

## EXPLORING NATURE BY FOLLOWING THE TRACKS OF WILD ANIMALS

The natural environment witnesses the activities, often at night or at dusk, of animals that populate the various habitats of the Torgnon area, leaving many signs of their presence. So, if contact with the wild fauna during an excursion can be decidedly scarce, especially if we consider mammals that are generally shy and elusive, the observation of these signs of their presence is not less important or less interesting than direct observation because it allows to know the habits, characteristics and behaviours of animals that populate the explored environment. From this perspective, footprints, signs of feeding and excrements are effective elements to know the composition of a habitat, as they illustrate the ethological aspects of animals that live there, and also provide practical elements that underpin the guide's explanations.

Signs of presence are also strictly related to the floral composition present and to its seasonal changes. For instance, trees bear the signs of deer rubbing against the bark. Especially in winter, they focus on young plants to find food. Instead, the excrements of mammals often reveal the composition of the diet of the animal that produced them. Food intake varies over the seasons and provides instant indications about the animal's last meal. Considering foxes, for instance, it is particularly evident whether the animal ate fruits (due to the presence of seeds) or other animals (feathers or fur).

During the various periods of the year, the development of flora and fauna is aligned with the sequence of the various phenological phases that are referred to the life cycle both of animals and of plants. The synchronism and balance of these phases is crucial for the equilibrium of the whole habitat because each natural component is closely related to its surroundings. Changes induced by climate change on phenology are one of the most destabilising elements for the delicate balance of mountain environments.

The descriptive sheets below enlarge on the main aspects related to the type of signs of the presence of animals, which can easily be observed during non-specialised trekking in the mountain habitat of Torgnon. Traces can be observed in several periods because every season presents different possibilities and underscores different habits and behaviours of alpine fauna.

The observation of traces of animals is ideally accompanied by discussions and observation of the various phenological phases of plants, particularly in the woodland setting that, especially in autumn when leaves change colour, forms an additional attractive element for visitors and an additional opportunity to organise nature-related tourist activities.



## SIGNS OF PRESENCE

### DEER

#### FOOD AND FAECES

The food of the deer mainly comprises grass, sprouts and fruits. In winter, given the scarcity of the vegetation available and the coat of snow, it feeds on the bark of trees, especially of the youngest trees that, hence, present typical signs of teeth.

The characteristics of faeces vary depending on the season. In autumn and winter they are dark, separate cylindrical balls of ca. 2 cm, resembling small olives. They are more or less crushed according to whether they were left by a male or a female, while in summer they are generally soft, often amassed, with visible grassy residue.

#### FOOTPRINTS

The deer is an ungulate that has a small bony hoof at the extremity of the legs. It walks on two modified toes.

The large nails are clearly visible in the footprint and are separated by a space called thread. In some cases, spurs representing another two atrophied toes can be noticed.

The footprint of the male and of the female is similar with the exception of the size, since the male adult's footprint is generally larger than the female's (male: width ca. 6-7 cm, length ca. 8-9 cm; female: width 4-5 cm, length 7-7.5 cm).

#### MISCELLANEOUS INFORMATION

The presence of deer in the woods is indicated by the so-called rubbing marks.

In fact, the antlers of deer fall every year between January and April, and start growing again already in May.

During this phase the antlers, which are inappropriately called horns, are wrapped in nutritional tissue called velvet. Once the antler has formed again, the velvet dies, generating a very uncomfortable itching sensation that causes the deer to rub the antlers vigorously against trees, thus damaging the bark.



## MARMOT

### FOOD AND FAECES

The marmot's diet mainly comprises roots, seeds and grass. By spending most of the winter in hibernation, the major part of the warm season and of autumn is spent looking for food to build energy reserves in the form of fat.

In winter the faeces are amassed in a dedicated room defined lavatory in the complex underground den, while in summer they are deposited just outside the den. They have a small dark cylindrical shape and contain undigested plant residue.

### FOOTPRINTS

The footprints left by the marmot indicate the characteristics of their legs, which are suitable for digging and to move in alpine prairies.

The front and hind legs feature a large plantar cushion, the front ones have four toes, and the hind ones have five toes. All the toes present strong nails that always leave clearly recognisable marks. The front footprint measures ca. 6 cm in length and 4 cm in width.

The hind footprint is a little longer, ca. 8 cm, and is 5 cm wide.

### MISCELLANEOUS INFORMATION

The ideal habitat of the marmot is the alpine prairie, a land where it digs dens, which are genuine systems of chambers connected by a thick network of tunnels. Usually there is a main chamber lined with grass and situated at a depth of a few metres, while secondary chambers and rooms that act as a lavatory are located more superficially.

The den is usually occupied by a single family unit that counts a reproductive pair and their offspring of three seasons (the current one and the two previous ones). At times colonies of several families share some areas of the den.

The typical "whistle" of the marmot (that is actually a shout) is a sign of danger for the entire colony, and is differentiated depending on the type of threat:

- **single whistle – threat from above;**
- **series of whistles – threat from the side;**
- **the intensity of the whistle informs about the distance of the probable predator.**

## CHAMOIS

### FOOD AND FAECES

The chamois is entirely herbivorous and feeds on grass, lichen, moss and berries.

In winter it feeds on the bark and suckers of trees (thin branches that grow at the base of the tree or directly from the root).

In summer the faeces resemble moist bullets that are stuck together and slightly flattened, while in winter their faeces acquire the shape of dry bullets with a more oval form that is ca. 1.5 cm long.

### FOOTPRINTS

Even the chamois is an ungulate and, as such, presents a footprint in which the two toes with nails and the space between them (thread) can be clearly discerned.

The foot of the chamois can broaden in a plastic manner to adapt to the contact surface, and especially on rock surfaces it behaves like a suction pad. Hence, the chamois is a highly skilled climber.

On soft land, the external edges of the nails remain well impressed and the toes appear closer than those of the deer. During the run, the tips of the hooves have a tendency to broaden, leaving a deeper and broader print.

### MISCELLANEOUS INFORMATION

Tufts of fur of mammals that moult their coat can often be found attached to shrubs in the underbrush or to the low branches of trees.

The chamois' spring moult commences in March and lasts over three months. The dark winter coat is replaced by the summer one that features shorter, rough fur and hues varying from light beige to reddish grey.

## FOX

### FOOD AND FAECES

The fox is an omnivorous mammal. Its diet includes small mammals (e.g., rodents, hare, rabbits), birds, insects and also plants.

In summer and autumn, when fruits and berries are available in plenty, it prefers blackberries, raspberries, cherries, rowan berries, etc., which account for 90% of its food.

The fox is a territorial animal that has the habit of leaving its faeces in particular positions, which are easily visible, such as stones, tree trunks, tufts of grass and often along trails. The colour depends on the type of food ingested, especially if it has fed on berries.

The excrements contain seeds, fur and feathers. The shape of the fox's faeces is generally sausage-like, with a length of 5-8 cm, rounded end and pointed tip.

### FOOTPRINTS

The fox's footprint remarkably resembles that of small dogs (mean dimensions: 6.5 cm length, 4.5 cm width) but, unlike the latter, the footprints of the fox present evident signs due to nails, which are more pronounced, and a central cushion that is quite far apart from the toe cushions, which are narrower.

### MISCELLANEOUS INFORMATION

The fox's den is usually excavated in the soil, along grassy slopes, at the edge of the woods or inside the woods. At times a fox might occupy the den of another mammal, the badger's den, for instance.

## HARE

### FOOD AND FAECES

The hare's diet is entirely plant-based, mainly including grass leaves and roots.

The faeces of the hare present the typical shape of small balls with ca. 1-1.5 cm diameter. They can be found disseminated in small quantities, and even piled up in the soil or near its den.

In summer, the faeces are darker and have a soft consistency due to the abundance of plants rich in water. In autumn the hare can add berries to its diet, while sprouts and bark are the choice for winter. These foods make the faeces harder and paler, with a tendency to become yellowish.

### FOOTPRINTS

The hare's footprints are very typical as a result of its characteristic gait. Indeed, it moves by leaping forward, thus leaving the impression on the ground, especially on snow. The shape of the hind legs, which are longer, appear one beside the other, in front of the front legs, which are, instead, behind, one followed by the other.

The resulting typical Y shape does not vary basically as the speed of progress changes.

## ROE

### FOOD AND FAECES

The roe's food, like that of the deer, mainly comprises grass, sprouts and fruits. In winter, given the scarcity of the vegetation available and the coat of snow, it feeds on the bark of trees, especially of the youngest trees that, hence, present typical signs.

The faeces of the roe are oval and slightly pointed. The length varies between 1-1.5 cm, with a width of 7-10 mm.

Characteristics vary depending on the season. In summer one can find dark faeces, grouped in masses as a result of the fresher vegetation that is rich in water. In winter, they are paler and always clearly separated. The remains of plant fibre that is not well digested can often be recognised.

### FOOTPRINTS

The footprints of the roe are very similar to those of the deer. Indeed, it too is an ungulate that walks on two toes (third and fourth) covered by a bony hoof. These are clearly visible in the footprint and are separated by a space called thread. The spurs, which represent the second and fifth toe that are atrophied, can be discerned in certain cases.

The footprint of the male adult is ca. 3-4 cm wide and ca. 4-5 cm long.

### MISCELLANEOUS INFORMATION

Antlers - roes change their antlers every year, in autumn (October-November). Regrowth of the new antlers, which are wrapped in nutritional tissue called velvet, starts immediately and quite slowly.

Early in spring, when the new antlers have formed, the roes experience the uncomfortable detachment of the velvet, which the animal accelerates by vigorously rubbing the antlers against trunks or trees, or on the ground.

The roe's antlers are much shorter than those of the deer, and the extent of branching conveys an idea of the animal's age because it ends around 6 years.

## WOLF

### FOOD AND FAECES

The wolf's diet is mainly carnivorous. Besides large animals in weak conditions, the wolf can integrate its diet with small mammals, such as marmot, hare, badger, fox, weasel and rodents. They do not refuse berries and fruits, when present.

The faeces of the wolf resemble those of a large dog. They are dark grey, 10-15 cm long and 2.5-3 cm thick, and are often distributed in evident areas, such as tree trunks, stones or tufts of grass to mark the territory.

### FOOTPRINTS

The wolf's footprints resemble those of a large dog; hence, it is easy to confuse the two animals.

But the wolf's toe cushions are quite long with a greater mutual distance than in the dog. The front footprint measures ca. 9-11 cm in length, 8-10 cm in width.

The typical gait of the wolf is the trot, with a step of ca. 1 metre, while the gallop and leap can reach and exceed 1.5 m.

### MISCELLANEOUS INFORMATION

One of the signs of the presence of the wolf in a territory is its typical howl.

There are basically three reasons for this behaviour:

- **communication – in this manner they inform other wolves about their presence and mark the territory;**
- **call – summons for the pack to become compact;**
- **socialisation – to strengthen relations within the pack.**

Various habits can be observed, depending on the season. For instance, when the pack is stable in the den due to the presence of cubs, the animals barely howl as it would reveal their persistent presence with the subsequent risk of exposure to the attacks of predators.



## ROCK GOAT

### FOOD AND FAECES

The rock goat's diet mainly comprises grass, along with sprouts of alpine shrubs, such as juniper and rhododendron, moss, lichen and fruit.

In winter it eats dry grass and integrates the meal with the sprouts of shrubs, lichen and, rarely, with the sprouts of conifers.

Like other alpine bovids, its excrements are small, oblong and roundish. They contain plant residue and are drier in winter and softer in summer due to the availability of fresh grass.

### FOOTPRINTS

The hooves of the rock goat, like those of other ungulates, leave a footprint that is characterised by two clearly visible toes and a thread between them.

The footprints resemble those of the chamois but are larger: length ca. 7-10 cm and width ca. 6 cm.

### MISCELLANEOUS INFORMATION

The horns are a distinctive trait of the rock goat. They are permanent and present considerable differences between male and female subjects.

In the former, the horns, which can exceed 1 m in length, present impressive stubs on the front due to a ring that is formed when growth stops in the month of November.

The number of rings provides a rough indication of the animal's age.

Females, instead, have basically smooth horns that are at most ca. 35 cm long.

## DETAILED INFORMATION

### ANIMAL PHENOLOGY IN THE MOUNTAIN ENVIRONMENT

Every season has its phenology, its annual development phases. We are accustomed to associating winter with the quiescence of nature, spring with the reawakening of plants and animals, summer with the peak of vitality, and autumn as a slow return to rest. But this is not always the case anymore. Climate change is altering the natural rhythm, modifying plant phenology and generating destabilising effects on animal species.

#### Have you ever thought of the impact of a very cold winter on animals?

The Common Frog that lives in these mountains can lay its eggs only when the snow melts and makes water accessible, an essential factor for its reproduction. The entire life cycle of the frog is disrupted when winter is very cold or if snow melting is delayed in spring. Conversely, the Black Grouse, which is accustomed to digging its hiding places in the snow as protection against the cold and predators, will have some problems if snow is late in coming. Hence, there is an ideal seasonal climate to which animal phenology adapts.

When the phenological phases of plants and animals are out of sequence, there are many repercussions that generate chain effects on the fauna of the ecosystem. Spring is the season of births. If the chamois can adapt to early heat by anticipating the birth of its young ones, early deposition and hatching of eggs does not solve the problem for the chickadee, since most of the small larvae that feed the chicks are by then too big and almost ready to become butterflies.

Torgnon hums with life in summer. Pastures and larch woods are the kingdom of insects that, in this season, have fully developed. The rich blossoming of alpine flowers are mostly due to pollination by the untiring bumblebees that, being highly sensitive to temperature variations, rise to higher altitudes in very warm summers. This causes variations in the composition of the flora at various altitudes, and affects the development and presence of butterflies.

Autumn is a delicate season when living beings get ready for winter. Certain plants shed their leaves, the fur of certain animals gets thicker, they prepare their dens and stock up on food. Variations in temperature and humidity are mostly perceived by sensitive species, such as ground beetles, a group of rather selective insects that colonises only very specific habitats. Hence they are considered excellent bioindicators.

### PHENOLOGICAL MONITORING PROCEDURES, THE EXAMPLE OF BUTTERFLIES

The monitoring process of the various species is based on procedures that precisely define times, methods and instruments so that all data are collected uniformly and are, hence, comparable. The technique adopted in the case of butterflies is that of the time-based transept on a limited surface. The operator must travel within an established period of time (30 minutes) across a certain surface (a theoretical square with side 5 m), moving in zig-zag fashion and identifying all the specimens encountered on the way. Considering the short life of butterflies and the rather short flying period of certain species, specimens must be rapidly and intensively monitored between June and August, on a weekly basis.