

MEMORANDUM OF UNDERSTANDING

between:

ATÚN SOSTENIBLE

and

THE INTER-AMERICAN TROPICAL TUNA
COMMISSION

for

IN-KIND AND FINANCIAL SUPPORT TO SUPPORT
THE CONTINUATION OF A SCIENTIFIC
EXPERIMENT TO EVALUATE DOLPHIN COW-CALF
SEPARATION DURING PURSE SEINE FISHING
OPERATIONS IN THE EASTERN TROPICAL PACIFIC
OCEAN
(PHASE 3)

This Memorandum of Understanding (MOU) between the Inter-American Tropical Tuna Commission (IATTC) and Atún Sostenible, hereinafter referred to as the "Parties", outlines the commitment of Atún Sostenible to provide in-kind and financial support for research on dolphin cow-calf separation during chasing, encirclement and backdown in purse seine fisheries in the Eastern Tropical Pacific Ocean.

Atún Sostenible is a company based in Panama dedicated to fishing tuna in the high seas with a mission to be a leading company in the fishing industry, deliver high quality frozen marine products to fulfill customer's demands. Atún Sostenible is committed to managing resources in a sustainable way, protecting the marine environment and social responsibility.

The Inter-American Tropical Tuna Commission (IATTC) is the intergovernmental Regional Fisheries Management Organization responsible for the conservation and management of tuna and tuna-like species as well as other associated species and ecosystems in the Eastern Pacific Ocean (EPO), pursuant to the 2003 "Antigua Convention". In accordance with the provisions of that Convention, it provides the Secretariat for the 1998 "Agreement on the International Dolphin Conservation Program" which aims at progressively reducing incidental dolphin mortalities in the tuna purse-seine fishery in the Agreement Area to levels approaching zero, through the setting of annual limits, with the goal of eliminating dolphin mortality in this fishery.

I. Purpose and Scope.

1. The purpose of this MOU is to set forth in general terms the scope of work and responsibilities of the Parties associated with a mutual collaboration plan to conduct Phase 3 of an ongoing scientific experiment to evaluate dolphin cow-calf separation during purse seine fishing operations in the Eastern Tropical Pacific Ocean (ETP), hereinafter referred to as the "Joint Research Project".

2. Both Parties, share a common understanding with regard to the relevance and importance of mutual cooperation to obtain scientific data to appropriately assess the level of incidence of separation, if any, between dolphin cow and calf during the chase, the encirclement and the backdown carried out by the tuna purse seine vessels in the ETP.

3. Both Parties recognize that they can work with other institutions, on any similar project, or to obtain collaboration and assistance from other institutions or non-Parties to achieve the objectives of this MOU. For transparency purposes, the policy of the IATTC regarding joint research projects with other organizations is attached as Appendix A; and Atún Sostenible understands that its joint activities with IATTC as described in this MOU will be consistent with this policy.

II. Responsibilities:

1. Both Parties will cooperate to implement the research project as described in Appendix B.

2. Atún Sostenible specifically commits to:

1. Provide IATTC with an in-kind contribution consisting of:
 - one purse seiner or more with helicopter and accommodations for three scientists plus an IATTC observer;
11. Provide IATTC with the funding required to cover the budget described in Appendix B (total of US\$220,000), as follows:
 - a first payment for an amount of US\$110,000 made by the signature of this Memorandum of Understanding;
 - payment of the remainder of US\$110,000, four (4) months after the first payment.

It is understood that any unspent amount will be returned to Atún Sostenible.

111. Respect the needs of IATTC to publish the results of the studies conducted under this Memorandum of Understanding.

3. IATTC specifically commits to:

1. Receive the in-kind contribution of Atún Sostenible, in compliance with all the legal formalities necessary for the conduction of the aforementioned studies; and to collaborate with Atún Sostenible to achieve the objectives of this Memorandum of Understanding; and

11. Assist with technology and expertise transfer as appropriate to effectively deliver the terms and objective of the Memorandum of Understanding.
4. Both Parties agree to share and make available to the public the results of the Joint Research Project.

III. Confidentiality

1. Both Parties recognize that the results of the research and any reports therefrom will be considered for publication.
2. The general policy of the IATTC regarding confidentiality as part of collaborative projects is summarized in Appendix A. Atún Sostenible understands that its joint activities with IATTC will be consistent with this policy.

IV. Enforcement and terms of Agreement

Hold Harmless. Each Party acknowledges that it shall be responsible for any loss, cost, damage, claim or other charge that arises out of or is caused by the actions of that Party or its employees or agents. As between the Parties, no Party shall be liable for any loss, cost, damage, claim or other charge that arises out of or is caused by the actions of any other Party, employees or agents. Joint and several liabilities will not attach to the Parties.

Use of Atún Sostenible and IATTC names: Except as provided in this AGREEMENT, the Parties shall not refer to the other Party's name or to any of its staff or facilities in any manner or through any medium, whether written, oral, or visual for any purpose whatsoever, without the prior written approval of that Party's Contractual Representative.

Relation of the Parties: The Parties, by this Agreement, do not intend to create a partnership, principal/agent, or joint venture, and nothing in this Agreement shall be construed as creating such. This is a non-exclusive agreement.

Effective date: This MOU will be valid for the duration of the study.

BOTH PARTIES, HEREBY affirm their commitment to conduct good faith efforts to complement, enhance, expand and constructively use their available resources and services for the benefit of the scientific community and the general public.

In WITNESS HEREOF the Parties have executed this MEMORANDUM OF UNDERSTANDING on the 26th day of November 2024

On behalf of the IATIC



Arnulfo L. Franco
Director

On behalf of Atún Sostenible



David Simana
Sustainability Director

IATTC policy regarding joint research projects with other organizations

The following guidelines constitute the policy of the IATTC regarding joint research projects and agreements with other organizations:

- I. At the recommendation of the staff and with the approval of the Director, joint research agreements with other organizations may be established.
2. Any joint research agreements established with other organizations shall be limited to research matters within the competence of the IATTC.
3. Prior to the start of any joint research project, the general provisions and schedule for the project will be summarized in an Agreement (AGREEMENT) signed by the Director of the IATTC and a representative of the collaborating organization.
4. Collaborating organizations shall be required to provide monetary compensation to the IATTC for joint research conducted at IATTC facilities.
5. An AGREEMENT shall include, *inter alia*, the following:
 - a. The responsibilities of IATTC staff members are to work jointly, but not exclusively, with the collaborating organization on the research described in the AGREEMENT.
 - b. Since the IATTC is a multinational research organization, all equipment, activities and results of joint research conducted at IATTC facilities will be available to IATTC member countries, and all results of such research may be published and may not be held as confidential.
 - c. The results of joint research conducted at non-IATTC facilities may be treated as confidential, at the discretion of the collaborating organization.
6. Any public announcements concerning any joint research project must be approved in advance by the Director of the IATTC and by the collaborating organization.

Research project
Scientific experiment to evaluate dolphin cow-calf separation during purse-seine fishing operations in the Eastern Tropical Pacific Ocean (Phase 3)

BACKGROUND

With the drastic decrease in dolphin mortality due to entanglement in tuna purse-seine nets during the 1990s, more attention was paid to other possible sources of mortality. Also, some studies have shown that in the 1980s and 1990s there were cases of orphaned nursing calves due to maternal mortality. It has also been suggested that mothers and calves may be separated during chases leading to purse seine sets.

The aim of this project is to use unmanned aerial vehicles (UAVs) to determine: (i) if dolphin mother-calf pairs become separated during chase, encirclement, backdown, and/or post-release “run” from the purse-seine net; and (ii) the rate at which mother-calf separation may be occurring and potentially affecting population growth of dolphins in the Eastern Tropical Pacific (ETP).

The project described in this MOU represents Phase 3 of a scientific experiment which has already undergone two prior phases (Phases 1 and 2) conducted by a team of contracted scientists hired by the IATTC under an [MOU established between the IATTC and the Pacific Alliance for Sustainable Tuna](#) (PAST). This team comprised a consortium of scientists from the University of Alaska Southeast (UAS), USA, and Associação para a Investigação do Meio Marinho (AIMM), Portugal. Phase 1 consisted of a two-segment pilot study which started in May 2023. The first segment of the pilot study occurred from May to July 2023 off the south of Portugal where the team developed UAV protocols by observing common dolphins at their long-term study site. The second segment of the pilot study occurred during August 2023 aboard a Mexican-flagged tuna purse-seiner where the team became familiar with fishery operations, tested and refined the methods, and collected preliminary data. Phase 2 of the study consisted of an initially planned “main study” which was conducted in May-June 2024 aboard a Mexican-flagged tuna purse-seiner. A progress summary report covering Phases 1 and 2 was presented at the 15th Meeting of the IATTC Scientific Advisory Committee ([Document SAC-15 INF-O](#)).

RESEARCH PROPOSAL FOR PHASE 3

During the 9th Meeting of the Scientific Advisory Board of the Agreement on the International Dolphin Conservation Program, held on August 26, 2024, the IATTC scientific staff recommended continuing the work conducted during Phases 1 and 2 by conducting at least one additional

fishing trip (Phase 3). Phase 3 offers numerous benefits to the scientific experiment, including but not limited to increasing the sample size across all fishery phases, expanding the geographical and fleet coverage of the study, and enhancing the ability to monitor calves and mother-calf pairs over longer periods. These improvements in sample size and geographical variability will, in turn, lead to greater precision in estimating the separation coefficient.

A research proposal for Phase 3, including the workplan, deliverables and budget is shown on the Table below.

PROJECT: Scientific Experiment to Evaluate Dolphin Cow-calf Separation during Purse Seine Fishing Operations in the Eastern Tropical Pacific Ocean - Phase III	
Objectives	<ul style="list-style-type: none"> • Continuation of the work conducted during phase I and II of the mother-calf study in the ETP • Increase sample size during all fishery phases • Improve the variance estimator for mother-calf separation • Improve the capacity to follow calves and mother-calf pairs for longer periods of time
Background	<ul style="list-style-type: none"> • Spinner and pantropical spotted dolphins associate with yellowfin tuna in the ETP, leading the tuna purse-seine fishery to take advantage of this association by setting nets on dolphins to catch the tuna beneath them. • Measures to reduce dolphin bycatch have significantly decreased dolphin mortality by over 99% compared to historic levels. • However, dolphin populations have not recovered as predicted, suggesting that cryptic and unobserved sources of mortality may be occurring and preventing population recovery. • For the past two decades it has been postulated that one such source may be mother-calf separations during fishery interactions, leading to calf mortality. • However, some argue that, in mammals, mothers are generally reluctant to leave their young, making such separations unlikely. • There are limited field observations available to either support or refute the hypothesis that mother-calf separation occurs. • The aim of this overall project is to use unmanned aerial vehicles (UAVs) to determine: (i) if mother-calf pairs become separated during chase, encirclement, and/or backdown; and (ii) if/how mother-calf separation may be affecting population growth. • Two phases of this project have already been completed: a two-staged pilot study and the main study. <ul style="list-style-type: none"> - The first stage of the pilot study occurred off the south of Portugal, for the testing and proficiency of the UAV methodology and technology. - The second stage of the pilot study and main study (Phase II) occurred aboard Mexican purse-seiners during August 2023 and May 2024, respectively. • A total of 30 days of data collection and >70 hours of flight time have already occurred off Mexican purse-seiners to collect UAV imagery during all phases of the fishery (chase, encirclement, and backdown).
Relevance for Management	<ul style="list-style-type: none"> • This project will generate a separation coefficient representing the maximum potential for permanent mother-calf separation. • The data collected from the proposed Phase III of the mother-calf project will improve the precision of the separation coefficient estimator by increasing the sample size and expanding the geographic variability of the study.

	<ul style="list-style-type: none"> ● This will improve estimates of how calf mortality resulting from separation could impact the population.
Pros	<ul style="list-style-type: none"> ● Highly professional, multi-lingual team with ample experience aboard ETP purse-seiners. ● Majority of the equipment already purchased during Phase I and II. ● Research protocols already developed. ● Increased sample collection and broadened geographic scope of results.
Cons	<ul style="list-style-type: none"> ● Extension of the end date for the full mother-calf study.
Duration	2025 (1 year)
Workplan (project staging)	<ul style="list-style-type: none"> ● Conduct a third trip aboard an ETP purse-seiner to collect UAV imagery during the chase, encirclement, and backdown (March-April 2025) ● Analyze full set of data (May-September 2025) ● Prepare scientific reports, manuscripts, and presentations (October-December 2025)
External collaborators	<ul style="list-style-type: none"> ● University of Alaska Southeast (UAS) ● AIMM
Deliverables	<ul style="list-style-type: none"> ● Improved estimates of mother-calf separation, by calf age, and a measure of precision on those estimates ● Sensitivity analysis to produce estimates of impact of separated calf mortality on dolphin stocks ● Management recommendations to mitigate mother-calf separation ● Reports to the SAC and to the IATTC ● Publications in peer-reviewed journals ● Presentations at scientific conferences
Budget (US\$)	<p>Phase III: \$220,000 (USD)</p> <p>See table below for an approximated breakdown.</p> <p>Item:</p> <ul style="list-style-type: none"> ● Field personnel for offshore work - 42 days: \$36,000 ● Personnel salary + benefits: \$107,000 ● Equipment and supplies: \$4,000 ● Transport of scientific equipment to the ETP: \$11,000 ● Travel and subsistence allowances: \$19,500 ● Insurance (equipment and personnel): \$3,500 ● Publication costs, open access: \$5,000 ● SAC 2025 (3 people): \$3,000 ● F&A UAS (20%): \$10,000 ● F&A AIMM (15%): \$21,000 <hr/> <p>Estimated Total UAS: \$60,000</p> <p>Estimated Total AIMM: \$160,000</p>