



**CIT-CC10-2013-Tec.6**

INTER-AMERICAN CONVENTION  
FOR THE PROTECTION AND  
CONSERVATION OF SEA TURTLES

# WETLANDS

OF INTERNATIONAL IMPORTANCE AND

# SEA TURTLE

# CONSERVATION

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# *Wetlands of International Importance and Sea Turtle Conservation*

## Introduction

The Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC) and the Convention on Wetlands (Ramsar, Iran 1971) recognized that sea turtle species in the Americas are at risk of extinction and are aware that key habitats (foraging, breeding, migrating and nesting) for these endangered species are often congruent with coastal and marine wetlands. They also acknowledged that some of these wetlands have been designated as Ramsar Sites or are potential areas for designation. Accordingly, the Secretariat *pro tempore* of the Inter-American Convention for the Protection and Conservation of Sea Turtles and the Ramsar Convention Secretariat signed a Memorandum of Understanding (MOU) in July 2012. The MOU's objective is to collaborate within the framework of each Convention to build capacities in their corresponding Contracting Parties to achieve the wise use of Ramsar Sites which contain essential habitat for sea turtles. The MOU represents an opportunity to enhance the scope and effective implementation of both Conventions at the national and regional level.

Under this MOU, IAC's Scientific Committee (SC), with the support of the Ramsar Secretariat, has prepared this Technical Document. The use of this document is recommended as an informative tool for Contracting Parties and the general public about the benefits that Ramsar Site designation offers to the conservation of sea turtles and their critical habitats. This document's objectives are: i) to highlight the importance of Ramsar Sites for the protection, conservation and recovery of sea turtle species in the Americas; ii) to identify Ramsar Sites that sustain sea turtles and the main threats to these species in the Site; and iii) to identify key areas for sea turtle conservation which may be

considered as justification towards designation of potential Ramsar Sites.

The technical document has three sections. The first section provides an introduction to sea turtles, to their habitats, and to wetlands and their importance. The next section identifies the benefits of Ramsar Site designation for the protection and conservation of sea turtles by using concrete examples in Parties of both Conventions in the Americas. This includes Ramsar Sites in the Americas in which sea turtles have been reported (table 1.), Ramsar sites where sea turtles are present but this has not been reported in the Ramsar Information sheet (RIS) (table 2.) and important areas for the conservation of sea turtle species that may be designated as Wetlands of International Importance in the near future (table 3). Finally, the last section comprises conclusions from the IAC Scientific Committee.

# I. Sea Turtles and Wetland Ecosystems

## 1. Sea Turtles in the Americas

Six of the seven living species of sea turtles are distributed in the Americas among tropical, sub-tropical and temperate waters of the Atlantic and Pacific Oceans. These species are: Hawksbill turtle (*Eretmochelys imbricata*), leatherback turtle (*Dermochelys coriacea*), green turtle (*Chelonia mydas*), loggerhead turtle (*Caretta caretta*), Olive-Ridley turtle (*Lepidochelys olivacea*) and Kemp's Ridley turtle (*Lepidochelys kempii*). Coastal wetlands are used by sea turtles as nesting sites and their waters as foraging, reproduction, migration and development habitats.

The importance of sea turtles to human populations and coastal and marine habitats is reflected in various ways. They are an important direct source of protein and income for local communities in coastal areas, and are part of the cultural heritage of these communities. Also, for more than 100 million years they have contributed to maintaining the health of marine and coastal ecosystems, upon which humans depend, by playing major roles in marine food chains and transferring energy between marine and coastal habitats.

## 2. Sea Turtle Habitats and Life Cycle

A sea turtle's life cycle is complex and some parts are still not well understood, especially their early marine stages. Depending on their life stage, species are linked to a variety of marine and coastal wetland habitats (Figure No. 1) including mangroves, estuaries, sandy beaches and coral reefs.

All sea turtle species use sandy beaches to lay their eggs. Females emerge onto beaches, usually at night, to lay their eggs and afterwards return to the sea. The characteristics of preferred nesting beaches vary according to the sea turtle species. For example, leatherback turtles use wide, long, gently sloping tropical beaches. Nesting beaches preferred by this species are characterized by deep, rock-free sand, and have unobstructed access from the sea. On the other hand, hawksbill turtles nest on narrow tropical beaches on islands or mainland shores, with reefs sometimes obstructing access onto the beach. Their smaller size and agility allows hawksbills to access beaches that are not accessible to other species (Pritchard and Mortimer, 2000).

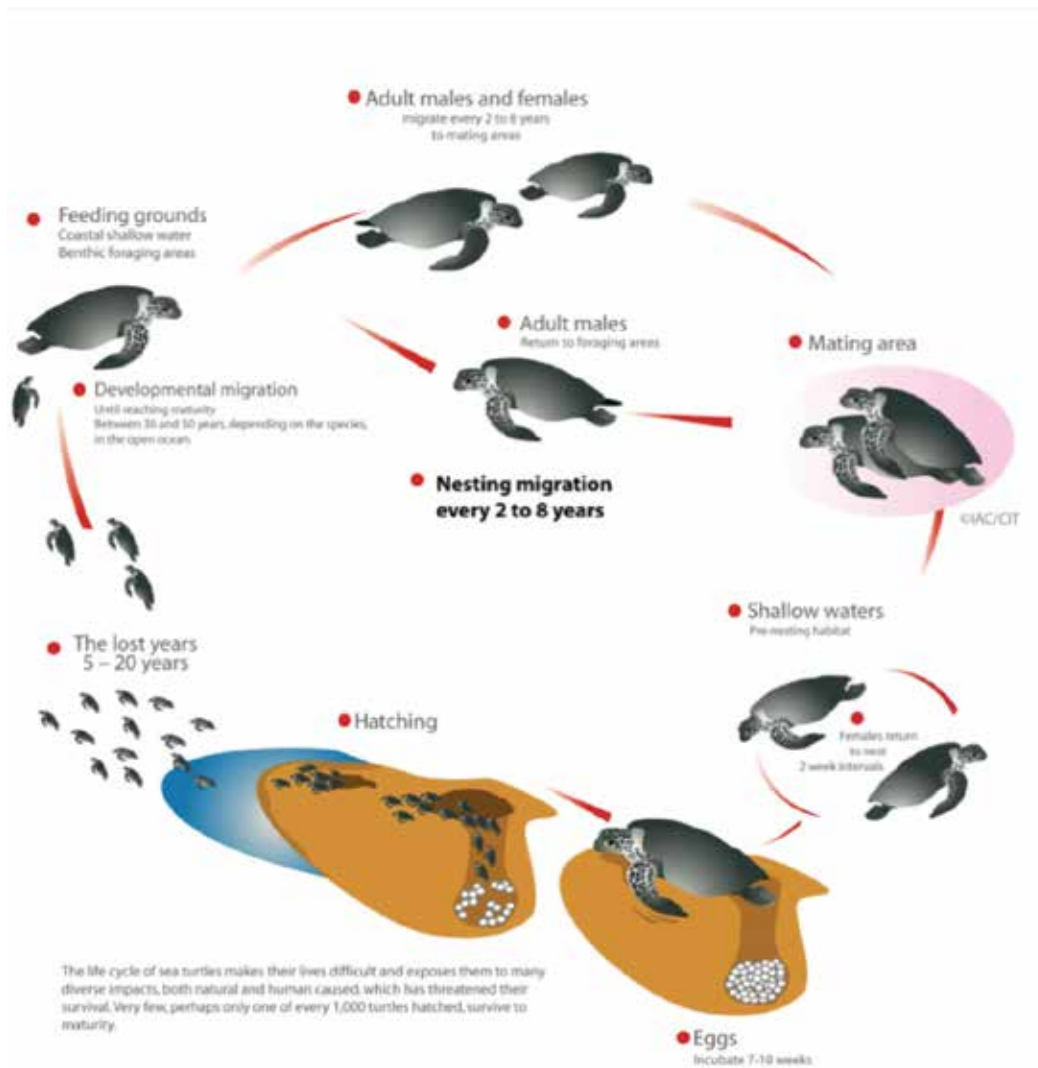


Figure No. 1. Sea Turtle Life Cycle (CIT, 2006b)

After the incubation period, which varies according to the sea turtle species, the hatchlings leave the nesting beach and head out to sea. During this initial phase, sea turtles may travel hundreds, even thousands of kilometers, and spend several years in open sea habitats. Depending on the species, after 2-5 years juvenile turtles may settle in coastal areas like sea grass habitats, coral reefs, and coastal lagoons where they mature. Once they reach sexual maturity, they initiate periodic migrations to breeding areas and then to the pre-nesting areas that are normally shallow waters near the nesting beaches. It is now known that hawksbills are important inhabitants of coral

reefs, sea grass beds and mangroves in the Americas (Bjorndal and Bolten 2010, Gaos et al 2011) and that green turtles are important herbivores in sea-grass beds and mangroves in coastal wetland ecosystems (Limpus and Limpus, 2000). Coastal wetlands in the Americas can be closely associated with sea turtles during one or several stages of their development: eggs, hatchlings, juveniles or adults. Some of these wetlands have been designated as Ramsar Sites.

### 3. Major threats to sea turtles in the Americas

The six sea turtle species in the Americas are threatened. According to the International Union for the Conservation of Nature's (IUCN) Red List, the Olive-ridley turtle is Vulnerable, the green turtle and loggerhead turtles are Endangered and the leatherback, Kemp's Ridley and hawksbill turtle are Critically Endangered. The primary causes of their threatened status are over-exploitation for products such as eggs, meat, oil and /or shell for local and national trade, incidental catch and degradation of critical nesting and foraging habitats.

Sea turtles populations are probably most vulnerable to anthropogenic threats while females, eggs and hatchlings are on nesting beaches. Threats at these stages are caused by coastal development, loss of beaches due to erosion, pollution by human activities and meteorological events like hurricanes, as well as poaching of eggs and predation of females. Sea level rise due to climate change further threatens the nesting beaches.

**The Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC)** is an intergovernmental treaty which provides the legal framework for countries of the American continent to take action for the protection, conservation and recovery of sea turtle populations and their habitats, based on the most reliable scientific data available and considering the environmental, socioeconomic and cultural characteristics of IAC Parties.

The IAC entered in force in 2001, in response to the importance of sea turtle species to the region, their threatened status, the recognition that many of the threats they faced were regional in scale and the need therefore to join forces to conserve them successfully. The Convention currently has

15 Contracting Parties, all of which are Parties to the Ramsar Convention.

### 4. Wetlands and their importance

Wetlands are ecosystems in which water is the primary factor that controls the environment and associated life. According to the Ramsar Convention, wetlands are areas of marsh, fen, peatland or water, with natural or artificial regime, temporal or permanent, lentic or lotic, fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six meters. This definition includes ecosystems with a range of habitats distributed from coastal zones to the highest mountains on the planet.

The Ramsar Convention classifies wetlands into 42 types grouped in 3 categories: marine and coastal wetlands, continental wetlands and human-made wetlands. Among the marine and coastal wetlands in the Americas are: coral reefs, marine sub tidal aquatic beds, marshes, shores, estuaries, mangroves, coastal lagoons and subterranean hydrological systems. These ecosystems are among the most productive, providing goods and services that directly benefit human communities.

Ecosystem services provided by wetlands are organized into four categories according to the Millennium Ecosystem Assessment (2005): provisioning, regulating, cultural and support services. The quantity and quality of the services provided by a wetland are determined by its ecological character, defined as the combination of ecosystem components, processes and benefits/services that characterize a wetland at a given point in time.

Among the provisioning services provided by marine-coastal wetlands are the variety of animal and vegetable products (e.g., reptiles, fish, mollusks, wood, fruit) derived from species within the ecosystem and used by coastal communities.

These services have a high social value as they allow the subsistence of many families. Similarly, the regulating services provided by coastal and marine wetlands include determining hydrological flows, and preventing erosion and pollution by retaining sediment. They also regulate climate at a global, regional and local level and mitigate natural disasters by controlling floods and protecting coastal areas from storms. Marine and coastal wetlands also provide cultural services by offering a source of aesthetic benefits that make them areas with high potential for tourism and recreational activities. Furthermore, communities develop their life styles and culture in close relationship with the wetlands they occupy. Finally, marine and coastal wetlands greatly influence soil and sand formation processes, the functioning of biogeochemical cycles, and the sustaining of biodiversity in their areas. These ecosystems provide critical habitats for resident and migratory species and/or rare and threatened species, including sea turtles.

Despite their importance, marine and coastal wetlands are threatened by anthropogenic impacts such as: changes in land-use (urban areas expansion, ports, development of tourism and hydroelectric projects, among others), pollution and over-exploitation of resources. These activities generate changes in the wetlands' ecological character, compromising their ability to provide ecological services for local communities and biodiversity.

**The Convention on Wetlands** (Ramsar, Iran 1971) or **Ramsar Convention** is an intergovernmental treaty that provides the framework for actions oriented towards the conservation of wetlands and their resources under three basic pillars: i) the wise use of wetlands and their resources; ii) the designation of significant wetlands as Wetlands of International Importance or Ramsar Sites; and iii) International Cooperation.

Currently 168 countries are Contracting Parties to the Ramsar Convention, with a total of 2,181 Ramsar Sites covering 208,545,658 hectares. This is the largest network of protected areas worldwide. In the Americas, 202 Ramsar Sites that cover 27,269,353 hectares have marine and coastal wetlands according to the Ramsar Sites database, and 108 of these Sites report sustaining sea turtles at various life-stages.

## *II. Benefits of Ramsar Site Designation For The Protection And Conservation of Sea Turtles*

When a country ratifies the Ramsar Convention, it commits itself to fulfilling the Convention's obligation in good will under international law. In this sense, the country must promote the wise use of all wetlands within its territory. Wise use refers to maintaining the ecosystem's ecological character through the implementation of the ecosystem approach in the context of sustainable development. This is fundamental for the promotion of activities aimed at the protection and conservation of sea turtles within Ramsar Sites and all wetlands of a given Contracting Party. In this sense, the implementation of Ramsar's first and second pillars "wise use of wetlands" and "designation and management of wetlands of international importance" are the main contributors to the conservation of key habitats for sea turtles. Additionally, these two pillars combined with the third pillar regarding international cooperation, represents an ideal context for the protection of sea turtles and their critical areas, given the migratory nature of these species, which are considered a shared resource among countries.

In addition, under Article 2.4. Each Contracting Party shall designate at least one wetland to be included in the List when signing this Convention or when depositing its instrument of ratification or accession, as provided in Article 9. In order to do so, the identified area must meet at least one of the nine criteria, designed to recognize the area as a Wetland of International Importance based on the representative and/or singularity of the wetland and/or its biodiversity values. Wetland areas that sustain sea turtles and other threatened or rare species also fulfill Criterion 2 for the designation of Ramsar Sites.

Taking into consideration the range of benefits obtained from designating an area as a Wetland of International Importance (Ramsar Secretariat, 2011), IAC's Scientific Committee has identified some specific benefits that the Ramsar Designation may accrue towards protection, conservation and recovery of sea turtle species:

**1.- Increased community participation in sea turtle conservation.** The designation of a Ramsar Site increases public awareness and pride of local and national stakeholders by being part of an internationally recognized ecosystem. It also entails, in several cases, involvement of national and international organizations supporting the designation process and later getting involved in the management of the Site. This provides the potential for the establishment or strengthening of community-based sea turtle conservation activities, within the management activities of a Ramsar Site.

**2.- Strengthening of National legal frameworks to promote wise use of wetlands.** A number of Contracting Parties have adopted/modified their legal frameworks based on the international Convention's Resolutions, as well as increased technical support, in order to promote wise use in wetland areas and thus, by extension, the wise use of key sea turtle habitats. For example, in 2007, the Dutch government canceled a permit to build a resort adjacent to mangroves in the Ramsar Site, Het Lac in Bonaire, based on the review of the State Council of the Kingdom of the Netherlands which stated that "the Resolution decisions and guidelines accepted unanimously by the Conference of the Parties to the Ramsar Convention ... should be part of national



obligations under the Convention.” (Ramsar Secretariat, 2011). This decision protected important feeding grounds for green and hawksbill turtle found at the Site.

### **3.- Increased conservation and protection efforts in Ramsar Sites.**

The Ramsar Site designation highlights internationally and nationally the unique characteristics of a wetland area. This may bring a range of possible benefits such as increasing conservation and protection efforts on the site and its surrounding areas, increasing scientific, academic and recreational interest, and increasing funding opportunities aimed at the conservation of these areas. These benefits accruing to sea turtle habitats could translate into protection, conservation and recovery of sea turtle populations.

In this regard, some IAC Countries have designated the most important sea turtle nesting beaches as Ramsar Sites. In this way, in addition to protection by national laws, local regulations and decrees, the designation has strengthened the conservation efforts in the area, and has also helped to ensure a budget and government support, participation of state agencies and in some cases NGO support.

Table 1 lists the Ramsar Sites in the Americas in which the presence of various species of sea turtles is reported as of May 2014. The location of these sites in the Americas is illustrated in Figures 2,3,4,5.

The table has been prepared by the Ramsar Secretariat using the official information of the designated sites on the List of Wetlands of International Importance. Besides the official information of Ramsar Sites, the “species”, “use”, and “threat” columns have been complemented by the IAC Scientific Committee and the IAC PT Secretariat based on information from IAC’s Annual Reports submitted by IAC member countries. This information appears in italics.

Table No. 2 contains Ramsar Sites with presence and/or of importance for sea turtles, which have not been documented in the Ramsar Information Sheet (RIS) for the Site. This table was prepared with information provided by the IAC Scientific and Consultative Committee. We suggest using table

No. 2 to work with Ramsar Focal Points to collect the necessary information about the presence of sea turtle in the sites in order to update the RIS as needed. Table No. 3 highlights sites in IAC member countries that are important for sea turtle conservation that have been identified by the IAC Scientific Committee to be consider for possible designation as Ramsar sites.

Table No.1 Ramsar Sites with presence of Sea Turtles in the Americas

No.	Country	Ramsar Site Name	Latitude And Longitude	Area (has)	Species1	Use Nesting- Ne Foraging - Fo Reproduction - Re Transit - Tr Developmental-De	Threats to sea turtles
1	Argentina	Bahía Samborombón	36 15S 57 15W	243,965	C.m., D.c., C.c. y E.i. . (in order from more to less abundance)	Foraging	Incidental by-catch from artisanal fisheries and commercial trawling industry. Plastic ingestion in the bay areas.
2	Brasil	Reentrâncias Maranhenses' Environmental Protection Area (EPA)	01 41S 45 04W	2,680,911	C.m., D.c., E.i.	C.m., D.c., E.i. – Vista en agua	Mining exploitation/ exploration impacts (unspecified); Erosion; Domestic sewage pollution; Dredging impacts
3	Brasil	Parque Estadual Marinho do Parcel Manoel Luís incluye los Baixios do Mestre Álvaro & Tarol	00 30S 44 45W	34,556	E.i., C.m.	in water occurrence	Oil pollution; Tourism-based /recreational disturbance (unspecified); Solid waste pollution; Unspecified disturbance from human activities;
4	Brasil	Abrolhos Marine National Park	17 49S 38 49W	91,300	D.c., E.i., C.c., C.m., L.o.	E.i. - Fo/De/Tr C.m. – Fo/De C.c., D.c., L.o., E.i, C.m. – in water occurrence No nesting activities	Unspecified development impacts; Industrial development impacts; Illegal fishing methods; Tourism-based /recreational disturbance (unspecified); Unspecified pollution
5	Costa Rica	Tamarindo	10 19N 85 50W	500	D.c.		Water Pollution
6	Costa Rica	Gandoca-Manzanillo	09 37N 82 40W	9445	C.c., E.i., D.c., C.m.	Nesting	Poaching of eggs
7	Costa Rica	Humedal Caribe Noreste	10 30N 83 30W	75,310	C.m., D.c., E.i., C.c.	Nesting Foraging	Illegal hunting and poaching of eggs
8	Ecuador	Refugio de Vida Silvestre Isla Santa Clara	03 10S 80 26W	46	1 specie (not specified)		

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9	Ecuador	Humedales del Sur de Isabela	00 57S 90 58W	872	C.m.	Foraging	Light pollution, domestic animals
10	United States	Everglades National Park	25 33N 80 55W	610,497	C.m., L.k., E.i., C.c	Foraging, nesting	Contamination from agricultural run off
11	United States	Chesapeake Bay Estuarine Complex	38 00N 76 20W	45,000	C.c., L.k.	Foraging (focus on blue claw crab)	Incidental by-catch in crab fisheries, contamination
12	United States	Delaware Bay Estuary	39 11N 75 14W	51,252	5 species (just C.c. was identified)	Foraging (C.c.)	Intensive fishing of horseshoe crab as C.c. feeds on them, oil spills, beach erosion
13	United States	Pelican Island National Wildlife Refuge	27 48N 80 25W	1,908	L.k., E.i., C.m., C.c.	Foraging	Dredging, oil and gas exploration, illegal hunting
14	United States	Palmyra Atoll National Wildlife Refuge	05 52N 162 06W	204,127	C.m., E.i.	Nesting Foraging	
15	Guatemala	Manchón-Guamuchal	14 28N 92 05W	13,500	L.o., C.m., D.c.	Nesting	Poaching of eggs
16	Guatemala	Punta de Manabique	15 50N 88 28W	132,900	C.c., C.m., E.i., D.c.	Nesting	Poaching of eggs
17	Guatemala	Reserva de Usos Múltiples Río Sarstún	15 51N 88 58W	35,202	C.c., C.m., E.i., L.o.		
18	Honduras	Parque Nacional Jeanette Kawas	15 51N 87 40W	78,150	E.i., D.c., C.c., C.m.	Nesting	Water pollution because on industries in upper watershed, Touristic development and urban growth.
19	Honduras	Refugio de Vida Silvestre Punta Izopo	15 44N 87 21W	11,200	C.m., E.i., C.c., D.c.	Nesting	Erosion, beach pollution by solid waste, hunting, feral animals.
20	Honduras	Sistema de Humedales de la Zona Sur de Honduras	13 20N 87 25W	69,711	E.i., L.o.	Nesting L.o (August and December)	L.o. eggs used for human consumption, water pollution, erosion and tourism
21	Honduras	Laguna de Bacalar	15 08N 85 10W	7,394	C.m., C.c., D.c.	Nesting	Water pollution from human population waste, erosion

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22	Honduras	Sistema de Humedales Cuyamel-Omoa	15 39 18N 88 11 49W	30,029	D.c., E.i.	Nesting Foraging	Turtle hunting for consumption
23	Honduras	Sistema de Humedales de la Isla de Utila	16 06 00N 85 56 14W	16,226	C.c., C.m., E.i.	Nesting Foraging	Urban and tourism development
24	Honduras	Sistema de Humedales Laguna de Zambuco (SH-LZ)	15° 47' 54 N 87°13' 23 W	649	D.c., E.i.	<i>Nesting Foraging</i>	<i>Extraction of resources from fauna and agricultural development.</i>
25	México	Humedales de Importancia Especialmente para la Conservación de Aves Acuáticas Reserva Ría Lagartos	21 30N 88 00W	60,348	E.i., C.c., C.m., D.c.	Nesting Foraging	Habitat fragmentation, chemical and organic pollution, decreasing vegetation coverage
26	México	Marismas Nacionales	22 08N 105 32W	200,000	C.m., D.c., E.i., L.o.		Fisheries and industrial development
27	México	reserva de la Biósfera La Encrucijada	15 11N 92 53W	144,868	D.c., C.m., L.o.		Urban development, consumption, illegal fishing, waste pollution, industrial development
28	México	Dzilam (reserva estatal)	21 35N 88 35W	61,707	E.i., C.m., C.c.	Nesting	Incidental by-catch and consumption
29	México	Parque Nacional Arrecifes de Xcalak	18 20N 87 48W	17,949	C.c., C.m., E.i., D.c.		Fisheries tourism
30	México	Cuencas y corales de la zona costera de Huatulco, Oaxaca	15 47N 96 12W	44,400	C.m., E.i., L.o., D.c.	Nesting Transit (D.c.)	Capture, eggs collection and tourism development
31	México	Parque Nacional Isla Contoy, Quintana Roo	21 29N 86 47W	5,126	C.m., C.c., D.c., E.i.	Nesting Foraging	Tourism
32	México	Parque Nacional Isla Isabel	21 51N 105 53W	94	L.o., C.m., E.i.		Fisheries and cats
33	México	Playa Tortuguera Rancho Nuevo, Tamaulipas	23 14N 97 46W	30	<i>L.k. (endemism), C.m., C.c., D.c.</i>	Nesting Reproduction (L.k-very important), from may-august	Artisanal fisheries, contamination by solid waste, oil and natural predation by dogs.

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34	México	Playa Tortuguera Tierra Colorada, Guerrero	16 25N 98 38W	54	<i>D.c., L.o., C.m.</i>	Nesting Foraging	Poaching of eggs and natural predation
35	México	Reserva Estatal El Palmar	21 03N 90 12W	50,177	<i>E.i.</i>	Foraging, nesting	Poaching of eggs
36	México	Sian Ka'an	19 30N 87 37W	652,193	<i>C.m., D.c., C.c., E.i.</i>		tourism
37	México	Reserva de la Biósfera Ría de Celestún	20 45N 90 22W	81,482	<i>E.i., C.c.</i>	Nesting (E.i.), Foraging (C.c., E.i.)	Habitat reduction, by-catch, dogs and local consumption of eggs and turtles, tourism
38	México	Reserva de la Biósfera Chamela- Cuixmala	19 29N 104 59W	13,142	<i>L.o., D.c., E.i., C.m.</i>	Nesting	Hunting for consumption
39	México	Laguna Ojo de Liebre	27 45N 114 05W	36,600	<i>C.m.</i>	Foraging	Illegal fishing
40	México	Laguna San Ignacio	26 45N 113 07W	17,500	<i>C.m.</i>		Illegal fishing
41	México	Manglares y humedales de la Laguna de Sontecomapan	18 32N 95 02W	8,921	<i>C.c., E.i., L.k., D.c.</i>	Nesting	Touristic development
42	México	Parque Nacional Arrecife de Puerto Morelos	20 55N 86 50W	9,066	<i>C.c., C.m.,</i>	Nesting	Touristic development
43	México	Islas Marietas	20 42N 105 34W	1,357	<i>E.i., L.o.</i>	Foraging	Touristic development, fisheries, urban growth
44	México	Parque Nacional Sistema Arrecifal Veracruzano	19 08N 96 00W	52,238	<i>C.c., C.m., E.i., L.k., D.c.</i>	Nesting	Hunting for consumption, water contamination, tourism, industrial and urban development
45	México	Playa Tortuguera Cahuitán	16 17N 98 29W	65	<i>D.c., L.o., C.m.</i>	Nesting D.c. (oct- march), L.o. (all year), C.m. (Oct -Jan)	Lights near nesting beaches. poaching of eggs for consumption and commercialization.
46	México	Playa Tortuguera Chenkan	19 06N 91 00W	121	<i>C.m., E.i.</i>	Nesting	Erosion, infrastructure development
47	México	Playa Tortuguera El Verde Camacho	23 24N 106 32W	6,454	<i>E.i., C.m., D.c., L.o.</i>	Nesting (L.o. y D.c. ) Foraging Transit	Urban and touristic development
48	México	Playón Mexiquillo	18 07N 102 52W	67	<i>D.c., L.o., C.m.</i>	Nesting	Urban development, tourism
49	México	Playa Tortuguera X'Cacel-X' Cacelito	20 20N 87 21W	362	<i>C.c., C.m.</i>	Nesting	Tourism

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50	México	Reserva de la Biósfera Banco Chichorro	18 35N 87 20W	144,360	C.c., E.i., C.m.	Nesting	Illegal fishing
51	México	Reserva de la Biósfera Los Petenes	20 11N 90 32W	282,857	E.i.,	Foraging	Fishing
52	México	Área de Protección de Flora y Fauna Laguna de Términos	18 40N 91 45W	705,016	E.i., C.m., L.k.	Nesting Foraging	Industrial and urban development
53	México	Reserva de la Biosfera Archipiélago de Revillagigedo	18 50N 112 47W	636,685	C.m., D.c., E.i., L.o.		Erosion
54	México	Parque Nacional Bahía de Loreto	25 49N 111 08W	206,581	C.m., D.c., E.i., C.c., L.o.,		Fishing and tourism development
55	México	Isla San Pedro Mártir	28 23N 112 19W	30,165			
56	México	Área de Protección de Flora y Fauna Yum Balam	21 28N 87 19W	154,052	E.i., C.c., C.m., D.c., L.k.	Nesting	Tourism, lights and walls on beaches
57	México	Laguna Madre	24 44N 97 35W	307,894	L.k., C.m.	Nesting	Fishing, tourism, pollution
58	México	Laguna Costera El Caimán	17 58N 101 16W	1,125	C.m.		urban, touristic and industrial development
59	México	Parque Nacional Arrecifes de Cozumel	20 16N 87 02W	11,987	C.m., C.c., E.i., D.c.	Nesting (C.c., C.m.), Foraging (D.c., E.i.), Transit (D.c., E.i.)	Tourism, urban development
60	México	Corredor Costero La asamblea - San Francisquito	29 27N 113 50W	44,304	C.m., C.c., L.o., E.i., D.c.	Foraging	Incidental by-catch, tourism, oils spills and coastal development
61	México	Laguna de Tamiahua	20 58N 97 19W	88,000	C.m., L.k.	Nesting ( <i>in Cabo Rojo, not the lagoon</i> )	Water pollution and commercial fishing
62	México	Laguna Huizache-Caimanero	22 50N 105 55W	48,283	L.o.	Nesting	Organic contamination of water and industrial development

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63	México	Ensenada de Pabellones	24 26N 107 34W	40,639	L.o.	Nesting	Illegal fishing and water pollution
64	México	Santuario Playa Boca de Apiza-El Chupadero - El Tecuanillo	18 45N 103 49W	40	L.o., D.c., C.m.	Nesting	Female hunting for meat and eggs, predation, and poaching of eggs , pollution and by-catch
65	México	Laguna Xola-Paramán	19 44N 105 16W	775	D.c., L.o., C.m.	Nesting	Fishing for consumption and touristic development
66	México	Sistema Estuarino Boca del Cielo	15 48N 93 35W	8,931	L.o., D.c., C.m.	Nesting (L.o., D.c., C.m.) Foraging (E.i.)	Female hunting for meat, eggs and oil, poaching of eggs , predation, by-catch and touristic development
67	México	Zona Sujeta a conservación Ecológica Cabildo - Amatal	14 46N 92 28W	2,832	L.o.	Nesting	Organic pollution, illegal hunting.
68	México	Zona Sujeta a conservación Ecológica El Gancho Murillo	14 37N 92 18W	4,643	L.o.	Nesting	Organic pollution in water, urban development, changes in water quality
69	México	Bahía de San Quintín	30 26N 115 58W	5,438			
70	México	Manglares de Nichupté	21 04N 86 48W	4,257	C.m.		Urban and tourism development
71	México	Parque Nacional Cabo Pulmo	23 27N 109 25W	7,100	C.c., C.m., D.c., E.i., L.o.	Nesting (L.o., D.c.) Foraging (E.i., C.m.)	Fishing, tourism and pollution
72	México	Playa de Colola	18 18N 103 26W	287	L.o., D.c., C.m.	Nesting, Foraging, Reproduction 70% of C.m. population Reproduce in this site	Predation, illegal capture, urban and tourism development
73	México	Estero El Chorro	19 54N 105 24W	267	D.c., L.o., C.m.	Nesting	Hunting for consumption, poaching of eggs
74	México	Estero Majahuas	19 50N 105 21W	786	D.c., L.o., C.m.	Nesting	Tourism
75	México	Playa de Maruata	18 16N 103 21W	80	C.m., L.o., D.c.	Nesting Reproduction-20% of C.m.	Predation, urban and tourism development

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76	México	Laguna Barra de Navidad	19 11N 104 40W	794	D.c, L.o., C.m.	Nesting	Urban and tourism development, hunting commercialization of by products
77	México	Laguna Chalacatepec	19 40N 105 13W	1,093	D.c., L.o., C.m.	Nesting	Water pollution, tourism, urban development
78	México	Lagunas de Chacahua	16 00N 97 40W	17,424	D.c., L.o., C.m.	Nesting	Urban development, poaching of eggs for commercialization
79	México	Parque Nacional Arrecife Alacranes	22 28N 89 41W	334,113	E.i, D.c., C.c., C.m.	Nesting Foraging	Domestic fauna
80	México	Playa Barra de la Cruz	15 50N 95 56W	18	D.c. (Oct-Mar), L.o.(All year), C.m.(oct-Jan)	Nesting	Poaching of eggs, by-catch, subsistence hunting, lights near beaches
81	México	Sistema Estuarino Puerto Arista	16 00N 93 53W	62,138	L.o., D.c., C.m., E.i.	Nesting, Foraging (E.i.)	Poaching of eggs , female predation, by-catch, beach and water pollution and touristic development
82	México	Sistema Lagunar Ceuta	24 02N 107 04W	1,497	L.o., C.m., D.c.	Nesting	Tourism, industrial development
83	México	Sistema Lagunar Estuarino Agua Dulce- El Ermitaño	20 00N 105 30W	1,281	D.c., L.o., C.m.	Nesting	Tourism development
84	México	Sistema Lagunar San Ignacio-Navachiste-Macapule	25 26N 108 49W	79,873	C.m., E.i., L.o.		industrial development, fishing, water pollution
85	México	Humedales Bahía Adair	31 35N 113 53W	42,430	C.c., C.m., D.c., L.o.		Urban, touristic, and industrial development, fishing
86	México	Canal del Infiernillo y esteros del territorio Comcaac (Xepe Coosot)	29 10N 112 14W	27,900	E.i., C.c., D.c., L.o., C.m.	Foraging Reproduction Transit Nesting	Fishing and industrial development
87	México	Manglares y Humedales del Norte de Isla Cozumel	20 35N 86 48W	32,786	C.c., C.m., E.i.	Nesting Foraging	Fishing, urban and tourism development
88	México	Humedales de Bahía San Jorge	31 06 00N 113 04 11W	12,198	C.c., C.m., D.c., L.o.		Urban and tourism development
89	México	Laguna de Cuyutlán vasos III y IV	18 58 09N 104 06 42W	4,051	L.o., D.c., C.m.,		Tourism



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90	México	Lagunas Santa María-Topolobampo-Ohuira	25 36 33N 109 06 23W	22,500	L.o., C.m., D.c., E.i.	Foraging	Water pollution and industrial development
91	México	Humedales de la Laguna la Cruz	28 47 15N 111 52 53W	6,665	C.m.	Foraging transit	Industrial development, fisheries, waster pollution
92	Netherlands/ Curaçao	Rif-Sint Marie	12 12 16N 69 03 16W	667	E.i., C.m.	Transit Foraging	<i>Tourism, oil spills. Small coral reef area is the area relevant to sea turtles.</i>
93	Netherlands/ Curaçao	Northwest Curaçao	12 21 11N 69 05 00W	2,441	D.c., E.i., C.m., C.c., L.o.	Nesting (June-November) tracks found starting April mostly E.i., C.c. and C.m. Foraging area for C.m. and E.i. year round (important)	Predators, nest lost because of abiotic factors, beach erosion, lost of native vegetation
94	Netherlands/ Bonaire	Klein Bonaire Island & Adjacent Sea	12 10N 68 19W	600	E.i., C.m., C.c.	Nesting (May-Jan) for E.i., C.c. Foraging for E.i. and C.m year round.	<i>Tourism, beach erosion as a result of Climate Change</i>
95	Netherlands/ Bonaire	Het Lac	12 06N 68 14W	700	E.i., C.m.	Foraging year round (very important)	<i>Tourism, illegal fishing, invasive marine plants.</i>
96	Netherlands/ Bonaire	Gotomeer	12 14N 68 22W	150			
97	Netherlands/ Bonaire	Slagbaai	12 16N 68 25W	90			
98	Panamá	San San-Pond Sak	09 30N 82 30W	16,414	C.c., C.m., D.c., E.i.	Nesting	
99	Panamá	Punta Patiño	08 18N 78 14W	13,805	D.c., E.i.		
100	Panamá	Humedales de Importancia Internacional Damani-Guariviara	08 56N 81 44W	24,089	E.i., C.c., C.m., D.c.	Nesting (D.c., E.i, C.m., C.c.) Foraging (C.m.-juv; E.i.-juv) Transit, Reproduction	Consumption of C.m., touristic development in nesting beaches

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101	Perú	Reserva Nacional de Paracas	13 55S 76 15W	335,000	D.c., C.m.		
102	Perú	Santuario Nacional Los Manglares de Tumbes	03 25S 80 17W	2,972	C.m., L.o.		
103	Uruguay	Bañados del Este y Franja Costera	33 48S 53 50W	407,408	C.m.	Foraging	Tourism development and urban growth
104	Venezuela	Cuare	10 55N 68 20W	9,968			
105	Venezuela	Archipiélago los Roques	11 50N 66 45W	213,220	E.i., C.m., C.c., D.c.	Nesting	Tourism development, artisanal fisheries by-catch
106	Venezuela	Laguna de la Restinga	11 02N 64 09W	5,248	C.m., E.i., C.c., D.c.	Nesting	Trawling, affectations to nesting sites, sand extraction, solid waste pollution and tourism
107	Venezuela	Laguna de Tacarigua	10 12N 65 56W	9,200	C.m., E.i., C.c., D.c.		Water pollution
108	Venezuela	Ciénaga de los Olivitos	10 55N 71 26W	26,000	C.m., E.i., L.o., C.c.		Pollution due to shrimp and salt industrial waste.

Species1: C.m.: *Chelonia mydas*;  
 E.i.: *Eretmochelys imbricata*;  
 D.c.: *Dermochelys coriacea*;  
 L.o.: *Lepidochelys olivacea*;  
 C.c.: *Caretta caretta*;  
 L.k.: *Lepidochelys kempii*



Figure No. 2- Ramsar Sites in the Americas with Sea Turtles



**Legend**

- Ramsar Sites with Sea Turtles





Figure No 3. Ramsar Sites in North America with Sea Turtles



**Legend**

- Ramsar Sites with Sea Turtles
- Site No. 14, located at 05° 52'N 162° 06'W, which is outside the main frame of this map





Figure No. 4: Ramsar Sites in Central America with Sea Turtles

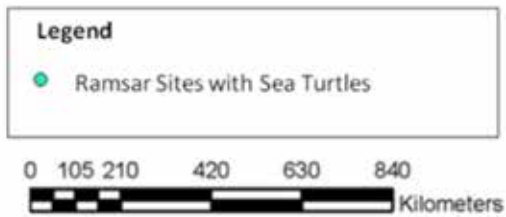




Figure No. 5 - Ramsar Sites in South America with Sea Turtles



**Legend**

- Ramsar Sites with Sea Turtles



## 2.- Ramsar Sites with presence of sea turtles whose information is not included on Ramsar Information Sheets (RIS)

No	Country	Name of the Area	Location (province, coordinate of approximate center) coordenadas)	Area (has)	Species <sup>1</sup>	Use Nesting- Ne Foraging - Fo Reproduction - Re Transit - Tr Developmental-De	Comments
1	Brasil	Cabo Orange National Park	003°38'59 N 051°11'24 W	657,328	D.c., C.c., L.o, E.i., C.m.	D.c. – few nesting activities; C.c., L.o., E.i., C.m., D.c. – in water occurrence	Major loss of recruitment through egg collection
2	Costa Rica	Manglar de Potrero Grande	10 50 N 86 46 W	139	E. i., C.m.	Foraging Reproduction	
3	Costa Rica	Terraba-Sierpe	08 52 N 83 36 W	30,654	E. i., C.m.	Foraging Reproduction	Mangrove extraction
4	Perú	Manglares de San Pedro de Vice	05°31'S 080°53'W	3,399	E.i.,C.m., L.o	Foraging	

Species<sup>1</sup>: C.m.: *Chelonia mydas*; E.i.: *Eretmochelys imbricata*; D.c.: *Dermochelys coriacea*; L.o.: *Lepidochelys olivacea*; C.c.: *Caretta caretta*; L.k.: *Lepidochelys kempii*

**Table No. 3.- Important Areas for the conservation of sea turtle species in IAC countries**

The table was prepared with the inputs of the IAC scientific Committee members to highlight important areas for the conservation of sea turtles that may be designated as Ramsar Sites.

No	Country	Name of the Area	Location (province, coordinate of approximate center)	Area (has)	Species <sup>1</sup>	Use Nesting- Ne Foraging - Fo Reproduction - Re Transit - Tr Developmental-De	Comments
1	Argentina	Reserva Natural de Uso Múltiple Bahía Blanca, Bahía Falsa y Bahía Verde	Provincia de Buenos Aires, Argentina.	210,000	<i>C.m.</i> , <i>D.c.</i> y <i>C.c.</i>	Foraging Transit	
2	Honduras	Reserva de Biosfera del Río Plátano	Departamento de Gracias a Dios	390,000	DC y EI	Nesting (D.c.); Transit (E.i.)	25% of the area is a coastal zone with mangroves
3	Honduras	Parque Nacional Cayos Cochinos	Departamento de Islas de la Bahía	48,533.7	E.i.	Nesting Foraging	
4	Netherlands / Curaçao	Klein Curaçao	11°58'56.80"N; 68°38'38.50"W	1	Ei, Cm, Dc,	Nesting Foraging	
5	Netherlands / St. Eustatius	Zeelandia Beach	17°30'24.68"N 62°58'50.89"W	1	Dc, Cm, Ei	Nesting	
6	Netherlands / St. Maarten	Guana Bay	N/A	1	Ei, Dc	Nesting	

Species: *C.m.*: *Chelonia mydas*; *E.i.*: *Eretmochelys imbricata*; *D.c.*: *Dermochelys coriacea*; *L.o.*: *Lepidochelys olivacea*; *C.c.*: *Caretta caretta*; *L.k.*: *Lepidochelys kempii*



### *III. Conclusion*

IAC Contracting Parties have identified 108 Ramsar Sites which provide habitat for various sea turtle species at different developmental stages. These Ramsar Sites are located in the following countries: Argentina (1), Brazil (3), Costa Rica (3), Ecuador (2), Guatemala (3), Honduras (7), Mexico (68), Netherlands/Curaçao (2)/Bonaire (4), Panama (3), Peru (2), United States (5), Uruguay (1) and Venezuela (5).

The implementation of the Ramsar Convention in a Contracting Party provides protection for all wetlands in its territory, thus protecting key sea turtle habitats (nesting beaches, foraging, reproduction and/or developmental areas). The implementation of the IAC provides represents the protection and conservation of the habitats of which sea turtles depend. In this way IAC and the Ramsar Convention both contribute to the protection and conservation of these threatened species.

The Ramsar designation of a wetland area may lead to the conservation of the ecological character of the wetland and securing its services. This will therefore translate into the protection and conservation of critical habitats for sea turtle populations in the Americas. It is important for Site managers to include sea turtle conservation in their management programs.

Sea turtle species are key in maintaining healthy and robust marine ecosystems, and therefore in allowing the ecosystem services to be provided to the human communities.

The complementary information on Ramsar Sites, provided by the IAC in tables 1-3 may be used to update the Ramsar Information Sheets (RIS) of the Wetlands of International Importance and the designation of new sites.

It is important for IAC Secretariat *Pro Tempore*

and the Ramsar Secretariat to continue to explore mechanisms to provide joint technical support aimed at strengthening the management and conservation of key sea turtle habitats in the Americas.

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(Ramsar, Iran, 1971)



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