

Introduction to security measures during research on Yakushima Yakushima Research Committee

Responsibility for security

Individual researchers are, first of all, responsible for the security. In addition, the institutions or research project (e.g., supervisor or project leader) to which each researcher belongs are also responsible. If an accident occurs, first individual researchers, then the supervisor or project leader take responsibility. Please note this principle and ensure measures against accidents are taken by both individual researchers and institutions.

In addition to the measures by each researcher and institution, we (Yakushima Research Committee) recommend many kinds of security measures that are especially applicable to Yakushima. We consider that the following measures are useful to reduce the likelihood of accidents. If an accident does occur, we will cooperate to resolve it as much as we can. However, please bear in mind that we cannot take final responsibility for any accidents because research is a volunteer activity by individual researchers.

Below we describe general security measures on Yakushima, based on our previous experience. Many researchers have encountered dangerous situations, although not all of them led to accidents. Please exchange information with other researchers to prevent accidents. Moreover, please give us any information or comments so that we can improve our security measures.

A. Traffic accidents

Traffic accidents are the most likely type of accident to occur. The results can be very serious, even fatal. If you drive an automobile or motorcycle, you could hurt other people. Always bear in mind that if you hurt someone seriously in Yakushima, not only your own research activities, but also those of other researchers, could be seriously affected, depending on the degree of injury or the measures taken after the accident.

Advance measures

Automobile insurance

Check the period, type, and age limit of obligatory and voluntary insurance if you will drive a car or ride a motorcycle. For a motorcycle, check the period of 'jibaiseki' insurance (obligatory insurance to compensate for damages you cause

while riding/driving; the period is shown on the seal on the number plate). If the insurance has already expired, renew the jibaiseki insurance (otherwise it is illegal to ride/drive). The insurance money for voluntary insurance should be shared among the users if the car is shared by multiple persons.

Maintenance of automobiles/motorcycles

Maintain your automobile/motorcycle as careful as possible. Maintenance is costly; however, safety is more important than anything else. Learn basic maintenance so you can perform it yourself.

Safe driving

Drive carefully. You are likely to cause accident when you are tired. Be very careful at times when you do not get much sleep or come back from research late. We recommend having somebody who has a driving license sit next to the driver, whenever possible.

Fasten seatbelts: it is illegal to drive or ride in the front seats without using a seatbelt. There are no legal regulations for the rear seats, but it is safer to wear a seatbelt in the rear seats.

Measures when an accident occurs

If someone was hurt, take emergency measures for the relief of the victim(s) (first-aid treatment, calling an ambulance, taking him/her to a hospital etc). If you cannot handle this by yourself, call a passing car and ask for help. If possible, move your car to the shoulder of the road in order not to prevent other cars from passing. Report the accident to the police regardless of whether anyone was injured. A police report is necessary for an insurance claim and it will also be useful if you encounter any trouble after the accident. Inform the insurance company and your colleagues in Yakushima. They will be able to give you useful advice.

B. Swimming accidents

Be careful if you go swimming in the sea or rivers. The probability of accidents is high, being proportional to the time spent in the water. Dangerous situations can occur without warning in water.

Advance measures

Go with somebody who already knows the place. Do not get too tired. Do not make other people too tired. We recommend wearing gloves and socks when swimming; otherwise, you could hurt your hands or feet on sharp rocks or shells. You need basic knowledge about dangerous animals, such as poisonous fish and jellyfish.

Measures when an accident occurs

If somebody drowns, give emergency first-aid treatment as soon as possible, such as mouth-to-mouth respiration and heart massage. During and after the first-aid treatment, call an ambulance.

C. Heavy rain, strong winds, and typhoons

When it rains strongly for a long time, floods and landslides may occur. A landslide may close a road. A typhoon, besides producing heavy rain, may often knock down trees with its strong winds. Always check weather information.

D. Accidents during research in the forest

Although the probability of accidents in the forest is not so high, you need to take precautionary measures against accidents in the forest because you will spend a lot of time there. If an accident occurs in the forest, you may be unable to call for help. The main risks of serious injury are sliding down a slope and being hit by falling rocks.

Advance measures

Health

If you are tired or sick, you will become inattentive and are more likely to have an accident. Get enough sleep and rest and take care of your health.

Accident insurance

Be sure to take out accident insurance and confirm the contact address and expiry period. 'Dangerous activities', such as climbing trees using hanging ropes, are usually outside the scope of ordinary insurance. If there is an option for special policy conditions to cover such 'dangerous activities', you should take it.

Getting lost

In the forest of Yakushima, poor visibility may prevent you from confirming your location. Learn to use a map and compass well, and if necessary, an altimeter or GPS so that you always can determine where you are.

Falling

Some cliffs in Yakushima are very steep. Not long ago, a fisherman fell down a cliff and died on the west coast of Yakushima. The sides of valleys are also steep and many rocks are unstable or slippery. If you sense danger, take a safer route by going back or making a detour. In most cases, it is more efficient to take a safer route and wait for your subject animals than to follow them along a very steep and dangerous route. It is also important to recognize dangerous places on the map and keep away from them.

Dangerous animals

Dangerous animals in the forest of Yakushima are the pit viper (*mamushi*), Japanese water snake (*yamakagashi*), and hornet (*suzumebachi*). Do not approach pit vipers or Japanese water snakes. Both are unaggressive snakes and rarely attack human unless threatened. Learn to identify these snakes. Do not approach a nest of hornets. Even if a hornet approaches you, it will usually not attack you if you keep your distance from its nest. Do not attack hornets. Some people have a strong allergic reaction to hornet stings. If you feel sick after being stung, get first-aid treatment as soon as possible. If you have previously had an allergic reaction, you might go into shock, so prompt treatment is required.

Dangerous humans

Take care not to be mistaken for a deer and shot. If you conduct research where hunting might occur, collect information about the hunting schedule. If you hear a shot, go to an open safe place, such as a road, as soon as possible. If the shot is very close, shout aloud to indicate that a human is nearby. If you see poachers, do not make contact with them; this would be very dangerous if they have guns. Do not try to solve such problems on site. Report to the police later, as soon as possible.

Measures when an accident occurs

1) If you can call for help

If you can get to the road, you can call for help from any cars passing by. You can use a mobile phone in some areas, although such areas are limited. Go to a place where you can use a mobile phone and call for help. Check for areas where you can get a mobile phone signal in your study area or on the way back. If you have a walkie-talkie, practice using it in advance. Be sure to give your call sign when you call for help. Otherwise, you will be treated as a false message. Identify locations that have good signal reception.

2) If you cannot call for help

If you cannot move in the mountains or on the road where cars scarcely pass by, wait for help at that place.

How to judge whether an accident has occurred (what rescuers should do)

If your colleague does not come back by the designated time, start searching for him/her. Assume that an accident has occurred. Exchange information about intended schedules and return times with the researchers living with you and decide when to start searching (at the Yakushima Station of PRI, we write the expected return time on a whiteboard). If you are living alone, you need to find a person who can verify that you got back safely every day. Make contact with someone periodically. If you cannot find an appropriate person, contact our committee (note 1)).

Be careful not to make others mistakenly think that you have encountered an accident. If you are late, be sure to make contact. If you make indirect contact (e.g., by leaving a message on an answering machine), contact multiple persons or make contact in multiple ways (e.g., leave a message both at the station and on your friend's mobile phone). If you come back from the forest and go somewhere else, be sure to notify the relevant people that you have already returned from the forest.

When an accident is judged to have occurred

If your colleague does not come back by the designated time, assume that an accident has occurred and start searching.

1) *Make contact*

Make contact with the persons concerned, for example those listed in the researcher's emergency contact address book. If necessary, make contact with somebody on the committee and ask for advice. If somebody needs to go to Yakushima to search, please ask the committee. Committee members keep an emergency list of Yakushima researchers.

2) Maintain contact

If possible, at least one person should stay at a place where it is possible to make contact. Try not to keep the line busy (e.g., use a mobile phone as much as possible to leave the station's telephone available). Ask people outside the site to make contact with related persons/organizations in order to reduce the burden on those at the site.

3) Check whether an accident has occurred or not

If the researcher involved left a note about the emergency, read it carefully. Go to the research site and see if the car or motorcycle is still there to check whether an accident really has occurred. For that purpose, confirm the type, plate number, and the usual parking places of your colleagues. If the researcher has a walkie-talkie, call him/her with it. If not, shout aloud. Be sure to take a walkie-talkie with you when you go searching.

4) Frequent contact

It takes time to send somebody to Yakushima, so make contact as soon as possible. Once an emergency message has been sent, many related persons will need to stand by. Make contact as frequently as possible. If the likelihood of an accident is high, contact the police. After doing that, take measures appropriate to the situation.

Note 1) Contact addresses of committee members are available at the station.