



# Amundsen-Scott South Pole

United States Antarctic Program

90°S 0°E

Type: Station

Operational period: Year-round

## Location

Geographic South Pole Antarctic Specially Managed Area (ASMA) 5.

## Biodiversity and natural environment

The station stands at an elevation of 2,835 m (9,306 feet) on Antarctica's nearly featureless ice sheet, which is about 2,700 m (9,000 feet) thick at that location. The station, which is 850 nautical miles south of McMurdo Station, is drifting with the ice sheet at about 10 m (33 feet) each year.

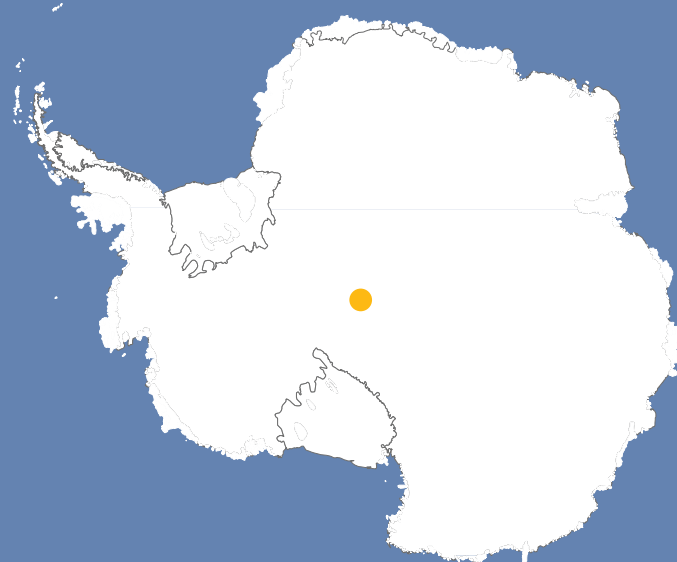
## History and facilities

The first station, built to support researchers during the International Geophysical Year, was begun in November 1956 and completed in February 1957. In 1975 the central area of the station was rebuilt as a geodesic dome 50 m wide and 16 m high, with fourteen by 24 m steel archways, covering modular buildings, fuel bladders, and equipment. In 1997, a redevelopment plan to upgrade the station began. The new station, which was dedicated in 2008, is one connected, elevated facility. To accommodate changes in population from winter to summer, certain areas can be closed.

## General research and databases

Research disciplines include astrophysics and cosmology (formation and evolution of the universe and detecting high-energy cosmic neutrinos from deep space), aeronomy and space physics (interaction of the solar wind with the Earth's magnetic field and understanding space weather), atmospheric science (changes in atmospheric circulation and composition), geophysics (monitoring global seismology), glaciology (ice sheet physics, past changes in climate), and polar medicine.

CLIMATE	
Climate zone	Inland Antarctica
Permafrost	None
Mean annual wind speed (km/h)	18.5
Max wind speed (km/h)	
Dominant wind direction	
Sea Ice Break Up	
Snow free period	None
Total annual precipitation (mm)	
Precipitation type	Snow
Mean annual temperature (°C)	-49
Mean temperature in February (°C)	-41
Mean temperature in July (°C)	-60
ENVIRONMENT	
Region	Continental Antarctica
Antarctic Environmental Domain: Q – East Antarctic high interior ice sheet	
Antarctic Conservation Biogeographic Region:	
Altitude of facility (m)	2835
Type of surface facility built on	Ice-sheet
Long term monitoring	Yes
Waste management	Yes
Hazard(ous) management	Yes
Fuel spill response capability	Yes



FACILITIES INFRASTRUCTURE	
Area under roof (m²)	16107
Area scientific laboratories (m²)	1748
Type of scientific laboratories: Astrophysics, Geophysics.	
Conference room (capacity)	
Logistic area (m²)	2102
Number of beds	150
Showers	Yes
Laundry facilities	Yes
Power supply type	Fossil fuel, Renewable
Power supply (V)	120
Power supply (hours per day)	
Hydroponics facilities	Yes
Number of staff on station (peak/summer season)	90
Number of scientists on station (peak/summer season)	60
Number of staff on station (off peak/winter season)	40
Number of scientists on station (off peak/winter season)	9
Max number of personnel at a time (staff, scientists and others)	153
Specific device/Scientific equipment:	
Scientific services possible:	
Long-term monitoring/observations:	
MEDICAL FACILITIES	
Area of medical facility (m²)	84
Staff with basic medical training or doctor (Summer)	1

Staff with basic medical training or doctor (Winter)	2
Capability: Basic	
Equipment: Altitude medicine, Diagnostic ultrasound, Diagnostic X-ray, Telemedicine	
Distance to hospital (km)	
Closest emergency facility in Antarctica (km)	
Closest emergency facility external (km)	
Medical research capabilities	Yes
Medical screening requirements	Yes
VEHICLES AT FACILITY	
Sea transportation:	
Land transportation:	
WORKSHOP FACILITIES	
ICTS, Mechanical, Metal workshop, Wood workshop	
COMMUNICATIONS	
Computer, E-mail, Internet, Satellite phone, Telephone, VHF	
TRANSPORT AND FREIGHT	
Access	Air
Transport to facility: Airplane	
Number of airstrips	1
Length (m) of longest runway	
Width (m) of longest runway	
Number of flight visits per year	
Period of flight visits per year:	
Helipad	No
Number of ship visits per year	0
Period of ship visits per year:	
Ship landing facilities:	

## Features in the facility area

Clear air zone, Ice cap or glacier.

## Main science disciplines

Astrophysics, Atmospheric chemistry and physics, Geophysics, Glaciology, Medicine.





# McMurdo United States Antarctic Program

77°50'89.3"S 166°40'10.0"E

Type: Station

Operational period: Year-round

## Location

McMurdo station is built on the bare volcanic rock of Hut Point Peninsula on Ross Island. Antarctic Specially Protected Area (ASPA) 122, Arrival Heights, is located near McMurdo.

## Biodiversity and natural environment

McMurdo station is a coastal station, though for most of the year, the area is surrounded by annual sea ice. Penguins, seals and skuas are found regularly in the area.

## History and facilities

The station was established in December 1955. It is the logistics hub of the U.S. Antarctic Program, with a harbor, landing strips on sea ice and shelf ice, and a helicopter pad. Its eighty-five or so buildings range in size from a small radio shack to large, three-story structures. Repair facilities, dormitories, administrative buildings, a firehouse, power plant, water distillation plant, wharf, stores, clubs, warehouses, and the first class Cray Lab are all found on the station.

## General research and databases

Research is performed at and near McMurdo in aeronomy and astrophysics, biology and medicine, geology and geophysics, glaciology and glacial geology, and ocean and climate systems.

CLIMATE	
Climate zone	Coastal Antarctica
Permafrost	Continuous
Mean annual wind speed (km/h)	18
Max wind speed (km/h)	
Dominant wind direction	
Sea Ice Break Up	
Snow free period	January
Total annual precipitation (mm)	
Precipitation type	
Mean annual temperature (°C)	-17
Mean temperature in February (°C)	-9
Mean temperature in July (°C)	-25
ENVIRONMENT	
Region	Continental Antarctica
Antarctic Environmental Domain: S – McMurdo – South Victoria Land geologic	
Antarctic Conservation Biogeographic Region: 9 South Victoria Land	
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



Photo: Pluk



Photo: Hood



Photo: Lucibella



Photo: Rupp

## Features in the facility area

Coast, Hill, Ice cap or glacier, Ice shelf, Permanent snowpatches, Rock, Sea, Sea ice, Shoreline, Snow.

## Main science disciplines

Atmospheric chemistry and physics, Climate change, Climatology, Geology, Geophysics, Glaciology, Marine biology, Medicine, Oceanography.

# UNITED STATES

## FACILITIES INFRASTRUCTURE

Area under roof (m <sup>2</sup> )	32750
Area scientific laboratories (m <sup>2</sup> )	5439
Type of scientific laboratories: Biology, Chemistry, Geology, GIS, Scientific diving.	
Conference room (capacity)	
Logistic area (m <sup>2</sup> )	7788
Number of beds	1200
Showers	Yes
Laundry facilities	Yes
Power supply type	Fossil fuel, Renewable

Power supply (V)	120
Power supply (hours per day)	
Hydroponics facilities	No
Number of staff on station (peak/summer season)	800
Number of scientists on station (peak/summer season)	200
Number of staff on station (off peak/winter season)	150
Number of scientists on station (off peak/winter season)	3
Max number of personnel at a time (staff, scientists and others)	1200
Specific device/Scientific equipment:	
Scientific services possible:	
Long-term monitoring/observations:	Yes

## MEDICAL FACILITIES

Area of medical facility (m <sup>2</sup> )	455
Staff with basic medical training or doctor (Summer)	8
Staff with basic medical training or doctor (Winter)	2
Capability: Basic	
Equipment: Aeromedical equipment, Altitude medicine, Diagnostic ultrasound, Diagnostic X-ray, Hyperbaric Recompression Chamber, Telemedicine.	
Distance to hospital (km)	0
Closest emergency facility in Antarctica (km)	0
Closest emergency facility external (km)	
Medical research capabilities	Yes
Medical screening requirements	Yes

## VEHICLES AT FACILITY

Sea transportation:	
Land transportation:	
<b>WORKSHOP FACILITIES</b>	
ICTS, Mechanical, Metal workshop, Plexiglas workshop, Wood workshop.	
<b>COMMUNICATIONS</b>	
Computer, E-mail, Fax, Internet, Satellite phone, Telephone, VHF	

## TRANSPORT AND FREIGHT

Access	Air, Sea
Transport to facility: Airplane, Ship	
Number of airstrips	6
Length (m) of longest runway	
Width (m) of longest runway	
Number of flight visits per year	
Period of flight visits per year:	
Helipad	Yes
Number of ship visits per year	
Period of ship visits per year:	
Ship landing facilities:	



# Palmer

United States Antarctic Program

64°46'45.6"S 64°3'20.0"W

Type: Station

Operational period: Year-round

## Location

Palmer station is located on a protected harbor on the southwestern coast of Anvers Island off the Antarctica Peninsula.

## Biodiversity and natural environment

Palmer station is superbly located for biological studies of birds, seals, and other components of the marine ecosystem.

## History and facilities

The station, built on solid rock, consists of two major buildings and three small ones, plus two large fuel tanks, and a dock. Construction was completed in 1968, replacing a prefabricated wood structure ("Old Palmer," established in 1965) 2 km away across Arthur Harbour. Old Palmer has been disassembled and removed from Antarctica.

## General research and databases

Research activities include work on population biology of seabirds, chemical defenses of marine macroalgae and invertebrates, terrestrial plant biology, ultraviolet radiation measurements and effects on marine organisms, atmospheric physics and chemistry, seismology, and marine ecology.

CLIMATE	
Climate zone	Coastal Antarctica
Permafrost	None
Mean annual wind speed (km/h)	
Max wind speed (km/h)	
Dominant wind direction	
Sea Ice Break Up	
Snow free period: January, February, March, December	
Total annual precipitation (mm)	
Precipitation type	
Mean annual temperature (°C)	-2
Mean temperature in February (°C)	2
Mean temperature in July (°C)	-6
ENVIRONMENT	
Region	Antarctic Peninsula
Antarctic Environmental Domain: E – Antarctic Peninsula and Alexander Island main ice fields	
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



Photo: Hood



Photo: Spence



Photo: Bonnette



Photo: Hood

# UNITED STATES

## Features in the facility area

Coast, Hill, Ice cap or glacier, Ice shelf, Permanent snowpatches, Rock, Sea, Sea ice, Shoreline, Snow.

## Main science disciplines

Atmospheric chemistry and physics, Climate change, Climatology, Geology, Geophysics, Glaciology, Marine biology, Medicine, Oceanography.

### FACILITIES INFRASTRUCTURE

Area under roof (m <sup>2</sup> )	2197
Area scientific laboratories (m <sup>2</sup> )	658
Type of scientific laboratories: Biology, Chemistry, Scientific diving	
Conference room (capacity)	
Logistic area (m <sup>2</sup> )	245
Number of beds	46
Showers	Yes
Laundry facilities	Yes
Power supply type	Fossil fuel
Power supply (V)	120
Power supply (hours per day)	
Hydroponics facilities	No
Number of staff on station (peak/summer season)	24
Number of scientists on station (peak/summer season)	20
Number of staff on station (off peak/winter season)	10
Number of scientists on station (off peak/winter season)	3
Max number of personnel at a time (staff, scientists and others)	46
Specific device/Scientific equipment:	
Scientific services possible:	
Long-term monitoring/observations:	
<b>MEDICAL FACILITIES</b>	Yes
Area of medical facility (m <sup>2</sup> )	54
Staff with basic medical training or doctor (Summer)	1
Staff with basic medical training or doctor (Winter)	1
Capability: Basic	
Equipment: Diagnostic X-ray, Telemedicine	
Distance to hospital (km)	
Closest emergency facility in Antarctica (km)	
Closest emergency facility external (km)	
Medical research capabilities	Yes
Medical screening requirements	Yes
<b>VEHICLES AT FACILITY</b>	
Sea transportation:	
Land transportation:	
<b>WORKSHOP FACILITIES</b>	
Mechanical, Metal workshop, Wood workshop	
<b>COMMUNICATIONS</b>	
Computer, E-mail, Internet, Telephone, VHF	
<b>TRANSPORT AND FREIGHT</b>	
Access	Sea
Transport to facility: 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	No
Number of ship visits per year	
Period of ship visits per year:	
Ship landing facilities:	