



Gabriel de Castilla Comité Polar Español

62°58'40"S 60°00'30"W

Type: Station

Operational period:
November – March

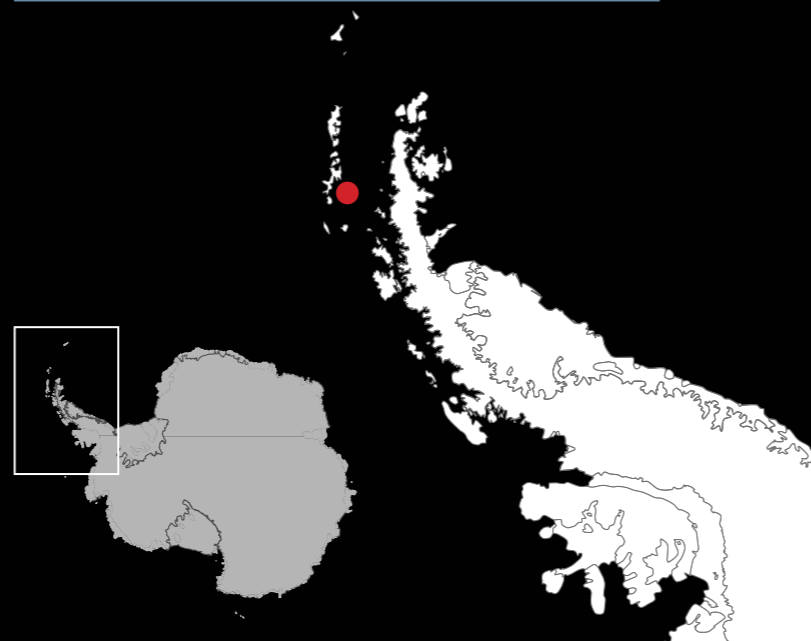
Location

Located on Deception Island, South Shetland Islands it is a summer station opened, normally, from November to March.

Biodiversity and natural environment

The area is located in an active volcano, and there is a unique community of organisms adapted to the geothermal activity. It is remarkably rich in criptogamic communities. There are several penguin rookeries. Over 57% of the island is covered by permanent glaciers. A ring of hills runs around the island and is the principal drainage divide, ephemeral springs flow toward the inner and outer coast. Several lakes are located on the interior side of the watershed. Kroner Lake is the only geothermal lagoon in the Antarctic.

| CLIMATE | |
|--|--------------------------|
| Climate zone | Maritime Antarctica |
| Permafrost | Discontinuous |
| Mean annual wind speed (km/h) | 24 |
| Max wind speed (km/h) | 130 |
| Dominant wind direction | |
| Sea Ice Break Up | November |
| Snow free period | January, February, March |
| Total annual precipitation (mm) | 23.2 |
| Precipitation type | Snow and Rain |
| Mean annual temperature (°C) | -0.7 |
| Mean temperature in February (°C) | 2.6 |
| Mean temperature in July (°C) | -6.9 |
| ENVIRONMENT | |
| Region | Antarctic Peninsula |
| Antarctic Environmental Domain: G – Antarctic Peninsula offshore island geologic | |
| Antarctic Conservation Biogeographic Region: 3 North-west Antarctic Peninsula | |
| Altitude of facility (m) | 15 |
| Type of surface facility built on | Ice-free ground |
| Long term monitoring | Yes |
| Waste management | Yes |
| Hazard(ous) management | Yes |
| Fuel spill response capability | Yes |



History and facilities

The area has had a long history of human activity since about 1820, including exploration, sealing, whaling, aviation and scientific research. Deception Island is one of the few places in the world where vessels can sail directly into the centre of a restless volcanic caldera, providing the opportunity for visitors to learn about volcanoes and other aspects of the natural world, as well as early Antarctic exploration, whaling and science. Deception Island is also one of the most frequently visited sites in Antarctica by tourists. The island is an Antarctic Specially Managed Area (ASMA 4), with two Antarctic Specially Protected Areas ASPA140 and ASPA145. The station Gabriel de Castilla was set up as refuge in 1990 mainly to support the scientific research carried out by Spain in Deception Island. The interest in the natural values of the island was increasing among the scientific community and, at the same time, the requests to develop research projects with the support of Gabriel de Castilla refuge. Due to the improvement of its capabilities, in 1998 Gabriel de Castilla was designated formally as a station. Nowadays, the station Gabriel de Castilla provides a very good living and working conditions with livingroom with kitchen and bakery. There are also seven sleeping room with four beds each and one laundry room. A scientist semi-permanent building with two offices, two labs, one environment issues lab (equipped) and a bathroom. Other facilities include a ribbon boat store container, nautical equipment store container, two materials of facilities container, wet lab container, health container (infirmary container), workshop building, three building igloos, logistic stores containers, freezer container, incinerator and communications area.

General research and databases

Databases on volcanism, seismology, marine biology, limnology, permafrost and meteorology are maintained. Research on coastal biology, pollution, human impact, invasive species.

Features in the facility area

Bird colonies, Coast, Ice cap or glacier, Lake, Mountain, Other Biological, Permanent snowpatches, Rock, Seal colonies, Snow, Terrestrial geothermal.

Main science disciplines

Atmospheric chemistry and physics, Climate change, Ecology, Environmental sciences, Geodesy, Geology, Geomorphology, Geophysics, GIS, Glaciology, Human biology, Human impact, Limnology, Mapping, Marine biology, Microbiology, Pollution, Soil science, Terrestrial biology.



| FACILITIES INFRASTRUCTURE | |
|---|------------------------|
| Area under roof (m ²) | 792 |
| Area scientific laboratories (m ²) | 142 |
| Type of scientific laboratories: Biology, Chemistry, Scientific diving. | |
| Conference room (capacity) | 36 |
| Logistic area (m ²) | 650 |
| Number of beds | 36 |
| Showers | Yes |
| Laundry facilities | Yes |
| Power supply type | Fossil fuel, Renewable |
| Power supply (V) | 220 |
| Power supply (hours per day) | 24 |
| Hydroponics facilities | No |
| Number of staff on station (peak/summer season) | 13 |
| Number of scientists on station (peak/summer season) | 20 |
| Number of staff on station (off peak/winter season) | |
| Number of scientists on station (off peak/winter season) | |
| Max number of personnel at a time (staff, scientists and others) | 36 |
| Specific device/Scientific equipment: Environment and Food Safety Lab Equipment, one Gas Detector, one Ground Sampling Equipment, one Multiparameter Photometer Spectroquant Nova 30A, one Thermostat Lt 200, Three Pumps for Microbiological Testing | |
| Scientific services possible: Available tests 1. sewage water: filtration / bod5 / cod/Suspended solids/Surfactants/Oxygen/Phosphate/ Nitrogen/Ammonium/Sulfate/Sodium/Manganese/Iron Conductivity/Turbidity/pH. 2. Soil Pollution: Petroleum ether – Petroleum hydrocarbons – Halogenated. | |
| Long-term monitoring/observations: Seismic, Meteorological, Permafrost, Geodesy | |
| MEDICAL FACILITIES | |
| Area of medical facility (m ²) | 15 |
| Staff with basic medical training or doctor (Summer) | 1 |
| Staff with basic medical training or doctor (Winter) | |
| Capability | Basic, Dental |
| Equipment: Anesthesia, Biochemistry, Diagnostic ultrasound, Telemedicine. | |
| Distance to hospital (km) | 1000 |
| Closest emergency facility in Antarctica (km) | |
| Closest emergency facility external (km) | |
| Medical research capabilities | No |
| Medical screening requirements | No |
| VEHICLES AT FACILITY | |
| Sea transportation: Five Ribbon boats and outboard motor. | |
| Land transportation: One ATV on wheels, one tracked ATV, two quad bikes, two telehandlers | |
| WORKSHOP FACILITIES | |
| ICTS, Mechanical, Metal workshop | |
| COMMUNICATIONS | |
| Computer, E-mail, Fax, Internet, Printer, Satellite phone, Scanner, Telephone, VHF | |
| TRANSPORT AND FREIGHT | |
| Access | Sea |
| Transport to facility: Helicopter, Ship | |
| Number of airstrips | 0 |
| Length (m) of longest runway | |
| Width (m) of longest runway | |
| Number of flight visits per year | 0 |
| Period of flight visits per year: | |
| Helipad | |
| Number of ship visits per year | 100 |
| Period of ship visits per year: January, February, March, November, December | |
| Ship landing facilities: Wetdock | |

International Field Camp Peninsula Byers

Comité Polar Español

62°39'49.7"S 61°05'59.8"W

Type: Camp

Operational period:
December–February

Location

International Field Camp Peninsula Byers is a camp located on the South Beaches of Byers Peninsula, Livingston Island, South Shetland Islands.

Biodiversity and natural environment

Exceptional diversity of terrestrial flora and fauna. It is the most significant limnologic site in the South Shetland Islands. Area extremely sensitive to human impact. Is the largest ice-free area in the South Shetland Islands.

History and facilities

The peninsula has exceptional historical interest, containing the greatest concentration of 19th century historical sites in Antarctica, such as the remains of refuges, contemporary artefacts, and shipwrecks of early nineteenth century sealing expeditions. The camp was installed to support the scientific research in the area during short periods of time. Due to the increasing interest in the area, the camp is still operative but can be easily dismantled when required. It is maintained by the personnel of Juan Carlos I station who keep the camp in a good condition year by year. The camp consists in two fibre glass "melon huts" each of 6m x 2m in size, one set up for scientific research and the other for domestic activities. The camp is open to all the Parties.

General research and databases

Limnology, human impact, ecosystem, geology, coastal science, meteorology, lichen physiology, permafrost, microbiology, invasive species, paleontology and archaeology.

| CLIMATE | |
|--|---------------------------------|
| Climate zone | Maritime Antarctica |
| Permafrost | Sporadic |
| Mean annual wind speed (km/h) | 26 |
| Max wind speed (km/h) | 180 |
| Dominant wind direction | |
| Sea Ice Break Up | |
| Snow free period | January, February, March, April |
| Total annual precipitation (mm) | 800 |
| Precipitation type | Snow and Rain |
| Mean annual temperature (°C) | -2.5 |
| Mean temperature in February (°C) | 1.2 |
| Mean temperature in July (°C) | -6.4 |
| ENVIRONMENT | |
| Region | Antarctic Peninsula |
| Antarctic Environmental Domain: G – Antarctic Peninsula offshore island geologic | |
| Antarctic Conservation Biogeographic Region: 3 North-west Antarctic Peninsula | |
| Altitude of facility (m) | 10 |
| Type of surface facility built on | Ice-free ground |
| Long term monitoring | Yes |
| Waste management | Yes |
| Hazard(ous) management | Yes |
| Fuel spill response capability | Yes |



Photos on this page: A. Justel

Features in the facility area

Archaeological, Biological features, Bird colonies, Clear air zone, Fauna, Geological, Lake, Melt streams, Seal colonies.

Main science disciplines

Climate change, Ecology, Environmental sciences, Geology, Geomorphology, Human impact, Invasive species, Limnology, Microbiology, Paleolimnology, Terrestrial biology.

| FACILITIES INFRASTRUCTURE | |
|--|-------------|
| Area under roof (m ²) | 32 |
| Area scientific laboratories (m ²) | 16 |
| Type of scientific laboratories: None | |
| Conference room (capacity) | |
| Logistic area (m ²) | 16 |
| Number of beds | |
| Showers | No |
| Laundry facilities | No |
| Power supply type | Fossil fuel |
| Power supply (V) | 220 |
| Power supply (hours per day) | 24 |
| Hydroponics facilities | No |
| Number of staff on station (peak/summer season) | 2 |
| Number of scientists on station (peak/summer season) | 10 |
| Number of staff on station (off peak/winter season) | |
| Number of scientists on station (off peak/winter season) | |
| Max number of personnel at a time (staff, scientists and others) | 12 |
| Specific device/Scientific equipment: None | |
| Scientific services possible: None | |
| Long-term monitoring/observations: | |
| MEDICAL FACILITIES | |
| Area of medical facility (m ²) | 0 |
| Staff with basic medical training or doctor (Summer) | 2 |
| Staff with basic medical training or doctor (Winter) | |
| Capability: Basic | |
| Equipment: None | |
| Distance to hospital (km) | 990 |
| Closest emergency facility in Antarctica (km) | 30 |
| Closest emergency facility external (km) | 100 |
| Medical research capabilities | No |
| Medical screening requirements | No |
| VEHICLES AT FACILITY | |
| Sea transportation: None | |
| Land transportation: None | |
| WORKSHOP FACILITIES | |
| COMMUNICATIONS | |
| VHF | |
| TRANSPORT AND FREIGHT | |
| Access | Air, Sea |
| Transport to facility: Helicopter, Ship | |
| Number of airstrips | 0 |
| Length (m) of longest runway | |
| Width (m) of longest runway | |
| Number of flight visits per year | 0 |
| Period of flight visits per year: January, February, March, November, December | |
| Helipad | No |
| Number of ship visits per year | |
| Period of ship visits per year: January, February, March, November, December | |
| Ship landing facilities: None | |



Juan Carlos I Comité Polar Español

62°39'80.5"S 60°23'28.9"W

Type: Station

Operational period:
November–March

Location

Seasonal coastal Antarctic station located 200 m from shore in a small bay in Livingston Island, South Shetland Islands. The station is close to Johnson Glacier and Sofia Mountain.

Biodiversity and natural environment

Coastal area surrounded by glaciers. Around the station there are many different lichen species and some fauna including Gentoo and Chinstrap penguins, Elephant seals, and birds such as Skuas and Petrels. Permafrost is easy to find in the area. The cryptogamic prairies are remarkable. Vascular plants are present in the station vicinity.

History and facilities

The station was set up to support the interest shown by the Spanish scientific community in Antarctica, it was the first Spanish station in Antarctica. In December 1986, a group of four scientists set up a camp in Livingston Island in order to look for the right place to build the Juan Carlos I station, taking into account that, at that time, there were no stations in Livingston Island. In 1988 the first modules of the station were disembarked, in that moment, the Juan Carlos I station was installed. Since then, the station has been operative during 28 years. The station was recently refurbished and was completed in the 2016/2017 campaign. The station consists of a set of buildings with two main modules, living/services, including infirmary, kitchen rooms and living room, with capacity for fifty people, and a laboratory module able to cover different scientific disciplines. There are another six modules dedicated to station services: workshop, waste treatment, energy generation, storage, fuel. One important aspect of the station is the importance given to energy efficiency in order to avoid energy waste and focus on decreasing consumption.

| CLIMATE | |
|--|---------------------|
| Climate zone | Maritime Antarctica |
| Permafrost | Sporadic |
| Mean annual wind speed (km/h) | 14 |
| Max wind speed (km/h) | 180 |
| Dominant wind direction | |
| Sea Ice Break Up | |
| Snow free period | February |
| Total annual precipitation (mm) | |
| Precipitation type | Snow and Rain |
| Mean annual temperature (°C) | -1.2 |
| Mean temperature in February (°C) | 2.2 |
| Mean temperature in July (°C) | -5.1 |
| ENVIRONMENT | |
| Region | Antarctic Peninsula |
| Antarctic Environmental Domain: G – Antarctic Peninsula offshore island geologic | |
| Antarctic Conservation Biogeographic Region: 3 North-west Antarctic Peninsula | |
| Altitude of facility (m) | 12 |
| Type of surface facility built on | Ice-free ground |
| Long term monitoring | Yes |
| Waste management | Yes |
| Hazard(ous) management | Yes |
| Fuel spill response capability | Yes |



General research and databases

Glaciology, lichen physiology, permafrost, geomagnetism, ionosphere, and meteorology databases are available. Research on limnology, microbiology, coastal science, soils, geology, geomorphology, geodesy are also conducted.

Features in the facility area

Bird colonies, Clear air zone, Coast, Hill, Ice cap or glacier, Lake, Melt streams, Moraine, Mountain, Other Biological, Permanent snowpatches, Rock, Shoreline, Snow.

Main science disciplines

Atmospheric chemistry and physics, Climate change, Climatology, Ecology, Environmental sciences, Geocryology, Geodesy, Geology, Geomorphology, Geophysics, GIS, Glaciology, Human impact, Hydrology, Limnology, Marine biology, Microbiology, Oceanography, Pollution, Soil science, Terrestrial biology.



Photo: Hilla



Photo: Felipe

| FACILITIES INFRASTRUCTURE | |
|---|------------------------|
| Area under roof (m ²) | 1735 |
| Area scientific laboratories (m ²) | 220 |
| Type of scientific laboratories: Biology, Chemistry, Electronic, Geology, Geophysics | |
| Conference room (capacity) | 25 |
| Logistic area (m ²) | 1215 |
| Number of beds | 50 |
| Showers | Yes |
| Laundry facilities | Yes |
| Power supply type | Fossil fuel, Renewable |
| Power supply (V) | 220 |
| Power supply (hours per day) | 24 |
| Hydroponics facilities | No |
| Number of staff on station (peak/summer season) | 16 |
| Number of scientists on station (peak/summer season) | 11 |
| Number of staff on station (off peak/winter season) | |
| Number of scientists on station (off peak/winter season) | |
| Max number of personnel at a time (staff, scientists and others) | 50 |
| Specific device/Scientific equipment: Microscopes, balance, basic lab glass items, fume hood, centrifuge, refrigerators, pumps, pH meter. Scientific services possible: Biological, chemical and electronic laboratories. | |
| Long-term monitoring/observations: Geodesy, glaciology, hydrology, meteorology | |
| MEDICAL FACILITIES | |
| Area of medical facility (m ²) | 10 |
| Staff with basic medical training or doctor (Summer) | 1 |
| Staff with basic medical training or doctor (Winter) | |
| Capability: | |
| Equipment: Aeromedical equipment, Anaesthesia, Biochemistry, Haematology, Mountain medicine related equipment | |
| Distance to hospital (km) | 990 |
| Closest emergency facility in Antarctica (km) | 100 |
| Closest emergency facility external (km) | 100 |
| Medical research capabilities | No |
| Medical screening requirements | No |
| VEHICLES AT FACILITY | |
| Sea transportation: Four Zodiac rubber boats | |
| Land transportation: Three telehandlers, one tracked utility machine, two quad bikes, five snowmobiles | |
| WORKSHOP FACILITIES | |
| ICTS, Mechanical, Metal workshop, Wood workshop | |
| COMMUNICATIONS | |
| E-mail, Internet, Printer, Satellite phone, Scanner, Telephone, VHF | |
| TRANSPORT AND FREIGHT | |
| Access | Sea |
| Transport to facility: Helicopter, Ship | |
| Number of airstrips | 0 |
| Length (m) of longest runway | |
| Width (m) of longest runway | |
| Number of flight visits per year | 1 |
| Period of flight visits per year: January, February | |
| Helipad | |
| Number of ship visits per year | 4 |
| Period of ship visits per year: January, February, November, December | |
| Ship landing facilities | None |