



Operation Wallacea

Conservation research through academic partnerships

Risk Assessment and Management
In South Africa and Mozambique 2011

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Key: H=high; M=medium; L=low

2011 – S1 Intibane and Thanda Reserves

Risk	Likelihood of occurrence	Severity of occurrence	Control Measures
Attack by animal	L	H	The main camp area including the training centre and the sleeping area is unfenced, so dangerous game can potentially walk through this area. During the day students will move around in groups of at least two. All students will be fully briefed on safety protocols for encountering dangerous game when they arrive. During the evenings students will be escorted by a safety officer between the enclosed sleeping area and the training centre where meals are taken. Whilst volunteers are surveying in the field they will always be accompanied by a trained armed guard.
Volunteer encountering venomous snake or scorpion	M	H	The main venomous snakes are puff adders, spitting cobras, black mamba, boomslang and vine snakes. In the winter when the surveys are running, snake activity is not great and the chances of encountering snakes are much reduced. However, the rangers are trained in snake handling and if one is encountered in camp it will be removed. In the field the students will be informed to move away from the animal. Students are not allowed to handle snakes. The main scorpion encountered, which is fairly common around the camp, is a large pincer species with only a minor sting. Any scorpions encountered in the rooms or tents should be removed. The Pongola hospital holds snake and scorpion antivenin.
Medical problem for volunteer or staff member	L	M	There are qualified First Aiders based at the camp and good medical and hospital facilities within 1 ½ hrs of the site.
Need for emergency evacuation	L	H	There will be vehicles available at the base at all times for evacuation to the hospital by road (1 ½ hrs). If Air Evacuation is required, the terrain is easily accessible to helicopters, and an emergency response unit can be deployed from Richards Bay (35 mins).
Walking to toilet at night	M	H	The toilet is a short walk away from the dormitories, volunteers will be informed about using torches and always wearing shoes. After dark those in the dormitories will need to use bucket toilets and not go to the outside bathrooms. Some of the accommodation is in huts with en suite

Key: H=high; M=medium; L=low

			toilets.
Lack of hygiene increasing risk of disease	M	M	Camp Manager to ensure that kitchen is kept clean and that food types are prepared separately.
Fire	L	H	Staff are aware of procedures in the event of a fire. No smoking to be allowed in any building or tent.
Volunteer becoming lost in the bush and unable to find the camp	L	H	All groups leaving camp have to be accompanied by an armed guard and to sign out on the whiteboard and state destination and estimated return time. The Group Leader (designated Staff member) is responsible for ensuring that each group have radio and/or cellular phone, sufficient water and First Aid kit.
Control measures not implemented	M	M	Local Opwall coordinator to be responsible for auditing the control measures and camp procedures on a weekly basis (see relevant audit form). These audit reports including details of non compliances and corrective measures to be available for inspection on site

2011 – S2 Pongola Research Centre

Risk	Likelihood of occurrence	Severity of occurrence	Control Measures
Medical problem for volunteer or staff member	M	M	There is a nominated First Aider at the camp and there are excellent medical and hospital facilities within 40 minutes of the centre. Each of the rangers is trained in Emergency First Aid procedures.
Need for emergency evacuation	L	H	There will be vehicles available at the base at all times for evacuation to the hospital by road (40 mins approx). If Air Evacuation is required, the terrain is easily accessible to helicopters, and an emergency response unit can be deployed from Richards Bay (35 mins approx).
Walking to toilet at night and treading on a dangerous snake or	L	H	The toilet is in the same building block as the accommodation but involves walking down an open corridor accessible to the outside. Volunteers are required to use torches and wear shoes. Hyenas may be encountered at night but they keep away from groups of people. Dangerous game

Key: H=high; M=medium; L=low

scorpion or encountering hyenas or other dangerous animal			species are kept out of the camp by a wire fence.
Volunteer encountering venomous snake or scorpion	M	H	The main venomous snakes are Puff Adders, Spitting Cobras, Black Mamba, Boomslang and Vine Snakes. In the winter when the surveys are running, snake activity is not great and the chances of encountering a snake are much reduced. Students will be trained to move away from any snake encountered, there is a trained safety officer living in the camp who will remove the snake from the camp. In the field the students will be informed to move away from the animal. Students are not allowed to handle snakes. The main scorpion encountered, which is fairly common around the camp, is a large pincer species with only a minor sting. Any scorpions encountered in the rooms or tents should be removed. The Pongola hospital holds snake and scorpion antivenom.
Attack by big cat or herbivore	L	H	There are no lions or cheetahs in the reserve and leopards to date have not been recorded. All elephant behaviour work will be done from vehicles, which will be driven by an experienced elephant scientist. The matriarch of the main herd is aggressive and can charge, so safe distances have to be maintained during elephant behaviour studies and these will be decided by the elephant scientist. All volunteers are trained in how to respond to encounters with dangerous game during bush training.
Volunteer becoming lost in the bush and unable to find the camp	L	H	The group will leave camp together, they will be in a vehicle with mobile phone contact. No one leaves the vehicle without permission from the elephant scientist and no one is ever allowed out of sight. No-one is allowed to leave camp unaccompanied.
Lack of hygiene increasing risk of disease	M	M	Camp Manager to ensure that kitchen is kept clean and that food types are prepared separately.
Fire	L	H	There are fire extinguishers on each of the vehicles and a hose pipe at the camp. Staff are trained in the fire procedure, and are able to evacuate to a safe point. No smoking to be allowed in any building or tent.
Volunteer attacked at night whilst sleeping	L	H	The entire reserve, which contains dangerous game animals is fenced and there are armed guards in the Reserve. Students always sleep at least 2 to a room and the rooms have secure lockable doors and windows.
Hippo or crocodile attack: Jozini Dam	L	H	All swimming and walking around the edge of the lake is prohibited because of the likelihood of crocodile or hippo attack.

Key: H=high; M=medium; L=low

Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non compliances and corrective measures to be available for inspection on site.
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2011 – S3 Mdluli Wilderness Camp

Risk	Likelihood of occurrence	Severity of occurrence	Control Measures
Medical problem for volunteer or staff member	M	M	There is a nominated First Aider at the camp and there are excellent medical and hospital facilities within 40 minutes of the camp. Each of the rangers is trained in Emergency First Aid procedures.
Need for emergency evacuation	L	H	There will be vehicles available at the base at all times for evacuation to the hospital by road (40 mins approx). If Air Evacuation is required, the terrain is easily accessible to helicopters, and an emergency response unit can be deployed to Nelspruit hospital if needed.
Walking to toilet at night and treading on a dangerous snake or scorpion or encountering hyenas or other dangerous animal	L	H	The toilet is a short walk away from the tents and communal areas and volunteers are required to use torches, wear shoes at all times and to go in pairs. Elephants and other dangerous game are kept out of the camp by a wire fence. There is an armed guard at the camp at all times.
Volunteer encountering venomous snake or scorpion	M	H	The main venomous snakes are Puff Adders, Spitting Cobras, Black Mamba, Boomslang and Vine Snakes. In the winter when the surveys are running, snake activity is not great and the chances of encountering a snake are much reduced. However, the field guides are trained in snake handling and if one is encountered in camp it will be removed. In the field the students will be informed to move away from the animal. Students are not allowed to handle snakes. The main scorpion encountered is a large pincer species with only a minor sting. Any scorpions encountered in the rooms or tents should be removed. Antivenom for both snakes and scorpions is held at the Nelspruit hospital.
Attack by big cat or	L	H	All foot based surveys will be led by a FGASA qualified Field Guide / Ranger with a minimum

Key: H=high; M=medium; L=low

large herbivore			qualification of SASSETA rifle handling competency and associated Kruger Park rifle handling assessment. In addition the field ornithologists will all be FGASA qualified providing a double level of safety. The groups will be removed from the site if any large herbivores are encountered. FGASA recommends that one qualified person leads a group of 8 if they are trekking long distances and deliberately looking for game encounters. In this situation the groups are not moving more than 400m from a vehicle, the group will be removed if there are any dangerous game near the site and there are two experienced leaders for groups not exceeding 10 volunteers. All volunteers will have completed bush training which includes training in how to respond to large game encounters, before participating in any foot based surveys.
Volunteer becoming lost in the bush and unable to find the camp	L	H	All groups leaving camp have a qualified Field Guide and are in a vehicle with radio contact and mobile phone. The on foot groups have two FGASA qualified armed staff with them. No-one is allowed to leave camp unaccompanied. All groups have to sign out on a whiteboard with proposed destination and names of all group members listed and estimated return time.
Lack of hygiene increasing risk of disease	M	M	Camp Manager to ensure that kitchen is kept clean and that food types are prepared separately.
Fire	L	H	There are fire extinguishers on each of the vehicles and staff are trained in the fire procedure for the camp, and are able to evacuate to a safe point. No smoking to be allowed in any building or tent.
Volunteer attacked at night whilst sleeping	L	H	The entire reserve is fenced and the camp is fenced within the reserve. There are armed guards in the Reserve and at the camp. Students always sleep at least 2 to a tent.
Crocodile or hippo attack whilst in or near water bodies	H	H	All swimming and walking around the edge of water bodies is prohibited because of the likelihood of crocodile or hippo attack
Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.

Key: H=high; M=medium; L=low

2011 – S4 Manyeleti Game Reserve

Risk	Likelihood of occurrence during expedition	Severity of occurrence	Control Measures
Medical problem for volunteer or staff member	M	M	There is a nominated First Aider at the camp and there are excellent medical and hospital facilities within 40 minutes of the camp. Each of the rangers is trained in Emergency First Aid procedures.
Need for emergency evacuation	L	H	There will be vehicles available at the base at all times for evacuation to the hospital by road (40 mins approx). If Air Evacuation is required, the terrain is easily accessible to helicopters, and an emergency response unit can be deployed to Nelspruit hospital if needed.
Walking to toilet at night and treading on a dangerous snake or scorpion or encountering hyenas or other dangerous animal	L	H	The toilet is a short walk away from the tents and communal areas and volunteers are required to use torches, wear shoes at all times and to go in pairs. Elephants and other dangerous game are kept out of the camp by a wire fence. There is an armed guard at the camp at all times.
Volunteer encountering venomous snake or scorpion	M	H	The main venomous snakes are Puff Adders, Spitting Cobras, Black Mamba, Boomslang and Vine Snakes. In the winter when the surveys are running, snake activity is not great and the chances of encountering a snake are much reduced. However, the field guides are trained in snake handling and if one is encountered in camp it will be removed. In the field the students will be informed to move away from the animal. Students are not allowed to handle snakes. The main scorpion encountered is a large pincer species with only a minor sting. Any scorpions encountered in the rooms or tents should be removed. Antivenom for both snakes and

Key: H=high; M=medium; L=low

			scorpions is held at the Hoedspruit hospital.
Attack by big cat or large herbivore	L	H	All foot based surveys will be led by a FGASA qualified Field Guide / Ranger with a minimum qualification of SASSETA rifle handling competency and associated Kruger Park rifle handling assessment. In addition the field ornithologists will all be FGASA qualified providing a double level of safety. The groups will be removed from the site if any large herbivores are encountered. FGASA recommends that one qualified person leads a group of 8 if they are trekking long distances and deliberately looking for game encounters. In this situation the groups are not moving more than 400m from a vehicle, the group will be removed if there are any dangerous game near the site and there are two experienced leaders for groups not exceeding 10 volunteers. All volunteers will have completed bush training which includes training in how to respond to large game encounters, before participating in any foot based surveys.
Volunteer becoming lost in the bush and unable to find the camp	L	H	All groups leaving camp have a qualified Field Guide and are in a vehicle with radio contact and mobile phone. The on foot groups have two FGASA qualified armed staff with them. No-one is allowed to leave camp unaccompanied. All groups have to sign out on a whiteboard with proposed destination and names of all group members listed and estimated return time.
Lack of hygiene increasing risk of disease	M	M	Camp Manager to ensure that kitchen is kept clean and that food types are prepared separately.
Fire	L	H	There are fire extinguishers on each of the vehicles and staff are trained in the fire procedure for the camp, and are able to evacuate to a safe point. No smoking to be allowed in any building or tent.
Volunteer attacked at night whilst sleeping	L	H	The entire reserve is fenced and the camp is fenced within the reserve. There are armed guards in the Reserve and at the camp. Students always sleep at least 2 to a tent.
Crocodile or hippo attack whilst in or near water bodies	H	H	All swimming and walking around the edge of water bodies is prohibited because of the likelihood of crocodile or hippo attack
Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.

Key: H=high; M=medium; L=low

2011 – S5 Welgevonden Camp

Risk	Likelihood of occurrence during expedition	Severity of occurrence	Control Measures
Medical problem for volunteer or staff member	M	M	There is a nominated First Aider and a first aid kit at the camp and there are excellent medical and hospital facilities within 2 hours of the camp.
Need for emergency evacuation	L	H	There will be vehicles available at the base at all times for evacuation to the hospital by road (2 hours approx). If Air Evacuation is required, the terrain is easily accessible to helicopters, and an emergency response unit can be deployed to the hospital in Pretoria if needed.
Walking to toilet at night and treading on a dangerous snake or scorpion or encountering hyenas or other dangerous animal	L	H	The toilet is a short walk away from the accommodation and communal areas and volunteers are required to use torches, wear shoes at all times and to go in pairs. Hyenas may be encountered at night but they keep away from groups of people. Elephants and other dangerous game are kept out of the camp by a wire fence. There is an armed guard at the camp at all times.
Volunteer encountering venomous snake or scorpion	M	H	The main venomous snakes are Puff Adders, Spitting Cobras, Black Mamba, Boomslang and Vine Snakes. In the winter when the surveys are running, snake activity is not great and the chances of encountering a snake are much reduced. However, the field guides are trained in snake handling and if one is encountered in camp it will be removed. In the field the students will be informed to move away from the animal. Students are not allowed to handle snakes. The main scorpion encountered, is a large pincer species with only a minor sting. Any scorpions encountered in the rooms or tents should be removed. Antivenom for both snakes and scorpions is held at the Pretoria hospital.
Attack by big cat or large herbivore	L	H	All foot based surveys will be led by a FGASA qualified Field Guide / Ranger with a minimum qualification of SASSETA rifle handling competency and associated Kruger Park rifle handling assessment. The groups will be removed from the site if any large herbivores are encountered.

Key: H=high; M=medium; L=low

			FGASA recommends that one qualified person leads a group of 8 if they are trekking long distances and deliberately looking for game encounters. In this situation the groups are not moving more than 400m from a vehicle and the group will be removed if there are any dangerous game near the site. All volunteers will have completed bush training which includes training in how to respond to large game encounters, before participating in any foot based surveys.
Volunteer becoming lost in the bush and unable to find the camp	L	H	All groups leaving camp have a qualified Field Guide and are in a vehicle with radio contact and mobile phone. The on foot groups have two FGASA qualified staff with them and a rifle and a vehicle on stand by close to them. No-one is allowed to leave camp unaccompanied. All groups have to sign out on a whiteboard with proposed destination and names of all group members listed and estimated return time.
Lack of hygiene increasing risk of disease	M	M	Camp Manager to ensure that kitchen is kept clean and that food types are prepared separately.
Fire	L	H	There are fire extinguishers on each of the vehicles and staff are trained in the fire procedure for the camp, and are able to evacuate to a safe point. No smoking to be allowed in any building or tent.
Volunteer attacked at night whilst sleeping	L	H	The entire reserve is fenced and the camp is fenced within the reserve. There is an armed guard in the Reserve and at the camp. Students always sleep at least 2 to a tent.
Thorn damage whilst being driven in open vehicle	M	M	The open vehicles are not driven off road and the drivers are all trained to go slowly and to warn the passengers to duck out of the way if there are overhanging thorn bushes.
Crocodile or hippo attack whilst in or near water bodies	L	H	All swimming and walking around the edge of water bodies is prohibited because of the likelihood of crocodile or hippo attack
Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.

Key: H=high; M=medium; L=low

2011 – S6 Malongane Camp, Ponto Do Ouro

Risk	Likelihood of occurrence	Severity of occurrence	Control Measures
Being bitten by snakes or other wildlife	L	H	All staff and volunteers are advised to wear shoes and carry a torch at night in order to ensure that they don't tread on snakes or other wildlife. All staff and volunteers to be advised not to touch or try to pick up/handle snakes or any other wildlife, and to staying on the footpaths when walking around.
Getting lost or swept out to sea during free time from the dive training or reef ecology courses	L	H	All volunteers are instructed that swimming and snorkelling is only allowed with a Dive Master in attendance.
Fire in the main base or at one of the tents	L	H	There is a strict no smoking policy in the tents and main building and there are adequate fire extinguishers on the base.
Medical problem for volunteer or staff member	M	M	There is medic present at all times. There are extensive medical supplies and a separate recovery room.
Need for evacuation	L	H	There are extensive medical facilities for immediate treatment. High Priority emergencies can be evacuated by helicopter from the border at Kosi Bay (about 30 minutes drive) to Richards Bay hospital. Manguzi hospital is 45minutes drive from camp.
Decompression sickness	L	H	The main control measure is to ensure strict enforcement of the dive procedures, allowing only 2 dives a day to a maximum depth of 18m with strict surface interval times. The nearest recompression chamber is at Richards Bay, which is about 1 hour flying time or 5 hours overland. There is adequate oxygen on site to maintain the patient for an overland transfer until reaching the recompression chamber
Being attacked at night	L	H	Access to Malongane is controlled by a gatekeeper and all vehicles are checked in. There are numerous guards at the site. All students sleep at least 2 to a tent and all the tents are close together. Students are NOT allowed to leave the confines of Malongane secure area without a leader.

Key: H=high; M=medium; L=low

Being hurt by propeller or knocked over by boat	M	H	All diving on the southern Mozambique coast is done by launching boats into the surf. Only qualified skippers are allowed to drive the boats and when divers are in the water a flag will be hoisted to warn other boats to keep a safe distance. All staff and volunteers to be trained in how to safely assist the launch and get onboard the boat.
Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.

2011 – S7 Sodwana Bay Dive Centre

Risk	Likelihood of occurrence during expedition	Severity of occurrence	Control Measures
Being bitten by snakes or other wildlife	L	H	All staff and volunteers are advised to wear shoes and carry a torch at night in order to ensure that they don't tread on snakes or other wildlife. All staff and volunteers to be advised not to touch or try to pick up/handle snakes or any other wildlife
Getting lost or swept out to sea when during free time from the dive training or reef ecology courses	L	H	All volunteers are instructed that swimming and snorkelling is only allowed with a Dive Master in attendance.
Fire in the main base or at one of the tents	L	H	There is a strict no smoking policy in the tents and main building and there are adequate fire extinguishers on the base.
Medical problem for volunteer or staff member	M	M	There is medic present at all times in the on-site Medical Centre.
Need for evacuation	L	H	There are extensive medical facilities for immediate treatment. High Priority emergencies can be evacuated by helicopter (about 30 minutes drive) to Richards Bay hospital.

Key: H=high; M=medium; L=low

Decompression sickness	L	H	The main control measure is to ensure strict enforcement of the dive procedures, allowing only 2 dives a day to a maximum depth of 18m with strict surface interval times. The nearest recompression chamber is at Richards Bay, which is about 1 hour flying time or 4 hours overland. There is adequate oxygen on site to maintain the patient for an overland transfer until reaching the recompression chamber
Being attacked at night	L	H	Access to the camp is controlled by a very high and secure fence and all vehicles are checked in. All students sleep at least 2 to a tent and all the tents are close together. Students are NOT allowed to leave the confines of the secure area without a leader.
Being hurt by propeller or knocked over by boat	M	H	All diving at Sodwana Bay is done by launching boats into the surf. Only qualified skippers are allowed to drive the boats and when divers are in the water either a flag will be hoisted to warn other boats to keep a safe distance or the dive leader will have an inflated SMB. All staff and volunteers to be trained in how to safely assist the launch and get onboard the boat.
Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.

2011 – G1 Survey work on foot

Risk	Likelihood of occurrence	Severity of occurrence	Control Measures
Attack from large animal, such as an elephant, buffalo, hippo or lion	L	H	All volunteers need to complete a bush training course before working in areas with large game. Volunteers work in a group of no more than 8, each with an armed guard who is FGASA qualified and has rifle handling competency. All group members are briefed fully on remaining in very close proximity to the armed guard at all times and how to respond if large game species are encountered. A vehicle will always be on standby within 400m of the groups whilst they are surveying. No trekking is allowed at night. It is to be assumed that ALL water bodies however small and apparently isolated contain crocodiles and hippos and are not to be approached closer than 30m unless the armed ranger having checked the site for dangerous animals grants permission.

Key: H=high; M=medium; L=low

Snake bite from venomous snakes	L	H	All volunteers and staff in the bush are required to wear long baggy trousers and long sleeved shirts. ALL volunteers are told never to approach a snake nor are they allowed to empty pit buckets. If a snake is sighted only designated staff snake handlers are allowed to capture or remove it. Any venomous snakes in the vicinity of camps are to be removed to a sufficient distance that they will not return to the camp site. In the unlikely event of a bite the patient will be immobilised and spread of the toxin slowed by appropriate bandaging by the nominated Medical Officer. The patient is to be evacuated by the quickest and safest means direct to the hospital closest to the site which hold the anti-venom.
A fall resulting in serious bleeding or a bone fracture	L	H	Ensuring that all staff and volunteers have footwear with good grip and ankle support. Ensuring that a first aider with a mobile First Aid kit is in close attendance and in telephone or radio contact with the main camps so that additional help can be summoned quickly. Ensuring that an evacuation plan is in position for each location in which the staff and volunteers will be working.
Dehydration	M	H	All volunteers to be briefed about the need to carry sufficient water supplies with them. The temperatures are not as hot in South Africa or Mozambique as in most of the other Operation Wallacea sites so this is not such a significant risk.
Becoming separated from the rest of the group	L	H	Getting separated is not such a risk in South Africa because the volunteers are all briefed repeatedly to remain within 20m of each other and as close to the armed guard as possible. Volunteers are also requested to carry a whistle to signal for attention if needed.
Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.

Key: H=high; M=medium; L=low

2011 – G2 Road travel

Risk	Likelihood of occurrence during expedition	Severity of occurrence	Control Measures
RTA or other vehicle related incident	M	H	All buses are checked before use in compliance with national legislation for meeting health and safety standards, and have drivers with the full set of required qualifications (e.g. “Professional Passenger Courier” qualifications). All 4 X 4 vehicles are subject to pre-departure checks for each journey. 4x4 vehicles will only be used for driving within the reserves and parks, and so the risks faced by driving on public roads will not be present. Each vehicle on a road journey to have a mobile phone, the necessary equipment for changing the wheels and to carry a torch and sufficient water for the journey in case of breakdown.
Pedestrian accident	L	H	The volunteers are within game reserves and protected areas at all times throughout the expeditions and never walking next to public roads
Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.

2011 – G3 Diving

Risk	Likelihood of occurrence	Severity of occurrence	Control Measures
Injuries during kitting up process.	L	M	All volunteers are instructed to lay tanks down onto dive benches at all times when they are not holding the tank and to make sure that they turn on cylinder valves slowly and face the gauge away from them.
Falling out of the dive boat whilst launching, or travelling to dive sites	L	H	All boats have to be launched by experienced staff and volunteers helping to push the boats into the water are under instruction of this staff member. All volunteers are instructed to sit evenly on each side of the boat and to stay seated until they reach the dive site.

Key: H=high; M=medium; L=low

Decompression sickness	L	H	Dives are limited to 2 per day with a minimum 3 hour surface interval between dives, a maximum depth 18m for survey dives. Maximum dive time of 50 minutes with a 5 minute stop at 5m before surfacing. All boats carry oxygen supplies and there are sufficient oxygen supplies at the camp to continue treating the patient throughout the period of the evacuation to the recompression chamber in Richards Bay. There is a qualified staff member who can administer oxygen and evacuation plans are in position for getting the patient to recompression facilities.
Being hit by boat on surfacing	L	H	Surface slowly with arm raised and slowly turning to check for hazards. All boats in the Sodwana Bay area only driven by qualified boat captains, and when divers are down the boat accompanying the dive will hoist a flag to warn other boat drivers to keep a safe distance.
Being left in water at the end of a dive	L	H	Ensure all dive leaders operate the Roster system for each dive.
Becoming separated from buddy	L	H	Ensure that all staff and volunteers are trained in the lost diver procedure.
Being carried away by currents or to greater depths by down currents	L	H	Ensure that risk assessments are completed for each dive site and used by all staff in dive planning. Ensure that the Dive Leader checks the conditions on the day before the group enter the water.
Barotraumas	L	H	All staff and volunteers informed of risk of barotraumas when diving and the safe equalisation procedure, which includes aborting the dive if equalisation is not possible. All staff and volunteers to be informed that they should not dive with an upper respiratory tract infection. All staff and volunteers to be informed of the dangers of using decongestants when diving.
Coming into contact with dangerous sea animals.	L	M	Before any students are allowed to enter the water they have a lecture on possible dangerous organisms they might encounter and how to reduce the risks from them. All volunteers swimming, snorkeling or paddling must wear foot protection. Wetsuits are also to be used to protect against stinging nematocysts. If box jelly fish or other dangerous species are noted in the area, all diving and snorkeling to be aborted. All volunteers and staff to be told never to touch the reef when diving or snorkeling
Sharks	L	H	Majority of sharks encountered will be small reef sharks and harmless although Great White, Bull and Tiger sharks have been recorded from nearby sites in the past. Any sightings of these large dangerous sharks result in all water activities being suspended until the shark has moved.

Key: H=high; M=medium; L=low

Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.
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2011 – G4 Snorkelling and swimming

Risk	Likelihood of occurrence	Severity of occurrence	Control Measures
Being hit by a boat whilst snorkeling	L	H	A Dive Master with a SMB must accompany all snorkellers. All snorkellers to be required to wear inflated BCD's whilst snorkelling. All snorkellers and swimmers are instructed to stop every 2 minutes and check around them for any nearby boats
Being swept out to sea by offshore currents	L	H	If the currents are strong the Dive Master to bring the group back to shore. No swimming unless accompanied by a Dive Master to be allowed.
Being stung when wading at the start and end of the snorkel.	M	M	All volunteers are told that they should wear full foot fins or boots and fins with straps and enter and exit the water walking backwards when snorkelling. If swimming all volunteers are advised to wear footwear at all times.
Being stung when swimming or snorkelling or badly sunburned	M	M	All staff and volunteers are advised to wear wetsuit or other cover up to protect against stings and excessive sun. All volunteers have to complete training in Dangerous Marine Organisms before swimming or snorkelling and instructed never to touch any part of the reef.
Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.

Key: H=high; M=medium; L=low

2011 – G5 Medical support

Risk	Likelihood of occurrence	Severity of occurrence	Control Measures
Stomach upsets	M	M	Ensure that personal hygiene issues are emphasised in briefings to avoid spread of infectious diseases amongst a group of people living in close proximity.
Heat stroke and sunburn	M	M	Ensure that all volunteers and staff are aware of the need to drink adequate water each day. The way to monitor whether adequate fluid is being taken is to monitor the volume and colour of urine. All volunteers and staff to be told of significant risk of sunburn particularly when travelling on boats and to have become adequately prepared with high factor sun block for the duration of their stay.
Wounds	M	M	Ensure all cuts, however insignificant, are cleaned with clean water and antiseptic is applied. All volunteers and staff to be made aware that there is a greatly increased risk of secondary infections. Assess daily and if the wound appears to becoming infected then report it to the medical staff.
Lack of medical advice	M	M	Detailed medical questionnaires to be completed by all staff and volunteers before joining the expeditions. These questionnaires to be reviewed by an Expedition Medic prior to the start of the expeditions and any staff or volunteers that appear to have medical conditions that might affect their ability to participate in the expeditions, informed so that additional medical advice can be obtained. Medical advice and hospital facilities are within close proximity of all the sites. Communication facilities at each site allow additional advice from external medics. There are evacuation plans for different levels of emergency (High, Medium, Low) in position at each site and these procedures will have been tested by the staff prior to the start of the season.
No feedback system to reduce accidents and illnesses	M	M	The local Op Wall Expedition Co-ordinator to record the number of accidents, near misses and illnesses at their camp into 7 categories of seriousness and to hold bi-monthly meetings to discuss how these incidents could be further reduced.
Control measures not implemented	M	M	Senior coordinator to be responsible for auditing the control measures and camp procedures on a fortnightly basis (see relevant audit form). These audit reports including details of non-compliances and corrective measures to be available for inspection on site.

Key: H=high; M=medium; L=low