

Macquarie Island

Overview:

Macquarie Island is a sub-Antarctic island located in the Southern Pacific Ocean. It is under the jurisdiction of the Commonwealth of Australia and is operated as a meteorological and scientific station.

Territory:

The island plateau is surrounded by steep slopes and cliffs 200 - 350 meters above sea level; the highest point is Mount Hamilton at 433 meters. The territory also includes Judge and Clark Islets 11 kilometers north of Macquarie Island, and Bishop and Clark Islets 37 kilometers to the south. Macquarie Island is 128 sq kilometers in area, approximately 34 kilometers long and up to 5 kilometers wide.

Location:

Located 1500 kilometers southeast of Tasmania, and 1300 kilometers north of Antarctica. The scientific station building which includes work space, accommodations and limited recreation facilities are concentrated on a narrow isthmus at the northern end of the island.

Latitude and Longitude:

54 degrees, 30 minutes south; 158 degrees, 57 minutes east

Time Zone:

GMT +10

Total Land Area:

128

EEZ:

200

Climate:

Macquarie Island is located on Macquarie Ridge, an underwater mountain range extending north and south through the middle of the territory. This ridge reacts with strong oceanic currents and creates several distinct environmental sections. Days of sunshine with no rain are exceedingly rare, usually strong winds blow rain, sleet and snow in a typically unpleasant climate. As the winds blow over the Southern Oceans, waves develop and move across the water. As the waves move out of the area of the strongest winds (or the winds ease), the shorter waves disappear, leaving only the longest of waves, called the 'swell'. Near Tasmania, the waves are usually 2 to 3 metres from trough to crest, reaching 4 to 5 metres near Macquarie Island. When large low pressure systems cause strong southwesterly winds to blow over extensive ocean areas, the swell can reach 8 metres or more, especially near Macquarie Island.

Natural Resources:

The island exhibits pillow basalts and other extrusive rocks from the earth's mantle. There is a large marine resource on and around the island including seals, penguins, and whales. Macquarie Island was declared a World Heritage property in 1997 because of its geological properties; it is an uplifted portion of the sea bed at the edge of two tectonic plates of the earth's crust. It is the only place on earth where rocks from the earth's mantle (6 kilometers below the ocean floor) are actively exposed above sea level.

ECONOMY:

Total GDP:

Per Capita GDP:

% of GDP per Sector:		
Primary	Secondary	Tertiary

% of Population Employed by Sector		
Primary	Secondary	Tertiary

External Aid/Remittances:

All activities on Macquarie Island are subsidized by Australia. The labor force consists of scientists, trades people, rangers, meteorologists and support staff like chef, doctor, and base leader. The Tasmanian Parks and Wildlife Service usually has between one and three authorised officers working in the area throughout the year. These may be rangers, technical officers, scientific officers or wildlife management officers carrying out research and management programmes. Maintenance, communication and other back-up staff are provided by the Antarctic Division. BUDGET Estimated in A\$4.7 million for the period between 1 July 1995 to 30 June 1996.(UNEP 1997)

Growth:

Economic growth is stable at little or no change. The complement of scientists and support staff remains stable. There is no unemployment on Macquarie Island, although statistics for Australia indicate a 5.1% unemployment rate for the country as a whole.

Labour Force:

Unemployment	
Year:	Unemployment Rate (% of pop.)

Industry:

MacQuarie Island imports all its supplies and exports information. The economy is based in scientific assets in fisheries and oceans with research in biology, botany, auroral physics, meteorology, and medical sciences. There have been in the past, oil extraction plants to harvest oil from the resident seal and penguin populations, this practice stopped in the early 1900's. There is no current interest in the Region for purposes of mineral or petroleum exploration or extraction.

Niche Industry:

Scientific research in biology, botany, auroral physics, meteorology and medical fields is conducted all year round.

Tourism:

Tourism to the Island is a small but developing industry. VISITORS AND VISITOR FACILITIES There is provision within the management plan for tourism, and guidelines for tourism operations are given based on the Tasmanian National Parks and Wildlife Reserves Regulations, 1971. Visitors must be ship-based and facilities such as walkways and viewing platforms may be provided to protect the reserve. A maximum figure of 500 tourists per year has been set by the Parks and Wildlife Service of Tasmania. In fact, since this limit was introduced in 1990-1991, it has only been reached on one occasion.

Imports and Exports:	
Tot. Value of Imports	0.00 ()
From Eu:	
Import Partners (EU:)	
Partners Outside EU:	
Import Partners:	
Tot. Value of Exports	()
To Eu:	
Export Partners:	
Partners Outside EU::	
Export Partners:	
Main Imports:	
Main Exports:	



TRANSPORTATION/ACCESS

External:

Number of Airports:

Transportation and access are by sea.

Number of Main Ports:

Internal:

Air

Road:

There are no vehicles on the island, and the footpaths are the only means of transportation, these are treacherous because of the cold wet climate and the need to scramble over slippery rocks.

Sea:

Other Forms of Transportation:

Economic Zones:

The economic zone of most importance is the Exclusive Economic Zone declared under UNCLOS, MacQuarie Island is pivotal to Australia's claim to large areas of the oceans of Antarctica.

Energy Policy:

Diesel generators are used to provide electricity.

Year	Total Energy Production (Mwh)	Type			Total Energy Consumption (Mwh)	Sector				
		Thermic (Mwh)	Geothermic (Mwh)	Other (Mwh)		Domestic (Mwh)	Commercial (Mwh)	Public Service (Mwh)	Industry (Mwh)	Public Lighting (Mwh)

Official Currency:

Australian dollar

Banking and Insurance:

Number of Banks and Credit Unions:



Number of Agricultural Credit Unions:
Number of Insurance Companies:

Financial Services:

Communications/E-Commerce:

Public Ownership:

Land Use:

LAND TENURE: The State of Tasmania has jurisdiction over MacQuarie Island, Bishop and Clerk islets, Judge and Clerk islets, adjacent seastacks and reefs and the surrounding water to 3 nautical miles. The Commonwealth of Australia has jurisdiction over the marine area from the limit of Tasmania's territorial waters to 12 nautical miles.

Agriculture/Forestry:

There is no agriculture or forestry on Macquarie Island. In fact there are no trees, although the island is covered in tussock grass and other plants.

Marine Activity:

Fishing:

Marine activity is conducted under two frameworks, The MacQuarie Island Marine Park was created by the Environment Protections and Biodiversity Conservation Act 1999, Commonwealth Government of Australia, as well as International Conventions under the UNCLOS agreements signed in 1982. International Conventions on biodiversity, migratory species, whaling and regulations on the neighboring Conservation of Antarctic Marine Living Resources all affect the management of the area. The MacQuarie Island Marine Park Management Plans is divided into three zones: Highly Protected Zone with no mining operations, including petroleum and/or mineral exploration or extraction, and no commercial tourism. Passive transit of vessels through the zone will be allowed. Non-intrusive scientific research compatible with the strategic objectives of the Marine Park and management goals for this zone will be allowed. There are two Habitat/Species Management Zones where no mining activities are allowed. Scientific research, commercial fishing, tourism and other commercial activities are allowed in these Zones subject to subject to a permit from the Director of National Parks. The Australian Fisheries Management Agency (AFMA or Fisheries) manages the AFZ (aka EEZ) under the Fisheries Management Act 1991 (Cwlth). In 2004-05 only one vessel was allowed to fish in Macquarie Island waters as the zone is regarded as being fully fished. There has been no direct evidence of illegal fishing in this area.

Marine Life:

The MacQuarie Island Region contains important habitat for five species of seals and 38 species of seabird, during various life stages. The Macquarie Island Marine Park contributes to the only 'biosphere reserve' in the Southern Ocean, one of 12 in Australia. Biosphere reserves are part of the Man and the Biosphere Program of the United Nations Educational, Scientific and Cultural Organization (UNESCO). The population of fur seals on Macquarie Island was exterminated by uncontrolled sealing in the 19th century. Populations of seals were estimated to be over 200,000 in 1810, and maybe as high as 400,000. The first eighteen months of sealing recorded a harvest of 120,000 seal pelts. The population was wiped out within twenty years. The fur seal population was the first to be exploited, then elephant seals, then king penguins and finally royal penguins which were harvested for their oil up until 1910. No breeding occurred on the island until the mid 1950s (some 130 years later), by the mid 1970s a small breeding population had established, with exponential growth of the population occurring by the mid 1980s. The Macquarie Island population is unique in the world being the only population where three species of fur seals occur together and hybridise extensively (~30% of the population). The small population of sub Antarctic fur seals at Macquarie Island is Australia's only breeding population of the species, and is listed as a Threatened species in Tasmania and under the Commonwealth EPBC Act. Marine life includes Elephant and Fur seals, Royal, King, Gentoo, and Rockhopper penguins, and it is home to over a million seabirds including Skuas, Petrels and Albatross.

Critical Issues:

MacQuarie Island is on the margin of change resulting from Global warming and the effects on the southern hemisphere bordering Antarctica. Increased human activity on the island, through the maintenance of the ANARE station and through tourist visits, has brought with it inevitable, although limited, environmental impacts through, for instance, logistical operations, waste disposal, walking tracks and field huts. It also holds the potential threat of introduction of serious pest species. The Tasmanian Department of Parks, Wildlife and Heritage and the Antarctic Division have established management procedures to deal with these concerns and these are formalised in DPWH (1991).

JURISDICTIONAL RESOURCES

Capital:

Canberra, Australia. MacQuarie Island is part of the state of Tasmania, and has been since 1825. The island is part of Huon Municipality.

Political System:

Democratic, federal state system recognizing the British Monarch as sovereign.

Political Parties:

Important Legislation:

Principal Taxes:

Associated Power:

Australia

Citizenship:

Australian.

Paradiplomacy:

Proposals to carry out scientific research programmes in the reserve are considered by several committees, including Macquarie Island Advisory Committee (MIAC) which liaises between the Department of Parks, Wildlife and Heritage, the Antarctic Division of the Federal Department of the Arts, Sport, the Environment, Tourism and Territories, and other organisations (UNEP 1997).

HUMAN RESOURCES

LOCAL HUMAN POPULATION In recent years the ANARE station on the Isthmus has been staffed by 13-21 overwintering personnel, but over the summer periods the number can double. Temporary influxes of over 100 people may occur when resupply or tourist ships visit the island (DPWH, 1991).

1991			
Island	Area (km sq.)	Population	% of Total Population

The age range of population is generally between 25 and 60, with 70% of the population between 20 and 39, and the age range being 22 to 65.

Population:	
Year	Resident Population

Age of Population:	0-14	15-24	25-49	50-64	65 and up
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Migration:

Crude Birth Rate:

Life Expedctancy:

Crude Death Rate:

Ethnicity:

Class Division:

Languages:

Religion:

Literacy:

Education System:

Total Pre-schools:()	
Total Primary Schools	
First Level:	
Second Level:	
Third Level:	
Total Secondary Schools:	
Total Professional Schools	
Universities:	

Number of Schools per Island:										
	Pre-school		Elementary			High-school		Prof.	University	
	Pub	Priv	1	2	3	Pub	Priv		Pub	Priv

Students Enrolled:					
Year:	Pre-School	Elementary	High-school	Prof.	University

Teachers							
Year	Pre-School	Elementary			High-School	Prof.	University
		1	2	3			

Medical Services:
All expeditioners are required to pass a physical exam before being posted to the island.

HISTORY AND CULTURE

History:



MacQuarie was discovered in 1810 by a sealing vessel sailing out of Sydney Australia. Some evidence was reported at that time of an ancient wreck, possibly of Polynesian origins. The territory of MacQuarie Island has been a part of Tasmania since 1825 when Queen Victoria declared Great Britain's jurisdiction over the area. The first scientific station was established on the island in 1911, setting up radio contact with Antarctica, and mapping and recording the island and its life forms. This scientific station operated until 1914 when a relief ship, the Endeavour, was lost with all passengers and crew. It was re-established in 1948 and has operated continuously ever since. In 1919 the Tasmanian government stopped all exploitation of penguins on Macquarie Island and proclaimed the island a sanctuary in 1933. With the establishment of the Tasmanian National Parks and Wildlife Service in 1971, it was declared a conservation area, then a state reserve in 1972, in 1978 it was renamed MacQuarie Island Nature Reserve.

Referenda:

Recent Significant Events:

The magnitude 9.0 earthquake that hit Banda Aceh, Indonesia, is not the only great (magnitude 8.0 or higher) earthquake that occurred during 2004; a magnitude 8.1 earthquake hit north of Macquarie Island (about one thousand miles southwest of New Zealand) three days before the Indian Ocean quake and tsunami, but no deaths were reported. Prior to the Macquarie Islands' earthquake, the last great earthquake was a magnitude 8.3 in Hokkaido, Japan, in September of 2003.

Music, Dance, Handicraft and Patrimony:

CULTURAL HERITAGE Sealers discovered the island in 1810 and inhabited it periodically throughout the 19th century, exterminating the fur seals and greatly reducing the elephant seal population. In 1870, gangs came to exploit the king and royal penguins populations also for oil, eliminating the former. The original elephant seal population of about 93,000 to 110,000 animals was reduced by 70 percent as a result of these operations. The visitors also brought exotic mammals and caused the extermination of two endemic subspecies of land birds (UNEP 1997).

Sources:

Commonwealth of Australia Australian Antarctic Division www.aad.gov.au Department of Environment and Heritage www.deh.gov.au Bureau of Statistics www.abs.gov.au McGaughey, Ingrid. (2003) Australia Antarctic Division, Australia Injury Volume 34, Issue 11, Nov 2003 Pages 842-846 1301.0--Year Book Australia, 2007. article is based on material contributed by the Australian Government Antarctic Division, the Australian Fisheries Management Authority, the Australian Customs Service and the Sea Power Centre - Australia, Defence (September 2006). <http://www.abs.gov.au/ausstats/abs@.nsf/7d12b0f6763c78caca257061001cc588/3f509b931d366083ca2572360001df47!OpenDocument>. UNEP, World Heritage Sites: http://www.unep-wcmc.org/protected_areas/data/wh/macquari.html. Revised, April 1997.

Useful Links:

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