

AGREEMENT ON THE INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

40TH MEETING OF THE PARTIES

La Jolla, California (USA)
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REPORT ON THE INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

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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), 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 created 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 consideration the interrelationship among species in the ecosystem.

As of 1 June 2019, 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, the IATTC provides Secretariat support for implementation of the Agreement, including coordination of the On-Board Observer Program and the [Tuna Tracking and Verification System](#).

2. THE ON-BOARD OBSERVER PROGRAM

The IATTC observer program, along with 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) comprise the AIDCP On-Board Observer Program. 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 Convention Areas of both organizations.

2.1. Observer coverage

As required by the AIDCP, in 2018 observers were placed aboard 100% of trips by purse-seine vessels of carrying capacity greater than 363 metric tons (Class 6) in the Agreement Area, with only one exception¹.

Consistent with the provisions of the AIDCP, national observer programs covered a percentage of the trips made by the various fleets. In 2018, the Ecuadorian national program had 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 had a goal of placing observers aboard 50% of the trips by their respective fleets.

The IATTC program covered the remainder of the trips by vessels of these seven fleets, plus 100% of the trips by vessels of other fleets, except for the one noted above, which represented a total of 60% of all trips.

During 2018, AIDCP observers departed on 809 fishing trips made in the Agreement Area by vessels operating under the flags of Colombia, Ecuador, El Salvador, European Union (Spain), Mexico, Nicaragua, Panama, Peru, the United States, and Venezuela (Table 1). Of these, 9 trips were by vessels of less than 363 tons capacity required to carry observers as required by IATTC Resolution [C-12-08](#), and 15 were Class-6 vessels monitored by WCPFC cross-endorsed observers.

2.2. Observer training

The IATTC staff conducted an observer training course from 13 July to 9 August 2018 in Manta, Ecuador, for 17 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, during 12-29 November 2018, with 10 observers from the IATTC program and 5 observers from TUNACONS.

In addition, the staffs of the IATTC and WCPFC conducted a training course for 14 WCPFC observers in Honiara, Solomon Islands, from 28 May to 2 June 2018, with financial support from the WCPFC.

¹ At the end of 2018, one Class-6 vessel, not yet included in the IATTC Regional Vessel Register (RVR), departed from a port in the eastern Pacific without an AIDCP observer. It was included in the RVR in 2019. The flag authority of the vessel provided documentation indicating that, while the vessel did not make any sets in the Agreement Area in 2018, it did so after its inclusion in the RVR in 2019, but still without an AIDCP observer aboard, which means that there is no documented evidence by such an observer of the nature and scope of its activities in the Agreement Area during the trip.

3. DOLPHIN MORTALITY

3.1. Dolphin Mortality Limits (DMLs)

3.1.1. 2018 DMLs

The overall dolphin mortality limit (DML) for the international fleet in 2018 was 5,000 animals, and the unreserved portion of 4,900 was divided among 103 qualified vessels that requested DMLs. The average individual-vessel DML (ADML), based on 103 DML requests, was 47. One vessel renounced its DML. Additionally, two 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 they were not utilized. Five vessels lost their DML due to not utilizing them prior to 1 April. No vessels were granted a second-semester DML. Two vessels were assigned DMLs from the Reserve DML Allocation (RDA) managed at the discretion of the Director. No vessel exceeded its DML in 2018.

The distribution of dolphin mortalities in the fishery is shown in Figure 1.

3.1.2. 2019 DMLs

The Parties requested 107 DMLs for 2019 from the unreserved portion (4,900) of the overall fleet mortality limit. As of 20 August, the utilization of these DMLs is as follows:

DML (Limit per vessel)	Assigned	Utilized by April 1	Re- nounced	Lost due to no utilization	Exempt due to <i>force majeure</i>
Full year (45)	107	92	1	2	12
Second semester	1	-	-	-	-
RDA	3	-	-	-	-

3.2. Estimates of the mortality of dolphins in 2018 due to fishing

The estimate of the mortality of dolphins in the fishery in 2018 is 819 animals (Table 2), compared to 683 mortalities recorded in 2017. The mortalities for 1979-2018, 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 1993-2018 are sums of the observed mortalities recorded by the IATTC and national programs, although estimates for 2001-2003 had to be adjusted for unobserved trips.

The mortalities of the principal dolphin species affected by the fishery have declined since the early 1990s (Figures 2-3). 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 9,774 in 2018, compared to 8,863 in 2017, and this type of set accounted for 38% of the total number of sets made in 2018, compared to 35% in 2017. The average mortality per set was 0.084 dolphins in 2018, compared to 0.077 dolphins in 2017. 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 31% in 2018, as compared to 2017. The percentage of the catch of yellowfin taken in dolphin sets was 67% of the total catch in 2018, compared to 58% in 2017, and the average catch of yellowfin per dolphin set was 14.7 metric tons (t) in 2018, compared to 12.4 t in 2017. The mortality of dolphins per metric ton of yellowfin caught was 0.0057 in 2018, compared to 0.0062 in 2017.

The 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 2018, 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 2001 (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 1998-2018; 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 on at-sea reporting](#), which makes the vessel personnel responsible for transmitting these reports. During 2018, the reporting rate averaged 99.8% (Table 6).

Since 1 January 2001, the Secretariat has been reporting weekly to the Parties 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. INTERNATIONAL REVIEW PANEL

The International Review Panel (IRP) follows a general procedure for reporting to the governments concerned non-compliance by 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. A number 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 in San Diego, California on 16 August 2018, and on 22 October 2018 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.

5. 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 also 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.

All trips by vessels fishing in the Agreement Area that began in 2018 with an IDCP observer aboard were issued TTFs.

6. AMENDMENTS AND RESOLUTIONS AFFECTING THE OPERATION OF THE IDCP

During their 37th meeting in 2018, the Parties adopted Resolution A-18-01 on Vessel Assessment and Financing, replacing A-13-01. This updated resolution deleted provisions that were no longer relevant and adjusted the drafting of others for the sake of completeness and clarity, but did not affect the substantive rules and procedures concerning vessel assessments, in particular regarding the amount of the contributions to be made.

At their 38th meeting in 2018, the Parties adopted Resolutions A-18-02 and A-18-03, both on observer safety at sea. Through Resolution A-18-02, the Parties authorized the purchase, and mandated the use, of (1) independent two-way satellite communication devices, and (2) waterproof personal life-saving beacons, to increase the safety of observers in the IATTC and national observer programs that comprise the AIDCP On-board Observer Program. The Parties agreed to cover future costs of maintenance, service, and replacement of these devices from the AIDCP annual budget. Resolution A-18-03 establishes procedures and other directions applicable to observer health and safety, as well as the implementation of paragraph 6(f) of Annex II of the AIDCP regarding the responsibilities of Parties to ensure that the captains, crew and owners of vessels do not interfere in the work of observers. The Resolution addresses circumstances of serious illness or death of an observer, instances where an observer goes missing or is presumed fallen overboard, and processes to be followed where there are grounds to believe that an observer has been assaulted, intimidated, threatened, or harassed.

At their 39th meeting in 2019, the Parties adopted Resolution A-19-01, which distributes 10% of the AIDCP surplus (US\$ 24,705 as of 31 May 2018) equally among the national observer programs, to fund the purchase of computer equipment in support of the work of the observers and data processing.

7. OTHER FUNCTIONS PERFORMED BY THE SECRETARIAT

7.1. Dolphin safety panel alignments

During 2018, the IATTC staff conducted five alignments of dolphin-safety panels (DSP) and inspections of dolphin rescue gear aboard purse-seine vessels.

7.2. 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 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 2018, two training seminars were held, which were attended by 56 fishermen.

Date	Program	Location
28-Sep	IATTC	Manta, Ecuador
13-Dec	PNOV (Venezuelan National Program)	Panama, Republic of Panama

7.3. Statements of Participation

Statements of Participation are 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 2018, statements of the first type were issued for 95 fishing trips by vessels of Ecuador, El Salvador, the European Union, Nicaragua, Panama, United States, and Venezuela.

8. RESEARCH

8.1. 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 2017 and 2018. For floating-object sets, the effort increased in 2018 to the south and west of the Galapagos Islands (Figure 4). For both unassociated and dolphin sets, more sets in the far west of the Agreement Area were reported in 2018 than in 2017 (Figure 5).

8.2. Dolphin population studies

A Workshop on Monitoring Dolphin Population Status in the Eastern Tropical Pacific Ocean, funded by the European Union and the Pacific Alliance for Sustainable Tuna (PAST), was held in La Jolla on 18-20 October 2016. The report of the workshop, edited by Kelli Johnson, André Punt, and Cleridy Lennert-Cody, which provided recommendations for future developments in survey methodology, was published as [IATTC Special Report No. 22](#). Also, three of the background documents for the workshop have been published: “Review of Contemporary Cetacean Stock Assessment Models”, by André Punt, in the *Journal of Cetacean Research and Management* (17: 35–56, 2017; [Punt 2017](#)); “Review of Potential Line-Transsect Methodologies for Estimating Abundance of Dolphin Stocks in the Eastern Tropical Pacific”, by Cleridy Lennert-Cody and co-authors, in the *Journal of Cetacean Research and Management* (19: 9–21, 2018; [Lennert-Cody et al. 2018](#)); and “Data Available for Assessing Dolphin Population Status in the Eastern Tropical Pacific Ocean”, by Michael Scott and co-authors, as [IATTC Special Report No. 23](#).

8.3. Dolphin abundance survey

To fill the gap in scientific knowledge about dolphin stock status in the eastern tropical Pacific Ocean (ETP) resulting from the hiatus since 2006 in marine mammal surveys conducted by the U.S. National Marine Fisheries Service (NMFS), and in view of the problematic nature of monitoring stock status from fishery-dependent data², 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, has undertaken an important project to survey the dolphin populations in the ETP. Since updated 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), 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. The current project, presented in July 2019 ([MOP-39-01 Addendum 1](#)), builds on the IATTC workshop in October 2016 (Section 8.2) and on the survey designs presented in August 2018 ([MOP-37-02](#)).

On 16 July 2019, Dr. Cornelia Oedekoven of CREEM (the project chief scientist), and staff of the IATTC, PAST, and the Instituto Nacional de la Pesca (INAPESCA) of Mexico conducted a sea trial, funded by the government of Mexico and PAST, from Mazatlán, Mexico, aboard the INAPESCA research vessel *Jorge Carranza*. Several tests were conducted of the suitability of the vessel for a dolphin survey, including: 1)

² <https://www.sciencedirect.com/science/article/pii/S0165783615301028>

maintaining the survey speed of 10 knots without any vibration of the ship's hull, and 2) rapid speed and direction changes to simulate following a dolphin herd. The tests were completed successfully, and it was concluded that the *Jorge Carranza* is well-suited for the proposed survey, with some modifications to the flying bridge to mount 25x binoculars and other equipment for use by the marine mammal observers when searching for dolphins. In addition, the use of a SeaHawk drone was tested, launched from and landed on a special platform constructed on the stern of the vessel. Several tests of drone capabilities were conducted: 1) taking off and landing aboard the vessel when underway at the survey speed (10 knots), 2) flying a zig-zag pattern more than 5 km ahead of the vessel, and 3) transmitting good-quality video to the ship in real time. All tests were completed successfully, and video recorded by the drone was viewed in real-time in the ship's conference room by all participants. With the default camera set-up, dolphin herds likely can be seen, and individuals counted and identified to species.

In November 2019, with additional funding provided by the government of Mexico and PAST, a 14-day trial survey will be conducted aboard the *Jorge Carranza*. The primary purpose of this trial is to evaluate the suitability of the drone protocol for the planned main survey, and to evaluate the flying bridge modifications that are currently in progress. Drs. Oedekoven, Stephen Buckland, and Laura Marshall, all of CREEM, have already completed a detailed survey protocol and cruise instructions for the trial survey. The protocol involves continuous operation of a drone ahead of the vessel during all daylight hours while marine mammal observers are on duty. Evaluation of the imagery recorded and transmitted in real time by the drone during this trial is essential because this component will provide critical data for (a) evaluating the probability of detecting dolphin herds on the ship's trackline, a critical component of the survey methodology, and (b) calibrating the observers' estimates of dolphin herd size. Data collected by the drones during the main survey will be used to evaluate whether the probability of detection on the trackline is close to the assumed value of 1.0 or biased, as suggested in 2015 in a publication by Dr. Jay Barlow³.

The survey coordinator, Mr. Juan Carlos Salinas, IATTC Consultant, who is overseeing the modifications to the *Jorge Carranza* in consultation with Dr. Oedekoven, was a senior marine mammal observer on previous NMFS ETP surveys. Also, several marine mammal observers with experience on previous NMFS dolphin surveys have expressed interest in participating in this trial survey, and six of them will be confirmed shortly. The experience brought to the project by these observers is important because the new survey protocol generally follows that developed previously by the NMFS, but modified to accommodate a drone component and the use of only one survey vessel (see [MOP-39-01 Addendum 1](#) for details). The IATTC has a contract with Gtt NetCorp to provide three SeaHawk AR Helicopter drone systems for the trial survey, each including a SeaHawk drone, cameras, GPS equipment and rapid-charging battery packs, and also four pilots and two engineers to operate the drones during the trial survey, and repair them if necessary.

Following completion of the trial survey, Drs. Oedekoven and Buckland and other CREEM scientists will begin analysis of the resulting data to evaluate whether the current drone survey protocol addresses the objectives of the single-vessel survey for the northeastern offshore spotted and the eastern spinner dolphins ([MOP-39-01 Addendum 1](#)). If the determination, expected by January 2020, is that a main survey with a single vessel and a drone component is viable, preparations would begin for a main survey during July-December 2020.

Although new funding for the main survey has been provided by the government of Mexico and PAST, it is hoped that, given the magnitude and importance of the project, individual AIDCP Parties will provide financial support, either directly (including through collaboration in fundraising) or through the AIDCP. Also, since the survey area includes areas under national jurisdiction, it is important that the affected coastal Parties commit to issuing any research permits and documents required for the survey to operate in their waters.

³ <https://onlinelibrary.wiley.com/doi/10.1111/mms.12205>

8.4. Climate and the tuna-dolphin bond

Caitlynn Birch, of the University of San Diego, and Michael Scott, of the IATTC staff, are currently studying how environmental change – seasonal, El Niño/La Niña, and long-term climate trends – affects the distribution and prevalence of the tuna-dolphin bond. Their results show that climate change is causing the oceanographic conditions that promote the tuna-dolphin association, and particularly the tuna-spinner dolphin association, to expand. The number of sets on pure herds of spinner dolphins has increased over time, the areas where these sets occur have expanded, and the relative proportion of spinner dolphin mortalities has increased.

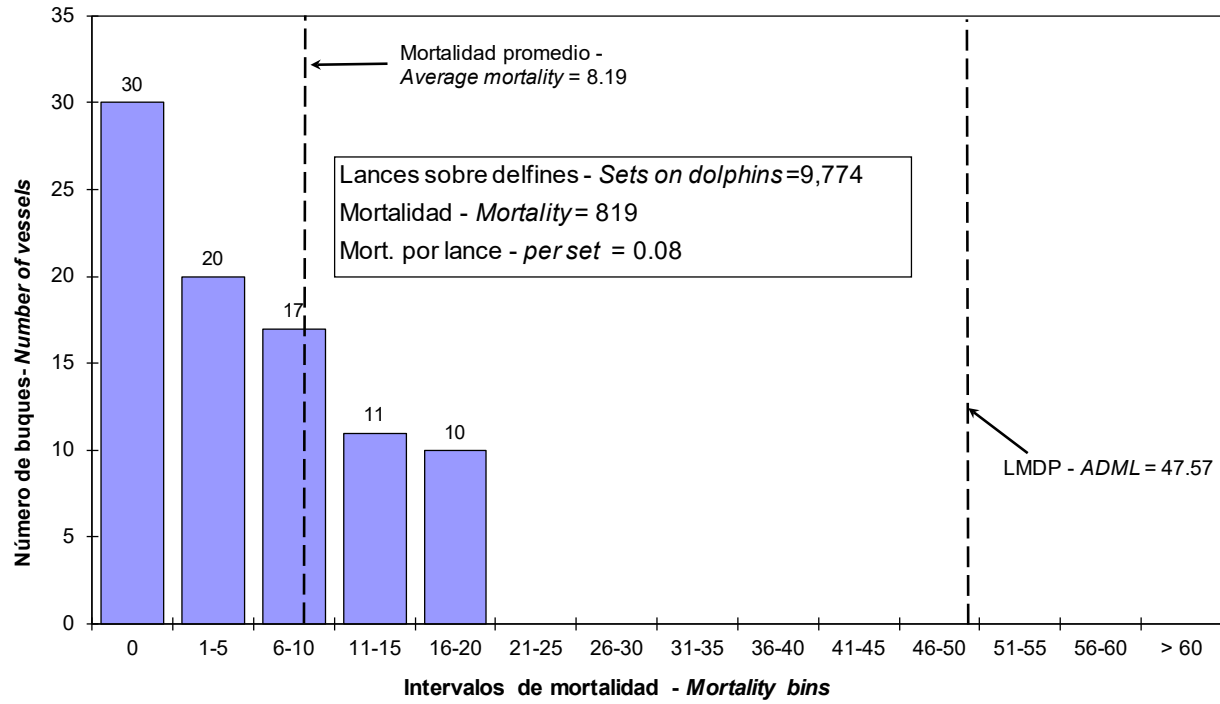


FIGURE 1. Distribution of dolphin mortality caused by vessels with DMLs during 2018.

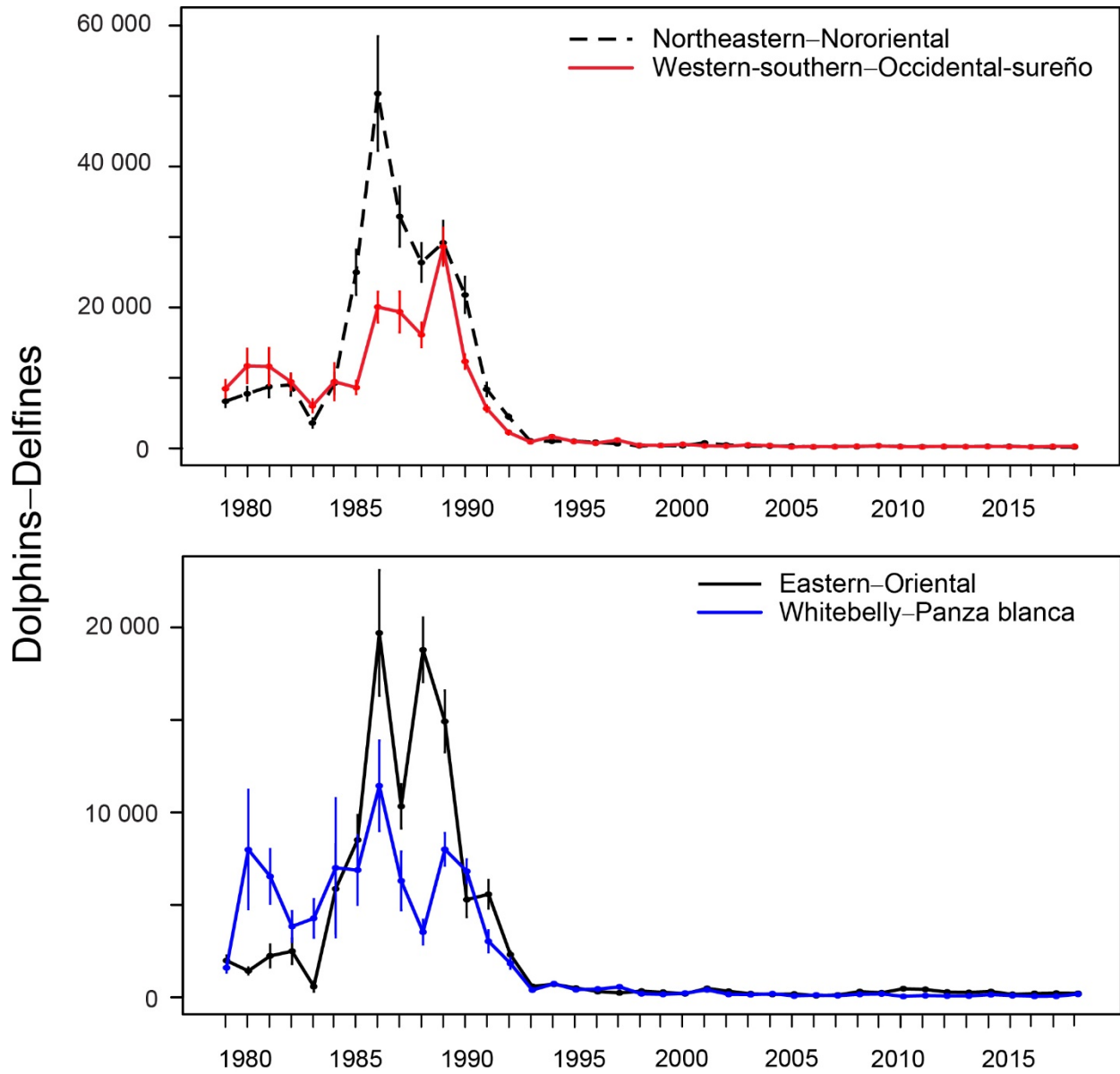


FIGURE 2. Estimated mortalities for the stocks of spotted (upper panel) and spinner (lower panel) dolphins in the Agreement Area, 1979-2018. Each vertical line represents one positive and one negative standard error.

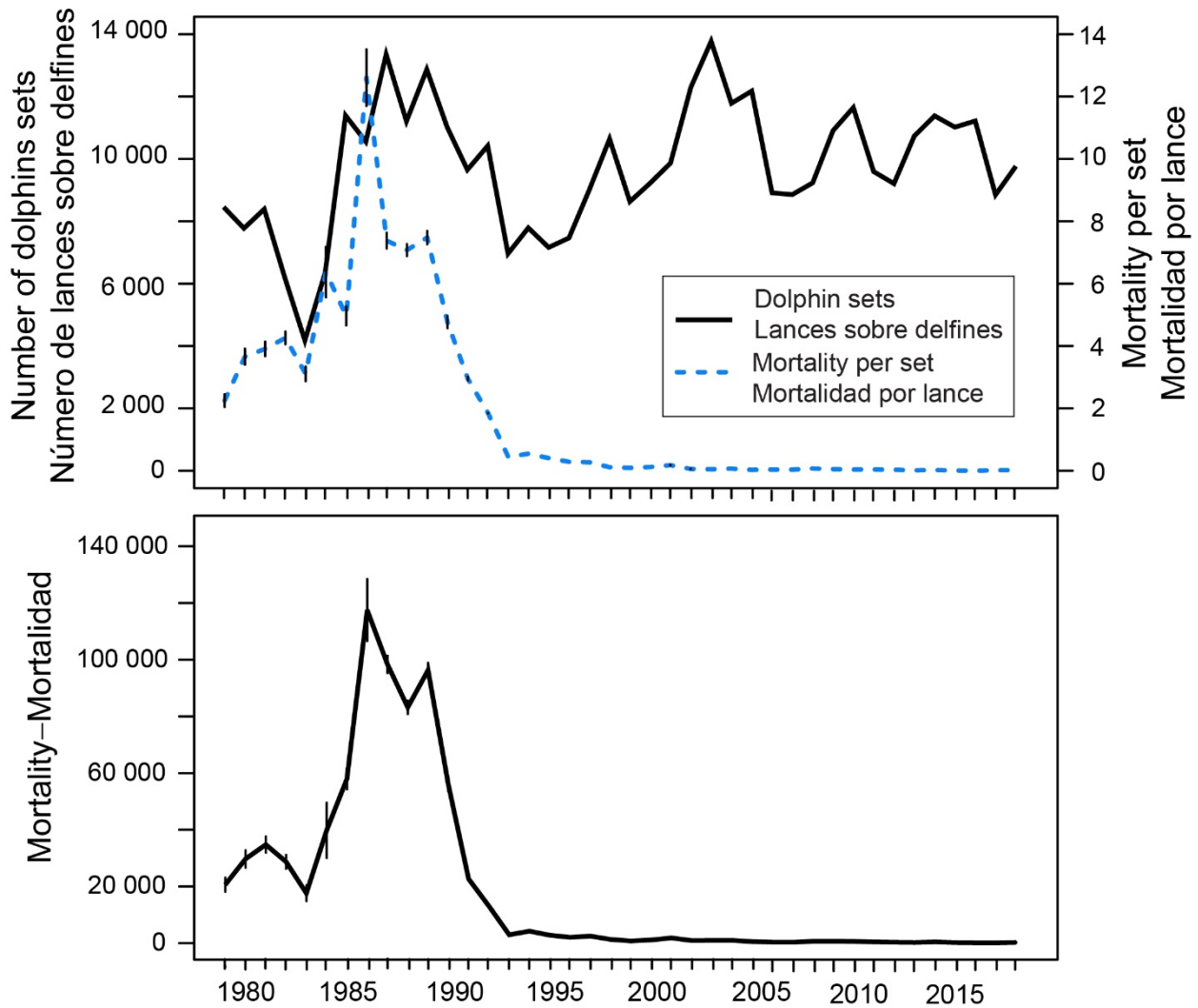


FIGURE 3. Total number of dolphin sets and average mortality per set (upper panel) and estimated total mortality (lower panel) for all dolphins in the Agreement Area, 1979-2018. Each vertical line represents one positive and one negative standard error.

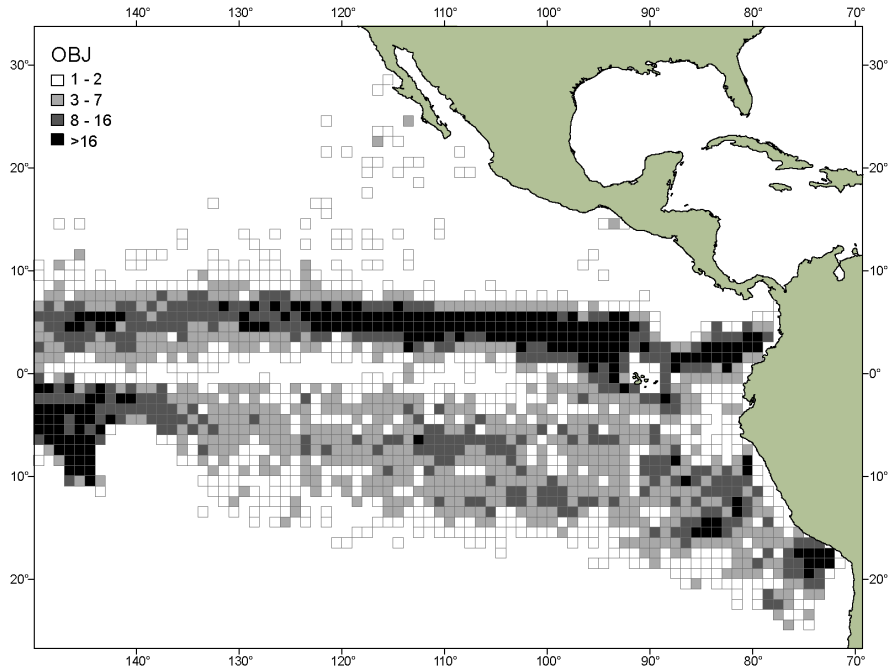


FIGURE 4a. Spatial distribution of sets on tuna associated with floating objects in the Agreement Area, 2017.

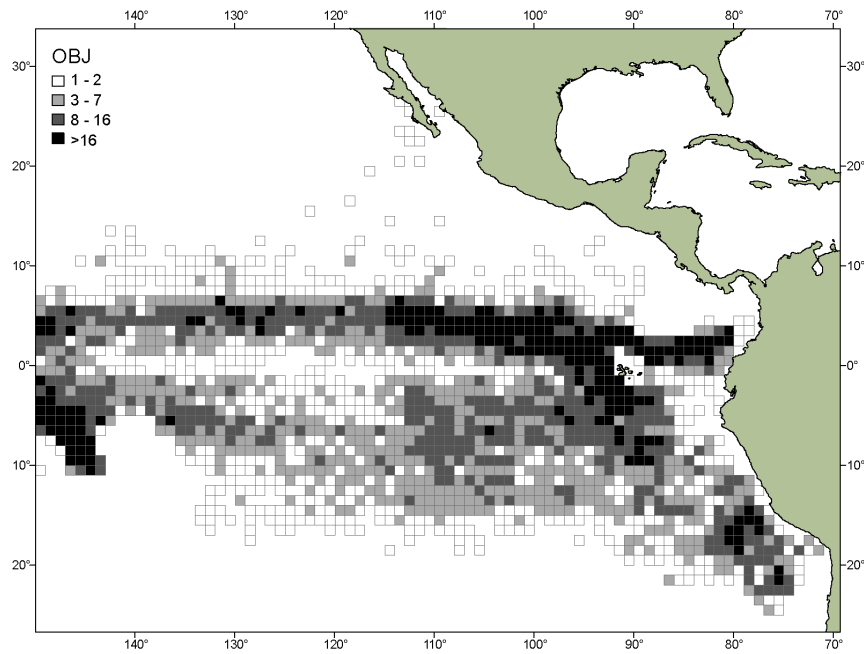


FIGURE 4b. Spatial distribution of sets on tuna associated with floating objects in the Agreement Area, 2018.

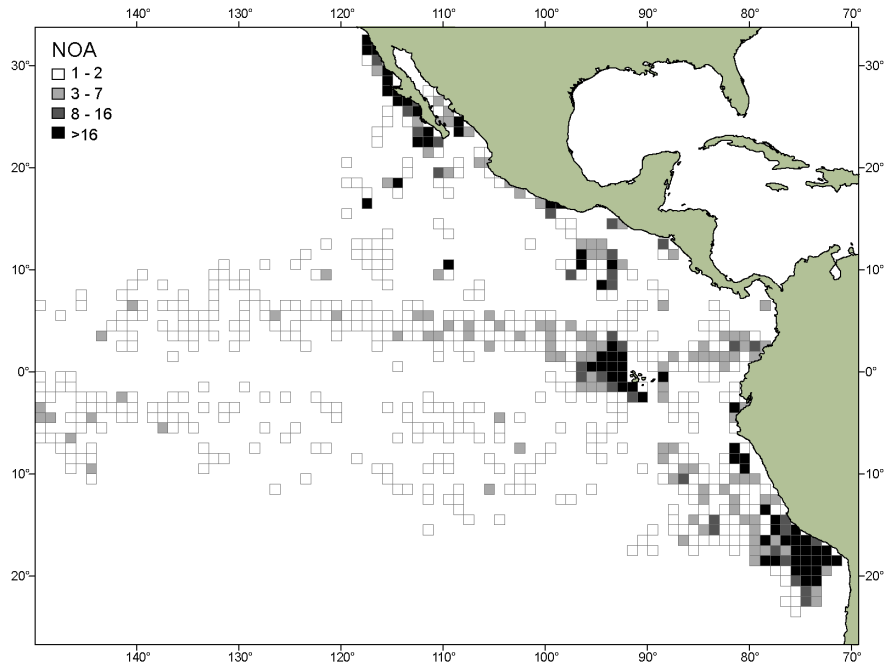


FIGURE 5a. Spatial distribution of sets on unassociated schools of tunas in the Agreement Area, 2017.

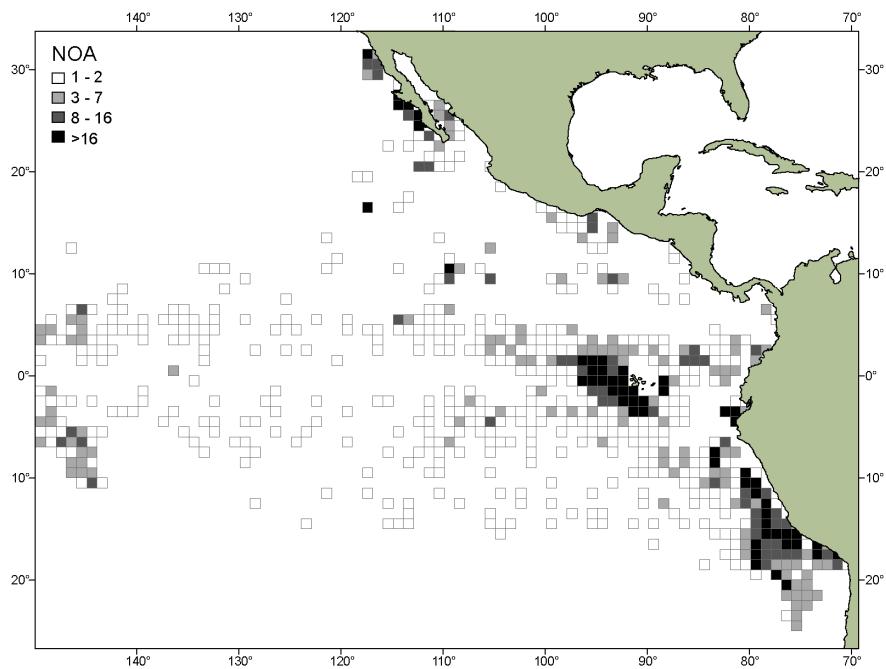


FIGURE 5b. Spatial distribution of sets on unassociated schools of tunas in the Agreement Area, 2018.

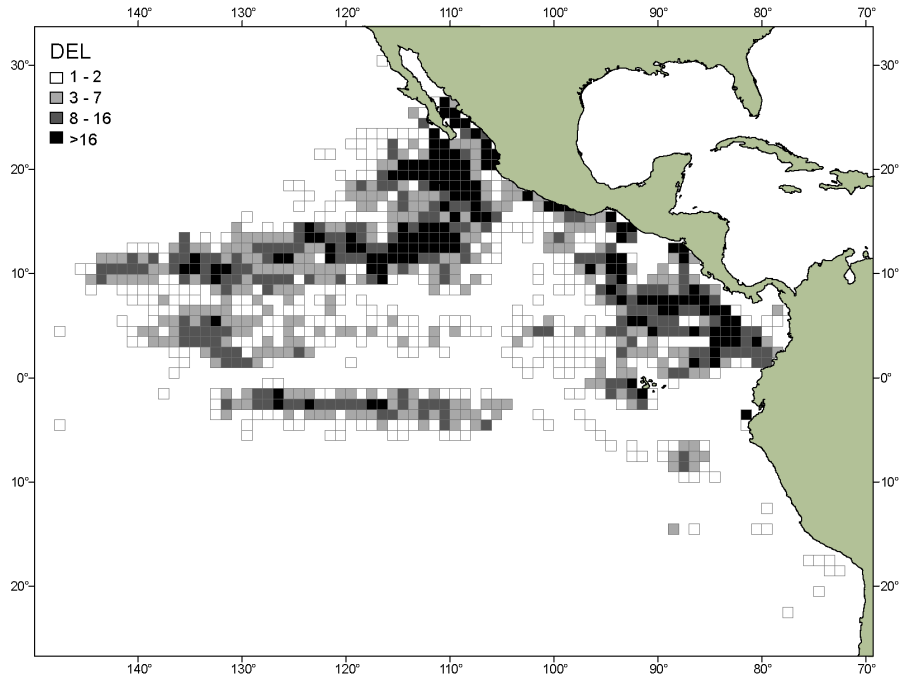


FIGURE 6a. Spatial distribution of sets on tuna associated with dolphins in the Agreement Area, 2017.

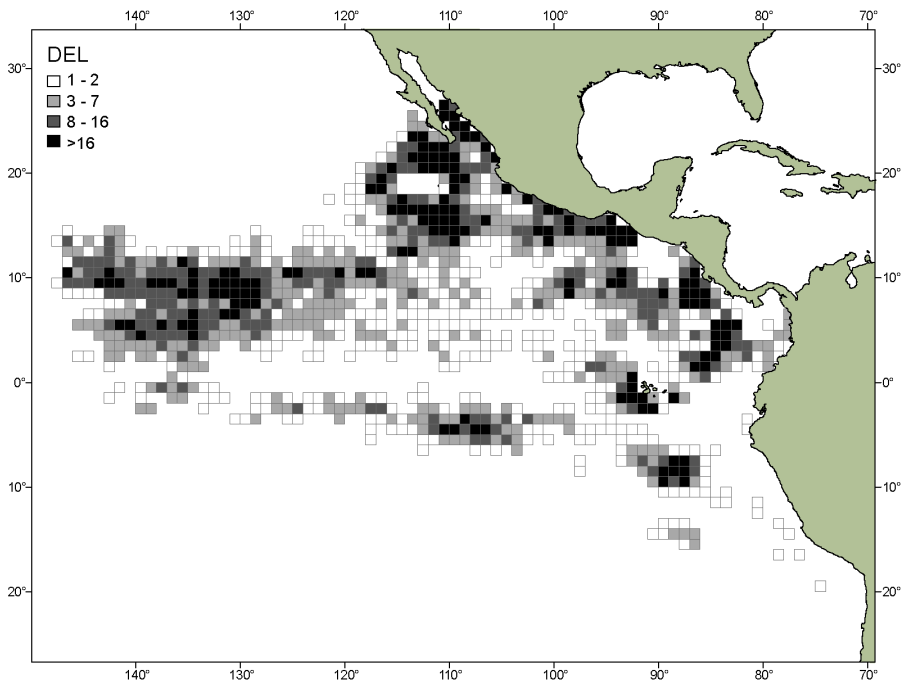


FIGURE 6b. Spatial distribution of sets on tuna associated with dolphins in the Agreement Area, 2018.

TABLE 1. Coverage of vessels by the On-Board Observer Program of trips initiated during 2018 with activity in the Agreement Area.

Pabellón - Flag		Clase 6 – Class-6 por/by prog.			
		Viajes/Trips	Nac./Nat	CIAT/IATTC	% obs.
Colombia	COL	45	26	19	100
Ecuador	ECU	347	114	233	100
El Salvador	SLV	13	1 ¹	12	100
EU–UE (España – Spain)	ESP	10	5	5	100
México	MEX	200	103	97	100
Nicaragua	NIC	21	9	12	100
Panamá	PAN	74	34	40	100
Perú	PER	13	-	13	100
United States	USA	38	14 ¹	23	99
Venezuela	VEN	40	19	21	100
Subtotal		801	325	475	99

Otras Clases – Other Class por/by prog².						
Pabellón – Flag / Clase - Class						
Ecuador	ECU	3	2	-	2	-
Ecuador	ECU	4	5	1	4	-
Ecuador	ECU	5	2	-	2	-
All classes – Todas las clases						
Total		810	326	491	-	-

¹ Sampled by cross-endorsed observers of the WCPFC

² The AIDCP requires 100% coverage only on Class-6 vessels

TABLE 2. Estimates of mortalities of dolphins in 2018, population abundance, and relative mortality, by stock.

Species and stock	Mortality	Population abundance	Relative mortality (%)
Offshore spotted dolphin—Delfín manchado de altamar ¹			
Northeastern—Nororiental	96	911,177	0.01
Western/southern—Occidental y sureño	197	911,830	0.02
Spinner dolphin—Delfín tornillo ¹			
Eastern—Oriental	252	790,613	0.03
Whitebelly—Panza blanca	205	711,883	0.03
Common dolphin—Delfín común ²			
Northern—Norteño	41	449,462	0.01
Central	1	577,048	<0.01
Southern—Sureño	18	1,525,207	<0.01
Other dolphins—Otros delfines ³	9		
Total	819		

¹ Logistic model for 1986-2006 (IATTC SAB-07-05);

² Weighted averages for 1998-2003 (IATTC Special Report 14: Appendix 5)

³ “Other dolphins” includes the following species and stocks, whose observed mortalities were as follows: coastal spotted dolphin (*Stenella attenuata graffmani*) 3, Central American spinner dolphin (*Stenella longirostris centroamericana*) 3, bottlenose dolphin (*Tursiops truncatus*) 2, and unidentified dolphins, 1.

TABLE 3. Annual estimates of dolphin mortality, by species and stock since 1979.

	Offshore spotted ¹		Spinner		Common			Others	Total
	Northeast- ern	Western- southern	Eastern	White belly	Northern	Central	Southern		
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

¹ Estimates for offshore spotted dolphins include mortalities of coastal spotted dolphins.

TABLE 4. Standard errors of annual estimates of dolphin species and stock mortality for 1979-1994, and 2001-2003. There are no standard errors for 1995-2000 and after 2004, because the coverage was at or nearly at 100% during those years.

	Offshore spotted		Spinner		Common			Other
	North-east- ern	Western- southern	Eastern	Whitebelly	Northern	Central	Southern	
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.

	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 back-down
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

TABLE 6. Weekly reports of dolphin mortality received, 2018.

	Prog.	Req.	Rec.	%
COL	IATTC	189	185	97
	National	279	279	100
ECU	IATTC	1,594	1,594	100
	National	919	917	99
EU- UE	IATTC	43	43	100
	National	41	41	100
MEX	IATTC	718	716	99
	National	943	943	100
NIC	IATTC	80	80	100
	National	60	60	100
PAN	IATTC	270	270	100
	National	234	234	100
PER	IATTC	41	41	100
SLV	IATTC	100	100	100
	National	3	3	100
USA	IATTC	59	59	100
	National	193	189	97
VEN	IATTC	192	192	100
	National	184	181	98
Total		6,142	6,127	99.8

TABLE 7. Preliminary reports of the mortalities of dolphins in 2019, to 1 September.

Species and stock	Total mortality	Limit	Used (%)
Offshore spotted dolphin – Delfín manchado de altamar			
Northeastern--Nororiental	72	793	9.1
Western-southern--Occidental-sureño	153	881	17.4
Spinner dolphin – Delfín tornillo			
Eastern—Oriental	197	655	30.1
Whitebelly--Panza blanca	98	666	14.7
Common dolphin – Delfín común			
Northern—Norteño	20	562	3.6
Central	8	207	3.9
Southern—Sureño	2	1,845	0.1
Others and unidentified--Otros y no identificados	29		
Total	569	5,000	11.4

TABLE 8. Summary of possible infractions identified by the International Review Panel at its 63rd and 64th meetings, August and October 2018.

INFRACCIONES MAYORES / MAJOR INFRACTIONS:	
Viaje sin observador Trips without an observer	0
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	4
Viajes sin paño de protección de delfines Trips without a dolphin safety panel	0
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	2
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	6
OTRAS INFRACCIONES / OTHER INFRACTIONS:	
Viajes sin balsa Trips without a required raft	2
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	1
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	6
Total	9
Casos de interferencia al observador Cases of observer interference	3
Viajes revisados en estas reuniones Trips reviewed in these meetings	893
Lances sobre delfines revisados en estas reuniones Dolphin sets reviewed in these meetings	9,704
Lances accidentales revisados en estas reuniones Accidental sets reviewed in these meetings	1

TABLE 9. Responses for six types of possible infractions identified by the International Review Panel at its 63rd and 64th meetings.

	No. of cases	No response	Responses						Total
			Under investigation ¹	No infraction	Infraction: no sanction	Infraction: warning	Infraction: sanction ²		
HOSTIGAMIENTO AL OBSERVADOR – OBSERVER HARASSMENT									
COL	1	0	-	0	1	0	0	0	1 (100%)
PAN	1	0	-	0	1	0	0	0	1 (100%)
VEN	1	0	-	0	1	0	0	0	1 (100%)
Total:	3	0	-	0	3	0	0	0	3 (100%)
USO DE EXPLOSIVOS – USE OF EXPLOSIVES									
VEN	2	0	-	0	0	0	0	2	2 (100%)
Total:	2	0	-	0	0	0	0	2	2 (100%)
LANCES NOCTURNOS– NIGHT SETS									
PESCAR SIN OBSERVADOR – FISHING WITHOUT AN OBSERVER									
PESCAR SOBRE DELFINES SIN LMD – FISHING ON DOLPHINS WITHOUT A DML									
LANCES SOBRE DELFINES DESPUES DE ALCANZAR EL LMD-- SETS ON DOLPHINS AFTER REACHING DML									
<i>Ningún caso identificado durante el periodo de este informe No identified cases during this report period</i>									

Appendix A.

POSSIBLE INFRACTIONS IDENTIFIED BY THE IRP

Brief descriptions of government actions taken, as reported to the Secretariat by August 20, 2019, are included. If no action is listed for a possible infraction, the Secretariat has not received a response from the government.

Abbreviations: DSP = Dolphin Safety Panel

COLOMBIA			
<i>Vessel</i>	<i>IRP recno</i>	<i>Review date</i>	<i>Identified infractions</i>
COL 1	2017-765	2018/08	1) 1 Trip without a required raft Action taken: 1) The vessel obtained the required equipment during the fishing trip in question, so the Fisheries Authority determined that no infraction occurred.
COL 2	2018-390	2018/10	1) 1 Case of observer interference Action taken: 1) After investigating, the government decided that no infraction occurred.
ECUADOR			
<i>Vessel</i>	<i>IRP recno</i>	<i>Review date</i>	<i>Identified infractions</i>
ECU 1	2017-916	2018/08	1) 1 Trip with captain not on the AIDCP list
	2018-140	2018/08	1) 1 Trip with captain not on the AIDCP list
	2018-228	2018/08	1) 1 Trip with captain not on the AIDCP list
ECU 2	2018-016	2018/08	1) 1 Trip with captain not on the AIDCP list
PANAMA			
<i>Vessel</i>	<i>IRP recno</i>	<i>Review date</i>	<i>Identified infractions</i>
PAN 1	2018-492	2018/10	1) 1 Trip without a required high intensity floodlight
PAN 2	2017-935	2018/08	1) 1 Trip with dolphin sets before the DML notification
PAN 3	2017-825	2018/08	1) 1 Case of observer interference Action taken: 1) After investigating, the government did not find enough elements to follow an administrative procedure.
VENEZUELA			
<i>Vessel</i>	<i>IRP recno</i>	<i>Review date</i>	<i>Identified infractions</i>
VEN 1	2017-929	2018/08	1) 1 Trip with dolphin sets before the DML notification Action taken: 1) After investigating, the government decided that no infraction occurred.
VEN 2	2017-945	2018/08	1) 1 Trip with dolphin sets before the DML notification Action taken: 1) After investigating, the government decided that no infraction occurred.
VEN 3	2017-930	2018/08	1) 1 Trip with dolphin sets before the DML notification Action taken: 1) After investigating, the government decided that no infraction occurred.
VEN 4	2017-840	2018/08	1) 1 Trip with dolphin sets before the DML notification Action taken: 1) After investigating, the government decided that no infraction occurred.
VEN 5	2018-055	2018/08	1) 2 Sets or chases with use of explosives Action taken: 1) The fishing captain will be suspended from the AIDCP Captain List for three months.
VEN 6	2017-848	2018/08	1) 1 Trip with dolphin sets before the DML notification Action taken: 1) After investigating, the government decided that no infraction occurred.
VEN 7	2018-354	2018/08	1) 1 Case of observer interference
		2018/08	2) 1 Trip without a required raft Action taken: 1) After investigating, the government did not find enough elements to follow an administrative procedure.