



Inter-American Convention for the Protection and Conservation of Sea Turtles Costa Rica 2006 Annual Report

Second Annual Report [Translation]

Directory

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Agency or institution responsible for preparing this	National System of Conservation Areas, Ministry of Energy and the Environment
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Focal Point

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Date: Mayo, 2006

1. Biological Information

1.1. Species present

Species	Pacific Ocean	Atlantic Ocean	Caribbean Sea
	Phase(s)	Phase(s)	Phase(s)
<i>Lepidochelys olivacea</i>	R/F/M		
<i>Lepidochelys kempii</i>			
<i>Dermochelys coriacea</i>	R/F/M		R/F/M
<i>Eretmochelys imbricata</i>	R/F/M		R/F/M
<i>Chelonia mydas</i>	R/F/M		R/F/M
<i>Caretta caretta</i>			R/F/M

Phases: R = Reproduction; F = Foraging; M = Migration; D = Phase Unknown

1.2. Important sites for sea turtle conservation

	Name of Site	Specie(s)	Season	Geographic Location (Lat/Long)	Area (km or ha, if applicable)	Protection Category	Observations*
Nesting Sites	Tortuguero - Parismina - Pacuare	Cc	May	N10°35.51, O83°31.40 to N10°19.04, O83°21.39	50 km	25 km within Tortuguero National Park	See attached references: Troëng et al. 2004; Troëng y Rankin 2005; Troëng et al.
		Cmm	June-November				
		Dc	February-July				
		Ei	April-October				



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Matapalo Beach, Guanacaste ¹	Cma	September-March			None	
	Dc	October-March				
Nombre de Jesús and Zapotilla ²	Cma	September-March			None	
	Dc	October-March				
Playa Grande*	Dc	October-March	N10°22'11.21" O85°52'10.73"		National Marine Park Las Baulas	
	Lo	June-December				
Langosta Beach (P.N.M.Baulas)*	Lo	June-December	N10°16'21.39" O85°51'8.32"		National Marine Park Las Baulas	
	Dc	October-March				
Camaronal Beach ^{1****}	Lo	June-December			R.N.V.S. Camaronal	
	Dc	October-March				
	Cma	September-March				
Islita-Pilas Beach ¹	Lo	June-December				
Bejuco Beach ¹	Lo	June-December				
San Miguel Beach ****	Lo	June-December				
Coyote Beach ¹	Lo	June-December				
11. Ario – Caletas – Bongo Beaches ^{2 ****}	Lo	June-December				
	Cma	September-March				
	Dc	October-March				
12. Junquillal Beach ^{*****}	Lo	June-December				
	Cma	September-March				
	Dc	October-March				



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Nancite Beach	Lo	June-December	309.564 N 350.531 E	0.8 km	National Park	Protected beach with restricted access.
Naranjo Beach	Lo	June-December	306.841 N 354.109 E	3 km	National Park	Tourist Beach, with protection
	Dc	October-March				
Ostional Beach	Lo	June-December	85 43' 50" W, 10 01' 00" N y 85 40' 40" W, 09 54' 30" N	7 km	National Wildlife Refuge	Massive nesting site for Lo and more than 50 nests per year of Dc and Cm (Chaves et al 2005a)
	Cma	September-March				
	Dc	October-March				
Gandoca	Dc	February-July	N9.60164 W82.60834	11 km	RNVS	Protection in hands of locals and NGO's, little State protection
	Ei	April-October				
	Cmm	June-November				
Cahuita	Dc	February-July	N9.73221 W82.81706	14 km	National Park	Very small populations due to hunting and illegal poaching of eggs within the AAPP
	Ei	April-October				
	Cmm	June-November				
	Cc	May				
Isla Uvita	Ei	All year		1 km (perimeter)	National Monument	Nesting of one or two individuals, adults and juveniles present in surrounding reef
Playa Negra de Puerto Viejo	Dc	February-July		4 km	None	Threatened by tourist development and by agricultural contamination from banana plantations
	Ei	abril-octubre				
	Cmm	June-November				
	Cc	May				



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Hermosa Beach-Punta Mala (Central Pacific)	Lo	June-December		9 km	National Wildlife Refuge	Hatchery Project
Cocos Beach	Lo	June-December		400 m	RNVS San Lucas Island	Solitary Nesting
Rey Beach ³	Lo	June-December		14 km	PN	Problems with egg poaching
Barú Beach	Lo	June-December			National Wildlife Refuge	Rescue Project
Portalón-Matapalo-Guapil (Central Pacific)	Lo	June-December			National Wildlife Refuge	
Ballena Beach	Lo				National Marine Park Ballena	
Carate, Pejeperro, Río Oro and Piro Beaches	Lo, Cma, Dc	June-December		12 km	RNVS	
	Cma	June-December				
	Dc	October-March				
Preciosa Beach-Platanares	Lo	June-December			RNVS	
	Cma	June-December				
	Dc	Octubre - marzo				
Matapalo Beach	Lo	June-December			None	
	Cma	June-December				
	Dc	October-March				
Punta Banco	Lo	June-December				
	Cma	June-December				
	Dc	October-March				



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	Cabuyal Beach	Lo	June-December			None	
	Punta Mala, southern zone	Lo	June-December		3 km	Sierpe Térraba Wetland.	
	Madrigal, Sirena, Llorona Beaches Corcovado	Lo	June-December		40 km	PN Corcovado	
		Cma	June-December				
		Dc	Octubre - marzo				
Foraging Site	Gandoca/Manzanillo	Ei / Cm		N9.64194 W82.64237	5000 ha	RNVS	Open access to boats, some carry out poaching
	Cahuita	Ei / Cm		N9.75054 W82.81296	600 ha	PN	Open access to boats, some carry out poaching
Migratory Routes	PENDING						

Data taken from: Piedra and Velez 2004; Paladino et al., 2004; Paladino et al., 2003; Reina et al., 2002

** Data taken from:

*** Data taken from: Quirós, 2004. Unpublished. Datos de la temporada 2004 – 2005 únicamente.

**** Data taken from: PRETOMA, 2005. Unpublished.

***** Data taken from: Francia, 2005. Unpublished.

1. There are no research projects or collection of long term data.
2. Non-permanent research projects.
3. Presence of research projects in the past, but no longer are operating due to lack of funding.
4. Nest protection projects exist and data collected refers to the number of eggs relocated to the hatchery and number of hatchlings.

2. Information regarding the use derived from sea turtles

	Types of use	Specie	Products	Ocean Basin	Origin *		Estimated annual quantity	Information source	Actions
					L	I			
Consumptive Use	Poaching and Hunting	Ei	Carapace-scales (crafts, rooster spurs)	Caribbean		I	No. of turtles unknown. Hundreds of items	Personal data	Sporadic confiscations
			Eggs			I	0 % of marked nests in 2004	Harrison et al. 2005b	Patrols by Park Guards, Coast Guards monitoring of poaching by CCC
		Ei	Carapace-scales (crafts, rooster spurs)	Pacific		I	No. of turtles unknown. Hundreds of items	Personal data	Occasional confiscations



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		Dc	Eggs	Caribbean		I	Hundreds of eggs	Personal data	Sporadic confiscations
			Eggs and Meat			I	1 turtle in 2005, 11.8 % of marked nests in 2004	Harrison et al. 2005a	Sporadic confiscations
		Cm	Meat	Caribbean		I	Hundreds of Kg's	Personal data	Sporadic confiscations
						I	~1,000 turtles?	Harrison et al. 2005b	Patrols by Park Guards, Coast Guards monitoring of poaching by CCC
			Eggs			I	Thousands of eggs	Personal data	Sporadic confiscations
						I	6.3 % of marked nests in 2004	Harrison et al. 2005b	Patrols by Park Guards, Coast Guards monitoring of poaching by CCC
		Lo	Eggs	Northern Pacific (RNVS Ostional)	X		6 million eggs	Chaves et al 2005b.	Article 55 of Law N° 7064- Promotion of Farming Production (FODEA) of May of 1987. Article 3 of Law N° 7149 of June 27th, 1990 reforming article 28 of Law N° 190 - Fisheries and Maritime capture.
		Lo	Eggs	Pacific (other areas)		x	ND	Park Guards	Control and protection, present during nesting season
	Capture	Ei	Capture of individual juveniles for ornamental use in private aquariums	Caribbean (mainly Limón)		X	Aprox. 30 individuals /year	D. Chacón	Rescue, Rehabilitation and liberation on behalf of ANAI and the Puntarenas Marine Park
Non- Consumptive Use	Research	Cm/Dc/ Ei	Monitoring, hatcheries	Caribbean	X			Research permits approved by Conservation Areas	Regulation of public use by MINAE, regulates visitation
	Tourism	Dc/Ei/C m	Nesting Observation	Caribbean	X		33000 visitors	Harrison et al. 2005b, Visitation Statistics from SINAC	Regulation of public use of the ASP of MINAE, regulate visitations
	Environment al Education, Training	Dc/Ei/ Cm	Awareness, non extractive alternatives, hatcheries management	Caribbean	X				



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Scientific	Lo/Ei/Dc/Cm	Blood samples, monitoring, hatchery management	Pacific	X		ND	Plotkin, P.T. Et al. 1995. Kalb, H.J. 1999	Complete control within AAPP and partial control within other areas
Tourism	Ei/Dc/Cm/Lo	Observation of nesting and arribadas	Pacific	X			Personal data	Partial control in some AAPP
Environmental Education, Training	Dc/Ei/Cm	Awareness, non extractive alternatives, hatcheries management, release programs	Pacific	X				

* L = legal, I = illegal

3. Main threats

3.1 Habitat and other threats

Threats	Specie(s) Affected	Size of Impact	Geographic Region(s) Affected	Information Source	Actions
Light contamination	Cc, Cm, Dc, Ei, Lo	Medium	Caribbean & Pacific	Harrison et al. 2005b.	Change public lighting to sodium lighting through ICE, local public and hotel awareness
Wood debris on the beach	Dc, Ei, Cm, Cc, Lo	Significant	Caribbean & Pacific	Reports ANAI www.anaicr.org , Juan Sánchez (obs. Pers)	Manual beach cleaning by NGOs General beach cleaning at least once a year. In Hermosa beach the collection of pieces of fallen wood is permitted for wood making.
Anthropogenic solid wastes	Dc, Ei, Cm, Cc, Lo	Medium	Caribbean & Pacific	Reports ANAI www.anaicr.org	Manual beach cleaning by NGOs
Oceanic erosion	Dc, Ei, Cm, Cc	Significant	Caribbean & Pacific	Reports ANAI www.anaicr.org	Nest relocation and hatchery management
Coastal erosion	Dc, Ei, Cm, Cc, Lo	Medium	Caribbean & Pacific	Personal data	Nest relocation and hatcheries
Damage to coral reefs	Ei, Cm	Significant	Southern Caribbean	Reports ANAI / www.anaicr.org	None
Tourism development	Dc, Ei, Cm, Cc, Lo	High	Caribbean & Pacific	Reports ANAI, Confiscation	EIA, Declared ASP.
Motorized vehicles in the ocean	Lo, Dc, Cm	ND	Pacific Coast of Costa Rica	Orrego Carlos Mario. 2001, Arauz 2000, Chavez, 2002, Personal observations	Implement and develop ACG marine strategy to restore and effectively conserve the 43,000 ha. of protected marine area



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Motorized vehicles on the beach	Lo, Dc, Cm	ND	Pacific Coast of Costa Rica	Personal observations	Patrols for protection and control
Predation of nests and hatchlings by wildlife	Lo	Moderate	Naranjo Beach, Nancite Beach, Hermosa Beach, San Lucas Island	Eckrich Caren, Owens David, Juan Sánchez	Patrols for protection and control
Affects to other associated habitats (over fishing, destruction of and extraction in reefs and coves)	Lo, Dc, Cm, Ei	ND	Northern and Central Coast of the Pacific Coast, Costa Rica	Spotila, JR. Et al. 2000. Valverde, R.A et al. 1998. Personal data	Implement and develop ACG marine strategy to restore and effectively conserve the 43,000 ha. of protected marine area

3.2 Capture (Intentional/incidental)

Threats	Specie(s) Affected	Size of Impact	Geographic Region(s) Affected	Information Source	Actions
Capture in the ocean	Cm	~1,000 turtles?	Caribbean	ANAI	Law 8325 of 2002
	Ei	?	Caribbean		Law 8325 of 2002
Capture of sea turtles on the beach	Cm / Dc	Minimum of 24 turtles in 2004	Caribbean	Harrison et al 2005b	Law 8325 of 2002
	Dc	1 turtle in 2005	Caribbean		Law 8325 of 2002
	Ei	?	Caribbean		Law 8325 of 2002
Egg harvesting	Cm	6.3 % of marked nests in 2004	Caribbean	Harrison et al 2005b, Spotila et al 1998, Vélez & Piedra 2000, Arauz 2001	Law 8325 of 2002
	Dc	11.8% of marked nests in 2004	Caribbean	Harrison et al 2005b, Spotila et al 1998, Vélez & Piedra 2000, Arauz 2001	Law 8325 of 2002
	Ei	0 % of marked nests in 2004	Caribbean	Harrison et al 2005b, Spotila et al 1998, Vélez y Piedra 2000, Arauz 2001	Law 8325 of 2002
	Lo	High	Pacific	Personal data Spotila et al 1998, Vélez y Piedra 2000, Arauz 2001	Laws 8325, 7317
Gillnet Fisheries	Ei/Cm	Medium	Northern and Southern Caribbean	Interviews	None
	Lo, Cm	ND	Northern Pacific		Implement and develop ACG marine strategy to restore and effectively conserve the 43,000 ha. of protected marine area



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Manual direct capture or with harpoon	Ei/Cm	Medium	Northern and Southern Caribbean	Interviews	None
Incidental *1	Lo, Cm, Dc, Ei	High	Northern and Central Pacific	Arauz 1997, Arauz, 2000. Orrego 2002, Chávez, 2002	
Hunting	Lo	High	Northern and Central Pacific	Orrego pers.com.	
Artesinal fishing with bottom lines	Lo, Cm, Dc	ND	Northern Pacific		Implement and develop ACG marine strategy to restore and effectively conserve the 43,000 ha. of protected marine area
Bottom trawl fisheries	Lo, Cm	ND	Northern Pacific of Costa Rica		Implement and develop ACG marine strategy to restore and effectively conserve the 43,000 ha. of protected marine area
Gillnet fisheries	Lo	ND	Pacific	Fishermen Biol. Randal Arauz of PRETOMA	Legislation
Artesinal fishing with bottom lines	Lo	ND	Pacific	Fishermen Biol. Randal Arauz of PRETOMA	Legislation
Longline fisheries	Lo	ND	Pacific	Fishermen Biol. Randal Arauz of PRETOMA	Legislation
Bottom trawl fisheries	Lo	ND	Pacific	Fishermen Biol. Randal Arauz of PRETOMA	Legislation



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4. Legal Framework

4.1. International instruments

Treaty, Convention, Agreements, Memorandum of Understanding	Year signed and/or ratification
1. Convention on International Trade in Endangered Species of Wild Flora and Fauna.	Ratified 22/10/74
2. Convention Concerning the Protection of the World Cultural and Natural Heritage.	Law 5980, 16/11/76
3. Convention for the Protection of Flora, Fauna and Scenic Beauties of the Americas.	Law 3763, 19/11/66
4. Convention for the Conservation of the Biodiversity and Protection of Wilderness Areas in Central America.	Ratified 07/12/94
5. The Convention on Wetlands of International Importance especially as Waterfowl Habitat (RAMSAR).	Ratified 20/06/91
6. Convention on Biological Diversity (Biodiversity Convention).	Ratified 24/08/94
7. Constitutive Convention of the Latin American Organization for Fisheries Development (OLDEPESCA), and its amendments I and II signed on October 29th, 1982.	Ratified 26/09/96
8. Convention on Fishing and Conservation and Living Resources of the High Seas.	Law 5032, 27/07/72
9. Cartagena Convention for the protection and development of the marine environment of the Wider Caribbean.	Law 7227, 22/04/91
10. Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere.	
11. United Nations Convention on the Law of the Sea.	Law 4940, 12/01/72
12. FAO Fisheries Department Code of Conduct for Responsible Fisheries .	Decree 27919-MAG, 14/06/99
13. Constitutive Convention of the Central American Interparliamentary Commission on the Environment and Development.	Law 7226, 14/05/91
15. Protocol Concerning Co-operation and Development in Combating Oil Spills in the Wider Caribbean Region .	Law 7227, 22/04/91
16. Convention on the Territorial Sea and Contiguous Zone, signed in Geneva April 29th, 1958.	Law 5031, 12/08/72
17. Cooperative Agreement for the Conservation of Sea Turtles of the Caribbean Coast of Costa Rica, Nicaragua and Panama.	
18. Agreement on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.	Law 5556, 26/08/74
19. Convention on the Continental Shelf	Law 4936, 28/12/72
20. United Nations Framework Convention on Climate Change	Law 7414, 13/06/94
21. Inter-American Convention for the Protection and Conservation of Sea Turtles.	Law 7906, 24/09/99



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4.2. National legislation

Type and name of legal instrument (No.)	Description (Range of application)	Sanction(s) Imposed
1. Political Constitution.	National	
2. Law of the Creation of National Park Services (Law No.6084 August 17 th , 1977).	National	
3. Wildlife Conservation Law (Law No 7317 October 21st, 1992) and its regulation.	National	
4. Biodiversity Law (Law No.7788 April 30th, 1998).	National	
5. Law of the Maritime Terrestrial Zone (Law No.6043 March 2nd, 1977)	National	
6. Organic Law of the Environment (Law No.7554 October 4 th , 1995)	National	
7. Forestry Law (Law No.7575 February 5 th , 1996)	National	
8. Law of the Creation of the Costa Rican Fisheries and Aquaculture Institute (INCOPECA) (Law No. 7384 March 16 th , 1994).	National	
9. Soil Use, Management and Conservation Law (Law No. 7779 April 30 th , 1998).	National	
10. Executive Degree No28203-MINAE-MAG (authorizes the harvesting and commercialization of Olive Ridley eggs (<i>Lepidochelys olivacea</i>) layed within the Ostional National Wildlife Refuge to ADIO (The Association for the Integral Development of Ostional).	Ostional National Wildlife Refuge	
11. Specific legislation for each Wildlife Protected Area	Each Wildlife Protected Area	
12. Regulations on research	National	
13. Law of the creation of the National Coast Guard Service N° 8000	National	
14. INCOPECA Administrative board agreement No.051-1995	Prohibits commercial fishing using all types of nets, dragnets, and trawls in river mouths.	Fine of 20 to 60 times base salary
15. INCOPECA Administrative board agreement No.146-2000	Regulates the line size and the number of hooks for small, medium and large scale artisanal commercial fleets.	Fine of 20 to 60 times base salary
16. INCOPECA Administrative board agreement No.252-2003	Obligates longline fleets to use circular hooks.	Fine of 20 to 60 times base salary
17. INCOPECA Administrative board agreement No.439-2003	Obligates sport fishing fleets to use circular hooks.	Fine of 20 to 60 times base salary
18. INCOPECA Administrative board agreement No.439-2003	Obligates sport fishing fleets to use circular hooks.	Fine of 20 to 60 times base salary
19. Law 8325. Law of the Protection, Conservation and Recuperation of Sea Turtle Populations (Repealed with the approval of Law 8436).	Use of Turtle Excluder Devices (TED) is mandatory for shrimp trawler fleets	Fine, prison and cancellation of fisheries license.
20. Law 8436. Law of Fisheries and Aquaculture.	Art.140. Prohibits the capture, injury, killing, transport or commercialization of chelonians. Art.149. Use of Turtle Excluder Devices (TED) is mandatory for shrimp trawler fleets.	3 months to 2 years in prison, fine of 40 to 60 times base salary. /Fine of 5 to 15 times base salary.



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4.3. Indicate any legal instruments that are currently in the process of being approved.

- Regulation for Public Use of the RNVS Ostional.
- Regulation of the Fisheries and Aquaculture Law.
- Actualization of the RNSV Gandoca-Manzanillo Management Plan.
- Draft decree to expand Cahuita National Park
- Expansion of Camatonal Wildlife Refuge (signed, but still needs to be published)
- New Wildlife Refuge Caletas-Arío was declared (signed, but still needs to be published)
- SINAC hatchery management protocol

4.4. Public and private institutions involved in sea turtle conservation

Institution/ Entity	Responsibilities
National System of Conservation Areas	Protect marine protected areas and nesting sites for sea turtles. Facilitate, promote and execute scientific research activities and environmental education
University of Costa Rica	Research
National University	Research
National Fisheries and Aquaculture Institute	Authorizes, regulates and supervises different types of fisheries in the area
Ministry of Public Security: National Coast Guard Service (SNG) and Police Force	Duty to protect and carry out established legislation in the country. The SNG also carries out research projects and environmental education.
ANAI	Research, monitoring, training, environmental education, control
Caribbean Conservation Corporation	Monitoring, research, lobby, environmental education
PRETOMA	Research and control
WWF	Research and financing
National Sea Turtle Network	Follow-up, policies, strategies.
CEDARENA	Analysis and legal support
MARVIVA	Control, protection and legal support
ASVO	Research, control, protection and environmental education
WCS	Financial support
Leatherback Trust	Research, financial support
FundationTuva	Research
Piro	Research
Salvamento Internacional de la Tortuga del Mar	Research
Forensic Science Laboratory-Judicial Power	Chemical-biochemical analysis, legal and investigative support.
Marine Park	Research
ECOTEACH	Research
Tortuga Feliz, Pacuare	Research
Estación las Tortugas	Research
PROVCA	Voluntary enforcement
Hacienda Barú	Research, control and protection



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5. Exceptions

The only human activities permitted in relation to sea turtles are: a) the activity of scientific research as a information generator for biological, ecological, and behavioral knowledge, among others, and to facilitate the decision making process for a better management of and improved conditions for these species, b) tourist activities related to the observation of these species and their nesting process, c) environmental education in local communities as well as for visitors and d) the harvesting and commercialization of olive ridley (*Lepidochelys olivacea*) eggs within the Ostional National Wildlife Refuge by the Association for the Integral Development of Ostional (ADIO).

The current legislation explicitly prohibits the possession, hunting, fishing and harvesting of sea turtles, their products and sub-products. The importation and exportation is also prohibited of these species, which are included in Appendix I, II and III of CITES as well as in the Convention on Migratory Species. The commercialization and transport of sea turtle products and sub-products is illegal throughout the entire National territory.

6. Conservation Efforts

6.1 General description of the sea turtle protection and conservation program

Las Baulas National Marine Park - Playa Grande sector (Leatherback sea Turtle Project): Joint project between the Ministry of Energy and the Environment, Drexel University (Philadelphia USA), Purdue University (Indiana USA) and the Leatherback Trust. Protected species are *Dermochelys coriacea* (main species), *Lepidochelys olivacea* and *Chelonia mydas agassizii*. Objectives: to understand the population dynamics of the leatherback turtle. To help increase base line data in order to develop a long term Sea Turtle Conservation and Management Plan. To develop an attainable growth model for sustainable use as the key to economic development within the National Park. Elucidate as to the physiological and behavioral roles of leatherback turtles in determining their functional niche in the oceanic ecosystem. This project has been up and running for 17 years. The most relevant activities are: hatchery operation as a conservation strategy, tagging, registry of biometric data, ecological studies, nest excavation to determine hatching and emerging success. Park guards are in charge of nest protection and nesting area, control, attending tourists and environmental education. A recycling project is also present with the goal of maintaining nesting areas. Contact information: Dr. James Spotila, main researcher and president of the Leatherback Trust, tel: (1) 215 895 2099), Dr. Frank Paladino, main researcher and Pilar Santidrian, researcher, Biol. Elizabeth Vélez, Goldring Biological Marine Station Tel: (506) 653 0635, e-mail: evbaulas @ Yahoo.com, Biol. Rotney Piedra, Las Baulas National Marine Park Administrator Tel:, (506) 653 0470, e-mail: baulasrp@yahoo.com

The Las Baulas Marine Park Management Plan was approved and made official, the majority of the management strategies revolve around the protection and conservation of sea turtles, especially the leatherback turtle.



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Ostional National Wildlife Refuge (UCR Project): Project lead by the University of Costa Rica. Species protected: *Lepidochelys olivacea* (main species) and *Dermochelys coriacea*. Objectives: To determine the population trends for the olive ridley in both mass nesting (arribadas) and solitary nesting. To analyze sea turtle mortality at different life stages and their causes. Determine spatial and temporal nesting patterns and their presence in hatching success. Dr. Douglas Robinson began the research in 1971 and it has been continued under the School of Biology of the University of Costa Rica and in collaboration with the Association of the Integral Development of Ostional. The most relevant activities include a registry of daily nesting activities along the 7 km of beach and the fate of each nest. The size, duration and extension of each arribada phenomena is measured. The effect of the egg harvesting and the percentage of turtles injured by nets and hooks getting caught on them is determined. In addition, the density of nests on the beach, their status and hatching success is also measured. (G. Chaves com. pers). Contact: Biol. Gerardo Chávez; Tel: (506) 682 0400, (506) 207 5966.

Since 2000, a new branch of research within the RNVSO was initiated, looking at both the natural and anthropogenic causes of the mortality of sea turtles found dead at RNVSO, classifying the cadaver according to the state of decomposition in which it was found and later performing a necropsy. Additionally, samples are taken for future lab analysis from those individuals that are in a viable condition for a histopathological, bacteriological and parasitological analysis. During 2004, new research was initiated to find out the occurrence of fibropapillomatosis in the nesting population during the arribadas in Ostional. (C. Orrego com. Pers). Contact person: M.Sc . Carlos Mario Orrego V. (506) 841 2246 (506) 682 0400 (506) 686 4970, carlos.orrego@sinac.go.cr, carlosmarioo1@yahoo.com.mx

Junquillal Beach. Mainly a conservation project for the leatherback turtle (*Dermochelys coriacea*). Activities carried out are environmental education, sea turtle protection and hatcheries. The project involves participation from different social actors from within the community, including businesses.

Sea Turtle Restoration Program- Playa San Miguel (Northern Pacific) and Punta Banco (Southern Pacific): Two conservation projects lead by the Sea Turtle Restoration Program (PRETOMA). Species protected: *Lepidochelys olivacea*. Objectives: Intervene in the uncontrolled and illegal egg poaching through a Conservation Program that involves coastal community members by offering jobs, responsibilities, technical training and education, and integrating community development with the conservation of natural resources in a long term Plan (Arauz 2001). Project has been running for 4 years in San Miguel and in Punta Banco for 6 years. Most relevant activities: Hatchery operation, excavation of nests to determine percentages of hatching and emerging success, nest protection, tagging and compiling biometric data. Contact persons: Biol. Randall Arauz president PRETOMA y Biol. Isabel Naranjo PRETOMA. Tel: (506) 236 6017

Playa Hermosa National Wildlife Refuge (includes Punta Judas): Joint project between the Environmental Department of the Coast Guard Services and the Ministry of Energy and the Environment. Species protected: *Lepidochelys olivacea*. Objectives: To conserve and protect the turtle and reduce egg poaching to minimum levels. The project has been in effect for 5 years



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and its most relevant activities are: protection of nests and nesting area, hatchery management as a conservation strategy, compile biometric data, tagging, excavation of nests to determine percentages of hatching and emerging success and assist other research projects, project carried out in 2001-2002. Contact Person: Coast Guard Services and Alejandro Sotela, Tel (506) 286 6880. Research project is headed by ASVO on hatchery management, biometrics, and nest temperatures. Contact: Luis Matarrita, tel (506) 258-4430. Control and protection programs are covered by the Coast Guards, MINAE, ASVO, and COVIRENAS.

Barú National Wildlife Refuge (Olive ridley restoration project in Barú beach): Project headed by the Association of Friends of Nature of the Central and South Pacific (ASANA). Species protected: *Lepidochelys olivacea*. Objectives: To protect nesting sea turtles in the Refuge, their nests and nesting area, in addition to carrying out environmental education activities. The project has been running for 15 years. Among their most relevant activities are hatchery management, excavation of nests to determine percentages of hatching and emerging success, beach patrol, hatchling release and environmental education. (J. Ewing 2002, com pers.). Contact persons: Jack Ewing (Administrator Barú) and Franklin Sequeira (ASANA) tel: (506) 787 0254

Portalón-Matapalo Project. Project headed by a group of community members. Mrs. Flor Madrigal and Matilde Pérez Rodríguez, 15 years old, are recognized as the project leaders. Species protected: *Lepidochelys olivacea*. Objectives: To develop environmental education activities and protect nests in hatcheries. Contact persons: Mrs. Flor Madrigal and Matilde Pérez. Tel: (506) 771 3726

Project in Playa Piro on the control and protection of *L. olivacea*.

Through Friends of the Osa, the Sea Turtle Conservation Program of Osa was initiated in 2005 (www.osaseaturtles.org) with the main objective of providing continuity to past efforts on conserving these reptiles, as well as unifying and standardizing the techniques and methods used for this purpose. The beaches monitored by this program are Carate, Rio Oro, Pejeperro, y Piro. Tagging, follow-up, monitoring, control, hatchery management, are all activities of the project. Contact: Fabián Andrés Sánchez, Tel (506) 838-9171, fasanchez@racsa.co.cr.

Sea turtle conservation project carried out in Barra de Pacuare, Limón, Costa Rica, along the 7km of beach between the Pacuare and Parismina Rivers. During the 2005 leatherback nesting season, the work consisted of relocating nests to safer areas, which were monitored by using established protocols up until their hatching.



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6.2 Relevant Projects and Activities

Project/Activities	General objective	Results obtained	Duration	
			From	Until
Southern Caribbean ST Conservation Program	Improve the Conservation status of ST in harmony with local communities	Project started in Cahuita	1990	2006
Monitoring and Conservation in Tortuguero by the CCC	Sea Turtle Conservation in Tortuguero to help ST fulfill their ecological roles	Increase in green turtle nesting 412% between 1971 and 2004	1955	2005
Follow-up on sea turtle nesting activities in Ostional	Establish nesting trends of Lo, Dc and Cm in Ostional	Close to 300 mass nesting events have been recorded, ranging from 1000 to 400 thousand turtles per kilometer. More than 4 million hatchlings hatch per year (Chaves et al in preparation)	1981	2005
Habitat improvement in Ostional	Increase nesting area and provide sea turtles easy access to the beach		4 km of clean beach throughout the entire year. (Chaves et al 2005b)	1987
Hatchling protection in Ostional	Avoid predation and hatchling death in the daylight	Close to 50 thousand hatchlings saved daily. Predation reduced to 10% of the normal percentage (Chaves et al. 2005a)	1987	2005
Control and protection, hatchery management, environmental education and training in Hermosa Beach, Punta Mala, Barú and Matapalo (Central Pacific)	Improve nesting site conditions, decrease egg harvesting by humans and domestic and wild animals, public awareness.	Improved hatchery management, increased hatching success, number of hatchlings released and awareness levels.	1986	2005
Control and protection, hatchery management, environmental education and training in Carate, Piro, Río Oro, Pejeperro, Perla Beaches	Improve nesting site conditions, decrease egg harvesting by humans and domestic and wild animals, public awareness.	Improved hatchery management, increased hatching success, number of hatchlings released and awareness levels.	??	2005
Use of circular hooks in place of "J" type hooks by Costa Rican commercial longline fleets.	Implement the use of circular hooks as substitution for "J" type hooks in Costa Rican commercial fleets.	Project is in initial phase.	June of 2005 to June of 2006.	

7. International Cooperation

The majority of the different projects identified are being carried out utilizing funds offered through international cooperation with entities such as WWF, WCS, foreign Universities, and Widecast.



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8. National Directory

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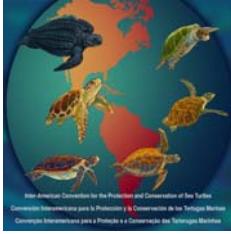
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Angel Herrera	Pacific Marine Park Directo	Marine Biologist				

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10. Annexes

Spanish Versions of:

- Use Plan for Ostional Wildlife Refuge, VII Annual Follow-up Report
- Expansion of the Camatonal Wildlife Refuge (signed, but not published)
- Declaration of a new Wildlife Refuge Caletas-Arío (signed, but not published)
- SINAC Hatchery Management Protocol
- Sea Turtle Conservation Project in Barra del Pacuare, 2005 Leatherback Nesting Season

Troëng, S., Chacón, D. and B. Dick. 2004. Possible decline in leatherback turtle *Dermochelys coriacea* nesting along the coast of Caribbean Central America. *Oryx* 38(4):395-403

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