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Abatement of egg poaching in a Pacific Leatherback turtle nesting site in Costa Rica



Leatherback hatchling emerging in a protected nest in Junquillal

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- Project title:** Abatement of egg poaching in a Pacific Leatherback turtle nesting site in Costa Rica
- Contact:** Carlos Drews, Regional Coordinator for Marine Turtle Conservation in Latin America and the Caribbean
+506 234 8434
cdrews@wwfca.org
- Report elaborated by:** Sandra Andraka, Species Coordinator, WWF Central America, and Gabriel Francia, Coordinator Junquillal Project.
- Photographs:** © *Gabriel Francia, Sandra Andraka, Michael García, Cinthya Becerra*

EXECUTIVE SUMMARY

In 2005, WWF initiated a Pacific leatherback turtle conservation project in Junquillal Beach, Guanacaste, Costa Rica, to improve the survival outlook for leatherbacks and black turtles and increase growth from populations in decline. Through an approach to establish a relationship between sea turtle conservation and improved quality of life for coastal communities, three principal strategies have been developed: 1) nest protection via beach monitoring to find nesting females and nests; 2) raising environmental awareness and local self-esteem; and, 3) stimulating the creation of productive activities related to sea turtle conservation. The work continues to employ local, provincial or national resources to the greatest extent possible, stimulates conservation by the community, respects the community work pace, and displays creativity in adapting to emerging needs.

Junquillal beach in the Costa Rican Pacific region was recently discovered to be one of the most important nesting sites of leatherbacks in the country. However the only relationship the local residents had with the turtles was illegally taking their eggs. Initially, the project was not accepted by the local community due to distrust. To attain their involvement, heads of families and teachers were invited to an environmental education workshop to stimulate their curiosity and critical thinking about natural resources of the schoolyards and beaches. The positive response to this activity led to the establishment of the environmental education program, which has involved schools from Junquillal and other nearby beaches. To involve other sectors of the population in the project, the “Leatherback Tournament 2005” soccer championship was held to gain the interest of young people in conservation activities. After visits to community ecotourism experiences in Monteverde and Tortuguero, two world-class tourism destinations, several youth from Junquillal began working on beach monitoring. The nests are marked in situ with placards that include the species, hatching date, and nest name, or they are relocated to a hatchery where the temperature of the sand is controlled and they function as an educational tool.

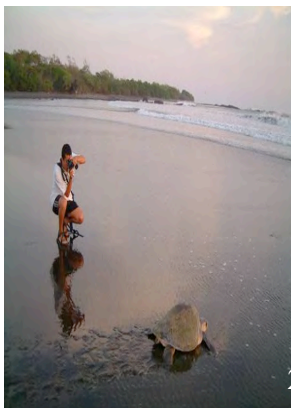
We have also initiated an artisanal tourism experience, housing foreign volunteer students in the homes of local families. This generates income for the families, and the students carry out research projects that contribute to the project.

In one year, plundering of leatherback (*Dermochelys coriacea*), black turtle (*Chelonia mydas agassizi*) and olive ridley (*Lepidochelys olivacea*) nests at Junquillal has been virtually eliminated. Since the beginning of this project, the hatchling from this beach have gone from almost none to approximately 10,000 leatherbacks, black turtles and olive ridleys. The presence of Project Coordinator Gabriel Francia, who lives in Junquillal, along with the ongoing dissemination of information through an information bulletin, photo exhibitions, talks, and hatchling releases with the entire community and tourists, has led to the community's appropriation of the project and has resulted in real sea turtle conservation. We are very grateful for the support of the SeaWorld & Busch Gardens Conservation Fund, which has helped make this project possible.

Junquillal's project team



1) This project is carried out under the leadership of **biologist Gabriel Francia**, recipient of an **Education for Nature grant of WWF's Russell E. Train Program**. His thesis¹ has been an important contribution to knowledge and conservation of sea turtles in Costa Rica. Thanks to his work, Junquillal community, and the WWF team, it is possible to watch leatherback hatchling emerging from a protected nest in Junquillal.



2) Michael García, ecotourism and wildlife management specialist; 3) Valerie Guthrie, environmental educator and biologist.

¹ "Predation and eclosion in solitary and arribada nests of olive ridleys (*Lepidochelys olivacea*) at Nancite and Naranjo Beach, and human incidence on nestings of olive ridleys, leatherbacks (*Dermochelys coriacea*) and black turtles (*Chelonia mydas agassizi*) at Junquillal Beach, Guanacaste, Costa Rica."



4) Sandra Andraka, Species Programme Coordinator, WWF Central America; 5) Carlos Drews, Regional Coordinator for Marine Turtle Conservation in Latin America and the Caribbean; 6) Cinthya Flores, Communication Director, WWF Central America, with her baby in Junquillal.

PROJECT ACHIEVEMENTS

Goal: Increase survivorship of leatherback and black turtle nests on an unprotected beach of Guanacaste and in this way maximize the recruitment of hatchlings into the diminished eastern Pacific populations.

Drastic reduction of nest poaching

During this season, illegal egg collection was at its lowest level since the project began. The percentage of nests plundered was 2.6% for olive ridleys, 0% for black turtles and 0% for leatherbacks. Considering that the leatherback nesting season ends in March and this encompasses much of the black turtle nesting season, zero egg collection indicates that we have achieved historic results for nest survivorship of these species at Junquillal.

From the beginning of 2005 to mid-March 2006, approximately 8,198 hatchlings have been released. We should now be reaching the figure of 10,000 hatchlings released. A high percentage of these were olive ridley hatchlings. Although this is not the priority species, olive ridleys are being used as an educational tool with very good results because they are the most abundant. During this project period, a total of 106 nests were protected. Protected nests are those that were actively cared for (covered, kept moist and shaded, or relocated, depending on the case). The percentages of hatchling success and numbers of hatchlings by species, for the period May 2005 to March 2006 are:

	Leatherback	Black turtle	Olive ridley	Total
Hatchling success	42.7%	89.4%	73%	
Hatchlings	246	625	6405	7276
Nests	7	8	91	106

Junquillal beach does not have any legal protection. The project aims to have the community become the steward of its natural resources. In particular, it seeks to ensure conditions for the protection of sea turtles. This is a challenge and the results to date show that this can be a successful and viable model.

The work team made up of six youth from Junquillal (Andrés, Dennis, Emanuel, Jaime, Junior, Mainor), a Costa Rican youth from outside the area (Gabriel S.), and the beach project coordinator (Gabriel F.) has attained the lowest level of egg collection since monitoring was initiated at Junquillal beach in July 2001, when eggs were illegally collected from all the nests.



7, 8, 9) Youth from Junquillal monitor the beach, relocate nests, and take data under the coordination of Gabriel Francia.

Objective 1- Encourage the development of ecotourism.

Capacity building of local guides

1. Visits to community-based tourism experiences

Ecotourism specialist Michael Garcia led representatives from Junquillal on visits to two places where community-based tourism has developed. The objective was to provide an opportunity for learning about ecotourism through a hands-on experience for the people from Junquillal. The first visit was to Monteverde, a place that is globally renowned for its experience in ecotourism. The program of activities was dynamic and stimulating for the young people from Junquillal. They learned about organizational aspects of tourism such as community organization, the use of local or attainable resources, the quality of good service as a function of experience acquired over time, the concept of nature in handcrafting and the local tourism industry, taking advantage of opportunities offered by tourism, and the diversity of tourism services offered in Monteverde.

At Tortuguero the Junquillal team become acquainted with a tourism experience based on sea turtles. In this case it was possible to appreciate the difference between tourism managed by community people and tourism managed by foreigners, the function of a research organization (*Caribbean Conservation Corporation*) as another player, social changes, distribution of benefits, and the local guide cooperative.



10) Before and during the trip to Monteverde, several planning meetings were organized by Michael to analyze the ecotourism potential of Junquillal and the need to train ourselves to attend to future ecotourists. 11) A happy group from Junquillal enjoys a lunch served by a Monteverde family. 12) Junquillal's group works with local artisans women, using nature elements.

2. Beach monitoring

As a result of these visits, six local youth (who have not yet finished high school and are working in construction and gardening) worked actively on direct protection of sea turtle nests and another served as coordinator of the group that substitutes for Gabriel Francia when he is away. These youth located leatherback and black turtles, scanned them for PIT tags (microchips that allow tracking and identification of individual animals), measured them, and relocated their nests to the corral, where they monitored nest temperatures, controlling them with palm fronds for shade and nightly watering. They also led several community ceremonies to release the hatchlings, explaining their conservation mission to an average of thirty participants including local people and tourists at each release. Family members, friends of the work team and previous team members attend the events. These people voiced their approval of these activities and are adherents of the new turtle conservation philosophy with an interest stimulated by the Project.



14,15,16) Monitoring activities and hatchling releases.

Development of artisanal tourism with local families

We have launched the artisanal tourism plan for Junquillal Beach with the participation of two local families. Since February, the host families have housed two students from France and the United States. In this way, and making use of typical Guanacaste hospitality, the development of local capacity for attending and feeding future ecotourists is being promoted. Although still small

in scale, this kind of tourism is providing economic benefits to the local community. It is also helping to maintain cultural values (e.g. food, traditional music, handicrafts) and increase self-esteem in the people, who up until now have been excluded from the business of tourism. Additionally, these students are carrying out research projects that will help the community of Junquillal and sea turtle conservation. Currently, there is a social research project that is of particular interest because it aims to determine the interest and capacity of other homes in Junquillal for lodging additional students or volunteers.

Achievements

- Awakened interest in participating in the project among the youth of Junquillal
- Trained beach monitors
- Encouraged women to provide lodging for student volunteers in their homes
- Launched the artisanal tourism concept, incorporating local Guanacaste cultural values
- Involved people from the community and tourists in turtle conservation activities

Objective 2 – To increase awareness about the benefits of marine turtle conservation.

Environmental education

As a first step for raising awareness about the importance of sea turtles, a workshop on “Teaching and Learning about Ecology on the Beach and in the Schoolyards” was held from April 14 to 20, 2005. It was facilitated by Argentine specialist Andrea Caselli. The methodology used was based on cycles of investigation, an adaptation of the scientific method. It stimulates curiosity and critical thinking by the teacher and the student, beginning with the people’s knowledge about their surroundings, instead of using a prohibitionist approach toward the use of natural resources. The objective of this workshop was to involve heads of families and professors in the process. Students from the schools of Junquillal and neighboring towns of Paraíso and Pargos, personnel from the Ministry of the Environment (MINAE), and teachers from San José were included.



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16, 18) Several moments during the environmental education workshop. 17) Andrea, Gabriel and students from the Junquillal school observe the tracks, size and abundance of the different turtle species on the beach.

On subsequent days, activities were conducted with students and teachers in the schools of Junquillal and Pargos. Freestyle and thematic drawings were made by all the students of the school, and these will be used as a reference tool for the evaluation of the stage prior to the systematic application of the Investigation Cycle by the teacher; an indirect assessment was made of the schoolchildren's knowledge about sea turtles and their eggs.

After that workshop, the environmental education component took on a more protagonist role and with the addition of Valerie Guthrie to the project team, the program has continued with other activities. Work is conducted in the schools of Junquillal, Pargos and Paraíso. The teachers and children are meant to apply the instructional tools learned in the April . The goal of the environmental education is to help people understand, analyze, and reflect on ecological processes and the effects of human activities on their local surroundings. Apart from the educational institutions, other community actors committed to the environment are also involved. The emphasis of this intervention will be on the conservation of sea turtles and their benefits for the communities involved.

With the help of the parents and use of the hatching calendar, hatchling releases have been held with the participation of practically all the members of the community and tourists. These releases have become both training activities and celebrations. Although each nest has an identification sign that gives the turtle species, the name of the nest and the estimated date of hatching, turtle-loving people prefer to witness the nest excavations and the hatching process accompanied by project personnel.

Communications and Broadcasting

1. Notibaula – Leatherback News

In June 2005, the first edition of NOTI BAULA, an informative bulletin about the Pacific Leatherback Conservation Project activities and progress, was published. The bulletin is distributed locally, regionally, and internationally by e-mail, in English and Spanish. Design and editing were improved in the second edition. The third edition is now in preparation, and it is hoped that community members will collaborate on future editions.

2. Increased awareness about turtle conservation.

An intensive information/education campaign has been conducted on project achievements, encompassing the communities of Marbella, Lagarto, Venado, Paraíso, Río Seco, Pargos, Lagartillo and Avellanas as well as Junquillal. The strategies used have been: 1) distribution of bulletins (NotiBaulas), 2) photo exhibits, 3) distribution of hatching calendars and placing signs next to nests on the beach, 4) informal talks with hotel and food service owners and tourists, and 5) participation of the people from Junquillal and other nearby beaches and tourists in several hatchling release events. This is how we help the people become familiar with the turtles, stimulating improvement in their perception of nest conservation tasks and maintaining the health of the nesting beaches.

3. National Geographic filming in Junquillal

A team from the NATIBO VISA EXPEDICIÓN 2 program of the National Geographic channel filmed at Junquillal. The program has already aired on television and this has helped explain the philosophy of the project and the work of its coordinator Gabriel Francia. Additionally, the program was very well received in Junquillal and the zone in general, including the closest cities.

In the district seat of Santa Cruz, people on the street were asking Gabriel Francia about the project, after the television broadcast.

Achievements

- Involved groups of parents that did not initially show interest in the project, along with children that had not been considered at first
- Stimulated curiosity and raised self-esteem in local people
- For the first time, MINAE participated in an activity in the community of Junquillal
- Valerie Guthrie, one of the teachers from San José who participated in the workshop, was selected to continue the environmental education program
- Community crowd participation in hatchling releases
- The topic of sea turtles is being introduced into formal and informal instruction activities
- Local, regional and international reception thanks to project dissemination activities

CHALLENGES

1. At project outset, the local population did not trust project intentions. In contrast, foreign residents (many hotel owners or investors) showed a lot of interest, in part due to their confidence in an international organization like WWF. This division between local people and foreigners is repeated at all tourism development areas, where the community people have sold their lands and have been relegated to working in service jobs for foreigners. Additionally, the local people tend to be extractors of natural resources, which is objectionable to foreigners. The scant participation of local people during the first six months of the project delayed the execution of several community proposals, such as the educational trips, construction of the corral for the turtle nests, and participation in beach patrols.

However, the gradual maturation of direct (formal and informal talks, photo exhibits, environmental education workshop, the Noti Baula bulletin, soccer tournament, hatchling releases, etc.) and indirect approaches (meetings with local institutions) had good outcomes beginning in the third quarter of the year, to the point where today the project has the approval of the entire population of Junquillal and community participation in recent activities has been completely satisfactory.

The key activity that integrated the project into the community and attracted interest was the soccer championship called “Leatherback Tournament 2005.” This activity was not part of the original plan. It was proposed as a strategy for strengthening the bonds of friendship with Junquillal and nearby communities and for disseminating the project objectives regarding sea turtle conservation. It stimulated the local inhabitants to sign up for the first trip to see community-based tourism experiences.



19) Young women had an important role at the soccer match. 20)The Development Association and the Patronage of Junquillal worked hard so players and visitors would have a pleasant memory of Junquillal beach.

2. Project flexibility is one of the keys for strengthening and continuing to make progress on the objectives that deal with the participation of the local community. More protagonist roles were permanently given to the youth in the Project. This new leadership facilitated the integration of other segments of the population of Junquillal, including foreign residents and tourists. In this way, the Turtle Conservation Project is seen as a new democratic and participatory opportunity where the community of Junquillal can discuss its model for development in harmony with nature, with a renewed interest in sea turtles.
3. Constant documentation using photographs shared with the community, as well as the preparation of attractive documents for sharing information is a good way to keep the social transformation process alive. At the beginning of the Project, many residents were not aware of the presence of turtles in the area, while others only consumed or sold the eggs. Today the people are enjoying the value of continual turtle hatchings on Junquillal Beach and they can more clearly see the benefits of conservation over those of illegal extraction.
4. Adaptive management: activities were developed mainly according to the action plan. The general execution of this plan depends on the rate of social change from the intervention. Progress will depend, to a large extent, on the response of the people to each plan that is to be implemented and on the respectful actions of the Project coordinators. This will also help WWF reach and maintain our conservation goals.

SUSTAINABILITY

The activities carried out during this project period have earned commitment from the community for sea turtle conservation. This is the foundation for the sustainability of the process beyond the presence of a project. Nevertheless, this commitment requires strengthening and so WWF will continue working in Junquillal to ensure the consolidation of the progress made to date. The strategies to pursue are:

1. Strengthen the Development Association, the local decision-making entity, in environmental matters. Continue accompanying the association in its activities to ensure that it makes informed decisions regarding sea turtles.
2. Establish a local guide cooperative. The youth who have begun working on the beach should continue their training and gain capacity for attending to tourists. This is a process that will take at least one year, after which it is hoped that they can organize themselves into a cooperative.
3. Integration of the hotel private sector. The participation of hotel owners is fundamental because they are already benefiting from the project sending their clients to the beach to see sea turtles, guided by the coordinator and the beach monitors. Before the project, they did not have this tourism service. The commitment of this sector must be attained so that it becomes part of a local tourism scheme, contributing to sea turtle conservation. This will help prepare guides and project operations.
4. Incorporation of neighboring beaches. Other beaches nearby are also important for sea turtle nesting, although on a smaller scale. Furthermore, residents of those communities occasionally pillage eggs on their beaches and Junquillal Beach. Creating a coastal network

that identifies with sea turtles, acting as local stewards, will create pride and an identity that will ensure the conservation of these species.

PROJECT IMPACT

This project has a double biological and social impact that reflects the sea turtle conservation program approach for Latin America and the Caribbean. WWF hopes to demonstrate the relationship between sea turtle conservation and improved living conditions for coastal communities, to promote harmonious coexistence with the ocean.

Biological impact is evident in the reduction of leatherback, black turtle and olive ridley nest pillaging on Junquillal Beach to nearly 0% in the first year. The contribution of this beach to the populations of these species had been zero, but approximately 10,000 leatherback, black turtle and olive ridley hatchlings have emerged from protected nests from project outset to date.

Social impact is reflected in the creation of job alternatives based on sea turtles for the local people, many of whom were egg collectors. Today, several families are benefiting from work in beach monitoring or by offering artisanal lodging services. Additionally, the development association, as the local decision-making entity, is being strengthened and the self-esteem of the community, which has historically been excluded from coastal development processes, is being raised.