



## Final Report

“The swanka turtle, mangroves and swamps, an environmental education program in San Andrés Island”

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## I. INTRODUCTION

The following pages summarize in a brief manner the final report of the project “The swanka turtle, mangroves and swamps, an environmental education program in San Andrés Island”. The work was carried out between the months of September of 2003 and April of 2004 and involved different schools in the island, mainly one rural school located to the south, surrounded by mangrove forests, and in which students are native islanders in their majority. Other activities were carried out in the island in different institutions such as the SENA and the Universidad Nacional de Colombia. A divulging campaign was also conducted during the entire project, directed to the general community, through radio, T.V., speeches and other tools such as T-shirts and posters that allowed people to get to know the species, its habitats and the threats it faces in the island.

The work was very successful and involved more than a thousand people including students, teachers and people from different places of the island. A long lasting process was started with an environmental group that was officially formed in one of the schools and at the end, the children and the community in the island got to know the turtle, its importance, its habitats, and started to change some attitudes for the benefit of its conservation.

## II. ORIGINAL OBJECTIVES

This project was conceived from the beginning as an environmental education program for the conservation of mangroves and the “swanka” turtle (*Kinosternon scorpiodes albogulare*) in San Andrés Island, Colombia, directed to islanders, but especially to kids in public schools. The idea was to use environmental education in order to generate an interest for this threatened species and a sensibility for natural resources, as well as an awareness of the importance of their preservation.

The main objectives were to design, in cooperation with local teachers, different activities and didactic materials in order to show kids the species, its biological characteristics, its habitats and its importance. Some of the activities planned were visits to the mangroves and ponds, and games showing the threats to the species. Children were pretended to be the principal participants of the project.

The other main objective was to show the species to the general community by different informative and educational tools such as posters, t-shirts and brochures giving some

facts about the species and its conservation in the island. Through all of these ways we expected to start to change people's attitudes towards the environment and reduce in the present and in the future some of the problems involving the turtle and its habitats.

### III. METHODS AND RESULTS

We can definitely state that the main objectives were reached successfully and that we were able to even go farther and obtain several results that were not expected at the beginning of the project such as the creation of a well defined, organized environmental group. We summarize in the following lines the methods used to reach the goals proposed and the results obtained in their achievement. As the project used two strategies, the educational and the informational, each of them had specific methods, however, they were related to each other throughout the entire work and there was a continuous feedback between them.

#### A. Environmental Education

The first strategy was environmental education, for this we worked with 40 children from the San Francisco Javier School. We carried out a complete work scheme beginning with an evaluation of their perceptions about their natural environment and knowledge of the mangrove forests, the turtle, and other ecosystems. We then conducted different classes, workshops, and field work with the objective of constructing some knowledge about these topics. Throughout the whole process three essential aspects were worked with the children, learning to know, learning to do and learning to be.

##### *Learning to know*

This aspect is based on the construction of knowledge that allows the understanding of the environment and its problems. This knowledge helps children to identify the causes of these problems and their possible solutions, all of this through reflection and a critical and autonomous way of thinking. Children learned many things about the turtle like its characteristics, its importance, the threats it faces in the island, and the way they could help for its conservation. They were also able to acquire basic knowledge on some ecological and biological concepts that helped them understand the relation between man and nature and thus the environmental problems.

The first thing we did was to evaluate how children conceived their natural and social surrounding (Figures 1 and 2). We could recognize by looking at their drawings that the mangroves and the turtle were not present, even though most of the kids live near or next to this place where the turtle lives. When they were asked to draw nature and animals these two elements almost never appeared. According to these results the work was then directed to the appropriation of these resources.



Figure 1. Drawing by Shema Brandt. This girl lives next to the mangroves.



Figure 2. Drawing by Carl Escamilla. He lives at the edge of the Mangroves

In order to start constructing knowledge about the mangrove and the turtle we first compiled the pre-conceptions that children had about the functioning, composition, fauna and flora of the mangrove and the importance, characteristics and ecology of the turtle. Evaluating these pre-conceptions is very important, according to the constructivism the elaboration of knowledge is not done through a direct transferring of information but through a reordering of what a student already knows, as he already has many ideas of everything that surrounds him<sup>1</sup>. This construction of new knowledge has to be done by confronting pre-conceptions with new ideas and with direct experience so that the student can find new and better answers for many questions<sup>2</sup>.

We found that children had certain knowledge about the mangrove but many of these pre-conceptions were mistaken or badly understood. They didn't know the characteristics of the different mangrove trees, they believed some animals such as crocodiles and giraffes inhabited the mangrove and they couldn't tell the importance of this ecosystem. The same happened with the turtle, many of them didn't even know the species, some believed it was a marine turtle and none of them knew its importance for the island.

Based on this information that children had we helped them construct knowledge through arguing and comparison with reality. We carried out classes and different activities such as games and visits to the mangroves and swamps so that they could discover by their own the real facts of life in the mangrove and the turtle.

At the end we conducted a survey in order to see the appropriation of new ideas by the students. We could see that the children learned what a mangrove forest is, its importance (they first saw as a dirty and undesirable place) and the concept of an ecosystem. They also learned what the swanka turtle is, its importance and its characteristics (See results survey in Annex I). Most important they created their own vision and perception of the species (Figure 3 and 4).

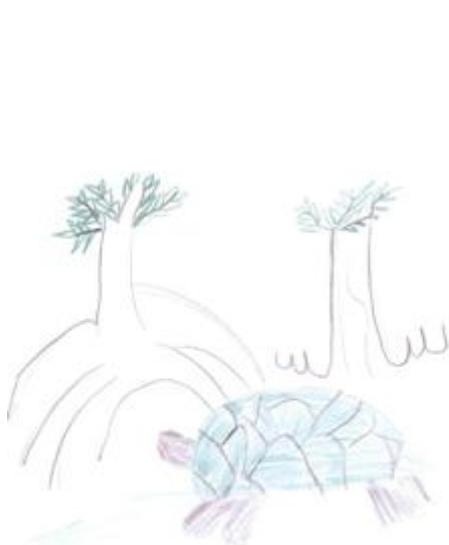


Figure 3. Drawing by Orly Livingston.

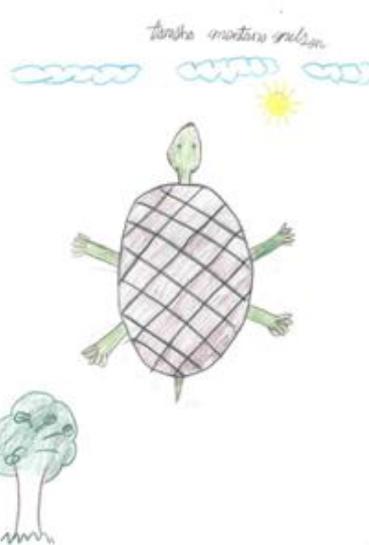


Figure 4. Drawing by Tanisha Montaño

This survey was not the only way to confirm that children had learned. We could see during the radio and T.V sessions in which they participated that they had really incorporated the new information and ideas and that they were able to speak with property about the turtle and the mangroves to other islanders, children or adults.

### *Learning to do*

We promoted the abilities that allow children to identify and resolve environmental problems as well as other skills such as writing, reading, painting and oral expression which were used in the informative campaign.

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1 GIORDAN, A. 1998 [1996]. "La corriente didáctica", in: La pedagogía hoy. Edited by G. Avanzini, pp. 189 – 211. México D.F.: Fondo de Cultura Económica.  
2 Ibid.

The most important achievement in this aspect was participation; children learned that they could do many things for the divulgation and conservation of the species. The most long lasting initiative was to create an environmental group. This group was called “Guardianes del Manglar” which means guards of the mangrove. It is composed of 40 children from the San Francisco Javier School with ages between nine and eleven years. The badge of the group is the swanka turtle and the red mangrove; this symbol can be seen in the cup that identifies the members of the group (Figure 5 and 6).



Figure 5. The badge of the group “Guardianes del Manglar”



Figure 6. Some of the guards of the mangrove.

With the group already formed we carried out many different activities. We first conducted, during the learning process, exercises such as drawing, painting, games of word relations, puzzles, word searches and short plays. They built a scale model of a mangrove made up of garbage that they collected from one of the most contaminated mangroves near the school. This scale model showed the different kinds of mangroves and the fauna of this ecosystem (Figure 7). It was presented in a cultural and environmental event coordinated by CORALINA, the corporation in charge of the Biosphere Reserve.



Figure 7. The scale model of a mangrove.

The group painted a mangrove in one of the walls of the school. Most of the children participated in the painting that shows the types of mangrove trees and some of the animals that live there with their common names (Figure 8 and 9).



Figure 8. Making the wall painting.

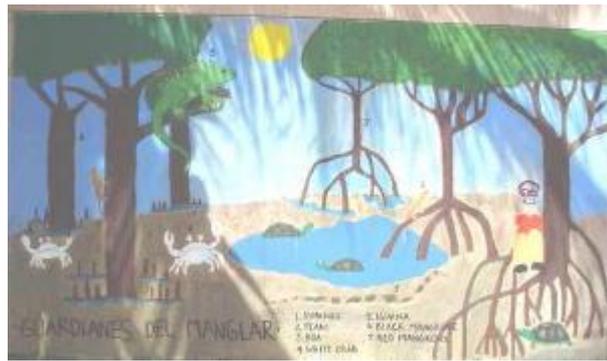


Figure 9. The mural finished.

Some of the mangroves and swamps were visited with the “Guardianes del Manglar”. During these visits children had to do detailed observations and descriptions of the elements and interactions they observed, especially concerning the swanka turtle. They were able to observe the species in its natural environment, to touch it, to smell it and to create their own perception according to their senses and feelings (Figure 10 and 11).



Figure 10. Children in the mangrove of Smith Channel

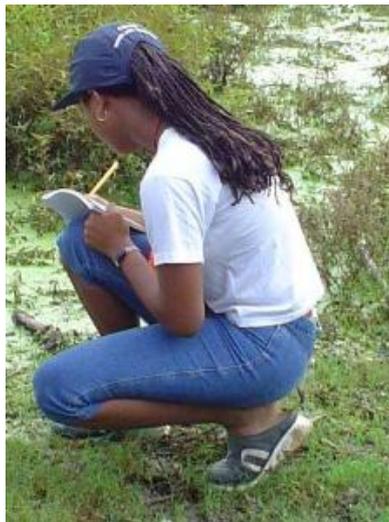


Figure 11. Children had to do detailed observations and descriptions of the elements and interactions they observed.

During the whole project the group supported and participated in the divulging activities in the radio, T.V. and in the visits that were done to other schools where they could teach other children from the island about the turtle and its conservation.

Finally the group prepared and presented a play called “The swanka turtle and its friends from the mangrove”. This play showed the swanka and the animals living in the mangrove as friends and neighbours from the island that live in harmony and need to be preserved. It also showed some of the threats that the swanka faces in the island and how children could help to its conservation (Figure 12 and 13). It was a great

achievement because children had to rehearse, to learn their dialogues, and to face the public. They did all of this with great commitment and responsibility.



Figure 12. The iguana and the boa snake two of the Swanka's friends.



Figure 13. The last scene.

### *Learning to be*

This aimed to the construction and changing of attitudes so that the children would modify some behaviour towards their environment. For this it is needed to create values such as responsibility and respect for other students, teachers, and nature. This aspect was worked throughout the whole process through the example given by the teachers, by talking with the children about their bad behaviours and carrying out workshops specially directed to the learning of human values.

At the end we noticed changes in the attitudes of children in some situations and in their behaviours as we all worked together and discussed about the importance of some values. We could also notice some important improvements in the cooperation, solidarity and responsibility. Some kids that at the beginning were not enthusiastic about working in pairs or in group at the end started to feel part of a group and got involved in shared activities, helping and supporting their partners. At the end most of them were interested in participating in activities for the conservation of the turtle and the mangroves.

All of these changes in attitudes were also reflected in their relation with the environment and the turtle. We could see that they were starting to feel some respect for the mangrove and to see the turtle as an important character of the island and the neighbourhood.



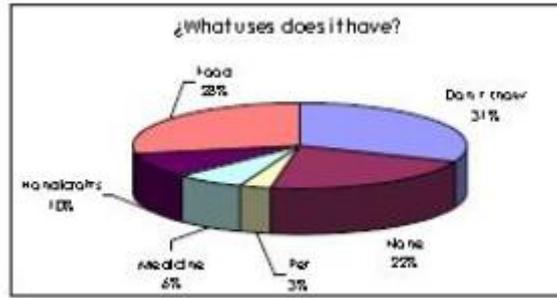


Figure 16

People identified as threats for the turtle human impact (11%), habitat destruction (10%), contamination (8%), hunting (4%) and others. However 43% was sure that there were no threats for the species in the island (Figure 17).

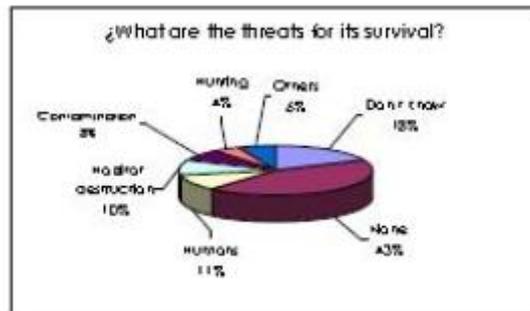


Figure 17

According to the results of this survey we could plan and direct the informative campaign trying to show and teach people what they didn't know about the species.

In order to show people the species, its habitats and importance for the island we started a campaign through television, radio, conferences and workshops in schools and other institutions. We also conducted field work with the purpose of generating some sensibility through the observation and direct contact with the turtle and the mangroves (Annex III).

A very important part of this phase was the visits to the schools. During these visits we first asked the children to draw three wild animals from the island. With this we wanted to identify the most common and closest animals for them. We then showed a live turtle to the children so that they could touch it, smell it and through their own senses generate and construct some knowledge. Finally we discussed about the importance of the species and its conservation.

The project had a widespread diffusion in the island, 10 schools were visited and we worked with 340 children with ages between 9 and 12 years (Annex IV). The schools always permitted the workshops and were very pleased with the work. The presence of a live turtle was very important and helpful for the workshops, the children were surprised and curious, many of them didn't even know the turtle and it was the first time they had any contact with it (Figure 18).



Figure 18. The presence of a live turtle was very important for the workshops.

We found during the workshops in schools that children are most familiar with domestic animals and that the turtle almost didn't appear in any of the drawings (Figure 19 and 20). However at the end of each workshop children found many interesting things about the species and made drawings, stories and songs about it (Figure 21 and 22).



Figure 19. In this drawing we can see animals like the horse, the sheep and the hen.

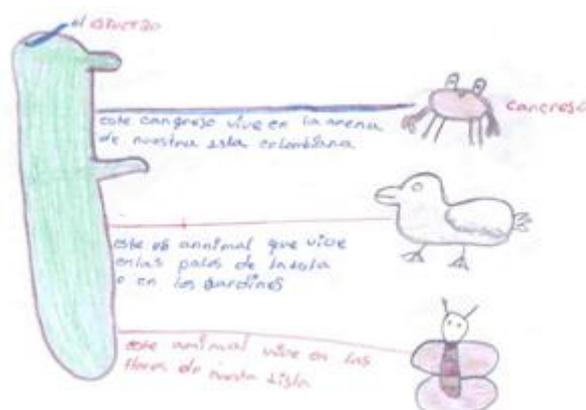


Figure 20. In this drawing we can see a crab, a bird and a butterfly.



Figure 21. Children showing their painting.

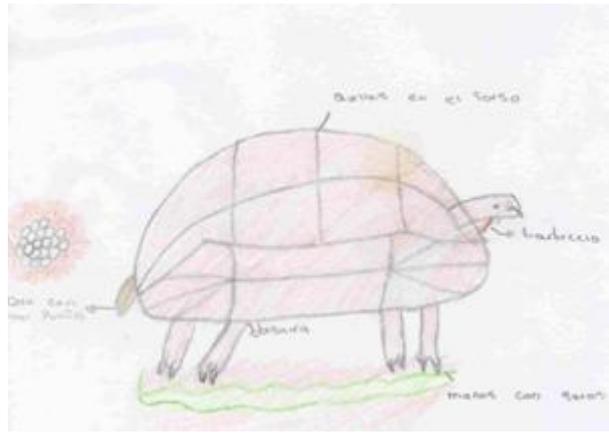


Figure 22. Drawing by Darwin Arellano, Jorge Armando Blaquicet, Elkin Mendoza, Julio César Cerrato of the Brooks Hill School

We also visited three radio stations and appeared in four programs (Annex III). In one of the stations informative messages about the turtle were transmitted daily with commercials. During the visits to the radio stations we discussed with the environmental group “Guards of the mangrove” about the turtle, its habitats and its importance for the island (Figure 23 and 24).

Television also made part of the campaign. The project appeared three times in a local channel, T.V. Islas, in a news program transmitted every Sunday night and that is seen by many islanders. The channel also transmitted informative messages between commercial announcements.



Figure 23. Andylee Lever (11 years) spoke about the importance of the swanka in the island during the visit to the radio station “RCN”.



Figure 24. Princeton Hudgson (11 years) in the radio program “Econéctate” of the radio station “Radio Leda”.

Finally we created and presented the short play with the children from the environmental group. It was presented in the Universidad Nacional de Colombia with the assistance of fathers, school directives and teachers, teachers and directives from the U. Nacional and public from the island.

Other tools were used to contribute with the informative campaign in the island. A poster about the species was designed in cooperation with the San Andrés Botanical Garden. This poster will be distributed to the different institutions, schools and to people in the island. We also designed T-shirts showing the species and some information about it that are currently being distributed.

The different strategies used for the informative campaign were effective as people in the island became interested in this turtle that many of them didn't know. People learned many things about the turtle and became involved with the project as the turtle started to appear in the radio, T.V. and news. The turtle appeared all around the island. Most of the people could realize the importance of this species and became more compromised with its conservation and the conservation of mangroves.

#### IV. CHALLENGES AND SOLUTIONS

The main challenges faced during the work in the island were, first, the difficulty in getting teachers from schools really involved in the project. As we had the support and the approval of the school director for working with the kids, teachers were pleased with us teaching the children new things and carrying out different activities but they didn't want to participate in the preparation of these activities and classes. This appeared as a big challenge because it was only through the involvement and participation of teachers that the environmental group "Guards of the Mangrove" could survive and have a long lasting impact.

However, as we started to work with the children and the teachers saw their motivation and increased participation they started to get more and more involved. We then asked them to help us in the elaboration of the speeches and activities and in this way they started to feel that the environmental group really belonged to the school and that they were its leaders. They went to the different visits made to the mangroves and swamps and participated actively in the elaboration, rehearsal and presentation of the play.

Another challenge that appeared at the beginning was a lack of interest in the kids themselves to participate and make part of an environmental group, because this implied some degree of responsibility, commitment and sacrifice as they sometimes had to use their free time to go to the radio or T.V. Nevertheless not all of them were not interested and it was a challenge to motivate all of them. For this we planned all sorts of activities that could be fun for each of them, in some activities they had to think, draw or paint,

while in others they had to run, shout, act, etc. this way exploiting their different abilities. Finally kids were very motivated and felt part of the group, at this point they were very enthusiastic about going to other schools and teach other kids facts about the turtle, going to the radio in order to speak about the species and tell other islanders how to preserve it. At the end children learned a lot of things about the turtle and participated actively in the campaign directed to the rest of the community.

One big challenge for the conservation of the species was to really start changing the way people see their natural resources. It was very hard to stop people throwing trash to the mangroves and contaminate the turtle's habitat. However we faced this challenge by working with children, showing them how the mangrove and the turtle was part of their home, generating new feelings towards these resources. Children were in charge of spreading this feelings and new attitudes to the rest of the community. It is very important to say that this is a long process and that should be continued in order to really change behaviours and attitudes. This is the beginning of a process that requires permanent work with the children and the community and should be continued by teachers and local institutions in charge of the Biosphere Reserve.

## V. THE FUTURE

The long lasting impact of the project is basically the environmental group. This group will be maintained by teachers and directives of the schools as it became a PRAE (Proyecto Ambiental Escolar). A PRAE is an environmental project that every school must carry out because it is stated by the law. This type of projects is included in the educational project of each school and should be done every year. The group won' t have the same members every year but new students will start making part of the group as they get to 4th and 5<sup>th</sup> grade.

The group will be in charge of continuing with the divulging campaign of the species through future visits to the radio and T.V. and by presenting the play in other institutions in the island.

The Universidad Nacional will continue making posters and giving them out to the community.

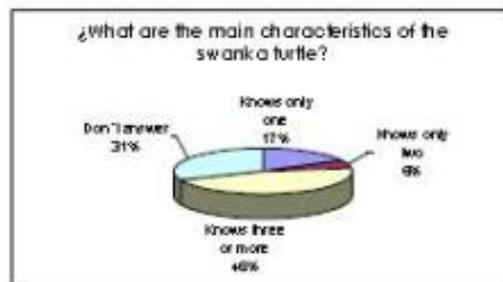
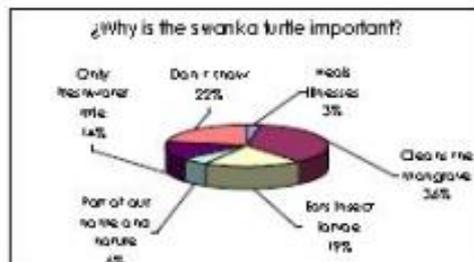
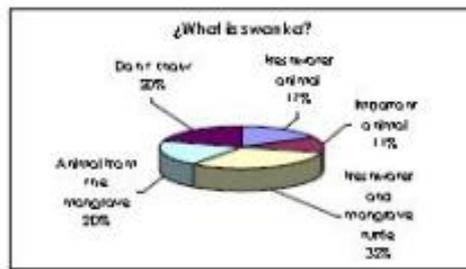
## VI. BUDGET AND EXPENDITURE

ITEM	BUDGET			EXPENDITURE		
	NUMBER	UNITARY COST (£)	COST (£)	NUMBER	UNITARY COST (£)	COST (£)
Materials						
Photographic Film	10	1,5	15	10	1,6	16
Film Development	10	4,4	44	10	3,4	34
Diskette	20	0,2	4,4	20	0,26	5,2
Paper (X100)	20	2,2	44	5x500	2,52	12,6
Colour Box	50	1,5	75	40	1,15	46
Pencil Box (x10)	10	0,7	7	5x12	1,38	6,9
Plasticine Pack	50	1,8	90	40	1,8	72
Cardboard	150	0,2	30	71	0,41	29,11
Paint	20	8,8	176	11	2,3	25,3
Video production	1	217,6	217,6			100
T-shirts	200	1,5	300	250	2,3	575
Glue	30	0,9	27	7	0,56	3,92
Plastic Bags	100	0,04	4,4	100	0,04	4
Staple (X2000)	3	0,3	0,9	3x200	0,3	0,9
Stapler	2	1,3	2,6	2	1,3	2,6
Masking Tape	6	0,6	3,6	7	0,67	4,69
Photocopies	1000	0,02	21,9	1900	0,03	57
Bibliography			32,9			45,96
Markers (x5)	6	2,6	15,6	10x1	0,35	3,5
Printing Ink	3	14	42	3	14	42
Paint brush				34	0,31	
CD's				10	0,69	6,9
Cassettes				4	0,46	1,84
Boots				4	3,7	14,8
Scissors				5	0,69	3,45
Disguises						41,4
Batteries				3x2	1,77	5,31
Cups				100	1,6	160
Others			40			60
Transport						
Flight Ticket	5	184,2	921	3	122	368
Transport in situ		0,9 daily/person	297			651
Maintenance						

Food (3 persons)		3,3 daily/person	1089			1655
Fares 4 months	4 months	87,6 monthly	350,4			368
Services						
Children's transport and food during field activities			438			300
Bank taxes and money exchange taxes						180,43
TOTAL			4958,3			4902,81

## ANNEX I

Some of the results of the evaluation to the children after the project.



## ANNEX II

Questionnaire used in the survey conducted at the beginning of the project.



**The Rufford**  
Maurice Levy  
Foundation



UNIVERSIDAD  
NACIONAL  
DE COLOMBIA

**Mangroves and swamps, and environmental education program in San Andrés.**

**QUESTIONNAIRE**

Age: \_\_\_\_\_

Sex: \_\_\_\_\_

Place of birth: \_\_\_\_\_

Place where you live: \_\_\_\_\_

1. What is the name of this animal? \_\_\_\_\_
2. Where does it live? \_\_\_\_\_
3. In what other part of Colombia or in which other country can it be found?
4. Is this animal dangerous for the tourist?  
yes  No
5. Why? \_\_\_\_\_
6. Is this animal in danger of extinction?  
yes  No
7. Have you gone to a mangrove?  
SI  No
8. Have you gone to a golf?  
SI  No
9. Do you think it is important to preserve mangroves?  
  
D) Very important  
  
E) Important  
  
F) Not important
10. Would you agree to participate in a conservation campaign for the turtle?  
  
D) Agree  
  
E) Not agree or disagree  
  
F) Disagree

### ANNEX III

Table of activities developed during the project.

<b>Activity</b>	<b>Date</b>
Workshop in the school Colegio Luis Amigó	August 28th, 2003
T.V. news program Magazín SWN	August 31st, 2003
Beginning of workshops at the school Escuela San Francisco Javier	September 2nd, 2003
Visit to the mangroves Smith Channel and Sound Bay with 5th grade students from the school Escuela San Francisco Javier	September 11th, 2003
Visit to the mangroves Smith Channel and Sound Bay with 4th grade students from the school Escuela San Francisco Javier	September 15th, 2003
Recollection of garbage from the mangroves for building a scale model.	September 22nd, 2003
Presentation of the project and speech about the turtle to 11th grade students from the Instituto Bolivariano (marine modality)	September 22nd, 2003
Visit to the mangrove Smith Channel with 11 <sup>th</sup> grade students from the school Instituto Bolivariano (marine modality)	September 22nd, 2003
Building of a scale model of a mangrove forest for the event at CORALINA	September 23rd – 26th, 2003
Workshop with students from the Instituto Bolivariano. Survey training.	October 1st, 2003
Participation in the environmental event at Coralina	October 2nd, 2003
Survey at the northern area, North End	October 6th, 2003
Conference on solid wastes in the cultural week at the CEMED school.	October 8th, 2003
Survey at the central area, The Hill.	October 8th, 2003
Survey at the southern area, San Luis	October 10 <sup>th</sup> , 2003
Conference to the group of young journalists at T.V. Islas, Henrietta's Foundation	October 11th, 2003
Official confirmation of the group Guards of the Mangrove	October 15th, 2003
Interview to the environmental group by Henrietta's foundation	October 18th, 2003
Conference to the Environmental tourism Group of the SENA, directed by José Hooker.	October 23rd, 2003
Interview to the environmental group by the radio station Marina Estéreo	October 23rd, de 2003
Appearance in the program Econéctate at radio station Radio Leda	November 8th, 2003
Visit to Big Pond with 4th and 5th grade students of the school Escuela San Francisco Javier	November 10th, 2003
Appearance in the program Alto Voltaje in the radio station (Radio RCN)	November 13th, 2003
Appearance in the program Econéctate at radio station Radio Leda	November 15th, 2003
Making of the wall painting with the group	November 18th, 2003
Presentation of the play "La swanka y sus amigos del manglar"	November 28th, 2003
Report of the project and results at T.V. Islas during the news report Magazín SWN	December 21st, 2003

## ANNEX IV

List of the 10 schools that were visited.

Name of the schools	Grade	No. of children	Day
Colegio Luis Amigó	4th, 5th, 6th, 7th	118	August 28th, 2003
Escuela Phillip Beakman	5th	41	October 30th, 2003
Escuela Nacional San Andrés	4th	65	November 5th, 2003
Escuela El Esfuerzo	4th	62	November 6th, 2003
Escuela Bautista Emmanuel	5th	18	November 7th, 2003
Colegio Modelo Adventista	5th	29	November 11th, 2003
Brooks Hill Bilingual School	5th	27	November 12th, 2003
Escuela El Carmelo	5th	46	November 13th, 2003
Escuela Antonio Nariño	5th	60	November 14th, 2003
Escuela San Francisco Javier	4th, 5th	40	August 29th – November 28th