



Rieserferner-Ahrn/Vedrette di Ries-Aurina Nature Park

Cover image
Hochgall
Photo: Leo Unterholzner

The boundaries of nature and the limits of man

In the glacial regions one finds only scant traces of life and here man is at his limit. Along with the Hohe Tauern National Park and the Zillertaler Alps Nature Park, the Rieserferner-Ahrn/Vedrette di Ries-Aurina Nature Park has a European dimension.

Geology and minerals

Going from the Dolomites to the north side of the Puster Valley entails more than simply crossing over a valley – it involves crossing over one of the most prominent geological seams in Europe: the so-called Periadriatic Seam separates the Eastern Alps from the Southern Alps.

These extremely different rock units were fused together along this line about 30 million years ago by the Alpidic orogeny mountain-building event. Thus today the sedimentary rocks of the Dolomites abut the schists and gneisses of the crystalline basement. While the Alpidic orogeny simply folded and moved the sedimentary rocks causing little or no mineralogical change, the rocks of the crystalline basement underwent a profound transformation (metamorphosis).

The collision of the Southern Alps and the Eastern Alps is a lengthy process that began some 100 million years ago and continues to this day. Roughly speaking, it pushed the Apulian plate up against the southern edge of the European continent. The thrust direction has changed several times during the process, and short distension periods have also been documented. During one of these distension periods some 30 million years ago, magma came up out of the earth's crust along the Periadriatic Seam and along a fault zone lying a little to the north. The molten rock crystallized about nine kilometers deep in the crust and formed the so-called Rieserferner/Vedrette di Ries Pluton. The rising and erosion of the mountains slowly brought

the plutonic rock tonalite to the earth's surface. This is how the Rieserferner/Vedrette di Ries Group was formed.

The exceptionally bold and rugged peaks of the Rieserferner/Vedrette di Ries Group (somewhat unusual in the Eastern Alps) are not due solely to hardness of the tonalite – an igneous rock similar to granite –, but also to the fact that these rocks, which are "only" 30-million years old, are some of the youngest geological formations in South Tyrol.

Eastern Alpine crystalline basement rock units surround, and often extend over the mass of tonalite. These rocks are more than 500-million years old and have experienced at least two mountain-building events. During these orogeny events the multiple transformations of schists, gneisses, amphibolites and marbles were folded by pressure and heat, intensively "kneaded" and recrystallized.

Geologists estimate that the Alps will continue to rise for another 20 million years. The High Tauern will thus attain a height of 25,000 meters in theory. Erosion does, however, ensure that the mountains will not rise much higher. At present, the uplift and erosion are roughly in balance.

The Tauern Window

The Tauern window extends in a narrow strip along the main ridge of the Alps from Brenner/Brennero to the Katschberg Pass 160 kilometers to the east. It provides a glimpse of those rocks which lie under the mighty rock strata of the Eastern Alps and have been brought to the surface here by the extreme lifting and erosion of the mountains. It is estimated that the southern edge of the European continent formed of the abraded remains of the Pennine Ocean floor only became visible about ten million years ago, following massive erosion of the Eastern Alps.

Geologically speaking, the Tauern window forms an elongated dome, which consists of several shells. Just as with a sliced onion, the deepest units are at the center, and the youngest in the outermost shell.

The oldest and deepest geological unit is that of the so-called old roof (old crystalline basement). It comprises a crystalline base of transformed (metamorphic) rocks that are more than 550-million years old. The main part consists of various paragneisses and mica schists (formerly sediments) and amphibolites (formerly basalts). The so-called central gneisses are the product of molten magma that, sometime between 340 and 250 million years ago, penetrated into the rocks of the old crystalline basement and solidified.

During the Alpidic orogeny the granite and granodiorite became transformed into the schists and gneisses – known as the central gneisses due to their presence at the center part of the dome – that we find today. In the area of the Nature Park they form the mighty mountain ridge that separates the Ahrn Valley from the Ziller Valley; the rocks of the old roof, however, are only found in small quantities.

Fig. 1
A flowering wonder on the edge of the ice: the delicate alpine rock-jasmine is a typical cushion plant. The form of these plants protects them from dying of dehydration or cold. The parts of the plant that die decompose directly into the cushion and thus supply the plant with nutrients. Nothing is wasted.
Photo: Leo Unterholzner

Fig. 2
The Tristennöckl above the Kasseler Hütte/Rifugio Roma alpine hut is a "forest above the tree line". It is a Natural Monument.
Photo: Peter Schieiner

The lower schistose covering is located on top of the central gneisses and the old roof. This "shell" consists of various layers of sediment that originally lay next to each other and, through the Alpidic orogeny events, were stacked and compressed into tight folds. The original sedimentary rocks have now become an array of quartzites, mica schists, marbles and powerful calcareous mica schists.

The upper schistose covering (also known as the Glockner nappe) consists mostly of deposits from the edge and the deep-sea floor of the Pennine Ocean. These powerful calcareous mica schists with inclusions of quartzites and graphite schists are also referred to as Bündner slate. There are also thick inter-layers of green ophiolite, which were formerly the basalts of the ocean floor. The copper deposits in these rocks were mined in the Prettau/Predoi mine for centuries up until modern times. Today, the mine has been turned into a museum and climate gallery.

The Tauern window is known for the large and well-formed crystals found in the so-called Alpine chasms. These chasms formed during the last orogeny uplift phase of the Tauern window: between the plastic and structural deformation, the hard rocks were particularly under such strain that cracks and wide fissures formed, into which mineral solutions flowed with enough space to crystallize. Thus were formed, mainly in the central gneiss and green ophiolites, beautiful crystals of quartz, smoky quartz and amethyst, to name just a few.



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South Tyrol Nature Parks

Rieserferner-Ahrn/Vedrette di Ries-Aurina Nature Park

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Ripartizione Natura, paesaggio e sviluppo del territorio



Habitats, animals and plants

Water and ice have played a large part in shaping the mountains and valleys. The Rieserferner-Ahrn/Vedrette di Ries-Aurina Nature Park has the greatest number of glaciers of all South Tyrolean nature parks. The landscape of the central gneisses with their beautiful ridges, slow rock weathering and soil formation, scree and "stone mountain" appearance is very different from that of the schist coverings with their wide, rounded ridges and "grassy mountain" look.

Glaciers

Legends had it that they were "glass mountains", rising inhospitably skywards and inaccessible to all but the "Saligen people" – the dead. The German word for glacier (from the Latin "glacies") is Gletscher, and was in common use in Tyrol only by the 19th century. Prior to this, the term "Ferner" (from Old High German "firni" – old snow) was used. In the Ziller Valley, the term "Kees" (from Rhaetian "Kasa" – ice) was used.

Today, only the northernmost slopes in the Nature Park are glaciated to a significant degree; this is mostly because the limited accumulation zones and steep terrain make the glaciers far less pronounced than those around Großvenediger and Großglockner. For example, in the upper Gell Valley or at the Kasseler Hütte/Rifugio Roma alpine hut, the recent retreat of the glaciers provides an excellent opportunity to observe glacial formation: various types of moraines, boulders, glacial polish, lakes, rounded-hump landscapes, and the incipient erosion. Thus, on a small scale, here we can see the processes that greatly contributed to forming the landscape at the end of the Ice Age.

Milky white water gurgles forth from the mouth of the glacier, rushing over the smooth, flat rocks to flow over waterfalls into the valley. The Reinbachfälle/Cascade di Riva waterfalls in the Tobel/Tobl gorge at the entrance to the Rein/Valle di Riva valley vividly convey a sense of the force of the glacier landscape that issues forth from the Rieserferner/Vedrette di Ries Group. There is almost nothing comparable to it in South Tyrol, and the water is the true wealth of the Nature Park.

Algae, crustaceans and mosses are soon visible upon the stones and sandy pebbles, followed by the first pioneer plants (plant species which are the first to colonize adverse habitats and adapt well to extreme conditions, and the lack of water and nutrients). Late spring blooms in the snow beds (small valleys and hollows where the snow often remains for up to eight or ten months per year), as late as early August. Here we can find specially adapted plants, such as the alpine snowbell, the two-flowered sandwort, the alpine daisy or dwarf cudweed. Many of the plant species found in the snow beds begin to bud while they are still buried by the snow. There is such little time that every ray of sunshine must be used before the weather changes and the long winter sets in. In some extreme places the loss of a single leaf may be decisive for the survival of the plant.



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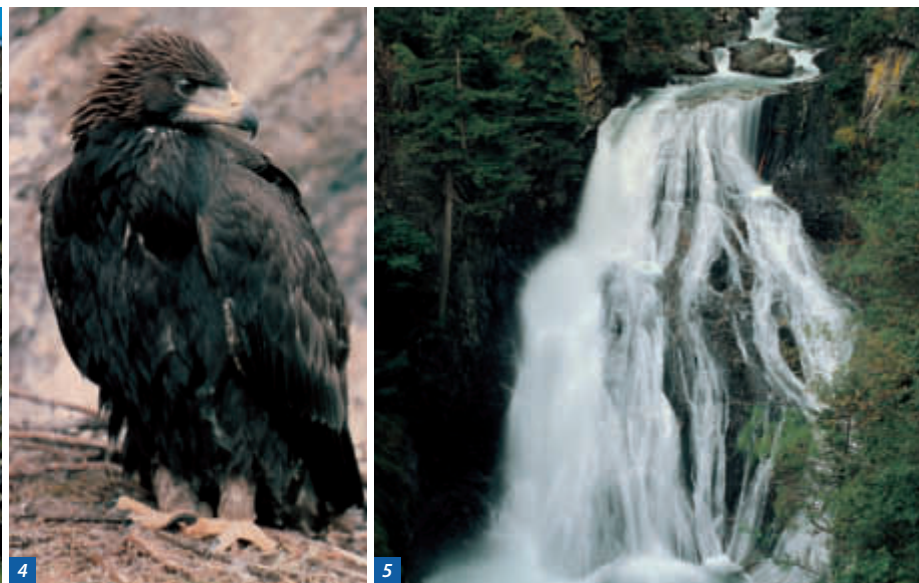
Several pioneer plant species are evergreens and thus save a lot of energy and time by not having to constantly reproduce their foliage.

Lakes

The third largest lake in South Tyrol lies nestled amid the mixed pine forest of the Anholz/Anterselva Valley. Anholz/Anterselva lake is a summer attraction for thousands of tourists who are drawn to its refreshing, cool mountain setting. A nature trail around the lake provides information about the flora, fauna, cultural background and characteristics of the area. Several smaller but extremely attractive lakes are found above the tree line. High above the Bachertal/Val del Rio valley are the Kofler lakes, in which the glacier mountains of the Rieserferner/Vedrette di Ries Group are mirrored. The Klammljoch/Lago di Gola lake is located southwest of the Klammljoch pass at the end of the Knuttental/Valle dei Dossi valley, and the three Maler lakes lie below the Schneebigen Nock/Monte Nevoso. Lesser known lakes include the Pojener Valley lakes (Schreinssee, Schlossbergsee and Schwarzsee/Lago Nero) in the foothills of the southwestern Durreck Group, nestled in the barren landscape of the upper Pojener Valley between the Ahrn/Aurina and Rein/Riva Valleys.

Bogs

Especially in the northern side valleys of the Ahrn/Aurina Valley, but also in other parts of the Natural Park, one can find numerous special wetland habitats. The largest is 22 hectares in size and the best preserved bog is the habitat protected Pürschthal bog at over 2,000 meters above St. Peter/S. Pietro between the Pürschthal meadow and Katzenkofel/Cima del Gatto. There are beautiful



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wet meadows where orchids bloom in early summer situated in Großklausen, southeast of Steinhaus/Cadipietra. The Rötmoos is superbly set against the scenic backdrop of the Rötspitze/Pizzo Rosso, and also worth mentioning are the lower bogs on the valley floor in the further stretches of the Wielen Valley, the Pojener bog or the bog near the Oberen Kofler pasture in Rein/Riva. Plants such as the round-leaved sundew or the alpine butterfly and animals, such as the grass frog are frequently found in these areas.

Forests

On the Tristennöckl above the Kasseler Hütte/Rifugio Roma alpine hut at an elevation of 2,465 meters is one of the highest Swiss pines in the Eastern Alps. The roots of the tree penetrate deep into the rocks between the schists. The north-facing slope provides just the right shade for this record-setting elevation. The southern slopes of the Rieserferner/Vedrette di Ries, on the other hand, are much warmer and the intense sunlight in the spring would deplete the pine needles of their water reserves at a time when there is no replenishment source from the frozen ground: the tree would thus get "dried out."

The spread of the pine trees and their occurrence in particular locations such as on large boulders are the result of the tireless work of the nutcracker. This relative of the crow feeds almost exclusively on the seeds of the Swiss pine, the pine nuts, and is thus by far the greatest propagator of this tree species. The nutcracker eagerly gathers the seeds in autumn to store up as food for the winter and buries them in different locations. Those nuts that it fails to recover then germinate and grow into new trees.

Hooved animals are also widespread in the Nature Park. Red Deer and roe deer – the males of which bear antlers, which they



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The wood grouse is a typical forest dweller. This grouse species prefers solitary woods with dense undergrowth, and is particularly sensitive to any disturbance of its habitat.

The creeping avens is sometimes found just a few meters away from patches of ice. This pioneer plant is characterized by yellow flowers, fuzzy fruit and long stolons similar to the strawberry plant.

Photo: Josef Hochholzer

grow each year after losing the old ones – are fond wood dwellers. The entire Nature Park is home to the chamois, whereas the alpine ibex found in the Durreck and Venediger Groups tend to live far above the tree line.

The coniferous forests differ greatly from the valley up to the tree line. The spruce is dominant in the lower part, and is the tree most common to the Nature Park. As one goes higher in elevation, it is slowly replaced by larch and Swiss pine; each of these trees, either jointly or alone, depending on the location, form the upper timberline. The southern part of the Nature Park, especially in particularly dry locations, is extensively covered by a forest of Scots pine. These trees are especially beautiful in the spring when the spring heather comes into bloom. The crested tit is a bird species common to this habitat.

The mountain pine is found in great numbers in the Knuttent Valley, but also in the Pojener pastures and throughout the Ahrn/Aurina Valley. A bird typically found among the mountain pines is the redpoll.

The woods also contain particular specimens of various deciduous trees, such as the rowan, birch, aspen, willow or the gray alder, which cover great swaths of the Anholz/Anterselva Valley; the green alder may also be found in some moist gullies.

These gullies are frequented by the hazel grouse, or the smaller grouse. Black grouse and wood grouse, two more representatives of this genus, however, prefer the upper edge of the forest and the dwarf shrub heaths or among the mountain forests with lots of undergrowth of blueberries and cranberries and anthills, which provide an important source of protein for feeding their chicks. The anthill larvae are also favorites of the woodpeckers, of which five different types exist in the Park. Also worthy



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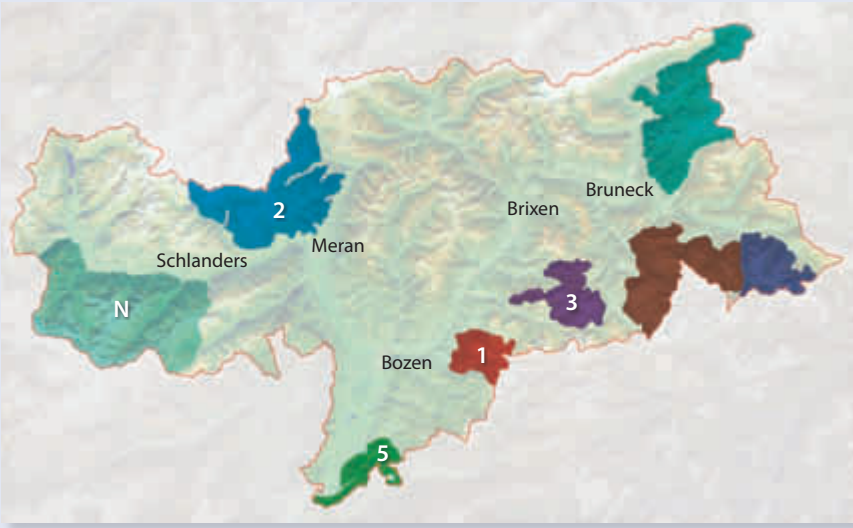
of mention here is the three-toed woodpecker, which lives a secretive life among the natural mountain forests, but whose presence is easily noted by the ringed imprints he leaves on trees.

The Human Factor

Humans play an important role in the Rieserferner-Ahrn/Vedrette di Ries-Aurina Nature Park. In many areas, with the exception of those dominated by high-mountain wilderness, the natural habitats have benefited from human management. Mountain meadows and pastures, of which there are over a hundred in the Nature Park, have been shaped for centuries through agriculture. The natural tree line has in fact been lowered by grazing and mowing in many areas. The abundance of flowers present, which visitors so greatly admire, is only possible because the mountain meadows have been regularly mowed and not over-fertilized, and the pastures have been evenly grazed. Only a proper balance ensures the survival of certain plant and animal species. On the one hand, the hemming in of pastures with roads creates less time-consuming management, on the other hand, many plants cannot tolerate fertilizer or to be grazed too frequently. Increased mechanization of agricultural processes requires uniform, easy-to-work surfaces, which destroy many valuable micro-habitats. The conservation of traditional farming methods takes on even greater value, and the protected area has greater importance for the conservation of habitats. The scientific research undertaken, including that across the border in cooperation with the Hohe Tauern National Park, is a valuable aid in preserving bio-diversity and gaining new knowledge. Natural settings that are ecologically intact are a basic need for people seeking recreation.

Rieserferner-Ahrn/Vedrette di Ries-Aurina Nature Park (7)

Area: 31,320 hectares, established in 1988, expanded in 1994



- 1 Schlern-Rosengarten/Sciliar-Catinaccio Nature Park
- 2 Texelgruppe/Gruppo di Tessa Nature Park
- 3 Puez-Geisler/Puez-Odle Nature Park
- 4 Fanes-Sennes-Prags/Fanes-Senes-Braies Nature Park
- 5 Trudner Horn/Monte Corno Nature Park
- 6 Drei Zinnen/Tre Cime Nature Park
- 7 Rieserferner-Ahrn/Vedrette di Ries-Aurina Nature Park**
- N Stillsfer Joch/Stelvio National Park

South Tyrol Nature Parks

Nature parks are of particular importance for the preservation of nature and landscapes, education and research, and providing an opportunity to experience nature. The concept is based on a few clear principles:

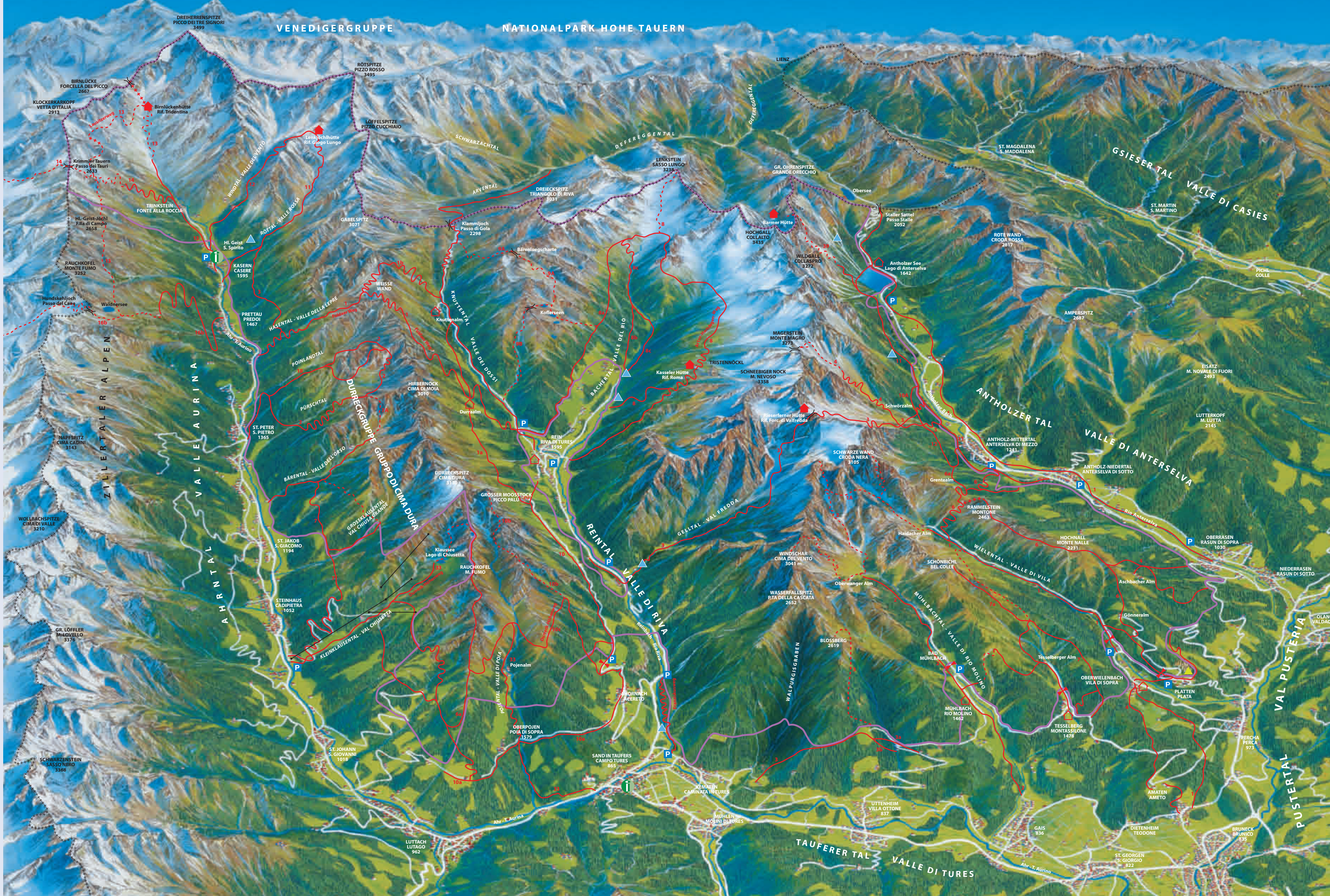
1. South Tyrol Nature Parks protect and preserve the diversity of the mountains with their habitats, plants and animals.
2. Information, environmental education and a special nature experience offer visitors a new understanding of nature and promote good governance.
3. The Nature Parks comprise mountains, pastures and forests; permanent settlements are not part of the area.
4. Forest and alpine farming and transhumance are maintained using sustainable methods.
5. No construction is permitted (except for the forest and alpine farming and transhumance). No overhead lines, mines, gravel mines or use of water for hydroelectric or industrial purposes is allowed.

A Brief Overview of the Nature Park

The heart of the Nature Park is the Rieserferner/Vedrette di Ries Group between Antholz/Anterselva and Rein in Taufers/Riva di Tures, of which the Hochgall/Collalto (3,436 m) is the most recognizable landmark. The Durreck Group lies between Rein/Riva and Ahrntal/Valle Aurina, in which the Durreckspitze (3,135 m) is the highest peak. Further eastwards, the Venediger Group has the two highest peaks of the Nature Park, Rötspitz/Pizzo Rosso (3,495 m) and the Dreierherrenspitze/Picco dei Tre Signori (3,499 m). The Rieserferner-Ahrn/Vedrette di Ries-Aurina Nature Park is the second largest nature park in South Tyrol and seamlessly abuts the Austrian Hohe Tauern National Park and the Zillertal Alps High Mountain Nature Park at the border.

Together these three protected areas contain more than 2,500 sq. km of the largest connected nature reserve in Central Europe. The village of Kematen in Sand in Taufers/Camminata di Tures at 900 meters is the lowest point in the Park, right next to the mighty Rein/Riva waterfalls that offer spectacular natural scenery and are a tourist attraction. The village Rein in Taufers/Riva di Tures is like an island within the Nature Park and is the jumping-off point for wonderful hiking and mountain tours. Other major accesses are the valley entrances of Prettau/Predoi and Antholz/Anterselva lake. Peaceful valleys lying to the south include those of Mühlbach/Rio Molino, Tesselberg/Montassilone and, Wielen/Vila. Near Platten/Plata above Percha/Perca are the famous earth pyramids, which are easily accessible to everyone.

Overall, the nature reserve offers an amazing amount of diversity unlike anything else in the more southerly Dolomites and are a welcome alternative destination. The Visitor's center in Sand in Taufers/Campo Tures and Information center in Kasern/Casere house modern permanent exhibitions that offer visitors to the Nature Park a good place to start.



Nature Park communities

- Sand in Taufers/Campo Tures:** 5,293 inhabitants, Area 16,447 hectares, of which 12,016 hectares are part of the Nature Park; Tourist office: Ph. +39 0474 678076, www.taufers.com
- Gais:** 3,186 inhabitants, Area 6,034 hectares, of which 2,912 hectares are part of the Nature Park; Tourist office: Ph. +39 0474 504220, www.gais-uttenheim.com
- Percha/Perca:** 1,474 inhabitants, Area 3,028 hectares, of which 2,048 hectares are part of the Nature Park; Bruneck tourist office: Ph. +39 0474 555722, www.bruneck.com
- Rasen/Rasun-Antholz/Anterselva:** 2,885 inhabitants, Area 12,092 hectares, of which 4,584 hectares are part of the Nature Park; Rasen/Rasun-Antholz/Anterselva Valley tourist office: Ph. +39 0474 496269, www.rasen.it; Antholz/Anterselva Valley tourist office: Ph. +39 0474 492116, www.antholz.com
- Ahrntal/Valle Aurina:** 5,920 inhabitants, Area 18,728 hectares, of which 3,467 hectares are part of the Nature Park; Tourist office: Ph. +39 0474 671136, www.ahrntal.it
- Prettau/Predoi:** 604 inhabitants, Area 8,649 hectares, of which 6,293 hectares are part of the Nature Park; Tourist office: Ph. +39 0474 652198, www.ahrntal.org



Rieserferner-Ahrn/Vedrette di Ries-Aurina Nature Park Visitor's Center in Sand in Taufers/Campo Tures

Open: from early May to late October, late December to late March, Tuesday to Saturday, 9:30 am – 12:30 pm and 2:30 pm – 6:00 pm. Also open on Sundays in July, August and September. Admission free!
Ph. +39 0474 677546
info@provinz.bz.it
www.provinz.bz.it/naturparke



Kasern/Casere Nature Park Information Center in Kasern/Casere; Prettau/Predoi

Open: in summer from early June to mid-October 10:00 am – 5:00 pm, closed on Sundays; from mid-July to mid-September daily 9:00 am – 6:00 pm; in winter from Christmas to Easter daily 9:00 am – 4:00 pm. Admission free!
Ph. +39 0474 654188
kasern@ahrntal.it
www.provinz.bz.it/naturparke

Key

- Nature park boundary
- Access road
- Waters
- ▲ Waterfall
- Parking lot
- Closed Road
- Tavern/Rest station
- ▲ Alpine hut
- 12 Marked hiking trail
- Difficult path
- ++++ Via ferrata
- ↗ Lift
- Pass/gap
- ▲ Earth pyramids
- +++++ National border
- i Visitor's center

Alpine emergency signals

- Within 1 minute emit 6 audio/visual signals (at 10 second intervals)
- Pause for 1 minute
- Repeat the signal (until a response is received)
- Response: 3 signals within 1 minute

Emergency number for mountain accidents

Provincial emergency call center 118

Park regulations

- No motor vehicles, use public transport to access the Park.
- Stay on the trails.
- Avoid making noise.
- Do not throw anything away, do not take anything (mushrooms, plants, minerals).
- Tents? Camping? No. Please have consideration for the facilities of the Park.
- Fire hazard! No campfires, no grills. Cigarettes?
- Take your time, and enjoy the experience.