



Name of the Organization: <b>Fundacion Conservación, Naturaleza y Vida (CONAVI)</b>	Type of Organization: <b>Non-governmental Organization</b>
Brief Description of the Organization: <b>CONAVI is a not-for-profit organization established in the Republic Panama by Public Document No. 6618 of 22 March 2005 and registered in the Information Technology System of the Public Registry of Panama (id 13638; REDI 753710). Its mission is to “foster sustainable development and natural resource conservation in rural and indigenous territories of Panama”. CONAVI has conducted several sea turtle conservation project’s in Panama’s Pacific coast.</b>	
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Project title: <b>Assessment of <i>arribada</i> olive ridley sea turtles in nesting beaches at Panama’s Pacific Coast</b>	
Project Objective and Expected Outcomes:  Objective: Secure the long-term viability of Panama’s main <i>arribada</i> beaches by means of estimating the number of turtles using strip transect methodology and studying hatching rate, embryo and hatchling mortality while conducting community and parkranger training in sea turtle rookery management and applied research.  Expected outcomes: <ol style="list-style-type: none"> <li>1. Reliable estimates of <i>arribada</i>, hatching rate and neonate production in five (5) beaches serve to establish globally standardized monitoring protocols and data standards in Panama, examine interannual changes in the regional nesting effort and to verify results obtained yearly, which is essential to determine adequate protection measures.</li> <li>2. 100 community dwellers trained in rookery management and <i>arribada</i> censuses.</li> <li>3. 50 protected area field personnel from the government’s National Environmental Authority (ANAM) and Aquatic Resources Authority (ARAP) trained in rookery management and <i>arribada</i> censuses.</li> </ol>	
Target Population: <ol style="list-style-type: none"> <li>1. 100 island and coastal community dwellers in Panama’s Pacific Coast.</li> <li>2. 50 field personnel from the government’s National Environmental Authority (ANAM) and Aquatic Resources Authority (ARAP).</li> </ol>	
Amount Requested in USD: <b>US\$20,000</b>	Co-financing: <b>US\$66,390</b> (CONAVI: 21,390 in-kind and salaries; SENACYT: \$45,000 cash)
Project Duration in Months: <b>6 months</b>	Country: <b>Panama</b>



## 2. Project Summary:

The olive ridley sea turtle (*Lepidochelys olivacea*) is a highly migratory species. This turtle exhibits a pantropical distribution reaching its greatest abundance in the Eastern Tropical Pacific (ETP), including Panama's Pacific Coast, and in the Bay of Bengal in the Indian Ocean. Nesting of this species occurs throughout its distribution range and it reaches remarkable proportions at beaches in India, Costa Rica, Mexico, Nicaragua and Panama. At a few rookeries in these countries olive ridleys nest synchronously en masse numbering in the tens or hundreds of thousands, giving rise to a phenomenon known as *arribada*. Because of the overwhelmingly high density, an exact number of nesting individuals in the arribadas is difficult to generate. In recent years, however, a statistically robust methodology, the instantaneous count (strip transect) method, was developed specifically to estimate the number of individuals that participate in these massive nesting events. This method is being globally applied as part of standardized monitoring protocols and data standards. *L. olivacea* is considered as the least imperiled of all sea turtle species. Yet, their unique nesting assemblage known as *arribada* is increasingly less frequent in the few remaining *arribada* beaches.

Since 2006, with funds from the USFWS, the strip transect method has been applied at the major arribada beaches in the ETP by the Southeastern Louisiana University and NGOs from the relevant ETP countries, except Panama. Preliminary results have allowed to take a peek at the dimension of the olive ridley stock from a regional perspective, indicating that the arribada assemblage at La Escobilla, Mexico is the largest arribada assembly in the world. We propose to conduct estimation of olive ridley arribadas in Panama as part of both local conservation efforts and olive ridley management and conservation in the ETP. The project will consist of a) estimating the number of turtles at the five (5) arribada beaches in Panama using strip transect methodology. By using the same technique the estimates will allow a direct comparison of numbers of turtles nesting at beaches in Panama and the whole ETP beaches. Estimates will serve to examine interannual changes in the regional nesting effort, which is essential to determine adequate protection measures. The estimation of the mass nesting effort will be complemented by an estimate of the hatching rate at all beaches. Hatching rates are known to be very low at arribada beaches with respect to their non-arribada counterparts, which is likely due to density-dependent factors. Estimation of hatching rates will be accomplished by protecting from predators and nesting adults a significant number of nests at each beach using wire cages. Hatching rates from protected nests will be used to estimate neonate production of all beaches. This parameter will be important to generate an idea of the potential of the rookeries to sustain long-term recruitment into the adult population.

In Panama, relevant government agencies face serious limitations regarding trained field personnel. Coastal communities have long become aware of the need to protect sea turtles. However they still lack rookery management training. The project will enhance through training and hands-on conservation the local dweller's stake in conservation and government field staff's capacity to manage rookeries and conduct monitoring. The estimated overall cost of the project is US\$86,390. A total of **US\$20,000 are respectfully requested from the Organization of American States (OAS) – Western Hemisphere Migratory Species Initiative (WHMSI)**. Matching funds already secured are offered in the amount of US\$66,390: US\$21,390 in-kind and salaries from CONAVI and US\$45,000 from a grant provided by Panama's Secretaría Nacional para la Ciencia y la Innovación (SENACYT) to fund the project "Status of *Dermochelys coriacea* and *Lepidochelys olivacea* within Coiba National Marine Park and its buffer zone". To complement the research and training activities proposed in this project, a proposal entitled "Rapid Assessment of Bycatch Rates in the Gulf of Panama" has been recently submitted to the National Fish and Wildlife Foundation – Sea Turtle Conservation Keystone Fund seeking a US\$20,000 grant to conduct research of incidental captures of sea turtles by commercial and artisanal fisheries in Panama's Pacific Coast and provide training and sound fishing devices to artisanal fishermen.

La tortuga golfina (*Lepidochelys olivacea*) es una especie altamente migratoria. Esta tortuga exhibe una distribución pantropical alcanzando su mayor abundancia en el Pacífico Tropical Oriental (ETP), que incluye la costa pacífica de Panamá, y en la Bahía de Bengala en el Océano Índico. La anidación de esta especie ocurre a lo largo de todo su área de distribución alcanzando proporciones importantes en playas



de la India, Costa Rica, Mexico, Nicaragua y Panamá. En algunas de las playas de anidación de estos países, las golfinas anidan de manera sincronizada y en masa llegando a los centenares de miles, dando lugar a un fenómeno conocido como arribada. Debido a la altísima densidad, el número exacto de individuos anidantes en las arribadas es difícil de generar. En años recientes, sin embargo, se ha desarrollado una metodología estadísticamente robusta, el método de conteo instantáneo (transecto en línea), específicamente para estimar el número de individuos que participan en estos eventos masivos de anidación. Este método está siendo aplicado globalmente como parte de los protocolos de monitoreo estandarizados y estándares de datos. *L. olivacea* es considerada como la especie de tortuga marina menos amenazada. Sin embargo, el fenómeno conocido como *arribadas* es cada vez menos frecuente.

Empezando el año 2006 y con financiamiento de USFWS, el método de transectos en línea ha sido aplicado en las principales playas de arribadas en el ETP por la Universidad Southeastern Louisiana University y ONGs de los países relevantes, excepto Panamá. Los resultados preliminares han permitido tomar una mirada a la dimensión de la población de tortuga golfinas desde una perspectiva regional, indicando que la arribada en La Escobilla, Mexico, es la mayor en el mundo. Proponemos realizar una estimación de las arribadas de golfinas en Panamá como parte de los esfuerzos de conservación local y de manejo y conservación en el ETP. El proyecto consistirá en a) estimación del número de golfinas anidantes en las cinco (5) playas de arribadas en Panamá usando el método de transectos en línea. Mediante el uso de el mismo método en todas las playas de anidación permitirá realizar comparaciones directas de los números de tortugas anidantes en las playas de Panamá y de las playas del ETP. Estos estimados servirán para examinar los cambios inter-anales de la anidación de golfinas en la región, lo que es esencial para determinar las medidas de protección adecuadas. El estimado de la anidación masiva será complementada por b) un estimado de las tasas de eclosión en todas las playas estudiadas. Las tasas de eclosión son conocidas por ser muy bajas en las playas de arribadas con respecto a las playas donde estas no se producen, lo cual posiblemente se deba a factores relacionados con la densidad de nidos. La estimación de las tasas de eclosión se obtendrá protegiendo de los predadores y tortugas adultas un número significativo de nidos en cada playa usando cajas de alambre. Este parámetro será importante para generar una idea del potencial de las playas de anidación de sostener generacionalmente una población adulta a largo plazo.

En Panamá, las agencias gubernamentales relevantes tienen serias limitaciones en cuanto a personal de campo capacitado. Las comunidades costeras son conscientes de la necesidad de proteger las tortugas marinas. Sin embargo, estas carecen de entrenamiento en manejo de playas de anidación. El proyecto 3) fortalecerá, mediante la capacitación y conservación en campo, el papel de las comunidades locales en la conservación de las playas de anidación y del personal de campo de las agencias gubernamentales para manejar las playas de anidación y realizar monitoreo de las nidadas. El costo estimado del proyecto es de US\$86,390 de los que **US\$20,000 son respetuosamente solicitados a la Organización de Estados Americanos (OAS) – Iniciativa para las Especies Migratorias del Hemisferio Occidental (WHMSI)**. Ofrecemos fondos de contrapartida por un total de US\$66,390: US\$21,390 en bienes y salarios de CONAVI y US\$45,000 en efectivo provenientes de la Secretaría Nacional para la Ciencia y la Innovación (SENACYT) que apoya nuestro proyecto “Status de *Dermochelys coriacea* y *Lepidochelys olivacea* en el Parque Nacional Marino Isla de Coiba y su zona de amortiguamiento”. Para complementar las actividades de investigación y capacitación propuestas en este proyecto, hemos enviado recientemente una propuesta a National Fish and Wildlife Foundation – Sea Turtle Conservation Keystone Fund solicitando US\$20,000 para realizar investigación sobre la captura accidental de tortugas marinas por la flota comercial y pescadores artesanales en la costa del Pacífico de Panamá y proveer entrenamiento y equipo de pesca apropiado a pescadores artesanales.

### 3. Organization’s Experience

Fundación CONAVI owns a private preserve in the Azuero Peninsula, Panama’s Pacific Coast, purchased with funding from IUCN-The Netherlands in 2005 that protects 98 hectares of dry tropical forest and abuts a small sea turtle rookery. Between 2005-2007, CONAVI conducted a USFWS-Wildlife Without Borders grant project entitled “Making Management of Sea Turtle Rookeries and Conservation of Dry Tropical Forests Work in Panama’s Pacific Coast” that consisted on activities such



as training in rookery/forest management, nature tourism training, promotion of cooperative ecotourism ventures, assessments and planning on turtle rookeries and adjoining forests, joint patrolling/monitoring of rookeries and adjoining forests and outreach activities including printed/video material. Direct beneficiaries included 12 rural communities (3172 inhab.), 5 local environmental groups, 100 local dwellers as trainees and 20 large landowners, indirectly reaching 9261 settlers from 6 towns and hamlets.

During 2008 – 2009, CONAVI conducted a National Fish&Wildlife Service (NFWF)-sponsored project called “Pacific Leatherback Nest Site Identification Project” that yielded the identification of 47 potential leatherback nesting sites. The project also conducted Training workshops on TED use in coordination with Panama’s Aquatic Resources Authority in Panama’s three large fishing harbors: Vacamonte, Coquira and Puerto Mutis. In 2008, a collaborative relationship was established between CONAVI and Southeastern Louisiana University project “Global assesment of arribada olive ridley turtles”. CONAVI provided data from two nesting beaches, Isla Cañas and La Marinera, as first data coming from Panama. Censuses of transects were conducted during the arribadas at these main known olive ridley rookeries in Panama. The methodology used was the strip transect in time method (Gates et al., 1996; Valverde and Gates, 1999). Both projects provided important data and relevant activities that supported the designation of La Marinera as protected area and Panama’s signing of the Inter-American Convention for the Protection and Conservation of Sea Turtles. CONAVI is currently conducting the project “Status of *Dermochelys coriacea* and *Lepidochelys olivacea* within Coiba National Marine Park and its buffer zone”.

#### Relevant Funding Background

Source	Project	Year	Amount (US\$)
1. IUCN – The Netherlands	<i>Land purchase for Conservation of Dry Tropical Forest and Nesting Beaches of Sea Turtles, Bucaro</i>	2007-08	120,000
2. USFWS – WWB (USA)	<i>Making Management of Sea Turtle Rookeries and Conservation of Dry Tropical Forests Work in Panama’s Pacific Coast</i>	2005-07	25,000
3. National Fish & Wildlife Foundation – Marine Turtle Conservation Fund (USA)	Sea Turtle Nesting Identification in Panama’s Pacific Coast	2008-09	25,000
4. Secretaría Nacional de Ciencia y Tecnología (SENACYT - Panama)	PNCOIBA10-001 “ <i>Presencia estacional, distribución, abundancia y patrones de actividad de Dermochelys coriacea y Lepidochelys olivacea en el Parque Nacional Coiba y zonas de influencia</i> ”.	2010-present	45,000

#### 4. Project Narrative Description:

##### 4.1. Rationale:

Sea turtle populations have sharply declined and their long-term survival is in serious jeopardy. All seven species are included in CITES’ Appendix I and six of them listed as threatened or endangered under the US Endangered Species Act. The olive ridley sea turtle (*Lepidochelys olivacea*, Eschscholtz 1829), an IUCN-listed species as vulnerable, is a pantropical species that nests through most of its distribution range. Although it is a widely distributed species this turtle reaches its highest abundance in the Indian Ocean and along the coastal areas of the Eastern Tropical Pacific (ETP) Ocean (Cornelius, 1986). This species is thought to be the most abundant sea turtle species in the world (Marcovaldi, 2001). This belief is primarily supported by the fact that, aside from nesting solitarily, this turtle can nest en masse giving rise to a phenomenon known as arribada (Valverde et al., 1998). This mass nesting phenomenon is characterized by the participation of tens or hundreds of thousands of females that nest synchronously on a relatively small section of beach over a few nights (Richard and Hughes, 1972; Hughes and Richard, 1974). Today this mass nesting phenomenon still occurs in large numbers in Gahirmatha and Rushikulya beaches in India (Pandav et al., 1994; Shanker et al., 2004), in La Escobilla in Mexico (Márquez-M. et al., 1996), at Ostional beach in Costa Rica (Russell et al., 2000) and La Marinera beach and Cañas Island in Panama (Vasquez Bultrón, 2012). In addition, minor arribada rookeries are known to occur in Nicaragua and Panama.



Unfortunately, the gregariousness of olive ridleys has contributed to the decimation of arribada assemblages, underscoring one of the main reasons to designate the species as endangered or threatened (Groombridge, 1994). It is perhaps due to these designations and associated protection measures that some arribada assemblages, such as those at La Escobilla and Ostional Beaches, appear to be exhibiting signs of good health, although these and others, such as those in India, continue to suffer from high mortality as a consequence of fisheries bycatch (Shanker et al., 2004). It is important to emphasize that the lack of long-term monitoring of the nesting populations using sound methodology prevents biologists from determining the actual impact of natural events and anthropogenic activities on the health of regional populations.

The proposed project seeks to conduct arribada censuses in Panama's main rookeries using a method common to other rookeries under study in the Eastern Tropical Pacific region to yield an estimation of olive ridley arribadas in Panama. In addition, it will conduct estimation of hatching rates and neonate production to generate an idea of the potential of the rookeries to sustain recruitment to the adult population and the protection steps necessary for it to be restored or secured. In the process, the project will also offer training in rookery management and monitoring to government field personnel and local community dwellers and seek to establish a long-term monitoring program along with the local stakeholders and the relevant government agencies and non-governmental organizations.

#### 4.2. Baseline:

Populations of *Lepidochelys olivacea* are estimated to have declined by between 33 and 39% in the entire eastern Pacific region and by between 42 and 85% in Isla Cañas rookery, Panama, between 1945 and 2005 (Abreu-Groblois & Plotkin, 2008). Today Panama's 16 main identified rookeries are in dire straits, particularly the largest ones in Isla Cañas and La Marinera. Conditions on the other three arribada rookeries (La Barqueta, Cambutal and Mata Oscura) are characterized by a strong level of community interest and growing support to community organizations (Comité de Conservación de Alanje in La Barqueta, TortuAgro in Cambutal and Asociación Agropecuaria y Eco turística de Quebro-AAPEQ in Mata Oscura) by international NGOs. However, law enforcement, research and monitoring remain weak. There are very few records available as to the condition of arribadas in these sites and the data collection methods are mostly unreliable. The following project baseline will be used:

Beach	Output from most recent arribada census	Hatching rates	Embryo and Hatchling Mortality	Trained Community Volunteers	Trained Government Agency Personnel
Isla Cañas	5,000–20,000 <sup>1</sup> (1999)	unknown	unknown	unknown	1 (ANAM)
La Marinera	5,249 <sup>2</sup> (2010)	unknown	unknown	unknown	3 (ARAP)
La Barqueta	54 <sup>3</sup> (2001)	unknown	unknown	2 (Comité Ambiental de Alanje)	2 (ANAM)
Cambutal	unknown	unknown	unknown	1 (from Grupo para la Conservación de Tortugas Marinas, Desarrollo del Turismo y el Sector Agropecuario - TORTUAGRO- de Cambutal)	1 (ANAM)
Mata Oscura	unknown	unknown	unknown	5 (from Asociación Agropecuaria y Eco turística de Quebro-AAPEQ and Fundación Agua y Tierra)	1 (ARAP)

<sup>1</sup>Bernardo, J. & Plotkin, P.T. 2007. An evolutionary perspective on the arribada phenomenon and reproductive behavioral polymorphism of olive ridley sea turtles (*Lepidochelys olivacea*). En: Plotkin, P.T. (ed.) *Biology and Conservation of Ridley Sea Turtles*. Johns Hopkins University Press, Baltimore, MD. Pp. 59-87.

<sup>2</sup>Vásquez Bultrón, O. S. 2012. Evaluación de la Densidad de nidos de tortuga lora (*Lepidochelys olivacea*) en la Playa La Marinera, Guánico Abajo de Tonosí, Provincia de Los Santos. Universidad Marítima Internacional de Panamá (UMIP). p. 68.

<sup>3</sup>ANCON.2002. Diagnóstico biológico y socio-económico del Refugio de Vida Silvestre La Barqueta. p. 188 .



#### 4.3. Project Goals and Purpose:

The main goals of this project are to: A. Generate a simultaneous estimate of the number of *Lepidochelys olivacea* females that participate in arribadas in Panama's five main nesting beaches. B. Contribute to close the gap in our knowledge of population size of olive ridleys and promote improved conservation measures and training and capacity building in Panama as part of regional efforts in the ETP region. C. Conduct training for local community organization and government field personnel in turtle rookery management and applied research in coastal and island communities near known sea turtle rookeries in Panama's Pacific Coast. D. Promote international collaboration toward the study of the biology and conservation of olive ridley rookeries.

The specific objectives of the proposed project are to: A. Conduct arribada censuses at the most important olive ridley rookeries in Panama using standardized methodology. B. Assess hatching rates at every one of the study sites to generate an idea of the potential of each turtle rookery to support the adult population. C. Conduct studies on embryo and hatchling mortality. D. Carry out training in turtle rookery management and monitoring.

#### 4.4. Project Outputs and Indicators:

##### Outputs:

A. An arribada census for Panama's five main rookeries. B. Hatchling rates, embryo and hatchling mortality estimated for Panama's five main rookeries. C. 100 community dwellers trained in rookery management and *arribada* censuses and passing on this training to other community volunteers. D. 50 protected area field personnel from the government's National Environmental Authority (ANAM) and Aquatic Resources Authority (ARAP) trained in rookery management and *arribada* censuses. E. Two papers published in relevant peer-reviewed journals such as *Chelonian Conservation and Biology*, *Ecology*, or *Biological Conservation*.

##### Indicators:

A. Number of arribadas at each nesting beach. B. Number of nesting turtles per arribada. C. Hatchling rate, embryo and hatchling mortality rates at each nesting beach. D. Number of training events/participants at local communities. E. Number of training events/participants for government personnel. F. Number of papers published in relevant peer-reviewed journals.

#### 4.5. Project Activities and Methodology:

A. Conduct arribada censuses at the most important olive ridley rookeries in Panama using standardized methodology. The census of transects will be conducted during the arribadas at the main known olive ridley rookeries across the globe. The censuses will be conducted only during the months when meaningful arribadas occur at each beach. The methodology to be used will be the strip transect in time method (Gates et al., 1996; Valverde and Gates, 1999). An important observation is that the method was specifically designed for its application at any arribada beach. This feature has to conduct successful censuses in Mexico and Costa Rica and highlights the power of strip transect methodology. Briefly, to facilitate the census, beaches will be divided into equal sections of 50 m along the length of the beach. A number of 2 m-wide transects, at least two but no more than five per section, perpendicular to the length of the beach will be censused from the high tide mark to the vegetation. The size of the effective nesting area will be determined by approximation using Simpson's rule (Burington, 1961), based on the length of the transects. Censuses will be conducted every two hours for the duration of each session (a 24 hr period) of the arribadas. Censuses will count only turtles that are actually laying eggs. This will be rapidly verified by digging a small window into the nest chamber as the animals lay their eggs. Data will be preliminarily revised at every rookery by each team of collaborators. Raw and processed data will be gathered by the Principal Investigator (PI) for processing and verification. The PI and the project coordinator will then share with all collaborators the information gathered and will prepare the information for reporting and publication.



B. Assess hatching rates at every one of the study sites in Panama to generate an idea of the potential of each turtle rookery to maintain the adult population. Abnormally low hatching rates, approximately 10%, have been reported for arribada beaches, specifically for Costa Rica's Nancite and Ostional (Cornelius et al., 1991). Hatching rates at Nancite beach have been estimated at around 7%, which predicted the extinction of this rookery as an arribada beach due to its apparent inability to sustain the adult assemblage (Cornelius et al., 1991). This early prediction seems to have been accurate as the Nancite assemblage has undergone a severe decline in the 1990s and early 2000s (Valverde et al., 1998). Recent data collected by a team from Southeastern Louisiana University have verified this decline (Fonseca et al., In press). The reasons for the low hatching rates at these beaches are not well understood. However, they appear to be closely related to the high nesting and nest densities observed at both beaches and not to anthropogenic activity (Cornelius et al., 1991; Valverde et al., 1998).

There is concern that other arribada assemblages might follow the same fate of Nancite (Cornelius et al., 1991). Thus, we propose to continue monitoring hatching rates at the main arribada rookeries in Panama, as part of similar monitoring in other arribada rookeries in the ETP region. It is important to make it clear that information on hatching rate alone is not sufficient to conclude on the viability of an arribada rookery to sustain itself as other factors, such as life stage-associated mortality and habitat destruction, are likely to influence recruitment to the adult population and yearly nesting numbers. However, we envision the study of neonate production as a first and fundamental step toward understanding the population dynamics of arribada assemblages.

To estimate hatching success the project's Field Researcher I and II and local collaborators in each beach will protect at least 30 nests per arribada with square wire cages. Cages will be placed on top of the nest as soon as the female completes the nesting process and returns to the ocean. To prevent neonate death from desiccation, cages will be checked for hatchlings after 44 days of incubation before neonates are expected to surface. Data on hatching success and emergence rates will be collected according to published methodology (Miller, 1999), and will include number of emerged and non-emerged neonates, number of hatched and un-hatched eggs, and number of eggs with and without embryo development. In addition, data will be collected on the number of marked nests that produced neonates or not, and the number of nests destroyed or predated during the season. These data are expected to tell us about hatching rates, fertility rates, and the main cause(s) of egg loss during the season.

C. Conduct studies on embryo and hatchling mortality:

An aspect of major concern is the stage-associated mortality of ridley embryos and hatchlings. We believe that it is essential to document the main sources of stress of arribada assemblages as these play an important role in determining the long term sustainability of each nesting assemblage. The project will assess the sources of mortality of these life stages at arribada beaches focusing on three aspects: a) impact of nest excavation, disease, artificial lighting and temperature on embryos and hatchlings, b) the impact of beetle larvae on ridley eggs, and c) to assess the role of oxygen and organic matter on embryo mortality. This information is essential to help us to understand many fundamental biological aspects of the arribadas as a phenomenon. For instance, if organic matter causes increased mortality of ridley embryos (Valverde et al., 1998), then it follows that the largest arribada rookeries are at risk of decline given the massive amount of decomposing organic matter that is thought to be responsible for the decline of oxygen at these, which would create an anoxic environment, unfavorable to embryo development. One adaptive strategy observed at Costa Rica's Ostional and Mexico's La Escobilla is the tendency of the arribadas to shift the focus of the nesting effort spreading to sections of beach less used by the main nesting contingent. This strategy appears to diminish the anoxic effect described above and provide embryos with a favorable developmental microenvironment. It is our hope that by understanding environmental constraints of hatchling production we will be able to recommend effective management tools to ensure the protection of olive ridley in Panama and around the globe. Raw data collected at all beaches will be digitized by the respective collaborators into a spreadsheet and sent to the project coordinator. Data will be collected by the project coordinator and shared with the entire team of collaborators. Field researchers I and II and the project coordinator will synthesize the information and prepare it for publication.



D. Training in rookery management: headed by the project’s Training Coordinator and with guidance from the project team and local organizations, training will be conducted for community volunteers and government field staff. It will consist in protection of natural turtle nests, re-location of turtle nests in the same beach, establishment of artificial turtle hatcheries, mixed arrangements of natural nests and turtle hatcheries and protection of *arribadas*.

The protection of natural nests will consist on project personnel and local environmental groups recording and monitoring the nests made by the turtles, leaving them untouched, and erasing the turtle tracks on the beach. Particularly in the most isolated rookeries, many of these nests are difficult to protect from predators (stray domestic dogs, vultures, marine birds) and poachers. They are also affected by the high tide variations in the Pacific, including unexpected surges up eighteen feet high known as “marejadas”, may open the nests, change the temperature inside the nest or provide for sand compaction making egg hatching impossible. To reduce these hazards, the project will identify the areas affected by marejadas in each rookery so that trainees learn how to relocate natural nests. The re-location of turtle nests consists on the careful moving of eggs towards a suitable space in the same beach but away from the potential damage from the tides, making sure the sand has the required texture and the hole adheres to egg requirements temperature-wise, including access to sunlight. This method will be promoted only in beaches where settlers can monitor them on almost an everyday fashion so as to avoid egg stealing by poachers. Traditionally, the establishment of artificial turtle hatcheries, a known method in most rookery areas, has consisted on learning how to transport the eggs, choosing the best areas for the nests, the required ground temperature and so forth. However the locals will be updated on new techniques including avoidance/mitigation of infestation of rookeries by bacteria, keeping natural sex ratios among hatchlings, construction of self-releasing and restraining hatcheries, and identification of turtle species according to “crawl” (marks left in the sand by turtles that have attempted to nest).

#### 4.6. Logical Framework:

Narrative Summary	Performance Indicators	Means of Verification	Assumptions/Risks
<p><b>Goal</b> Secure the long-term protection and monitoring of Panama’s main arribada rookeries</p>	<p>Number of nesting turtles per arribada per year.</p> <p>Hatching rate at each nesting beach per year.</p> <p>Government and community-based protection of nests</p>	<p>Yearly Census</p> <p>Yearly Count Report</p> <p>Agency and community group reports</p>	<p>Assumption: Local communities, environmental groups and authorities keep a high level of interest and participation in the project.</p> <p>Risk: Addressing the current state of arribada beaches is not a key priority in international sea turtle conservation</p>
<p><b>Purpose</b> Conduct arribada censuses and assess hatching rates, embryo and hatchling mortality while carrying out training in turtle rookery management and monitoring in Panama’s five main arribada rookeries on the Pacific shore.</p>	<p>Number of arribadas at each nesting beach.</p> <p>Number of nesting turtles per arribada.</p> <p>Hatching rate at each nesting beach.</p>	<p>Arribada census reports per rookery</p> <p>Arribada census reports per rookery</p> <p>Hatching rates study report per rookery</p>	<p>Assumption: The government complies with environmental impact assessment regulations in building infrastructure to foster tourism development in the</p>



	<p>Embryo and hatchling mortality rates at each nesting beach.</p> <p>Number of training events/ participants at local communities.</p> <p>Number of training events/ participants for government personnel.</p> <p>Number of papers published in relevant peer-reviewed journals.</p>	<p>Embryo and hatchling mortality study report per rookery</p> <p>Training event reports</p> <p>Training event reports</p> <p>Published articles</p> <p>Final technical report</p>	<p>region.</p> <p>Assumption: Eco-tourism keeps growing in the project area.</p> <p>Asumption: No natural disasters occur.</p> <p>Risk: Deterioration of the global economy has tourism as one of the first casualties of recession.</p>
<p><b>Outputs</b></p> <p>1. An arribada census for Panama's five main rookeries.</p> <p>2. Hatchling rates, embryo and hatchling mortality estimated for Panama's five main rookeries.</p> <p>3. 100 community dwellers trained in in rookery management and <i>arribada</i> censuses and passing on this training to other community volunteers.</p> <p>4. 50 protected area field personnel from ANAM and ARAP trained in rookery management and <i>arribada</i> censuses.</p> <p>5. Two papers published in peer-reviewed journals.</p>	<p>1.1 Number of arribadas at each nesting beach.</p> <p>1.2 Number of nesting turtles per arribada.</p> <p>2.1 Hatchling rate, embryo and hatchling mortality rates at each nesting beach.</p> <p>3.1. Number of training events/ participants at local communities.</p> <p>4.1 Number of training events/ participants for government personnel.</p> <p>5.1. Number of papers published in relevant peer-reviewed journals.</p>	<p>Arribada census reports per rookery</p> <p>Arribada census reports per rookery</p> <p>Hatching rates study report per rookery</p> <p>Embryo and hatchling mortality study report per rookery</p> <p>Training event reports</p> <p>Training event reports</p> <p>Published articles</p>	<p>Assumption: There is a responsible and timely management of human and financial resouces</p>



<p><b>Activities</b></p> <p>1. Conduct arribada censuses at the most important olive ridley rookeries in Panama using standardized methodology.</p> <p>2. Assess hatching rates at every one of the study sites in Panama to generate an idea of the potential of each turtle rookery to maintain the adult population.</p> <p>3. Conduct studies on embryo and hatchling mortality.</p> <p>4. Provide training in rookery management for local communities and relevant government agencies.</p> <p>5. Project Coordination and Administration (including publications, purchase of equipment and perishables, and miscellaneous expenses)</p>	<p>US\$6,020 (WHMSI: US\$2,160)</p> <p>US\$4,515 (WHMSI: US\$1,620)</p> <p>US\$4,515 (WHMSI: US\$1,620)</p> <p>US\$16,970 (WHMSI: US\$4,245)</p> <p>US\$55,370 (WHMSI: US\$10,355)</p>	<p>Arribada census reports per rookery</p> <p>Arribada census reports per rookery</p> <p>Hatching rates study report per rookery</p> <p>Embryo and hatchling mortality study report per rookery</p> <p>Training event reports</p> <p>Training event reports</p> <p>Published articles Final financial report Receipts Photos</p>	<p>Asumption: Local communities, environmental groups and authorities keep a high level of interest and participation in the project.</p> <p>Asumption: There is a timely flow of resources to conduct project activities.</p>
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4.7 Timeframe / Work Plan															
Activity	Output	Months							Responsible	Indicator	Budget				
		1	2	3	4	5	6	7			8	9	10	11	12
<b>1.1. Conduct arribada censuses</b>															
1.1.2. Field censuses in 5 arribada beaches	Censuses of arribadas completed		X	X	X						1. Roldan Valverde 2. Patricia Rincon 3. Adriana Manrique	1. Number of arribadas at each nesting beach. 2. Number of nesting turtles per arribada.	2,160	3,860	6,020
<b>1.2. Assess hatching rates</b>															
1.2.1 Monitoring of hatching rates at each arribada beach	Reports per arribada beach on the number of emerged and non-emerged neonates, number of hatched and un-hatched eggs, and number of eggs with and without embryo development		X	X	X	X					1. Roldan Valverde 2. Patricia Rincon 3. Adriana Manrique	1. Number of emerged and non-emerged neonates, 2. Number of hatched and un-hatched eggs, 3. Number of eggs with and without embryo development..	1,620	2,895	4,515
<b>1.3. Conduct studies on embryo and hatchling mortality</b>															
1.3.1 Studies on embryo and hatchling mortality at each arribada beach	Reports on hatchling rate, embryo and hatchling mortality rates at each nesting beach.		X	X	X	X					1. Roldan Valverde 2. Patricia Rincon 3. Adriana Manrique	Hatchling rate, embryo and hatchling mortality rates at each nesting beach.	1,620	2,895	4,515
<b>1.4. Training in rookery management</b>															
1.4.1 Training of ANAM& ARAP Field personnel	50 protected area field personnel from (ANAM) (ARAP) trained			X	X	X					1. Roldan Valverde 2. Lyneth Cordoba	Number of training events/ participants for government personnel.	1,873.50	3,817.50	5,691
1.4.2 Training of community dwellers trained	100 community dwellers trained			X	X	X					1. Roldan Valverde 2. Lyneth Cordoba	Number of training events/ participants at local communities.	2,371.50	8,907.50	11,279
<b>1.5 Project Coordination &amp; Administration</b>															
1.5.1 Project Coordination	Project Technical Report	X	X	X	X	X	X				Lenin Riquelme		500	2,800	3,300
1.5.2 Project Administration	Project Financial Report	X	X	X	X	X	X				Dayana Valverde		1,135	6,535	8,670
1.5.3 Project publications	1. Two papers published in relevant peer-reviewed journals. 2. Project reports.						X				Roldan Valverde/ Lenin Riquelme	Number of papers published.	500		500
1.5.4 Purchase of equipment & goods	Equipment & goods purchased	X									Lenin Riquelme	a. Purchase receipts b. Contracts	8,220	31,200	39,420
1.5.5 Miscellaneous expenses, office lease, electricity, etc.		X	X	X	X	X	X							3,480	3,480
<b>Total:</b>												<b>20,000</b>	<b>66,390</b>	<b>86,390</b>	



#### 4.8 Monitoring and Evaluation:

The project coordinator and designated members of the partner organizations will coordinate all monitoring and evaluation activities for the project. The project coordinator will report to the donors and collaborating government and research institutions. Reporting will allow for timely corrections or concentration of efforts in particularly difficult activities. With participation from local experts, partner organizations and the beneficiary communities and using the project workplan as monitoring and evaluation tool, its milestones and indicators of success, there will be two project evaluations: one after three months and the other during month six. At the project site, monitoring and evaluation activities will be part of each project activity so that local and regional participation contributes to improve project impacts and recommend further measures.

Project evaluations will count with the participation of the following project stakeholders:

Communities: Comité de Conservación de Alanje in La Barqueta, TortuAgro in Cambutal, Asociación Agropecuaria y Eco turística de Quebro-AAPEQ and in Mata Oscura.

Local environmental groups: Centro de Estudios Científicos Aplicados (CECA), Grupo Ambientalista Santeño (GAS), Azuero Earth Project, Fundación Agua y Tierra.

Government institutions: Panama's National Environmental Authority (ANAM) and Panama's Maritime Authority (AMP)

Relevant national/regional NGOs: MarViva

Education & Research Institutions: International Maritime University of Panama (UMIP), Smithsonian Tropical Research Institute.

#### 4.9 Team Composition and Task Assignment:

**Team structure:** a Project Coordinator, a Principal Field Researcher, two Field Researchers (I and II), a Training Coordinator and a Project Administrator.

**a. Lenin Riquelme Quintero:** CONAVI's Executive Director and Project Coordinator in charge of overseeing all of the project activities. His specialty is Tropical Conservation and Sustainable Development. He will lead the project and coordinate all matters related to project content. He will supervise the implementing of the project action plan according to agreed standards and deadlines. He will be the regular liaison with local, regional and international stakeholders on all project-related matters. He has to ensure the effective preparation and delivery of all project outputs and production of relevant documentation, taking responsibility for the effective flow of information between team members, community volunteers, government staff and participants in project activities. He will lead evaluation of project activity and take charge of reporting on project progress to donors.

**b. Roldan Valverde:** he is Assistant Professor of Biology at Southeastern Louisiana University (SELU) and the project's Principal Researcher. As one of the developers of the trip transect in time methodology to be used in the censuses of the arribada rookeries, he will be in charge of applying and teaching the method as well as of ensuring the quality of data analysis. An important component of his role will be dissemination of raw and processed data among all teams members and relevant stakeholders. One of his tasks will be the drafting and submission of final results, including at least two peer-reviewed papers.

**c. Patricia Rincon & Adriana Manrique:** Ms. Patricia Rincon is a researcher at Colombia's Instituto de Investigaciones Marinas y Costeras "José Benito Vives de Andrés" (INVEMAR) and Adriana Manrique is a researcher at Venezuela's PROVITA. As Field Researchers I and II, part of their work will focus on the arribada censuses. Their main task will be the assesment of hatching rates, embryo and hatchling mortality drafting, the submission of final results for drafting and publication. They will collaborate also in community and government staff training.

**d. Lyneth Cordoba:** She is Head of ANAM's Protected Area and Wildlife Conservation in the Pacific Coast. Given her long experience working on community-based conservation in the project area, her work will focus on training of government staff and local volunteers.



#### 4.10 CVs of Proposed Staff:

### LENIN RIQUELME QUINTERO

#### Education

Master's degree in Latin American Studies/Tropical Conservation&Development, University of Florida, Gainesville, USA.

Bachelor's Degree in Political Science, University of Iowa, Iowa City, USA.

#### Professional Experience

January 2010 – Present: **Seacology Inc.** Country Field Representative. Currently supervising the projects: “Cartí Waste Management Project, Kuna Yala” and “Establishing protection signage&mooring and providing alternative cooking technology for Ngobe Bugle fishermen at Escudo de Veraguas Island”.

January 2006 – Present: **Conservación, Naturaleza y Vida (Fundacion CONAVI)**. Executive Director. Currently coordinating the project “**Pacific Leatherback Nest Site Identification Project**” and “**Status of Dermochelys coriacea and Lepidochelys olivacea within Coiba National Marine Park and its buffer zone**”. Facilitated the Project Site Support Group (SSG), providing capacity building (training in organizational skills and technical assistance) for community-based organizations at the Upper Bay of Panama Ramsar Site, including coastal communities of Oquendo and Chinina and Chepillo Island (Panama Audubon Society, Birdlife Inc., GTZ). Technical evaluator of projects “*Desarrollo de la Actividad Turística en Achioté, Zona de Vecindad del Parque Nacional San Lorenzo, Costa Abajo de Colón*” (CEASPA, AED/USAID) and “*Desarrollo del Ecoturismo en las comunidades de San Antonio y Ella Púru, Parque Nacional Chagres*” (CICA, AED/USAID).

July 2004 – December 2005: **Fundación de Parques Nacionales y Medio Ambiente (Fundación PA.NA.MA.)** Director for International Cooperation. In charge of managing a Marine Turtle Conservation Project in Panama's Azuero Peninsula and a Manatee Conservation Project in Bocas del Toro, including research, community training and environmentally sound businesses. Outreach, presentation of project activities and achievement to diverse audiences, proposal write-up and seeking technical assistance and funding.

July 2003 – July 2004. **The Nature Conservancy (TNC)**, Program Consultant; Coordinate operation of country program, focused on Bocas del Toro Archipelago and Marine Park, Coiba National Marine Park and Panama Canal Watershed. Manage annual planning and budgeting, deliver technical assistance and training to local NGO and government partners, assist in proposal preparation, develop communications materials and respond public inquiry.

November 2002 – May 2003. **Autoridad Nacional del Ambiente (ANAM)**, Planning and Environmental Policy Director; Setting annual and multi-year environmental planning goals for the institution. Report directly to the Administrator General on the general overview of the institution's plans and performance. Advise the Administrator General on matters of environmental policy.

July 1999 – July 2001. **United States Agency for International Development (USAID)**, Natural Resource Management Specialist; Field and office management of USAID-supported biodiversity conservation and park management projects along with assigned personnel from the Autoridad Nacional del Ambiente. Provide leadership and guidance on initiatives with potential to receive USAID support. In charge of supervision and follow-up of 10-million dollar project “Natural Resource Management within the Panama Canal Watershed”.



### Relevant Publications

Isla de Cañas, Panamá: Sistematización de la Experiencia. En Manual de Prácticas de Conservación de las Tortugas Marinas en Centroamérica. Publicación de la Red Regional de Conservación de Tortugas Marinas de Centroamérica. Primera Edición 1999 y Segunda Edición 2001.

Diagnóstico Regional del Estado Actual de Las Tortugas Marinas de Centroamérica.  
Publicado por la Red Regional de Conservación de Tortugas Marinas. Costa Rica.

Candanedo, I, Ponce, E & Riquelme, L (2003). Conservation Plan for Alto Chagres, Panama. The Nature Conservancy, USAID, National Environmental Authority, Parks in Peril Project. Panama. 66 pg.

### Fellowships and Awards

Nagao Foundation for Nature Conservation, 2008 – 2009; Scott Neotropical Fund-Cleveland MetroPark Zoo, 2006; Rufford Small Grants for Nature Conservation 2005 – 2008; Van Tienhoven Foundation Research Grant 2004; Inter-American Foundation Research Grant 1999; Research Grant from the International Tropical Timber Organization (ITTO) 1998; Prince Bernhard Scholarship for Nature Conservation (WWF) 1997.

**Languages Spoken:** Spanish (native), English (excellent command).

### ROLDAN A. VALVERDE

**Current Position** Assistant Professor

**Current address** Southeastern Louisiana University, Department of Biological Sciences, Hammond, LA 70402, USA. **Telephone** 985-549-3029. **FAX** 985-549-3851. **e-mail** roldan.valverde@selu.edu

**Education & Training** Postdoctoral Fellow, University of Michigan 1997-2001

Ph.D. Zoology, Texas A&M University; August, 1996

B.S. Marine Biology, National University of Costa Rica, 1985

**Languages** English (fluent); Spanish (fluent)

**Dissertation** Corticosteroid dynamics in a free-ranging population of olive ridley sea turtles (*Lepidochelys olivacea* Eschscholtz, 1829) at Playa Nancite, Costa Rica as a function of their reproductive behavior. 1996. Texas A&M University.

#### Peer-reviewed publications

Fonseca, L.G., Murillo, G.A., Guadamúz, L., Spínola, R.M., Valverde, R.A. Downward but stable trend in the abundance of arribada olive ridley (*Lepidochelys olivacea*) sea turtles at Nancite Beach, Costa Rica for the period 1971-2007. In press *Chelonian Conservation and Biology*.

Lara, R., Sibaja, J., Selcer, K.W., and Valverde, R.A. 2007. Lack of xenoestrogen-induced vitellogenin in male olive ridley sea turtles. In press *Revista de Biología Tropical*.

Valverde, R.A., Stabenau, E., and MacKenzie, D.S. (2007). Physiology of ridley sea turtles. In: "Biology and Conservation of ridley turtles". Plotkin, P. (ed.). The Johns Hopkins University Press. Baltimore, pp. 119-149.

Seasholtz, A.F., Valverde, R.A., Denver, R.J. (2002). Corticotropin-releasing hormonebinding protein (CRH-BP): From fishes to mammals. *Journal of Endocrinology*, 175: 89-97.



Valverde, R.A., Denver, R.J., Cortright, D.N., and Seasholtz, A. (2001). Biochemical characterization and expression analysis of corticotropin-releasing hormone binding protein of *Xenopus laevis*. *Molecular & Cellular Endocrinology*, 173: 29-40.

Valverde, R.A., Owens, D.W., MacKenzie, D.S., and Amoss, M.S. (1999). Basal and stress-induced corticosterone levels in olive ridley sea turtles (*Lepidochelys olivacea*) in relation to their mass nesting behavior. *The Journal of Experimental Zoology*, 284: 652-662

Valverde, R.A. (1999). Letter to the editors: On the Ostional affair. *Marine Turtle Newsletter*, 86: 6-8

Valverde, R.A. and Gates, C.E. (1999). Population surveys on mass nesting beaches. In: Eckert, K., K. Bjorndal, A. Abreu and M. Donnelly (eds.). *Research and Management Techniques for the Conservation of Sea Turtles*. IUCN/SSC Marine Turtle Specialist Group. Pub. No. 4, pp. 56-60 Global Arribada Estimate Valverde 20

Valverde, R.A., Cornelius, S.E., and Mo, C.L. (1998). Decline of the olive ridley sea turtle (*Lepidochelys olivacea*) nesting assemblage at Nancite beach, Santa Rosa National Park, Costa Rica. *Chelonian Conservation and Biology*, 3: 58-63

Lahanas, P.N., Bjorndal, K.A., Bolten, A.B., Encalada, S.E., Miyamoto, M.M., Valverde, R.A., and Bowen, B.W. (1998). Genetic composition of a green turtle feeding ground population: Evidence for multiple origins. *Marine Biology*, 130: 345-352

Gates, C.E., Valverde, R.A., Mo, C., Chaves, A.C., Ballesteros, J., and Peskin, J. 1996. Estimating arribada size using the instantaneous count procedure. *Journal of Agricultural, Biological and Environmental Statistics* 1(3): 275-287

### **Postdoctoral Experience**

Postdoctoral Fellow at the University of Michigan, Department of Biology. Center for Organogenesis Postdoctoral Fellow. May 1999 – 2001.

Postdoctoral Fellow at the University of Michigan, Department of Biology. Recipient of the Postdoctoral Fellowship for the Diversity in the Sciences. August 1997 - May 1999.

Field Coordinator, Green Sea Turtle Monitoring Program, Tortuguero, Costa Rica.

Caribbean Conservation Corporation, Gainesville, Florida. June-December, 1996 Pre- and Doctoral Experience

Co-instructor and co-organizer for the I, II and III Sea Turtle Training Course for the Neotropics. Sponsored by U.S.F.W.S. and the National Park Service of Costa Rica.

Santa Rosa National Park, Costa Rica; November, 1993, 1994; January, 1996.

Field assistant - "Abundance, distribution and movements of olive ridley sea turtles in Costa Rica". Regional Wildlife Management Program, National University of Costa Rica, 1987-88.

### **Grants and Awards**

US Fish and Wildlife Service, International Sea Turtle Conservation Program "Regional Assessment of Arribada Olive Ridley Sea Turtles". (\$35,690) 6/1/2007-6/1/2008. Role: PI

US Fish and Wildlife Service, International Sea Turtle Conservation Program "Global Assessment of Arribada Olive Ridley Sea Turtles". (\$42,784) 3/15/2006-5/31/2007. Role: PI



Environmental Protection Agency “Salinity as a stressor of the freshwater turtle, *Trachemys scripta* in the Lake Pontchartrain Basin” \$38,727 (Pending)

### **Memberships and Honors**

Member of the Marine Turtle Specialist Group. Species Survival Commission/International Union for the Conservation of Nature-The World Conservation Union. Member by invitation. Since 1999.  
Member of the International Sea Turtle Society. Since 1991.

### **MARTHA PATRICIA RINCON DIAZ**

**Address:** Calle 81 No 118-30 Interior 8 Apto 201 Bogotá, Colombia;

**Tel.** (57-1) 4348905 / (57) 300 2170377;

**E-mail:** princon\_7@hotmail.com/princon7@gmail.com

**Education:** Msc in Tropical Ecology, University of Puerto Rico (2009); Bsc in Marine Biology, Universidad Jorge Tadeo Lozano, Colombia (2003), Post-graduate degree in Neotropical Wildlife Conservation, Universidad del Tolima, Colombia (2004).

### **Publications:**

**Rincón-Díaz M. P.**, B. Heycke, F. Solórzano y B. Schmitt. 2005. The importance of social and cultural aspects in sea turtle conservation project in Jaqué, Panamá. Poster Presentation 25th Annual Symposium on Sea Turtle Biology and Conservation. Savannah-Georgia, USA. Proceedings 25th Annual Symposium on Sea Turtle Biology and Conservation.

**Rincón-Díaz M.P.** y C.J. Rodríguez-Zárate. 2010. Characterization of nesting beaches and feeding areas of marine turtles at the San Bernardo Archipelago, Colombian Caribbean. Boletín de Investigaciones Marinas y Costeras de Punta Betín No 33. Instituto de investigaciones Marinas y Costeras “José Benito Vives de Andrés”-INVEMAR. 119-138p.

### **Relevant Experience:**

**Scientific Consultant.** Sea Turtle Conservation Project – Grupo Jicotea. Jaqué, Darién, Panama. Red Jaqué – Fundación Casa Taller. July – October, 2004. Coordination of scientific and environmental education activities, construction of project infrastructure, basic training of project personnel, field data collection including species and nesting survey, characterization of sea turtle habitat.

**Research Assistant.** “Hawksbill Turtles in Isla Mona, Puerto Rico” Project. September-December, 2003. Data gathering during hawksbill nesting season, nocturnal and diurnal survey, marking of nesting turtles, analysis of genetic samples.

**Researcher.** “Caracterización estructural de playas de anidación y zonas de alimentación de tortugas marinas en el archipiélago de San Bernardo, Caribe colombiano”. Instituto de Investigaciones Marinas y Costeras “José Benito Vives de Andrés” INVEMAR. July-November/2002. Data gathering, nocturnal and diurnal survey, marking of nesting turtles, characterization of habitat and threats.



**ADRIANA DEL PILAR MANRIQUE HERRERA**

**Address:** 21 Rue du Gué Robert, 44000 Nantes, Francia,  
**Tel** + 33 2 53 00 48 88/+ 33 6 78 89 77 09,  
**E-mail:** manrique.pilar@gmail.com

**Education:** MSc in Integrative Biology and Comparative Physiology. Pierre et Marie Curie University, France (2007), Thesis “*Adaptation to temperature by hydrothermal annelids of the Paralvinella genus: a transcriptomic study*”, CNRS (Centre National de la Recherche Scientifique) Roscoff Station Biologique;

Bsc in Marine Biology, Jorge Tadeo Lozano University, Thesis “*Granulometric characterization of sea turtle nesting beaches at Tairona National Park, Colombia*”.

Relevant Experience

2008 **TOTAL - Profil Armor - Paimboeuf – France.** Decontamination of a beach affected by an oilspill.

2007 **Roscoff Biological Research Station - CNRS - Centre National de la Recherche Scientifique.** France. “*Adaptation to temperature by hydrothermal annelids of the Paralvinella genus: a transcriptomic study*”.

2003-04 **GTTM-NE, Sea Turtles Working Group from the State of New Sparta, Venezuela.**

Research Assistant for project “*Evaluation and Monitoring of Diseases in Sea Turtles in Marine and Coastal Habitat of Nueva Esparta*”. Conservation, Hematology, Necrosis / Captures and measuring of nesting females / Sampling of epizoots (flora and fauna) in skin and carapace / description of health condition. *Dermochelys coriacea*, *Quelonia mydas*. January - August 2004.

Research Assistant for project “*Applied Conservation Science – Integral Program for Conservation and Development to Rescue Sea Turtle Populations in the state of Nueva Esparta*”. Monitoring and survey of nesting beaches / proper handling of nesting females / handling and moving of nests / construction and maintenance of artificial nurseries / data gathering and liberation of newborns / data gathering and monitoring of environmental data. *Dermochelys coriacea* . June - August 2003.

Licensed Scuba Diver, SID certification, 2005

Participant in Workshop “*Medicine for Conservation and Pathology of Sea Turtles*” PROVITA, WILDLIFE TRUST, MUSEO MARINO DE MARGARITA, Boca del Rio – Margarita Island, Venezuela, april 2004.

Workshop “*Basic Protocols for Follow-up and Control of Marine Turtles*”. Working Group on Marine Turtles at the state of Nueva Esparta - GTTM-NE - Isla Margarita, Venezuela, february 2004.

Workshop “*Basic Protocols for handling of nesting events*” and “*Handling techniques for sea turtle nests and nursery management*”. Working Group on Marine Turtles at the state of Nueva Esparta - GTTM-NE - Isla Margarita, Venezuela, julio 2003.

Workshop “*Biology and Conservation of Marine Turtles*”. Working Group on Marine Turtles at the Gulf of Venezuela- GTTMGV at Tairona National Park.



Organization of  
American States



**LYNETH ZULAY CORDOBA CARRANZA**

Address: Santo Domingo, Calle Central, Las Tablas, Provincia de Los Santos; Tel. 960-0279, mobile 6688-7050; E-mail: [lynethcord@yahoo.com.mx](mailto:lynethcord@yahoo.com.mx), [lynethzulay17@hotmail.com](mailto:lynethzulay17@hotmail.com)

**Current Position:** Head of Protected Areas and Wildlife Conservation. ANAM – Los Santos.

**Educación:** Bsc in Biology, Concentration in Zoology. University of Panama. 1984.

**Professional Experience:**

1995 – Present. In charge of Protected Areas Program, Regional ANAM Office in the Province of Los Santos.

2000-Present. Chief ANAM Biologist at Cerro Hoya National Park.

1990 – 1995, 2003 – 2004. ANAM Park Manager of Isla Cañas Wildlife Sanctuary.

1999 – Present. Coordinator in Panama of the Central American Regional Network for Conservation of Marine Turtles.

2000 – Present. Panama's designated representative, as an observer, at each Conference of the Parties of the Inter American Convention for the Protection and Conservation of Marine Turtles.

2004 – 2009. Participant in the XI Conference of Latin American Marine Turtle Specialists Ostional, Guanacaste, Costa Rica. Participant in the annual World Symposium on Marine Turtles.

2003. Organizer of two exchanges on marine turtle management and conservation in Cañas Island between local dwellers and committee members in Malena and Cascajilloso, Province of Veraguas.

2002. Speaker on the topic “the Central American Regional Network for Conservation of Marine Turtles, the Network's Community in Panama and its Future” at the Biodiversity Conservation Workshop, Part I: Provinces of Bocas del Toro, Chiriquí and Los Santos and Part II: Provinces of Colón and Darien. Organized by the US Peace Corps. Part of the survey team for the Survey on use of Carey in Panama to be published by the Central American Regional Network for Conservation of Marine Turtles.

2001. Speaker at the community exchange on turtle rookery management between the communities of Cañas Island, Guanico Abajo, Cambutal and Pedasí. (Project Rural Poverty and Natural Resources, World Bank-ANAM-MIDA). Participant in the elaboration of the Strategic Plan for Conservation of Marine Turtles in Central America (Central American Regional Network for Conservation of Marine Turtles). Speaker on the topic “Outlook of research and conservation of marine turtles in the national parks of the Pacific rim” (Panama's Maritime Authority and the Permanent Commission for the Southern Pacific).



**5. Budget (in US\$ Dollars):**

DIRECT COSTS	Amount	Unit Price	OAS WHMSI	SENACYT	CONAVI	TOTAL
<b>A. Personnel</b>						
1. Project coordinator – Lenin Riquelme	400 hrs	\$12/hr		2,000	2,800	4,800
2. Principal Researcher – Roldán Valverde	250 hrs	\$15/hr	1,000	2,750		3,750
3. Field researcher I – Patricia Rincón	250 hrs	\$12/hr	1,000	2,750		3,750
4. Field researcher II – Adriana Manrique Herrera	250 hrs	\$12/hr	1,000	2,750		3,750
4. Community&parkranger trainer – Lyneth Córdoba	350 hrs	\$12/hr	1,000	3,200		4,200
5. Field Assistant I	350 hrs	\$4/hr	700	700		1,400
6. Field Assistant II	350 hrs	\$4/hr	700	700		1,400
7. Project administrator – Dayana Valverde	100 hrs	\$8/hr			800	800
<b>Sub-total</b>			<b>5,400</b>	<b>14,850</b>	<b>3,600</b>	<b>23,850</b>
<b>B. Capital Goods</b>						
8. Project vehicle (4x4 SUV)	1	\$12,000/unit			12,000	12,000
9. 20 ft boat	1	\$3,000/unit		3,000		3,000
10. Outboard engine 60hp	1	\$6,000/unit		6,000		6,000
11. ATV Motorcycle	1	\$5,000/unit		5,000		5,000
12. Laptop Computer/software	1	\$2,500/unit			2,500	2,500
13. Inflatable boat/lifesaving appliances	1	\$2,700/unit		2,700		2,700
14. Handheld GPS units	2	\$300/unit	600			600
15. Clinometers	2	\$100/unit	200			200
16. Water-proof camera	1	\$500/unit	500			500
17. Video Camera	1	\$400/unit	400			400
18. Snorkling Equipment	1	\$360/unit	360			360
19. Scuba Diving Equipment	3	\$1,000/unit		3,000		3,000
20. Temperature/Light Data Loggers	5	\$500/unit	2,500			2,500
21. Soil Moisture Smart Sensor	20	\$30/unit	600			600
22. LED Headlamps	15	\$50/unit	750			750
23. Photodegradable Flagging rolls	4	\$15/unit	60			60
24. Fisco Ranger 50m Tape Measure	5	\$50/unit	250			250
25. Water-proof notebooks/cover	20	\$10/unit	200			200
26. VHF radios	5	\$160/unit	800			800
27. Field equipment (tents, cooking appliances, backpacks, etc.)			1,215			1,215
28. Welded mesh utility wire	2 full rolls	\$500/unit	1,000			
<b>Sub-total</b>			<b>8,220</b>	<b>16,700</b>	<b>14,500</b>	<b>39,420</b>



DIRECT COSTS	Amount	Unit Price	OAS WHMSI	SENACYT	CONAVI	TOTAL
<b>C. Perishables</b>						
29. Fuel	150 gallons /month x 6 months	\$4.50/gallon	2,000	2,050		4,050
30. Food	100 pounds /month x 6 months	\$5.00/pound	1,000	1,000	1,000	3,000
<b>Sub-total</b>			<b>3,000</b>	<b>3,050</b>	<b>1,000</b>	<b>7,050</b>
<b>D. Transportation</b>						
31. International Flights	3 roundtrips	\$500/each	500	1,000		1,500
32. In-bound transportation (Panama City – project area)	12 air roundtrips	\$165/each	495	1,485		1,980
Mileage for terrestrial Intra regional transportation (communities – training sites)	12 trips x 400 km/each	\$0.15/each	250	250	220	720
<b>Sub-total</b>			<b>1,245</b>	<b>2,735</b>	<b>220</b>	<b>4,200</b>
<b>E. Services</b>						
33. Lodging	65 days	\$60/day	1,000	2,000	900	3,900
34. Printing Services (banners, handouts, maps, posters)					820	820
35. Rent of meeting facilities	30 days	\$100 day	1,000	2,000		3,000
<b>Sub-total</b>			<b>2,000</b>	<b>4,000</b>	<b>1,720</b>	<b>7,720</b>
<b>INDIRECT COSTS</b>						
36. Field office lease - Montijo		\$225/monthx 6 months		1,000	350	1,350
37. Electricity and communication services		\$100/month x 6 months		600		600
38. Miscellaneous expenses (spare parts, vehicle/boat repair service, engine oil change, etc.)			135	2,065		3,415
<b>Sub-total</b>			<b>135</b>	<b>3,665</b>	<b>350</b>	<b>4,150</b>
<b>TOTAL</b>			<b>20,000</b>	<b>45,000</b>	<b>21,390</b>	<b>86,390</b>

6. Annex 1: Document proving the legal existence of your Organization



REPUBLICA DE PANAMA
REGISTRO PUBLICO DE PANAMA No.198846

REGISTRO PUBLICO DE PANAMA REGISTRO PUBLICO DE PANAMA

29/Mar/2010

PAG. 1
// GLJOPAZO //

CERTIFICACION

CON VISTA A LA SOLICITUD NO. 165322

QUE LA FUNDACION

FUNDACION CONSERVACION NATURALEZA Y VIDA

SE ENCUENTRA REGISTRADA LA FICHA PANAMA REG. 13638-DOC. 753710

DESDE EL VEINTINUEVE DE MARZO DE DOS MIL CINCO EN LA SECCION DE FUNDACIONES DE INTERES PRIVADO

QUE LA FUNDACION SE ENCUENTRA VIGENTE

QUE SU(S) FUNDADOR(ES) ES(SON) 1) LENIN RIQUELME QUINTERO

QUE SUS MIEMBROS DEL CONSEJO SON: ESILDA BATISTA

LENIN RIQUELME QUINTERO LINETH ZULAY CORDOBA CARRANZA

QUE SU AGENTE RESIDENTE ES: MAYTE GONZALEZ S.

QUE SU DOMICILIO ES PANAMA

EXPEDIDO Y FIRMADO EN LA PROVINCIA DE PANAMA EL VEINTINUEVE DE MARZO DEL DOS MIL DIEZ A LAS 05:13:00 P.M.

NOTA: ESTA CERTIFICACION PAGO DERECHOS POR UN VALOR DE B. 30.00

COMPROBANTE NO. 10 - 165322

NO. CERTIFICADO FUND. INT. PRIV. 001487

FECHA: Lunes 29/ Marzo de 2010

Handwritten signature and stamp of JOHEL ANTONIO COCCIO





REPUBLICA DE PANAMA  
PROVINCIA DE PANAMA

*mele*

42094  
2005

**NOTARIA PRIMERA DEL CIRCUITO**

*Licdo. Boris Barrios González*

**NOTARIO PUBLICO PRIMERO**

Teléfonos: { 264-3585  
264-8927  
Telefax: 264-8047

TORRE COSMOS  
PLANTA BAJA, OFICINA No. 3  
AVENIDA MANUEL MARIA ICAZA  
AREA BANCARIA

Apartado: 87-4240  
Zona 7  
Panamá, Rep. de Panamá

**COPIA**

**ESCRITURA** No. 6618 DE 22 DE MARZO DE 20 05

GUERRA 4-147 1120

**POR LA CUAL** se protocoliza el acta fundacional de la fundación denominada  
**FUNDACION CONSERVACION NATURALEZA Y VIDA**

*[Handwritten marks]*



REPUBLICA DE PANAMA  
PAPEL NOTARIAL



NOTARIA PRIMERA DEL CIRCUITO DE PANAMA

ESCRITURA PUBLICA NUMERO SEIS MIL SEISCIENTOS DIECIOCHO \_\_\_\_\_

(6618) \_\_\_\_\_

POR LA CUAL se protocoliza el acta fundacional de la fundación denominada **FUNDACION CONSERVACION NATURALEZA Y VIDA.** \_\_\_\_\_

\_\_\_\_\_ Panamá, 22 de Marzo del año 2005 \_\_\_\_\_

En la Ciudad de Panamá, Capital de la República y Cabecera del Circuito Notarial del mismo nombre a los veintidós (22) días del mes de marzo de dos mil cinco (2005), ante mí, **BORIS BARRIOS GONZALEZ**, Notario Público Primero del Circuito de Panamá, portador de la cédula de identidad personal número ocho-doscientos doce-mil setecientos veintidós (8-212-1722), compareció personalmente **LENIN RIQUELME QUINTERO**, varón, panameño, mayor de edad, soltero, vecino de esta ciudad, con cédula de identidad personal número seis-setenta-setecientos cincuenta y cinco (6-70-755), con domicilio en Bebedero, Distrito de Tonosí, Provincia de Los Santos, por este medio manifiesto mi voluntad de constituir una Fundación Privada sin fines de lucro denominada, **FUNDACION CONSERVACION NATURALEZA Y VIDA (CONAVI)** con sujeción a lo dispuesto en la ley veinticinco (25) de doce (12) de junio de mil novecientos noventa y cinco (1995). \_\_\_\_\_

El suscrito Notario hace constar que ha extendido la presente Escritura Pública, con base a minuta debidamente refrendada por la Licenciada Mayte González, con cédula de identidad personal número ocho-trescientos setenta-dieciséis (8-370-16), abogada en ejercicio. \_\_\_\_\_

Advertí que copia de esta Escritura Pública debe ser inscrita en el Registro Público, y leída como le fue a los comparecientes en presencia de los testigos instrumentales **IVONNE ARIZA**, con cédula de identidad personal número ocho-cuatrocientos setenta y nueve-quinientos noventa y cuatro (8-479-594) y **CHARLIE BROCE**, con cédula de identidad personal número siete-setecientos dos-mil siete (7-702-1007, ambas mayores de edad, solteras, vecinas de esta ciudad, personas a quienes conozco y son hábiles para el cargo, la encontraron conforme, le impartieron su aprobación y la firman todos para constancia, por ante mí, el Notario que doy fe. \_\_\_\_\_

Esta Escritura en el protocolo del presente año lleva el número de orden SEIS MIL

SEISCIENTOS DIECIOCHO (6618)

(FDOS.) **LENIN RIQUELME QUINTERO** -- Ivonne Ariza -- Charlie Broce -- BORIS BARRIOS GONZALEZ, NOTARIO PUBLICO PRIMERO.

**ACTA FUNDACIONAL MEDIANTE LA CUAL SE CONSTITUYE LA FUNDACION CONSERVACION NATURALEZA Y VIDA.**

A los 16 días del mes de marzo de 2005, quien suscribe, Lenin Riquelme Quintero, varón, panameño, mayor de edad, soltero, con cédula de identidad personal No. 6-70-755, y domicilio en Bebedero Distrito de Tonosí, Provincia de Los Santos por este medio manifiesto mi voluntad de constituir una Fundación Privada sin fines de lucro denominada, FUNDACION CONSERVACION NATURALEZA Y VIDA (CONAVI) con sujeción a lo dispuesto en la Ley 25 de 12 de junio de 1995.

Actuando en mi carácter de miembro fundador, procederé con todos los trámites de protocolización e inscripción exigidos por la ley.

CONAVI se registrará por lo dispuesto en la presente acta fundacional, así:

PRIMERO: NOMBRE. La denominación de LA fundación será FUNDACION CONSERVACION NATURALEZA Y VIDA, en adelante CONAVI.

SEGUNDO: PATRIMONIO INICIAL: El patrimonio inicial de CONAVI es B/.10,000.00, moneda de curso legal de la República de Panamá. El patrimonio inicial de CONAVI puede ser incrementado en cualquier momento por el fundador, el Consejo Fundacional o por cualquier otra tercera persona.

TERCERO: ORGANOS DE GOBIERNO:

a) La Asamblea de Miembros de CONAVI es su órgano supremo y se reunirá de manera ordinaria por lo menos una vez al año y de manera extraordinaria cuando las circunstancias lo ameriten.

b) Los miembros podrán ser personas naturales y/o jurídicas que sean debidamente aprobados por el Consejo Fundacional, para lo cual emitirán un documento privado denominado Reglamento de Ingreso de Miembros.

c) La asamblea de miembros tendrá las siguientes competencias: Aprobar y modificar el acta fundacional, elegir y/o remover los miembros de los cuerpos



REPUBLICA DE PANAMA  
PAPEL NOTARIAL



NOTARIA PRIMERA DEL CIRCUITO DE PANAMA

directivos, aprobar el monto de las cuotas de los miembros, aprobar el presupuesto de ingresos gastos e inversiones y los planes anuales de desarrollo que presentará el Consejo Fundacional. \_\_\_\_\_

d) El Consejo Fundacional de CONAVI es el Órgano de administración permanente de la Fundación y deberá fijar los objetivos, políticas, estrategias y metas para el cumplimiento de los fines de la fundación y la ejecución de los acuerdos de la Asamblea de Miembros. Sus integrantes son nombrados inicialmente por el fundador y luego electos por la Asamblea de miembros. \_\_\_\_\_

e) La elección de reemplazo de un miembro del Consejo Fundacional por renuncia, incapacidad o muerte, requerirá el voto favorable de una mayoría calificada de dos tercios (2/3) de los miembros restantes del Consejo Fundacional. Si no existiera ningún miembro más del Consejo Fundacional, o los miembros restantes estuvieran incapacitados, la designación de los nuevos Miembros del Consejo Fundacional lo realizará la Asamblea de miembros, El ejercicio del cargo de miembro del Consejo Fundacional de CONAVI será por un período de dos (2) años a partir de la fecha de su nombramiento como miembro; sin embargo, los miembros seguirán en el ejercicio de sus funciones hasta que se haya nombrado el reemplazo correspondiente, según lo dispuesto en esta acta fundacional. \_\_\_\_\_

f) El Consejo Fundacional de CONAVI podrá traspasar a uno o varios de sus miembros o a una tercera persona sus poderes para emitir el reglamento. \_\_\_\_\_

g) El Consejo Fundacional elegirá un Presidente, un Tesorero y un Secretario y además podrá elegir cualquier otro dignatario que estime conveniente. Los acuerdos del Consejo Fundacional se incorporarán a un acta y esta será firmada por todos los miembros presentes. \_\_\_\_\_

h) El Consejo Fundacional se reunirá ordinariamente por convocatoria de su Presidente por lo menos una vez al mes, en la sede de CONAVI o en otro lugar designado por el Consejo Fundacional. \_\_\_\_\_

i) Los acuerdos del Consejo Fundacional podrán tomarse también por medio de circular, para lo cual se requerirá la aceptación expresa de una mayoría calificada constituida por los 2/3 de los miembros del Consejo Fundacional. \_\_\_\_\_









NOTARIA PRIMERA DEL CIRCUITO DE PANAMA

b) Los beneficios y todo reparto del patrimonio o del producto de la renta de CONAVI no podrán ser objeto de ningún tipo de medida precautoria, secuestro o embargo, a menos que sea por deudas de CONAVI.

c) El traspaso del derecho a recibir beneficios de CONAVI ya sea presentes o futuros es nulo. El derecho al beneficio de CONAVI tampoco podrá ser dado en garantía de ninguna clase, ya sea prendaria, hipotecaria o de cualquier otra índole. Cualquier beneficiario que intentara traspasar su beneficio, lo perderá. -----

DÉCIMO CUARTO: LOS REGLAMENTOS. El fundador o la persona que él designe, o en su defecto, el Consejo Fundacional de CONAVI están facultados para emitir los Reglamentos de CONAVI. -----

DÉCIMO QUINTO: NOTIFICACIONES. Las notificaciones dispuestas por la Ley se harán en cualquier diario de amplia circulación en Panamá. -----

DÉCIMO SEXTO: RENDICIÓN DE CUENTAS: El Consejo Fundacional preparará un Informe Anual que refleje las actividades desarrolladas en el año y dé cuenta del uso de los fondos. -----

DÉCIMO SÉPTIMO: REPRESENTANTE LEGAL: El Representante Legal será el Presidente, por su falta, el Secretario, y por falta de ellos, el Tesorero o la persona natural o jurídica que respectivamente haga sus funciones, aún si no tuviesen dichos títulos. El Representante Legal podrá ser sustituido por el Consejo Fundacional de CONAVI. La designación de los cargos es la siguiente: -----

Presidenta: Esilda Batista -----

Secretario: Lenin Riquelme Quintero -----

Tesorera: Lineth Zulay Córdoba Carranza -----

DÉCIMO OCTAVO: QUÓRUM Y TOMA DE DECISIONES: El quórum lo constituirá la mitad más un miembro de la totalidad de los miembros de CONAVI en la fecha y hora señalada. Todos los miembros que estén al día en sus compromisos con CONAVI, tienen derecho a voz y voto. -----

En las reuniones del Consejo Fundacional, para decidir sobre un punto se requiere la presencia y el voto favorable de por lo menos tres (3) miembros, salvo aquellos casos establecidos expresamente en esta acta en los cuales se requiera una mayoría calificada.





NOTARIA PRIMERA DEL CIRCUITO DE PANAMA

siguientes atribuciones: -----

- a) Velar por el cumplimiento de los fines de CONAVI -----
- b) Exigir rendición de cuentas al Consejo Fundacional de CONAVI -----
- c) Designar nuevos miembros del Consejo Fundacional de CONAVI por ausencia temporal, definitiva o extinción del período para el cual fueron designados. --
- d) Nombrar nuevos miembros del Consejo Fundacional de CONAVI en reemplazo de los existentes en caso de ausencia temporal o accidental. -----
- e) Refrendar los actos adoptados por el Consejo Fundacional de CONAVI indicados en el acta fundacional o su reglamento. -----
- f) Supervisar el manejo de los bienes de CONAVI y velar por la aplicación de estos a los usos y finalidades enunciadas en el acta fundacional. -----
- g) Cualquier otra función que se considere conveniente. -----

VIGÉSIMO TERCERO: CAMBIO DE JURISDICCIÓN. Cuando por unanimidad el Consejo Fundacional de CONAVI lo consideren necesario, podrán a su entera y absoluta discreción transferir CONAVI a la jurisdicción de otro país. -----

VIGÉSIMO CUARTO: CONAVI podrá, si lo considera conveniente, adoptar sello fundacional. -----

VIGÉSIMO QUINTO: VIGÉSIMO QUINTO: DERECHOS RESERVADOS POR EL CONSEJO FUNDACIONAL: El Consejo Fundacional, a través del voto favorable de una mayoría calificada constituida por las dos terceras partes (2/3) de sus miembros, se reservan el derecho de remover a cualquier otro Miembro del Consejo Fundacional de Fundación, lo mismo que nombrar o adicionar nuevos miembros. Igualmente, el Consejo Fundacional se reserva el derecho de revocar CONAVI creada por medio de esta Acta Fundacional con el voto afirmativo de la totalidad de sus miembros. Si CONAVI que por la presente acta se constituye fuese revocada de la manera antes dicha, el Consejo Fundacional después de cancelar las deudas ya incurridas, especialmente todas las obligaciones adquiridas en virtud del desarrollo de los proyectos deberá traspasarle, pagarle y entregarle al fundador o a la o las personas designadas por él, todos los bienes que constituyen el patrimonio de CONAVI (o la parte de esta que estuviere sujeta a dicha revocación), ya fuesen capital o intereses. Nadie tendrá ningún derecho o interés con

respecto a esta Fundación excepto de acuerdo con las disposiciones de este artículo.  
Concuerda con su original esta primera copia que expido, sello y firmo en la Ciudad de Panamá, República de Panamá, a los veintidós (22) días del mes de marzo de dos mil

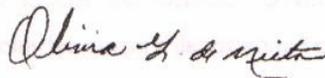
respecto a esta Fundación excepto de acuerdo con las disposiciones de este artículo.  
Concuerda con su original esta primera copia que expido, sello y firmo en la Ciudad de Panamá, República de Panamá, a los veintidós (22) días del mes de marzo de dos mil cinco (2005).

  
Licdo. Boris Barrios González  
Notario Público Primero  
del Circuito de Panamá



**Ingresado en el Registro Público de Panamá**

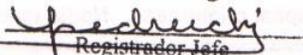
Provincia: Panamá	Fecha y Hora: 2005/03/23 16:46:29:4
Tomo: 2005	Asiento: 42094 -
Presentante: SAID GUERRA	Cedula: 4-147-1120
Liquidación No.: 8784066	Total Derechos: 60.00
Ingresado Por: MACL	





**Inscrito en el Sistema Tecnológico de Información  
del Registro Público de Panamá**

Sección de Mercantil Ficha No. 13638 Sigla No. E.I.P.  
Documento Redi No. 753710  
Operación realizada Fundación  
Derechos de Registro B/. 50.00  
Derechos de Calificación B/. 10.00  
Lugar y Fecha de Inscripción Panamá 29 de marzo del 2005

  
Registrador Jefe



FIP\_13638

D\_753710

6/29/3

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