

The Formation of Young Conservationists at the Guapi-Assu Conservation Centre, Rio de Janeiro, Brazil.

This document is the final report on the project “The Formation of Young Conservationists” at the Guapi-Assu Conservation Centre, Rio de Janeiro, Brazil, that was implemented by the Reserva Ecologica de Guapi Assu with the support of the Rufford Foundation during 2006. This paper is organized in three parts: Part 1 presents a general overview about all the environmental-education activities developed at the Reserva Ecologica de Guapiaçu as from 2001 with special attention to two specific programmes: “Young Rangers” and “School Visits”. Part 2 presents the report on the project The Formation of Young Conservationists at the Guapi-Assu Conservation Centre which is the main objective of this document. In Part 3 you will find photographs of most activities.

PART 1

Context

The Brazilian Atlantic Forest is one of the most diverse and threatened ecosystems in the world. Originally more than 1.4 million km² of unbroken tropical and subtropical rainforest, it is now reduced to a mere 7%, and consists mostly of fragmented patches in mountainous regions. Wetlands with lowland and swamp forest once abundant on the coastal plains and home to a variety of wildlife such as the Golden Lion Tamarind, Woolly Spider Monkey, the Broad-snouted caiman and the Brazilian tapir are almost none existent today, drained, cut and turned in to pasture, with only some patches still remaining at the feet of mountain ranges in Rio de Janeiro Estate, like in the Municipality of Cachoeiras de Macacu, where is situated the Reserva Ecológica de Guapi Assu (REGUA).

The Reserva Ecológica de Guapi Assu (REGUA) is a local grassroot organization with the aim to conserve Atlantic Forest and currently responsible for the protection of 7500 ha of prime rainforest. It has recently acquired the Fazenda São José with the objective to establish the Guapi Assu Conservation and Education Centre as the base for research, education and tourism activities.

Education activities started in 1999 with several visits by the local primary school to the Reserva Ecologica de Guapi-Assu. From these visits it became clear that there was a significant lack of awareness and understanding about biodiversity and the importance of its conservation among teachers and pupils. As a result REGUA started working with 5 schools located near the Reserve.

Nowadays REGUA and its partners are occupied with three education and awareness programmes and one project since 2001, see Tables 1 and 2. Today’s Teachers Capacity Building Programme is implemented together with partners such as Tereviva e Bioatlantica Institute and will finalize in 2007. The Agenda 21 Programme has the support of the Ministry of Environment and the Municipality of Cachoeiras de Macacu and will be handed over to the Municipality of Cachoeiras de Macacu in 2007. The School Visit and Young Rangers Programmes are funded by The Rufford Foundation and will be concluded this year. BART, The Brazilian Atlantic Forest Trust an UK based organization has played a fundamental role to support most core costs of all REGUA’s programmes since 2001.

Table 1 – Implementation of the Education Programmes

Consolidated Programmes	2001	2002	2003	2004	2005	2006	2007
School Visit							
Teachers Capacity Building							
Young Rangers							
Agenda 21 Project							

Table 2 – Partner participation during the implementation of the Education Programmes

Formal Partnerships	2001	2002	2003	2004	2005	2006	2007
BART							
The Rufford Foundation							
Ministry of Environment							
Golden Lion Association & CI							
Tereviva & CI							
Municipality of Cachoeiras de Macacu							
Bioatlantica Institute							

Overview of the School Visit Programme

The objective of this programme is to raise awareness about the importance of Mata Atlantica conservation to primary and secondary students of the Municipality of Cachoeiras de Macacu.

This programme started with visits of many classes of the Guapi Assu School to the Reserva Ecologica de Guapi Assu in 2001. REGUA provided transportation and guided visits to the forest. The School Visit Programme evolved into a partnership between REGUA and the Municipality Education Secretary where REGUA provided guided tours and the Education Secretary transportation and meals. The growth of the programme trough time is presented in Figure 1 and 2.

Figure 1 – Levels of involvement within the School Visit Programme

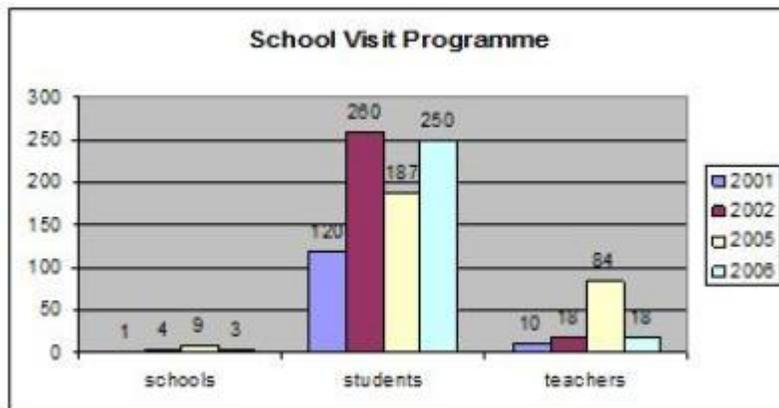
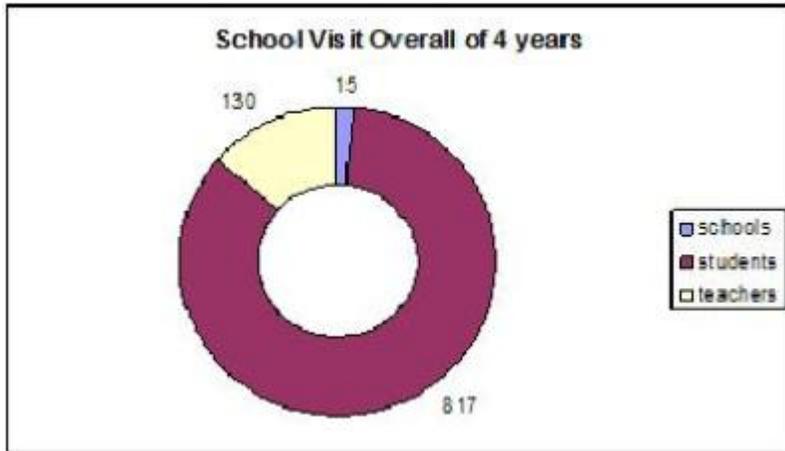


Figure 2 – The scope of School Visit Programme in four years of implementation



There are 76 primary and secondary schools in the Municipality of Cachoeiras de Macacu with a total of 870 teachers and 12.580 students. So far, the School Visit Programme has reached 19,7% of the schools, 6.5% of the students and 1,5% of teachers of the Municipality of Cachoeiras de Macacu.

Overview on the Young Rangers Programme

The aim of this programme is to involve youngsters that live in the high catchments of the Guapi Assu River to achieve knowledge, values and practices for the conservation of Mata Atlantica, to stimulate further study and create positive attitudes towards their communities. Picture 4 and Table 4 show the development of 3 years of Young Rangers Programme.

Picture 4 – Levels of involvement within the Young Rangers Programme

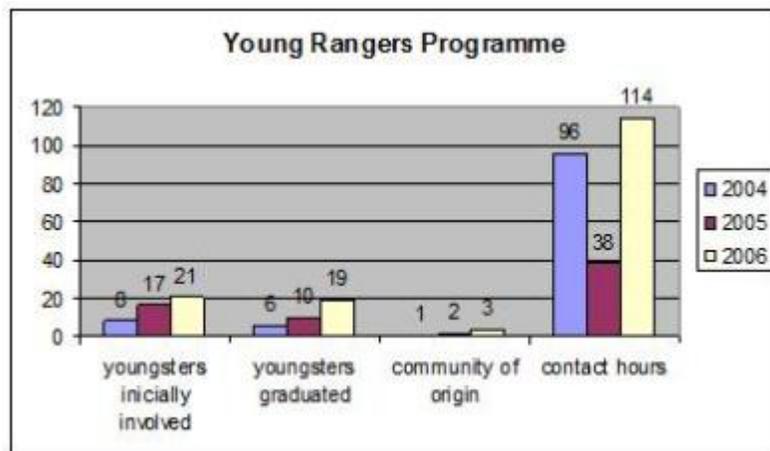


Table 4 – Curriculum implemented within tree years of Young Rangers Programme

Curriculum		2004	2005	2006
REGUA Institutional	1			
Brazilian Ecosystems	2			
Mata Atlantica	3			
Environmental Law	4			
Environmental Movement	5			
Conservation Units	6			
Nursery	7			
Fauna Introduction	8			
Flora introduction	9			
Birds	10			
Reptiles	11			
Fishes	12			
Cachoeiras de Macacu aspects	13			
Brazil aspects	14			
Field Trip	15			
Introduction to Internet	16			
Presentation Techniques	17			
Sexual Education	18			
Theatre	19			
TOTAL	19	12	11	10

The Young Rangers Programme started in 2004 formally supported by Conservation International and Golden Lion Tamarin Association. In 2005 the programme was implemented without a budget and financial support of partners. Today this programme has formal support of The Rufford Foundation. Table 5 shows the institutions involved in the programme' implementation.

Table 5 – Partners that support activities during the last tree years of Young Rangers Programme

	Partners	2004	2005	2006
1	BART			
2	Golden Lion Association			
3	Primate Centre			
4	Municipality of Cachoeiras de Macacu			
5	Serra dos Orgãos Faculty			
6	The Rufford Foundation			
7	Coopercrama			
8	Sítio Chão de Estrelas			
9	Equitação Desempenho			
10	Serra dos Orgãos National Park			

11	Tereviva			
12	Bioatlantica Institute			
13	State University of Rio de Janeiro			
14	State University of Sao Paulo			
	TOTAL	4	7	7

PART 2

General Objectives

The project The Formation of Young Conservationists at the Guapi-Assu Conservation Centre, Rio de Janeiro, Brazil aims to enhance the awareness of the interdependence between man and its natural surroundings within the next generation of Cachoeiras de Macacu. It will strengthen the concept of responsible stewardship within the larger community and will lay a receptive and strong basis for REGUA's future and current conservation activities such as:

- the protection and expansion of the Guapi Assu Reserve (since 2000);
- the restoration of the São José wetland (2004 - 2006);
- the creation of an Agenda 21 (sustainable development plan) for the municipality (2003 – 2007);
- the reintroduction of *Crax blumenbachii* (red billed currasow) in Rio de Janeiro State (2005);
- the implementation of the Macacu River Environmental Protection Area (2006);
- the implementation of the Guapi Assu Conservation Center (2006);
- the implementation of the adjacent Tres Picos State Park (2006);

The project will capacitate a select group of youngsters that will be able to initiate and execute conservation projects within their communities and become active members of REGUA in the near future.

Specific Objectives

1. Organize 50 visits a year on biodiversity and the importance of conservation for approximately 1500 primary school pupils and their teachers (50);
2. Capacitate 20 youngsters (Young Rangers) between the age of 14 and 18 to become biodiversity conservationists in their communities.

Activities Implemented - General

A formal selection procedure was made for an Environmental Educator position to implement School Visits and Young Rangers' Programmes.

Andre Luiz was contracted as Environmental Educator to implement School Visits and Young Rangers' Programmes. Andre Luiz is a biologist with interest to further study and work on the

field of environmental education lives in the Guapi Assu community and is highly committed to REGUA's work.

Andre Luiz was trained to implement the programmes by the Instituto Romã, a Brazilian based organization that formally capacitate people in Joseph Cornell's methodology Flow of Learning.

In relation to the Young Rangers Programme, the Environmental Educator, Andre Luiz participated in all workshops implemented by specialists and implemented himself some workshops.

In relation to the School Visit Programme, the Environmental Educator, Andre Luiz participated in all school visits and conducted some together with me.

As the project manager I coordinated the implementation of all activities, held and participate in some of them.

Arts material and lesson material was purchased to support School Visit and Young Rangers Programmes.

Activities Implemented – School Visit

There were 5 visits, 250 students and 18 teachers that participated in the School Visit Programme 2006.

The Municipality Education Secretary as a partner provided food and transportation for the school visits of 2006.

A folder to promote school visits was produced and handled to every school within the municipality and during events.

The visit is an educational experience that combines walks, talks and activities according to Joseph Cornell's methodology "Flow of Learning" and proceeded as such:

- 1) In the Guapi Assu Conservation Center a school visit starts with a welcome followed by an orientation about day activities and security.
- 2) There is an activity based on the Flow of Learning methodology to approximate all participants.
- 3) After, there is a trail of about two hours around the Guapi Assu Conservation Center. The trail is a circuit of 3 km that issues the nursery, the reforestation areas, the wetland and mountainous areas, forested areas and an outlook.
- 4) Back to the Guapi Assu Conservation Center' classroom there is a talk about the conservation of the Mata Atlantica and REGUA institutional with support of a power point presentation.
- 5) After lunch, students and teachers play the biodiversity game an activity based on the Flow of Learning methodology.

6) Finally, students are asked to show their day's experiences either drawing a picture or writing a text. These materials stay available for participants to see each other's work. This material indicates the preferred activities and the type positive or negative experience students had. Also, the material is selected into the best writings and drawings and used to promote the programme in seminars and reports.

Activities Implemented – Young Rangers

The Young Rangers Programme was developed in 114 contact hours' through 33 weekly workshops with 19 youngsters of 14 to 19 years old.

The programme proceeded as such;

- 1) Planning sessions with REGUA's board of directors and technical staff are held to determine the target group and organise the activities for the year.
- 2) A selection procedure is defined accordingly.
- 3) A promotion call for the programme is made within the adjacent communities Guapi Assu, Matumbo, Estreito, Areal e Funchal through school talks and distribution of leaflets
- 4) A selection procedure is implemented to form the young rangers group.
- 5) The parents of the Young Rangers are invited to participate during the introductory day in the beginning and in the graduation day at the end of the year.
- 6) Workshops of about 3.5 hours are held one day a week.
- 7) Tree evaluations on young rangers progress are held; at the beginning, middle and at the end of the year that result to one mark as it shows in Table B below.
- 8) The graduation day is a public event with a multimedia presentation made by the Young Rangers that explains the programs' proposal and activities developed, followed by coffee and cake.

The 2006 young rangers' curriculum approached 10 subjects such as REGUA Institutional, Mata Atlantica Ecosystem, Conservation Units, Nursery, Fauna, Flora, Fish, Birds, Introduction to Internet, Theatre as it shows in Table 4 above.

Six specialists were contracted to give workshops on the topics mentioned. Two Masters degree students, Luana and Tatiana, from Rio de Janeiro Estate University developed and gave the Fauna and Flora workshops. Zeca, a local resident that worked in the timber industry joined the Flora classes. The Grupo Latex, a local theatre group developed and gave the artistic workshops. Pedro a PhD student from the Sao Paulo Estate University working in REGUA developed and gave the Fish workshops. Fabricio in his LAN house, in the Guapi Assu community, developed and gave the workshop on Internet. REGUA's park rangers and its maintenance, cleaning and cooking staff assisted in all activities.

Young Rangers wrote and implemented one project. With my support and the Environmental Educator Andre Luiz, a project proposal was produced and implemented by the young rangers. The project aimed to investigate the environmental aspects of Rivers Estreito and Guapi Assu and to draw community perception about those rivers. Four field trips were made to elaborate a written and photographic diagnostics of the rivers. There were 30 interviews applied within communities of Estreito, Matumbo and Guapi Assu. The data set was analysed and a power point presentation summarized photos and results. The project was presented to the communities of Guapi Assu and Matumbo during the young ranger's graduation day at the end of year.

A tree day field trip to Serra dos Orgãos National Park was made in the end of the year. Young Rangers's participation was made according to merit and 15 pupils joined the activity. A REGUA's park ranger Antonio, Andre Luiz, a local guide and myself conducted the trip.

In the Table A below there is the chronogram of workshops put into practice.

Table A - Young Rangers implemented schedule

HOURS	WORKSHOP	DATE	TUTOR	ACTIVITY
3	1	19/05	André	Getting to know REGUA's infrastructure and trails
3	2	26/05	Eleonora	Introduction about Mata Atlântica - theory
3	3	02/06	Fabício	Introduction to Internet A
3	4	09/06	Fabício	Introduction to Internet A
3	5	02/06	Volunteers**	Birdwatching
3	6	09/06	Volunteers**	Birdwatching
6	Partial *	9/06	Eleonora	Project writing ***
6	Partial *	10/06	Eleonora	Project writing ***
6	Partial *	26/06	Eleonora	Project writing***
3	7	30/06	André	Project review***
3	8	07/07	André and Maurício	Germinating seeds at the Nursery
3	9	14/07	André and Christine	Visiting the Reintroduction of Crax blumenbachii project
3	10	21/07	André and Eleonora	Project planning***
3	11	28/07	André and Park Rangers	Project implementation***
3	12	04/08	André	Semester review
3	13	11/08	André and Eleonora	Semester evaluation
3	14	18/08	Zeca	Identification of trees practice
3	Partial*	23/08	IBIO-Tereviva- Schincariol	Seminar The Guanabara Catchments
3	15	25/08	Zeca	Identification of trees practice
3	16	01/09	Luana	Introduction to Botanic theory
6	17	02/09	Luana	Introduction to Botanic practice
3	18	15/09	André	Review Flora
3	19	22/09	Tatiana	Introduction to Fauna theory
3	20	23/09	Tatiana	Introduction to Fauna practice

3	21	29/09	Pedro	Introduction to Fish
3	22	06/10	Pedro	Introduction to Fish
3	23	13/10	André	Review Fauna Flora and Fish
3	24	20/10	André and Eleonora	Project implementation***
3	25	27/10	Grupo Látex	Theatre
3	26	28/10	Grupo Látex	Theatre
3	27	03/11	André and Eleonora	Participative planning for Young Rangers graduation
8	28	10/11	André and Eleonora	Field trip National Park Serra dos Orgãos
8	29	11/10	Idem	Field trip National Park Serra dos Orgãos
8	30	12/10	Idem	Field trip National Park Serra dos Orgãos
3	31	17/11	André and Eleonora	Participative planning for Young Rangers graduation
3	32	23/11	André and Eleonora	Project presentation*** and Graduation party in Matumbo
3	33	24/11	André and Eleonora	Project presentation*** and Graduation party in Guapi Assu

*Veterans only, ** Participated REGUA's Volunteers Programme, *** The project aimed to investigate the environmental aspects of Rivers Estreito and Guapi Assu and to drown community perception about those rivers.

Table B - Young Rangers and overall marks

	PARTICIPANTS	MARKS			
		D	C	B	A
1	Aldenison Nunes				
2	Bruno Rufino				
3	Carla Cadena				
4	Carolina Andrade				
5	Edson Leandro				
6	Everton Rodrigues				
7	Gabriel Júnior				
8	Jefferson				
9	Jonatan Gomes				
10	Julliene Nogueira				
11	Milena Peixoto				
12	Mariana Teodomiro				
13	Natalia Lagoas				
14	Natasha Conceição				
15	Otoniel de Oliveira				
16	Priscila Nogueira				
17	Rafael Vitor				
18	Stella Bastos				

19	Verônica Lúcia				
----	----------------	--	--	--	--

There were 3 pupils that reached the best mark A in green, 8 pupils that reach mark B in blue, 5 pupils that reach mark C in brown and 3 pupils with mark D in red.

Analyses

The high catchments of Guapi Assu River is the target area for REGUA's conservation work, as defined in its strategy 2004 – 2009. Within the targeted area there are 10 schools and 11 communities. As from 2001 the School Visit Programme involved 15 schools which 9 are situated in the high catchments of the Guapi Assu River. As from 2004 the Young Rangers Programme involved 3 of the 11 communities situated in the high catchments of the Guapi Assu River.

In order to conserve the Mata Atlantica situated in high catchments of the Guapi Assu River with support of communities it is desirable to gain a greater efficacy on the implementation of both School Visit and Young Rangers Programmes. In order to do so, it is important to further involve the communities and schools situated in the targeted area as such:

1. To discuss and implement with schools (10) a year proposal of visits and activities in the Guapi Assu Conservation Centre – REGUA.
2. To strengthen the recruitment of youngsters in the 3 communities already involved and to expand recruitment to the other 8 communities.

There is a difference between implementation levels of objectives 1 and 2. Whereas the Young Rangers Programme was implemented almost 100%, the School Visit Programme was implemented 10% of the number of visits, 17% of the number of students and 36% of the number of teachers.

There are two main reasons to justify the weak results of the School Visit Programme;

- 1) the opening of the Tres Picos State Park' visitors centre and
- 2) the reduced availability of transportation provided by the Municipality Education Secretary.

The Tres Picos State Park was created to conserve 48 thousands hectares of Mata Atlantica that connects conservation areas of Rio de Janeiro State. Grants available from KFW, a German Bank, were invested in the Park' infrastructure and human resources. The central office and a visitor's centre were launched in the Municipality of Cachoeiras de Macacu, 30 minutes from its main city and 40 minutes from other two important urban centres. As most schools are situated in theses urbanised areas, paved roads would facilitate the access between schools and the Parks' visitors centre. Therefore, a trip to the Park's visitors centre would be faster, more comfortable, less costly and more effective in number of students involved. As a result the school visits to REGUA were greatly reduced.

Nevertheless, the implementation of the Tres Picos State Park is profoundly relevant for the Mata Atlantica as an ecosystem. Very important for government police implementation and for people's quality of life.

Bearing in mind the importance of Tres Picos State Park, REGUA will maintain trails and infrastructure to continue school visits embracing further the schools (10) settled in its targeted area.

The Young Rangers Programme of 2006 was by far the best of the three years because of the support of the Rufford Foundation that made available a trained environmental educator and a budget to implement activities. Other important factors for success were the accumulated experience on the programs' implementation and the community appreciation and support.

The 2006 group of young rangers was divided in two; veterans and newcomers because of youngsters coming back to the programme and the age difference, even so workshops were held together.

The Young Rangers Programme was conceived as a 4 year extra-curricular training that focused on the conservation of Mata Atlantica involving youngsters of 14 to 18 years old, residents in the high catchments of the Guapi Assu River. The continuation of the programme towards its initial conception would require a division of the group in year classes (4), separated curricula and workshops, a group of specialists as tutors and partnerships to support program implementation.

Conclusion

Young Rangers Programme implemented according to objective set.

School Visit Programme little implemented in relation to objective set.

The continuation of both Young Rangers and School Visit Programmes in 2006 was only possible because of The Rufford Foundation support.

REGUA will gain greater community support to conserve Mata Atlantica if focus environmental education efforts towards the communities and schools situated in the high catchments of the Guapi Assu River.

REGUA will submit new project proposal to improve the implementation of Young Rangers and School Visit Programmes with special focus on the schools and communities of the high catchments of the Guapi Assu River.

PART 3



**The bus offered by the Municipality
to support the School Visit Programme and Eleonora the project coordinator**



**The Maria Veralba School in the school trail outlook
- The Guapi Assu Conservation Centre, REGUA.**



**Students drawing what they found the best of the school visit
in the Guapi Assu Conservation Centre, REGUA.**



Exposition of drawings in the Guapi Assu Conservation Centre, REGUA.



**Selection procedure for the position of Environmental Educator
– an activity to promote interaction within the candidates based on the Joseph Cornell Flow of Learning in
the Guapi Assu Conservation Centre, REGUA.**



**Selection procedure for the position of Environmental Educator
– an activity to promote concentration based on the Joseph Cornell Flow of Learning in the Guapi Assu
Conservation Centre, REGUA.**



Selection procedure for the position of Environmental Educator
– an introduction to REGUA and to the School Visit and Young Rangers Programmes in the Guapi Assu Conservation Centre, REGUA.



Selection procedure for the position of Environmental Educator
– written part to access the capacity to read, interpret and write a short essay - The Guapi Assu Conservation Centre, REGUA.



Development of Young Rangers curriculum
with REGUA' technical staff – Volunteers' house – REGUA.



Young Rangers selection procedure

- an activity to promote interaction within the candidates based on the Joseph Cornell Flow of Learning in the Guapi Assu Conservation Centre, REGUA.



Young Rangers selection procedure

- an activity to promote concentration within the candidates based on the Joseph Cornell Flow of Learning in the Guapi Assu Conservation Centre, REGUA.



Young Rangers selection procedure

- written part to assess the capacity to read, interpret and write a short essay in the Guapi Assu Conservation Centre, REGUA.



**Young rangers and their parents
for the introductory day in Guapi Assu Conservation Centre, REGUA.**



**Ornithology
with Phil Jones from Birdlife International
in the wetlands of the Guapi Assu Conservation Centre, REGUA.**



**Visit to *Crax blumenbachii*
a reintroduction project in REGUA**



Christine Steiner
the researcher for the reintroduction of *Crax blumenbachii* supporting the visit



Backpacks
granted by the Rufford Foundation



Nursery workshop
- The Guapi Assu Conservation Centre, REGUA.



**Medium term evaluation
in the classroom of the Guapi Assu Conservation Centre, REGUA.**



**Field trip
to investigate the situation of the Estreito River as
an activity of the project proposed by Young Rangers**



**Field trip
to investigate the situation of the Estreito River**



Field trip
to investigate the situation of the Guapi Assu River
as an activity of the project proposed by Young Rangers



Lesson material
granted to the young rangers by the Rufford Foundation



Fauna workshop
with Tatiana from Rio de Janeiro State University during observation of birds in the wetland' observatory tower – The Guapi Assu Conservation Center, REGUA.



Fauna workshop

– Dynamics on food chain in the Guapi Assu Conservation Center, REGUA.



Flora workshop

– Recognition of plant species in the nursery with participation of Zeca a local resident that worked in logging industry.



Flora workshop

– Forest observation in REGUA's trails



Flora workshop

- with Luana from the Rio de Janeiro Estate University explaining basic characteristics of plants in Maria's house trail - REGUA



Theater workshop

- Training acrobatics in the Guapi Assu Conservation Center, REGUA.



Fish workshop - - Observation of fish anatomy in the Guapi Assu Conservation Center, REGUA.



Fish workshop
– Collection of organism for observation in the Guapi Assu River



Field trip to Serra dos Órgãos National Park
– Birdwatching



Field trip to Serra dos Órgãos National Park
–Birdwatching with support of a local guide on the left.



**Field trip to Serra dos Órgãos National Park
– Cooking**

Guapi Assu 10th January 2006
Eleonora Camargo da Motta Pacheco