

Mediterranean through the Straits of Gibraltar and utilizes the western basin as feeding grounds. They frequently interact with the longline fishery there.

Exploitation by humans reached a peak in the early 1960s when a sea turtle fishery was active in the eastern Mediterranean. Today, despite legislation, there is still traditional consumption in some coastal communities, which may well exceed the sustainability of existing populations.

Sea turtles in the Mediterranean are protected under several international conventions (Bern convention, CMS,

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etc.). However, the convention that encompasses all Mediterranean countries is the Barcelona Convention. While the parties to this convention have already developed a specific Action Plan, a Regional Conservation Strategy is needed in order to define main actions and set priorities for research, conservation and management. Furthermore, a common strategy would develop cooperative mechanisms for assessing conservation status, identifying and protecting critical areas, monitoring population trends, and enforcing international agreements.

## Sea Turtle Protection in the Guayana Shield Region: Optimization of Collaboration and Conservation

JEROEN L. SWINKELS<sup>1</sup>, PAUL VAN NUGTEREN<sup>1</sup>, JOHAN CHEVALIER<sup>2,3</sup>, MARC GIRONDOT<sup>4</sup>, LUC H.G. VAN TIENEN<sup>1</sup>,  
AND LAURENT KELLE<sup>3</sup>

<sup>1</sup>*Biotopic, plantage middenlaan 45, 1018 DC, Amsterdam, The Netherlands; E-mail biotopic@biotopic.demon.nl*

<sup>2</sup>*URA « Evolution et Adaptation des Systèmes Ostéo-musculaire », Université Paris 7 et CNRS, 2 place Jussieu, 75251 Paris cedex 05, FRANCE; E-mail chevali@ccr.jussieu.fr*

<sup>3</sup>*WWF France - 151 boulevard de la Reine - 78000 Versailles – FRANCE*

<sup>4</sup>*Université Paris-Sud, Paris XI, Laboratoire d'Ecologie, Systématique et Evolution, CNRS UPRESA 8079, Batiment 360, 91405 Orsay Cedex, France; E-mail mgi@ccr.jussieu.fr*

In the Guayana Shield region, it appears that sea turtles do not show fidelity to a specific nesting beach, but to a large nesting zone including Venezuela, Guyana, Suriname, French Guiana and northern Brazil. No population dynamic study or conservation strategy in general is possible without a strong collaboration of the different countries in the nesting zone.

### Background

The coastal region of the Guayana Shield is visited by several sea turtle species: leatherback, olive ridley, green, hawksbill and loggerhead. The presence of five different sea turtle species gives the institutes, working on sea turtle conservation in this area, a large responsibility for preserving and protecting these species and the biodiversity of their natural environment.

The leatherback turtle has suffered a large worldwide decline in the last decade, which makes it one of the most endangered sea turtle species. The estuary of the Marowijne River is visited by more than half of the world population of leatherback turtles, but the number of nesting females in the estuary has declined severely. For the Guayana Shield region this means that this species deserves high priority in conservation efforts with global importance.

This region still contains the largest population of nesting olive ridley females in the western Atlantic Ocean, but that number is declining very fast. Because of the regional importance, a high priority in conservation efforts should be given to this species as well.

The green turtle, the hawksbill turtle and the loggerhead turtle do occur in the coastal waters of the Guayana shield region. Because of their current status in French Guiana and Suriname no special conservation

efforts are made for these species, but they will benefit from the conservation activities carried out anyway.

### Early history

Joop Schulz from the Netherlands can be considered as the pioneer in the field of sea turtle research and conservation in the Guayana Shield region. He started his work in the 1960s, founded STINASU in 1969 and continued his work successfully until 1978. Starting in 1965 he was assisted by Peter Pritchard, who started working in Guyana and put up a consistent framework for research on and conservation of sea turtles. Peter Pritchard is still the main force behind the actual work carried out in Guyana.

The first census in French Guiana was carried out in the late 60s by Schulz and Pritchard. Jacques Fretey started his work in 1977 and was later assisted by Marc Girondot. In 1986 the Kawana-project was created, integrating European volunteers into the conservation work. In 1997, Marc Girondot continued the work. WWF has been funding the sea turtle conservation effort in French Guiana without interruption since 1977.

In the mid-1970s, Henk Reichart started his work on the Surinam beaches for STINASU. STINASU has been and still is executing conservation and research activities in Suriname. Henk Reichart, Jacques Fretey and Peter Pritchard drew the world's attention to the status and the problems of sea turtles in the Guayana shield region with various articles.

### Recent history

In 1995, Biotopic started its work on the Surinam beaches with the primary objectives being research and active beach protection. The second project began in 1997; research activities were extended and, in collaboration with

STINASU, a conservation program was added. The philosophy was that for successful conservation of sea turtles in the Guayana Shield region collaboration between Suriname, French Guiana and Guyana was needed. In that year Biotopic and STINASU took the initiative to organize a symposium in Suriname. The goal of this meeting was to exchange information between the three countries. To attract regional attention for this symposium work visits were made to French Guiana and Guyana.

It was fairly easy to get in contact with the French team. In 1997 some joint expeditions were undertaken to remote beaches and members were exchanged between the two research teams. The two teams' methods differed greatly. Because of practical problems the French team and officials weren't able to attend the symposium in 1997.

In 1998 contact was intensified. At various meetings, initiatives were put forward to combine conservation efforts. This resulted in the attendance of a diverse French delegation at the second symposium. This delegation consisted of researchers, the curator of the Awana Nature Reserve and officials of the French Guianese ministry of environmental issues. This symposium was very successful.

Contact with the Guyanese representatives was somewhat more difficult. Both in 1997 and 1998 officials reacted distantly. The research areas are very remote and difficult to get to. Contacting the Guyanese researchers was also very difficult. Unfortunately we were not able to persuade representatives to attend the symposia.

Nowadays, Mr. Romeo de Freitas is doing most of the work on the Guyanese beaches and in 1998 received a Conservation International Award for his work. It is our goal to involve him in the international collaboration in the Guayana Shield region.

#### **Actual status**

At the end of 1998, WWF, which is responsible for funding the Guayana Shield conservation program, initiated a number of meetings in Europe between the French WWF/Kawana-team and Biotopic. This was the first step towards the creation of a regional conservation program for the Guayana Shield. The goal of these meetings was to coordinate the future programs of both teams.

A regional conservation program for the Guayana Shield will be prepared, taking into account the roles of each counterpart in each country. During the next few months, a proposal will be submitted to several international organizations like WWF, IUCN, WIDECAS and STINASU. A free copy can be obtained at the French WWF office.

The main priority was given to the leatherback turtle with a second priority given to the olive ridley turtle. For the leatherback turtle we decided to focus on research and conservation at the population level. Identification and quantification of the threats are needed. Science was put forward as a conservation tool for sea turtle protection to fill the lacks in knowledge we need for an optimal conservation program. To save the world's largest population of

leatherback turtles we agreed on the following aspects to execute in Suriname and French Guiana:

- The use of coastal flights to determine the most important beaches for conservation activities.
- The use of PIT tags for population monitoring and to have a better view on beach fidelity. Johan Chevalier and Marc Girondot have a poster on this issue at this symposium (see Poster section: Population Status and Studies: South America)
- The use of ARGOS satellite tracking to better understand inter- and intra-seasonal movements.
- The use of DNA research to better define the population. Willem Hoekert of Biotopic has already done a pilot study on this issue.

We suspect that the mass scale of egg poaching is the largest threat for the survival of the olive ridley turtle in the Guayana Shield region. In Suriname this is one of the primary threats to the leatherback turtle as well. To deal with this problem attendance and control on the beaches is necessary. These activities should be done by the local authorities.

We hope that eventually the Venezuelan, Guyanese and Brazilian teams will join this initiative. We consider this annual symposium as a very useful platform to make the first contacts for international collaboration for sea turtle conservation in the Guayana Shield region.

#### **Conclusion**

It takes a lot of effort to combine all conservation activities into a regional program for optimal conservation of sea turtles. Next to a solid scientific background, visits for networking as a start for a fruitful contact, regional meetings and an exchange of information in good confidence instead of concurrence are needed to accomplish a cooperative conservation program. Initiative steps can be taken by institutes sponsoring different conservation groups in neighboring areas, but also by these groups themselves. For an ideal concept for conservation of sea turtles in a specific region, international collaboration is certainly needed. We are confident that sea turtles will benefit from this way of regional collaboration.

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