

ENGLISH

code
of mountain
ethics



BEHAVIOUR
RULES
ETIQUETTE
FOR LIVING IN
THE MOUNTAINS

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The “Code of Mountain Ethics” is part of a project informing and making the public aware of environmental matters, strongly backed by the Regional Department for the Territory, Environment and Public Works and is intended for both Valle d’Aosta residents and those who choose this region as their holiday destination.

Its aim is to focus the public’s attention on environmental issues and to suggest a correct way of behaviour, thereby guiding the public towards greater respect of the environment. The “Code” is a useful aid to those coming into contact with mountain life for the first time, but also for those who, despite having previous experience of the mountains, do not fully know its rules and fail to behave in a correct manner.

Within this booklet you will find valuable practical advice on how to organise an excursion or just a simple walk, advice resulting from experience but also from common sense, public spirit and mountain etiquette.

It also contains strong messages awakening the public opinion on the principles of environmental sustainability, principles which are aiming to find a balance between the overall improvement of human life and the level of sustainability of our natural ecosystems. This handbook, which is easy to consult and published in four languages, contains the main items and definitions of alpine life and will help you to forge a closer and more conscious relationship with mountain life, a common heritage which deserves our due respect and attention.

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Introduction

This code has not been divided into articles and paragraphs because the mountains cannot be placed within such a rigid scheme. By nature, the mountains have a thousand faces, a thousand facets, a thousand questions whose answers would be difficult even to find in a law book. Therefore it was decided to present the most important themes and main topics in alphabetic order, like a dictionary which is handy to consult and easy to understand, where anyone can find the answers to their questions and understand the mountain world and its rules.

However, we intend to dwell on the three large themes which we believe represent the foundations of this world: the environment, safety and responsibility.

The environment

Environmental awareness is an important theme ranging from basic rules, such as not picking flowers or leaving litter, to ideas concerning development and sustainable tourism which have been maturing over the last several years.

Going to the mountains, whether on a simple hike, a demanding excursion or even as a competent mountaineer, involves observing a series of rules concerning different spheres. Certain rules of conduct must be followed, these are unwritten rules born from common sense, public spirit and good manners. This may seem obvious but the failure to observe these rules has obliged legislators to set down laws protecting the environment which, once enforced, seriously limit human access to nature and, paradoxically, the mountains become something to look at and not to live with. This Code also intends to reaffirm the general public's freedom to enjoy the mountains while respecting the environment without feeling restricted by prohibitions, a limitation on numbers or boundary fencing.

Respect for the environment not only means respect for the fauna and flora but also for those who live there: this is the elementary rule to observe.



Responsibility

The mountains, a synonym for open spaces and freedom, have become a place of amusement, recreation, sport and relaxation. Consequently, the alpine environment has had to adapt to this new and increased popularity, developing infrastructure such as hotels, second homes, sports facilities and ski-lifts but it has also had to adapt from a sociological point of view, creating new professions and activities able to cater for the ever growing demands of tourists.

The first act of responsibility we can take is by not expecting what the mountains cannot offer us but by respecting it for what it can give us. We must not act like those tourists who go to the mountains for short periods as predators and consumers of the land, with widely varied demands. Responsibility means being aware of one's own capabilities and limits, taking advantage of the mountains, its paths, peaks and rock faces knowing how far we can push ourselves physically. Knowing how to turn back or when to abandon an ascent is a sign of maturity and solid responsibility.

Safety

It is difficult to define safety in the mountains as it is a group of personally subjective elements, such as fitness, technical skills and common sense; but also a number of objective elements, beyond our control such as the environment, the chosen itinerary, the weather conditions, our trekking or climbing companions, the wildlife....

So, can an optimum level of safety be reached? Certainly it can, but we must observe the environment we live in and read the signs nature sends: this is the basic rule of safety in the mountains.

Alessia Di Addario



Alphabetical list

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Ski slopes and signage

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Storm

Sustainable development

Sustainable tourism

Sunstroke

Topographical maps**V**iper bites**W**eather report

What destination, time of departure and length of excursion

Wind slab

Yes**118** emergency care team

Code

Accidents : accidents have always occurred and will continue to do so in the mountains. It is interesting to analyse the data referring to their origin. Firstly, a large percentage happen during excursions, this is largely a question of numbers in that more people go to the mountains to hike than to climb. The majority of accidents occur for “banal” reasons such as loss of the sense of direction, slipping on stony ground or inappropriate equipment. Another factor causing accidents is over-confidence and the repetition of certain movements leading to the superficiality of judgement and in human error. Lastly, a small percentage of accidents is caused by unexpected and unpredictable factors which dominate the newspaper headlines and news reports due to their “spectacularity”.

Acute mountain sickness : this is caused by ascending too rapidly, by staying at altitude (above 3,000/3,500m) but also by other subjective physical factors. This generally occurs from 4 to 8 hours after reaching altitude and the symptoms are headache, nausea with loss of appetite, vomiting, dizziness and difficulty sleeping. Serious cases can lead to respiratory insufficiency caused by pulmonary edema or coma caused by cerebral edema. In order to avoid acute mountain sickness, a few precautions are sufficient such as acclimatising gradually to the new altitude and not staying there long, drinking plenty of water and, above all, when the first symptoms are felt, descending to lower altitude.

Alpine guide : a professional operator who escorts one or more clients to the mountains and teaches them the various techniques and skills during ascents, mountaineering and ski-touring excursions. This profession is regulated by Italian general policy n. 6 of January

2nd 1989, which provides the first principles referring the various regions of Italy to lay down in detail laws on this matter. Alpine guides are also recognised on an international level under the International Union of High Mountain Guides (UIAGM).

Announcements : avoid looking for hiking or climbing companions through ads put up on notice boards outside tourist offices, mountain huts, hostels or bars. Under all circumstances you must know your companions as regards their technical, hiking or climbing skills as well as their physical fitness. It is also important to know how they will react in difficult situations.

Ascent : is the upward route to a summit by climbing rock walls and difficult stretches of ice and snow.

Avalanche : the Italian AINEVA avalanche offices (an inter-regional snow and avalanche Association) to which the autonomous regions and provinces of the Italian alpine chain belong, agree that an avalanche can be defined as a mass of snow, either small or large, moving down a slope. When do avalanches occur?

There are several answers: first of all, avalanches mainly occur during the winter, between December to April, but they can occur at altitude in any season and on steep snow-clad slopes.

It is possible to distinguish between an “immediate” avalanche which is the direct result of snowfall (the fresh snow does not adhere to the slopes or to the old snow) and a



“delayed” avalanche which occurs days or weeks later compared to the other type. Both depend on changes in the snow or other transformations which normally occur within the layer of snow. What are these changes and transformations caused by? They can depend on wind action, the variation in temperature, greater or lesser air humidity or the presence of the warm mountain wind called “Föhn”. The variability of weather conditions and their unpredictability can provoke avalanches even in places such as woods, slopes and snow-covered fields, making it difficult to answer this question.

Avalanches can be caused by human working activity in snowy regions, but they are now more frequent following the increase in popularity of backcountry leisure activities such as off-piste skiing, ski touring or new sports like free-riding.

It is therefore essential to read the snow and weather conditions in bulletins, published by AINEVA avalanche offices which constantly monitor the evolution of the ground snow during the winter. Also, practise these sports accompanied by a mountain professional operator such as an alpine guide or ski instructor. (see also “snow”).

Avalanche transceiver - ARVA : means “appareil de recherche de victimes en avalanche” that is, a search device for finding buried avalanche victims. It was developed in Switzerland in 1940 by Bachler, a Swiss army officer who first fitted out his soldiers with a device using the principles of electromagnetic waves to find lost men if they should be buried in an avalanche. Since then this device has been constantly modified and improved and within Europe one frequency length has been defined: 457 Khz. This type of transceiver is worn on a harness around the torso, it is very simple to use, easily manageable, only weighs about 300 grams including the batteries and costs between 200 and 300 euros. This, a shovel and snow probe make up the trio of emergency rescue material. Remember that it’s not enough just buying an avalanche transceiver but you need to know how to use it too!

Bivouac : this is generally a prefabricated small wooden or tin building with only one room in which a limited number of mountaineers can sleep (usually no more than 15). They are generally found in the higher regions of mountainous chains popular for classical mountaineering and are used as a base close to climbing walls or along ascent routes. These constructions are unmanned and permanently open, cleaning is carried out once a year by the owner who may be an alpine guide group, or a branch of the Italian Alpine Club - sometimes in collaboration with the local administrative authorities. Mountaineers using these structures should have the good manners to treat them with due respect and clean them daily. Inside you can normally find the necessary equipment for an overnight stay such as mattresses and blankets. The fee (if requested) should be left in the special slit or “money box”.

Campsite : in Italy the laws regarding camping vary from region to region. Normally camping, that is, staying out during an excursion, is allowed above 2,500m altitude. Below this height it is only possible to stay in authorised campsites.

Clothing : must be neither too heavy nor too light. It is best to wear layers which can be removed or replaced whenever necessary. We advise: a thermal T-shirt over the skin, a zippered sweater, a fleece, a waterproof wind jacket and a spare thermal T-shirt and a thick pair of long socks. Wear comfortable trousers which can be converted into shorts. According to the season, take along thick tights or waterproof over-trousers, a hat and gloves. Take a hat as protection from solar radiation and wrap-round sunglasses to protect your eyes from the sun’s rays and the glare off the snow or glacier. Hiking boots or shoes should give good ankle support and, if necessary, be able to fit crampons.



Diet : it is very important to have a good breakfast based on complex carbohydrates (that is, bread, cereals, toast) before setting off on a trip in the mountains. While ascending it is advisable to stop and have regular breaks every hour and a half, with a snack containing carbohydrate, protein and sugar, such as a ham or cheese sandwich or a piece of fruit: it is essential to eat frequently. When arriving at destination it is best to eat vegetables, salad or tomatoes and some protein.

During a mountain excursion lasting between two and three hours your body consumes about 700 calories so it is not necessary to “stuff yourself”.

Drinking is very important: you should drink a good deal, between 200 and 300 centilitres per hour, restoring your body liquids with water and added mineral salts. Your body loses a great deal of water through perspiration and respiration, especially in winter when the air is drier. Drinks can be either hot or cold depending on the season, but they should not be too sugary. If you are going to a mountain hut it is advisable not to eat too much when you get there, always consume a sensible proportion of carbohydrates, proteins and sugar, do not exaggerate on the alcohol - adults should drink no more than one or two glasses of wine as alcohol induces drowsiness and carelessness which could cause problems during the descent.

Rock climbing involves a greater consumption of energy and calories, so you must pay attention to the quantity of food consumed as this can create digestive complications. Climbers usually eat little, partly because they cannot carry the excessive weight but also because fatigue reduces the appetite.

Disabled people : disability and the mountains may seem contradictory but it is now possible for increasingly more disabled people to enjoy themselves in the mountains. Naturally we must distinguish between the various forms of disability: for example

wheelchair users can reach and enter some mountain huts. If suitably accompanied, people with a disability or with special needs can practise many alpine sports such as cross country skiing, downhill skiing, ski touring and climbing. It is even possible for those with impaired eyesight to go hiking on specially adapted paths in some regions in Italy.

Documentation : see “itinerary”.

Dogs : your faithful friends may go hiking with you but they must not chase or attack wild animals. As this could have serious or unpleasant consequences, always keep them on a lead. Dogs are not allowed in national parks. This may also be the case in protected areas but only at certain times of the year. Find out about the regulations before departing.

Equipment : first of all, buy good quality and technically reliable equipment as your life may depend on it. Carry your gear in a comfortable, spacious backpack buckled at the waist in order to spread the weight over the spine, hips and legs. Only take are light, warm, not bulky items - the rest can stay at home! Telescopic hiking poles give a safer grip, take the weight off the legs during ascent but especially during descent. When mountaineering a harness, crampons, rope and descender are all necessary.

Etiquette : talking about etiquette in the mountains may seem strange or even out of place but there are a set of unwritten rules which must be respected, for example, on paths give way to those ascending, always greet another hiker, be respectful to others in mountain huts by not making a noise, using a sheet bag and avoiding water wastage.



Excursion : could be defined as a hike in the mountains without needing specific mountaineering equipment such as crampons, ice-axes or pitons.

Excursionist : someone who goes hiking in the mountains without mountaineering equipment – nothing more complicated than pair of binoculars or camera!

Fauna and flora of the Valle d’Aosta and the alpine regions developed in far away countries but were pushed onto the Alps by the weather changes which have been taking place over the past million years. We can find a wonderful variety of flowers, plants and animals throughout the region, particularly in established protected areas such as Gran Paradiso National Park - the oldest in Italy, founded by Victor Emanuel III in 1922; Mont Avic Regional Park founded in 1989 and a number of other protected areas. The main animal species found in Valle d’Aosta are the chamois, ibex, roe deer, marmot, all of which the excursionist may be lucky to see, particularly during the springtime when these animals descend to the lower pastures in search of fresh forage. To fully appreciate these meetings and observe the animals at close range without frightening them, you must stay calm and avoid making sudden movements. As regards the flora, admire it where it grows: don’t take souvenir bunches of flowers home! All flora is, without distinction, not only protected by regional and national laws but by rules of common sense and good manners. If we are more considerate, respecting these rules and not just obeying a prohibition, we can enjoy the mountains in a more knowledgeable and respectful manner. So, always enquire about the rules concerning flower, wild fruit, snail and mushroom gathering.

Fire : fire lighting is extremely dangerous as a gust of unexpected wind, a few uncontrollable sparks or plain absent-mindedness could cause a fire and turn a happy day in the mountains into a tragedy. To avoid this danger, many Italian Regions have forbidden fire lighting within 50m distance of a wooden area, otherwise fire-lighting is totally prohibited during declared periods of drought.

Föhn wind : is the warm wind of the Alps. It is a dry, violent wind known for its sudden gusts and high temperature. It descends from the mountains during the winter - a strange factor as we automatically presume that air coming off snowy peaks will always be cold. How is the föhn wind produced? In order to go over the Alpine chain, the air is forced to rise rapidly to high altitude – this phenomenon is called “Stau”, and when the air rises it cools rapidly. When it reaches a certain temperature then condensation is formed producing clouds and heat. The descent then begins and, due to the increase in temperature caused by condensation and the pressure put on the underlying air masses, the air temperature increases. This is the Föhn, a warm wind which may last several days. Normally it is followed by colder nights and deadly frosts as the original wind coming from the polar or sub-polar regions is no longer warmed by compression and so its natural condition is felt.

Food : see “diet”

Glacier : it is not easy to define a glacier and this subject continues to be debated today. First of all, it is a collection of elements working together as an organic entity and is the result of two fundamental aspects: the material it is composed of and its movement. As



regards material, it is composed of ice originating from snowfalls mixed with gas bubbles, pollen and inorganic materials. As regards movement, its dynamism is very important, the transfer of ice from a collecting or accumulation area to a zone of ablation. This movement is brought about firstly by the storing of ice and secondly by its transferral flux.

For further information it is useful to know that in Valle d'Aosta there is an Organisation of Glacier Experts grouping together the heads of Soccorso Alpino (Alpine Rescue) and the Guide di Alta Montagna della Valle d'Aosta (Valle d'Aosta High Mountain Guides) as well as representatives of institutions such as the National Glaciology Board, the CNR, ARPA and the Department of Territory, Environment and Public Works in Valle d'Aosta. This board coordinates all monitoring work carried out on the glaciers in Valle d'Aosta, plans any safeguarding action and promotes the scientific knowledge acquired and action carried out through specific working groups.

This Organisation works within a wider umbrella foundation called "Montagna Sicura" (Safe Mountains) which was founded to study the nature and problems concerning safety, rescue and life in the mountains.

GPS : means "global positioning system". This system makes it possible to find one's position through a series of at least four satellites which rotate around the Earth. Within a few minutes this system gives our position data in terms of longitude, latitude and altitude by means of a device about the size of a mobile phone. In addition, the GPS records a route taken – this can then be used to retrace the outward path and follow the same route on the return journey. Due to its precision in localising a position, the GPS is becoming popular among hikers and climbers, it is also an unfailing aid in rescue work

in that it has always been difficult localising hikers and climbers in distress. Together the GPS and mobile phone will become an important duo, however it must be borne in mind that there are areas where there is no signal. Remember that it's not enough just buying a GPS but you must also know how to use it!

H₂O: that is, water. While hiking and climbing in both summer and winter, it is necessary to drink a great deal. Do not set out on a hike taking for granted that water is easily found in the mountains: along many hiking routes water can be scarce, and in some places even non-existent. Do not drink stream water as further uphill there may be a house or a cow shed contaminating the water. Remember that the water from snow or glaciers is not thirst quenching as it contains no mineral salts and is difficult to digest. It is a good idea to take rehydration salts with you.

Helicopter : an important means of transport for people and goods, but also for mountain rescue. It is important to remember though that they cannot take off under adverse weather conditions or when visibility is poor, for example, when there is a group of clouds lingering precisely over the rescue spot. Valle d'Aosta is presently trying out an experimental period of night flying to certain areas of the region to offer medical aid. Avoid calling the helicopter unless strictly necessary - it could cost you a tidy sum!

Hypothermia and frostbite : is caused by prolonged exposition to the cold, rain, wind or storm, by wet clothing or fatigue. The symptoms are shivering, drowsiness, apathy, weak pulse and increasing paleness, loss of consciousness and eventually death. Always be prepared for an unpredicted stop, so take a thermal blanket along with you. A casualty



must be wrapped in dry, heated clothes, given hot drinks (no alcohol) and, if possible, a hot bath. He should not move or tire himself in any way.

Information : unfortunately there are still a series of taboos within the mountain world. One of these is not enquiring about the excursion itinerary or ascent about to be undertaken. Enquiring is a sign of maturity and prudence. Information can be obtained from alpine guide offices, visitors' centres within the regional and national parks, from the managers of mountain huts or from habitual excursionists or from those who know the area. You must enquire about the itinerary, difficulty of the route, length of the trip, that is, about everything to make it a pleasant outing and about what to do in the case of need.

Insect bites : may be from bees, wasps or hornets. If still in the skin, remove the sting with a needle or tweezers, do not squeeze the wound, wash it with soap and plenty of water and apply some antihistaminic cream or ammonia.

Internet : in this era of communication globalisation, the Internet is becoming an important supplier of information regarding the mountain conditions and the itineraries with specific sites giving advice on materials and equipment. These sites are more and more numerous both nationally and internationally: however, pay attention to the source of the information and consequently its reliability. As a rule, the best information can be found on the spot.

Itinerary : your choice of itinerary should be made in relation to your fitness and hiking or climbing skills: always aim below your possibilities and never push yourself to the limit. It is essential to find out about the environment where you are climbing or hiking, for

example, the difficulty of a rock face which is expressed in degrees may be the same as for a route on Mont Blanc but the context may be different due to the altitude, geophysical conditions, climate or chosen route. Climbing in an alpine environment is very different from climbing in a gym or on a natural practice wall. When choosing an itinerary, find information from topographical maps and books which illustrate the route, its practicability and difficulty.

Lightning : is a real risk in the mountains, occurring before or during storms.

If the lapse of time between the lightning and the thunder is less than 10 seconds this means that you are very close to the lightning and in great danger. A few precautions should be take, for example remove metal climbing equipment items such as ice-axes, crampons, pitons and carabiners to a distance. The worst place to shelter is under a tree, never stay on mountain crests or in a group, try to shelter in a cave or rock cavern but keep away from the walls. If in the open, the safest position is seated and immobile, when rock climbing, make sure you are tied to the rope, as climbers are often bounced off the rocks by the energy released from a lightning bolt fallen nearby and not because directly hit by a bolt.

Medicines : always keep a first aid kit in your rucksack. That is: an elastic bandage, a dry ice pack, a selection of plasters (particularly those for blisters), eye drops and aspirin.

Mobile phone : see “rescue call”



Mountains : scholars have had great difficulty in formulating a strict definition of the mountains, provoking numerous debates to which no true answers have resulted. In order not to enter into this endless debate, it is possible to suggest a minimum definition based on the idea of “altitude” and “steep slopes”, two terms which are difficult to use and to adapt when taken singularly or together. From a geomorphologic point of view “steep slopes” are places of high energy, that is, areas where erosion and the force of gravity prevent the formation of cultivable or arable land, areas where it is very difficult or impossible for man to work the land. “Altitude” is often associated with steep slopes but there are areas which, despite lying between 3,500 and 5,000m, are not at all steep as in the case of the Tibetan plateau, Pamir, the uplands of the Andes or Ethiopia: in this case farming is restricted by the low temperatures in certain areas and aridity in others. Taking into consideration just altitude, scientists have calculated that 48% of the Earth’s surface is over 500m, 27% over 1,000m, 11% over 2,000m and 2% over 4,000m. Therefore, about one third of the Earth’s surface area is above 1,000m so it is truly difficult to find a definition of the mountain: in order to say what we mean by “the mountains” we must use many other definitions linked to the cultural, geographical and economical specificity of the various regions.

Mountaineer : is someone who scales mountains using mountaineering techniques and specific equipment such as a ropes, ice-axes, crampons, carabiners and pitons.

Mountain hut : is a building erected to cater for the needs of mountaineers and hikers. Huts are managed, guarded and open seasonally to the public. They offer food, lodging and additional facilities. They have a winter room with an independent entrance used as

an emergency shelter and, whenever possible, there is also a telephone for emergencies. Certain elementary rules of conduct must be followed in these huts, such as being quiet during the night, taking off your shoes in the rooms and bathrooms, using the sheet sleeping bag, not smoking, not wasting water and leaving the bathrooms clean. A way to behave and ritual therefore exist which are part of a specific unwritten code. When you enter a mountain hut this means accepting this code and respecting it.

National and regional parks : in Italy 21 national parks have been set up, 3 are awaiting go-ahead and cover over one and a half million hectares, that is, 5% of the national surface area. The principle goal of each park is conservation and therefore to:

- maintain the bio-diversity level, that is, the complexity of the animal and plant association;
- conserve the landscape features;
- conserve the natural and cultural resources present within the protected area.

Conservation is attained in these parks on three clearly distinct levels: knowledge of the territory, protection of the territory and educating about the territory.

First of all, it is important to know how the park is composed and structured as regards the flora and fauna and how they interact within this protected environment. This is done by mapping out the habitats and identifying how the animal and plant life is distributed there.

Secondly, it is vital to protect the environment by preventive work and monitoring, achieved through an efficient supervisory service which is adequately prepared to protect not only the flora and fauna, but also the protected area.

Lastly, it is essential to educate society about the importance of protecting our natural



environment in order to decrease the risk of transformation, in that these protected areas can help the local economy to develop and provide employment for the local population and do not represent just prohibitions and restrictions.

Since 1977 regional natural parks have been set up alongside national parks and jurisdiction has passed from the State to the Regional Authorities. Not have these regional natural park greatly increased the total protected surface area in Italy which is over 1 million hectares, but they also try to conserve natural resources through social means and research compatible development for the local populations. In this way regional parks have become a territory for permanent ecological experimentation where a new model of territory management and sustainable development is possible, alongside to the complex reality of the developed Italian world.

Nature : see “fauna and flora”.

Nature guide : a person who takes individuals or groups of people on excursions into the mountains in the aim of teaching them to appreciate the scenery, natural beauty, ethnographic, productive and topographic aspects. These guides may also offer visits to natural science museums, parks, protected areas and botanical gardens. In Valle d’Aosta, a number of nature guides work exclusively in Gran Paradiso National Park. However, there are many also working outside mountainous areas, avoiding difficult routes which involve climbing techniques and the use of ropes, ice-axes or crampons, such as rock walls or glaciers. This profession is regulated by a number of laws and regions such as Valle d’Aosta, Liguria and Lombardia have already laid down laws in this regard.

Ophthalmia : ophthalmia is caused by neglecting eye protection, that is, not wearing good quality, wrap-around glasses or those with no side protection. The first symptoms are irritation, similar to having a foreign body in the eye which causes the eye to water. The eye then reddens and cannot bear the light, in severe cases this can lead to blindness. Treat this ailment with an eye-wash, avoid the light and take tranquillisers.

Oxygen : it is not true that the higher the altitude the lower the percentage of oxygen there is in the air. The percentage of oxygen always remains the same, what decreases is the partial pressure of the gas mixture which the air is composed of, at any altitude the percentage of oxygen remains 21%.

Ozone : as summer approaches we hear the term “ozone alarm” again and consequently the need to safeguard ourselves against “summer smog”.

What is ozone and why is it related to those “stifling hot” days or to the pollution of urban centres ?

Ozone is a colourless gas with a pungent smell made up of three oxygen atoms (O_3). In the lower layers of the atmosphere (troposphere) that is, the entire environment in which we live from sea level to the mountain peaks, solar radiation sparks off a chemical reaction when the air is polluted, this produces high levels of ozone which are harmful to man and the environment. Ozone can cause eye and respiratory irritation and also damage the aerial parts of plants. When there is little or no wind allowing pollutants to build up and when solar radiation is at its strongest, more ozone is produced, this why there is a higher concentration during the summer.

However, if ozone is produced in a polluted environment then outside the cities there



should be very little, and in the mountains even less. Unfortunately this is not the case. It is true that more ozone is produced where there are more sources of pollution, however, the ozone produced in cities, in areas of heavy traffic and industrial zones is transported by the wind towards the countryside and mountains where there are fewer sources of pollution. Here conditions are more stable and the ozone accumulates. Thus, an apparently strange event occurs: during the summer there is more ozone in the mountainous areas than in the cities or on the plains where most of it is produced.

We have all heard about the hole in the ozone layer. Is it the same as what we have been talking about up to now? No, it isn't. The same ozone that we breathe and is harmful to us is also found much higher up in the stratosphere, at 15/20 kilometres altitude. Up there it plays a beneficial role which is vital to life: it screens the sun's ultraviolet rays which are harmful to living cells. Since the beginning of the 70s depletion of the ozone layer of the stratosphere near the South Pole during the Antarctic Springtime has attracted scientists' attention. This depletion is now occurring in the northern hemisphere, even affecting the middle latitudes where we live.

Excessive exposure to ultraviolet rays can increase the risk of skin cancer and damage to the retina of the human eye. Exposure is particularly high in the mountains as the atmosphere above is thinner. Therefore, you must always protect yourself from ultraviolet rays when in the mountains with suitable headwear, sunglasses, a high-protection sun cream according to your complexion.

At this point you may wonder: if, on one hand, "polluting" ozone increases in the lower layers of the atmosphere, and on the other the "protective" ozone of the stratosphere decreases, don't these two effects balance each other? Can't the summer pollution ozone replace the stratosphere ozone, even partially? The answer is no. We may be talking

about ozone in both cases but the two “compartments” of the atmosphere are distinctly separate and what takes place in the lower ozone layer and in the higher layer do not meet.

Parking : the first gesture of respect towards the mountains and the environment is to leave your car in an authorised car park before departing on an excursion and not in the middle of a field, wood or beside a river or stream. Respect for the mountains begins in the valley!

Paths and signages : in Italy mountain path signage varies from region to region but contains basically the same information. At the start of an itinerary there is normally a pole and pointer indicating the destination, the time it takes to complete the walk and the itinerary number or letters. Along the route these numbers or letters are painted on stones, especially where footpaths cross. In places where the path tends to erode away, for example, on moraines or glaciers, the pathway is signed by a small pile of stones known as cairn. When passing, add a stone and if it looks like collapsing, do some maintenance work! As signage is different in the different regions of Italy, hikers could make mistakes if they are not careful. It is advisable to ask for information how the paths are signed before setting out. Avoid straying from the footpath both for your personal safety and for the respect of the flora and fauna.

Physical preparation : depends on where you intend to climb or go hiking, obviously if you want to ascend to altitude you must train at altitude. Low altitude training, even to high levels, will never be sufficient for activity in the mountains.



Protected oases : are areas where wildlife can shelter, rest and reproduce, and flora is also protected. These areas are identified according to the ecological value of a habitat, the characteristics of such an area must be favourable for endangered species to settle and disperse naturally.

The size of the oasis varies depending on the ecological goals and on the species to be protected. Hunting is forbidden in these areas, animals are only caught for study purposes, scientific research, or if the area is overpopulated by a particular species of wildlife it will then be taken and re-introduced into another area.

The main feature of the oasis is wildlife conservation, therefore untouched and scarcely populated regions are chosen, the natural habitat has a specific variety of both flora and fauna. Even a complex and populated region may become a protected oasis in order to initiate environmental improvement policies.

Radio : an important piece of equipment in the mountains, for those who live there, those who work there and the rescue team. It allows communication always and everywhere, even where there is no mobile phone signal. One single frequency signal is active for alpine rescue within the western Alps zone which includes Valle d'Aosta, the Valais region of Switzerland and Haute-Savoie in France, this is 161.300 and is constantly monitored over numerous listening stations, even found in mountain huts throughout Valle d'Aosta. Thanks to this one frequency length, the rescue teams and alpine guides on the three sides of the Alps can receive information, collaborate and co-ordinate with each other.

Rescue : see "rescue call, 118, yes".

Rescue call : when calling for help you must follow a precise procedure in order for the rescuers to help you. What will they ask when you call?

- who you are and where you are calling from (phone number)
- where it happened (any reference point could be important)
- where the injured person is now
- what happened (accident, illness)
- how many people were involved if an accident has occurred
- sex, age of patient
- if the patient is conscious
- if the patient is breathing

Normally this is done by mobile phone, dialling 118 in Italy (112 in France, 144 in Switzerland), and it is essential not to keep the line engaged making other phone calls (to mother, boyfriend etc.), let the rescuers recall you at any time and do not put the phone down until the operator says. Remember that mobile phone batteries run down quickly in the cold, so only use it for indispensable calls. A mobile phone is not a life insurance, do not feel safe and protected by it – in many areas the signal is not received. The mountain rescue service is free in Italy for those who receive medical care due to injury or illness. If, however, you call the rescue team when it is not strictly necessary or do not require medical care, for example, due to fright or a lost boot or rucksack, then a fee will be charged.

Respect : there are three areas of respect to observe when in the mountains: for the environment, for our companions and for ourselves. The first area involves general respect for nature: not picking flowers, not frightening animals, not leaving rubbish, following



footpaths. The second area means respecting those near us, sharing those special, exciting moments the mountains give us, the happiness and pride felt when reaching a summit, but at the same time we must realise if they are in difficulty, tired, need help, even just need moral support or a word of comfort. Last but not least, we must respect ourselves, our life, our limits without ever reaching breaking point and keeping a margin of error which will allow us to turn back. Never push our body or mind too far and remember as a mature and responsible person that it is always better not to go “beyond” the limit.

Responsibility : much has been said, is said and will continue to be said regarding responsibility in the mountains which were in the past, a symbol of open space and freedom have, for many, become a place of entertainment, leisure and sport. This increase in popularity has led to the development of infrastructure, new professions and activities practised. The balance between respect for the mountains and the right to economic development of the mountains and its inhabitants has not always been respected. In order to find this balance, European legal bodies have attempted to codify this varied alpine world, attempting to define the mountains from a geographical and geophysical point of view, by introducing laws protecting the fauna and flora but also laws regulating agriculture. Additionally, laws have been introduced regulating ski-lifts, codifying professions such as alpine guides, ski instructors and nature guides. Important and in-depth research work on rights is being carried out by the Courmayeur Foundation, the International Centre for Justice, Society and Economy which has already published a series of booklets known as the “Mountain Codes” containing information on the legislation, law and jurisprudence in Italy, France, Spain, Switzerland and Austria; plus a self-regulating code

known as the “Tavole di Courmayeur” concerning those sports activities practised at altitude in the mountains.

Risk : the mountains are an enchanting place accessible to all those who respect the rules and behave in a mature and responsible way. Risk is always present in the mountains: it may be in the form of a sudden storm, a stream overflowing, a deep snowfall and the consequent risk of avalanche. In order to enjoy, live and thus admire mountain scenery, this entails reading the signs it sends us. Paying careful attention to these signs and where we are is fundamental and can mean avoiding unnecessary risks.

Rubbish : this must be repeated over and over again: always take your rubbish home with you! The rubbish a hiker produces is simply the remains of his packed lunch: paper and wrappings, plastic bags, water bottles... which, when empty, only weigh about 200gr - certainly not a great burden or encumbrance.

If this rubbish is left in a mountain hut and multiplied by even a small number of hikers, this becomes a great weight, a burden and creates a series of problems in transporting it back down the valley to be disposed of.

Ski instructor : a person who professionally teaches individuals or groups the techniques of skiing in its different forms, using all types of equipment on ski slopes , skiing itineraries, off-piste skiing and excursions on skis which are not difficult and where the use of mountaineering techniques and tackle such as ropes, ice-axes and crampons are not necessary. This profession is regulated by Italian general policy, n. 81 of March 8th 1991,



which provides the fundamental principles referring each region of Italy to set down laws concerning this subject.

Skiing and skiers : people are spending their leisure time in the mountains more during the winter when they can practise winter sports such as traditional skiing, snowboarding, telemark and cross-country skiing than at other times of the year. Presently, the general rules are contained in national outline law, n. 363 of December 24th 2003, with which many regions are conforming.

Many Italian regional authorities have made laws regarding safety in the areas set aside for these sports stating that "maximum safety must be guaranteed to the skier in relation to the sport practised, if this person uses the authorised ski runs open to the public" (n. 20 of 15/11/04 Autonomous Region of Valle d'Aosta) and defines the rules of conduct to comply with. (Autonomous Region Valle d'Aosta law n. 27 of 15/11/04). These laws are being circulated by both the Association of Ski Instructors in Valle d'Aosta and the Valle d'Aosta Ski-lift Association in the "Skiers' Handbook" and the "10 Golden Rules for Skiing in Safety" which illustrate the main rules to observe on the ski runs, such as respect for others, moderating speed, respecting signage and stopping.

Ski slopes and signage : these not only include ski runs but ski areas defined as "snow covered surfaces, either artificially or naturally, which are open to the public, including slopes, ski lifts and snow-making canons, generally reserved for such snow sports as: skiing and its variations, snowboarding, cross-country skiing, sledging and other sports as mentioned under respective single regional laws" (law n. 363 of December 24th 2003). As regards signage, this varies from region to region and is composed of symbols or

wording similar to road signs, therefore are easy for everyone to understand, including foreigners.

Safety : involves a series of elements subjective to each individual, such as physical preparation, technical skills, common sense and responsibility. However, it also involves a series of objective elements beyond each individual's control, such as the surrounding environment, chosen itinerary, weather conditions, hiking or climbing partners, wildlife etc. The basic rule of safety in an alpine environment is to take note of, and to read the signals nature sends us.

Snow : how is snow formed? Low temperatures within the clouds cause the formation of snow crystals which originate from the sublimation of drops of water vapour around tiny ice nuclei. Depending on the temperature, the humidity and the wind these crystals can have different shapes and, whirling in the wind, can join together to form snow flakes. When the snow flakes reach the ground they undergo further transformations, known as metamorphisms, caused by variations in air temperature which influence the snow layer: we can find rounded, faceted or chalice-shaped crystals. When the ground snow layer temperature rises above freezing point due to solar radiation or warm mountain wind, known as "Föhn", the snow grains and crystals fuse together. The snowfalls lie over each other in chronological order, each layer having its own different physical and mechanical characteristics and within which stress and tensions develop, these are not always counter-balanced on steep slopes causing the bonds to weaken and avalanches to occur. (see "avalanches").



Storm : see “lightning”

Sustainable development : has been defined as development that responds to the current generation’s needs without compromising those of future generations (Brundtland Board 1987).

During the UN Summit on the Environment and Development held in Rio de Janeiro in 1992, 178 governments from all over the world signed the AGENDA 21 programme, a document containing the principles, goals and action to be taken on a global, national and local level to promote sustainable and balanced development in the 21st century. AGENDA 21 is divided into forty chapters illustrating the theme dealt with and the basic goals hoped to be achieved, they identify the areas of the programme, the action to be taken, the tools to employ and describe the different social, economic and cultural participants involved. Chapter 13 is particularly important as it acknowledges the importance of the mountainous regions for the first time, stressing that the mountains are an important store of water, energy and biological diversity and provide essential resources such as minerals, forest products, farming products and recreational facilities. Mountainous areas are large ecosystems within the complex ecology of our planet and are vital for the world’s ecosystem to survive. We must therefore administer the environment in the best way to make the socio-economic development of mountain populations possible and sustainable.

Sustainable tourism : the idea of sustainable tourism - a consequence of sustainable development – was defined during the World Conference on Sustainable Tourism in Lanzarote , Spain in 1995. “The development of tourism must be based on the criterion

of sustainability, this means that it must be ecologically sustainable in the long term, economically favourable, ethically and socially equitable to the local communities".

Following the Lanzarote Charter, the World Organisation for Tourism has concisely and efficiently defined sustainable tourism as "sustainable tourist development which responds to current needs of tourists and hosting regions, at the same time safeguarding and improving future prospects. It must integrate the administration of all resources in such a way that the economic, social and aesthetic requirements are satisfied, while conserving cultural integrity, essential ecological processes, biological diversity and living systems".

Sunstroke : is caused by direct exposure of the head to the sun's rays for a long period of time. The symptoms are headache, heavy sweating, nausea, vomiting, high temperature and can lead to fainting. It is essential to protect yourself, this is done simply by wearing a light-coloured hat or cap and using a sun cream. Victims of sunstroke must stop, rest in the shade, cool themselves with handkerchiefs soaked in water or snow and drink plentifully if conscious (no alcohol).

Topographical maps : see "information and itinerary"

Viper bites : generally animals do not attack man and they only do so when they feel endangered, this is also true of the viper. If a person is accidentally bitten the first thing to do is wash the wound with plenty of water and soap and cover with a cold tight bandage. Never cut or suck the wound, do not use a tourniquet or give the victim snake serum. Take the victim to hospital as quickly as possible or call the rescue service.



Weather report : always check the weather forecast for the area before departing on an excursion or ascent. Bulletins are now highly reliable and forecasts are trustworthy for the following 48 hours. If caught in bad weather then stop, build a shelter or bivouac, do not try to continue: the consequences could be tragic. Wait for weather conditions to improve. During the winter snow reports are available giving information on the depth and type of snow in the main ski resorts with additional reports giving avalanche risk warnings.

What destination, time of departure and length of excursion : another typical “taboo” in the mountains is the reluctance not to tell anyone the destination, time of departure or time of arrival when leaving for an excursion or ascent. There is a strong sense of rivalry and reaching the summit first gives great feeling of satisfaction and glory. However, letting others know your destination is a sign of maturity and good sense. Avoid solitary excursions: never go to the mountains alone!

Wind or snow slab : an accumulation of snow transported and hardened by the wind which prevalently forms on a level with the crest, on the leeward side. It looks like a protrusion, a balcony of snow with no support and no “foundations” and its main feature is, of course, its instability. It is one of the greatest dangers for both climbers and skiers as, easily sliding off the underlying layer, it may detach either spontaneously or caused by human movement, producing an avalanche.

Yes : arms up and apart to form a y shape is the international rescue request signal meaning help is needed, land here. “Yes” is the opposite of “no” signalled by one arm up and the other is down, meaning do not land here, help is not needed.

118 emergency care team : is a 24-hour emergency medical call operating all over Italy, called by dialling 118 with no code and which is free of charge. This co-ordinates and organises all rescue calls, guaranteeing that an equipped ambulance will be sent immediately and also provides assistance and psychological support for the caller while waiting for the rescue team. This call is always free and recorded.

How can you call 118?

- Dial 118 from anywhere in Italy with no code, even when using a mobile phone.
- A phone card is not necessary in a public phone booth.
- Wait for the call operators to reply.
- Answer all the operator's questions calmly and precisely, this is the only way to accelerate rescue procedures.
- Carefully follow the instructions given carefully before the ambulance or the rescue team arrives.

