

At the edge of the
earth



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BUSTER**

Below the snowline is a treeless zone of alpine pastures that have for generations been used for the summer grazing of goats and cattle.

Agriculture is confined to the valleys and foothills, with fruit growing and viticulture on some sunny slopes.

Further down the mountain normal plants still cannot grow only plants that are adapted to the cold are able to grow. Forests of the pine trees grow higher up the mountain where it is colder. Forest of broad-leaved trees and a wide range of other vegetation grow at the base of the mountain.

Typically in mountain ranges it is high on the mountaintop. It is so cold that plants cannot grow here. There is only snow and bare rock. Summit regions above 3000 m (about 9800 ft) are glaciated. Peaks and crests, however, rise above the ice, displaying jagged shapes (tooth like horns, needles, and knife-edged ridges). About 2 % of the total area of the Alps is covered in ice. The longest valley glacier, the Aletsch Glacier in the Bernese Alps, is 18 km (11mi) long.

My great grandfather used to be a farmer but nowadays people in this area are no longer relying on agriculture. Now people tend to work in the tourist industry and farmland has been given up to build ski slopes and lodges. Older people feel that the area has lost its natural beauty but most of their income comes from the tourist industry.

Oak, hornbeam, and pine trees dominate the warm foothill zones, and sheltered valleys opening onto the Upper Italian Lakes abound with subtropical vegetation. A region of beech forests encompasses the cooler

zone and grades at higher elevations into the fir and spruce belt. Mountain maple, spruce, and larch extend to the timberline.

Living in mountainous regions can bring problems with individual isolated areas separated by mountains and rivers. In past times communications would have been a problem but since 1981 tunnels have been built linking areas. Higher areas in Fold Mountains like the Alps are not available to live because of the jagged ice and it is too cold. Traditionally the economy has relied on farming and forestry. Alpine pastures have been used for grazing goats and cattle below the snow line.

Life has however changed in the Alps tourism has brought with it both benefits and problems.

50 million people visit the Alps every year. The attraction is mainly winter skiing. To cater for all these people forests have to be mown down to make room for the ski slopes and lodges for people to stay in.

Effects of tourism include erosion and acid rain from the many vehicles. Areas of this nature are prone to avalanches.

Benefits and problems can also be seen with the tunnels. There have been numerous accidents in the tunnels. Recently two trucks collided and exploded in the St. Gotthard tunnel as a result a hundred people are missing. Long alpine tunnels are crucial in modern living but accidents have left officials questioning them.

A distinctive Alpine pastoral economy that evolved through the centuries has been modified since the 19th century by industry based on indigenous raw

materials, such as the industries in the Mur and Murz valleys of the southern Austria that used iron ore from deposits near Eisenerz. Hydroelectric power development at the end of the 19th and beginning of the 20th centuries, often involving many different watersheds, led to the establishment in the lower valleys of electricity-dependent industries, manufacturing such products as aluminium, chemicals, and specialty steels.

Tourism, which began in the 19th century in a modest way, has become, since the end of World War II, a mass phenomenon. Thus, the Alps have become a summer and winter playground for millions of European urban dwellers and annually attract tourists from around the world. Because of this enormous human impact on a fragile and ecological environment, the Alps are the most threatened mountain system in the world.

The first of the great tunnels through the Alps, the Mount Cenis tunnel between France and Italy, was built between 1857 and 1870 and opened in 1871. The St Gotthard line, with its spiral tunnel approaches at Goschenen, was built between 1872 and 1882. The Arlberg tunnel in the southwest Austria, connecting Vorarlberg with the Tyrol, dates from 1884, and the Simplon rail tunnel, the longest in the world, was built between 1898 and 1906. Construction of a new St Gotthard rail link began in 1990 with a 20-year completion schedule.

Swift road travel between Italy and Germany became possible during World War II, when the totalitarian regimes of these countries linked their new motorway networks over the Fern and Brenner passes. The road tunnel under Mont Blanc was opened in 1965. Many truck roads now cross the Alps,

such as the main motorway route from Switzerland to Italy, which runs from Zurich past the Walensee and the town of Chur.

Causes:

- * Heavy snowfall compressing and adding weight to the earlier falls, especially on windward slopes.
- * Steep slopes of over 25 degrees where stability is reduced and friction is more easily overcome.
- * A sudden increase in temperature, especially on the south-facing slopes and, in the Alps, under foehn wind conditions.
- * Heavy rain falling upon snow (more likely in Scotland than in the Alps)
- * Deforestation, partly for new ski runs, which reduces slope stability.
- * Vibrations triggered by off-piste skiers, any nearby traffic and more dangerously, earth movements.
- * Very long, cold, dry winters followed by heavy snowfalls in spring. Under these conditions, earlier falls of snow will turn into ice over which later falls will slide (some local people perceive this to pose the greatest avalanche risk).

Consequences:

Avalanches can block roads and railways, cut off power supplies and telecommunications and, under extreme conditions, destroy buildings and

cause loss of life. Between 1980 and 1991 there were, in Alpine Europe alone 1210-recorded deaths.