Safeguarding Pacific Sea Turtles on the Osa Peninsula of Costa Rica

Critically Endangered: Hawksbill & Pacific Leatherback and Threatened: Olive Ridley & Green Turtle

Hatchery Operations, Rehabilitation & Community Conservation Awareness

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Fundación OSA
Council for Cultural & Biological Diversity
www.4biodiversity.org
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Funding
Our most sincere aspiration, to provide long-term security and protection for these threatened venerable marine turtles and their hatchlings that nest on our San Josecito Beach, requires a committed and stable source of funding. This Marine Turtle Conservation Project requires funding for the years of 2014, 2015, and 2016, the time necessary to accurately measure and determine the survival of each threatened marine turtle species. The funding covers yearly operational expenses during the seasonal months of May through December.

Donations can be made tax-deductible via Living Bridges Foundation, based in California, USA, a non-profit, tax-exempt corporation under Section 501c3. All kindhearted patrons receive a detailed outline of the project’s expenses and progress reports.

The Turtles
Costa Rica’s Pacific Coast is very important for the life cycle of numerous marine sea turtle species. Of particular concern to our undertaking are those classified as threatened on the International Union for the Conservation of Nature (IUCN) Red List: the vulnerable Olive Ridley (Lepidochelys olivácea), the endangered Green Turtle (Chelonia mydas), the critically endangered Hawksbill (Eretmochelys imbricata), and the world's most critically endangered marine turtle, the Pacific Leatherback (Dermochelys coriacea). The populations of each of these species are decreasing yearly and facing extinction. For example, the Pacific Leatherback has not been recorded on our beach for over ten years! In spite of protection through international conventions, the survival of threatened marine turtles on our beach requires our help.

Our foundation is in an auspicious position to nourish the survival of these ancient sentient creatures. It is for this reason we have sustained this project for the past 9 years. According to Didier Chacón from WIDECAST Costa Rica, a project advisor and marine turtle conservation expert, our beach, San Josecito, is one the most important nesting sites on Costa Rica’s Pacific coast for Green and Hawksbill Sea Turtles.

Accomplishments
In 2007, the night patrols of Fundación OSA, or its English counterpart, Council for Cultural and Biological Diversity (CCBD), with the help from local school children, relocated 27 nests to the hatchery and successfully released over 1500 hatchlings, including 83 critically endangered baby Hawksbills! Following that year up until the present, the foundation has successfully released an additional 33,600 threatened Pacific Marine Turtles.
Mission Objectives

1. Protect threatened marine turtle species through the relocation to a protected hatchery of those
   nests at risk from: inundation by the sea; the human poaching of eggs; predation from raccoons, coatis
   and other birds and animals; and crushing by horses and the ever-increasing traffic of motorcycles and
   quad bikes on the beach.

2. Raise cultural awareness of the principles of environmental conservation and its challenges by
   organizing workshops and readily providing volunteer orientation for the local beach community,
   adults and school children alike.

3. Capacity Building: co-creating and empowering members of the community with employment to
   qualified locals in pursuit of the vision of marine turtle and environmental conservation practices.

4. Educate and coach dedicated staff and volunteers in turtle husbandry procedures.

5. Collect valuable data regarding turtle nesting habits to present to the International Union for
   Conservation of Nature (IUCN) for their database of threatened marine turtle species.
   www.iucnredlist.org

6. Present a legal petition to the Costa Rican Park Service requesting nesting sanctuary status to
   currently unprotected beaches that are south of the Sierpe River mouth and north of Corcovado
   National Park, highlighting the presence of exceedingly endangered Pacific Hawksbill, Pacific Green,
   and Olive Ridley sea turtles.

7. Exemplify a proactive culture of environmental conservation amongst the local populace. The
   increasing cohabitation of the community with the threatened marine turtles' environmental refuge,
   due to the installation of a new road and the first grid-electric power on our beach, requires the
   stewardship of the local community in protecting the sea turtles.

8. Collaborate with the ecotourism sector in composing informational media regarding the area’s
   relationship with the sea turtles. This simultaneously addresses the perpetuated problem of poaching
   sea turtle nests by many employed in ecotourism, as well as establishing an understanding with
   travelers. Given that the majority of people work in ecotourism, the possibility exists for this to be a
   successful undertaking.
BACKGROUND

B.1 Project Background

Following an invitation from Gabriel Palacios, a local community leader and park ranger, we initiated our Marine Turtle Conservation efforts to protect the plummeting resident turtle population on the Osa Peninsula, specifically on the beach where we live. The turtles migrate throughout the ocean and come to the beaches only during their nesting season. Playa Rincón de San Josecito is a vital turtle-nesting seashore in the region with the only registered sighting of both the critically endangered Hawksbill Turtle and endangered Pacific Green Sea Turtle (also known as the Pacific Black, a rare subspecies of the Green Sea Turtle found on the Caribbean coast). This project hopes to increase the opportunity for the Marine Turtles to hatch their nests in a protected hatchery or nursery. Once in the ocean, the baby turtles still face great odds. The project reduces the probability of loss of the valuable nests to land-based threats, through prevention of poaching, predation, and accidental crushing by horses that frequently walk the beach and the increasing traffic of motorcycles and quad bikes due to the new road.

In 2002 our Marine Turtle Conservation undertaking began with organizing volunteers to hide turtle tracks to deter poachers, and raising environmental education in our local school. In 2007, after receiving training from various marine biologists, we organized our approach with the construction of a hatchery and a more concerted and methodological procedure. By the end of 2007, with help from local school children, our night patrols relocated 27 nests to the hatchery and successfully released over 1500 hatchlings, including 83 baby critically endangered Hawksbill Turtles!

In 2009, thanks to a small grant from the Threshold Foundation in the US and funds generated from Guaria de Osa’s visiting guests, we were able to protect a total of 64 nests. Of these, we protected 55 in our hatchery and nine were successfully protected in-situ. The 2010 season saw 62 nests with 5,203 eggs being collected and placed into the nursery. During 2011, 6,311 turtle eggs were collected from 63 nests, with an average of 78.6% of these nests hatching successfully. Not all nests hatch with the same success rate as different contributing factors vary from nest to nest. Some factors are within our scope for improvement while at other times the nests are simply defected from unknown reasons. 2011 also saw the return of the critically endangered Hawksbill Turtle, with three nests recorded, and the endangered Green Sea Turtle, with one nest recorded, and more than a combined 2,700 hatchlings were released.

Although 2012 showed a reduction in total number of nests relocated, with only 44 recorded, we were very pleased to see fourteen Green Sea Turtle nests. Of these nests, six were moved to the hatchery and the remaining eight were left in-situ on the beach. Of the 3,424 eggs recorded, 3,118 hatchlings were released with a truly remarkable success rate of 92%. The success rate of Olive Ridley nests left in-situ was only 56%. In 2013, 66 nests (60 Olive Ridley and 6 Green) were relocated to the hatchery with 90% of these eggs successfully hatching. This demonstrates the significantly higher success rate of the hatchery and the true importance of this facility to the overall survival of the turtles.

The staff at Fundación OSA has undergone substantial training in both turtle husbandry and turtle rehabilitation. This has proven invaluable when assisting turtles that have been trapped in nets and those who have washed up on the beach due to collision damage. In 2011 two such injured turtles were successfully treated and released back to the sea! In addition to being supported by the local beach community, the project has the authorization of the Ministry of the Environment (MINAE), through which, with legal assistance, we will submit a proposal for Protected Sanctuary Status.
B.2 Importance of the Hatchery

More nests hatch with a higher success rate in the hatchery than those left on the beach. There are several reasons for this. Overall, due to the reduction of the size of the beaches over the past 50 years, the loamy sands are now found lower down on the tidal zone. This began when people started planting coconuts and mango trees next to the ocean’s shore. The high tides during March and September (near the Spring and Autumnal Equinoxes) that once pushed sand banks up high out of the tide’s reach provided a valuable nesting habitat. Today, however, due to the presence of roots, these high tides wash away the loamy sand banks. On some beaches no sand remains; only hard sandstone substrata that is too hard for the turtles to dig their nests. We are noticing that many sea turtles on our beach, especially the Olive Ridley, lay their nests within the tidal zone. It is critical for these nests to be relocated to the hatchery within the next six hours! If this window of opportunity is lost, they are washed away by the rising tide!

Being that this beach has no road alongside of it, the locals transit the beach on horseback. Eggs nested in safe places outside of the tidal zone and off the horse trail, run the risk of being contaminated by the horse dung carried daily to the high-water mark by the ocean waves. During the seven-month rainy season, a copious amount of bacteria from within the horse dung is leeched into the nests, rotting the majority of the potential hatchlings.

For nests that are left in-situ, these threats, in addition to threats of poaching, predation, and crushing lead to an overall successful rate of 33% or below. That 98% of hatchlings are successfully released from the hatchery on San Josecito Beach validates the vital importance and necessity for the hatchery construction year after year.

B.3 Background of Fundación OSA

This Marine Turtle Conservation Project is spearheaded by Fundación OSA (Organización Social y Ambiental); in English, we are the Council for Cultural and Biological Diversity (CCBD). The CCBD is a non-profit organization legally established in Costa Rica and Ecuador, involving a committed group of volunteers, scientists, activists, indigenous and country folk who are dedicated to rainforest conservation and cultural heritage revalidation.

Since 1990, we worked extensively in Ecuador on projects among indigenous ethnic minorities. We helped create biological reserves, decolonize and demarcate indigenous territories, and support the revival of cultural values that strengthen community participation in rainforest conservation and sustainable resource management.

In the year 2001, ethnobotanist Jonathon Miller Weisberger, the foundation’s director, moved to Costa Rica where he founded Guaria de Osa EcoLodge, a Rainforest Ocean Discovery Centre and Ethnobotanical Gardens, on San Josecito Beach just south of Drake Bay. It is on this secluded three-kilometer stretch of beach where the Turtle Conservation Project is upheld. A local ranger and community leader, Gabriel Palacios, concerned at the numbers of nests that were being poached, damaged and destroyed along the Playa Rincón de San Josecito, Fundación OSA was asked to establish a course of action to protect the sea turtles. Thus, in 2007 we began our stewardship in service to the turtles and have remained faithfully vigilant each year since.
OBJECTIVES OF FUNDACIÓN OSA

San Josecito Beach, Rincón de San Josecito, and the neighboring San Josecito Cove are important nesting sites for these threatened species. To the south, in Corcovado National Park, which National Geographic has called “the most biologically intense place on Earth in terms of biodiversity,” almost all turtle eggs are eaten by the growing number of pizotes (Coati mundis) as a result of the shrinking jaguar population, who prey on the turtles. To the north of Drake Bay in Playa Colorada, the Corcovado Foundation is doing a good job of protecting the Olive Ridley that nest there. In that area, there has been close to zero registered sightings of Hawksbill or Green Sea Turtles. Since our beach is a proven nesting site for the Hawksbill and Green Sea Turtles, our project places special emphasis on these particular species, with nightly patrols in search of fresh nesting sites. Between three and six times each season, a mother turtle returns to lie their eggs, depending on the species. On this 3-kilometer long stretch, we strive to locate, observe and record each turtle as she comes to the beach. We also use turtle tracks to locate nests and then relocate them to the hatchery. Nests must be relocated within 5 hours, therefore two night shifts are necessary to find the nests while they are fresh. To release and return the baby turtles to the ocean is also an involved process. The nests require constant nocturnal supervision because the turtles can hatch at any given hour of the night. Scientific methodology is utilized to record during all stages, and the collected data is submitted to the national archive of information on sea turtles. These tasks require diligence, vigilance, resilience and dedication from the volunteers.

Each year over the past decade, there is an increasing interest and respect from the beach community towards the conservation of the sea turtles on San Josecito Beach. In 2013, we were overjoyed to witness the school kids lending a hand to release the hatchlings into the sea!

To actualize a successful Marine Turtle Conservation Project, yearly funding and adequate staffing, including volunteers and biologists, must be secured. This project needs to be active for at least 12 to 15 years, the time needed for the turtles to reach their sexual maturity. 2016 will be our 10th year of upholding the project, more than halfway towards ensuring the effectiveness of our stewardship.

We seek for San Josecito Beach to receive marine turtle nesting sanctuary status. As soon as funding is secured, we will begin the legal process required from the Environmental agency within MINAE.

Long Live the Turtles!
D.1 Overview

We will apply the procedures and methods outlined in “Manual para el manejo y la conservación de las tortugas marinas en Costa Rica” (“Practical Guide for the Management and Conservation of Costa Rica’s Marine Turtle”) (Chacón, D.; Sánchez, J.; Calvo, J. y J. Ash. 2007) SEE APPENDIX VI. These procedures are recognized and accepted within the turtle conservancy community as providing the highest recruitment success rate while simultaneously guaranteeing data is adequately recorded. The methodology in this guide is required by the local park service. We received this same training from the author, a master marine biologist, Didier Chacón who came and shared his enthusiasm for the turtles and inspired us even more with the need to uphold the core principles of the project.

D.2 Implementation

• To build, maintain, and safeguard a hatchery.
• To offer a deeper awareness to volunteers of the tropical ecological climatic phenomena during the rainy season with its dramatic and remarkable elements of thunder, lightning, rainstorms and rainbows. We take all safety precautions possible.
• To patrol San Josecito Beach throughout the night during the nesting season.
• To alert passerby’s walking the beach to the nearby nesting-in-progress. A polite request to turn off their lights is made to the person(s), when necessary, so as not to disturb the nesting mother. Volunteers then use headlamps, with red bulbs that do not disturb the mother turtle, to illuminate the nesting scene.
• To protect the turtles and their eggs from hueveros (turtle egg poachers) and other predators, such as stray dogs and pizotes (Coati mundis).
• To create a comprehensive database of each turtle specie that nests on San Josecito Beach, Rincón de San Josecito, and the neighboring San Josecito Cove. This includes documenting all variables during: the initial nesting, the transfer to the hatchery, the hatching, and the release to the sea.
• To apply careful and precise methodology during the relocation of a nest to the hatchery. Only one person and an assistant are allowed near the nest, ensuring that the eggs remain as isolated from non-sterile contact as possible. After the eggs have been removed, the dimensions of the nest are recorded and a replica is dug at the hatchery. The eggs are then carefully placed inside and covered with sand and surrounded with a protection screen.
• To assure the safe passage of the hatchlings to the sea.
• To clean, every 15 days, the 3-kilometer beach of all garbage materials that are hazardous to turtles and other sea life, separating recyclables (i.e. plastics, tin cans, etc.).
• To coach and coordinate volunteers to perform the numerous responsibilities required by the Marine Turtle Conservation Project.
• To collaborate with locals, volunteers, and MINAE officials in the endeavor of communal ecological conservation.
• To provide environmental information to the local community and visitors regarding the population of turtles who have chosen our beaches to nest, thereby fostering understanding and appreciation for the necessity of this project. We will utilize various methods including dialogues, workshops, and distribution of informational material.
• To communicate with the neighbors of San Josecito Beach, including hotel personnel and their visitors, about turtle conservation observances. For example: turning off lights that distract and confuse nesting turtles; controlling pets; and preserving the natural beauty of the beach for a safe nesting sanctuary.
• To collaborate with teachers of nearby schools to incorporate activities of turtle conservation and environmental education into their curriculum.
• To encourage the school children to be participate with the Marine Turtle Conservation Project.
• To host an end-of-season turtle and ecology festival with the beach community.
CONCLUSION

We - the Council for Cultural and Biological Diversity at Guaria de Osa EcoLodge - founded by ethnobotanist & conservation biologist, Jonathon Miller Weisberger in 2001, have taken it on as an act of personal, social and ecological responsibility to carry out a program to assist in the survival of these threatened species.

In 2013, the combined labours of three dedicated volunteers, along with myself, Jonathon, carried the Project through to the end of the season. A skilled local team already trained for the work eases the task.

We are now in our 10th year of upholding the Project, which needs to be active for at least 12 to 15 years, the time needed for the turtles to reach their sexual maturity. We are halfway there!

With Guaria’s three-kilometer stretch of San Josecito Beach as one of the most important nesting havens on Costa Rica’s Pacific Coast for the threatened Hawksbill and Green Sea Turtles, our team is advantageously positioned to help turn the tide against the alarming rate of declining marine turtle populations. We have the opportunity, with sufficient funding, to serve the ancient noble sentient beings that nest on our beach.
# Minimum Budget

## A: Equipment & Materials

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>[4] Energizer Headlamp w/ red light</td>
<td>$100.00</td>
</tr>
<tr>
<td>[3] Economy Rain Suits</td>
<td>$120.00</td>
</tr>
<tr>
<td>[3] Wooden-Tipped Umbrellas (to avoid lightning attraction)</td>
<td>$60.00</td>
</tr>
<tr>
<td>All-Weather Notebooks &amp; Pencils</td>
<td>$45.00</td>
</tr>
<tr>
<td>First Aid Kit</td>
<td>$150.00</td>
</tr>
<tr>
<td>[6] Boxes of Powder-Free Latex Gloves</td>
<td>$120.00</td>
</tr>
<tr>
<td>[4] Portable Public-Band Radios (for communication)</td>
<td>$300.00</td>
</tr>
<tr>
<td>Hatchery Supervision Shelter (materials &amp; labor) (^1)</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Photocopy Paper</td>
<td>$70.00</td>
</tr>
<tr>
<td>Video Camera (for project documentation) (^2)</td>
<td>$400.00</td>
</tr>
<tr>
<td>Lawyer’s Fees, (to obtain turtle nesting sanctuary status) (^3)</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>Rehabilitation Tank w/ Circulation Pump (to treat injured turtles) (^4)</td>
<td>$1,200.00</td>
</tr>
<tr>
<td>Turtle Tags, Portable Tag Reader, &amp; Tagging Equipment</td>
<td>$855.00</td>
</tr>
<tr>
<td>Medication, Syringes, Serum, Antibiotics, Food (for injured turtles)</td>
<td>$300.00</td>
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</table>

**Equipment & Materials Total:** $8,720.00

## B: Food / Transportation / Utilities

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Basic Food Supplies for Turtles Project Staff ([$100/month x 8 months])</td>
<td>$2,400.00</td>
</tr>
<tr>
<td>Boat Transportation to Drake Bay for Food Pick-Up ([$50/trip x 2 trips/month x 8 months])</td>
<td>$800.00</td>
</tr>
<tr>
<td>Boat + Land Transportation for disposal of garbage from Beach Cleanups (heap of trash dumped by cruise ships, brought by the tide to the shore multiple times a year)</td>
<td>$1,100.00</td>
</tr>
<tr>
<td>Utilities (Lights - Phone - Internet)</td>
<td>$700.00</td>
</tr>
<tr>
<td>[2] Travel Fees for local volunteer (for more experience at another Marine Turtle Conservation Project)</td>
<td>$600.00</td>
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</tbody>
</table>

**Food & Transportation Total:** $5,600.00

## C: Stipends for Project Staff Members

<table>
<thead>
<tr>
<th>Stipend</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>[2] Night Patrol (trained local resident) ([$350/month x 8 months])</td>
<td>$5,600.00</td>
</tr>
<tr>
<td>[1] Community Environmental Education &amp; Outreach, part time ([$300/month x 9 months (+1 month for nests hatching in January)])</td>
<td>$2,700.00</td>
</tr>
<tr>
<td>[1] Hatchery Monitoring &amp; Community Outreach ([$350/month x 9 months (+1 month for nests hatching in January)])</td>
<td>$3,150.00</td>
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**Stipends for Project Staff Subtotal:** $11,450.00

<table>
<thead>
<tr>
<th>Stipend</th>
<th>Cost</th>
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<tbody>
<tr>
<td>10% to National Insurance Agency</td>
<td>$1,145.00</td>
</tr>
<tr>
<td>26.17% to the Costa Rican Social Security Agency</td>
<td>$2,996.47</td>
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</table>

**Stipends for Project Staff Total:** $15,591.47

**MINIMUM BUDGET SUBTOTAL:** $29,911.47

## D: Fees

<table>
<thead>
<tr>
<th>Fee</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% for Contingency Reserve (20% of Equipment &amp; Materials + Food &amp; Transportation)</td>
<td>$2,864.00</td>
</tr>
<tr>
<td>12% to Fundación OSA for fiscal accounting and final report</td>
<td>$3,589.38</td>
</tr>
<tr>
<td>3% to Living Bridges Foundation for US-based sponsorship</td>
<td>$897.34</td>
</tr>
</tbody>
</table>

**MINIMUM BUDGET TOTAL:** $37,262.18
Notes for Minimum Budget

1 Hatchery Supervision Shelter: to place near the hatchery for monitoring nests; a place for local volunteers to wait out rainstorms; to prepare hot water on a simple stove for tea or coffee. The volunteers on night patrol appreciate this friendly gesture, especially when raining, of a warm drink to sip accompanied by homemade cookies (included in food expenses budget). The cost breaks down to: carpenter fee $300; materials $400; tarp roof $300.

2 Video Camera: It would be a great benefit to film the individual processes of the project for documentation. Footage can be used to assemble an informational short film.

3 Lawyer’s Fee: To obtain nesting sanctuary status requires an appeal, with multiple legal demands, to the Municipal Government. After many years of observation and biological inventorying, as well as dialogue with Didiher Chacón, the county’s most notable marine biologist and our instructor whose protocol we follow, it is evident that Playa San Josecito Beach is among two of the most important nesting beaches for Pacific Hawksbill Sea Turtles and Green Sea Turtles. We aim to have our 8 years of collected data refined by Didiher Chacón. We will then consult with an environmental lawyer and petition the Costa Rican government to grant legal protection to San Josecito Beach as a Marine Turtle Nesting Sanctuary. This will be an important boost for local ecotourism.

4 Rehabilitation Tank: Currently we use a fiberglass canoe. What would be ideal for rescued turtles is a larger round tank with oxygen circulation pumps. This cost is for materials to construct the tank on site.

Guaria de Osa Donation

<table>
<thead>
<tr>
<th>A: Equipment &amp; Materials</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[4] Flashlights (recently purchased, in new condition)</td>
<td>$100.00</td>
</tr>
<tr>
<td>Rechargeable Batteries &amp; Recharging Units (recently purchased)</td>
<td>$100.00</td>
</tr>
<tr>
<td><strong>Equipment &amp; Materials Subtotal:</strong></td>
<td><strong>$200.00</strong></td>
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<table>
<thead>
<tr>
<th>B: Lodging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of Guaria de Osa EcoLodge as Marine Turtle Conservation Project</td>
</tr>
<tr>
<td>Base Camp (shelter and sleeping quarters for Project Staff)</td>
</tr>
<tr>
<td>[$15/day x 30 days/month x 8 months x 3 staff]</td>
</tr>
<tr>
<td><strong>Lodging Subtotal:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C: Guaria Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-site Cook @ Guaria de Osa (prepares meals for Project Staff)</td>
</tr>
<tr>
<td>[$350/month x 8 months]</td>
</tr>
<tr>
<td>Project Supervision + Training of Project Staff + Turtle Database Management (donated by Jonathon Miller W.) [$550/month x 9 months]</td>
</tr>
<tr>
<td><strong>Guaria Staff Subtotal:</strong></td>
</tr>
</tbody>
</table>

**GUARIA DE OSA DONATION TOTAL:** $18,750.00
APPENDICES

I. Endorsements

“The rainforest conservation work of Sparrow and his Indigenous colleagues ranks among the most respectful, creative and promising ventures underway on behalf of earth and ancient earth ways. This is truly deep ecology in action - a privilege to behold.”
— Joanna Macy, Buddhist scholar and teacher

“Thank you to the amazing staff of Guaria de Osa EcoLodge for serving in the highest way!”
— Abby Tucker, master yoga instructor

“Group Osanimi [CCBD] is doing courageous and innovative work. By seeking out ways to assist cultural transmission while organizing to protect Ecuador's forests, they are working to preserve ancient botanical wisdom, not on some dusty bookshelf, but in the hearts of indigenous youths and in the forest itself. This is a bold and crucial step in these times.”

“Jonathon Sparrow and the rainforest workers in Ecuador are doing invaluable work. Not only with the Huaorani Indians but with many tribal groups. These young people are conscientiously recording botanical medicinals and new species of rainforest plants and bringing hope to Indigenous People. We all have pride in their efforts and support them in their endeavors.”
— Bill Mollison, biologist, Father of Permaculture

“Jonathon Sparrow Miller-Weisberger and his colleagues are doing important work for the preservation of tropical ecosystems, and the indigenous gnosis of the forest inhabitants. They are literally rediscovering the "roots" of humanity's million-year old symbiosis with the plant kingdom. Their work is ethical, motivated, and deserves support. In this era of shrinking ecosystems, disappearing species, and cultural dissolution the work of Jonathon and his organization is of incalculable value for every species, and for all species who share this fragile planet.”
— Dennis McKenna, ethnopharmacologist
LETTER FROM A VOLUNTEER

My name is Forrest Blackwell. I was a volunteer on the Guaria de Osa Turtle Conservation Project under the tutelage of Jonathon Miller Weisberger for 6 months in 2012 and for another 3 months in 2013. I came to Guaria de Osa in 2012 without any formal training in conservation or marine biology and stayed throughout the entirety of the turtle nesting season. I returned the following year for the second half of the nesting season, at Jonathon’s request, to help out and instruct the less-experienced volunteers.

The entire time I spent in Costa Rica was by far the most intense educational experience of my life. From the moment I set foot on Playa San Josecito, I had to learn as fast as possible not only the ins and outs of sea turtle conservation, I also had to learn the language and the lifestyle of living in a tropical rainforest. For a good deal of the time I was there I was the only non-native and English-speaking volunteer on the project. The work was hard, much harder than I had imagined, and was made harder still by the overwhelming tropical climate and living hazards of the jungle. Yet it was all made worth it for the chance to simply be in Costa Rica, seeing and interacting with live sea turtles. There is something so breathtaking about coming face to face with a species that has been living on Earth for millions of years before people existed. From early on it became apparent that this work was very important and that these creatures deserve all the effort we can give to save them.

Though the experience overall was indescribably beautiful, it also showed me the gruesome reality of just how endangered these turtles really are. The turtles’ eggs are regularly collected and eaten by local people or simply dug up by dogs and left to wash into the sea. The coconut palms that stand in dense clusters along the beach have widespread, fast-growing roots that can puncture buried turtle eggs. This makes it so that very few areas of the beach can be considered “safe” for turtle nests. Sometime in early 2013, telephone poles and streetlights were installed along the road that connects the beach to the nearest town, bringing a reliable source of electricity to the beach. As a result, the electric lights along the beach at night frighten and confuse nesting turtles, and in some instances have caused newly hatched baby turtles to run away from the ocean instead of toward it.

As if all these dangers weren’t enough, many of the turtle hatchlings I released last year exhibited severe physical deformities that I believe are a result of chemical and radioactive pollution in these turtles’ habitat. It doesn’t seem fair to me that such magnificent and peaceful creatures should be faced with such brutality.

For these turtles to have any chance at all of surviving the next 50 years, the work Jonathon Miller Weisberger and his associates are doing is crucial. This small conservation effort is quite literally the only thing standing between the turtles of Playa San Josecito and complete extinction. Though I cannot be there in person this 2014 season, I’d like to be there in spirit and offer my full and sincere endorsement of this project. It is so important that Jonathon’s project is adequately staffed and funded so that we might still have a chance of turning the tides and bringing these turtles back from complete annihilation. Thank you.
II. About the Turtles

Marine Turtles have inhabited the Earth for over 100 million years and survived in great numbers until the recent past. They have evolved from large, land-living, tortoise-like animals. Their body consists of a head, short neck, a pair of long fore-flippers, a pair of short and rounded hind-flippers, and a tail. Upper carapace and lower plastron make a protective enclosed structure for the internal organs. Unlike tortoises and freshwater terrapins, they are unable to withdraw their head and limbs into their shell. Marine turtles do not have teeth. What they do have are sharp, beak-like jaws that can crush, tear or bite, depending on their diet, which varies according to species.

Turtles are reptiles (Class: Reptilia, Order: Chelonia), which makes them cold-blooded animals. Therefore the environment determines their body temperature. In the morning, marine turtles sunbathe on the surface of the sea to increase their body temperature. They have lungs to breathe air. Turtles rise to the surface to breathe every 5 - 30 minutes.

Over millions of years, they have become very well adapted to living in a marine environment. With their long and muscular oar-like fore-flippers, rudder-like hind-flippers, and their flattened, streamlined shells, marine turtles are fast and agile swimmers. The only time marine turtles leave the ocean is when the females come ashore to nest. In some areas they can be seen having their “sunbath” on beaches or rocks. The males spend all of their time at sea and little is known about their habits. Most species are highly migratory, moving between nesting and feeding grounds, which can be thousands of kilometers apart.

Although we do not know exactly how long turtles live, they are generally assumed to have a life span of greater than 80 years. It is thought that marine turtles reach sexual maturity between 12 to 50 years of age, depending on the species. Until they reach maturity, it is difficult to distinguish between male and female turtles. At maturity, male turtles develop a long claw on each fore flipper and a long tail.
A Mystery

The way an egg-bearing female finds her way to her nesting beach, after traveling in open sea for thousands of miles, is still a mystery! Some scientists believe that marine turtles are sensitive to Earth’s magnetic field and use it for navigation. They are often found coming to the same sandy beach and even to the very same stretch of beach they used in previous years. The distinct species nest only every two to three years, so it is quite likely that the baby turtles we released from our efforts in 2007 were a completely different population than the baby turtles released last year.

Major Threats

In the last decade the Marine Turtle population has decreased dramatically. In some species, such as the Hawksbill and the Leatherback, this loss has been up to 90%, driving them to the brink of extinction. This fact is alarming scientists and concerned individuals. Urgent action is needed from state departments and international conventions in order to allow these species to survive.

The direct causes of their extinction are the plunder of nests for the consumption of eggs and the hunting of the adults for their meat and their shells. Other causes are: plastics floating in the ocean that suffocate the turtles when they confuse and consume it as food; other forms of unknown contamination; the loss of beaches for nesting due to the construction of hotels and towns; light pollution on the beach which confuses their orientation during nesting; industrial fishing with dragging fishing lines, accidentally killing thousands of turtles per year.

Their complex cycle of life makes them even more vulnerable since they need to survive a multitude of dangers before they become adults and are able to reproduce. These dangers snare them in all stages of their life: as eggs, they are consumed by a large quantity of birds and mammals, including human beings; the few that manage to hatch are eaten by practically all the carnivorous vertebrates as well as a large quantity of invertebrates, such as sea crabs. For these reasons, approximately one turtle survives to reach maturity out of every one to ten nests. In other words, for every one hundred to one thousand baby turtles, one will reach mature adulthood.

Olive Ridley, such as this one, lay approximately 70 nests per year on San Josecito Beach.
III. Website Links

A description of our work
www.4biodiversity.org | www.guariadeosa.com/osa.html

Video: Marine Turtle Conservation Project
www.guariadeosa.com/gallery-videos-turtles.html

Video: Guaria de Osa EcoLodge Turtle Project Base Camp on San Josecito Beach
www.guariadeosa.com/index.html

Photo Gallery: Marine Turtle Conservation Project
www.4biodiversity.org/sea-turtle-conservation/turtle-gallery/

Fundación OSA’s Archive of Past Projects
www.rainforestconservationprojects.org

Living Bridges Foundation
www.livingbridgefoundation.org

Two beach boys, Jonathon and a budding aficionado, washing baby turtles.
IV. Tax-Deductible Donations

- FOR TAX PURPOSES: IRS 501C3 NON-PROFIT NUMBER 770503014
- To make your kind donation, please make your check payable to: Living Bridges Foundation
- Please earmark in the memo: Fundación OSA Turtle Project Costa Rica
- Please include an additional 3% onto your donation for Living Bridges Foundation’s fiscal accounting fees. To easily calculate the total, multiply the amount of your donation by 1.03. This will then be the amount of your gift to sea turtles on the Osa Peninsula.
- Mail to:
  Living Bridges Foundation c/o Donna Runnalls
  PO Box 667
  Aptos, CA 95001, USA

- Contact personnel for more information:
  Donna Runnalls                     Jonathon S. Miller W.                     Dahlia Miller
  Living Bridges Foundation’s Director  Project Supervisor                     USA Liaison
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VII. Bibliography
