

## 4<sup>a</sup> Reunión Anual del Monitoreo del Grupo Tortuguero 4th Annual Monitoring Meeting of the Grupo Tortuguero

### Community Presentations

#### *Guerrero Negro*

*Hector Toledo and Gabriel Zaragoza from Vizcaino's Biosphere Reserve, and Ramiro Zaragoza from the Salt Exporting Company- Exportadora de Sal*

In-water monitoring of sea turtle species in this area. Last year the Reserve worked to complete all requirements in order to obtain permits to work with sea turtles starting mid-2004. Once the permits were granted, they re-initiated monitoring activities in July 2004. The report presented corresponds to 10 months of work.

240 hours of work

17 black sea turtles (*Chelonia mydas agassizii*) and loggerhead sea turtles (*Caretta caretta*) though in lower numbers (only 2 organisms).

There were only two recaptures; one turtle caught in July 2005, and the other in 2003. In all of the time they have been working, only 10 recaptures have been reported.

They also report on a halibut net where six turtles were entangled. Of these six animals, only five survived. Morphometric data of all specimens was taken. At the moment, processes for the new permits are being carried out and the groups of Punta Abreojos, Mulegé, Vizcaino, and Ojo de Liebre will be included.

#### *Punta Abreojos,*

#### *Miguel Valenzuela*

Miguel presented results of the last six months in Estero el Coyote. The estuary is 16 km in length and is a good place for turtles since fishing is under the control of the Fishing cooperative. The recovery of all fisheries is clearly marked.

The required measures are taken, organisms are tagged and weighed. The distance between the net and their turtle camp is approximately 1 km. They assist the staff from CIBNOR in the taking of blood samples from sea turtles.

There was no monitoring in February; there were two monitoring sessions in March and none in April. Working hours are few but are well planned. The net is checked three to five times depending on the currents and the tide.

In these sessions they have captured 70 turtles and 24 of them have been recaptures. During this time, they recaptured a turtle tagged in 2001, the year they started the monitoring in Punta Abreojos.

Their current problem is their obligations to the cooperative; it takes away most of their time due to the different fisheries they work with. Monitoring sessions cannot be a complete 24 hours all the time, but each has been at least 8 hours. It is recommended to divide the monitoring session into two days, with 12 hours of work on each. The first workday would be done by day, the second by night.

It is also suggested to measure and weight all recaptured turtles regardless of the time passed between capture. The possibility of sending a student to work in Punta Abreojos and help with the fieldwork is being analyzed.

#### *Mulegé*

#### *Andres Higuera*

They have carried out some surveys in Bahía Concepción and have picked up 5 turtle nets (from poachers), and have found 12 turtle carapaces. They are willing to work but do not have the necessary resources (permits).

### ***López Mateos***

#### ***Victor de la Toba***

San Lázaro beach, where their mortality monitoring is carried out, is 45 km long. Their goal is to identify, record, measure, weigh, and take samples of dead turtles found on the beach. In the time they have been working, it can be observed that the season of highest mortality occurs from May to September coinciding with the fishing season and the use of nets. The rest of the year, mortality diminishes significantly.

The presented data are from 2003 to date:

In the first year, 440 dead turtles were found, 275 in 2004, and 191 in the current year. Most of the dead turtles have been loggerheads, though there have been olive ridleys and blacks too.

Victor explains that the decrease of captures in the last years is due to the opening of the clam fisheries which implies reduction in the use of nets; however it can also be the result of lower number of turtles. What is perfectly clear is the change of attitude of fishermen; they are now more cautious and avoid the capture of turtles. They are now fishing close to the shore to avoid the capture of these organisms.

The team out of Lopez Mateos is conducting other studies to solve the problem of the abundance of turtles in this area. At the moment they are performing an experimental study with modified nets to reduce the capture of sea turtles.

### ***Bahía Magdalena***

#### ***Julio Solís***

They work in Estero Banderitas, an estuary of 300 m in length. Rafa, Poncho and Jorge are the other members of the team. They had a total of 292 hours and a total of 30 turtles were captured, 17 of which were recaptures.

Volker Koch makes the observation that according to their data, captures of sea turtles have been decreasing. Julio responds that the fishermen are not capturing turtles and he is not sure why the decrease. The species they have captured have been mainly blacks but they have recorded hawksbills.

### ***San Cristóbal***

#### ***Elizabeth Gonzalez, ASUPMATOMA, in collaboration with UABCS and Laura Sarti, Semarnat***

The research at San Cristobal focuses on leatherbacks, and primarily focuses on their incubator project and nesting temperature, which is determinant for this species since the emergence time and sexual determination depend on that. This work is being carried out in Agua Blanca in Todos Santos, the northernmost limit for the nesting of this species.

Surveys are made of the 36 km of beach, which is an important place for the nesting of leatherbacks. However, there is no emergence of hatchlings due apparently to the low temperatures. Since 2001 ASUPMATOMA has been working on methods to achieve hatching. They start the studies with an incubation chamber heated with gas and though some hatches have occurred, the "quality" of hatchlings is unknown. For this reason, the project will evaluate new incubation techniques en situ.

Surveys to find turtles start in November and finish in March, from 9 pm and until 6 am every day. The females are measured, tagged, and photographed. Nests are collected and taken to the incubation chamber where they are kept between 30 and 31°C. Just recently a green house was built on the beach.

Furthermore, humidity and temperature of the beach, the green house, and the incubation chamber are measured. After emergence, hatchlings are measured and weighed before release. Blood samples will be taken to observe the maturation of blood cells. Dead hatchlings are preserved in 70% ethyl alcohol for histological analyses of the gonads.

In 2000-2001, 16 females were observed, 2002-2003 two were observed, 2003-2004 six were observed, and only one female was observed in 2004-2005. A drastic decrease in the number of nesting females is observed.

The hatching rate in the incubation chamber is very low, about 40%. This year it decreased to 30%. Until now, 445 hatchlings have been released but the proportion of sexes is unknown.

### ***Pescadero***

#### ***Paty Baum, Grupo Ecológico y Tortuguero de Pescadero***

Due to lack of resources, Pescadero is not carrying out in-water monitoring. They are making beach surveys in three beaches: San Pedrito, Los Cerritos, and Elias Calles, embracing a total of 27 km surveyed. From June and until November they work with olive ridley turtles; and from November to March, they work with leatherbacks. They are already working with the olive ridley nesting season that started the July 29<sup>th</sup>, and there are some nests in the hatchery.

The release of sea turtle hatchlings is a good education program; it is focused on the children who then take the message back home. Since the program started, the consumption of eggs has diminished (it is believed). Two sea turtle festivals have been organized to call the attention of the community and achieve their participation in this campaign.

There is a strong environmental education program in Pescadero. All schools are visited, from kindergarten to junior high. They are creating conscience about the garbage problem and the protection of sea turtles.

### **Presentation of New Monitoring Sites**

We welcome three new monitoring sites: Agua Verde, El Pardito, and Sinaloa.

Federico Sabín is the field coordinator in Camp Agua Verde, he and his family will be in charge of the zone south of Loreto. Most of the people are fishermen working in the red snapper fisheries; poachers coming from other places, like Loreto, are the main threat to sea turtles. It is a big problem they are trying to solve, and are in the best position to do so. They have four years experience watching the coasts as watchmen assistants for PROFEPA and have dedicated themselves to stopping harpooners that operate more than 80 km off coast.

Felipe and Miriam Cuevas are from a small island called El Pardito off of La Paz. Around 20 people live there. They will work with Aaron Esliman to start the monitoring next month.

Alan Zavala is from CIIDIR Guasave, Sinaloa, a Research center recently created and focused on regional development. Sinaloa is principally a fishing state and Guasave, the area where they are located, is a lagoon system important for the nursery and growth of many organisms, mainly commercially important fish. A large number of shrimp farms can also be found in this area.

Their lagoon system is composed of mangroves and the Navachiste Sierra, and little is known about the areas. This is one of the main reasons why they want to join the Grupo Tortuguero. Among the issues they want to address is the capture of sea turtles, as well as to preserve the areas used by marine and aquatic birds for reproduction and resting.

The lagoon complex is formed by a great number of islands on which they have found olive ridley carapaces, a sign of illegal consumption of these organisms. Through interviews with fishermen, they have learned of dead turtles on the beach, and of turtles being sacrificed. They have taken pictures of these animals and then buried them for later identification. They are considering the possibility of constructing a hatchery for the protection of nests. They also want to start monitoring the feeding areas with a group of fishermen of the area.

### **Other Project Presentations**

#### ***ProCaguama***

#### ***Johath Laudino, Hoyt Peckham and David Maldonado***

In the talk yesterday, sea turtle mortality in López Mateos was discussed. Most of the turtles found have been loggerheads, which only nest on the coasts of Japan and come to Baja California to feed. Most alarming is that most

of the turtles found dead are juveniles and in the coasts of Japan the number of nesting females has decreased and continues dropping. This is why there is concern with this situation and the reason the ProCAGUAMA project was initiated.

At the moment, the group is trying to solve the problems related to sea turtle mortality. They are working directly with fishermen of the region who have recognized there is a strong interaction between the fisheries with set gill nets (halibut fishery) and sea turtles, and that it is necessary to try to avoid sea turtle mortality with these techniques.

The team has searched for alternatives to reduce the bycatch of sea turtles in fishing nets and also for new alternatives for the use of marine resources. Last year, they conducted several workshops with fishermen from López Mateos and Magdalena Bay, and from these they came up with the agreement of using a modified fishing net (reducing the size of the net and its height); never without considering the interest of fishermen that depend on this activity. In this way they try to keep the yield of the net so not to affect the fishermen's economy.

In the experiments with this new net, no changes in the yield have been observed, but it was found that the incidental capture of sea turtles is being affected by the zone where fishing takes place. Capture increases when fishing takes place far from the coast and decreases when fishing closer to shore.

Another important result has been the participation of fishermen who now understand the importance of their cooperation to achieve the conservation of these organisms, and that they can help recover the sea turtle populations if they reduce incidental capture. Friendly fisheries can become more expensive for the fishermen; therefore it is necessary to look for alternatives to give a greater value to the capture, and avoid affecting the income of those concerned in conserving the resources.

### ***Mortality Monitoring***

***Volker Koch and Agnese Mancini, UABCS***

This project is concerned with the monitoring of sea turtle mortality in several localities in BCS. Agnese Mancini will be working on her doctoral thesis with the data obtained. The goals of this project are to estimate the mortality distribution of sea turtles and to evaluate the relationship between artisanal fisheries and sea turtle mortality, among other things.

The study area includes 15 index sites. Search of carapaces will be conducted in garbage dumpsites and beaches. Each carapace will be geographically referenced (GPS), measured, and the identification of the species will be done. Additionally, interviews with local people will be done to analyze the cultural and economic importance of sea turtles, and the attitude of the people towards the conservation of these organisms.

This is the continuation of research started in San Carlos with the School for Field Studies – Center for Coastal Studies, that later extended to López Mateos with the collaboration of Víctor and Vladimir de La Toba, and Hoyt Peckham (2001). They will be involving the other monitoring sites for the collection of samples. All the equipment required for the sampling will be provided.

### ***Magdalena Baykeeper***

***Julio Solis, Armida Romero, Carmen Perez***

Presentation of the new group constituted by young locals interested in the protection of the Magdalena Bay area. The organization was recently created, and they have thus far established staff and an office, and are monitoring the bay to evaluate the quality of the water.

### ***Health Monitoring***

***Melania López, CIBNOR, in collaboration with Susan Gardner***

The project is carried out in coordination with the monitoring teams of the Grupo Tortuguero to collect blood, skin, and carapace samples. We are analyzing the presence of vitelogenin, heavy metals, organochlorines, etc. They would like to extend their research to other sites of the Peninsula working with other monitoring teams.

The goals of this project, coordinated by Susan Gardner of CIBNOR in collaboration with a number of other scientists, are to evaluate the health of the sea turtle populations in the waters surrounding the Baja California peninsula, and specifically to understand and evaluate the anthropogenic effects, such as pollution, on these sea turtle populations and establish bases and parameters in order to determine infected populations. The project is carried out in coordination with the monitoring teams of the Grupo Tortuguero in Bahía Magdalena and Punta Abreojos to obtain skin, blood and shell samples. These samples are tested for the presence of heavy metals, organochlorines, vitelogenin, etc.

It is necessary to extend this study to other sites on the peninsula in order to understand better the health of sea turtle populations and project coordinators are looking to collaborate with the other monitoring teams within the Grupo Tortuguero.

### **Monitoring Advances**

#### ***Antonio Mariscal***

The results of the monitoring analysis from its beginnings in 2001 until now 2005 were presented. It was mentioned that this work would not have been possible without the collaboration of the monitoring groups, the coordination of Pro Peninsula, J Nichols, and Volker Koch.

#### Criteria

The method to obtain the capture per unit effort is defined, as well as the importance of this estimation for the calculus of the relative abundance. The CPUE of each site is compared. The annual growth of the organism is obtained from the morphometric data of the capture.

#### Captures per season.

Comparing the results of the different groups, it can be observed that most of the animals are captured in the warm season except in Magdalena Bay, where most of the capture is obtained during the cold season.

#### Size structure

Punta Abreojos presented organisms between 45 and 60 cm of SCL (straight carapace length), San Ignacio mostly between 40 a 55 cm. Ojo de Liebre lagoon has various sizes.

#### Growth

The morphometric data are grouped in size intervals based on the recapture data. Punta Abreojos shows the highest growth.

#### Average annual growth

Punta Abreojos and San Ignacio Lagoon have an average annual growth of 2.5 cm, Ojo de Liebre lagoon 1.7 cm per year, Bahía Magdalena 1.2 cm per year.

#### Capture per unit effort (CPUE)

The tendency of the capture is analyzed. Punta Abreojos, Ojo de Liebre, and San Ignacio Lagoon have a positive tendency, which could be indicating an increase of organisms. Magdalena Bay has a negative tendency.

### **Creation of the Coordinating Committee of the Grupo Tortuguero**

The idea behind the creation of this committee is to further integrate the members of the Grupo Tortuguero into the decision-making processes of the group. The community members, organizations, students and scientists are the heart of the Grupo Tortuguero, and they should have decision-making powers within the group. The Committee will work to solve problems/issues of the group such as the organization of the annual meetings, the granting of the Orantes Award, and other aspects related to the group.

Elected members will hold their post for two years, and a representative of each region will be elected. Due to the large area that the group embraces, a regional coordinator is proposed. The establishment of the rights and

obligations of the coordinators will be performed, such as coordination within their region, representation of their region, etc.

There is one representative for each municipality, as well as and one representative for each state, in the case of Sinaloa and Sonora.

- Héctor Toledo designated coordinator of Mulegé (Laguna San Ignacio, Ojo de Liebre, and Punta Abreojos).
- Victor de La Toba designated coordinator of Comondú (Lopez Mateos, Bahia Magdalena, San Carlos)
- Aaron Esliman designated coordinator of La Paz (Agua Verde, El Pardito, and Todos Santo)
- Elizabeth Gonzalez designated coordinator of Los Cabos (Cabo Pulmo, San José, Cabo San Lucas, Pescadero).
- Alan Zavala designated coordinator of Sinaloa.

### **Roundtable Discussion**

J Nichols:

Each year we can see the advances in the turtle projects, as well as the beginning of new ones. Communities have been monitoring feeding areas for four year, however there are other groups- like ASUPMATOMA- that have been working for a longer time monitoring nesting beaches. As always, the door is open for all students willing to participate with us.

Volker Koch:

We are gathering the data of the monitoring groups to start with the analyses. It is important to give this information to Antonio, who is in charge of the compilation and analysis.

Miguel Valenzuela:

Asks about the necessary data for Antonio's study and if it is possible to elaborate an easier way to take the data.

Volker Koch and Antonio Mariscal:

It is necessary to measure the straight carapace length and width, the body depth, and the weight of the turtle. A picture of the animal is required to observe the coloration pattern of the carapace. In order to do that, the animal must get drenched to eliminate the sand and the dryness that affect the color of the carapace. It is also important to write down any strange or unusual thing observed on the animal.

J Nichols:

It is recommended to take as much data as possible at least once, especially with the measurements of the organism. This is useful to know the turtles better. And talking about the monitoring methods, it is good to know the time of effort of the monitoring is been registered in a proper manner.

Volker Koch:

To estimate the catch per unit effort, it is not necessary to work 24 hours with the net. The important thing is to record the exact time the net works.

Aaron Esliman:

Is it possible to get the permits as a group? He also suggests organizing a workshop to standardize all methods used in the monitoring. This way the results won't be affected when joining them with the information of the other groups.

Antonio Mariscal:

It is understandable that each site has its particularities, and therefore it is necessary to record with veracity the time spent monitoring. It is also important to mention the number of nets used per site and their length, so the estimations of the catch per unit effort are comparable. He also suggests a workshop to standardize the methods.

J Nichols:

It is better if each team adopts its own monitoring method and stick to it all the time, instead of imposing a single method that might not work properly in all groups due to the characteristics of their working site.

The poaching problem still exists, in Volker's project the monitoring of mortality will go on. He asks the people of Mulegé how are they fighting against poaching. They answered that they have been picking up turtle nets, and so far they have collected five nets. Aaron asks if they have done this with some of the authorities. The answer is no, they have been doing this without authorization, risking a potential legal problem.

In the case of fishermen working with hooks, sometimes they capture turtles incidentally, they ask if there is a way of taking out the hook since in those cases fishermen prefer to kill the turtle and eat it because they can't take out the hook. J and Hoyt tell them there are special devices to take the hook out and by doing that, help the turtle. It is possible to organize a workshop to learn how to use this tool.

Alan Zavala (Guasave, Sinaloa):

They are just starting activities; they started one and a half months ago, and they are working in the monitoring of nesting beaches on the islands of Sinaloa. They find mostly olive ridleys, loggerheads and blacks. According to the people, poaching is directed to black turtles since they generate a better income.

The research center is new and therefore they lack resources, however this line of work is open due to the existing problem of sea turtle poaching. Captures of leatherbacks and hawksbills have been reported inside the lagoon. They already have a master's student for the research work. They need the assistance of the GT to learn the techniques and cooperate with the GT by sharing experiences.

J Nichols:

One of the subjects last year was the inclusion of Sinaloa and now they are finally here with us. He hopes that next year they will come with their first results.

He talks about the new project being carried out by Stephen Delgado as his Doctorate project and in collaboration between the GT and the Health Department in BCS. It is an informative campaign about the health of sea turtles and how it can affect their consumers.

Alan Zavala:

He asks how the situation in Baja is- one problem in Guasave is the poaching by government authorities; they are encouraging the consumption of sea turtles. It is a cultural problem, people do not understand the need for conservation. It is worrying and sad to see that they do not have the power to change the attitude of the people towards the consumption of sea turtles. While the capture of sea turtles is done one in a certain time of the year, where there is no other activity to do, the level of captures is high.

Volker Koch:

Responds that the situation in Baja is bad; however it is improving little by little. The trick is to be patient and work with the communities to keep improving.

Kama Dean, Rodrigo Rangel:

Talk about the desire to create a coordinating committee for the GT. Pro Peninsula is in charge of the administration of the GT, however all of those in the room ARE the Grupo Tortuguero, they make it what it is, and we want to involve them more. This is why we propose the creation of a coordinator committee of the GT that will be constituted by a representative of each of the communities involved.

J Nichols:

One point of discussion for this new committee will be the possibility of being the hosts of the International Sea turtle Symposium of the year 2008.

## Participants

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