



Inter-American Convention for the Protection and Conservation of Sea Turtles

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IAC Annual Report General Instructions

Annex IV of the Convention text states that each Contracting Party shall submit an Annual Report each year. To complete this Annual Report, Focal Points should consult with appropriate stakeholders involved in sea turtle issues. If you have any questions regarding this Annual Report, please contact the Secretariat *Pro Tempore* at secretario@iacseaturtle.org

The submission deadline for this Annual Report is **June 30th, 2020**.

Part I (General Information)

Please fill out the following tables. Add additional rows if necessary.

a._ Focal Point

Institution	MINISTERIO DE AMBIENTE DE PANAMÁ.
Name	José Julio Casas Maldonado, M.Sc.
Submission Date	JULY 2020

b._ Agency or Institution responsible for preparing this report

Name of Agency or Institution	Ministerio de Ambiente de Panamá
Name of the person preparing this report	Marino Eugenio Abrego.
Address	Altos de Curundu, Edificio 500, Avenida Ascanio Villaláz, Ciudad de Panamá, República de Panamá.
Telephone(s)	+507 232-9618 / +507 6150-2101
E-mail	meabrego@miambiente.gob.pa



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c._ Others who participated in the preparation of this report

Name	Agency or Institution	E-mail
Andrés Hidalgo	Fundación Tortuguías	andresthm@hotmail.com
María Montenegro	Fundación Tortuguías	montenegromedia@hotmail.com
Robert Shahverdians	Tortugas Pedasí	tortugaspedasi@gmail.com
Jacinto Rodríguez M.	Fundación Agua y Tierra	info@fundat.org fundatpanama@gmail.com
Leia González M.	Fundación Agua y Tierra	fundatpanama@gmail.com
Juan Blas	ACOTMAR, UNACHI, Familia Rojas.	juan.blas@unachi.ac.pa
Filomena Pérez	Asociación Conservacionista de Playa Malena.	filomenaperez06@gmail.com
Karen Domínguez	Reserva Biológica Playa La Marinera.	kcdominguez@miambiente.gob.pa
Alexis Pérez	Refugio de Vida Silvestre de Isla Cañas.	aperez@miambiente.gob.pa
Generoso Muñoz	Proyecto de Conservación de Tortugas Marinas de San Roque.	generosomu@hotmail.com
María Cristina Ordóñez Espinosa	Sea Turtle Conservancy, STC.	cristinao@conserveturtles.org crisespino@yahoo.com
Anne Meylan Peter Meylan	Proyecto Ecología y Migración de Tortugas Marinas en Bocas del Toro.	anne.meylan@myfwc.com meylanpa@eckerd.edu
Iván Morales	Reserva Los Panamaes.	ivan@im-km.com
Rodrigo Donadi	Investigador Proyecto Carey Coiba.	rodrigo.donadi@gmail.com



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Juan Obando	Coordinador Playa HISSPS, Changuinola, Bocas del Toro.	obandojuan28@yahoo.com
Ignacio Crespo	Coordinador Playa Armila, Puerto Obaldía, Comarca Guna Yala.	ibedialnatural@hotmail.com



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Part II (Policy and Management)

a._ General description of activities carried out for the protection and conservation of sea turtles

In accordance with Articles IX and XVIII of the text of the Convention, each Party shall establish monitoring programs, policies, and plans for implementation at a national level for the protection and conservation of sea turtles and their habitat.

As a result, the Party shall report on the action plans, management plan, or other types of instruments, describing their location, the species considered and the actions related to sea turtles implemented by governmental, non-governmental, and private institutions.

In addition to the above, please fill out the following tables and describe progress in the comments column.

	YES/NO/ In Progress	Comments
Does your country have a national action plan in accordance with Article XVIII?	Yes	In accordance with Article XVIII, Panama has a National Action Plan for the Protection and Conservation of Sea Turtles in effect, which was approved by Resolution No. DM-0031-2017 (Friday, January 27, 2017). The plan, titled 'National Action Plan for the Conservation of Sea Turtles in the Republic of Panama,' oversees the implementation of protection and conservation measures for sea turtles and their habitats, as stipulated in this Convention or adopted in accordance with it
Does your country have policies and programs at local and regional scales in accordance with Article XVIII	Yes	The National Action Plan for the Protection and Conservation of Sea Turtles is a tool that contributes to strengthening the actions carried out by the Ministry of the Environment in the Republic of Panama. We also follow the IAC Resolution, which are legally binding. Similarly, there is the CPPS Regional



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		Program for the Conservation of Sea Turtles in the Southeast Pacific, which supports planning of national activities and projects
Does your country have monitoring programs in accordance with Article IX?	Yes	In accordance with article IX, through the Directorate of Coasts and Seas of the Ministry of the Environment of Panama, within the national territory and in the maritime zones subject to its sovereignty, effective compliance with the measures for the protection and conservation of sea turtles and their habitats, provided by this Convention. The Investment Project Strengthening Actions for the Protection, Conservation and Sustainable Development of Sea Turtles in Panamanian Pacific and Caribbean Coastal Communities is currently being executed, which supports management in several Panamanian Pacific and Caribbean coastal communities.



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b._ National legislation and international instruments related to sea turtles adopted during the preceding year

Describe any national regulations, international agreements, and other legal instruments related to sea turtles and/or relevant activities that were adopted during the preceding year (April 30th, 2019 – June 30th, 2020). Please provide a literature reference and attach the digital file for the legislation and its corresponding number. The laws adopting the international legislation should be included when they exist.

National Legislation		
Type and name of the legal instrument (No.)	Description (Range of application)	Sanctions(s) Imposed
Executive Decree No. 5 of February 1, 2017, which regulates the direct sanction procedure for environmental violations. Published in Official Digital Gazette No. 28225-A of Thursday, February 23, 2017.	National	This Decree regulates the Direct Penalty procedure for Environmental Violations, and establishes in sanction No. 18, that "the possession or ownership, for commercial and/or consumption purposes, of sea turtle products or by-products (eggs, meat, products made from hawksbills, among others), violating the provisions in force, apply a direct sanction of B/. 2000.00". This decree is in force in all its parts and it emphasizes that the sanction applies to people found in flagrante delicto for an environmental offense and is currently under review
International Instruments		
Treaty, Convention, Agreements, Memorandum of Understanding	Year signed and/or ratified	
There has not been any agreement, treaty, convention, agreement or memorandum of understanding approved in the last period in which this report applies.	Does not apply.	

Note: *If this is the first time a country is submitting this information, please include all pertinent national legislation and international instruments currently in force. For countries that have previously submitted a complete Annual Report, please provide information for any changes that have occurred since the most recent previously submitted Report.*



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c._ Actions for compliance with national and international legislation

c.1 IAC Resolutions

Fill in the following tables for each of the IAC Resolutions listed below. If a Resolution does not apply to your country, please mark the box as “RESOLUTION DOES NOT APPLY”, and if a specific question does not apply, please mark the column “DOES NOT APPLY”. If you need more space to describe these actions, please attach additional pages and note the resolution and question number to which you are responding.

Resolution CIT-COP7-2015-R2: Conservation of the Eastern Pacific Leatherback Turtle (*Dermochelys coriacea*)

ACCORDING TO RESOLUTION CIT-COP7-2015-R2, REPORT WHETHER YOUR COUNTRY:

RESOLUTION DOES NOT APPLY				
IS COMPLIANT WITH THE FOLLOWING:	YES	NO	DESCRIBE ACTION (*)	DOES NOT APPLY
1a) Have you created conservation plans and long-term programs that can reverse the critical situation of the leatherback turtle in the Eastern Pacific?	X		Resolution No. DM-0031-2017 (Friday, January 27, 2017) approves the National Action Plan for Sea Turtle in the Republic of Panama. This Plan has just been approved. Its implementation will contribute to the protection of all the species of sea turtles found in Panama. Within the framework of this Action Plan, a specific strategy must be developed for this particular species, however it has not been possible to have progress with the strategy.	
1b) Are you implementing these conservation plans and monitoring programs?	X		Yes - Published in Gazette No.28237 (Wednesday, March 15, 2017 is Resolution No. DM-0031-2017 (Friday, January 27, 2017) approves the National Action Plan for Sea Turtle in the Republic of Panama. Its implementation will contribute to the protection of all the species of sea turtles found in Panama. Responsibility for its implementation lies with the Ministry of the Environment Department of Coasts and Seas. The Plan is valid for 5 years (2017-2021) and it helps monitoring actions for protection, conservation and sustainable management of sea turtle, carried out in the Republic of Panama	



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2. Have you taken conservation measures to eliminate poaching of leatherback turtles?	X		The campaigns carried out to stop consumption of sea turtle eggs are applicable to all species, except for the Area of Isla Cañas Wildlife Refuge where Resolution CIT-COP6-2013-R1 on Exceptions Under Article IV (3a and b) for the Subsistence Harvest of Eggs for <i>Lepidochelys olivacea</i> in Guatemala and Panama, applies. Exemplary sanctions apply for those who violate the rule and commit crimes against all species of sea turtles.	
3. If your country has Eastern Pacific leatherback turtle nesting beaches: Have you taken conservation measures to protect the nesting sites and their associated habitats?	X		Currently there are community groups and NGOs that to some degree work on protection and conservation projects, Fundación Tortuguías and Asociación Tortuagro in Cambutal, Fundación YauK Galu (Armila/Gunayala) and Fundación Agua y Tierra in Mata Oscura. Efforts are made to ensure that there is coordination and support for these projects.	
4. Has your country adopted fishing techniques that reduce incidental capture and mortality of leatherbacks?	X		Executive Decree No. 82 8 (April 1, 2005) published in Gazette No. 25,272 (April 6, 2015) establishes the use of the Sea Turtle Excluder Device in all trawl net vessels operating in the jurisdictional waters of the Republic of Panama. Also published in Gazette No. 28225-A (Thursday, February 23, 2017), is Executive Decree No. 5, (Wednesday, February 01, 2017), which regulates the Penalty Procedure for environmental sanctions to possession for commercial purposes or consumptions of sea turtle products and/or byproducts (eggs, meat, hawksbill products, among others), violating the provisions in force with a direct penalty of \$2,000. On the other hand, it should be noted that during this period the Aquatic Resources Authority of Panama (ARAP) indicated that it has not been able to carry out training to instruct the personnel in charge of surveillance and control in the vessels of the trawling fishing fleet. However, they organize these events that contribute to strengthening efforts to reduce sea turtle bycatch and mortality.	

(*) Specify actions implemented, the name of the project or relevant document, location, objective(s), institutions responsible, contact, financial or other support (optional), results (both positive and negative), and duration.



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Resolution CIT-COP8-2017-R2: Conservation of the Hawksbill Turtle (*Eretmochelys imbricata*)

ACCORDING TO RESOLUTION CIT-COP8-2017-R2, REPORT WHETHER YOUR COUNTRY:

RESOLUTION DOES NOT APPLY				
IS COMPLIANT WITH THE FOLLOWING:	YES	NO	DESCRIBE ACTION (*)	DOES NOT APPLY
1. Are you strengthening monitoring of the illegal use and trade of hawksbill turtles and their products	X		Control over illegal use and trade of hawksbill turtles and their products is strengthened by the interinstitutional support (MiAMBIENTE, DIJ, Public Ministry, National Police, Environmental, Rural and Tourist Police). In addition, with the creation of the National Sea Turtle Network, community organizations and groups have increased their support through reports to monitor the illegal use and trade of hawksbill turtles and their products. This reports are presented to the corresponding agencies and/or using the citizens reporting line 311.	
2. Are you enforcing pertinent hawksbill legislation?	X		Administrative and criminal proceedings continue to be carried out against those who commercialize sea turtle products and byproducts, including hawksbill turtle. The direct sanction also applies in specific cases, with a fine of B/.2,000.00. Currently this regulation is under review, as increasing penalties has been proposed.	
3. Are activities being carried out to stop the illegal trade of hawksbill products?	X		Within the Project Strengthening Actions for the Protection, Conservation and Sustainable Management of Sea Turtles in the Pacific and Caribbean Coastal Communities of Panama, there is a National Campaign with informative material about the penalties and sanctions for violating the current regulation. Its execution is by the Directorate for the Promotion of Environmental Culture, in coordination with Protected Areas and Biodiversity Directorates, and the Department of Coasts and Seas of the Ministry of the Environment. Actions are also carried out reinforcing control and surveillance to prevent hawksbill turtles trafficking in internal and international ports and airports. With the support of the Metropolitan Directorate of	



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				the Ministry of the Environment, several confiscations have been made, specifically of spurs made of Hawksbill.	
4. Indicate if your country is strengthening the protection of important nesting and foraging habitats by declaring protected areas and regulating anthropogenic activities that adversely impact these habitats	a) Protection of nesting habitats	X		Real estate projects carried out near sea turtle nesting beaches must comply with the regulations that establish recommendations to protect these areas, in the Environmental Impact Assessment that the projects submit for approval by the Ministry of the Environment.	
	b) Protection of feeding habitats	X		The IAC urges the Parties to strengthen the protection of important nesting and feeding habitats through the declaration of protected areas and the control of anthropogenic activities that adversely impact these environments. In this sense, the competent agencies (ARAP and the Ministry of the Environment) make efforts to strengthen surveillance and control, and apply sanctions to violators of current regulations.	

(*) Specify actions implemented, the name of the project or relevant document, location, objective(s), institutions responsible, contact, financial or other support (optional), results (both positive and negative), and duration.



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Resolution CIT-COP7-2015-R3: Resolution on the Conservation of the Loggerhead Sea Turtle (*Caretta caretta*)

ACCORDING TO RESOLUTION CIT-COP7-2015-R3, REPORT WHETHER YOUR COUNTRY:

IS COMPLIANT WITH THE FOLLOWING:	YES	NO	DESCRIBE ACTION (*)	DOES NOT APPLY
1. Has your country created national action plans and/or monitoring programs to promote loggerhead sea turtle conservation?		X	No action plans have been developed to promote the conservation of the loggerhead turtle. There are research programs in the Caribbean by the NGO, Sea Turtle Conservancy. There is also the National Action Plan 2017-2021, which includes the protection and conservation of all sea turtle species of sea turtles found in jurisdictional waters of the Republic of Panama	
2. State if there are plans or recovery programs, or bilateral or regional cooperation.				X
3. Are these action plans or monitoring programs being implemented?				X
4. Is there protection of the species at a state or federal level?	X		Applicable regulations are related to Law 8 (January 4, 2008), which adopts the Inter-American Convention for the Protection and Conservation of Sea Turtles. The regulations adopted by the Convention on Biological Diversity (CBD), (Law 5 of January 3, 1989), which approves the Convention on the Conservation of Migratory Species of Wild Animals, among others.	
5. If your country has loggerhead turtle nesting beaches:	X		In the Caribbean, specifically in Bocas del Toro, loggerhead turtle nesting beaches have been reported.	
5a. Has your country taken conservation actions to protect nesting beaches and their associated habitats?	X		Measures are applied according to the current regulation.	
5b. Are there laws on turtle-friendly lighting in areas impacted by coastal development?		X	Currently there are no specific regulations on this matter. It is an issue of concern given the light pollution found on some beaches in the Pacific and Caribbean coasts of Panama.	
5c. Is there a long-term (minimum 10 years) standardized data available for population trend studies?		X	Currently there is not a data collection program for this species. A proposal is underway to comply with this matter.	
6. Is there exploitation or direct harvest of loggerhead turtles in your country?		X	It is a species with few reports of nesting on our Caribbean beaches. It is needed to increase monitoring of this species both for the Pacific and the Caribbean of Panama.	

(*) Specify actions implemented, the name of the project or relevant document, location, objective(s), institutions responsible, contact, financial or other support (optional), results (both positive and negative) and duration



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Resolution CIT-COP9-2019-R2: Conservation of the Northwest Atlantic Leatherback

ACCORDING TO RESOLUTION CIT-COP9-2019-R2, REPORT WHETHER YOUR COUNTRY:

IS COMPLIANT WITH THE FOLLOWING:	YES	NO	DESCRIBE ACTION (*)	
Note: Question 1 must be answered by all IAC Parties, please skip the other questions if the Resolution is not applicable in your country.				
1. Has reached out to Canada, Guyana, French Guiana, Trinidad & Tobago, and/or Suriname to inform these nations about the critical situation of the population and priority actions for the conservation of leatherbacks in the NW Atlantic?		X	Only when we have reported tags on turtles that nest in Playa Armila, Comarca Guna Yala	
IS COMPLIANT WITH THE FOLLOWING:	YES	NO	DESCRIBE ACTION (*)	DOES NOT APPLY
2. Has implemented techniques to reduce leatherback bycatch and mortality in fisheries, following the UN-FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations?	X		Those applicable according to current national regulations.	
3. Have fishery observer programs that comply with the minimum standards for scientific observer coverage that have been established by pertinent Regional Fishery Management Organizations?	X		Applies to the international fleet	
4. Has implemented laws and regulations related to Northwest Atlantic leatherback conservation, particularly related to fisheries bycatch and marine protected areas?	X		Applicable regarding current national regulations. Nonspecific, in this case.	
5. If your country has Northwest Atlantic (NWA) leatherback turtle nesting beaches:				
5.1. Has your country implemented conservation measures for the protection of the NWA leatherback nesting beaches and associated habitats?	X		Implementation of the National Action Plan for Sea Turtle Conservation, applicable to all the species.	
5.2. Does your country have a monitoring and tagging program at the NWA leatherback nesting beaches?	X		Only within projects carried by NGOs, Sea Turtle Conservancy.	
6. Is your country collecting data on interactions of the NWA leatherback with fishing fleets? Report data of interactions of the species with industrial longline vessels in Annex 3 of this report.		X	No data is collected.	

(*) Specify actions implemented, the name of the project or relevant document, location, objective(s), institutions responsible, contact, financial or other support (optional), results (both positive and negative), and duration.



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Resolution CIT-COP3-2006-R2: Reduction of the adverse impacts of fisheries on sea turtles

ACCORDING TO RESOLUTION CIT-COP3-2006-R2, REPORT WHETHER YOUR COUNTRY:

In the column for “species” please use: Cm (*Chelonia mydas*), Lo (*Lepidochelys olivacea*), Dc (*Dermochelys coriacea*), Cc (*Caretta caretta*), Lk (*Lepidochelys kempii*), Ei (*Eretmochelys imbricata*)

IS COMPLYING WITH THE FOLLOWING:	YES	NO	DESCRIBE ACTION (*)	SPECIES	DOES NOT APPLY
Adopted the “Guidelines to Reduce Sea Turtle Mortality induced by fisheries operations”, of the United Nations Food and Agriculture Organization (FAO), including:					
A. Research and monitoring of the adverse impact of fisheries on sea turtles					
i) Collect information by fishery		X	Panama’s Aquatic Resources Authority (ARAP), does not report generation of information by fishery on adverse impacts of fisheries on sea turtles for this period.		
ii) Observer programs		X	Panama’s Aquatic Resources Authority (ARAP), is in the process of implementing an onboard observers program.		
iii) Research on sea turtle/fishery interactions	X		There is an ongoing project involving ARAP, the Ministry of the Environment and Justsea Foundation on "Assessment of Marine Megafauna bycatch in the main fishing ports of the Pacific coast of Panama". Through surveys with captains, it is expected to document bycatch interactions between the Marine Megafauna, both in artisanal and industrial fisheries in the main fishing ports of the Panamanian Pacific. This project is carried out to obtain results such as: Generate information to evaluate the nature and frequency of the interactions between the Marine Megafauna and the fisheries in the region; Identify the temporal and spatial patterns of fishing interactions and relate them to environmental and oceanographic data from remote sensing; Hold workshops with fishermen to share the results, promote best practices, and strengthen a relationship of trust for future studies, and cooperate with the LaudOPO network in the characterization of leatherback sea	Lo, Ei, Dc	



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			turtle bycatch, to establish management measures appropriate to the conservation needs of this population. This project has the support from fishermen from the selected fishing communities who provide relevant information on the interactions between Marine Megafauna and artisanal fisheries.		
iv) Information on non-Party vessels		X	No information is reported on this matter.		
v) Cooperation with non-Party states to obtain information		X	No information is reported on this matter.		
B. Mitigation measures for the following fisheries:					
i) Long-line		X	No information is reported on this matter.		
ii) Gillnets		X	No information is reported on this matter.		
iii) Trawling (e.g., 1. TEDs: specify legally approved TEDs, their dimensions, material, and target species for that fishery, 2. time-area closures: specify a geographical area, time of closure and target species for that fishery, 3. tow times and/or 4. other measures)	X		Two types of TEDs are used in Panama: Georgia Jumper and the Round and Flat Rod in the industrial shrimp fleet. The industrial shrimp fleet in Panama reports the 133 valid licenses. Artisanal shrimp boats have 144 valid licenses.		
iv) Other fishing gear (indicate which one(s))	X		There are reports of interactions with fisheries such as that of the longline fleet.		
v) Fisher training programs about best practices for safe handling and release of incidentally-caught sea turtles	X		Panama's Aquatic Resources Authority (ARAP), indicates that training activities for trawling vessels crew and inspectors, on sea turtles handling and release are suspended. ARAP's inspection staff of the Inspection, Surveillance and Control Directorate of the ARAP, according to the established plan, receive training every year to strengthen the inspection actions when they get onboard the vessels to inspect the correct use of the Sea Turtle Excluder Device. Training activities are coordinated with ARAP's Regional Offices of the ARAP. However, at the moment of this report, no trainings have been reported. Strong penalties apply to those who violate the TED use regulation. Panama's Aquatic Resources Authority (ARAP) reports that in		



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			2019 no training to TED inspectors on compliance, also there were no sanctions to vessels for non-compliance with the use of TEDs. 2,272 inspections on the use of TEDs were carried out in port and sea; In addition, in 2020, no training on TED compliance has been reported for inspectors, as well as no sanctions on vessels for non-compliance with the use of TEDs, and to date 187 inspections have been carried out on the use of TEDs in port and at sea. On the subject of Inspection, Surveillance and Control, the operations are carried out periodically and without previous notice. The information is described in note DGIVC/0157/2020 of May 27, 2020 from ARAP, attached in Annex II of this report.		
C. Socio-economic considerations					
i) Support socio-economic activities that help mitigate adverse impacts of fisheries on sea turtles		X	No information is reported on this matter.		

(*) Specify actions implemented, the name of the project or relevant document, location, objective(s), institutions responsible, contact, financial or other support (optional), results (both positive and negative), and duration.

c.2 National and International Mandates

List actions that are being carried out to comply with national and international mandates (Ex: inspections, confiscations, sanctions, etc.)

The following is reported for this period:

1. On January 14, 2019, at Tocumen International Airport in Panama City, the seizure of 7 small boxes containing tortoiseshell spurs for cockfighting took place. Each box contained 12 pairs of spurs, presumed to be made of tortoiseshell (103 units). Subsequently, the Directorate of Coasts and Seas received a request from the Metropolitan Directorate of MiAMBIENTE (Panama's Ministry of Environment) through Memorandum SAPB-004-01-2019 dated January 15, 2019, requesting identification and certification of the seized products (103 units of rooster spurs). Field testing confirmed that the products were made of tortoiseshell. Due to the nature of the infraction committed, this process resulted in a Direct Sanction, issued through ticket number 7304 on January 14, 2019.



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2. On May 28, 2019, the Ministry of Environment (MiAMBIENTE), in coordination with the Environmental Prosecution Office of the Public Ministry and the Judicial Investigation Directorate, conducted inspections at five (5) commercial establishments, specifically jewelry stores that allegedly had tortoiseshell items for sale at Albrook Mall and the Albrook Grand Terminal. During the visit to these establishments, personnel from MiAMBIENTE, the Public Ministry, and the Judicial Investigation Directorate formed a team of approximately thirty (30) officials from these institutions and managed to seize (confiscate) over 200 crafted pieces of hawksbill products.

3. It is worth mentioning that the Republic of Panama has ratified several conventions, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which aims to ensure that the international trade of specimens of wild animals and plants does not threaten their survival. Similarly, our country has signed the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC) through Law 8 of January 4, 2008. This Convention urges the Parties to prohibit the capture, retention, or incidental killing of sea turtles, as well as the domestic trade of sea turtles, their eggs, parts, or products, and to comply with the provisions of the CITES Convention regarding the international trade of sea turtles, their eggs, parts, or products (such as hawksbill), among others.

There are other applicable national regulations, such as Law 24 of June 7, 1995, the Unified Text of Law 41 of July 1, 1998, Article 107, Law 8 of March 25, 2015, and Decree No. 5 of February 1, 2017, which regulates the Procedure for Direct Sanction for Environmental Offenses, among others.

After this procedure, two (2) direct sanctions and two (2) orders were issued to the legal representatives of these commercial establishments to proceed with the regular administrative processes, as the amounts exceeded B/. 2,000.00.

Likewise, individuals who violate the current regulations are fined and required to perform community work, specifically in projects where sea turtle hatcheries exist. Violations of the current regulations entail administrative and criminal penalties, including through Executive Decree No. 5 of Wednesday, February 1, 2017, which regulates the Direct Sanction Procedure for environmental offenses, published in Official Gazette No. 28225-A on Thursday, February 23, 2017, currently in effect. In cases involving possession or ownership for commercial and/or consumption purposes of sea turtle products or by-products (eggs, meat, items made from hawksbill, among others), in violation of the applicable provisions, a direct fine of B/. 2,000.00, equivalent to two thousand Balboas or its equivalent in US dollars, is imposed.

The issue of trafficking and trading of sea turtle eggs in Panama, mainly in Azuero, is a practice that is knowingly conducted despite being prohibited. Those who plunder the nests are fewer



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in comparison to those who work in support of the Ministry for the protection and conservation of these species. Currently, there are more reports and seizures, putting more pressure on violators of the regulations. Additionally, in this report, we highlight that the Direct Sanction regulations are under review with the purpose of increasing penalties to deter such environmental offenses.

4. In terms of surveillance and control, the Panamanian Authority for Aquatic Resources (ARAP) conducts regular operations in ports and at sea, with support from the National Aeronaval Service. Thus far, no violations of the regulations have been identified during these operations. If any infractions are found, proceedings are initiated, and strong sanctions are imposed on those who violate the regulations regarding the use of Turtle Excluder Devices (DET). Between 2019 and the present year 2020, no vessels have been caught using the Turtle Excluder Devices incorrectly during inspections.

d._ Application [submission] of exceptions established in the Convention

Describe in detail the exceptions allowed in accordance with article IV, item 3(a,b,d), and Annex IV of the text of the Convention, in accordance to the procedure established by the COP (Doc. CIT-COP5-2011-R2). Attach management program.

Within the framework of this report, Resolution No. DM 0085 of 2017 approved the Action Plan 2017-2018 of the Isla de Cañas Wildlife Refuge, located in the District of Tonosí, Los Santos Province. Official Gazette No. 28226-B, dated Friday, February 24, 2017, issued guidelines for the Management of the Isla de Cañas Wildlife Refuge, but it is currently not in effect as the Management Plan for the Protected Area is in preparation.

The Isla de Cañas Wildlife Refuge was created by Resolution JD-010-94 on June 29, 1994, published in Official Gazette No. 22586 on June 29, 1994. This refuge has the following objectives: To protect one of the most important nesting areas in the Panamanian Pacific; To conserve significant samples of the existing biological diversity in the region, ensuring the existence of mangroves as well as economically and ecologically important flora and fauna species; To promote the socio-economic and cultural development of related communities, ensuring the sustainable use of renewable natural resources and protecting archaeological sites within the boundaries of the refuge; To promote scientific activities, research, and provide opportunities for education, recreation, and tourism, both nationally and internationally.

The management of the Isla de Cañas Wildlife Refuge is based on the principles established in Article 3 of Resolution AG-0491-2006, which regulates Articles 94 and 95 of Law 41 of 1998, the General Environmental Law. The guiding principles for the use, management, and conservation of coastal and marine resources in protected areas in Panama are as follows: Gradual principle, Precautionary principle, Sustainable Development principle, Participation principle, Preventive



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principle, Public Interest principle, Shared Responsibility principle, Complementarity principle, and Non-discretionary principle.

Currently the Isla de Cañas Wildlife Refuge has a series of documents that serve as a basis for the participation of key stakeholders in decision-making processes, among which the following are highlighted:

1. Biological and Sociocultural Diagnosis of the Isla de Cañas Wildlife Refuge, prepared by PRONAT-ANAM, 2009.
2. Proposal for the Management Plan of Isla de Cañas, from the year 2012, currently under review for approval. It should be available before the end of 2020.
3. Situational Diagnosis of the Isla de Cañas Wildlife Refuge, implementation of the Sea Turtle Monitoring Program and Adaptation of Isla de Cañas Wildlife Refuge hatchery, prepared by Environmental and Legal Consultants, S.A., in April 2015.
4. Proposal for the Development of Ecotourism in the Isla de Cañas Wildlife Refuge.
5. Annual Operational Plan 2020, which includes activities of the Control and Surveillance Program.
6. Monitoring Program for the Conservation of Sea Turtle Species and other species of interest to the community.
7. In addition, the Ministry of Environment has approved regulations for shared management and service concessions in protected areas.



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Within the framework of Resolution CIT-COP6-2013-R1 on Exceptions under Article IV (3A and 3B) for Subsistence Harvest of *Lepidochelys olivacea* eggs in Guatemala and Panama, approved at the IAC Sixth Conference of Parties from June 26th to 28th, 2013, in Santa Cruz Island, Galapagos, Ecuador; we are pleased to inform that the following activities have been carried out during the period covered by this report:

1. Immediate actions (1 to 2 years), Increasing the area of the hatchery
 - The 14km of beach was segmented, and signs were placed indicating the start and end of the natural hatchery as the first action. The beach was segmented every 100 meters, and the width of the natural hatchery was increased from 800 to 1000 meters.
 - Nesting records were taken in various sectors of the natural hatchery to determine which areas should be expanded.
 - The zone has maintained suitable conditions for turtle nesting.
2. Quantify the total number of nests:
 - Nesting events have been recorded since 2015; in 2014, there was no monitoring protocol for sea turtles yet.
 - The records show that in 2015, a total of 3,553 nests were quantified; in 2016, 792 nests; in 2017, 4,966 nests; and in 2018, 6,500 nests, resulting in a total of 15,811 nests.
3. Increase control and protection of nests in the area of the hatchery:
 - Support is provided by the Ecological Police Units of Panama to safeguard the natural hatchery and by protected area officials who patrol the beach.
 - Members of the Peace Corps also contribute to the surveillance and collection of information during patrols.
 - There is a need for the appointment of more officials in the protected area to enhance the effectiveness of nest control and protection.
4. Strengthen the harvest co-management with the community:
 - An important co-management experience was the Cooperation Agreement between ANAM (now the Ministry of Environment) and the Cooperativa de Isleños Unidos, R.L. for the use of sea turtle eggs and the protection of this species in the Isla Cañas Wildlife Refuge (RVS) from 2003 to 2009.
 - After that experience, efforts have focused on training community members to provide support to protected area officials in conservation activities, and this action needs to be further strengthened.



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5. Training for residents of the Isla Cañas community:

- Trainings were provided to the community on turtle conservation, conservation targets in the area, the importance of fishing, and the conservation of species present in the area.
- Workshops have been conducted to train community residents in techniques for research, management, and monitoring of sea turtles, as well as techniques for monitoring and research with sea turtles, among others.

6. Promote protection and non-consumptive use schemes:

- The "Oyster Farming, Fattening, and Commercialization Project" has been developed in Isla Cañas. This activity is carried out in collaboration with the Aquaculture, Fishing, and Agrotourism Association of Isla Cañas (ACPAT). Oyster farming has been ongoing since 2014, thanks to the knowledge and training provided by officials from the General Directorate of Research and Development of ARAP.
- More funding is needed to promote projects of this kind that allow for the development of other related initiatives, which contribute to reducing the harvesting of sea turtle eggs and discouraging eggs poaching.

7. Medium-Term Activities (1 to 5 years):

- Development of a Management Plan for Sea Turtle Eggs in the Isla Cañas Wildlife Refuge. Currently, a consultancy is being carried out to develop this plan, which will involve a process of discussion with the community of Isla Cañas for its timely approval.
- Continuous monitoring and patrolling have been conducted from 2014 to 2020, with the support of the Ecological Police and Environmental Economics students from the University of Panama, as well as volunteers.
- Relevant scientific information is systematically collected to contribute to the compliance with the IAC recommendations for the exception.
- Data collection:
 - Female turtles nesting on the beach of Isla Cañas are marked. Over 350 turtles have been marked to date.
 - Ongoing communication with neighboring beaches to exchange information on the marked turtles.
- Nest management:
 - The natural nest management model is maintained as much as possible.
 - The area of the natural hatchery is monitored daily to ensure that the majority of nests are maintained under natural conditions.
 - Nests relocated to artificial hatcheries are mainly the result of actions aimed at motivating the community to contribute to sea turtle protection.
 - Egg manipulation is minimized, and the time spent outside the sand is kept to a minimum.
 - In most cases, the relocation time does not exceed 4 hours.
 - Excellent results have been achieved so far, with hatching success rates above 80%, indicating that appropriate measures have been taken for egg management.



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- **Use of Manuals:**
 - Existing manuals are used to manage the exception and implement the suggested recommendations. These manuals should be endorsed by a technical institution of the country that has requested the exception.
 - Existing manuals are always taken into account to apply the appropriate methodology for sea turtle monitoring, including hatchery operation, biometric data collection, information management, species identification, among others.
- **Hatcheries Control, Registration, and Management:**
 - Establish control, registration, and management of hatcheries, which should include a complete census and identification of all collected nests.
 - A record is maintained for all nests relocated to artificial hatcheries, including date, species, number of eggs, emerging hatchlings, hatching success, among other data.
- **Inspection, Surveillance, and Control Measures:**
 - Develop and apply inspection, surveillance, and control measures to ensure that egg collectors comply with egg delivery.
 - Ministry of Environment personnel, with the support of the Ecological Police, conduct patrols on the beach.
 - There is a Harvest Protocol for eggs in the Wildlife Refuge, which is currently not implemented as the inventory of families involved in this harvest is pending. It will also be reviewed by the ongoing consultancy.
 - Egg collection is only allowed for consumption by registered community members. Control and surveillance patrols are carried out along the 14 km of the beach.
- **Establishment of Partnerships:**
 - Establish partnerships with other organizations, institutions, and NGOs to ensure the conservation and research on sea turtles.
 - Efforts are made to incorporate educational organizations (schools, universities, and NGOs) to support sea turtle protection and conservation activities and beach cleanups.
 - Work is being done to coordinate actions through strategic partnerships.
 - Work is underway to formalize agreements and cooperation with organized community members.
 - **Training and Education Campaigns:**
 - Implement training and education campaigns to improve management and reduce egg consumption.
 - Trainings are conducted for students, teachers, and the National Police.



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- Workshops are conducted with residents of the Wildlife Refuge to raise awareness about the importance of sea turtle protection, conservation, and research.
 - Develop an Environmental Training and Education Plan to improve management and reduce egg consumption.
 - Management of Human and Financial Resources:
 - Allocate or manage the necessary human and financial resources to achieve proper management of the exception.
 - The need to obtain human and financial resources to support protection and conservation efforts in the Isla de Cañas Wildlife Refuge.
 - Funds are being sought for equipment purchase and travel expenses.
 - The permanent appointment of a Manager for the Wildlife Refuge is necessary.
 - Additional staff members are needed to work within the Wildlife Refuge (at least four park rangers) and improve facilities.
- Unfulfilled Guidelines:
 - Spatial and temporal closures have not been established on the exploitation beaches to protect other turtle species that should not be harvested. The presence of *Chelonia mydas* and *Eretmochelys imbricata* has been observed, but closures have not been established
 - Use published biological data to interpret trends in abundance and reduce the likelihood of attributing changes in nesting female numbers to the functioning of the hatcheries.
 - The data collected so far is not sufficient to indicate trends. Diurnal and nocturnal monitoring will continue year after year. To comply with this recommendation, an increase in Ministry personnel in the protected area is necessary.



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Part III (Research information)

a. Threats

Indicate threats (**Coastal development, incidental capture, direct use, contamination and pathogens, and climate change**) by species, with information on the area and activities taken to control them in the following table. Lo = *Lepidochelys olivacea*; Lk = *Lepidochelys kempii*; Dc = *Dermochelys coriacea*; Ei = *Eretmochelys imbricata*; Cc = *Caretta caretta*; Cm = *Chelonia mydas*.

Species	Threat(s)		Actions
Lo	☒ Coastal development ☒ Incidental capture ☒ Direct use	☒ Contamination ☒ Pathogens ☒ Climate change	Complaints are received, environmental education activities are carried out along with training, beach patrols, rescue and relocation of nests, signposting, and reforestation along the beach.
Lk	☐ Coastal development ☐ Incidental capture ☐ Direct use	☐ Contamination ☐ Pathogens ☐ Climate change	This species is not reported in the territorial waters of Panama.
Dc	☐ Coastal development ☒ Incidental capture ☒ Direct use	☐ Contamination ☒ Pathogens ☒ Climate change	Complaints are received, environmental education activities are carried out along with training, beach patrols, rescue and relocation of nests, signposting, and reforestation along the beach.
Ei	☒ Coastal development ☒ Incidental capture ☒ Direct use	☒ Contamination ☒ Pathogens ☒ Climate change	Complaints are received, environmental education activities are carried out along with training, beach patrols, rescue and relocation of nests, signposting, and reforestation along the beach.
Cm	☒ Coastal development ☐ Incidental capture ☒ Direct use	☒ Contamination ☒ Pathogens ☒ Climate change	Complaints are received, environmental education activities are carried out along with training, beach patrols, rescue and relocation of nests, signposting, and reforestation along the beach.
Cc	☒ Coastal development ☐ Incidental capture ☒ Direct use	☒ Contamination ☐ Pathogens ☒ Climate change	Complaints are received, environmental education activities are carried out along with training, beach patrols, rescue and relocation of nests, signposting, and reforestation along the beach.

Organizations that report threats in their areas of work:

1. FUNDACIÓN TORTUGUÍAS: Located in Cambutal, Los Santos province and Punta Chame, Panama province. Several threats continue to be reported, such as coastal development, incidental



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capture, direct use, contamination, pathogens and climate change; for *Lepidochelys olivacea* (lora /olive ridley), *Eretmochelys imbricata* (hawksbill) and for *Chelonia mydas* (green or brown). Activities are carried out to reduce these threats in coordination with local authorities and the Ministry of the Environment.

2. FUNDACIÓN AGUA Y TIERRA, FUNDAT: In this Project located in Mata Oscura, district of Mariato, province of Veraguas, work is being done with *Lepidochelys olivacea* (lora or olive ridley), *Eretmochelys imbricata* (hawksbill), *Dermochelys coriacea* (baula or canal/leatherback) and *Chelonia mydas* (green or brown); where coastal development, incidental capture, direct use and climate change are the main threats. There are complaints about sand extraction, there is a need to strengthen environmental education, training, patrolling, rescue and relocation of nests, signaling, reforestation of the beach edge with the community, tagging of nesting females with Inconel marks.

3. SEA TURTLE CONSERVANCY: Within the framework of the efforts carried out by this organization, *Dermochelys coriacea* (Baula or Canal) is threatened by Coastal Development in Playa Bluff. Regarding communication and guidance to hoteliers, efforts have been made to reduce the impact of light and avoid impacts on the beach, support has been requested from the authorities; In terms of direct use, they are reported at Playa Bluff and Soroopta where constant daytime and nighttime monitoring is carried out to control nest poaching and the killing of females, and in relation to climate change, relocation of nests and sporadic studies of beach profiles are carried out.

In the case of *Eretmochelys imbricata* (Carey), there are impacts from Coastal Development in Playa Bluff, where communication and orientation activities are carried out for hoteliers to reduce the impact of light and avoid impacts on the beach. Support has been requested from the authorities; Regarding direct use, in Bocas del Toro and the Comarca direct capture is still observed mainly with harpoon or by lobster divers, education activities with fishermen also continue to be carried out. This organization supports the authorities, in carrying out patrols at sea, to prevent illegal fishing of turtles in protected areas, as well as the confiscation of harpoons for illegal fishing in different areas, as well as for poaching of eggs and/or nesting females. There are work agreements with communities that participate in research and monitoring efforts, constant daytime and nighttime monitoring continues to control nest poaching, and educational activities are carried out in the communities surrounding the nesting beaches. Support has been requested from authorities such as the Ministry of the Environment and the National Border Service, for joint protection work. In relation to climate change, the relocation of nests and studies of beach profiles are also carried out.

With *Chelonia mydas* (Green), although in Bocas del Toro and the region, the nesting of this species is minimal, but in the sea it is common to see them copulating or resting, they continue to carry out the same actions. In relation to coastal development, in Playa Bluff communication and guidance activities are carried out for hoteliers to reduce the impact of light and avoid impacts on



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the beach. Support has also been requested from the authorities; regarding direct use in Bocas del Toro and the region, direct capture is still observed mainly with harpoon or by lobster divers, we carry out educational activities in the fishing areas. There is collaboration with the authorities, carrying out patrols at sea and preventing illegal fishing of turtles in protected areas, as well as to confiscate harpoons or to control illegal fishing in different areas. Regarding the poaching of nests and/or nesting females, work agreements are maintained with residents of the communities that participate in research and monitoring. Similarly, it should be noted that constant daytime and nighttime monitoring is carried out to control nest poaching. Education activities are also maintained in the communities surrounding the nesting beaches. Regarding climate change and this species, the relocation of nests and studies of sporadic beach profiles continue to be carried out. To reduce the impacts and threats, support has been requested from the authorities for joint protection work.

Regarding *Caretta caretta* (loggerhead), although in Bocas del Toro and the region nesting of this species is minimal, juveniles and sub-adults use the sea. Regarding the threat of coastal development, it is reported that in Playa Bluff, communication and guidance actions are also carried out for hoteliers to reduce the impact of light and avoid impacts on the beach, support has been requested from the authorities. It is highlighted that the direct use in Bocas del Toro and the Comarca is maintained because direct capture is still observed mainly with harpoon or by lobster divers, educational activities are carried out in the fishing areas, the authorities support with patrols in the sea and to prevent illegal fishing of turtles in protected areas, they also confiscate harpoons and control illegal fishing in different areas. Like the other species on the beaches, nests and/or nesting females are also suffering poaching. In the same way, research and monitoring is carried out, day and night monitoring are constant to control nest poaching, and additional educational activities are developed in the communities surrounding the nesting beaches. Another threat is climate change, for which relocation of nests and studies of beach profiles are carried out.



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b._ Research

Describe scientific research that is being carried out in the country relating to sea turtle population assessments including tagging, migration, and genetic studies, as well as those relating to conservation issues including habitat monitoring, fisheries interactions, disease, etc. Provide a list of references for the information used in this report and note how to obtain them when needed.

In addition to the above, please fill out the following table on the types of research being carried out in the country and with what species.

Research	Specie (s) (Lo, Lk, Cm, Ei, Cc, Dc)
Tagging	Lo, Cm, Ei, Cc, Dc
Migration	Cm, Dc, Ei
Habitat monitoring	Cm, Dc, Ei, Lo
Fisheries interactions	Cm, Lo, Dc, Ei
Genetics	Cm, Ei

The results of the efforts made by NGOs and Community-Based Groups or Associations in the Protection, Conservation and Research of Sea Turtles in the Republic of Panama are described below.

1. FUNDACIÓN TORTUGUÍAS: This organization works on three nesting beaches, Cambutal and La Cuchilla beaches in Tonosí, Los Santos Province, and Punta Chame beach, in Punta Chame, West Panama province. They work with three species of sea turtles, *Lepidochelys olivacea*, *Chelonia mydas* and *Eretmochelys imbricata*.

With the species being monitored, it is highlighted that they face several threats such as coastal development, bycatch, direct use, pollution, pathogens and climate change. Relocation of nests in hatcheries, monitoring and night and day patrols of beaches, tagging of nesting turtles, biometric data collection, beach cleaning, education and awareness about sea turtle threats and their habitats, and ecotourism, through the sighting of sea turtles, are some of their activities.

Within the Research activities, monitoring of the incubation temperature in the nests relocated to hatcheries or hatcheries (Data Loggers) continues, to determine the proportion of males and females released in the project's hatcheries and the impact of climate change; there is research on the nesting population, through marking and recapture, biometric data (AC, AR, LC and LR),



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recording of turtles that arrive on the beach (nesting, crescent, egg poaching), relocation of nests in hatcheries, Calculation of hatching and emergence success is done along with counting the number of hatchlings released.

In the 2019-2020 Marking/Recaptures per, 24 marks have been placed in *Lo* (with 4 recaptures). The marks (PV733, PV707, NM581, and NM567) recaptured, provided the following information: PV733 (It was placed on 11-3-2019 and was seen again on 11-19-2019, being seen again 16 days later); PV707 (placed on 11-23-2019 and recaptured on 12-11-2019, 18 days later); NM581 (It was marked on 08-27-2018 and recaptured on 08-26-2019, one year later) and NM567 (Marked on 08-16-2018 and recaptured on 07-06-2019, 11 months and 10 days later)

For *Lepidochelys olivacea* (Lo), from July 2019 to February 2020, 345 monitoring have been carried out, 553 nests were relocated in hatcheries; 50,655 eggs were relocated to hatcheries; 42,616 hatchlings were released; while the Hatching Success was 84.89% and the Emergence Success was 80.17%.

Nests relocated from 2014 to 2020 in Cambutal Beach, Tonosí, Los Santos province for *Eretmochelys imbricata* (Ei)/3; *Chelonia mydas* (Cm)/19 and *Lepidochelys olivacea* (Lo)/961; In Punta Chame for *Lepidochelys olivacea*, 961. A total of 4511 relocated nests are reported.

From 2014 to 2020, the Tortuguías Foundation has released 112,120 hatchlings, has involved more than 4,500 volunteers, taught workshops to more than 800 students in public and private schools, generating around 15 jobs at the Foundation itself, in Playa Esmeralda. in Las Perlas, in Cambutal, Tonosí and in Punta Chame, Panama, having an economic impact on the national community.

2. ISLA CAÑAS WILDLIFE REFUGE: Isla Cañas Beach is approximately 14 kilometers long, located in Tonosí District, Los Santos Province. In the period of this report, the observation of 18,225 tracks is reported, 1,300 nests depredated, 8,425 clutches protected, the average number of eggs was 85; 60,350 eggs were protected, the number of unhatched eggs was 8,985, and 49,097 hatchlings were released. and 2,268 dead hatchlings are reported.

Regarding the Progress Report on the Implementation of Resolution CIT-COP06-R1 on Exceptions under Article IV (3 A and B), for the Subsistence Harvest of *Lepidochelys olivacea* Eggs in Panama; we inform the following:

As immediate actions from 1 to 2 years, it is reported that the segmentation of the 14km of beach was carried out, subdividing every 100 meters, the placement of signs indicating the beginning and end of the natural hatchery as the first action has been achieved. Nesting records were taken in the various sectors of the natural hatchery in order to have an idea of what zone should increase. The area has maintained adequate conditions for the nesting of turtles and it has been possible to increase it from 800 meters to 1000 meters. Further increase of this area, should be discussed with



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the community, to make them aware of the action, so that it can be implemented soon.

For the quantification of the total number of nesting events, these were recorded from 2015, in 2014 there was still no monitoring protocol for sea turtles. The records indicate that in 2015 they were able to quantify (3553 nests); 2016 (792 nests); 2017 (4966 nests); 2018 (6500 nests), 2019 (8,425 nests) for a total of 24,236 nests.

In relation to increasing the Control and Protection of the Nests in the Hatchery Zone, there is support from Units of the Ecological Police of Panama, for the custody of the natural hatchery and the officials of the Protected Area who patrol the beach. The support of members of the Peace Corps has been obtained for the custody and collection of information during patrols and in the artificial hatchery. It is necessary to appoint more officials in the protected area and increase the effectiveness in the control and protection of nests.

As for the recommendation to Strengthen the Co-management of the harvest with the Community, it can be mentioned that an important experience of co-management took place, which was the Cooperation Agreement between ANAM (today the Ministry of the Environment) and the Cooperativa de Isleños Unidos, R.L. for the use of sea turtle eggs and the protection of this species in the Isla Cañas Wildlife Refuge (RVS) that was carried out from 2003 to 2007. After that experience, the actions have been aimed at training community members to provide support to protected area officials in conservation activities, an action that needs to be strengthened.

Regarding the recommendation on training for residents of the Isla Cañas community, training has been conducted on turtle conservation, the main conservation objects in the area, the importance of fishing, and the conservation of species present in the refuge. Training has been provided on techniques for researching, managing, and monitoring sea turtles, workshops on fisheries and their threats, and techniques for monitoring and researching sea turtles. Regarding promoting schemes for protection and non-consumptive use, the "Cultivation, Fattening, and Commercialization of Oysters" project was developed in Isla Cañas. This activity has been carried out in collaboration with the Aquaculture, Fishing, and Agrotourism Association of Isla Cañas (ACPAT) since 2014, thanks to the knowledge and training received from the officials of the General Directorate of Research and Development of ARAP. This project has yielded excellent results and has enabled a group of community members to receive training and generate additional income, thereby avoiding the consumption of sea turtle eggs. Activities like these contribute to discouraging the consumption of sea turtle eggs and promoting other activities that help conserve and protect these threatened species. More funding is needed to support the development of other projects that help reduce the harvest of sea turtle eggs.

Regarding the recommendations that must be made from 1 to 5 years, it can be mentioned that there is good progress in the preparation of the Management Plan for sea turtle eggs, with Consultation 2237 PAN 2019 – Consultation service for Inter-Institutional Agreements to develop



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a Control Plan for the Extraction and Sale of Turtle Eggs and a Plan to Mitigate the Impact of Artificial Lights on the Coast during the Turtle Nesting Season. This project called Conservation and Sustainable Use of Biodiversity in Marine and Coastal Production Zones, which is financed by UNDP in coordination with the Directorate of Coasts and Seas of the Ministry of Environment.

It should be noted that in terms of the recommendations on data collection, progress has been made, since females that nest on the beach of Isla Cañas are marked and monitored. From 2015 to 2019, more than 314 turtles have been tagged and more than 8,425 nests have been protected. Constant communication is maintained with other neighboring beaches to exchange information on the tagging carried out, from where turtles that have been registered on beaches such as La Marinera and Cambutal are reported.

It should be noted that work is also being done on the Isla Cañas Wildlife Refuge Management Plan, which must be approved by the end of 2020. This Management Plan must go through all the processes, including discussion with the Isla de Cañas community. Continuous monitoring and patrols have been carried out from 2014 to date, with the support of the Ecological Police, students from the University of Panama, the Peace Corps and other volunteers. Relevant scientific information is also collected in a systematic way, which contributes to compliance with the IAC recommendations, for the exception.

Regarding nest management, progress has been reported to keep the nest management model as natural as possible.

- The natural hatchery area is monitored daily to ensure that the largest number of clutches are maintained under natural conditions.
- The nests relocated to artificial hatcheries are mostly the product of actions carried out to motivate the community to contribute to the protection of sea turtles.

The manipulation of the eggs has been avoided to the maximum, the time that the eggs spend outside the sand has been minimized.

- The relocation time in most cases, does not exceed 4 hours, they are generally relocated once the complete clutch is collected.
- Up to now, excellent results have been obtained since the hatching success is above 80%, which indicates that the appropriate measures have been taken to manage the eggs.

Regarding the use of recommended manuals, existing and recommended manuals are currently used to manage the exception, in order to implement the suggested recommendations. These manuals are endorsed and recommended by MiAMBIENTE, as the technical institution of the country that requested the exception.

- The manuals recommended by the IAC are always taken into account, to apply the appropriate methodologies, regarding the monitoring of sea turtles (operation of hatcheries, biometric data collection, information management, species identification, among others).



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With regards to Control, Registration and Management of Hatcheries, progress has been made in maintaining control, registration and management of hatcheries, for which a complete census and identification of all collected clutches must be included.

- Currently there is a record of all clutches that are relocated to artificial hatcheries (date, species, number of eggs, hatchlings, hatching success, among others).

In relation to the recommendations on inspection, surveillance and control measures, progress has been made in this regard, to ensure that all egg collectors comply with the mandatory delivery of eggs. Personnel from the Ministry of the Environment with the support of the Ecological Police, carry out tours on the beach. There is a Protocol for the use of eggs in RVS, which is not currently implemented, since the inventory of the families that would be involved in this use is pending. The collection of eggs is only allowed for consumption by members of the community, who must be duly registered. Control and surveillance patrols are carried out along the 14 km of the beach.

Regarding the recommendation to establish alliances with other organizations, institutions and NGOs to guarantee conservation and research on sea turtles.

- Efforts are made to incorporate mainly educational organizations and institutions (Schools, Universities and NGOs), so that they support the work of protection and Conservation of Sea Turtles and beach cleanups.
- Work is being done to coordinate actions through strategic partnerships, which must be formalized.
- There is also interest in formalizing work and cooperation agreements with members of the organized community.

Another recommendation on the implementation of training and education campaigns to improve management and reduce egg consumption.

- Training has been carried out for students, teachers and the National Police in the protected area.
- With the residents of the RVSIC, training workshops were developed to raise awareness about the importance of the protection, conservation and research of sea turtles, included in the monitoring plan.
- Work is being done on a Training and Environmental Education Plan, to improve management and reduce the consumption of eggs, (Directorate of Environmental Education, Protected Areas and DICOMAR).

In relation to the recommendation of Management of Human and Financial Resources necessary to achieve the correct handling of the exception.

- There is a need to obtain human and financial resources to support protection and conservation actions in the Isla Cañas Wildlife Refuge.
- Funds are managed to purchase equipment and pay travel expenses.



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- A Chief of the RVSIC has not been appointed, since the previous Chief was assigned to fulfill other responsibilities.
- The appointment of more personnel to work within RVSIC and improve the facilities is pending (work has started).

Regarding guidelines not met or in process, we can indicate that:

No spatial or temporary closures have been established on the exploitation beaches to protect the rest of the turtle species that should not be exploited.

- The presence of *Chelonia mydas* has been observed on the beach, and of *Eretmochelys imbricata* in the mangrove area. However, closed seasons have not been established.
- Use published biological data to interpret trends in abundance and thus reduce the likelihood that changes in numbers of nesting females are erroneously attributed to the result of hatchery operations.
- The data collected so far is not enough to indicate trends, day and night monitoring will continue year after year.

Visit to the Isla Cañas Wildlife Refuge with members of the Directorate of Protected Areas and Biodiversity and DICOMAR.

- A meeting is held with members of the Community.
- Subsequently, a meeting is held with members of NGOs and the Ecological Police.
- Meeting with personnel from the Ministry of the Environment.
- The infrastructure is reviewed and the need for equipment is discussed.
- Participation in day and night monitoring for egg collection and relocation in artificial hatchery.
- Review of future activities.
- Volunteering.
- Graduation work (Undergraduate and Postgraduate), research is managed with the School of Biology of the University of Panama.
- Develop the R&D component.

As projections we highlight:

- Improve the facilities.
- Painting, equipment and infrastructure adjustments.
- Strengthen the human resources of MiAMBIENTE in the protected area.
- Appoint at least 4 park rangers.
- Review of the registry and accreditation of families that use *Lepidochelys olivacea* turtle eggs for subsistence.
- Implementation of ordered and regulated co-management.
- Formalize the organizations that wish to support and collaborate.
- Management of Funds through the Project with UNDP.



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- Consultancy for the Establishment of Inter-institutional Agreements to develop a Control plan for the use of Turtle Eggs and a Plan to mitigate the Impact of Artificial Lights on the Coast.
- Workshop to promote non-consumptive use through training in the production of handicrafts and marketing.
- Implementation of a National and International Volunteer Program.
- NGOs, Schools, Colleges and Universities.
- Meeting with the Director of the Environmental Police to coordinate actions.

3. FUNDACIÓN AGUA Y TIERRA, (FUNDAT): Carry out research activities with monitoring of Mata Oscura beach, for the nesting of Cm, Dc, Ei, Lo, research is carried out on the hatching success of natural and relocated nests for Lo, Cm, Ei and tagging for Ei and Cm.

In the research subjects, tagging of *Chelonia mydas* is carried out; habitat monitoring of *Chelonia mydas*, *Dermochelys coriacea*, *Eretmochelys imbricata* and *Lepidochelys olivacea*; Genetic studies are carried for *Lepidochelys olivacea* and hatching success for *Chelonia mydas*, *Lepidochelys olivacea* and *Eretmochelys imbricata*. Information for *Lepidochelys olivacea* from June 2019 to the date of this report is reported below, 129 nests have been relocated in the hatchery, 55 nests have been depredated, 129 observed nesting females are reported, 129 neonates born in the hatchery have been released, no strandings of this species are reported. In relation to *Chelonia mydas* from June 2019 to the date of this report, 6 nests have been relocated in the hatchery, 4 nests have been depredated, 6 observed nesting females are reported, 432 neonates born in the hatchery have been released, and a strandings was reported. Regarding *Eretmochelys imbricata* from June 2019 to the date of this report, 2 nests have been relocated in the hatchery, 2 nests have been depredated, 2 observed nesting females are reported, 192 hatchlings born in the hatchery have been released and no strandings are reported. On *Dermochelys coriacea* no nesting of this species is reported during this period. It should be noted that the release of 10,944 hatchlings was reported in the Mata Oscura Beach Sea Turtle Conservation Project.

4. TORTUGAS PEDASI: This organization works on the beaches of the District of Pedasí, province of Los Santos. Among the beaches that this organization monitors are: Playa Lagarto, Playa Lunchon, and Playa El Toro, within the Pablo Arturo Barrios Wildlife Refuge. The beach monitoring area has an extension of 6 km.

As part of the monitoring activities, 13 nests are reported on Lagarto beach (10 olive ridleys, 2 green, and poached nests). In Lunchon beach, the monitoring of 5 nests is reported, (5 olive ridleys and 3 poached). In El Toro beach, 9 nests are reported (9 olive ridleys and 8 poached); In addition, 1 injured juvenile green turtle found at La Garita beach (RVSPAB) on March 21, 2019 and 1 dead leatherback turtle found at Playa El Toro, on February 27, 2019, are also reported.



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5. SEA TURTLE CONSERVATION PROGRAM OF LOS PANAMAES ECOLOGICAL RESERVE: This Project monitors three beaches (Puerto Escondido Beach, Los Panamaes Beach and La Miel Beach), located in Pedasí, Los Santos province. Los Panamaes Ecological Reserve is located at 07° 26' 50.9" N and 080° 04' 06.8" W. It has 410 hectares, along 4 kilometers of coastline on the Azuero Peninsula, Pedasí, Los Santos Province, Pacific Panamanian.

The period of this report is from June 2019 to March 2020. The Los Panamaes Ecological Reserve consists of approximately 4 kilometers of coastline made up of a bay, cliffs, coral reef and accessible sandy beaches. On each of these beaches you can observe the presence of female sea turtles nesting in different numbers, so it is necessary to carry out periodic monitoring to obtain accurate data.

During the 2019 season, 101 nests were relocated to the hatchery, which represented 9,307 eggs, 23 nests (17%) were poached, 8,038 hatchlings were released, with hatching success of 87.1% (quite acceptable quantity) and 6 events were held in the communities near the project.

During the 2019 season, between June 2019 to March 2020, a total of 193 nesting events were recorded, 168 of these turtles being olive ridleys (*Lepidochelys olivacea*) and 25 corresponding to green turtles (*Chelonia mydas*). in the three monitored beaches within REP. Of these nesting events, 138 ended in successful nesting (128 olive ridleys and 10 green) and 55 in nesting attempts (40 olive ridleys and 15 greens). Compared to the 2018 season, this season had a greater number of events, this may be due to this season starting in June (longer), in contrast to the 2018 season that began in September.

6. PLAYA LA MARINERA BIOLOGICAL RESERVE: It is located in Guánico Abajo, Tonosí, province of Los Santos. It has an extension of 570 meters, it is located at the initial coordinates 17N 563460 802312 and final 17N 563168 801878 UTM. Around two daily routes are carried out covering 1.14 km. Monitoring activities are carried out by MiAMBIENTE technical personnel attached to the Regional Office of the province of Los Santos.

Regarding the monitoring of nesting, for the date of this report, the presence of the olive ridley sea turtle (*Lepidochelys olivacea*), which nests alone and in arribadas, has been recorded. A total of 30,431 traces observed and estimated during the arrivals were recorded, the total number of nests registered was 1,029, the number of nests not located was estimated at 133, around 300 eroded nests were counted (the dynamics of the beach is very irregular, sometimes changing the coastline, destroying a large number of eggs), 107 nests were registered, 12 nests were stolen or poached (it is a place with difficult access), 1,278 nests were protected, the average number of eggs per clutch was 96, 24,236 eggs were protected, the number of unhatched eggs was estimated at 102,429, the number of hatchlings released was 336,486, and the number of dead hatchlings was estimated at 20,072.



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Regarding the report on the incubation process for the olive ridley turtle (*Lepidochelys olivacea*) in the La Marinera Beach Biological Reserve, it is reported that the number of nests in the hatchery was 249. 71 nests (6,842 eggs) were exhumed and planted) registering only 6,424 eggs with development, 448 eggs without apparent development were counted, 19,621 offspring were produced, and the use of other reproduction techniques is not reported.

31,078 nests were recorded *in situ*, the estimated number of eggs without apparent development was 102,429, the number of hatchlings produced was 334,872 (released hatchlings plus dead hatchlings) and 315,833 were released.

7. PLAYA MALENA SEA TURTLE CONSERVATION ASSOCIATION: This organization is located in the District of Mariato in the province of Veraguas. For this period this organization reports that 29,314 eggs were relocated to the hatchery, 23,854 were released and 319 nests were protected.

8. ARMILA SEA TURTLE CONSERVATION PROJECT, YAUK GALU FOUNDATION: This organization is located in the community of Armila, Puerto Obaldía, Guna Yala Region, Panamanian Caribbean. For the period of this report, this organization reports that the nesting season went from February to July 2019 with a total of 2,263 nests of leatherback or gray turtle recorded. The leatherback (*Dermochelys coriacea*) hatchlings were released in May (693), in June (1,071), and in July (1,161) for a total of 2,925. It was also possible to protect 13 hawksbill (*Eretmochelys imbricata*) nests. During the season, 6 tagged turtles were found by members from Caribbean projects. Three dead turtles that drowned at the mouth of the river and 31 nests destroyed by animals are also reported.

The Yauk Galu Foundation was created by residents of the Armila community, in order to protect and conserve sea turtles, and endangered species. It is a leading organization created for the conservation of Guna Yala Biodiversity, working in harmony with nature and committed to the protection and conservation of nature and the sustainable development of Guna Yala.

9. CASCAJILLOSO BEACH SEA TURTLE CONSERVATION PROJECT: This project is located in Arena de Quebro, Mariato district, Veraguas province. It is developed by technical personnel from the Ministry of the Environment of the Quebro Arena Agency, from the Cerro Hoya National Park. The 2019 season went from July 31 to December 9, 2019, 80 nests were relocated to the hatchery, from which 5,953 hatchlings of olive ridley (*Lepidochelys olivacea*) were released. During the nesting season, the presence of 3 turtles with a missing rear flipper was reported and they were helped to nest.

10. SAN ROQUE BEACH SEA TURTLE CONSERVATION PROJECT: This project is located in Coclé del Norte, district of Donoso, province of Colón. This project works to monitor and relocate hawksbill (*Eretmochelys imbricata*) and leatherback (*Dermochelys coriacea*) nests.



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Day and night monitoring of leatherback and hawksbill turtles is carried out every year. The 2019 season went from March to June for the leatherback turtle and from April to December for the hawksbill turtle. They released 250 hawksbill turtles from two protected nests.

So far in 2020, two hawksbill nests have been relocated, and 6 and 12 leatherback nests have been poached. One problem in the area is turtle eggs poaching and the placement of trammel nets to catch turtles. In this sense, support has been requested from the Ministry of the Environment to coordinate inspections and operations in the area. Additional information on the sale of eggs highlights that in that area hawksbill meat is paid at B/1.50 a pound and turtle eggs are paid at B/. 0.25 unit. In the same way, hundred eggs are paid at B/. 25.00, it is important to note that currently the fine for this direct environmental offense is B/. 2,000.00.

11. ORGANIZATION TO PROTECT THE SEA TURTLE AND BIODIVERCITY OF JAQUÉ – DARIEN: This Organization is located in Jaqué, district of Chepigana. Darien Province. For the period of this report, the relocation of 168 nests is reported, for a total of 13,340 protected eggs, the total number of protected nests was 220. During the season, 9,827 hatchlings were released. Also in the beach area, 52 nests were protected, for a total of 7,201 eggs. The total number of hatchlings killed and attacked by predators and the number of unhatched eggs was 3,723. The application of 8 Inconel tags (GM443, GM444, GM459, GM470, GM474, GM475, GM476 and GM477) is also reported during this period.

12. ACOTMAR ALLIANCE SEA TURTLE CONSERVATION PROJECT OF THE AUTONOMOUS UNIVERSITY OF CHIRIQUÍ, UNACHI AND THE ROJAS FAMILY: This project is located in La Barqueta Beach, Guarumal, Alanje District, Chiriquí Province. It is an initiative carried out by the Organization ACOTMAR (Association for the Conservation of Sea Turtles) of UNACHI, which is a seed group of researchers and collaborators of CRECOBIAN (Center for the Reproduction and Conservation of Animal Biodiversity), in alliance with the Network Family. Conservation and protection efforts focus on the nesting season, which runs mainly from June to December. Due to the threats suffered by sea turtles during the nesting process, last year 75 nests were relocated to the hatchery and more than 5,000 hatchlings were released into the sea.

13. SEA TURTLE CONSERVANCY: For the period of this report, this organization reports work on the following Beaches in the Caribbean, considering the study sites are divided into two categories; Impact sites include the five beaches near PCMP Coletón, Caimito, Portete, Caballo and Punta Rincón beaches of the Coast of the District of Donoso, Costa Abajo of Colón, Province of Colón and the Control Sites in the Province of Bocas del Toro: Soropta Beach (San San Pond Sack Wetland of International Importance), Bluff Beach (Playa Bluff Municipal Reserve), Larga Beach (Bastimentos Island Marine National Park), and in the Ngäbe Bugle Region: Red Beach, Escudo de Veraguas Island (Protected Landscape Island Escudo De Veraguas- egó) and Chiriquí Beach (Damani-Guariviara Wetland of International Importance).



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Research activities are part of the Recovery of the Sea Turtle population in the aforementioned sites, which includes monitoring and research on nesting beaches, daily censuses and night monitoring, for tagging and measurement of nesting females. The activities carried out include: Monitoring nesting beaches, and daily censuses to know the spatial and temporal distribution of the different species in the study sites, Reproductive biology, tagging of females, to know their nesting activities, frequency, nesting intervals, migration, among others. Population studies are also carried out. Efforts are long-term, therefore, the population situation of the turtles can be estimated by seasons after several years of research. There is satellite telemetry, to know the migration routes of the turtles, after their nesting period.

Below is a summary of the tracks censuses from January to December 2019. For the monitored beaches in the province of Colón, the completion of 4 censuses is reported from May 4 to 7 in each of the following Caletón beaches, Caimito and Rincón no nesting was recorded for hawksbill and 3 for leatherback, and 4 leatherback false nests were recorded (1 at Caletón beach and 3 at Rincón beach).

From the monitoring carried out on the beaches of the province of Bocas del Toro, it is reported that in Soropta beach, during the monitoring carried out from March 7 to September 3, 164 censuses were carried out, finding 16 hawksbill nests, 12 false nests of this species; 792 leatherback nests, 215 false nests of this species and 4 green turtle false nests. In Bluff beach, monitoring was carried out from March 6 to December 14, 235 censuses were carried out, finding 247 hawksbill nests, 84 false nests of this species; 81 of leatherbacks, 39 false nests of this species, 5 green nests and 4 false nests of this species. In Playa Larga, monitoring was carried out from February 11 to November 30, 244 censuses were carried out, finding 124 hawksbill nests, 24 false nests of this species; 48 leatherbacks, 12 false nests of this species, no nests or false nests of green were recorded.

Regarding the monitoring carried out on the beaches of the Ngäbe Buglé Comarca, it is reported that on Chiriquí beach, during the monitoring carried out from January 2 to December 26, 297 censuses were carried out, finding 1,717 hawksbill nests, 366 false nests of this species; 4,188 leatherback nests, 761 false nests of this species and 4 false nests of green and 9 nests of this species. In Playa Roja, the monitoring was carried out from April 2 to December 26 through 196 censuses, finding 311 hawksbill nests, and 79 false nests of this species; 43 leatherback nests, no false nests of this species have been reported, no green turtle nests or false nests of this species have been reported. On the Escudo de Veraguas beach, monitoring was carried out from February 24 to November 2, where only 28 censuses could be carried out, finding 361 hawksbill nests, 26 false nests of this species; 1 carcass or leatherback, no false hatchings of this species were recorded, nor were there any nests or false hatchings of green turtles. In total there were 2,776 hawksbill nests, 5,156 leatherback nests and 14 green nests.

With respect to the summary of nest survival in the provinces of Colón, Bocas del Toro and the Ngäbe Buglé Comarca during the 2019 season, we can indicate that 3 hawksbill nests were



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removed on Soroopta beach, 16 on Bluff beach, 11 on Playa Larga 11, 19 on Chiriquí beach, 1 in Red beach and none in Escudo de Veraguas. The summary for leatherback nests is as follows: 81 nests on Soroopta beach, no looted nests were reported on Bluff beach, Larga beach, Roja beach and Escudo de Veraguas and 1 poached nest on Chiriquí beach.

Regarding the nests depredated, we can indicate that 1 hawksbill nest was depredated on Soroopta beach, 3 on Bluff beach, 1 on Playa Larga, 450 on Chiriquí beach, 36 on Roja beach and none in Escudo de Veraguas. The summary of leatherback nests is as follows: 11 nests on Soroopta beach, 3 on Roja beach, no poached nests were reported on Bluff beach, Larga beach and Escudo de Veraguas and 30 poached nests on Chiriquí beach.

Regarding eroded nests, we can indicate that 1 hawksbill nest was found eroded at Soroopta beach, 1 at Bluff beach, 18 at Playa Larga, 36 at Chiriquí beach, 10 at Roja beach and none at Escudo de Veraguas. The summary of nests for leatherback is as follows: 31 nests on Soroopta beach, 4 on Bluff beach, 5 on Larga beach, 25 on Chiriquí beach, none on Roja beach and Escudo de Veraguas.

The number of turtles found during the 2019 season night patrols is detailed below. On Chiriquí beach, 348 hawksbill nests, 868 leatherback nests, 3 green turtle nests and none of loggerheads; on Red Beach, 102 hawksbills, 1 leatherback, none green turtle, and 1 juvenile loggerhead; in Playa Larga, 54 hawksbills, 23 leatherbacks and none green turtle and loggerhead; on Bluff beach, 100 hawksbills, 55 leatherback, 2 green and none of loggerhead and on Soroopta beach there were 6 encounters with hawksbills, 489 with leatherbacks (*Dermochelys coriacea*) and none with green (*Chelonia mydas mydas*) and loggerhead (*Caretta caretta*). It is observed that there were more encounters with carcass or leatherback (1,436), followed by hawksbill (610).

Below we present the summary of hatchlings released during the 2019 season for hawksbill and carcass or leatherback. In Playa Larga out of the *in situ* nests for hawksbills, 11,194 of the 60 relocated were released; 239 hatchlings from leatherback nests *in situ* were released and 145 were released from relocated nests. In Playa Bluff from *in situ* nests we released 2064 hawksbill hatchlings, and from relocated nests we released 7137 hatchlings. For leatherback we released 28 hatchlings from *in situ* nest and 119 hatchlings from the relocated nests. On Soroopta beach, 45 hawksbill hatchlings were released from the *in situ* nests, there were no nests relocated for the leatherback turtle, 1,572 hatchlings were released from the nests *in situ* and 255 from the relocated ones.

In the Gnäbe Buglé Region, 127,252 hatchlings were released from hawksbills nests *in situ* and 6,697 from nests with cages; in Playa Roja 30,621 hawksbill hatchlings were released from nests *in situ*, and for leatherback there were 118 from nests *in situ*; In Escudo de Veraguas beach, 25,658 nests were released from hawksbills *in situ* nest and none for leatherback nests *in situ*. In total in the Ngäbe Buglé Comarca, 210,728 hawksbill hatchlings and 8,860 leatherback hatchlings were released.



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14. ECOLOGY AND MIGRATION OF SEA TURTLES PROJECT IN THE PROVINCE OF BOCAS DEL TORO, PANAMA: In the Report with preliminary results from January to December 2019 delivered to the Ministry of Environment under the Research Permit SE/A-45-19 requested by Doctors Anne and Peter; it is indicated that the objective of this project is to conserve Caribbean sea turtles through a broader understanding of their reproductive biology and promoting the recovery of the important populations of females that nest and feed in the Province of Bocas del Toro, Panama.

This province is an area with a great diversity of sea turtles and historically there has been high pressure from hunting; Currently this is not the main threat facing these animals, rampant coastal development puts pressure on populations. Four species of sea turtles: green (*C. mydas*), hawksbill (*E. imbricata*), loggerhead (*C. caretta*), and channel (*D. coriacea*) sea turtles at different stages of its life cycle are found in the waters of the Bocas del Toro province.

This project employs a number of field and laboratory methods to explain the reproductive biology and ecological distribution of sea turtles in the region. A better understanding of the ecology and migration of these animals will allow us to promote the best conservation efforts for the different species of sea turtles present in Panama and the rest of the Caribbean.

Preliminary results from the research in the Isla Bastimentos National Marine Park (Cayos Zapatillas) are detailed below. This project continues to have two main components, the original network study that brings together research on the reproductive biology, ecology, and migration of hawksbill and green turtles, and the monitoring of hawksbill nesting beaches. Both projects are carried out mainly in the Isla Bastimentos National Marine Park (PNMIB).

Nests monitoring has made it possible to contribute to the great cooperative effort of the project, "Research and Recovery of the hawksbill turtle population in the Ngäbe Buglé Comarca, Ño Kribo Region, Chiriquí Beach, Escudo de Veraguas and Isla Bastimentos National Marine Park" with the Sea Turtle Conservancy (STC), Department of the Environment, U.S. Fish and Wildlife Service (USFWS), APRORENANB (local NGO of Playa Chiriquí) and the Smithsonian Tropical Research Institute (STRI). Two censuses (April 22 and 28) were conducted in the Zapatillas Cays prior to the nesting season.

Daily monitoring of the beaches began from April 29 to November 1, and extra censuses on November 8, 19, 20, 30 and December 15 and 30. From April 29 to November 1, 1,013 hawksbill nests were recorded at Playa Cayos Zapatillas and an additional 13 nests from November 1 to December 31. Additionally, from March 12 to October 20, 121 hawksbill nests were recorded at Playa Larga and adjacent beaches and an additional 5 nests from October 20 to December 31, 2019. During 2019, 1,026 hawksbill nests were recorded in the Zapatillas Cays, 469 in the Small Key and 557 in the Grande Key. Additionally, it is reported that hawksbill turtle nesting was recorded in the Zapatillas Cays from April 29 to December 30. The maximum activity was observed from



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June to September. Nests were recorded covering all the perimeters of the two keys. During 2019, more nests were recorded in Cayo Grande than in Cayo Pequeño. All nests were marked and recorded with a GPS unit to allow nest location for monitoring and management purposes.

During monitoring, it was possible to mark 354 hawksbill nests (34.5% of the total 1,026) to review and determine the productivity in the Zapatillas Cays during 2019; 332 of them were assessed. It is estimated that a total of 129,406 hatchlings were born and released. The average clutch size (# of eggs) was 159.9 eggs (with a range of 53 - 229). Hatching success ranged from 0 to 100%, with an average of 79.1%. Emergence success (number of hatchlings that left the nest) ranged from 0 to 100.0%, with an average of 75.9%. There are no mammalian predators in the Zapatillas Cays, but some losses can be attributed to ants, crabs, and dipteran larvae. At least nineteen nests were lost to erosion; An additional 14 nests were not found (some of these may be due to erosion, or loss of marking tape). No nest was poached by humans.

It should be noted that, in addition to beach monitoring and the presence of park rangers, it is rare to have another human presence on the islands at night; The absence of artificial lights on the nesting beach that could disorient the nesting females or the hatchlings that emerge from the nests is a very positive aspect that occurs in the Zapatillas Cays, as well as the absence of natural or introduced mammalian predators that may be a threat to nests.

Nesting activities at Playa Larga during 2019 were carried out with the cooperation of the Sea Turtle Conservancy (STC). The STC organization began the nesting season with daily censuses on March 12, ending on June 30, with the primary objective of documenting nesting activities of leatherback turtles (*Dermochelys coriacea*), the results of these works will be reported by STC. Daily censuses were carried out from July 1 to October 20. Five additional censuses were carried out during February and one on March 8; In addition, extra censuses were carried out on November 10, 20, and 30; December 10 and 30, 2019, and a census on January 9, 2020 to document any additional nesting.

During this season there was no park ranger from the Ministry of the Environment, or national police personnel company, their presence is important since it allows to keep away people in the park searching for turtle eggs, nesting females and iguanas.

The census and data collection methodology used in Playa Larga is the same as those implemented in Cayos Zapatillas, Playa Chiriquí, Escudo de Veraguas, Playa Roja, and Playa Bluff, to allow comparison.

In Playa Larga, the location of the nests was recorded according to 88 marks every fifty meters, which allow us to identify the sectors along the beach. In addition to the long Playa Larga, there are several small beaches to the east (within the park), where hawksbill turtles nest. These beaches were monitored during additional surveys. Nest coordinates were recorded with a GPS unit, and



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nests were discreetly marked with pink tape.

Thirty-six (36) hawksbills were observed (marked and measured) during night patrols at Playa Larga; a total of 54 hawksbill encounters were recorded. The curved carapace length (notch to notch) recorded in hawksbills ranged from 75.6 – 94.6 cm. No tissue samples were collected from female hawksbills for genetic analysis this year.

Playa Larga is the longest nesting beach within the Park and therefore has great potential to contribute to the recovery efforts of the hawksbill turtle populations that nest in the Panamanian Caribbean.

A total of 126 hawksbill nests were marked at Playa Larga for further evaluation of hatchling production for the 2019 season. The average estimated number of eggs in hawksbill nests was 146.1 eggs (range 95 - 218). The hatching success of the 125 hawksbill nests within the park ranged from 0% to 100%, with an average of 63.6%. The emergency success was 56.2%. Twenty (20) nests were eroded (15.9%) and 11 were poached. The hawksbill nests that hatched produced a total of 11,530 hatchlings.

Playa Larga is also known for its importance as a nesting site for leatherback turtles. Documentation of the number of hawksbill nests on this beach provides further reason for conservation efforts in the Marine Park. Additionally, information on temporal and spatial patterns of hawksbill nesting serve as a guide.

As every year, during 2019, the sea turtle research and recovery project in the province of Bocas del Toro continued. Each year a gradual recovery of the nesting populations of hawksbill turtles in the area is observed, registering 1,152 hawksbill nests in the PNMIB during 2019. These results show the importance of the research and conservation work carried out in the province of Bocas del Toro, more support from the authorities is always required to control illegal capture at sea and nesting beaches.

As part of the conclusions of this investigation, it should be noted that during this season turtle hunting and/or nest poached was observed on all beaches, except Cayos Zapatilla. A minimum of eleven (11) nests and four (4) female hawksbills were poached within the Park. At least nineteen (19) nests and four (4) females were taken on the beaches adjacent to the Isla Bastimentos National Marine Park.

Additionally in 2019, poaching of nests within the park was less than 1%, compared to 38% for nests outside the park. These problems could drastically affect our objective of recovering the nesting populations of hawksbill turtles, since the female population shares the nesting beaches between the Isla Bastimentos National Marine Park, other beaches in the Province of Bocas del Toro and the beaches of the Ngäbe Buglé region.



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It is concluded from the researchers that it is very important to receive more support from government organizations to control poaching of hawksbill nests and nesting females and poaching of leatherback turtle nests. The awareness work carried out is important, but constant vigilance and operations can greatly reduce this problem. In addition, the illegal sea turtle fishery still persists, due to the fact that every year divers are observed inside and outside the PNMIB, as well as turtle harpooners in the PNMIB, the Ngäbe-Buglé Comarca and other areas such as Bluff and Flores. The killing of reproductive adult animals is particularly detrimental to the recovery of Hawksbill sea turtle populations. Adult females may nest 4 to 6 times during the same season, and if they survive, they will return to nest again in these sites in two to three years.

The Project "Ecology and Migration of Sea Turtles in the Province of Bocas del Toro, Panama", led by Doctors Anne and Peter Meylan, constitutes an effort of more than 10 years of research that documents with scientific information, which will contribute to the proper management of sea turtles and their habitats in this area. The information described above is the property of the researchers who should be contacted to cite this content.

15. SAN SAN POND SACK WETLAND OF INTERNATIONAL IMPORTANCE SEA TURTLE CONSERVATION PROJECT:

This project is developed by the Organization "Friends and Neighbors of the Coast and Nature Association" (AAMVECONA) in Changuinola, Bocas del Toro. For the period of this report, the Association implemented the Sea Turtle Monitoring Program on San San Beach, which extends approximately 10 km between the mouth of the San San River and the mouth of the Changuinola River, in the province of Bocas del Toro.

The methodology was based on the management, registration and analysis of the information collected from sea turtle nesting data. The standardized protocol established in the "Manual on Technical Management and Conservation of Sea Turtles on Central American nesting beaches" was applied. As part of the results, it is highlighted that leatherback turtles had 289 effective nests, 51 nests *in situ*, 73 stolen nests, 165 nests relocated to the hatchery, 6,265 hatchlings were released from a total of 11,020 eggs relocated to the hatchery from May to September 2019.

153 night patrols were carried out, between March and July, where 289 leatherback turtle nests were recorded. During the leatherbacks nesting season in San San beach, diverse activities were carried out to ensure the protection of nests and increasing survival, as poaching has been consistent on this beach for years by people outside the protected area. Of the total number of nests, 57% were relocated in the hatchery, 25% of the nests were stolen, 18% were left *in situ*, this year it was not possible to relocate nests in safe areas.

The AAMVECONA organization has been leading this Sea Turtle Conservation Project on San



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San beach for 13 consecutive seasons, managing to release 66,519 leatherback hatchlings to date, and protecting around 50% of the total effective nests per season in the hatchery.

Regarding the Tagging Program, for the 2019 season, a total of 86 nesting females were registered on San San beach with tags, of which 12 females re-nested twice on the beach, 2 females re-nested 3 times on the beach and 2 females re-nested 4 times on the beach, new turtles were not tagged because tags were not available.

It should be noted that thanks to the efforts of partners, volunteers, and Field Staff of the Sea Turtle Conservation and Monitoring Project in San San beach, local hunters have managed to kill only 16 leatherback turtles, in 13 years of the project. The fight against hunters who commit this environmental crime is becoming more and more difficult, causing a negative impact on this endangered species. Unfortunately, this year two leatherback were killed in May in markers 47 and 56, respectively. It is necessary that the authorities intervene, in such a way that this malpractice is eliminated and offenders are punished. Also to highlight, only 9 Hawksbills (*Eretmochelys imbricata*) nests were recorded during the season, and protected in the hatchery. 1,297 eggs were relocated and 939 hatchlings of this species were released.

16. PROJECT DISCOVERING AN ENDANGERED TREASURE IN LAS PERLAS ARCHIPELAGO; PILOT STUDY TO FIND LEATHERBACK TURTLE NESTING SITES: This project is carried out from Punta Cocos, La Esmeralda, Isla El Rey, Las Perlas Archipelago. This project is funded by National Geographic with support from the Ministry of Environment. The research team arrives in Panama on October 3, 2019, the investigation begins on October 23, 2019. The final work in the field was established for March 11, 2020. The beaches that have been monitored during the investigation include: Playa La Tortuguera, Nispera Beach, El Playón, Laguna de La Yeya Beach, Grillo Beach, Atajo Beach and Barquito Beach.

As part of the activities carried out, it is reported that the research team set out to document the presence or absence of leatherback turtles in Punta Coco, Isla del Rey, while also documenting the historical and current human use of sea turtles on the island.

117 surveys were carried out in four local communities (La Ensenada, La Esmeralda, Pedro González, San Miguel), regarding incidental capture in fisheries and human use of turtles. It was possible to patrol 7 beaches at dawn every other day during the five months of the nesting season to record sea turtle tracks. It also achieved 40 nest excavations, profiled and mapped all beach berms on three nesting beaches to understand beach erosion. Sand temperatures were monitored throughout the season at three nesting beaches. Although this project did not have any in-water components, we collected as much data as possible on in-water sightings.

As part of the results or achievements, it is reported that the project was a success despite the fact that no leatherback turtle nests were documented, which was the target species. This year in the



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Eastern Pacific, leatherbacks experienced their lowest nesting year ever recorded. However, 105 olive ridley turtle encounters, 77 green turtle encounters, 17 potential hawksbill encounters, and an additional 25 sea turtle encounters where the species was unknown were documented. Through conversations with the fishermen, twelve leatherback sightings were documented in the water, and the research team personally documented six hawksbill and six green turtle sightings. Hawksbill and green turtles were much more common than leatherbacks, but we had asked fishermen to focus on reporting leatherback sightings. Four poached olive ridleys, two poached greens, and two poached hawksbill turtles were documented.

By spending time in the community and through community surveys, we were able to determine the many uses of sea turtles within the archipelago, including that the turtle penis is considered an aphrodisiac, that the hawksbill shell is also used to make spurs for cockfighting, turtle oil for lung health, turtle blood for asthma or coughs, and turtle eggs and meat supposedly eaten for subsistence.

As next steps it can be mentioned that one of the most interesting findings of the study was the relatively high presence of hawksbill turtles on the reefs throughout the island archipelago. There also appears to be a presence in the water of green and leatherback sea turtles. It is planned to study the in-water habitat use of these species through satellite tracking, reef surveys, and long-term monitoring. This is a particularly important project, as hawksbill shell is still sought after within the local community for use in developing cockfighting spurs. This critically endangered species is frequently taken as bycatch in gillnets. Understanding the historical and current presence of this species throughout the archipelago is really one of the first steps in understanding how we can protect it.

Another projection focuses on protecting turtles throughout the archipelago through a comprehensive education and outreach program within the main local communities of the archipelago. This education and outreach campaign could include techniques to reduce sea turtle bycatch, teaching fishermen how to revive a partially drowned turtle, providing the tools used to remove hooks from turtles' mouths, discussions about the importance of sea turtles in marine ecosystems, and a forum for fishermen to share their experiences with turtles and why they think it is important to preserve them for future generations.

The women of La Esmeralda were also very interested in the project, but due to their conventional roles in the house and discomfort with the idea of walking the nesting beaches at night, they were unable to participate in the research activities. We plan to develop a program that allows women to participate in conservation efforts and at the same time support their households. This will support the idea that turtle conservation can be economically viable and that a long-term healthy population of turtles has the potential to bring more tourism and financial stability rather than eating turtle meat. Many successful programs that support women in other countries include making jewelry or souvenirs from recycled materials, making rugs, making bags, among others.

Coiba National Park is a critically important feeding ground for juvenile and adult hawksbill turtles



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in the Eastern Pacific. It is largely unknown where these individuals nest, as the turtles found around the island of Coiba National Park have not previously been tagged on the beach by any nesting program. Throughout this project it was learned that there are hawksbill turtles that nest on the Pearl Islands and that the nesting season is from May to October. It is planned to continue the nesting monitoring program during these months to have the opportunity to document hawksbill nesting sites.

Talks have been made with the Ministry of the Environment of Panama (Directorate of Coasts and Seas), to start a campaign to discourage the use of hawksbill shell in cockfighting. There is a campaign against the use of tortoiseshell in jewelry called #TooRareToWear, and we believe that a similar slogan in Spanish with a widely publicized educational program could be extremely effective, in decreasing the use of tortoiseshell in cockfighting over time.

*Currently, the follow-up of the project is being discussed with the production of a documentary that would tell the story of the hawksbill turtles and the local community in the Pearl Islands. A segment has been considered to be on the hawksbill turtles that are tagged to be monitored by satellite, to map the use of their habitat and the discovery of this foraging population in the region, another segment would deal with the history of human use of this turtle and its parts, combined with ongoing community interest in conservation, and then a final segment featuring the launch of the campaign to end or discourage the illegal use of hawksbill shell in cockfighting and crafts. **The information described above is the property of the researchers who should be contacted if citing this content is required.***

17. EVALUATION PROJECT OF THE INCIDENTAL CATCH OF MARINE MEGAFUNA IN THE MAIN FISHING PORTS OF THE PACIFIC COAST OF PANAMA: This project started at the beginning of 2017, at the initiative of JUSTSEA FOUNDATION in collaboration with the Ministry of Environment through the Directorate of Coasts and Seas. It is a broad project to evaluate the incidental capture of Marine Megafauna focused on the leatherback turtle.

This project is an effort to describe and quantify the dispersed captures of Megafauna, focused on particular species (sea turtles, seabirds, marine mammals, sharks and rays); contributing to understand the dynamics and nature of these catches, through access to captains and crew of the prototype vessels of each fishery in the ports identified as main. The JUSTSEA organization, in collaboration with the University of North Carolina and the Directorate of Coasts and Seas, prepared this proposal to evaluate fisheries interactions with marine megafauna in the Panamanian Pacific. This proposal has the financial support of the "Bycatch Reduction Engineering Program" of NOAA Fisheries.

The project reports the collection of valuable information through interviews, mainly with the captains of the boats in the main fishing ports in Panama (Puerto Coquira, Puerto Remedios, Muelle



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Fiscal/Puerto Panamá, Puerto Vacamonte, Puerto Juan Díaz, Puerto Armuelles and Puerto Mutis). The visits to the ports will be made taking into account the peaks of the main fisheries in the region. The results of this research will be included in the Action Plan of the National Fish and Wildlife Foundation and the Red LaudOPO initiative in order to make them part of a population model intended to guide regional management decisions. In turn, it is proposed to make available the information obtained through websites, scientific publications and presentations at international events.

In the second stage of this project, it is proposed to hold workshops for the captains of the vessels on handling when turtles are caught in fishing gear, presenting them with the appropriate procedure to release them, the delivery of equipment to monitor the interaction and for its release. This project implies the development of joint work between ARAP, MiAMBIENTE and Justsea Foundation. **The information described above is the property of the researchers who should be contacted if citing this content is required.**

18. PROJECT FOR THE CONNECTIVITY BETWEEN FORAGING AND NESTING SITES OF HAWKSBILL TURTLES IN COIBA NATIONAL PARK AND ITS AREA OF INFLUENCE: SENACYT, PROJECT FID-17-114. The main activities of this project were carried out in the Coiba National Park (07 ° 25'58 "N - 81 ° 45'57" W), in the Gulf of Chiriquí, which is made up of numerous islands and islets in offshore waters. up to 50 m deep. The Coiba National Park, Coiba NP covers 53,582 hectares and its islands have more than 240 km of coastline, most of which are preserved in their natural state. The seas of the Coiba National Park are home to a great diversity of species, including fish, crustaceans, cetaceans, sea turtles, among others.

As part of the objectives of this project, it is proposed to continue monitoring the population of hawksbill turtles in Coiba National Park, including the capture and tagging of new recruits, evaluation of growth rates of previously marked individuals (recaptures), taking of biological samples for genetic analysis, and placement of satellite transmitters in adult individuals. At the same time, the project aims to improve national research capacities by training technical personnel from the Ministry of the Environment (MiAMBIENTE), park rangers of the Coiba and Cerro Hoya National Park, and postgraduate students on sea turtles monitoring, capture, and handling techniques.

The monitoring and capture of hawksbill individuals is carried out in the sites with the greatest potential abundance, according to the information generated by the project "Monitoring to determine the presence and abundance of the hawksbill turtle (*Eretmochelys imbricata*) in Coiba National Park" preceding this one, where 10 monitoring campaigns were carried out between September 2014 and February 2019. To date, the team has identified 14 sites within the Coiba NP where there are hawksbill turtles, most of them located in the eastern part of Coiba island.

This report includes the project activities carried out from September 12 to 16, 2019, being the 11th hawksbill capture and monitoring campaign in the Coiba National Park since the beginning of the



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study in September 2014.

As part of the results of the Eleventh Campaign, 5 dives were reported (2 day and 3 night), 113 individuals were captured during the campaign, of these a total of 59 were new individuals, the rest of the individuals (54) were recaptures. It was also possible to place a satellite transmitter on an adult male, which has remained in the area to date. The captures of the Eleventh Campaign, have a total of 783 individuals captured to date (since 2014) of which 470 are captures and 313 are recaptures. Of the 14 sites sampled, the highest hawksbill density is found in Playa Blanca (173), Canales de Afuera (96), Bahía Rosario (67) and Granito de Oro (53). It should be noted that a mature female tagged with a tag was captured from Costa Rica, Osa Peninsula (tag OP-2872 / OP2873), which represents the first record of connectivity between nesting beaches in Costa Rica and foraging areas in the Coiba.

The fact that new individuals of hawksbill turtles are still being captured, in significant numbers (59 in this last campaign), during 5 years of research, 11 campaigns carried out and 470 individuals captured since the beginning of the project, is encouraging because it means that there are still we have not reached the saturation point of labeling in the population. Additionally, there are many small turtles (juveniles with sizes around 30 CCL) that represent new recruits to the population present in the area.

Until the date of this report, the male to which a satellite transmitter was attached to has remained within the Coiba NP. There is great expectation about whether this individual leaves the waters of the park the next nesting season in search of mature females near the nesting beaches as males of other species usually do.

As part of the projections, it is expected to ensure the participation of at least 6 divers during the subsequent capture and monitoring campaigns. It is also planned to use the new adjustments to the diving methodology for better location of reefs by divers and to carry out at least two dives in the sites with the highest density of turtles, such as the Playa Blanca reef. Likewise, it is necessary to increase beach monitoring efforts during the nesting season (July-September), in order to have a better chance of finding nesting females for placement of satellite transmitters. It has been established to monitor Morrillo beach (adjacent to Mata Oscura) for the entire nesting season (July-September) of 2020, with the help of two graduate students, and to do the same on Cascajilloso beach, in Mariato, province from Veraguas. **The information described above is the property of the researchers who should be contacted if citation of this content is required.**



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c._ Other activities

Include information on environmental education activities, programs to establish and manage protected areas, and cooperative activities with other Party countries.

1. PROJECT PS102547 "CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY IN COASTAL MARINE PRODUCTION AREAS": funded by UNDP and executed in coordination with the Directorate of Coasts and Seas of the Ministry of Environment. Within the framework of this project, funds have been awarded to two research intentions in Azuero; the first called "Strengthening of Sea Turtle Conservation Actions", to be carried out by the TORTUAGRO Organization in Cambutal community and whose objective is to stimulate and expand the conservation activities carried out by the group, to increase monitoring and protection of sea turtles while strengthening the organizational structure of the association, with a view to generating a strategy that contributes to directing and making sustainable the conservation and tourist activities carried out in the area. This project is framed under the biodiversity focal area, this project will provide the necessary conditions to expand the action area of TORTUAGRO (La Cuchilla beach) in order to generate new nesting statistics, including patrols on Morro Puerco beach, where there are reports of *Lepidochelys olivacea* (olive ridley), *Chelonia mydas* (green), and *Dermochelys coriacea* (leatherback).

For this purpose, an Action Plan will be prepared, which will include the preparation of the surveillance booth and the construction of a hatchery. The second project is called "Conciencia: Doing Community Science with Organized Groups of the South Zone of Azuero for the Conservation of Sea Turtles", which aims to improve the state of conservation and increase local awareness about sea turtles in ZEM Sur de Azuero, through an induction process doing community science. Currently there is a lack of knowledge about new nesting beaches and about trafficking of products and by-products of sea turtles in the area. Additionally, the Proposal has also been awarded; 2237 PAN 2019, On Consulting Services for Inter-Institutional Agreements to develop a Control Plan for the Extraction and Sale of Turtle Eggs and a Plan to Mitigate the Impact of Artificial Lights on the Coast during the Sea Turtle Nesting Season; within the framework of the Sustainable Azuero Project, to be carried out in the Isla Cañas Wildlife Refuge.

2. PROJECT TO STRENGTHEN ACTIONS FOR THE PROTECTION, CONSERVATION AND SUSTAINABLE MANAGEMENT OF SEA TURTLES IN THE PACIFIC AND CARIBBEAN COASTAL COMMUNITIES OF PANAMA: This project is currently being carried out with a projection of continuity, since 2017. It constitutes a comprehensive management strategy for the protection and conservation of sea turtles and their habitats, as well as for the improvement of the quality of life in communities that depend on this resource in the Republic of Panama, addressing the implementation of the National



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Action Plan for the Protection, Conservation and Investigation of Sea Turtles, approved by Resolution No. DM-0031-2017 (Friday, January 27, 2017), which approves the National Action Plan for the Conservation of Sea Turtles in the Republic of Panama. Gazette No. 28237-A of Wednesday, March 15, 2017.

With this project, institutional actions are undertaken where training, environmental education and dissemination components are developed, tending to improve the conservation status of sea turtles, increasing knowledge of coastal communities and key actors; encourages the creation of strategic alliances to promote scientific research and the sustainable management of sea turtles, involving companies linked to tourism, governmental institutions, the scientific and academic sector, as well as non-governmental organizations; strengthens the institutional framework and cooperation on issues related to the protection, conservation, sustainable management of sea turtles and community development.

Priority areas were selected at the national level for the conservation of sea turtles, in urgent need of protection and where initiatives are currently being developed that need to be strengthened by MiAMABIENTE. The prioritized areas in this project are: In Alanje cabecera (La Barqueta Beach), Changuinola (San San Pond Sack Wetland of International Importance), Guánico Abajo, Tonosí, Los Santos (La Marinera Beach), Isla Cañas, Tonosí, Los Santos (Isla Cañas Wildlife Refuge), Jaqué, Chepigana (Jaqué Beach), Guna Yala, Puerto Obaldía (Armila), Quebro (Mata Oscura Beach and Malena Beach).

As part of the activities to be carried out are: the construction of 8 artificial hatcheries in priority areas, where nesting *in situ* is seriously affected by human activities, predation by domestic animals and there are changes in the topography of the beaches; holding workshops to disseminate the National Action Plan for the Protection, Conservation and Research of Sea Turtles; the issuance of certifications for tourist guides specializing in sea turtle observation; strengthen eight (8) community organizations (Caribbean and Pacific), which are key in the protection, conservation and sustainable management of sea turtles and the participation of communities, to support and strengthen their management; reestablish the Inter-institutional Committee of Sea Turtles of Panama and assist in its operation; train members of community organizations on general aspects regarding the biology, ecology, identification, behavior of sea turtles, related regulations and safety measures that people must follow to avoid altering the behavior of sea turtles; design and preparation of informative billboards for the nesting beaches belonging to the project; monitoring and inspection of the Coastal Marine Biodiversity, among others.

3. PANAMANIAN SEA TURTLE NETWORK RED PANATORTUGAS: The Red Panatortugas is made up of 14 sea turtle conservation organizations in Panama, 6 in the Caribbean and 8 in the Pacific that work together for the conservation of sea turtles. Each organization protects and conserves its own nesting beaches and also promotes Environmental Education Programs in their respective communities. Committed communities, groups and



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organizations are the greatest allies for conservation. It is through environmental education and networking at a national, regional and international level that it will be possible to recover and conserve these highly threatened species. The PANATORTUGAS NETWORK serves as a platform for organized groups and organizations that work to protect sea turtles and to report conservation activities and environmental violations related to this important resource to the authorities.

This is how, every year, PANATORTUGAS holds its annual meeting, held on May 17, 18 and 19, 2019, at Playa Soropta, Bocas del Toro, with representatives and members of organizations of the Network. During this event, the results of the Sea Turtle Conservation Projects that attended were presented and the origin, structure and functions of the Secretariat for the Application of Environmental Legislation of the Trade Promotion Treaty between the United States and Panama (SALA TPC USA-Panama) were disclosed. They discussed the possibility of coordinating meetings or workshops in the future in communities to explain the Environmental Communications Mechanism and the Fact File as participation tools offered by the TPC and managed by the SALA. Likewise, workshops on how to prepare environmental communications were proposed, considering the different requirements according to the administrative procedure law and Chapter 17 of the Treaty, among others.

4. FUNDACIÓN AGUA Y TIERRA, (FUNDAT): Carry out research and monitoring activities in Mata Oscura beach on nesting of *Cm*, *Dc*, *Ei*, *Lo*, research is carried out on the hatching success of natural and relocated nests for *Lo*, *Cm*, *Ei*) and tagging for (*Ei* and *Cm*).

On the subject of Environmental Education, the Fundación Agua y Tierra (FUNDAT) has an environmental education program, in which the following activities were developed in 2019:

Talks: Talks on sea turtle conservation were held in 4 schools within the Southern Zone of Veraguas Special Management Zone, specifically in the Torio, Malena, Morrillo and La Loma schools, all in the Mariato district. Talks were also given at 2 elementary schools, 2 high schools and 1 university and in other areas of Panama. Also, 15 units of the Ecological Police and 325 visitors to the project received talks during 2016.

Turtle Fair: In 2019, the 4th Ecotourism and Conservation Fair of the Sea Turtle was held, with the attendance of 1,200 people, who were given information about sea turtles, species, threats, importance of conserving them and management alternatives. It is also a window to disseminate the work of the Fundación Agua y Tierra and educate on issues of waste management and ecotourism.

Garbage Scientists: It is a Program that is carried out with the students of the Morrillo School, where they are educated on the problem of garbage on beaches, in this case on the nesting beach. Monitoring of biotic interactions, community perception surveys and educational tours are carried out to empower children about the problem of garbage for turtles and people. This



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program is carried out in a network with other Latin American countries (RECIBA Network).

Dissemination in events: FUNDAT's participation in 4 environmental fairs with an educational stand is reported. In September we organized the beach sculpture contest, in conjunction with MEDUCA, CI and ICEPED. In these activities, information was given on the conservation of sea turtles in Panama.

Other activities: 6 nesting beach cleanups were carried out during the year, 3 educational releases of hatchling sea turtles, in the Agua y Tierra Foundation hatchery, with children from the Morrillo school.

Management Programs: The formation of the first Zonal Committee was promoted, as a co-management body within the ZEMMC Zona Sur de Veraguas. We have created a rural community ecotourism circuit, based on the conservation of sea turtles, called ECO-RUTA TORTUGA.

Cooperation: We worked in partnership with foreign educational centers in 2019 such as: 3 students from the Agro Paris Tech University (France), 19 students and 2 teachers from the Students Without Borders Academy (Canada), among others. A Social Service Program was also carried out with the Regional University Center of Veraguas of the University of Panama (20 students were attended in 2019), and 4 thesis students were received in 2019, from the University of Panama (Panama, Coclé and Colon).

Scientific Monitoring: Night patrols were carried out 250 nights (June 2019-February 2020), with a biologist, technical staff and volunteers. Pilot patrols with drones and cameras with heat sensors began in October (20 days).

Volunteering: 76 volunteers were received from June 2019 to February 2020, mainly from Spain (60%), Panama (30%), France (6%), other countries (4%).

5. TORTUGAS PEDASI: This organization works on the beaches of the District of Pedasí, province of Los Santos. Among the beaches that this organization monitors are: Playa Lagarto, Playa Lunchon, Playa El Toro, within the Pablo Arturo Barrios Wildlife Refuge. The beach monitoring area has an extension of 6 km.

Regarding Environmental Education and Dissemination, a series of activities have been carried out during the period of this report, including:

- February 9 and 17, 2019; A kite-making workshop and festival are organized for the children of the community of the Pedasí district, in collaboration with the Municipality. Participation of 53 children.
- March 23 to May 3; Design of environmental board games about sea turtles and their



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threats and the birds found in the Arturo Pablo Barrios Wildlife Refuge. 4 schools were visited where a talk was held and the games were given away. The games were presented to 2 education projects in Pedasí (EcoPelao from Proyecto Eco Azuero and Teach PTY).

- June 8, 2019; A talk on Sea Turtles and how to build a hatchery is held for a group of students from the United States of the Global Glimpse organization, Pedasí.
- July 24, 2019; Talk about sea turtles is held at the San Agustín School, Costa Verde, in Panama City.
- August 3, 2019; Talk about sea turtles to the neighbors (adults and children) of the PH Versalles, in Panama City.
- September 11, 2019; Talk about sea turtles with the participants of the Nomad Campus project, Pedasí.
- September 14, 2019; A talk was held for Novey employees, in conjunction with its "Ocean League" campaign, in Panama City.
- October 19; "Art in the Park" Environmental education activity, creativity with recycled materials in collaboration with Nomad Campus, Pedasí.
- March 3, 2020; Talk about sea turtles for members of BioFuturo, Pedasí.
- July 23, 2019 to January 28, 2020; Night monitoring is carried out at Playa Lagarto with national and foreign volunteers. The experience of night patrols is shared and we provide information about sea turtles and their situation on our beaches.

The Tortugas Pedasí Organization has participated in several workshops, among which the following stand out:

- March 27, 2019; Participation in the project start-up workshop "Conservation and sustainable use of biodiversity in productive landscapes in coastal marine production areas". Gef-MiAMBIENTE, Las Tablas, province of Los Santos.
- October 9, 2019: seminar "Conservation and sustainable use of biodiversity in productive landscapes in coastal marine production areas, Panama: Azuero Biodiversity" UNDP-Gef-MiAMBIENTE, Las Tablas.
- October 18, 2019: Climate Change Adaptation Project Workshop, MiAMBIENTE, Pedasí.
- November 15, 2019: Biodiversity Project/UNDP information workshop.
- November 18, 2019: Biodiversity Project/UNDP information workshop.

Regarding Beach Cleaning, Tortugas Pedasí has made the following efforts:

- April 26, 2019; "Earth Day", El Arenal beach cleaning, Pedasí.
- June 8, 2019; "Day of the Oceans": beach cleaning, Lagarto, Pedasí.
- September 3, 2019; Arenal beach cleaning in collaboration with MiAMBIENTE, Pedasí.
- September 29, 2019; "International Coastal Cleanup Day", El Arenal beach cleaning, Pedasí.



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The number of volunteers and people (adults and children) reached by our education and conservation activities: Education, 436 and Volunteering, 125.

Regarding the Alliances, the Tortugas Pedasí Organization presents the following actions:

- Collaboration with ProEcoAzuero and Cima in the organization of the celebration of Earth Day, on April 26, 2019.
- Participation in the Third Meeting of the Panatortuga Network at the facilities of the Sea Turtle Conservancy, in Bocas del Toro, Panama.
- Collaboration with Global Glimpse in the construction of a hatchery in Playa Lagarto, Pedasí.
- Collaboration with Nomad Campus in a camping and monitoring project in Playa Lagarto, Pedasí.
- Collaboration with Miambiente; Rescue and rehabilitation of 2 green turtles, March 21-27, 2019, June 10-16, 2020; Beach cleaning, participation in the V day of national reforestation. Officials from the Ministry of the Environment accompanied us on nightly monitoring.
- December 5-6, 2019; Participation in the global study of microplastics on nesting beaches, University of Exeter, England and Ocean Legacy Foundation. Sand samples collected on the beaches of the Pablo Arturo Barrios Wildlife Refuge. Field work by Paula Pava, marine biologist.
- Participation in the "Ocean League" campaign of the company Novey, in September 2019.

6. ORGANIZATION TO PROTECT THE SEA TURTLE AND BIODIVERCITY OF JAQUÉ – DARIEN: This Organization is located in Jaqué, district of Chepigana. Darien Province. For the period of this report, the following activities are reported: the realization of the Sea Turtle Festival, which was promoted and disseminated by television media; Beach cleanings were carried out, talks were held for children and high school students with issues of awareness about sea turtles by personnel from the Ministry of the Environment. With the support of community members and the National Border Service (Jaqué Detachment), the hatchery was reconstructed and cleaned. Another of the activities that we highlight is the planting of mangroves and their surveillance.

7. PLAYA MALENA SEA TURTLE CONSERVATION ASSOCIATION: This organization is located in the District of Mariato in the province of Veraguas. The completion of 10 beach cleanups is reported, one (1) cleanup where students from the University of Panama have participated, four (4) cleanups with the Technological University of Panama, two (2) cleanups with Malena's group, two (2) with the community, two (2) volunteers from Japan and NGO's; 20 pick up cars full of garbage bags were collected.

8. ACOTMAR ALLIANCE SEA TURTLE CONSERVATION PROJECT OF THE



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AUTONOMOUS UNIVERSITY OF CHIRIQUÍ, UNACHI AND

THE ROJAS FAMILY: This project is located in La Barqueta Beach, Guarumal, Alanje District, Chiriquí Province. It is an initiative carried out by the Organization ACOTMAR (Association for the Conservation of Sea Turtles) of UNACHI, which is a seed group of researchers and collaborators of CRECOBIAN (Center for the Reproduction and Conservation of Animal Biodiversity), in alliance with the Red Family.

As part of the education and outreach activities, an estimated 3,000 visitors of all ages are reported, including children, youth, and adults from the community, the province, and nationwide; as well as foreigners who participated voluntarily and free of charge in the release of baby turtles. In each release they are taught all the work we do in the field from the location of the nests where the turtles spawned in their natural environment, the collection of nesting data, relocation of the nests in the hatchery, the incubation period and birth. In January 2020, the Tagging Program began, where we managed to tag the first turtle on the beach, a hawksbill turtle, a critically endangered species. It should be noted that coordination is being carried out with the MiAMBIENTE Regional Office of Chiriquí to support this initiative with supplies and materials, as well as support during monitoring and conduct surveillance operations.

9. SEA TURTLE CONSERVATION PROGRAM OF THE LOS PANAMAES ECOLOGICAL RESERVE: This Project carries out monitoring on three beaches (Puerto Escondido Beach, Los Panamaes Beach and La Miel Beach), located in Pedasí, Los Santos province. The Los Panamaes Ecological Reserve is located at 07° 26' 50.9" N and 080° 04' 06.8" W. It has 410 hectares, along 4 kilometers of coastline on the Azuero Peninsula, Pedasí, Los Santos Province, Pacific Panamanian.

It should be noted that during the period covered by this report, a Volunteer Program was developed, with the participation of 5 volunteers. Those who supported the monitoring (relocating nests and taking biometric data) and also collaborated in the release of hatchlings and beach cleaning, in addition to making cylinders.

During the Environmental Education and Dissemination activities, around 196 people participated, including children, youth, and adults.

10. CASCAJILLOSO BEACH SEA TURTLE CONSERVATION PROJECT: This project is located in Arena de Quebro, Mariato district, Veraguas province. It is developed by technical personnel from the Ministry of the Environment of the Quebro Arena Agency, from the Cerro Hoya National Park. As part of the Environmental Education and Dissemination activities, on October 3, 2019, in commemoration of the 25th Anniversary of the Cerro Hoya National Park, an awareness-raising activity was carried out, where 320 hatchlings were released, as well as cleaning the beach. This activity was attended by 120 people including children, youth and adults. At night, a beach monitoring was carried out with the participation of 60 people.



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11. PLAYA LA MARINERA BIOLOGICAL RESERVE: It is located in Guánico Abajo, Tonosí, province of Los Santos. It has an extension of 570 meters, it is located at the initial coordinates 17N 563460 802312 and final 17N 563168 801878 UTM. In the Playa La Marinera Biological Reserve, the activities of Environmental Education, Social Work and Volunteering, Attention to visitors (National and Foreign, Academics) and graduates research are reported.

12. SEA TURTLE CONSERVANCY: For the period of this report, this additional organization reports Environmental Education and Outreach work that includes, among other activities, training. Since monitoring activities have started, it is required to recruit local personnel on the various beaches, and a call is made in the surrounding communities, explaining the job and skills required. Those interested were given a training workshop that includes theory and practice; This course lasted three days where the participants learned about the biology of sea turtles, conservation, threats and monitoring techniques. Having the opportunity to practice the methodology of patrols and censuses. To be hired as a 'beach instructor', anyone has to pass a written and practical exam at the end of the training course.

In Playa Chiriquí, the training was from March 8 to 10; 16 interested parties participated, of which 8 were selected and four who had worked in previous years continued to work during 2019; In Playa Soropta, the training of monitors was carried out from March 14 to 17; 7 people who were selected participated; In Playa Bluff from March 18 to 20, only 5 people selected to work participated (Annex 4). This year, five volunteer Research Assistants (RA's) were involved, who will participate as monitors rotating on the different study beaches during the 2019 season. As in previous years, in 2019 the local monitors, research assistants, volunteers and coordinators of field are responsible for carrying out monitoring and protection activities in the different study sites; the local monitors belonged to coastal communities in the province of Bocas del Toro and the Comarca Ngäbe Buglé. STC continued to work closely with Minera Panamá, S.A., local community organizations such as the Hawksbill Association (Asociación Natural Bocas Carey - ANABOCA) and the Association for the Protection of Natural Resources Ngäbe Buglé APRORENANB, developing community participation and a sense of pride in the projects, which have been critical to their success to date. A total of 45 people were employed by STC at various study sites in 2019; including six field assistants, 30 beach monitors, 8 cooks and a boat captain. Of these, 9 (20%) were women, all cooks at Playa Chiriquí and Playa Soropta and a field monitor at Playa Bluff. The information described above is the property of the researchers who should be contacted if they are required to cite this content.

13. SAN SAN POND SACK WETLAND OF INTERNATIONAL IMPORTANCE SEA TURTLE CONSERVATION PROJECT: This Project is developed by the Friends and Neighbors of the Coast and Nature Association, AAMVECONA in Changuinola, Bocas del Toro. For the period of this report, the Association developed the Sea Turtle Monitoring Program in San San beach, which has an approximate extension of 10 km between the mouth of the San San river and the mouth of the Changuinola river, in the province of Bocas del Toro. The



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AAMVECONA Organization, reports the results of its Environmental Education Program, whose objective is focused on raising awareness among students of the schools of the Changuinola district adjacent to the protected area of the San San Pond Sack Wetland of International Importance, where 15 schools participated, training a total of 271 people including students, teachers and parents, and releasing a total of 464 newborns as part of the activities of this Project. This year, training workshops were held including topics such as the Handlingt of Sea Turtles during Night Patrol, training 278 people from university groups, schools, national and international volunteers, who contributed their time and work to the conservation of these vulnerable species and at the same time become agents of change to disseminate and educate future generations about the importance of protecting sea turtles.

Once the IAC Technical Focal Point was appointed to the Ministry of Environment, after the approval of the Law on March 25, 2015 that creates it, it continued to comply with the Country's responsibilities before this convention. In the same way, they have participated in all the meetings of the Consultative and Scientific Committees and coordination has been carried out with the national institutions and organizations with competence in this matter.



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Part IV: Annexes

Table 1: Species Present

Place an X in the box when the species listed is present in the oceanographic basins of your country as established in Article III of the text of the Convention. Lo = *Lepidochelys olivacea*; Lk = *Lepidochelys kempii*; Dc = *Dermochelys coriacea*; Ei = *Eretmochelys imbricata*; Cm = *Chelonia mydas*; Cc = *Caretta caretta*.

Species	Pacific Ocean	Atlantic Ocean	Caribbean Sea
Lo	X		
Lk	X		X
Dc	X		X
Ei	X		X
Cm	X		X
Cc	X		X



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Table 2: Index nesting sites or beaches for sea turtle conservation

- a. *This table is intended to report information on index nesting sites or beaches for each species. For beaches that have multiple species nesting, enter that beach under the list for the primary nesting species. When entering information on nesting site or beaches, information is to be entered for each species independently. Indicate the names of index nesting sites. On a separate sheet of paper, indicate the selection criteria used for identifying the index beach, for example, because it hosts a significant proportion of the overall nesting population within a region or other defined unit or genetic importance. Please use the index sites that your country has selected included in the document circulated with this report as Table 4. Also available on the [IAC website](#).*
- b. **Nesting season:** *Indicate the starting and finishing date of the nesting season.*
- c. **Monitoring period:** *Indicate the starting and finishing date of monitoring efforts.*
- d. **Survey frequency:** *Indicate the frequency with which the surveys are done (daily, weekly, bi-weekly, monthly, among others).*
- e. **Geographic location:** *Specify latitude and longitude in decimal degrees.*
- f. **Extension of beach monitored:** *Provide the total length (in Kilometers) of the nesting beach.*
- g. **Declared protection area:** *Indicate (yes or no) if the area is declared as some type of protected area.*
- h. **Annual nesting abundance:** *Provide information on the total number of females and/or clutches or nests deposited at the nesting site or beach in real numbers. Provide the exact count of females based on tagged or uniquely identified individuals. If the exact number of clutches is unknown provide a total number of nests.*
- i. **Information from tagging program:** *Indicate if there have been any tagging activities at the nesting beach by using the letters of the type of tagging being done: flipper tagging (FT), passive integrated transponder (PIT) tagging, and satellite telemetry (ST) programs. If possible, on a separate sheet or as attached reference provide greater detail about the type of tagging efforts conducted. Also, provide satellite telemetry maps or flipper tag recovery information if available.*
- j. **Tissue sampling:** *Indicate if there has been tissue sampling conducted at this site. This includes skin, blood, and other body tissues. On a separate sheet, or as attached references describe these tissue sampling programs in greater detail. For example, were samples collected for genetic, contaminant, and/or stable isotope studies?*
- k. *Indicate what organization or entity is providing the data.*
- l. *When inserting new rows, please copy and paste the drop-down menus when applicable.*

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Spp	Name of Index Nesting Site or Beach	Nesting Season		Monitoring Period		Survey Frequency	Geographic Location (Lat/Lon) in Decimal Degrees		Extension of beach monitored (km)	Declared Protected Area (Yes/No)	Annual Nesting Abundance			Tagging Program (FT, ST, PIT)	Tissue Sampling (Yes, No)	Organization or entity providing data
		Start	Finish	Start	Finish		Latitude	Longitude			Females Exact Count	Clutches Exact Count	Number of Nests			
Lo	Playa La Marinera	Jul	Dec	Jan	Dec	Not available	7° 15' 26.91'' 7° 21' 42.79''	80° 25' 27.87'' 80° 25' 32.31''	600 m	Yes	31,078	1,278	1,029	Not available	No	MiAmbiente/ SIN AP
	Playa Isla Cañas.	Jul	Dec	Jul	Dec	Daily	7° 25' 29.40'' 7° 21' 42.79''	80° 15' 30.01'' 80° 21' 46.80''	0.8 km	Yes	18,225	8,425	710	MA	No	MiAmbiente/ SIN AP
Dc	Playa Armila	Feb	Aug	Not available	Not available	Not available	8° 41' 53.83'' 8° 39' 51.71''	77° 31' 27.04'' 77° 27' 08.42''	4.5 km	No	Not available	Not available	Not available	Registration of Trademarks of other beaches	No	Fundación YaugGalu
	Playa Chiriquí	Feb	Jul	2 Jan	26 Dec	Jan to Dec once a week, Feb to Nov every other day, Mar to Oct daily.	9° 00' 57.02'' 8° 47' 48.93''	81° 42' 37.94'' 81° 29' 35.93''	24 km	Yes	868	4,118	234	MA and TS	NO	Sea Tutle Conservancy, STC
Ei	Playa Chiriquí	May	Oct	2 Jan	26 Dec	Jan to Dec once a week, Feb to Nov every other day, Mar to oct daily	9° 00' 57.02'' 8° 47' 48.93''	81° 42' 37.94'' 81° 29' 35.93''	24 km	Yes	348	1,717	598	MA	NO	Sea Tutle Conservancy, STC
Cm	Playa Chiriquí	Jan	Dec	2 Jan	26 Dec	Jan to Dec once a week, Feb to Nov	9° 00' 57.02''	81° 42' 37.94''	24 km	Yes		Not		MA	NO	Sea Tutle Conservancy, STC

						every other day, Mar to Oct daily. Sporadic nesting.	8° 47' 48.93"	81° 29' 35.93"			3	available	9			
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Table 3: IAC Form to report interactions of sea turtles with industrial longline fisheries

a. This form is intended to report the annual summary of the number of sea turtle incidentally caught by industrial longline vessels (>20 m) during fishing operations in 2019.

b. Countries without this type of fishery will mark with X the “does not apply” box.

c. Target Species: Indicate the target species (scientific and common name) of the industrial longline fisheries during the last year. Indicate if the catch was using shallow or deep sets.

Fleet Information (Examples are provided in blue in the form)

d. Period covered: Starting and end date of the fishing operations of the year

e. Area fished: Indicate the area coordinates where shallow set and deep sets fishing operations were carried out during the last year.

f. No. of vessels that fished: Indicate the total number of vessels in the fleet in each case (deep set and shallow set), the number of vessels with observers on board, and the corresponding percentage of vessels with observers (% observed)

g. No. of trips: Indicate the total number of trips in each case (deep set and shallow set), the number of trips with observers on board, and the corresponding percentage of trips with observers onboard (% observed)

h. No. of effective fishing days: Indicate the total number of fishing days in each case (deep set and shallow set) when fishing took place, the number of fishing days with observers on board, and the corresponding percentage of fishing days with observers onboard (% observed)

i. No. of sets: Indicate the total annual number of sets in each case (deep set and shallow set), the annual number of sets with observers on board, and the corresponding annual percentage of sets with observers onboard (% observed)

j. No. of hooks (in thousands): Indicate the total annual number of hooks in each case (deep set and shallow set), the annual number of hooks with observers on board, and the corresponding annual percentage of hooks with observers onboard (% observed). It refers to the number of hooks per basket (HPB) or the number of hooks between floats (HBF). If the number is unknown include an approximate number of hooks/sets, using an asterisk (*) to indicate that it is an approximation.

k. Predominant hook type/size: Using the [IATTC codes](#) indicate the most common hooks (> 50%) used throughout the year as a total, and in vessels with onboard observers in each case (deep sets and shallow sets).

l. Predominant bait type: Indicate the most common bait used throughout the year as a total, and in vessels with observers in each case (deep sets and shallow sets) using the following bait codes: SQ – squid (e.g. Cephalopods), M – mackerel (e.g. Scomber spp.), A – artificial lure (e.g. plastic jig), O-other, and specify.

Sea Turtles Species (Units expressed in the number of individuals observed)

m. Released alive: Total number of each sea turtle species released alive in each case (shallow and deep sets)

n. Released dead: Total number of individuals of each sea turtle species released dead in each case (shallow and deep sets)

o. Released condition unknown: Total number of each sea turtle species released under unknown conditions as the individual could not be brought onboard or close enough to verify the condition dead or alive.

p. Notes: Include additional information such as turtles caught that had tags (flipper tags or satellite transmitter), in each case (shallow and deep sets), if applicable.

Table 3: IAC Form to report interactions of sea turtles with industrial longline fisheries (vessels >20m)

Member country	Country name	The form does not apply	
Target Species	e.g. Multiple		

FLEET INFORMATION (vessels >20m)

	Shallow sets (<15 HPB/HBF ¹ or <100m max hook depth)			Deep sets (≥15 HPB/HBF or ≥100m max hook depth)		
Period covered	date range mm/dd/yyyy–mm/dd/yyyy			date range mm/dd/yyyy–mm/dd/yyyy		
Area fished	from (XXX) ^o W to (XXX) ^o W and from (XXX) ^o S/N to (XXX) ^o S/N			from (XXX) ^o W to (XXX) ^o W and from (XXX) ^o S/N to (XXX) ^o S/N		
	Total Fleet	Observed	% observed	Total Fleet	Observed	% observed
No. of vessels that fished	60	3	5	90	8	8.9
No. of trips	150	15	10	300	10	3.3
No. of effective fishing days	3700	238	6.4	800	22	2.8
No. of sets	4000	800	20	1000	25	2.5
No. of hooks (in thousands) ¹ <i>If unknown, approx. no. of hooks/set, using a *</i>	700	120	17	300	12	4
Predominant ² hook type/size (IATTC code)	C-40	J-02		C-33	C-33	
Predominant bait type ³	SQ	SQ		M	M	

SEA TURTLE SPECIES (vessels >20m)

	No. of Individuals Observed					
	Shallow sets (<15 HPB/HBF ⁴ or <100m max hook depth)			Deep sets (≥15 HPB/HBF or ≥100m max hook depth)		
	Released Alive	Released Dead	Released Condition Unknown	Released Alive	Released Dead	Released Condition Unknown
Taxa - Sea turtles						
Leatherback (<i>Dermochelys coriacea</i>)						
Loggerhead (<i>Caretta caretta</i>)						
Green (<i>Chelonia mydas</i>)						
Olive ridley (<i>Lepidochelys olivacea</i>)						
Kemp's ridley (<i>Lepidochelys kempii</i>)						
Hawksbill (<i>Eretmochelys imbricata</i>)						
Notes (e.g. Tagged turtles, etc.)						

¹ Hooks per Basket / Hooks Between Float (HPB/HBF)

² "Predominant" indicates most common, e.g. >50%

³ Bait code: SQ – squid (e.g. Cephalopods), M – mackerel (e.g. Scomber spp.), A – artificial lure (e.g. plastic jig)

⁴ Hooks per Basket / Hooks Between Float (HPB/HBF)

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List of index sites for each sea turtle species for each IAC country within which sea turtle nesting occurs. Use the index beaches in this table to provide information for Table 2 index nesting sites.

Name of Beach	DC	CM	EI	CC	LO	LK	Responsible
Belize (2)		(1)	(1)	(1)			
Gales Point			X				
Bacalar Chico Marine Reserve		X		X			
Brazil (18)	(2)	(1)	(7)	(12)	(3)		
Comboios	X			X			
Povoação	X			X			
Busca Vida			X	X			
Santa Maria				X			
Barra Jacuipe			X	X			
Guarajuba			X	X			
Itacimirim			X	X			
Praia do Forte			X	X			
Barra do Furado				X			
Farol				X			
Farolzinho				X			
Maria Rosa				X			
Berta			X				
Pipa			X				
Mangue Seco					X		
Coqueiros					X		
Pirambu					X		
Trindade Island		X					

Name of Beach	DC	CM	EI	CC	LO	LK	Responsible
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Caribbean Netherlands (2)	(1)	(2)	(1)	(1)			
Klein Bonaire, Bonaire		X	X	X			Sea Turtle Conservation Bonaire
Zeelandia, St. Eustatius	X	X					St Eustatius Sea Turtle Conservation
Costa Rica /Pacific (9)	(1)	(5)			(4)		
Isla Murcielago		X					
Nancite*					X		
Naranjo		X			X		
Cabuyal		X					
Nombre de Jesús		X					
Punta Pargos		X					
Playa Grande	X						
Ostional*					X		
Hermosa					X		
Costa Rica/Atlantic (4)	(3)	(1)	(1)				
Tortuguero	X	X					
Pacuare Norte	X						
Mondonguillo	X						
Cahuita			X				
Ecuador (9)		(6)	(1)		(5)		
San Lorenzo					X		MAE (Pacoche)
La Botada					X		MAE (Pacoche)
Playa Chocolatera		X			X		MAE (REMACOPSE)
Playa Tres Cruces		X			X		MAE(REMACOPSE)
PlayaMar Bravo		X			X		MAE(REMACOPSE)
Playita (Machalilla)			X				MAE (PNM/ Equilibrio
Quinta Playa (Galapagos)		X					MAE (DPNG)
Barahona (Galapagos)		X					MAE (DPNG)
Las Bachas (Galapagos)		X					MAE (DPNG)

Name of Beach	DC	CM	EI	CC	LO	LK	Responsible
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Guatemala (2)	(1)				(2)		
Hawaii	X				X		ARCAS
La Barrona					X		
Honduras/Atlantic (3)	(1)		(2)				
Pumkin Hill, Utila			X				
Plaplaya	X						
Cayos Cochinos			X				
Honduras/Pacific (2)					(2)		
Punta Ratón					X		
El Venado					X		
México/Atlantic (12)		(11)	(4)	(8)		(7)	
Rancho Nuevo, Tamps		X		X		X	CONANP
Barra del Tordo, Tamps		X		X		X	CONANP
Altamira, Tamps		X		X		X	CONANP
Mirama, Tamps						X	CONANP
Lechuguillas, Ver		X	X			X	CONANP
Isla Aguada-Xicalango-Victoria, Camp		X	X			X	CONANP
Chenkán, Camp		X	X			X	CONANP
Las Coloradas/Rio Lagartos, Yuc		X	X	X			CONANP
Xcaceel, Q.Roo		X		X			Reserve Estatal
Chemuyil, Q. Roo		X		X			
Xel Ha, Q. Roo		X		X			
Puerto Aventuras, Q. Roo		X		X			
México/Pacific (13)	(6)	(5)			(9)		
El Verde, Sin	X				X		CONANP
Platanitos, Nay					X		CONANP
Nuevo Vallarta, Nay					X		CONANP
Mismaloya, Jal					X		CONANP
Chalacatepec, Jal					X		CONANP
El Chupadero, Col							CONANP

Name of Beach	DC	CM	EI	CC	LO	LK	Responsible
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Mexiquillo, Mich	X	X			X		CONANP
Tierra Colorada, Gro	X	X			X		CONANP
Cahuitán, Oax	X						CONANP
Escobilla, Oax*	X				X		CONANP
Barra de la Cruz, Oax	X	X			X		CONANP
Maruata, Mich		X					Univ. Michoacana SNH
Colola, Mich		X					Univ. Michoacana SNH
Panamá/Atlantic (3)	(2)	(1)	(3)	(1)			
Cayos Zapatillas (B. del Toro)			X				
Playa Chiriqui (B. del Toro)	X	X	X	X			
Playa Armita o Pito (Guna Yala)	X		X				
Panamá/Pacific (2)		(2)			(2)		
RVS Isla Cañas		X			X		
Playa La Marinera		X			X		
United States/Atlantic (7)	(5)	(4)	(3)	(4)		(1)	
Culebra Island, Puerto Rico	X						
Vieques Island, Puerto Rico	X	X	X				
Mona Island, Puerto Rico			X				
Buck Island Reef National Monument, U.S. Virgin Islands	X	X					
Sandy Point NWR, U.S. Virgin Islands	X	X	X				
Florida Index Beaches	X	X		X			
Georgia Index Beaches				X			
North Carolina Index Beaches				X			
South Carolina Index Beaches				X			
Texas (South Padre Island)						X	
United States/Pacific (2)		(1)	(1)				
French Frigate Shoals (HI)		X					
Hawaii			X				

Name of Beach	DC	CM	EI	CC	LO	LK	Responsible
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Venezuela (11)	(6)	(4)	(6)	(6)			
Querepare (Edo. Sucre)	X			X			CICTMAR
Cipara (Edo. Sucre)	X			X			CICTMAR
Macuro (varias playas cercanas, Edo. Sucre)	X	X	X				ONDB-MPPA
El Agua - Parguito Beach (Edo. Nueva Esparta)	X						ONDB-MPPA
Parque Nacional Archipiélago Los Roques (varios cayos)			X	X			INPARQUES, Fundación Científica
La Sabana (Edo. Vargas)	X						ONDB-MPPA, Consejo de Pescadores
Parque Nacional Henri Pittier (Playas Cuyagua, Uricaro y otros)		X	X	X			INPARQUES, Fundación Ecodiversa, Líderes de la
Playas entre las bocas del Río Morón Y Río Yaracuy			X	X			Palmichal S.C.
Parque Nacional Morrocoy (Cayo Borracho, Varadero y Playas Mayorquina)		X	X				CICTMAR, INPARQUES
Paraguana Peninsula	X		X	X			UNEFM (Universidad Nacional)
RFS Isla de Aves		X					ONDB-MPPA

Annexes II - In the Spanish version

Decreto Ejecutivo N° 5 de miércoles 01 de febrero de 2017, que regula el Procedimiento de Sanción Directa por sanciones ambientales. Gaceta N° 28225-A del jueves 23 de febrero de 2017.

Meylan Anne y Meylan Peter. 2019. Ecología y Migración de las Tortugas Marinas en la Provincia de Bocas del Toro, Panamá. Reporte para el Ministerio Del Ambiente, Enero - Diciembre 2019 Permiso SE/A-45-19.

Resolución N° DM-0657-2016, De viernes 16 de diciembre de 2016, por la cual se establece el proceso para la elaboración y revisión periódica del Listado de Especies de Fauna y Flora Amenazadas de Panamá, y se dictan otras disposiciones. Publicado en Gaceta, el jueves 29 de diciembre de 2016, N° 281987-A.

Resolución N° DM 0085 de 2017, aprueba el Plan de Acción 2018-2018 del Refugio de Vida Silvestre de Isla de Cañas, ubicado en el Distrito de Tonosí, provincia de Los Santos. Gaceta Oficial N° 28226-B del viernes 24 de febrero de 2017.

Ordoñez, E. María C. 2019. Informe Final de actividades del Programa de Monitoreo y Conservación de Tortugas Marinas en las Provincias de Colón, Bocas del Toro y la Comarca Ngäbe Buglé. Sea Turtle Conservancy. Panamá. Enero a Diciembre, 2019.

Resolución N° DM-0031-2017 (De viernes 27 de enero de 2017), que aprueba el Plan de Acción Nacional para la Conservación de las Tortugas Marinas en la República de Panamá. Gaceta N° 28237-A del miércoles 15 de marzo de 2017.

Resolución N° DM-0147-2017, De lunes 10 de abril de 2017, que aprueba la lista del personal Técnico del Ministerio de Ambiente facultado para la aplicación del Procedimiento de Sanción Directa, por infracciones ambientales. Publicado en Gaceta Oficial Digital, N° 28257-A del miércoles 12 de abril de 2017.