

# Antarctica

## Geography

Location: continent mostly south of the Antarctic Circle.

Map references: Antarctic Region.

Area:

total area: 14 million sq km (est.)

land area: 14 million sq km (est.)

note: second-smallest continent (after Australia)

Coastline: 17,968 km.

International disputes: Antarctic Treaty defers claims (see Antarctic Treaty Summary below); sections (some overlapping) claimed by Argentina, Australia, Chile, France (Adelie Land), New Zealand (Ross Dependency), Norway (Queen Maud Land), and UK; the US and most other nations do not recognize the territorial claims of other nations and have made no claims themselves (the US reserves the right to do so); no formal claims have been made in the sector between 90 degrees west and 150 degrees west.

Climate: severe low temperatures vary with latitude, elevation, and distance from the ocean; East Antarctica is colder than West Antarctica because of its higher elevation; Antarctic Peninsula has the most moderate climate; higher temperatures occur in January along the coast and average slightly below freezing.

Terrain: about 98% thick continental ice sheet and 2% barren rock, with average elevations between 2,000 and 4,000 meters; mountain ranges up to 4,897 meters high; ice-free coastal areas include parts of southern Victoria Land, Wilkes Land, the Antarctic Peninsula area, and parts of Ross Island on McMurdo Sound; glaciers form ice shelves along about half of the coastline, and floating ice shelves constitute 11% of the area of the continent.

Natural resources: none presently exploited; iron ore, chromium, copper, gold, nickel, platinum and other minerals, and coal and hydrocarbons have been found in small, uncommercial quantities.

Environment:

current issues: in October 1991 it was reported that the ozone shield, which protects the Earth's surface from harmful ultraviolet radiation, had dwindled to the lowest level recorded over Antarctica since 1975 when measurements were first taken.

natural hazards: katabatic (gravity-driven) winds blow coastward from the high interior; frequent blizzards form near the foot of the plateau; cyclonic storms form over the ocean and move clockwise along the coast; volcanism on Deception Island and isolated areas of West Antarctica; other seismic activity rare and weak.

Note: the coldest, windiest, highest, and driest continent; during summer more solar radiation reaches the surface at the South Pole than is received at the Equator in an equivalent period; mostly uninhabitable.

## People

Population: no indigenous inhabitants; note - there are seasonally staffed research stations.

Antarctic Treaty Summary: The Antarctic Treaty, signed on 1 December 1959 and entered into force on 23 June 1961, establishes the legal framework for the management of Antarctica. Administration is carried out through consultative member meetings - the 18th Antarctic Treaty Consultative Meeting was in Japan in April 1993. Currently, there are 42 treaty member nations: 26 consultative and 16 acceding. Consultative (voting) members include the seven nations that claim portions of Antarctica as national territory (some claims overlap) and 19 nonclaimant nations.

The US and some other nations that have made no claims have reserved the right to do so. The US does not recognize the claims of others. The year in parentheses indicates when an acceding nation was voted to full consultative (voting) status, while no date indicates the country was an original 1959 treaty signatory.

Claimant nations are - Argentina, Australia, Chile, France, New Zealand, Norway, and the UK. Nonclaimant consultative nations are - Belgium, Brazil (1983), China (1985), Ecuador (1990), Finland (1989), Germany (1981), India (1983), Italy (1987), Japan, South Korea (1989), Netherlands (1990), Peru (1989), Poland (1977), South Africa, Spain (1988), Sweden (1988), Uruguay (1985), the US, and Russia. Acceding (nonvoting) members, with year of accession in parentheses, are - Austria (1987), Bulgaria (1978), Canada (1988), Colombia (1988), Cuba (1984), Czech Republic (1993), Denmark (1965), Greece (1987), Guatemala (1991), Hungary (1984), North Korea (1987), Papua New Guinea (1981), Romania (1971), Slovakia (1993), Switzerland (1990), and Ukraine (1992).

Article 1: area to be used for peaceful purposes only; military activity, such as weapons testing, is prohibited, but military personnel and equipment may be used for scientific research or any other peaceful purpose

Article 2: freedom of scientific investigation and cooperation shall continue

Article 3: free exchange of information and personnel in cooperation with the UN and other international agencies

Article 4: does not recognize, dispute, or establish territorial claims and no new claims shall be asserted while the treaty is in force

Article 5: prohibits nuclear explosions or disposal of radioactive wastes

Article 6: includes under the treaty all land and ice shelves south of 60 degrees 00 minutes south

Article 7: treaty-state observers have free access, including aerial observation, to any area and may inspect all stations, installations, and equipment; advance notice of all activities and of the introduction of military personnel must be given

Article 8: allows for jurisdiction over observers and scientists by their own states

Article 9: frequent consultative meetings take place among member nations

Article 10: treaty states will discourage activities by any country in Antarctica that are contrary to the treaty

Article 11: disputes to be settled peacefully by the parties concerned or, ultimately, by the ICJ

Articles 12, 13, 14: deal with upholding, interpreting, and amending the treaty among involved nations

Other agreements: more than 170 recommendations adopted at treaty consultative meetings and ratified by governments include - Agreed Measures for the Conservation of Antarctic Fauna and Flora

(1964); Convention for the Conservation of Antarctic Seals (1972); Convention on the Conservation of Antarctic Marine Living Resources (1980); a mineral resources agreement was signed in 1988 but was subsequently rejected; in 1991 the Protocol on Environmental Protection to the Antarctic Treaty was signed and awaits ratification; this agreement provides for the protection of the Antarctic environment through five specific annexes on marine pollution, fauna, and flora, environmental impact assessments, waste management, and protected areas; it also prohibits all activities relating to mineral resources except scientific research; 14 parties have ratified Protocol as of April 1995.

Legal system: US law, including certain criminal offenses by or against US nationals, such as murder, may apply to areas not under jurisdiction of other countries. Some US laws directly apply to Antarctica. For example, the Antarctic Conservation Act, 16 U.S.C. section 2401 et seq., provides civil and criminal penalties for the following activities, unless authorized by regulation of statute: The taking of native mammals or birds; the introduction of nonindigenous plants and animals; entry into specially protected or scientific areas; the discharge or disposal of pollutants; and the importation into the US of certain items from Antarctica. Violation of the Antarctic Conservation Act carries penalties of up to \$10,000 in fines and 1 year in prison. The Departments of Treasury, Commerce, Transportation, and Interior share enforcement

responsibilities. Public Law 95-541, the US Antarctic Conservation Act of 1978, requires expeditions from the US to Antarctica to notify, in advance, the Office of Oceans and Polar Affairs, Room 5801, Department of State, Washington, DC 20520, which reports such plans to other nations as required by the Antarctic Treaty. For more information contact Permit Office, Office of Polar Programs, National Science Foundation, Arlington, Virginia 22230 (703-306-1031).

## Transportation

Ports: none; offshore anchorage.

Airports: 42 landing facilities at different locations operated by 15 national governments party to the Treaty; one additional air facility operated by commercial (nongovernmental) tourist organization; helicopter pads at 36 of these locations; runways at 14 locations are gravel, sea ice, glacier ice, or compacted snow surface suitable for wheeled fixed-wing aircraft; no paved runways; 15 locations have snow-surface skiways limited to use by ski-equipped planes - 11 runways/skiways 1,000 to 3,000 m, 5 runways/skiways less than 1,000 m, 8 runways/skiways greater than 3,000 m, and 5 of unspecified or variable length; airports generally subject to severe restrictions and limitations resulting from extreme seasonal and geographic conditions; airports do not meet ICAO standards;

advance approval from the respective governmental or non-governmental operating organization required for landing.