



Operation  
Wallacea

Conservation research through academic partnerships

Information for Local Education Authorities on the  
Health & Safety measures taken to safeguard the  
Operation Wallacea expeditions to  
Madagascar

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## 1. Introduction

The aim of this document is to highlight the procedures and protocols in place for school groups involved with Operation Wallacea research expeditions in Madagascar. It is intended to fulfill the criteria set by the local education authorities with regard to overseas expeditions and is based on the information requirements set out in *Guidelines for Educational Visits and Outdoor Education Activities 2004*, produced by Surrey County Council. The Surrey CC document in turn is based on the Department for Education and Employment *Health & Safety of Pupils on Educational Visits (1998)* and on the August 2002 document produced by the Department for Education and Skills entitled *Standards for LEA's in Overseeing Educational Visits*. As with all these documents the aim is to ensure that there are adequate preparations and safety systems in position to ensure that best practice with regard to Health and Safety issues is being used in the planning and implementation of the expeditions.

## 2. Structure of the expeditions

The structure of the expeditions is a little different to that with many other expeditions or educational trips that are run by schools. The expeditions last for two weeks, with the first week spent in the forest and the second week spent at a marine site.

Operation Wallacea is running two biodiversity research programmes in Madagascar; the first in conjunction with Development and Biodiversity Conservation Action for Madagascar (DBCAM) in the Mahamavo forests in North Madagascar, and the second in conjunction with Madagascar Cultures and Nature (MCN) in the Ifotaka North protected area in the spiny forest region in the South of Madagascar. The school groups fly to Antananarivo (the capital city) or Nosy Be and transfer to their expedition start points in Mahajanga (Mahamavo projects) or Fort Dauphin (Ifotaka projects). In Mahajanga they are met at the airport and transferred to Mariarano, a small village about four hours drive from Mahajanga. The terrestrial section of the expedition is based here. The road to Mariarano is unpaved and so students are transported in large 4x4 vehicles. Once at Mariarano, the students stay in tents and trek into the surrounding forest to complete surveys of the wildlife. There is a satellite camp that can be accessed by trekking through the forest, and the groups will split their time between the Mariarano camp and the satellite camp (Matsedroy). After the first week, the group will be transported back to Mahajanga in 4x4 vehicles, and then will be transferred by mini-bus to Ankify, and then will take a speedboat over to the island of Nosy Be, where they will be based for their second week. Alternatively, the terrestrial week will be spent in Ifotaka. The groups will be met at the airport in Fort Dauphin, which receives direct flights from Antananarivo on a daily basis. From the airport they will be transported on an unpaved road in 4x4 vehicles to the Ifotaka village camp, about four hours drive from Fort Dauphin. The satellite camp, Mahavelo, is situated in the heart of the protected area about 5km from Ifotaka village. The groups will split their time between the village camp and the satellite camp, spending around three days in each. After this week the groups

will be transported back to Fort Dauphin in 4x4 vehicles, where they will fly to Nosy Be, overnighing in Antananarivo on the way. The group will be met at the airport and driven to the Marodoka beach camp.

During the week at Marodoka they will be completing a PADI dive training course, or if they are already dive trained, a reef ecology course. At the end of the second week the students will be taken to the airport in Nosy Be where they will be getting international flights home or a domestic flight to Antananarivo where they will meet their international flights. This may require an overnight stay in Antananarivo, which would be organised by DBCAM.



*Figure 1. Location of important transport points*



Figure 2. Location of Mariarano and the forest camps, Matsedroy is the Western Camp

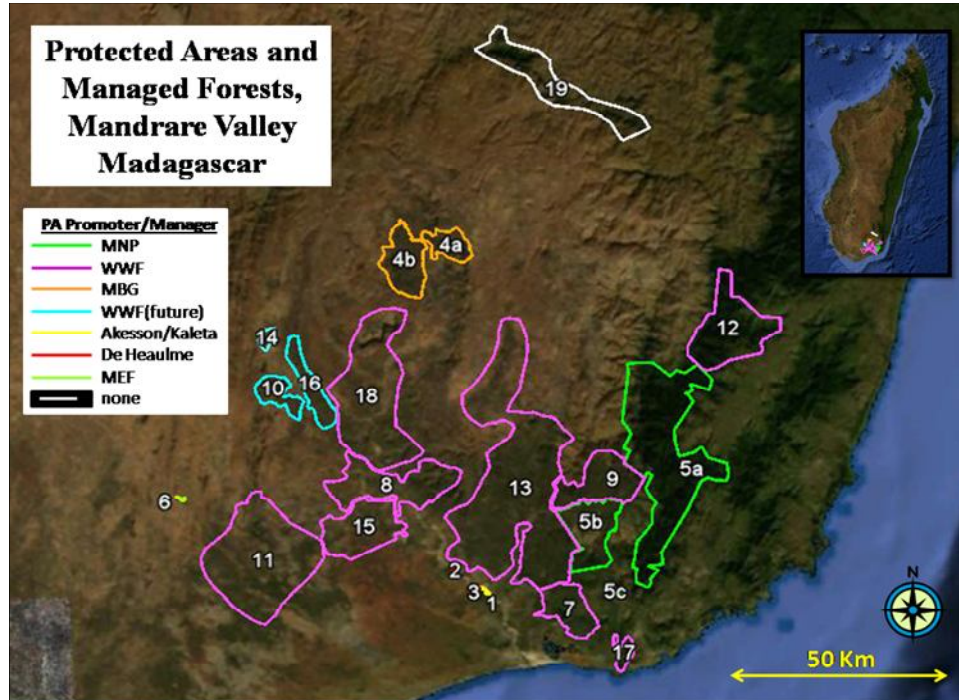


Figure 3. Protected areas within the Mandrare Valley proposed Biosphere Reserve. Ifotaka is area 8

### **3. Risk Assessments**

A thorough assessment of all the places visited, vehicles, transfers and the activities are completed before the start of the season and reviewed throughout. Risk assessments are completed for each site as well as generic risk assessments for each activity. These risk assessments are published on the website and are available as a hard copy if requested.

### **4. Training before the expedition**

Operation Wallacea staff work closely with teachers to ensure that pupils are ready and prepared for the expedition abroad. Various joint meetings take place with the Operation Wallacea schools team and the teachers regarding facilities on site and skills required. A full training day is arranged with each of the schools with the following aims:

#### *Preparation for the expedition*

Lectures are given on how to prepare for the expedition and the conditions likely to be encountered.

#### *Survey methodologies*

All the pupils are given a lecture on the aims of the surveys they will be participating in as well as the methodologies to be used. A written description of the survey methodology to be used is given to each pupil so they are aware of exactly what they will be doing in the field. The Operation Wallacea staff are always available to talk to any student, parent, or teacher, who has any questions about any aspects of the expeditions, and the preparation required.

### **5. Designated leaders and competencies**

#### ***Role of the teachers***

The teachers accompanying the students are responsible for ensuring the pupils' travel arrangements from the school until the expedition start time in Mahajanga/Fort Dauphin on the Friday of the start date of the expedition. If the group arrives in Mahajanga before the Friday start date the in-country partners DBCAM can organise accommodation and transfers, arrangements will be made through Op Wall. Once the expedition starts the teachers will be travelling with the group and responsible for pastoral care issues. At the end of the expeditions the teachers and the group are delivered to the airport in Nosy Be in time to meet their return flight home or connection to Antanarivo on the Thursday.

## ***Role of the Operation Wallacea staff***

### *Venture Leader*

The three research sites in Madagascar are run as three separate projects, each with a venture leader (see below).

The Operations Manager is responsible for the overall running of the expeditions and for the safety of the volunteers and staff working on the project. This role is fulfilled by Dr Tim Coles for the 2011 season. Dr Coles has 15 years experience in organising and running expeditions in remote areas of the world. It is the responsibility of the Operations Manager to ensure that the correct level of leadership is provided for each of the groups and to check that the designated leaders have the requisite qualifications and/or experience. Tim will act as the teachers' first point of contact for any questions relating to their expedition, or if they have any concerns.

### *Leadership on Mahamavo projects*

Dr Peter Long from the University of Oxford will be on site for the Mahamavo expedition to ensure that the agreed operations procedures and risk assessments are being adhered to. He will also be responsible for ensuring the groups are met and given an initial briefing when they arrive in Mahajanga, so that they know what to expect over the next two weeks. Dr Long has four years research experience in the Madagascar and a further three years or experience as a senior scientist on Operation Wallacea expeditions in Honduras. He has organised and/or led educational field trips to multiple countries and speaks good French. It is the responsibility of the Expedition Co-ordinator to ensure that the correct level of leadership is provided for each of the groups and to check that the designated leaders have the requisite qualifications and/or experience. The project has a very high overall level of staffing with up to 30 staff at any one time running the surveys or providing logistical support for the expeditions.

### *Leadership on the Ifotaka project*

Barry Ferguson of Madagascar Cultures and Nature will fill the counterpart role for the Ifotaka expedition, managing and auditing the operations and risk assessment procedures. Barry has lived and worked in the Ifotaka area for several years and has led expeditions of university students (international and Malagasy) in the Ifotaka North protected area in the past.

### *Leadership at Nosy Be*

Willem Strauss is responsible for the Marine section of the expeditions. Willem has 15 years experience running projects in Madagascar, and operates a South African company that facilitates tourism in several countries, including Madagascar. Willem speaks French and Malagasy and is a former PADI dive instructor.

### *Leadership for biodiversity surveys*

When school students join biodiversity surveys from the village or node camps these are led by academics from British, North American, or Madagascan universities and

each group has a local guide. Each of the biodiversity survey leaders must have relevant academic qualifications and previous research experience.

#### *Leadership for forest to marine site transfers*

The groups will travel from Mariarano to Ankify by 4x4 and then by mini-buses. The vehicles will all travel in convoy and a staff member will travel in the last vehicle in the convoy. The transfers have been arranged through Willem Strauss and a ground handler on Nosy Be who has worked with Willem for 15 years. He or a counterpart will accompany each of the transfers from Mahajanga to the Marondoka. On arrival in Ankify the group will board the speedboat to take them directly to the Marondoka beach camp.

#### *Leadership for diving activities*

All dive training is led by PADI qualified Dive Instructors or Master Instructors. Dive training is done at a ratio of 1 Dive Instructor per 8 students plus 1 Dive Master. For qualified divers the ratio is 6 divers per 1 Dive Master.

## **6. Use of guides**

Every group leaving a camp must be accompanied by a group leader and a local guide. No formal guide qualifications exist in Madagascar, (particularly that are available to the local people in the remote communities in which we work) so the appointment of guides relies primarily on their levels of experience and their suitability gauged via personal references from senior village members. The senior forest coordinator has the responsibility of employing locals as guides. A number of skills are required by all guides including:

- Knowledge of the local area
- An awareness of dangerous species including venomous snakes

Each newly appointed guide would have training on how to respond to dangerous situations, basic first aid and how to lead a group. Their training follows a three-stage induction period: shadowing a more experienced guide; then leading a group while supervised; and finally leading a group on their own.

## **7. Medical procedures**

This section summarises the medical procedures report which is a much more detailed description of the staffing, First Aid facilities and procedures that are followed.

#### *Information and records*

All school staff and pupils are required to complete an Operation Wallacea medical questionnaire prior to their departure. These forms are required to be completed and returned to the Operation Wallacea Medical Coordinator at least three months

in advance of the expedition. At a meeting in March all the medical staff working on various expeditions for Operation Wallacea that year review the medical forms received and identify any potential medical issues that could restrict sites or activities for individual pupils or staff, or aspects which require additional information before the start of the expedition. All medical information is held securely under the guidelines provided by the data protection act.

Medical information about each pupil and teacher is provided to the Medical officer who will be present at Mariarano, Matsedroy, Ifotaka, Mahavelo and Marondoka, in advance and a file is created for each person. There are additional forms for treatment provided and the individual files are returned to the Operation Wallacea Medical Coordinator at the end of the expedition. All medical problems, illnesses, injuries and near misses are recorded at each of the sites. At the end of the season, these data are collated and a health and safety report is completed and published on the website. This report classifies incidents into seven categories and allows comparison between the expeditions. The policy of publication of the accidents and illnesses recorded on the expedition is a unique aspect of the Operation Wallacea expeditions and helps ensure the procedures on site are followed fully.

#### *Medical staffing*

Operation Wallacea employ sufficient qualified medical staff including doctors, nurses and paramedics to provide the medical support at each of the field sites. All the medics are required to have completed their foundation training and have some experience in accident and emergency.

#### *Medical facilities*

A full medical kit is provided by Operation Wallacea which includes the equipment and medications needed to be able to deal with the minor conditions that may be encountered in the field. This reduces the need to rely on general medical care and enable us to continue working in the field.

Research into medical facilities in country are completed prior to the start of the season by senior Operation Wallacea staff, this information is published on the Opwall website and health and safety documents and passed on to the site Medical Officers. Operation Wallacea has links with the hospitals in Mahajanga and Antananarivo.

## **8. Operating procedures**

There are detailed operating procedures for all aspects of expedition management. The main measures used to minimise risk are included in the risk assessments which are published on the web site but are summarised below if they are not included in other sections of this report.

#### *Groups leaving camps*

At all camps there is a whiteboard system operating, where all groups leaving camp

have to sign out, with details of the group leader, the group members, the intended location, departure time and estimated time of return. The group leader has to take a radio so they can communicate with the main base, and ensure all group have appropriate attire (eg hats, boots) and have enough water for the trip. In addition a local guide has to accompany the group. No school group members (pupils or teachers) are allowed to leave any of the camps unless this procedure is followed. Navigation from each camp is fairly easy since there are marked transects and survey sites and maps available of the transect layout at each camp.

### *Trekking*

The guide takes the front of the trek line with the slowest group member immediately behind and the fittest group member at the end of the line followed by the group leader. There are no deepwater river crossings on any of the trails.

### *Small boat surveys*

All volunteers and staff on small boats must wear a life jacket at all times and must ensure they have a hat, sunscreen and sufficient water for the planned trip.

### *Diving*

All diving follows protocols that are more conservative than PADI procedures. All training dives are completed with a ratio of 1 Dive Instructor plus 1 Dive Master to a group of no more than 8 students. All qualified divers are accompanied by a Dive Master at a ratio of 1:6. Maximum diving depth is 18m, maximum dive time is 50 minutes and all divers have to perform a 5 minute safety stop at 5m on the way up. Minimum surface interval time is 3 hours. No night diving is allowed for school group members unless they are already a qualified Advanced Open Water diver or have achieved an equivalent qualification in another SCUBA diving course. If one or more of the group wish to undertake the Advanced Open Water dive training course they will need to do one dive to no deeper than 30m as apart of the course. This dive would need to be completed as the first dive of the day and only one additional dive would be permitted that day. These restrictions mean that all divers are well within the limits allowed for no-decompression recreational diving by PADI.

### *Snorkelling and swimming*

No snorkelling is allowed unless the group are supervised by a Dive Master and carrying an inflated SMB to warn any boat traffic of their presence. Swimming is only allowed in designated areas.

### *Alcohol*

Alcohol is available at Mariarano, Ifotaka and on Nosy Be. Whilst the school group is under the care of Operation Wallacea no school group member under 18 is permitted to consume alcohol.

## 9. Emergency procedures

This section summarises the emergency procedures report which is a much more detailed description of the procedures used at each of the sites.

### *Training of staff*

Carefully planned evacuation protocols are in place for both sites. All staff will have training on evacuation procedures, and protocols are rehearsed prior to the expeditions starting.

### *Emergency levels*

Operation Wallacea has 3 levels of evacuation as follows:

**Emergency** (requiring the fastest possible transfer – usually via a helicopter evacuation straight to Antananarivo), **High Priority** (requiring the patient to be moved at the fastest speed possible overland to the hospital in Antananarivo) or **Medium Priority** (requiring the patient to be moved with the next available vehicle movement to the appropriate medical facilities). For decompression facilities the Divers Alert Network will be contacted to arrange the most efficient transfer to facilities in Richards Bay, South Africa.

In all Emergency or High Priority cases where a patient is being transferred to medical facilities they are accompanied by the relevant Medical Officer or someone appointed by the medical officer as fit to accompany the patients.

## 10. Insurance

All participants for the expeditions are required to have adequate travel insurance with the following cover:

- At least £1million for medical repatriation
- At least £1 million medical fees
- The activities permitted by the insurance must cover diving up to 18m

Operation Wallacea has purchased an insurance policy that covers all of its participants to this level. This insures that the evacuation procedures and medical facilities that will be utilised on the expeditions can be agreed in advance. This saves a huge amount of time in an emergency, and means that there is no delay whilst, for example, the helicopter facilities arranged for emergency evacuations wait for authorisation from the insurance company before taking off.

Operation Wallacea have comprehensive combined liability insurance with up to £10,000,000 for public/product liability, and are members of ABTOT, which provides financial protection to participants in the event of insolvency.

## 11. Child Protection procedures

We endeavour to ensure that all school students participating in our activities are safe in accordance with the Protection of Children's act 1999. This is done a number of ways:

### *Supervision and accompanying adults*

Operation Wallacea offer a free teacher place with every 10 students thus giving an automatic ratio of at least 1 to 10 (in line with the DfES). For each activity provided by Operation Wallacea in the field the following ratios apply:

- 1 to 10 ratio for terrestrial survey work (plus at least one guide)
- 1 to 6 ratio for all river based surveys (plus at least one guide)

These ratios do not include other supervisory staff such as guides, or the schoolteachers. Overall there is at least a 1 to 3 ratio of adult staff to students on site providing a very high level of supervision. Teachers are asked to accompany students on as many activities as possible.

### *Minimum number of students*

No school pupil is allowed to participate in any activity without at least one other pupil from the school or a teacher being present.

### *Criminal Records Bureau Checks*

There are over 30 staff working on the survey expeditions as well as a further 40 university students. Many of these staff and some of the students are from countries where no CRB check facilities exist or spend a significant part of each year outside the UK, so CRB checks for all on-site personnel are not possible. The strategy used by Operation Wallacea therefore is to ensure that at all UK-based employees of Operation Wallacea are CRB checked, and that in all locations where pupils are sleeping that there is a CRB checked staff member in attendance. The accompanying teachers are already CRB checked and there will always be an accompanying teacher at any overnight location.

### *Codes of Practice*

All Operation Wallacea staff in the field are required to sign a code of conduct before they are employed. The Code of Conduct commits each staff member to not entering into relationships with school volunteers as well as conformity to restrictions on alcohol use and a complete ban on drug abuse. Operation Wallacea will dismiss staff that do not follow the code of conduct.

### *Complaints procedure*

Any complaint by a school pupil about inappropriate behaviour from any staff member or other student will be treated as a formal complaint and documented. The accompanying teacher will be informed immediately and together with the senior Operation Wallacea staff member on site will investigate the complaint. If the

complaint is upheld then any individuals involved will be dismissed from the expedition and a police file created if the incident was serious enough.

## **12. Communications**

All groups entering the forest carry a two way radio to communicate with the camp. A satellite telephone is also kept in Mariarano and at Ifotaka so that there is an instant form of outgoing communications if necessary. On Nosy Be the main form of communication is via the mobile phone network which is reliable. The boats used by Operation Wallacea (including the transfer between Ankify and Nosey Be) have mobile phones.

There are Operation Wallacea 24 hour emergency officers based in the UK and Canada (tel +44 (0) 1790 763194) in the event of an emergency message needing to be passed on to the field. The direct numbers for the key staff in Madagascar during the expeditions are published on the [contacts](#) page on the website shortly before the start of the expeditions.

## **13. Transport**

### *Buses and 4x4 vehicles*

The buses are given a full safety check prior to the start of the season and are checked prior to every journey. These checks include fluid levels and tyres. The drivers are briefed prior to every journey and a staff member travels with every group of vehicles to ensure that safe driving practices are followed.

### *Research Boats at Mariarano*

Small wooden *pirogues* are used to conduct surveys of wetland birds. Each of the pirogues is given a safety check prior to use to ensure that it is stable in the water, has a secure stabiliser, and does not leak. The wetland areas are only about a metre deep. All volunteers and staff on these surveys must wear lifejackets

### *Dive and research boats on Nosey Be*

There is a whiteboard system operating from the camp at Morondoka, so that all boats leaving the centre have to sign out and complete various safety checks (presence of life jackets, oxygen, First Aid kits, etc). The whiteboard contains details of where each boat has gone and the estimated return time. Morondoka base is in phone contact with each of the boats. Most of the dive training will take place within eyesight of the beach camp.

## **14. Security**

### *Transfers to and from the camps, security in the camps*

A security guard will accompany the group on all transfers, and there is a security guard on patrol 24hrs a day at all the camps. Students can place valuables in one of the lockable storage rooms that will be present in each camp. The Nosy Be site is accessible by walking through private land, which will be patrolled by a security guard during the night to ensure nobody who is not part of the project can access the site.

## **15. Cultural aspects and local issues**

The model of conservation used by Operation Wallacea is strongly rooted in principles of suitable economic growth in areas whose biodiversity is under threat. This means that huge efforts are made to ensure that conservation is tied with development of alternative income sources to minimise, for example, logging and hunting.

Operation Wallacea are only working in Madagascar for the second year, but are attempting to build similar links with the communities as have been built in other sites. For example in Indonesia, where Operation Wallacea has been involved in bringing financial assistance to the communities via accommodation for volunteers, provision of food, availability of seasonal jobs to support the expeditions and in Honduras has funded a scholarship scheme for bright children from the local communities to cover their university costs. There is strong local support for the projects in all the communities in which the school groups will be staying.

All pupils are encouraged to get involved with the community if they wish and several school groups have helped before by fundraising for local schools, tidying the local school area and getting involved in sporting events such as football matches.