



**ECOVOLUNTEER EXPERIENCE**  
**Field research on Jaguars**

**Atlantic rainforest of Brazil**  
**2010 - 2011**

**THE ECOVOLUNTEER PROGRAM**

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As it is necessary for you in this project to be able to communicate in English, this text is provided only in English.

Annually, under the supervision of this researcher the text is updated. Nevertheless you may experience some changes in the field compared to the brochure text. It is inherent to wildlife research programs that during the operations incidentally changes are necessary because of unexpected results, behaviour by the wildlife, etc. Be prepared for such changes. (Last update August 2009)

Please help us: If you happen to find any of the information below no longer to be valid, or when you have useful additions, then kindly report so to: Ecovolunteer Program: [info@ecovolunteer.org](mailto:info@ecovolunteer.org). That way we shall be able to provide better information to future participants.

## Preface

This research project aiming the conservation of the Atlantic forest jaguar is the continuation of a project that started with a first exploratory fieldtrip in 2005 and group research trips in 2006.

The Atlantic Forest jaguar is isolated into small sub-populations and from larger continental populations. If directed efforts are not allocated to the jaguar conservation the species will no longer be able to persist in this ecosystem.

We are studying the jaguar in the 'Serra do Mar' mountain range, the most important site for jaguar conservation within the Atlantic broadleaved forest. The study site is known for its outstanding beauty, with densely forested mountain ranges and mangrove lowlands reaching the Atlantic Ocean. Data collected during the expedition will form the basis for the management and protection of the jaguar and its habitats within this highly threatened ecosystem.


Research is now directed towards finding key information that can be used to enhance survivorship of threatened wildlife populations inside and outside protected areas.

With your support and participation we shall be able to run scientific studies and expeditions that would not be conducted otherwise. Volunteers play a major role during these missions. We have already trained several volunteer groups and we have seen that after few days anyone can perform well to actively help gather wildlife data in the field. The work in groups in a remote country help to develop confidence and trust in each other, and with each other's help, missions become easy and enjoyable. The scientist and field assistants will help you in every detail of your experience.

This document will tell you just about everything you should know, the scientific procedures, activities in the field, what to bring, reading references, etc. This document is quite complete and extensive to give you a complete picture of the expedition and local situation, but do not feel scared with the scientific details, we shall guide you through the daily routine.

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## 1. Research

Our aims and objectives are to continue this research work on jaguar in Atlantic forest habitat; to estimate jaguar detailed distribution and habitat quality; to assess the impact of human activity on mammalian biodiversity; and to maintain a conservation project that is working to preserve a source population of the southernmost population of jaguar in the Atlantic broadleaved forest.


### 1.1 Group sizes and length of participation

Group sizes will vary but we stipulate a maximum of 10-12 people per group. Length of participation may vary. We split into two levels of experience gained, beginner level up to 7 days, and advance level up to 14 days. It may be that we have multiple 14 day groups, and in this case the participant may have the additional choice to stay another 7 or 12 day period. Beginner level will receive basic training and will work basically around Base Camp, whereas advanced level participants may go for overnights or other searches further from camp. An example of overnight camp would be to travel by boat to a distant island, and look for jaguars in areas where they have not been surveyed yet. During these longer surveys we also have the opportunity to learn more about the landscape and how land use may be interfering with jaguar populations.

### 1.2 Background

The 'Serra do Mar' mountain range is one of the last strongholds of the jaguar in the Atlantic broadleaved rainforest. It is vital that jaguar populations in this ecosystem be protected, as it contains the source population from which some of the jaguar's previous distribution may be restored. The project will maintain local conservation efforts in this area, gathering key information for the protection of this highly endangered habitat and its resident species.

The Serra do Mar area is dominated by the Atlantic rainforest of Brazil, one of the most endangered ecosystems on Earth. It is hard to understate the importance of this ecosystem in terms of conservation. Declared a UNESCO World Heritage Site in 1999, most scientists rank the Atlantic forest as one of the top three priorities for global conservation efforts. Very little of the Atlantic forest remains, and what does is highly fragmented. Despite this, it still maintains extremely high levels of diversity and endemism.



The forest, which once spread along the Atlantic coast and much of southern Brazil, is now reduced to fewer than 8% of its original extent. This is a product of intensive human occupation beginning with sugar cane plantation in the 1500s and later coffee plantations. In all, despite the Atlantic forest's grim past, the outlook for the future looks bright, thanks to the availability of new conservation instruments, funding mechanisms and a large body of well-trained conservation professionals.

Fortunately, there are significant areas of the Atlantic forest left that are still intact and harbour many large mammalian species with considerable habitat requirements. It may be possible to maintain or even improve the quality of these habitats, but to date there is a serious lack of information on how to recover biodiversity to original levels in a human-dominated landscape.

To address this lack of information, the expedition's research work also aims to assess which human occupation strategies are most compatible with the concurrent survival of large mammals, with special emphasis on the habitat quality for the jaguar and puma. Few areas are left which have remained untouched and these are of high importance for their intrinsic value as a source of species, and as a model for recovering disturbed areas.

## 2. The Wildlife

Our primary study species will be the jaguar (*Panthera onca*), the puma (*Puma concolor*), tapir (*Tapirus terrestris*), collared peccary (*Pecari tajacu*), paca (*Agouti paca*), white-lipped peccary (*Tayassu pecari*), and red deer (*Mazama americana*), all of which are threatened to some extent at national level and of special relevance as flagship residents of a highly threatened ecosystem.

The project targets mainly jaguar conservation though, due to the fact that this species has lost most of its original distribution in southern Brazil, and today is confined to few remaining natural areas, which is not really the case for pumas and the other species.

The coastal subtropical rainforest is home to a considerable array of animal and bird species and we may encounter the following mammals: howler monkey, capuchin monkey, various armadillo species, common opossum, tayra, jaguarondi, ocelot, capybara, southern river otter, anteater and various deer species.

Most species are shy and elusive and it is thus unlikely to see many of the animals listed in this document. It is very unlikely to see a jaguar in the wild. Hopefully we shall be able to come across jaguar tracks and other signs. It is important to realize that, although to see animals is always a pleasure and we should try to spot them, the purpose of this research is not to see animals. For our scientific purposes, record a species from its signs or remote photography is just as important as seeing the animal, with the advantage that you can record more species and/or individuals in a fraction of the time you would be able to if it was required to see them.

Please also note that there will be no handling of animals during the expedition.

### 3. Your field training and activities

All field training will be given (in English) during the expedition and you do not need to be a scientist or have any special qualifications - everyone can take part. The basic training will be given in two days; from then on it is a question of practice. It is recommended that participants arrive on Sundays, so that in theory people can receive the field training together at the same time. If however you arrive alone then you will have to count on the learning process while executing tasks along with participants that have advanced from earlier stages.

You will be taught how to identify all the species you will be surveying, as well as their tracks.

You will also be taught how to walk in forest trails (and not get lost) and record in Global Position System (GPS) the paths you have taken (so that later we can plot that over a map of the study area).

You will also set and check camera traps and learn how to take field notes on predefined forms.

Usually by the end of the 'beginner level', which last 6 days, you will feel comfortable to walk in forest trails and will be able to record new travel routes with your GPS.

You will also acquire a good sense of direction that will give you confidence to safely explore the region with your group.

From the 6<sup>th</sup> day on you are just about ready to have other experiences that require the background you previously received. We then go for longer journeys and overnight camps.

### 3.1 Your activities and typical day

It is vital that you realize that you are part of an expedition, and not in a tour, photographic safari, excursion, or outdoor sports holiday. You should have a positive attitude towards living and working within a small international group of enthusiastic people in conditions that will be rather basic compared to their normal way of life at home. The staff will prepare you for your fieldwork. They will explain the research methods and the goals of the research. The expedition scientist will make you familiar with the study species and their function in the ecosystem.

During a typical day participants will be divided into small groups to carry out the following research activities:

- *Explore forest trails*: you will help open up survey trails into the forest, using compass, GPS, and topographic maps of the area.
- *Track identification*: you will identify and record tracks found on your walks and in specially made track traps.
- *Camera trapping* is also carried out at the study site. You will find locations for set and check camera traps, which allow for identification of photographed species.
- *Interviews with local people*: you will help talk to local people about the jaguar and their attitude towards the species in an effort to gain distribution data and develop community-based conservation strategies that include solutions for local people.

The programmed schedule is flexible and may change according with new research opportunities and with the group consent, but will basically consists of the following itinerary:

#### 1. Beginner level (first 7 days)

At this stage the training will be given around base camp, not exceeding two days. The remaining time we shall be dedicated to map and explore at least three main trails near the camp, from 3 to 5 km in length, where we shall install camera-traps. The camera-traps have to be installed at the beginning of the expedition, the longer they stay in the field, the better; the chances to photograph something of interest will increase.

## 2. Advance level (7-14 days or longer)

During this stage, you will be involved in one or more of the following activities, which usually require overnight surveys:

- Go out in a four wheel vehicle to explore forest trails further from our base camp, in nearby mountain ranges;
- Fetch supplies for the camp with our assistants;
- Go out in boat or truck surveys and interview local people regarding their interaction with jaguars (seeing, hearing, fresh evidence of its presence).

During the first few days we shall be around camp. Once we start surveying further into the forest, we shall usually leave early in the morning and come back in mid-afternoon. By this time everybody is tired and we call the day off. We then have time for cleaning, resting, and chatting about our experiences.

#### 4. The study site and base camp

Brazil is located on the Atlantic coast of South America and is the largest country on the continent. Two thirds of Brazilian territory is located within the Amazon basin. In addition to the Amazon, the Atlantic rainforest extends for about 3,500 kilometres along the coast with an area of over one million square kilometres.

The Atlantic forest ecosystem is recognised as one of the most unique habitats on Earth, with numerous endemic species. It is one of the so-called world "hotspots" of biodiversity, with over 400 vascular plants per hectare, 50% of which are endemic. Animal diversity is also high: 215 species of mammals have been recorded, 73 of which are endemic; and out of a total of 183 species of amphibians, 91.8 % are endemic. Although biodiversity is very high, the status of many individual species is precarious. A recent estimate showed that 171 out of 202 species of vulnerable animals from Brazil are from the Atlantic forest.

The study site is located in the Serra do Mar mountain range, southern Brazil, within a not very restrictive protected area named Area of Environmental Protection (APA). This protected area encompasses the Saint Hilaire/Lange National Park, 25,000 hectares in size, which is an area of restricted access, and the Guaratuba bay. Early settlers crossed the mountain range in search for silver mines, inspiring the name given to the national park's mountain range, Silver Mountain.

Base camp is about one hour and a half drive from Curitiba. It may be shifted according with research needs, but we are now basically using an advanced camp consisting of a wooden cabin surrounded by rainforest and rivers with tents installed on platforms.

Tents have been chosen instead of bedrooms because they give mobility to our base camps. This has allowed us to survey a broader area than we would be able to if we had a fixed base camp. Tents also give more privacy than in the lodge. We use the lodge for meals, meetings, and to spend the spare time during the day.

If you prefer you may sleep in the lodge.

We have plenty of running water and more than one bathroom is available. The lodge often has a staff for cooking and general cleaning when the groups are large; otherwise these are shared duties.

Breakfast, lunch and dinner are included and vegetarian and vegan food can be arranged if requested in your booking. We set one day a week as day off, when you can spend the time in the lodge or visit the surroundings. We usually arrange a common activity, like walk by the beach and go shopping. During these breaks, meals in town are not provided and alcohol is allowed with moderation.

## 5. Travel information

### 5.1 Dates

August–September 2010 and 2011

Individual dates can be set, subject to approval by the project management. Try to plan your arrival and departure dates to be Sundays.

Applications for this project have to be made at least five weeks before scheduled date of arrival.

No minimum nor maximum duration periods, but respecting the available months of August and September. For a satisfying full experience a minimum period of two weeks participation is strongly recommended.

### 5.2 Capacity

A minimum of 3 and a maximum of 12 ecovolunteers at a time.

### 5.3 Prices

As specified on the website <http://www.ecovolunteer.org/> or your national ecovolunteer website or by your booking office.

### 5.4 Included in the price

- Accommodation (see below)
- All meals (see below)
- Transfer from Curitiba airport or Tulip Inn (by the airport) to the project base only on Sundays (see below)
- Supervision
- Participation in the project in accordance with this brochure
- Advice about personal travelling necessities and literature

### 5.5 Not included in the price

- Travel / Flight to and from Curitiba, Brazil, additional hotel in Brazil when needed

- Passport / visa (see below)
- Travel and cancellation insurance (all participants should carry both; see below)
- Personal expenses like telephone bills, souvenirs, etc.

### 5.6 Accommodation and meals

We have a wooden cabin in the rainforest, but for sleeping we set up tents on platforms as this provides mobility to our base camps. The tents are for single use.

The tents are equipped with mosquito nets. Please note though that pillows, sleeping bags, sleeping mats or towels will not be provided, these you will have to bring yourself.

We use the lodge for meals, meetings and to spend the spare time. If you prefer you may sleep in the lodge (tents give more privacy).

Running water and bathrooms for shared use are available.

Sometimes we have a staff for cooking and general cleaning when groups are large; otherwise these are shared duties.

Breakfast, lunch and dinner are included; vegetarian and vegan food can be arranged, if requested in your reservation.

At your weekly day off, only breakfast is included.

Alcohol is allowed with moderation.

### 5.7 Flights and transfer to Base Camp

You must make your own way to the Curitiba meeting location in time.

Project staff will be available to pick you up and return you back on Sundays mornings at the Curitiba airport. If you arrive earlier we recommend you to stay at the Tulip Inn (you can get a taxi) and we pick you up there by Sunday morning.

We can only offer transfers all way to Curitiba and back just on Sundays.

In case you wish to arrive or to leave during any other day of the week, you can take a bus or a train that makes the Curitiba-Morretes service (schedule available) and we shall then take you to or pick you up in Morretes, which is much closer to our base camp than Curitiba.

## 5.8 Passport and visa

Citizens of most countries do not require a visa (USA and Canada are notable exceptions) but we advise you to check this with your booking agency or the Brazilian Embassy in your home country. You should bring enough money to finance your stay and have the ticket for your return trip.

*Please remember that it is entirely your responsibility to ensure that you are in possession of all the necessary documents for the expedition, including (but not limited to) valid visas, valid vaccination certificates and travel insurance documents, travel tickets to take you to the meeting location on time, a passport with at least six months validity beyond the date of your return travel (as some countries now insist on this). If you expect to have to renew your passport and your vaccinations before embarking on the expedition, you should allow plenty of time to do so. In some cases we must notify the authorities of the host country of the whole expedition participant's passport and vaccination details. Discrepancies may result in delays to the group and fines to the individuals involved.*

## 5.9 Insurance

You are required to carry both travel insurance and cancellation insurance that fully cover for all costs of illness, and if necessary, rescue and repatriation.

The Ecovolunteer Program and the jaguar project and their employees will accept no liabilities that could have been covered by travel insurance and / or cancellation insurance. Your booking office may provide you with information on the availability of these insurances in your home country and may provide these insurances for you.

## 5.10 Language

Very few people speak any English or German in our area. Most of the staff will be prepared to speak English. Be prepared for this and be not afraid to show initiative by yourself. Passively waiting till others take care for you is not a rewarding attitude in this project.

## 5.11 Attainability

Base Camp has neither telephone nor Internet; you should thus prepare your family at home for actually not being able to reach you during several days while you stay at the project. There is mobile connection at about one km from base camp, though, but we cannot be certain if you will get signal for your mobile.

In case of any emergencies at home, please have your folks inform your booking office.

### 5.12 Conditions for participation

- Minimum age 18, no upper age limit (children with parent accepted);
- A moderate to high fitness level, that is the ability to walk about 5-10 km per day in mountainous rainforest terrain of up to 500 m altitude;
- You have to speak English, or Spanish, or Portuguese, but English is the language spoken in common;
- If you are seriously overweight or have difficulties walking, you may experience some problems in participating;
- Given the high level of field work, you should be prepared to share the work and collaborate with the researchers and other participants;
- You will have plenty of time to explore the environment on your own. Safety rules, however, must be followed.

### 5.13 Climate

The study site is covered by the Atlantic Rainforest. The climate is subtropical and humid, with annual rainfall varying between 1750 to 2000 mm, being more intensive during spring and summer. Average annual temperature is 21°C. Summer extends from December to March, and winter from June to August. Expected temperatures for the expedition in winter (August-September) will range between 18 and 26°C during the day, and reach as low as 10°C during the night. Temperatures for summer will range between 22 and 32°C during the day, and reach a minimum of 17°C during the night.

### 5.14 Pocket money

Once at base there is very little opportunity to spend money. As a rough guideline you should not need more than the equivalent of 60 euro of pocket money to cover some extra luxuries and perhaps a drink (although food and drink other than alcohol will be in plentiful supply), or a dinner in town. Please make sure that you exchange your money into the local currency in town or at the airport before you join the expedition group, as there is very little or no possibility to exchange currency once the expedition is in the field. The Brazilian currency is Real (R\$).

### 5.15 Expedition scientist

The expedition's scientist and manager is Dr. Marcelo Mazzolli. Born in Brazil, he graduated in Biology in 1992, with a master's degree from the University of Durham, UK. His Ph.D. in ecology, obtained in Brazil, was on the effects of

human occupation on the extinction of large mammals. He has devoted his career to the study of large mammals, particularly the puma and jaguar, but has had many other outdoors experiences. He was a professional jungle guide in the Amazon forest in 1986 at age 21. He has attended many national and international workshops, and published relevant articles. His studies have made his work well known, and early in his career he was invited to be member of the International Union for Conservation of Nature (IUCN) Cat Specialist Group, with one of his projects listed as a priority in the world wide Cat Action Plan. He has travelled extensively, living in the United States and Peru, and has surveyed lions in Botswana. Has acted as scientist during international volunteer expeditions looking for jaguars in Brazil and for leopards in the Middle East.

## 6. Preparing the trip

All scientific research equipment will be provided. In order to avoid early detection by wildlife as you walk through the forest, your clothes and your rucksack should be in subdued or camouflage colours if possible. If possible avoid vivid colours and fabrics that make a lot of noise when walking. However, if you already have kit in non-camouflage colours, there is no need to go to any extra expense.

Kit list (please bear in mind that you can wash your clothes or get them washed at base, so do not over pack). Also, many of the items in the list may be found near our meeting location (hotel) and in our study area.

- Documents: valid passport, insurance papers, vaccination card, a print-out of this document and a print-out of the additional instructions provided to you by your booking office after booking.
- Money: pocket money, emergency money
- High-shaft hiking or jungle boots: Your boots will be one of the most important pieces of kit. Please make sure they have high shafts to protect you from snake bite. Please also make sure that they are of a good quality and well worn in so that they will not cause you any discomfort or give you blisters. Try a good Army surplus store for jungle boots (see also trouser ties below).
- Rubber boots: Expect the terrain to be very wet. We shall be constantly crossing creeks and muddy places, so rubber, impermeable boots are essential. They may be obtained in local stores at a price of 20 Reais.
- Light shoes (or sandals): For walking around base and those times when you do not need your hiking boots.
- Light clothing: Several sets for changing including several long-sleeved light shirts and trousers (rather than shorts) to keep out the mosquitoes. Consider some technical materials that wick away moisture from your body, thus keeping you dry.
- IMPORTANT: You must make sure that at least some of your clothing covers your arms and legs to keep out the mosquitoes. We recommend that you have at least two sets of (soon to be muddy & sweaty) "work clothes".
- Sun hat: To protect you from the sun. Wide-brimmed hat are a good idea, as they will also shade your neck and ears.
- One complete set of warmer clothing: Please be prepared for the odd cooler night. Please make sure your set of warm clothing includes a hat.
- Poncho (or wind- and waterproof jacket): Technical fabrics such as Gore-Tex do not work well in the rainforest, so consider a poncho.

- Insect repellent: Bring a DEET-based one (do not use more than 35% on your skin). You may also want to bring a citronella-based alternative (kinder to your skin and works well for some people). Also consider treating your expedition clothes with permethrin before arriving. A combination of DEET and treated clothes usually gives good protection. If you do not want to over pack or missed it, insect repellents may be found in every drugstore in Brazil. Mosquitoes are nastier when you are a non-moving target (when you are resting outside the base camp, for example). When walking they will usually not catch up with you. You will be sleeping in tents (with mosquito nets) thus they should not be able to get to you during the night.
- Bathing suit: Bring your bathing suit, as you can bathe in the local streams and waterfalls.
- Washing kit + towel + travel detergent: Please bring biodegradable detergents and remember to bring a towel.
- Sunglasses & high factor sun screen: Please bring your sunglasses and plenty of sun screen (sun screen can also be easily found in local drugstores).
- Water bottle or bladder: 2 litres or larger. A bladder that can go inside your rucksack is a good option.
- Small rucksack/daypack: For taking with you on your day's work.
- Pocket torch or preferably head torch + spare bulbs & batteries: Go for a head torch with a strong (halogen) beam to light the way ahead of you at night. However, strong halogen bulbs drain batteries quickly, so you may also want to consider bringing an energy-efficient LED headlamp just for around camp. There are models available that can be switched between halogen and LED, giving you the best of both worlds.
- Pocket knife
- Sleeping bag, jungle blanket, and pillow: You need to bring your own sleeping bag, pillow, and mat (see below). A thin, one season sleeping bag should be enough unless you get cold very easily. Those who stay warm may also want to consider a so-called jungle blanket, which is made out of sleeping bag material, but not sown into a bag with a zip. Talk to a knowledgeable Army or outdoor surplus store about this. Also, bring a small inflatable pillow.
- Sleeping mat: The self-inflatable types (for instance a Thermarest) are recommended because they are much more comfortable (but they are also heavier, more expensive and more bulky).
- Freezer bags, or dry bags, or watertight containers: Plastic bags with re-sealable seals - to keep your gear dry in humid conditions.
- Dryrite crystals or silica gel: Calcium chloride or similar moisture-absorbing crystals to include with items being stored in watertight containers. Can be redried by heating. Available from camera shops and some Army surplus or good outdoor stores.
- Personal first aid kit: Should contain pain killers, adhesive plasters, 1 medium, 1 small dressing, antiseptic wipes, blister kit (recommend "Spenco Second Skin" or "Compeed"), iodine, antihistamine, insect repellent, antibiotic (in consultation with your doctor) + *any personal medication for the duration of the expedition.*

### Optionals:

- Multi-pocket field vest: Useful for carrying your kit around and keeping it accessible.
- Binoculars: Provided by the project, but if you have a pair that you like to use, please bring it with you.
- Compass, GPS: Provided by the project, but if you have some kit you are familiar with and would like to use, please feel free to bring it with you.
- Photography equipment: You will have plenty of opportunity to take pictures.
- Alarm clock

Also consider: Field guides (on animal tracks, birds, etc. – see reading list below), travel guides for Brazil (also see reading list below), dictionary/phrase book, games, books, etc.

Please note that pillows, sleeping bags, sleeping mats or towels will not be provided at base camp.

Please travel as light as you can and try to restrict yourself to one rucksack and one carry-on (you will be able to do some of your own laundry whilst on the expedition). If you can not get your gear to the airport alone, you have packed too much!

Please use a strong rucksack or equivalent for packing and try to avoid cumbersome suitcases. Also bring something that you will be able to wear in town. It is also a good idea to pack a carry-on with essential items so that you are not incapacitated if your luggage is delayed and takes several days to get to you.

## 7. Fitness and health conditions of special concern

**Fitness:** we recommend a moderate to high fitness level, which is the ability to walk about 5-10 kilometres per day in mountainous rainforest terrain of up to 500 meters altitude. Those of lower fitness level can monitor wildlife at lower altitude near base camp. Expedition members should have the personality and mental health such that all members are able to work effectively together and under conditions that may be physically and mentally tiring. That said there will be plenty of resting moments.

**Dangerous wildlife:** Accidents with snakes are most common during summer, and although we have conducted surveys during this period, we never had a casualty. As we are running the expedition during winter and there is serum available nearby, this is not of major concern. The highest risk is the fer-de-lance snake (genus *Bothrops*).

**Inoculations:** Recommended are DTP (diphtheria, tetanus, and polio), gamma-globulin or Havrix and typhoid tablets. This project is not located in an area with malaria or dengue fever. Nevertheless we recommend you to check with a health-centre in your country to receive updated information.

- Dengue fever has become quite common in Brazil, but we are free of dengue in the study area. For dengue fever no vaccine is available. The disease is transmitted by mosquitoes; therefore general anti-mosquito precautions should be taken. The symptoms are fever and general fatigue. The risk of transmission is much higher in towns than in the country.
- Malaria: This expedition will not be entering a malaria area, but if you wish to travel further into the country to visit for instance the Amazon area or the Pantanal, you might need to use malaria prophylaxis.
- Yellow fever: When you get vaccinated, make sure you are given a vaccination certificate or card. You should have this vaccination certificate or card with you when you arrive at the airport in Brazil, since the local health officials very occasionally may ask to see it upon arrival. If they do, they will check for yellow fever in particular and may vaccinate you before permitting you to enter the country if you cannot show proof of existing yellow fever vaccination.

If you have an existing or previous illness / disability which could affect your mental or physical condition during the expedition you must tell your doctor when you see him/her for your pre-expedition health check and ask him about your suitability to join the expedition.

*Please remember that it is entirely the responsibility of each group member to ensure that they have taken adequate medical and dental precautions for the expedition they intend to join, as well as any additional travelling they may wish to do before or after the expedition. We reserve the right at any time prior to departure to insist that group members provide a medical certificate as documentary proof of their suitability to join the expedition.*

### 7.1 Proximity to medical care

- The first choice public hospital and emergency is in the town Matinhos, about 15 minutes from the harbour base in Matinhos. It has anti-botropic (snakes of the genus *Bothrops* – the most common snake) serum, and x-ray. It does not have, however, 24 hour orthopaedist or computer tomography.
- The best option for major accidents is the public Hospital Regional do Litoral in the town of Paranaguá. It is about 40 minutes from harbour base in Matinhos, and has the facilities to deal with a large range of problems. It has anti-botropic (snakes of the genus *Bothrops* – the most common snake) and anti-crotalic (snakes of the genus *Crotalus*) serum; it has 24 hour orthopaedist, as well as x-ray and computer tomography.
- And finally, one of the best hospitals in Paraná is in Curitiba, the University hospital Hospital de Clínicas – UFPR, with a large group of leading specialists capable of carrying out a wide range of major surgery and procedures, including bone and organ transplants. Facilities include operating theatres, X ray, body scanner and magnetic resonance equipment, laboratories, a diagnostic centre etc. This hospital is likely to provide suitable facilities for most emergencies obviating the need for repatriation.
- For evacuation a helicopter can be activated from Curitiba within 1 hour of the call. Flight time to Curitiba is 30 minutes. Very expensive though: cost of about US\$2000 an hour.

### 7.2 Smoking

Smokers are welcome but smoking is not allowed indoors.

## 8. Some reading suggestions

The reading list below was compiled to encourage you to read on Brazil and Brazilian rainforest ecology before coming on the expedition. If you would like to bring any field and/or identification guides or other books, which might be useful on the expedition, please feel free to do so. Please note that there is also a small library at base camp. You will have no problem in good bookshops or on the Internet to find interesting travel guides for Brazil and other sources of information that may help you prepare for your participation. Some suggestions but you may easily identify more yourself:

### 8.1 Travel guides for Brazil

- Lonely Planet Travel Guides: Brazil, Mitchell Schoen, William Herzberg, John Noble (Editor). 751 pages, colour photos, maps. Special wildlife section. Paperback.
- Rough Guide: Brazil, David Cleary, Dilwyn Jenkins, Oliver Marshall. 832 pages, illus, maps. Paperback.
- Lonely Planet Phrasebooks: Brazilian Portuguese, Mark Balla. 304 pages. Paperback.

### 8.2 On species & wildlife

- Jaguar. By Rafael Hoogesteijn & Edgardo Mondolfi. Extensively illustrated with colour photos. 182 pages, col photos, tabs. Armitano Editores.
- Desert Puma: Evolutionary Ecology and Conservation of an Enduring Carnivore, K. A Logan and L. L Swenor. 463 pages, photos, figs, tabs, maps. Island Press.
- Neotropical Rainforest Mammals: A Field Guide. Louise H Emmons. A 2 CD set (running time: 105 mins.) with the calls of some 109 mammal species, Sounds of Neotropical Rainforest Mammals, is also now available. 307 pages, 29 colour, 7 b/w illus, 11 figures, 184 maps. Chicago UP, USA.
- All the Birds of Brazil: An Identification Guide. Deodato Souza. 356 pages, col illus, maps. Editora DALL.

### 8.3 On habitat

- With broadaxe and firebrand: the destruction of the Brazilian Atlantic Forest. Warren Dean. University of California Press. Conservation International / Center for Applied Biodiversity Science, Carlos Galindo-Leal (Editor), Ibsen De Gusmao Camara (Editor), Philippa Benson (Editor). Paperback 408 pages. Island Press.
- Neotropical Companion: An Introduction to the Animals, Plants and Ecosystems of the New World Tropics. John Kricher (illustrated by Andrea Lefeune). 451 pages, 177 col photos, 86 line illus. Princeton University Press, USA. Hardback.

## 9. Your participation climate neutral

The Ecovolunteer Program aims to offset all carbon dioxide emissions caused by your participation in the project. For this we cooperate with the Trees for Travel Foundation.



The Trees for Travel Foundation finances the planting, regeneration and maintenance of forests that will lock up greenhouse gases. The Foundation does her work in collaboration with local people and organisations to not only create a greener planet but also to fight against poverty. So we keep the greenhouse effect in check by contributing a modest amount to Trees for Travel to compensate your greenhouse gas emissions while participating in the Ecovolunteer project. Thus you help to make the world a better place at the same time.

The cost for climate compensation is not added to the price you pay, but is fully covered by the Ecovolunteer Program.

Please note that we only care for making your participation in the project climate neutral. Your travelling from your home to the project is not included. We recommend that you yourself will make your travels climate neutral as well. You could ask your travel agent or your airline to do so, or you can arrange that directly yourself through:

Trees for Travel Foundation:

Website: <http://www.treesfortravel.info> Mail: [info@treesfortravel.nl](mailto:info@treesfortravel.nl)