution A-19-01 on funding of national programs

This resolution approved during the 39th Meeting of the Parties of the AIDCP in Bilbao, Spain, requires that the AIDCP allocates 10% of the surplus of the observer program as of 31 December 2018, "*to help replace equipment both for observers and for data processing, such as new-generation computer equipment which could not be updated due to lack of financial resources.*"

Additionally, this resolution required that the contribution *«be distributed equitably among all national programs».*

The National Programs agreed to an allocation of the total available amount equivalent to US$ 207,269 as follows: Colombia (7.1%); Ecuador (31.7%); European Union (3.3%); Mexico (31.0%); Nicaragua (4.3%); Panama (12.0%); and Venezuela (10.6%). All seven national programs have begun utilizing the allocated funds in 2022 and 2023, as reflected in the table below. US$ 100,953 of the allocated funds remain unspent as of September 2023.

Distribution of allocation of funds for national programs, Resolution A-19-01					
National Program	Allocation	Amount Distributed	Purchases		Available
			2022	2023	
Colombia	7%	$14,716.10	(1,831.90)		$12,884.20
Ecuador	32%	$65,704.27	(62,225.92)		$3,478.35
European Union	3%	$6,839.88	(4,579.00)		$2,260.88
Mexico	31%	$64,253.39		$(11,800.34)	$52,453.05
Nicaragua	4%	$8,912.57	(1,868.06)		$7,044.51
Panama	12%	$24,872.28	(16,278.08)		$8,594.20
Venezuela	11%	$21,970.51	(7,733.01)		$14,237.50
Total	100%	$207,269.00	$(94,515.97)	$(11,800.34)	$100,952.69
				$(106,316.31)	

7.3. RESOLUTION A-22-01 ON AIDCP RULES OF PROCEDURE

The development of procedural rules specific to the AIDCP started in 2019 with a proposal from Colombia and concluded at the 45th Meeting of the Parties in October 2022. The adoption of Resolution A-22-01 followed the successful negotiation based on the text proposed by the Chair at the previous meeting in August 2022, which was later revised. These Rules of Procedure are essentially modelled upon those of the IATTC, in terms of structure and content, but they include several modifications and additions to reflect the specificity of the nature, characteristics and functioning of the AIDCP.

8. OTHER FUNCTIONS PERFORMED BY THE SECRETARIAT

8.1. Research projects

a) Scientific experiment to evaluate dolphin cow-calf separation during purse-seine fishing operations in the eastern tropical Pacific (ETP)

For the past two decades, it has been postulate that one of the potential sources that might be slowing the growth of dolphin populations in the EPO may be mother-calf separation during fishery interactions, leading to calf mortality. For this reason, a field research study is needed to investigate the questions surrounding the hypothesis of dolphin cow-calf separation during tuna purse-seine fishing operations in the ETP. This research has been under consideration on the work plan of the IATTC staff since 2003 (IRP-33-11a, SAB-01-06, MOP-10-07). Two research proposals were submitted by the staff to the Parties of the AIDCP in 2017 and 2018, respectively (see MOP-36-06 and MOP-37-03).

Since the financial resources for a cow-calf separation study were not available through the AIDCP budget process, support for the project was provided by the fishing industry. On May 24, 2022, a Memorandum of Understanding (MOU) between the Pacific Alliance for Sustainable Tuna (PAST) and the IATTC was established for "in-kind and financial support to conduct a research on dolphins cow-calf separation during chasing and backdown" (see MOU PAST-IATTC). The aim of this project is to use unmanned aerial vehicles (UAVs) to determine: (i) if mother-calf pairs become separated during chase, encirclement, backdown, and/or post-release "run" from the net; and (ii) if/how mother-calf separation may be affecting population growth. These results will help to inform population models and management and conservation actions for dolphins in the ETP.

In April 2023, a consortium team, including scientists from University of Alaska Southeast (UAS) and Marine Environment Research Association (AIMM), was selected to conduct the research project in collaboration with the IATTC staff. Co-Principal Investigators Drs. Heidi Pearson (UAS) and Joana Castro (AIMM) attended the 14th Meeting of the IATTC SAC to present the project (SAC-14 INF-K). To date, the pilot study of the scientific experiment has been completed. This included two phases, phase 1 conducted in waters of Portugal and phase 2 conducted onboard a tuna purse seiner in the ETP. Currently, the team is analyzing the data collected during the pilot study and planning the final phase of the experiment planned for October-November 2023. It is expected that the final report of the project will be presented at SAC-15 in May 2024.

b) Dolphin abundance survey

Due to the hiatus since 2006 in marine mammal surveys conducted by the U.S. National Marine Fisheries Service (NMFS) there is a gap in scientific knowledge about dolphin stock status in the eastern tropical Pacific Ocean (ETP). New abundance estimates are needed to ensure that dolphin mortalities in the purse-seine fishery are both sustainable and insignificant (the AIDCP's Stock Mortality Limit scheme is dependent on such estimates). Hence, particular emphasis has been put on updating the assessments of two of the main stocks that interact with the fishery, the northeastern offshore spotted dolphin and the eastern spinner dolphin.

To fill this gap, and in view of the problematic nature of monitoring stock status from fishery-dependent data, the IATTC, in collaboration with the government of Mexico, the Pacific Alliance for Sustainable Tuna (PAST), and the Centre for Research into Ecological and Environmental Modelling (CREEM) at the University of St Andrews, Scotland, initiated a research project to develop a survey of abundance for dolphin populations in the ETP. The research project, presented in July 2019 (MOP-39-01 Addendum 1), builds on the IATTC workshop in October 2016 (IATTC Special Report 22) and on the survey designs and project specifics presented in August 2018 (MOP-37-02) and in July 2019 (MOP-39-01 Addendum 1). A 14-day sea trial was conducted in November 2019 to run several tests on several aspects of the proposed methodology (IATTC Special Report 24). Among the recommendations of the trial survey is that, prior to a main survey, a second sea trial is needed to test a different drone-camera system with longer endurances and greater video resolution than the system previously tested. To date, financial resources have not been secured to a second sea trial which, if successful, would potentially lead to the final study.

Taking into consideration the lessons and challenges encountered so far in the dolphin survey project, recent interest has been expressed by some AIDCP Parties for the exploration of alternative tools for abundance estimation. These include the techniques discussed in IATTC workshop in October 2016 (IATTC Special Report 22), with particular interest for mark-recapture surveys based on genetic methods.

8.2. Dolphin safety panel alignments

During 2022, the IATTC staff did conduct two alignments of dolphin-safety panels (DSP) and inspections of dolphin rescue gear aboard purse-seine vessels.

8.3. Training and certification of fishing captains

The IATTC has conducted dolphin mortality reduction seminars for tuna fishermen since 1980. Article V of the AIDCP calls for the establishment, within the framework of the IATTC, of a system of technical training and certification of fishing captains. Under the system, the IATTC staff is responsible for maintaining a list of all captains qualified to fish for tunas associated with dolphins in the EPO. The names of the captains who meet the requirements are to be supplied to the IRP for approval and circulation to the Parties to the AIDCP.

The requirements for new captains are (1) attending a training seminar organized by the IATTC staff or by the pertinent national program in coordination with the IATTC staff, and (2) having practical experience relevant to making sets on tunas associated with dolphins, including a letter of reference from a captain currently on the List, the owner or manager of a vessel with a DML, or a pertinent industry association. These seminars include AIDCP relevant material and, as well, pertinent IATTC material for the entire EPO fishing industry, and are intended not only for captains, who are directly in charge of fishing operations, but also for other crew members and for administrative personnel responsible for vessel equipment and maintenance. The fishermen and others who attend the seminars are presented with certificates of attendance.

During 2022, seven training seminars were held, which were attended by 107 attendees.

Date	Program	Location
12 Jan	PNAAPD (MEX)	On-line
7 Feb	IATTC	On-line
30 Nov	PNOV	Panama City, Panama
2 Sep	PNOV	Panama City, Panama
29 Sep	IATTC	Manta, Ecuador
30 Sep	IATTC	Manta, Ecuador
30 Nov	NMFS	On-line

8.4. Statements of Participation

Statements of Participation are typically issued by the Secretariat on request to vessels that carry observers from the On-Board Observer Program. This statement certifies that the vessel has been participating in the IDCP, and that all its trips have been covered by observers; the second, issued to vessels of non-Parties, certifies only that all the vessel's trips have been covered by observers. During 2022, 148 statements of the first type were issued for fishing trips by vessels of Ecuador, European Union (Spain), El Salvador, Nicaragua, Panama, United States of America and Venezuela.

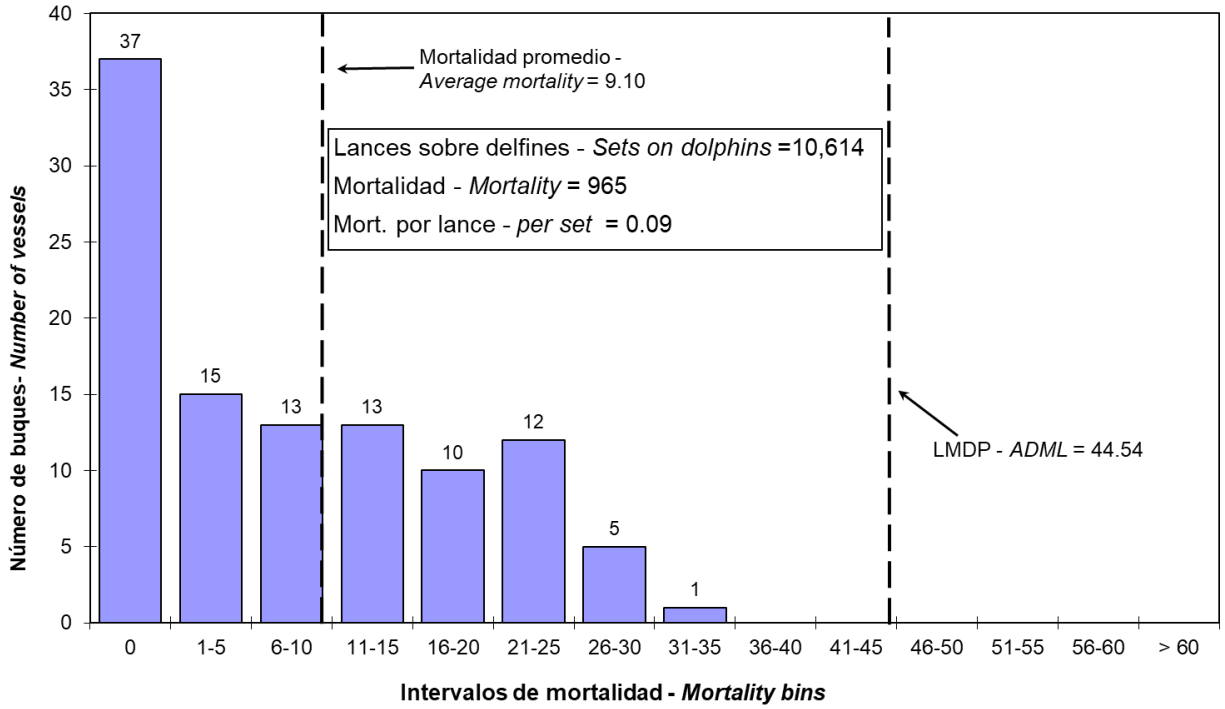

FIGURE 1. Distribution of dolphin mortality caused by vessels with DMLs during 2022.
FIGURA 1. Distribución de la mortalidad de delfines causada por buques con LMD durante 2022.

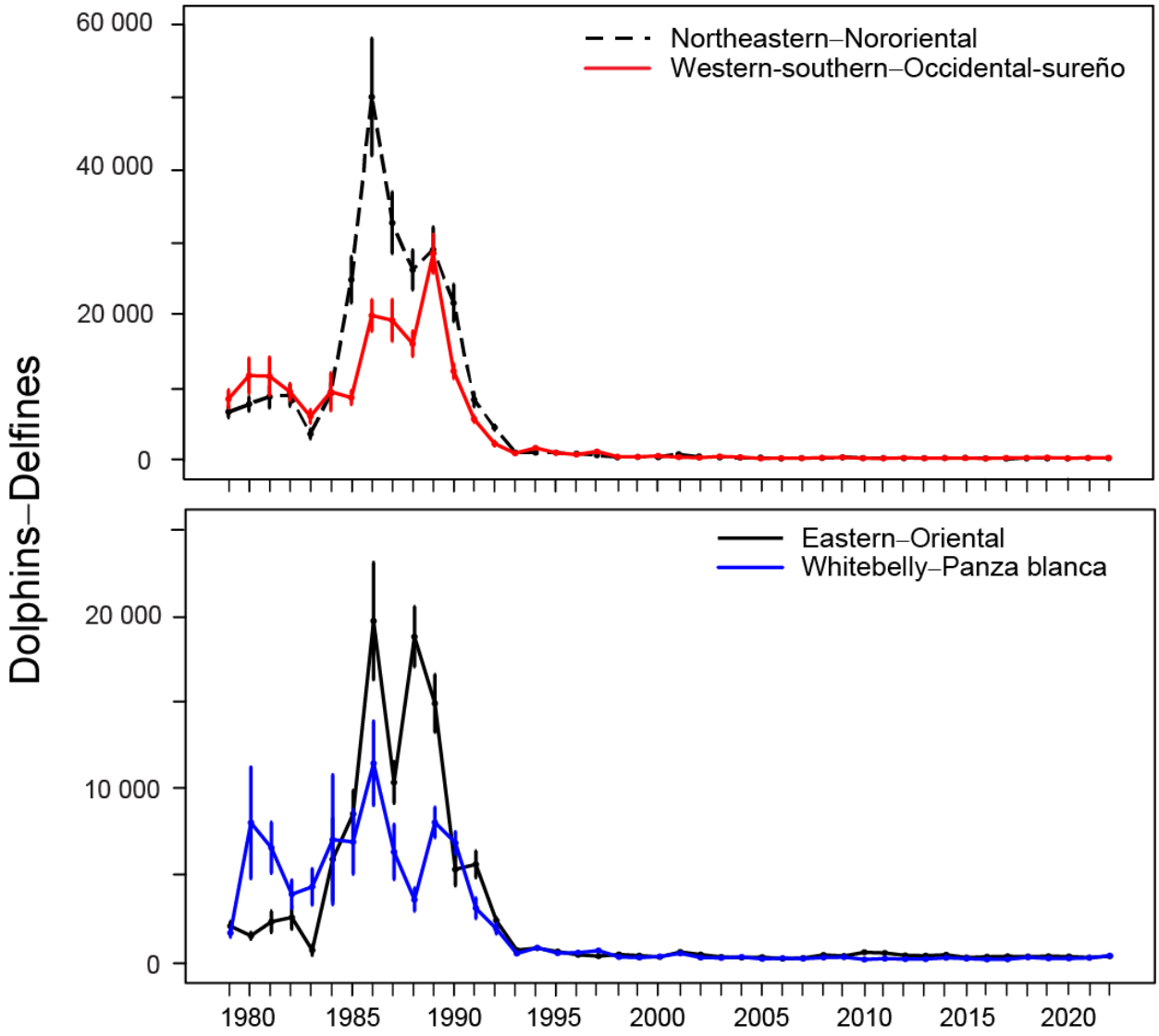

FIGURE 2. Estimated mortalities for the stocks of spotted (upper panel) and spinner (lower panel) dolphins in the Agreement Area, 1979-2022. Each vertical line represents one positive and one negative standard error.

FIGURA 2. Mortalidad estimada de las poblaciones de delfines manchados (panel superior) y tornillo (panel inferior) en el Área del Acuerdo, 1979-2022. Cada línea vertical representa un error estándar positivo y un error estándar negativo.

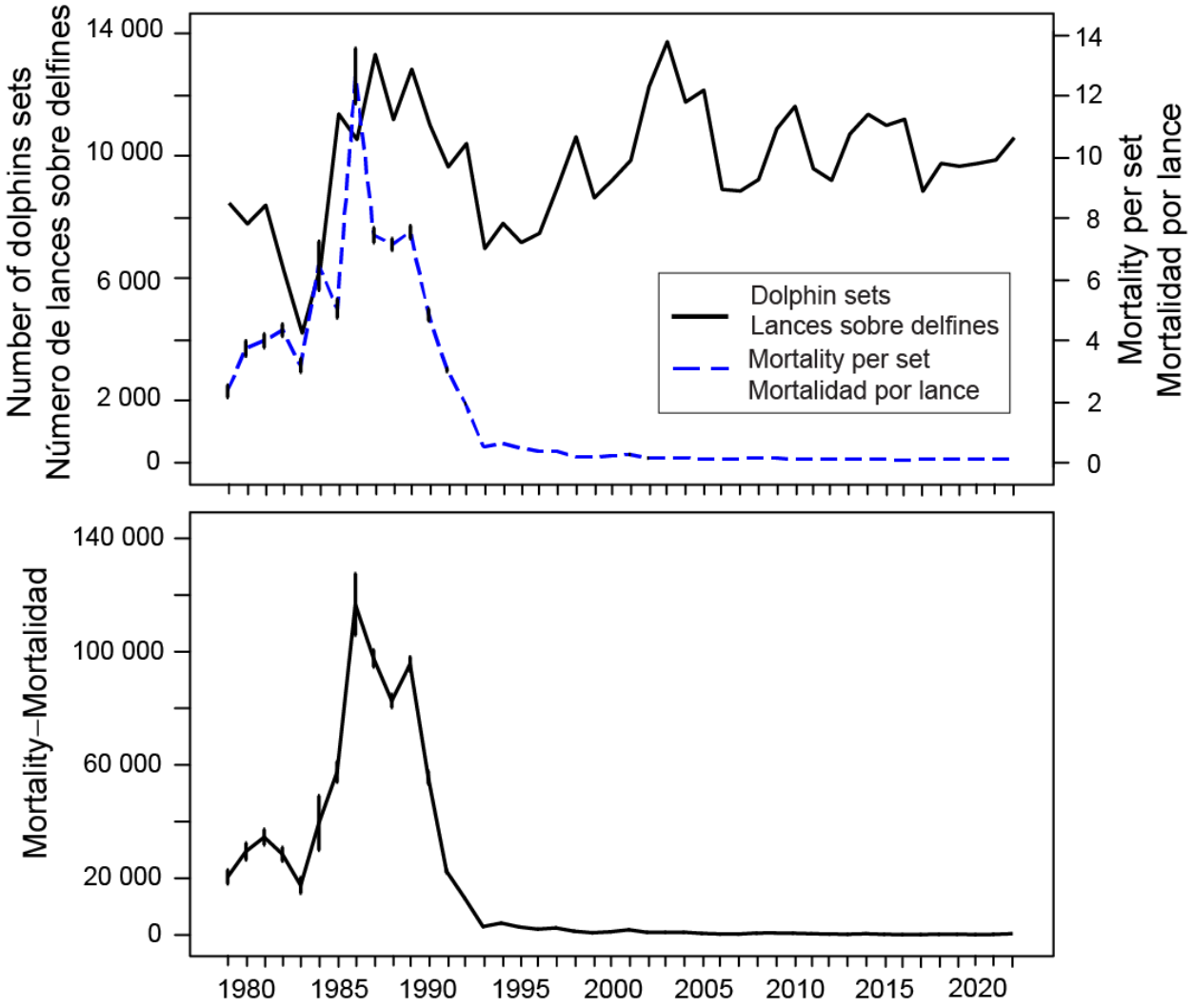

FIGURE 3. Total number of dolphin sets and average mortality per set (upper panel) and estimated total mortality (lower panel) for all dolphins in the Agreement Area, 1979-2022. Each vertical line represents one positive and one negative standard error.

FIGURA 3. Número total de lances sobre delfines y mortalidad media por lance (panel superior) y mortalidad total estimada (panel inferior) para todas especies de delfines en el Área del Acuerdo, 1979-2022. Cada línea vertical representa un error estándar positivo y un error estándar negativo.

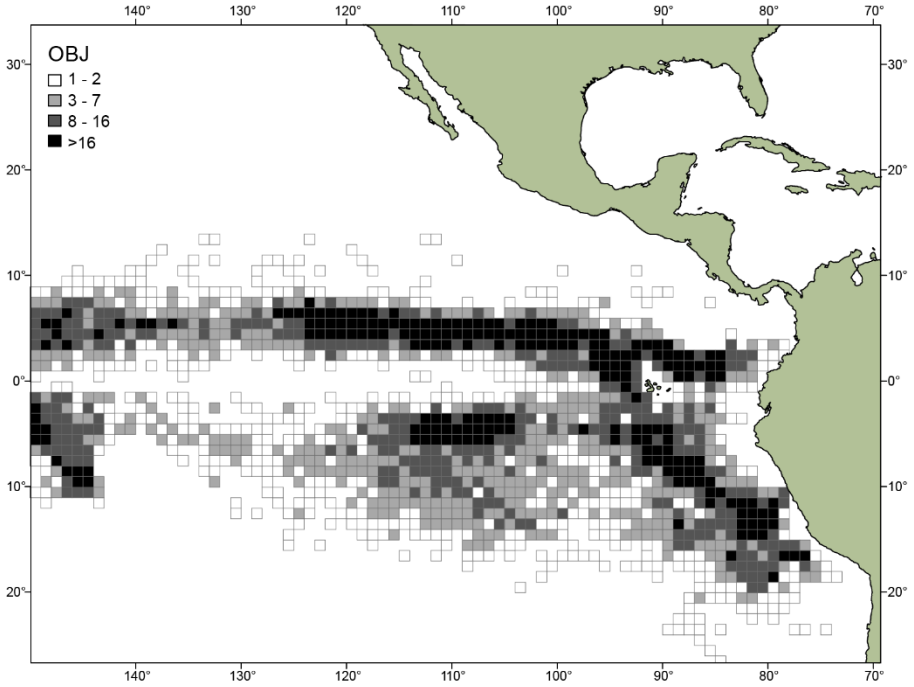

FIGURE 4a. Spatial distribution of sets on tuna associated with floating objects in the Agreement Area, 2021.
FIGURA 4a. Distribución espacial de los lances sobre atunes asociados a objetos flotantes en el Área del Acuerdo, 2021.

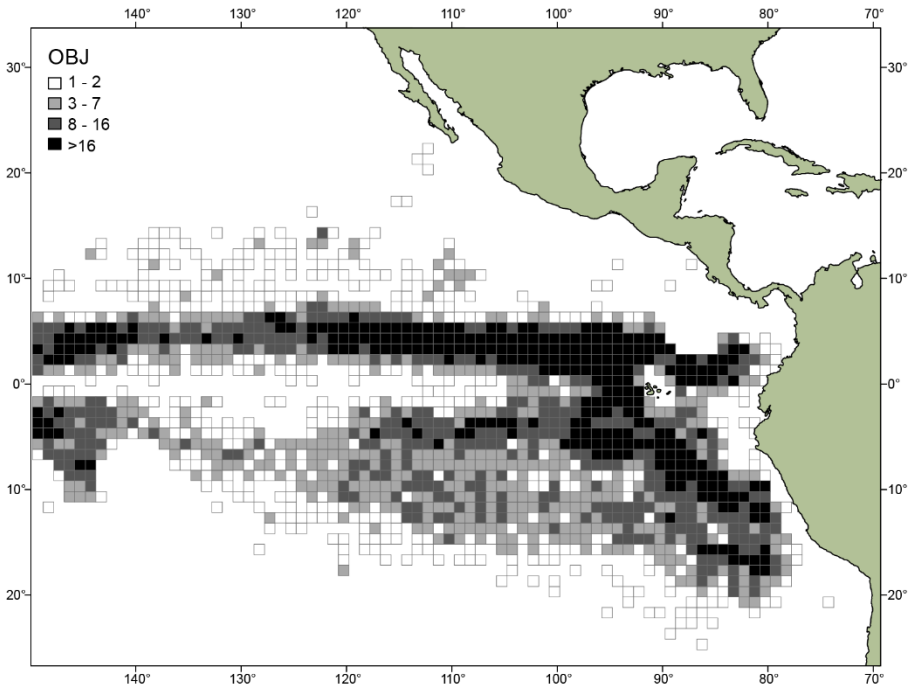

FIGURE 4b. Spatial distribution of sets on tuna associated with floating objects in the Agreement Area, 2022.
FIGURA 4b. Distribución espacial de los lances sobre atunes asociados a objetos flotantes en el Área del Acuerdo, 2022.

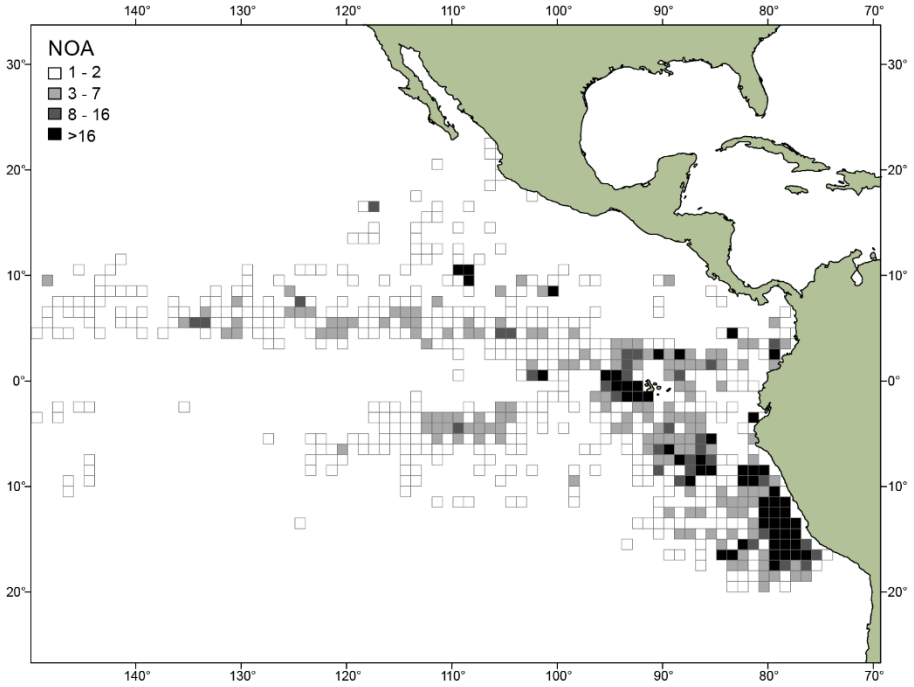

FIGURE 5a. Spatial distribution of sets on unassociated schools of tunas in the Agreement Area, 2021.
FIGURA 5a. Distribución espacial de lances sobre cardúmenes de atunes no asociados en el Área del Acuerdo, 2021.

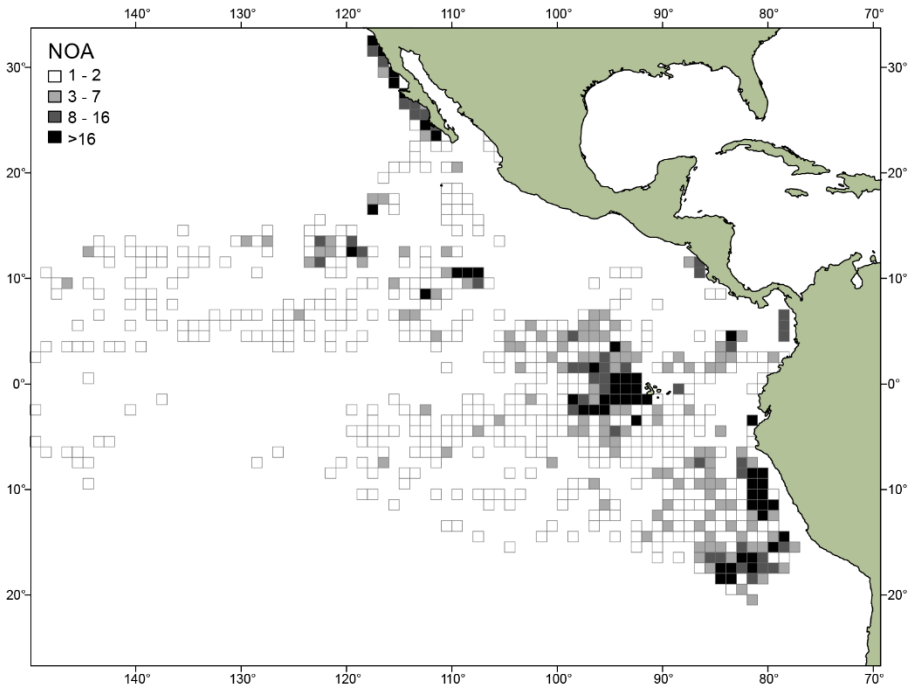

FIGURE 5b. Spatial distribution of sets on unassociated schools of tunas in the Agreement Area, 2022.
FIGURA 5b. Distribución espacial de lances sobre cardúmenes de atunes no asociados en el Área del Acuerdo, 2022.

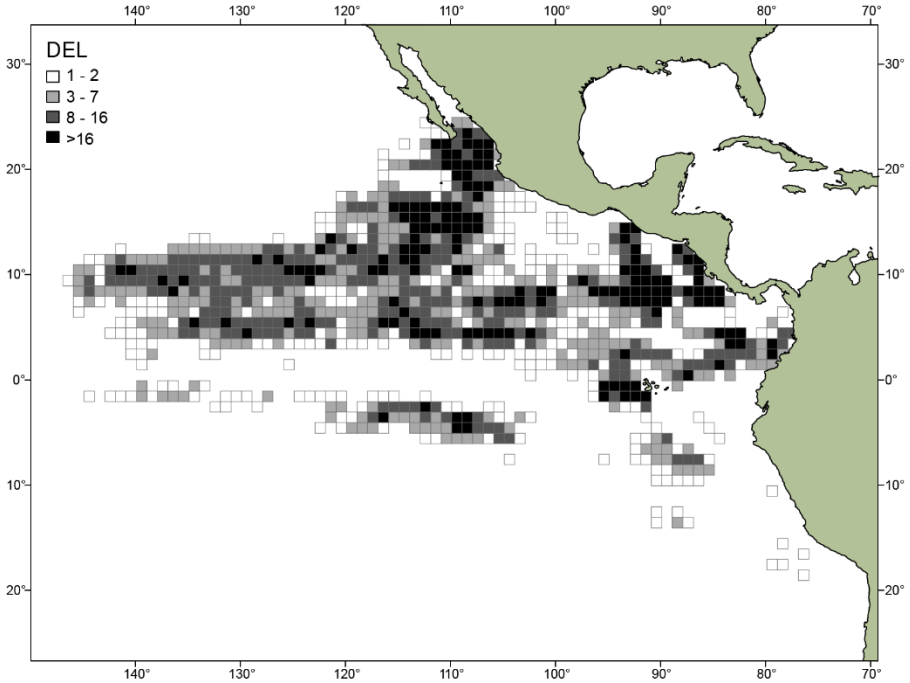

FIGURE 6a. Spatial distribution of sets on tuna associated with dolphins in the Agreement Area, 2021.
FIGURA 6a. Distribución espacial de los lances sobre atunes asociados a delfines en el Área del Acuerdo, 2021.

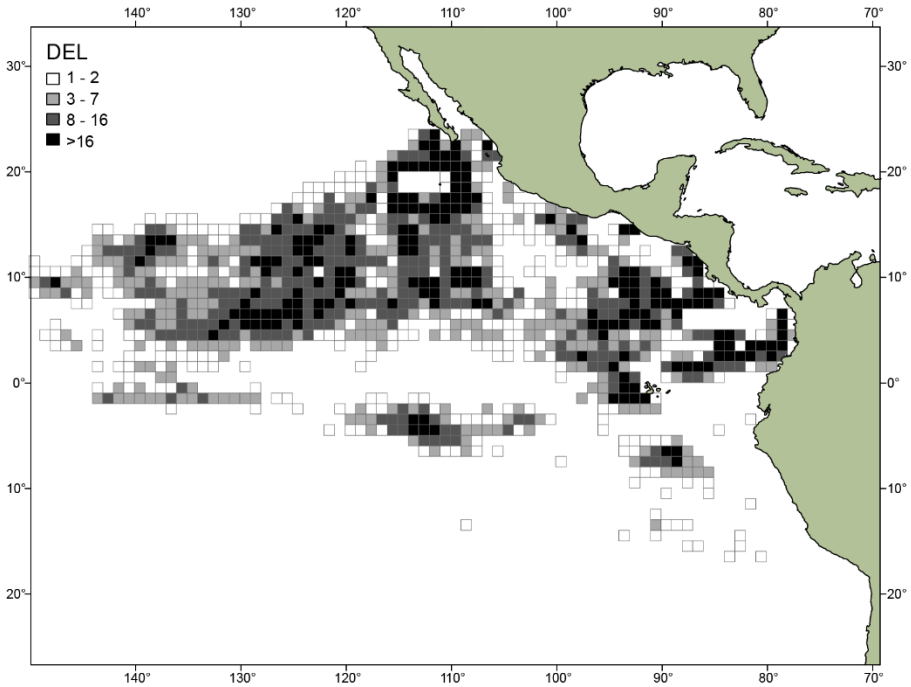

FIGURE 6b. Spatial distribution of sets on tuna associated with dolphins in the Agreement Area, 2022.
FIGURA 6b. Distribución espacial de los lances sobre atunes asociados con delfines en el Área del Acuerdo, 2022.

TABLE 1. Coverage of vessels by the On-Board Observer Program of trips initiated during 2022 with activity in the Agreement Area. Percentage in parenthesis, unless otherwise noted
TABLA 1. Cobertura de buques por el Programa de Observadores a Bordo de viajes iniciados durante 2022 con actividad en el Área del Acuerdo. Porcentaje en paréntesis a menos que se indique de otra manera.

	Clase 6 – Class-6 por/by prog.				
Pabellón - Flag	**Viajes/Trips**	**Nac./Nat**	**CIAT/IATTC**	**None - Ninguno**	**% obs.**
Colombia	43	24 (56)	19 (44)	-	100
Ecuador	338	117 (35)	215 (64)	6 (2)	98
El Salvador	16	-	16 (100)	-	100
European Union (ESP) – Unión Europea (ESP)	13	6 (46)	2 (15)	5 (38)	62
México	190	98 (52)	92 (48)	-	100
Nicaragua	21	8 (38)	12 (57)	1 (5)	95
Panamá	100	52 (52)	48 (48)	-	100
Perú	2	-	-	2 (100)	-
United States – Estados Unidos	41	0	35 (85)	6(15)	85
Venezuela	50	23(46)	24 (48)	3 (6)	94
Subtotal	**814**	**328 (40)**	**463 (57)**	**23(3)**	**97**
	Buques de clase <5 – Class <5 vessels				
Colombia	2	2	-		
Ecuador	8	2	6		
Todas las clases – All classes	**824**	**332**	**469**		

TABLE 2. Estimates of mortalities of dolphins in 2022, population abundance, and relative mortality, by stock.
TABLA 2. Estimaciones de la mortalidad de delfines en 2022, la abundancia de las poblaciones, y la mortalidad relativa, por población.

Species and stock	Mortality	Population abundance	Relative mortality (%)
Especie y población	**Mortalidad**	**Abundancia de la población**	**Mortalidad relativa (%)**
Offshore spotted dolphin—Delfín manchado de altamar[1]			
Northeastern—Nororiental	147	911,177	0.02
Western/southern—Occidental y sureño	197	911,830	0.02
Spinner dolphin—Delfín tornillo[1]			
Eastern—Oriental	271	790,613	0.03
Whitebelly—Panza blanca	300	711,883	0.024
Common dolphin—Delfín común[2]			
Northern—Norteño	23	449,462	< 0.01
Central	2	577,048	<0.01
Southern—Sureño	20	1,525,207	<0.01
Other dolphins—Otros delfines[3]	5		
Total	**965**		

[1] Logistic model for 1986-2006 (IATTC SAB-07-05);
[1] Modelo logístico para 1986-2006 (CIAT SAB-07-05)
[2] Weighted averages for 1998-2003 (IATTC Special Report 14: Appendix 5)
[2] Promedios ponderados para 1998-2003 (Informe Especial de la CIAT 14: Anexo 5)
[3] "Other dolphins" includes the following species and stocks, whose observed mortalities were as follows: Central American spinner dolphin (*Stenella longirostris centroamericana*) 6, striped dolphin (*Stenella coeruleoalba*) 3, roughtoothed dolphin (*Steno bredanensis*) 2, and unidentified dolphins, 1.
[3] "Otros delfines" incluye las siguientes especies y poblaciones, con las mortalidades observadas correspondientes: delfin tornillo centroamericano (*Stenella longirostris centroamericana*) 6, (*Steno bredanensis*) 2, y delfines no identificados, 1.

TABLE 3. Annual estimates of dolphin mortality, by species and stock since 1979.
TABLA 3. Estimaciones anuales de la mortalidad de delfines, por especie y población desde 1979.

	Offshore spotted[1]		Spinner		Common			Others	Total
	Northeast-ern	Western-southern	Eastern	White belly	Northern	Central	Southern		
	Manchado de altamar[1]		Tornillo		Común			Otros	Total
	nor-oriental	Occidental y sureño	Oriental	Panza blanca	Norteño	Central	Sureño		
1979	4,828	6,254	1,460	1,312	4,161	2,342	94	880	21,331
1980	6,468	11,200	1,108	8,132	1,060	963	188	633	29,752
1981	8,096	12,512	2,261	6,412	2,629	372	348	367	32,997
1982	9,254	9,869	2,606	3,716	989	487	28	1,347	28,296
1983	2,430	4,587	745	4,337	845	191	0	353	13,488
1984	7,836	10,018	6,033	7,132	0	7,403	6	156	38,584
1985	25,975	8,089	8,853	6,979	0	6,839	304	1,777	58,816
1986	52,035	20,074	19,526	11,042	13,289	10,884	134	5,185	132,169
1987	35,366	19,298	10,358	6,026	8,216	9,659	6,759	3,200	98,882
1988	26,625	13,916	18,793	3,545	4,829	7,128	4,219	2,074	81,129
1989	28,898	28,530	15,245	8,302	1,066	12,711	576	3,123	98,451
1990	22,616	12,578	5,378	6,952	704	4,053	272	1,321	53,874
1991	9,005	4,821	5,879	2,974	161	3,182	115	990	27,127
1992	4,657	1,874	2,794	2,044	1,773	1,815	64	518	15,539
1993	1,112	773	725	437	139	230	0	185	3,601
1994	847	1,228	828	640	85	170	0	298	4,096
1995	952	859	654	445	9	192	0	163	3,274
1996	818	545	450	447	77	51	30	129	2,547
1997	721	1,044	391	498	9	114	58	170	3,005
1998	298	341	422	249	261	172	33	100	1,876
1999	358	253	363	192	85	34	1	62	1,348
2000	295	435	275	262	54	223	10	82	1,636
2001	592	315	470	374	94	205	46	44	2,140
2002	435	203	403	182	69	155	3	49	1,499
2003	288	335	290	170	133	140	97	39	1,492
2004	261	256	223	214	156	97	225	37	1,469
2005	273	100	275	108	114	57	154	70	1,151
2006	147	135	160	144	129	86	40	45	886
2007	189	116	175	113	55	69	95	26	838
2008	184	167	349	171	104	14	137	43	1,169
2009	266	254	288	222	109	30	49	21	1,239
2010	170	135	510	92	124	116	8	15	1,170
2011	172	124	467	139	35	12	9	28	986
2012	151	187	324	107	49	4	30	18	870
2013	158	145	303	111	69	0	8	7	801
2014	181	168	356	183	49	13	9	16	975
2015	191	158	196	139	43	21	12	5	765
2016	127	111	243	89	82	36	9	5	702
2017	92	178	266	98	26	9	16	3	688
2018	99	197	252	205	41	1	18	6	819
2019	104	220	270	142	25	3	2	12	778
2020	105	154	251	138	1	17	3	20	689
2021	167	174	195	173	3	6	5	6	729
2022	147	197	271	300	23	2	20	5	965

[1] Estimates for offshore spotted dolphins include mortalities of coastal spotted dolphins.
[1] Las estimaciones de delfines manchados de altamar incluyen mortalidades de delfines manchados costeros.

TABLE 4. Standard errors of annual mortality estimates of dolphins, by species and stock, for 1979-1994. There are no standard errors for 1995-2000 and after 2003 because the coverage was at or nearly at 100% during those years.
TABLA 4. Errores estándar de las estimaciones anuales de la mortalidad de delfines, por especie y población, para 1979-1994. No se cuenta con errores estándar para 1995-2000 y después de 2003, porque la cobertura fue de 100%, o casi, en esos años.

	Offshore spotted		Spinner		Common			Other
	North-eastern	Western-southern	Eastern	Whitebelly	Northern	Central	Southern	
	Manchado de altamar		Tornillo		Común			Otros
	Nor-oriental	Occidental y sureño	Oriental	Panza blanca	Norteño	Central	Sureño	
1979	817	1,229	276	255	1,432	560	115	204
1980	962	2,430	187	3,239	438	567	140	217
1981	1,508	2,629	616	1,477	645	167	230	76
1982	1,529	1,146	692	831	495	168	16	512
1983	659	928	284	1,043	349	87	-	171
1984	1,493	2,614	2,421	3,773	-	5,093	3	72
1985	3,210	951	1,362	1,882	-	2,776	247	570
1986	8,134	2,187	3,404	2,454	5,107	3,062	111	1,722
1987	4,272	2,899	1,199	1,589	4,954	2,507	3,323	1,140
1988	2,744	1,741	1,749	668	1,020	1,224	1,354	399
1989	3,108	2,675	1,674	883	325	4,168	295	430
1990	2,575	1,015	949	640	192	1,223	95	405
1991	956	454	771	598	57	442	30	182
1992	321	288	168	297	329	157	8	95
2001	3	28	1	6	7	7	-	1
2002	1	2	1	1	1	1	1	1
2003	1	1	1	1	-	1	1	-

TABLE 5. Percentages of sets with no dolphin mortalities, with major gear malfunctions, with net collapses, with net canopies, average times of backdown (in minutes), and average number of live dolphins left in the net at the end of backdown. 1986-2008 data are from trips observed by the IATTC program only; data after 2008 include trips covered by national programs.
TABLA 5. Porcentajes de lances sin mortalidad de delfines, con averías mayores, con colapso de la red, con abultamiento de la red, duración media del retroceso (en minutos), y número medio de delfines en la red después del retroceso. Los datos de 1986-2008 provienen de viajes observados por el programa de la CIAT solamente; los datos posteriores a 2008 incluyen viajes observados por los programas nacionales.

	Sets with zero mortality (%)	Sets with major malfunctions (%)	Sets with net collapse (%)	Sets with net canopy (%)	Average duration of backdown (minutes)	Average number of live dolphins left in net after backdown
1986	38.1	9.5	29.0	22.2	15.3	6.0
1987	46.1	10.9	32.9	18.9	14.6	4.4
1988	45.1	11.6	31.6	22.7	14.3	5.5
1989	44.9	10.3	29.7	18.3	15.1	5.0
1990	54.2	9.8	30.1	16.7	14.3	2.4
1991	61.9	10.6	25.2	13.2	14.2	1.6
1992	73.4	8.9	22.0	7.3	13.0	1.3
1993	84.3	9.4	12.9	5.7	13.2	0.7
1994	83.4	8.2	10.9	6.5	15.1	0.3
1995	85.0	7.7	10.3	6.0	14.0	0.4
1996	87.6	7.1	7.3	4.9	13.6	0.2
1997	87.7	6.6	6.1	4.6	14.3	0.2
1998	90.3	6.3	4.9	3.7	13.2	0.2
1999	91.0	6.6	5.9	4.6	14.0	0.1
2000	90.8	5.6	4.3	5.0	14.9	0.2
2001	91.6	6.5	3.9	4.6	15.6	0.1
2002	93.6	6.0	3.1	3.3	15.0	0.1
2003	93.9	5.2	3.5	3.7	14.5	<0.1
2004	93.8	5.4	3.4	3.4	15.2	<0.1
2005	94.9	5.0	2.6	2.7	14.5	<0.1
2006	93.9	5.7	3.3	3.5	15.8	<0.1
2007	94.2	5.1	1.6	3.4	15.2	<0.1
2008	92.4	4.9	2.9	3.7	16.1	0.1
2009	93.3	5.2	1.8	3.1	16.7	<0.1
2010	94.1	4.7	1.3	2.4	16.2	<0.1
2011	94.0	4.1	1.9	2.1	16.3	<0.1
2012	94.5	4.3	1.9	1.5	16.5	<0.1
2013	95.4	4.2	1.3	1.3	15.4	<0.1
2014	95.5	3.7	1.3	1.3	16.2	<0.1
2015	96.4	4.3	1.1	1.2	15.4	<0.1
2016	96.4	3.8	0.9	0.9	15.2	<0.1
2017	96.2	3.6	1.0	1.0	15.9	<0.1
2018	95.8	3.3	0.8	1.5	17.3	<0.1
2019	95.8	4.1	1.1	1.1	16.6	<0.1
2020	96.5	3.9	0.3	0.9	17.0	0
2021	96.5	3.5	0.7	0.8	17.0	0
2022	96.0	3.3	0.3	1.3	18.1	0

TABLE 6. Weekly reports of dolphin mortality received, 2022.
TABLA 6. Informes semanales de mortalidad de delfines recibidos, 2022.

Flag	Program	Required	Received	%
Colombia	CIAT - IATTC	185	185	100
	Nal.-Nat.	222	222	100
Ecuador	CIAT - IATTC	1,385	1,385	100
	Nal.-Nat	741	741	100
El Salvador	CIAT - IATTC	86	86	100
EU (ESP)	CIAT - IATTC	21	21	100
Mexico	CIAT - IATTC	60	60	100
	Nal.-Nat.	622	622	100
Nicaragua	CIAT - IATTC	689	689	100
	Nal.-Nat.	84	84	100
Panama	CIAT - IATTC	56	56	100
	Nal.-Nat.	324	324	100
USA	CIAT - IATTC	306	306	100
VEN	CIAT - IATTC	202	202	100
	Nal.-Nat.	183	183	100
Total		**5,340**	**5,340**	**100.0**

TABLE 7. Preliminary reports of the mortalities of dolphins in 2023, to 21September.
TABLA 7. Informes preliminares de las mortalidades de delfines en 2023, hasta el 21 de septiembre.

Species and stock Especie y población	Total mortality Mortalidad total	Limit Límite	Used (%) Usado (%)
Offshore spotted dolphin – Delfín manchado de altamar			
Northeastern—Nororiental	117	793	14.8
Western-southern--Occidental-sureño	148	881	16.8
Spinner dolphin – Delfín tornillo			
Eastern—Oriental	207	655	31.6
Whitebelly--Panza blanca	147	666	22.1
Common dolphin – Delfín común			
Northern—Norteño	35	562	6.2
Central	20	207	9.7
Southern—Sureño	5	1,845	0.3
Others and unidentified--Otros y no identificados	11		
Total	**690**	**5,000**	**13.8**

TABLE 8. Summary of possible infractions identified by the International Review Panel at its 69th and 70th meetings, **July** and October 2022.
TABLA 8. Resumen de posibles infracciones identificadas por el Panel Internacional de Revisión en su 69ª y 70ª reuniones, **julio** y octubre de 2022.

INFRACCIONES MAYORES / MAJOR INFRACTIONS:	
Viaje sin observador Trips without an observer	1
Viajes con lances en delfines sin LMD asignado Trips with dolphin sets but no DML assigned	0
Viajes con capitanes no incluidos en la lista del APICD Trips with captains not on the AIDCP list – see corrective note in Appendix 1	4
Viajes sin paño de protección de delfines Trips without a dolphin safety panel	5
Lances intencionales después de alcanzar el LMD Intentional sets made after reaching the DML	0
Lances o cazas con uso de explosivos Sets or chases with use of explosives	0
Lances sobre stocks o tipos de manadas prohibidas Sets on banned stocks or school types	0
Lances sin retroceso Sets without a required backdown	0
Lances con embolsamiento o salabardeo de delfines Sets with dolphin sack-up or brail	0
Lances sin evitar herir o matar delfines Sets with unavoided dolphin injury or mortality	0
Total	**10**
OTRAS INFRACCIONES / OTHER INFRACTIONS:	
Viajes sin balsa Trips without a required raft	0
Viajes con < 3 lanchas rápidas y/o sin bridas de remolque Trips with < 3 speedboats and/or missing towing bridles	0
Viajes sin reflector de alta intensidad Trips without a required high-intensity floodlight	6
Viajes sin máscaras de buceo Trips without required facemasks	0
Lances nocturnos (ocurrieron en dos viajes) Night sets (occurred in two trips)	0
Lances sin rescate adicional Sets without required deployment of rescuer	0
Lances sin rescate después del retroceso Sets without continued rescue effort after backdown	0
Viajes con lances sobre delfines antes de la notificación del LMD Trips with dolphin sets before the DML notification	0
Total	**6**
Casos de interferencia al observador Cases of observer interference	0
Viajes revisados en estas reunions Trips reviewed in these meetings	827
Lances sobre delfines revisados en estas reuniones Dolphin sets reviewed in these meetings	10,364
Lances accidentales revisados en estas reuniones Accidental sets reviewed in these meetings	0

TABLE 9. Responses for six types of possible infractions identified by the International Review Panel at its 69th and 70th meetings.
TABLA 9. Respuestas para seis tipos de posibles infracciones identificadas por el Panel Internacional de Revisión en su 69ª y 708ª reuniones.

	No. de casos	Sin respuesta	Respuestas: Bajo investigación[1]	No hubo infracción	Infracción: sin sanción	Infracción: aviso	Infracción: sanción[2]	Total
	No. of cases	**No response**	**Responses: Under investigation[1]**	**No infraction**	**Infraction: no sanction**	**Infraction: warning**	**Infraction: sanction[2]**	**Total**
HOSTIGAMIENTO AL OBSERVADOR – OBSERVER HARASSMENT								
Ningún caso identificado durante el periodo de este informe *No identified cases during this report period*								
USO DE EXPLOSIVOS – USE OF EXPLOSIVES								
Ningún caso identificado durante el periodo de este informe *No identified cases during this report period*								
LANCES NOCTURNOS– NIGHT SETS								
Ningún caso identificado durante el periodo de este informe *No identified cases during this report period*								
PESCAR SIN OBSERVADOR – FISHING WITHOUT AN OBSERVER								
EU (SPN)	1	0	-	0	1	0	0	0	1 (100%)
Total:	**1**	**0**	-	**0**	**1**	**0**	**0**	**0**	**1** (100%)
PESCAR SOBRE DELFINES SIN LMD – FISHING ON DOLPHINS WITHOUT A DML								
Ningún caso identificado durante el periodo de este informe *No identified cases during this report period*								
LANCES SOBRE DELFINES DESPUÉS DE ALCANZAR EL LMD-- SETS ON DOLPHINS AFTER REACHING DML								
Ningún caso identificado durante el periodo de este informe *No identified cases during this report period*								

Appendix 1.

POSSIBLE INFRACTIONS IDENTIFIED BY THE IRP

Abbreviations: DSP = Dolphin Safety Panel

ECUADOR			
Vessel	*IRP recno*	*Review date*	*Identified infractions*
ECU 1	2022-244	2022/07	1) 1 Trip without a required high intensity floodlight **Action taken:** 1) The government initiated the proper administrative process.
ECU 2	2022-097	2022/07	1) 1 Trip with captain not on the AIDCP list **Action taken:** 1) The government determined that there was no infraction according to its national legislation.
	2022-118	2022/07	1) 1 Trip with captain not on the AIDCP list **Action taken:** 1) The government initiated the proper administrative process.
ECU 3	2021-910	2022/07	1) 1 Trip without a dolphin safety panel **Action taken:** 1) The government determined that there was no infraction according to its national legislation.
ECU 4	2022-522	2022/10	1) 1 Trip without a required high intensity floodlight **Action taken:** 1) The fisheries authority reported that the documentation which it had been provided with concerning the case could not be used to initiate an administrative or judicial process under the relevant national laws and regulations, since it contained documents with erasures or amendments, which would not therefore be used as legal evidence. In these circumstances, the fisheries authority declare that it would not be able to consider this case as a possible infraction.
ECU 5	2021-936	2022/07 2022/07 2022/07	1) 1 Trip with captain not on the AIDCP list 2) 1 Trip without a dolphin safety panel 3) 1 Trip without a required high intensity floodlight **Action taken:** 1), 2), 3) The government determined that there was no infraction according to its national legislation.
ECU 6	2022-195	2022/07	1) 1 Trip without a required high intensity floodlight **Action taken:** 1) The government initiated the proper administrative process.
EU (SPAIN)			
Vessel	*IRP recno*	*Review date*	*Identified infractions*
ESP 1	2022-369	2022/07	1) 1 Trip without an observer **Action taken:** 1) Regarding the lack of observer on board at its first 2022 trip, the vessel asked for an observer and the Observer Program informed it was impossible due to COVID restrictions at the time. The Observer Program asked for the departure date in order to provide an exemption certificate, but we have been informed by the vessel that this exemption procedure has not been formally finalised by the Observer Program.
PANAMA			
Vessel	*IRP recno*	*Review date*	*Identified infractions*
PAN 1	2022-345	2022/10	1) 1 Trip without a dolphin safety panel **Action taken:** 1) After investigating, the government decided that no infraction occurred.
PAN 2	2022-432	2022/07	1) 1 Trip with captain not on the AIDCP list **Action taken:** 1) The government is investigating the possible infractions.
PAN 3	2021-796	2022/07	1) 1 Trip without a dolphin safety panel **Action taken:** 1) After investigating, the government decided that no infraction occurred.
VENEZUELA			
Vessel	*IRP recno*	*Review date*	*Identified infractions*
VEN 1	2022-137	2022/07	1) 1 Trip without a required high intensity floodlight
OTHERS			
Vessel	*IRP recno*	*Review date*	*Identified infractions*
OTH 1	2022-030	2022/07 2022/07	1) 1 Trip without a dolphin safety panel 2) 1 Trip without a required high intensity floodlight