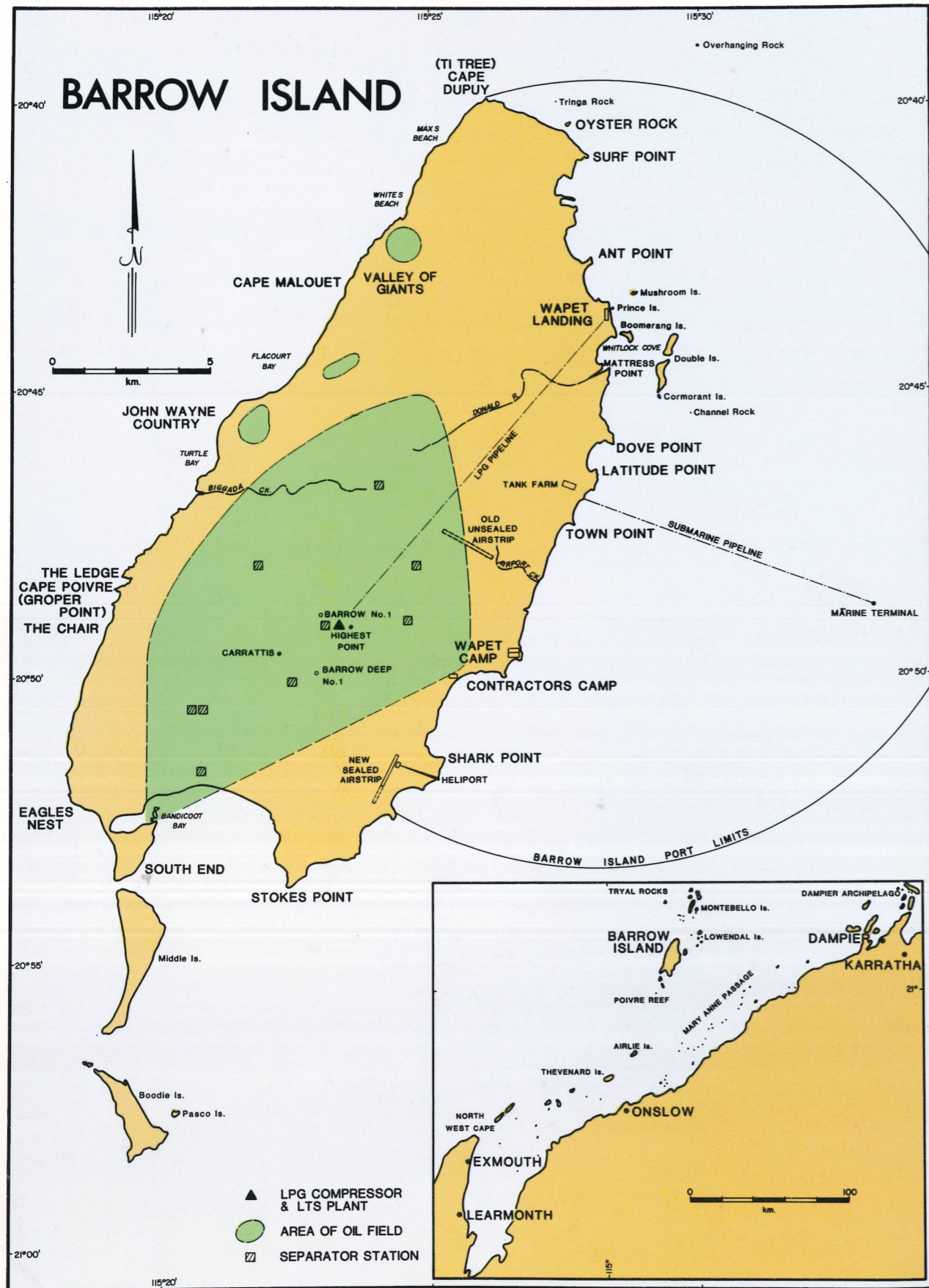




BARROW ISLAND

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Barrow Island is about 1300 km north of Perth, 56 km off the West Australian coast between Port Hedland and Onslow. The nearest port, Onslow is about 88 km south. To the north are the Lowendal and Montebello Islands. Continuing the same chain to the south are Middle, Boodie, Pasco and other isles running down to the North West Cape, which is like a finger pointing towards Barrow Island.

The story of Barrow Island was written by Harry Butler and compiled by Jacqueline Cox with assistance of other Wapet Staff.

The cover picture is symbolic of the Barrow Island story. Oil and Wildlife, two national assets, coexist in harmony due to a careful management programme. This and many of the pictures on other pages were photographed by Harry Butler. Other pictures come from Wapet Files.

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History

The name Barrow Island was bestowed by Lieutenant Phillip Parker King during a survey of the North-West coast in the colonial built cutter *Mermaid* (84 tons) in June, 1818. The name commemorated "John Barrow, Esquire, one of the Secretaries of the Admiralty" at that time. The land had been sighted by a French expedition of two vessels under Commander-in-Chief, Nicolas Baudin (1801-1803) but the French assumed that it was part of the mainland. Places such as Cape Dupuy, Cape Malouet, Cape Poivre and Flacourt Bay were named by the French. In 1840 Commander John Clements Wickham and Lieutenant John Lort Stokes in the famous sloop *Beagle* visited the island and made observations of the fauna.

The famous naturalist John T. Tunney spent two months on the island in 1900 collecting birds and mammals. As a result of this collection, sufficient interest was generated in the wildlife to have Barrow Island declared a reserve in November, 1908, and gazetted as a Class A reserve in February, 1910. Subsequently, visits were made by F. Lawson Whitlock (1917 and 1918), F.L. Hill of the Royal Navy (1952), D.L. Serventy and J. Marshall and others (1958), D. Goodall, a botanist (1964), A.A. Burbidge and A.R. Main (1969). The naturalist W.H. Butler worked on the island in 1964, 1965, 1966 and 1967. After the last visit he became conservation consultant to Wapet and has regularly visited the island since. All these scientists visited the area to study the rich fauna and flora and each added to the natural history knowledge. Even today each visit by a scientist leads to new discoveries and new information.



A relic of early visitors possibly pearlers, South End



Barrow Island Euro or Biggada first collected in 1840



Flacourt Bay and the western cliffs



Vegetation variation reflects climatic effects

Climate

Barrow Island experiences the normal North-West climate, but has the moderating influence of the sea. Daytime temperatures in summer reach 40 degrees celsius or more, but the evenings cool off rapidly; on most nights there is a dew. Cyclones may occur at any time between November and April. In March, 1964, Cyclone Katie produced 330 mm of rain in 12 hours. The rainfall at Barrow averages 200 mm a year, but is very variable, some years recording much more. Winter is the most pleasant time of the year, being dry and mild with a daily maximum of 26 degrees celsius and cool evenings. Winds, except when there are cyclones, tend to be easterly during the day, changing to south-westerly and westerly at night.



Figs will survive the harshest conditions



Salt spray inhibits plant growth near the coast

Surface Geology

Barrow Island is the second biggest island off the Western Australian coast. Its elongated oval shape covers approximately 233 sq. km. with its highest point rising to about 65 metres above sea level.

The island itself basically consists of stratified limestone which, in many places, has been deeply dissected by streams that flow briefly after heavy rainfall. Although it might rain during any month of the year, the stream beds often remain dry for years at a time. The surface rock, called Trealla Limestone, contains a variety of fossils which indicate to geologists that the rock formation is about 10 million years old.

The Trealla Limestone strata lie in a gently sloping landform in which the highest point of the island is also the highest point of the formation. In some places the 60 metre thick Trealla has been eroded to expose another formation called the Giralia Calcarenite. Fossils in this suggest an age of between 40 and 50 million years.

The rugged Barrow Island terrain consists of steep-sided gullies, limestone bluffs and spectacular sea-cliffs and caves. The latter may be quite extensive and go down hundreds of feet. On the west coast is the only permanent surface fresh water: a small spring near the mouth of Biggada Creek. The name Biggada was given by early Wapet people because of the large numbers of Biggadas or Barrow Island Euros found there during the long dry periods.

Although the surface at Barrow Island is largely rugged limestone, there are flat areas of claypan country at both the north and southern ends of the island. At the edge of some of the southern claypans are sporadic occurrences of native sulphur. This residue, from an oil or gas seep, is the only natural surface indication of the oil and gas accumulations in the sand and shale strata some 650 metres below the surface.



Biggada spring



Eocene age fossil coral



A natural gas seepage has deposited sulphur on the surface



Limestone cave column on a dripstone floor



Spinifex (*Triodia*) with fig thickets behind

Vegetation

The most obvious vegetation on Barrow is spinifex (*Triodia*) a prickly grass which covers almost the entire island. Dispersed throughout it are big, dark green clumps of rock fig growing out of the limestone and occasional native willows (*Pittosporum*) usually growing in the centre of the thickets. On some of the more muddy beaches mangrove occurs but Barrow Island does not have a real mangrove colony. The plants are mostly mature trees over 300 years old.

In the sandy areas to the north and south, necklace acacias (wattles) occur in dense thickets. Over 277 species of native plants grow throughout the island, the biggest being a eucalyptus which reaches the superb height (on Barrow Island) of 9.1 metres. This has led the local residents to call the isolated patch the Valley of the Giants.



Mangroves at Donald River mouth



Valley of the Giants, *Eucalyptus patellaris*



Possum



Marsupial Mouse



Boodie (above) and Bandicoot



Rock Wallaby



Spectacled Hare-wallaby

Fauna

The richest assemblage of Australian wildlife on an offshore island is found on Barrow. It includes at least 16 land mammals, 7 marine mammals, 105 birds, 48 reptiles and even one frog (the fish have yet to be counted). Of these the most exciting are the marsupials most of which are rare or extinct elsewhere. The full list is Biggada or Barrow Island Euro (*Macropus robustus*), Rock Wallaby (*Petrogale penicillata*), Spectacled Hare-wallaby (*Lagorchestes conspicillatus*), Boodie (*Bettongia lesueur*), Possum (*Trichosurus arnhemensis*), Bandicoot (*Isodon auratus*), Marsupial Mouse (*Planigale maculata*), and Fat-tailed Marsupial Mouse (*Antechinus macdonnellensis*).

Barrow Island was separated from the mainland of Australia about 6,000 to 8,000 years ago, and there is no indication that Australian Aborigines have ever visited the island. It is regarded by scientists as a living museum of the Australian mainland before pastoral development and introduced animals had destroyed the complex biological balances of Western Australia.



Anthill Python



Black-and-white Wren

Apart from the mammals the most interesting animals include the Perentie, a giant goanna which can reach up to 2.4 metres in length; the Black-and-white Wren, which is only found on Barrow and Dirk Hartog Islands; the Spinifex Bird, which, although shy and elusive over its wide desert range on the mainland, is extremely common and easily seen on Barrow Island; the Green Turtles, which come up in their thousands to lay eggs on the sandy beaches. This diversified group of animals naturally eat a wide range of foods, but the presence of Wapet's oil field and its workforce has not caused any major change in the environment.

Most people have difficulty understanding that the wildlife on Barrow Island relies on the dew fall and food moisture for water intake. The general lack of permanent surface water has caused all the wildlife to adjust to an arid situation. Due to the tremendous heat, shelter from the sun during the day is most important for the wildlife. Of prime concern in Wapet's conservation programme is retention of all natural cover such as spinifex clumps and rock ledges. Should these be destroyed, the oil company builds artificial shelters which are very quickly utilized by the various species of wildlife for cover until restoration can take place.



Young Ospreys



Frog



Perentie



Workover rig on beam pump with "Christmas Tree" in foreground



LPG plant and compressor station



Waterflood station

Oil Field

Barrow Island was first recognised in 1954 as an anticline where oil could be trapped. In that year Wapet geologists, J.R.H. McWhae and J.C. Parry visited Barrow and made a number of geological traverses across the island. During 1956 and in 1962-63 Wapet carried out further geological and geophysical surveys. A light aircraft landing strip and beach landing facilities were built. Following results of seismograph surveys a site at the crest of the sub-surface anticlinal structure was selected for Barrow No. 1 well. A drilling rig, camp and drilling supplies were taken to the island by landing barge in April 1964, living quarters were erected and a water supply well was drilled. Barrow No. 1 was spudded on May 7, 1964. The well produced gas a month later and oil flowed to the surface on July 7, 1964. At 2982 metres this was the deepest well on Barrow Island until F24J (Barrow Deep No.1) reached a depth of 4650 metres on July 20, 1973. Today Barrow No. 1 well which is adjacent to the workshops and warehousing complex is better known as L54J.

Intensive drilling followed this discovery. In the fourth well (F36) the Windalia reservoir produced oil and subsequent drilling indicated that this reservoir covered a significant area with sufficient reserves to justify commercial development. Between 1967 and 1970 two rigs drilled development oil producers and water injection wells for secondary recovery. By the end of 1970 over 500 wells had been drilled of which about 280 were producing oil.

Limited drilling was carried out in the mid 1970's despite 3 deep probes — Barrow Deep No.1 (F24J), Biggada No.1 (L35J) and Perentie No.1 (C77J) locating abnormally high pressure gas sands.

While the Windalia reservoir was by far the major oil deposit, small deposits were known to exist in the shallow Gearle Formation; the Muderong Greensand and in the so-called "Jurassic" reservoirs at about the depth of the original Barrow No.1 discovery.

The OPEC induced oil supply crisis and rapid increase in oil prices during the mid 1970's, added to the lack of Australian oil discoveries, caused the Federal Government to offer high oil prices to local explorers and producers as an incentive for exploration and development. This was sufficient incentive for Wapet in 1978 to commence a multi-million dollar programme to try and increase reserves from existing reservoirs (principally by infill drilling, i.e. closer well spacing) and to search for new reservoirs. This drilling programme was successful in recovering additional reserves and extending the expected life of the producing field beyond the year 2000.

History

There are now known to be at least 27 different reservoirs producing or holding oil and/or natural gas at Barrow Island. The schematic section (refer Statistical Leaflet) shows how they are related in the geological sequence.

Wells may produce oil, water, and natural gas in combination. The natural gas is used primarily as a method of lifting the oil to the surface. Subsequently, it is used to generate power, for cooking and as a general fuel. There is a low temperature separation (LTS) plant which processes natural gas to produce liquified petroleum gas and natural gasoline. Some of the product is used commercially on the mainland while some of the pollution-free liquified petroleum gas (LPG) is used to run Wapet's motor vehicle fleet on the island — another aspect of the conservation programme.

Only limited oil will flow naturally from the primary reservoir on Barrow Island; therefore, waterflooding is utilized to enhance flow from the wells and to increase recovery of reserves. Generally oil is pumped from the wells with large beam pumps that bob up and down 24 hours a day powered by the natural gas produced from the wells. Another method of recovery is by gas lifting. Gas is injected down the producing well and allowed to mix with the crude oil thus facilitating the oil flow to the surface.

Crude oil from wellheads is piped to the separator stations, which as the name suggests, separate water and gas from the crude oil. The clean oil is then pumped through landlines to the tank farm which contains five storage tanks with floating roofs.

These floating roofs rise or fall according to the liquid level in the tanks. From December 1 to March 31 (the cyclone season) the tank level is maintained carefully to ensure that cyclonic winds do not blow the tank down or remove the roof by suction. Each tank has a capacity of 31 megalitres.

Tankers load Barrow Island crude by anchoring approximately 10 km offshore at the end of a submarine pipeline. A flexible coupling enables a connection between the pipeline and the tanker to be made. Waters within a 11 km radius centred on Latitude Point are designated the Port of Barrow Island.

The first load of crude oil from Barrow Island went aboard the Ampol tanker P.J. Adams on April 23, 1967 and on August 5, 1974 the field produced its 1 millionth barrel (15,890,924 k1).



Tank farm with ballast pit behind



Separator station (part)



Submarine pipeline at low tide



Recreation room in main mess building



Contractors camp



Wapet camp showing mess (L) accommodation units (R), outdoor games area and landscaping

The Island

Opened in July, 1968 Wapet Camp was designed to accommodate 150 permanent Wapet/Contractor staff. It consisted air-conditioned transportable units surrounding a cyclone-proof mess/recreational building plus separate ablution/laundry facilities. In 1980 the Company began to replace this accommodation with individual air-conditioned cyclone-proof apartments. Each such apartment consists bedroom, bathroom and balcony and is used for Wapet Staff. A second temporary camp was created in 1982 south-west of the main camp to house visiting contractor personnel.

There is a wide variety of amenities and sports available including swimming, volley ball, tennis, badminton, cricket, billiards, pool, darts, canteen, post-office, library, public telephones, films, video equipment and T.V. This is additional to the fishing and other natural recreation available on the island.

Each working spell is followed by recreational leave when staff are flown back to Perth by the Company. Regular flights, except on Sundays, are made between Barrow Island and Perth via chartered aircraft, carrying mail and personnel. All other supplies go to Onslow by road then from Onslow to Barrow Island on flat-bottomed landing barges which run right up on shore, since there is no jetty at the island. Adjacent to the airport is the Heliport containing helicopter maintenance facilities. Helicopters service Wapet offshore drilling operations near Barrow Island.

A male nurse is on duty 24 hours a day, but any serious medical case is handled by the Flying Doctor Service. At all times the Company aircraft stands by on the island in case of emergency to fly to Karratha on the mainland. Barrow Island has its own ambulance and fire engine.

Today

To ensure maximum conservation, all constructed amenities are restricted to the camp site, which has been landscaped with native trees and lawns by special permission.

The air-conditioned permanent cyclone-proof administration building was constructed in 1973 at the centre and highest point of the island. It houses administrative and supervisory personnel, radio communications and a conference room. Communication to Perth Office is via radio or telephone service.

Approximately 1 km west of the office block is the main operations complex comprising the workshops, warehouses, repair shops, fire station, gas compression station, LTS plant and Training Centre.

The Training Centre was commissioned in 1976 to provide a resource centre for information and staff training. Training aids available include video tape, slide/tape, overhead projection and 16 mm movie projection.



Wapet aircraft on airstrip



Base workshop and warehouse complex



"The Castle" administration building



Training Centre instruction class

Conservation and Restoration

During 1964 and 1965 Harry Butler conducted detailed surveys of the Barrow Island fauna. These surveys resulted in more than double the known species of island fauna being found. As a result, when the field was declared commercial some concern was expressed internationally at possible damage by Wapet's operations to the rich and varied wildlife on the island. Mr. Butler was commissioned by the Explorers Club of New York to investigate possible changes. His report indicated that, although changes would take place, with a properly maintained programme of conservation no serious or lasting damage would result. This report and a subsequent one to Wapet in 1970 became the basis for the company's conservation programme on Barrow Island.

The programme includes a total ban on domestic animals, firearms, jetties and introduced plants, and immediate restoration of areas once use is finalized. In 1970 Wapet retained Mr. Butler as a Conservation Consultant to ensure continuance of the successful conservation and restoration programme, it being recognized that a thing like this is not static but dynamic and ever-changing. In 1973 Wapet, together with the West Australian Wildlife Authority instituted an annual Research Grant for the purpose of having some particular aspect of Barrow Island's flora or fauna studied each year. The results of these studies are incorporated in the programme for environmental restoration on Barrow Island which the company has accepted as part of its obligation as a responsible unit of the Australian community.

In addition to assisting the Company with the Annual Research Grant, W.A.W.A. sends a team of scientists to Barrow Island every 2 years. Their purpose is to independently evaluate the success of the Wapet conservation programme and recommend any alternative desirable actions. The visits began in 1969 and to date no significant changes in the programme have been suggested.

The core of the conservation programme requires all Company and contractor workforce and visitors to formally accept the strict environmental measures maintained by Wapet on Barrow Island.



A gravel pit after initial restoration 1976



"A reminder" to visitors



Working in the Conservation Laboratory



The same pit fully restored 1981



The restored industrial rubbish tip which was closed in 1977

The Future

With a world-wide energy crisis it is certain that the Barrow Island field will be utilized to the utmost for production of the last drop of its precious fossil fuel. On present indications this should be beyond the year 2000.

The workforce has stabilized as a production and maintenance crew with comfortable living and working conditions and will not expand any further.

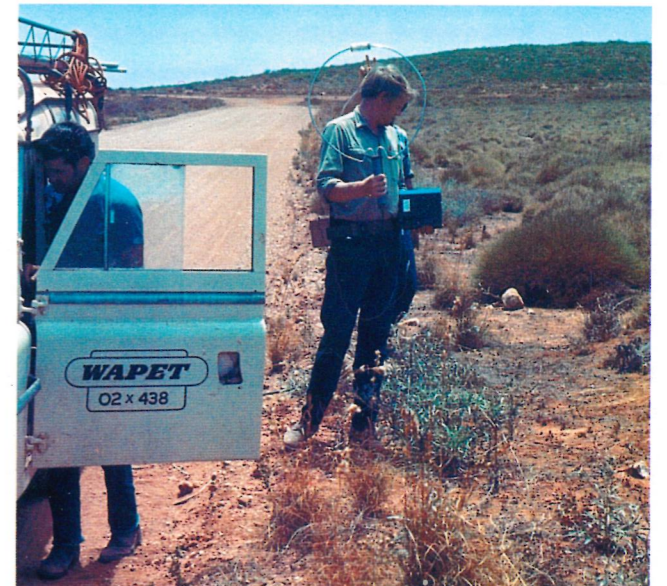
As the producing field decreases in size, abandoned areas will be reclaimed. When the last day comes and oil no longer flows, a programme of final clean-up and restoration will be carried out.

The end result will be a fauna and flora reserve with the same value it had in 1910 in terms of animal and plant population, but it will also have the immeasurably greater value of being serviced and accessible to scientists with the advantage of an enormous background of knowledge of its ecology and management.

The nation will have had the value of the island's oil reserves without losing any of its natural heritage in the process of production, thanks to the co-operation and foresight of the company. This lesson may well be applied in other parts of Australia and the world in years to come.



Scientific sampling of insects in the Research Grant



W.A.W.A. scientists using radio tracker on biennial visit

Place Names

Airport Creek

Named by Wapet personnel because the unsealed landing strip for aircraft was located nearby. Aircraft now use a new sealed air strip to the south of the island. Locally known also as Terminal Creek.

Ant Point

A survey point used and named by the Australian Hydrographic Services in 1963, probably after the termites or "white ants".



Termite mounds

Bandicoot Bay

Named by Wapet personnel after the species of bandicoot which inhabits the island.



Dinghy on Bandicoot Bay

Biggada Creek

Named by Wapet personnel because a spring in its bed provides the only natural watering place for euros on Barrow Island. Until 1972 it was incorrectly spelt BIGOTA. Biggada, is an aboriginal name for a mainland euro very similar to the Barrow Island animal.



Biggas at creek

Cape Dupuy

Named by Lieutenant Commander Louis de Freycinet, captain of the colonial built schooner *Casuarina* during a voyage of discovery with Captain Nicholas Baudin in 1801—1803.



Cape Dupuy or "Ti tree"

Cape Malouet

Named by Lieutenant Freycinet. It may have been named after Baron Pierre-Victor Malouet, Director of the French Navy at the time. He later became a minister in the government of the restoration after the fall of Napoleon.

Cape Poivre

Named by Lieutenant Freycinet. Poivre was Governor of Mauritius (Ile de France) around 1771. He is referred to as the immortal Poivre by Francis Peron because of Poivre's work as a naturalist. Peron was one of Baudin's zoologists on the 1801—1803 expedition. Previous charts situate Cape Poivre near South End.

Carrattis

Site of an early contractor's camp (Carratti Bulldozing Co.). Buildings remaining are referred to as Carrattis.

Donald River

Jock Marshall, during a visit to Barrow Island in 1958, gave this name in honour of a very small boy in Hampstead who had presented to him a notebook in which his notes were originally scribbled.

Dove Point

A survey point used and named by the Australian Hydrographic Services in 1963. It was named after the Bar-shouldered Doves which inhabit the acacias of the island.



Bar-shouldered Dove

Eagles Nest

Tall narrow rock cliffs where ospreys nest.

Flacourt Bay

Named by Lieutenant Freycinet. It was possibly named after Etienne de Flacourt, the French Governor of Madagascar during 1648—1655.

Groper Point

Local name for Cape Poivre. Area where there are large groper.



John Wayne Country

John Wayne Country

Rugged access through valley to a popular beach. Inhospitable country reminiscent of western movies.

Latitude Point

The origin of this name is not known. It appeared on a public plan of Barrow Island in 1888 and a 1884 edition of Admiralty chart 1055.

Mattress Point

Named by Wapet personnel. It originated from their practice of spending the night on mattresses at this spot while on fishing trips.

Maxs Beach

Named after a Wapet employee who was an avid fisherman. This was his favourite spot.

Oyster Rock

Conspicuous landmark. Rock covered entirely with oysters.

Shark Point

Origin of name unknown. Point referred to by the first Wapet geologists on Barrow Island in 1954. The area was their landing point from the H.M.A.S. "Karangi".

South End

Named by Wapet personnel. It is almost a separate section of the island at its southern extremity.

Stokes Point

Named by Wapet personnel. It was named after Lieutenant J. Lort Stokes, R.N., who visited Barrow Island in 1840.

Surf Point

A point used and named by the Australian Hydrographic Services in 1963.

The Chair

Place where a contractor's employee erected a metal stand resembling a chair for fishing. Still in existence.

The Ledge

Named by Wapet personnel. Its physical feature is a sheer drop into water.



The Ledge Beach with Groper Point behind

Town Point

Named by Wapet personnel. It originated from the old living quarters being nearby. The location appears on some maps as the point near Wapet Camp.

Turtle Bay

Named by Wapet personnel. It is a bay where Green Turtles come ashore to lay their eggs.



Green Turtles

Wapet Camp

Named by Wapet personnel. It is the site of the present staff living quarters.

Wapet Landing

Name applied to the barge landing area used by Wapet.

Whites Beach

Named by Wapet personnel because a truck-driver named Bert White spent much of his spare time fishing at this spot.

Whitlock Cove

Named after ornithologist F. Lawson Whitlock who camped there collecting birds in 1917.



Barge at Wapet Landing

Barrow Island Neighbours

Boodle Island

Name suggested by the W.A. Department of Fisheries and Fauna in 1973 after a small marsupial named Boodie that inhabits the island.

Boomerang Island

Name used locally by Wapet personnel. Name derived from its shape. It is often incorrectly referred to as Prince Island.

Channel Rock

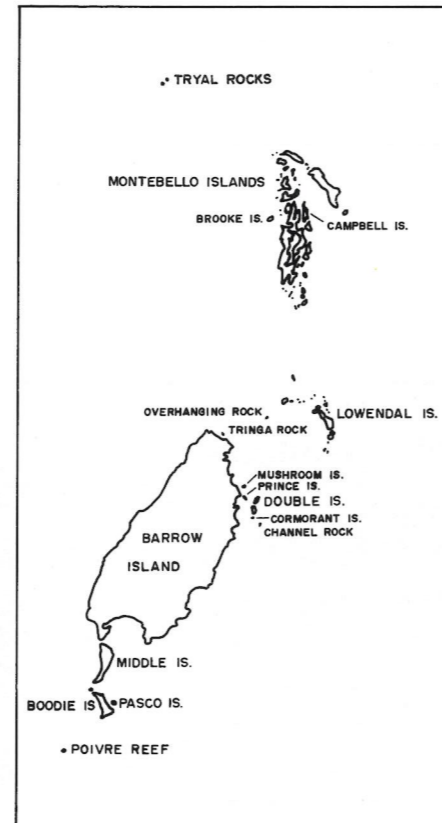
Believed to have been named by the Australian Hydrographic Services which carried out the original surveys of the waters surrounding Barrow Island for Wapet in 1963. The name originated from the feature of a channel running along the north-eastern shore of Barrow Island.

Cormorant Island

Named by F.L. Whitlock in a scientific article in the *Emu* 1918. A large colony of Pied Cormorants inhabited the island during Whitlock's visit.

Double Island

Origin not known. The name appeared on the Admiralty chart 1055 resulting from Wickham and Stokes' survey of the area in 1840. The formation consists of two islands with a very narrow channel between them.



Lowendal Islands

The name Lowendal was given by the French in 1803 to the island now known as Hermite in the Montebello Group. Wickham and Stokes during their voyage in 1839-40 misinterpreted the position of the islands indicated by the French and referred to the Lowendal Islands on their charts as a completely different set of islands. After the mistake was discovered, it was decided not to revert to the original naming to avoid further confusion. It appears that the present Lowendal Islands were first sighted by Lieutenant P.P. King in the colonial cutter *Mermaid* on June 20, 1818, and named Gray's Islets. The name Lowendal possibly commemorates Marshall Ulrich-Frederick Walderman de Lowendal, who was a member of the Academy of Sciences and died in 1755. Lowendal Group is now a fauna reserve.

Middle Island

Name used locally by Wapet personnel. It is the island between South End and Boodie; hence the name.



Middle Island east side

Montebello Islands

Named by Captain Nicolas Baudin in March, 1803, probably in honour of Marshall Jean Lannes, who was created Duc de Montebello by Napoleon after defeating the Austrians at the village of Montebello 51 km south of Milan, Italy, on June 8, 1800. It is said that the islands were visited by the survivors of the *Tryal* for a week's rest before they sailed to Java. Brooke Island, the western most island of the Montebello Group, was named after John Brooke, Captain of the *Tryal* which was

wrecked on what are now known as the Tryal Rocks, nearby. Pearl diving in waters surrounding the islands began in 1884 and Campbell Island later became the site of one of the first Australian attempts at pearl culture. Thomas H. Haynes leased the island from 1902 to 1914 for that purpose. British atomic tests were conducted on the Montebello Islands in 1952 and 1956.



A Montebello beach

Mushroom Island

Named by the Australian Hydrographic Services during a survey of the area in 1963.

Overhanging Rock

Named by the Australian Hydrographic Services. The name is used in sailing directions to the Barrow Island north anchorage.

Pasco Island

First shown on Admiralty Chart 3186 after a survey by Commander J.W. Combe in H.M. survey ship *Penguin* in 1899-1900. The island was named after Lieutenant F.C.C. Pasco, who assisted in this survey. Locally, Boodie Island is often miscalled Pasco.

Polvre Reef

Shown on charts after the survey by Commander J.W. Combe in H.M. survey ship *Penguin* 1899-1900. The reef was probably named after nearby Cape Poivre on Barrow Island.

Prince Island

Name used locally by Wapet personnel. It originated from the Prince Launch Service which provided the sole means of transport to and from Barrow Island before landing strips were built. The minute island lies off the eastern shore of Barrow Island near Wapet Landing. Boomerang Island is often miscalled Prince Island.

Tringa Rock

Named by the Australian Hydrographic Services after their survey ship *Tringa* in 1963.

Tryal Rocks

Named after the East India Company ship *Tryal* under Captain J. Brooke wrecked there at 11p.m. on May 25, 1622, with a loss of 97 lives. The wreck was not discovered until May 1969 by Eric Christiansen. These rocks were also called Ritchies' Reef. The *Tryal*, is the first known shipwreck off the Australian coast.



You have just read the story of Barrow Island, one tiny section of the enormous oil industry throughout the world. This story is repeated in many ways throughout the entire industry — exploration; development; engineering; production; environmental care; anti-pollution, and the multitude of other factors which are involved in the complexities of today's world. Environmental care includes care for people and their way of life.

Modern living is based on hydrocarbons and every day you use, or rely upon, some product, direct or indirect, of the oil industry. Because of its total involvement in our Australian way of life this absolute care of all aspects of all operations is regarded as completely essential by WAPET and the industry in general. The participating companies:—

- (i) Ampol Exploration Ltd.
- (ii) California Asiatic Oil Company
- (iii) Texaco Overseas Petroleum Company
- (iv) Shell Development (Australia) Pty. Limited

are justly proud of the fine record in the industry created by WAPET



WAPET—Management and Staff

BARROW ISLAND OILFIELD STATISTICS

JULY 1982

FIRST WELL: Barrow No. 1 spudded May 7, 1964

FIRST DISCOVERY OF OIL: July 7, 1964

OILFIELD DECLARED COMMERCIAL: May 26, 1966

FIRST SHIPMENT OF CRUDE OIL: April 23, 1967

STORAGE TANKS: Five tanks each 52 m diameter x 14 m height, 31 megalitres capacity (200,000 barrels)

SEPARATOR (Gathering) STATIONS: Nine stations each with a working capacity of 1500 kl (9600 barrels) of oil per day

TOTAL NUMBER OF WELLS DRILLED TO

1970	(519)
1976	(524)
1981	(602)
1982	(628)

NUMBER OF GAS LIFT WELLS: 87

NUMBER OF WELLS CURRENTLY PRODUCING OIL: 347

NUMBER OF WATER-DISPOSAL WELLS: 8

NUMBER OF WATER INJECTION WELLS: 192

NUMBER OF BEAM PUMPS IN OPERATION: 253

NUMBER OF RIGS CURRENTLY DRILLING: 1

NUMBER OF WORKOVER RIGS IN USE: 3

SIZE OF OILFIELD: Approximately 90 sq. km.

AVERAGE DAILY PRODUCTION OF CRUDE OIL: 1980 4,434 kl (27,904 barrels); 1982 3,845 kl (24,200 barrels)

CUMULATIVE OIL PRODUCTION TO JULY 31, 1982: 29,527,316 kl (185,812,446 barrels)

TOTAL GAS PRODUCTION AS AT JULY 31, 1982: LPG (liquified petroleum gas) 41,292 kl (259,846 bls)
NG (natural gas) 44,338 kl (279,014 bls)

TANKERS: About 35 tankers call at Barrow Island each year

SUBMARINE PIPELINE: 10 km long and 50 cm in diameter, wrapped in 5 cm of concrete

MOORINGS: 10 km offshore, 15.2 metres deep with a marine loading 7 anchor buoy terminal for tankers

THERE ARE*Two 1,000 horse power and one 600 horse power Compressors for compressing natural gas (produced with oil) for the field gas lift system

*One 750 horse power refrigeration Compressor used for extraction of liquified petroleum gas from the compressed natural gas

*Two 1,300 horse power natural gas engines driving shipping pumps for transport of crude oil from Storage tanks via submarine line to Tankers offshore

*Approximately 1,000 km of steel pipelines varying in diameter from 2.51 cm to 40.64 cm which transport crude oil, produced water, gas & injection water to and from the various field facilities, e.g. wells, gathering stations, water flood plants, storage tanks

*Several hundred km of unsealed service roads

*Seven water injection stations

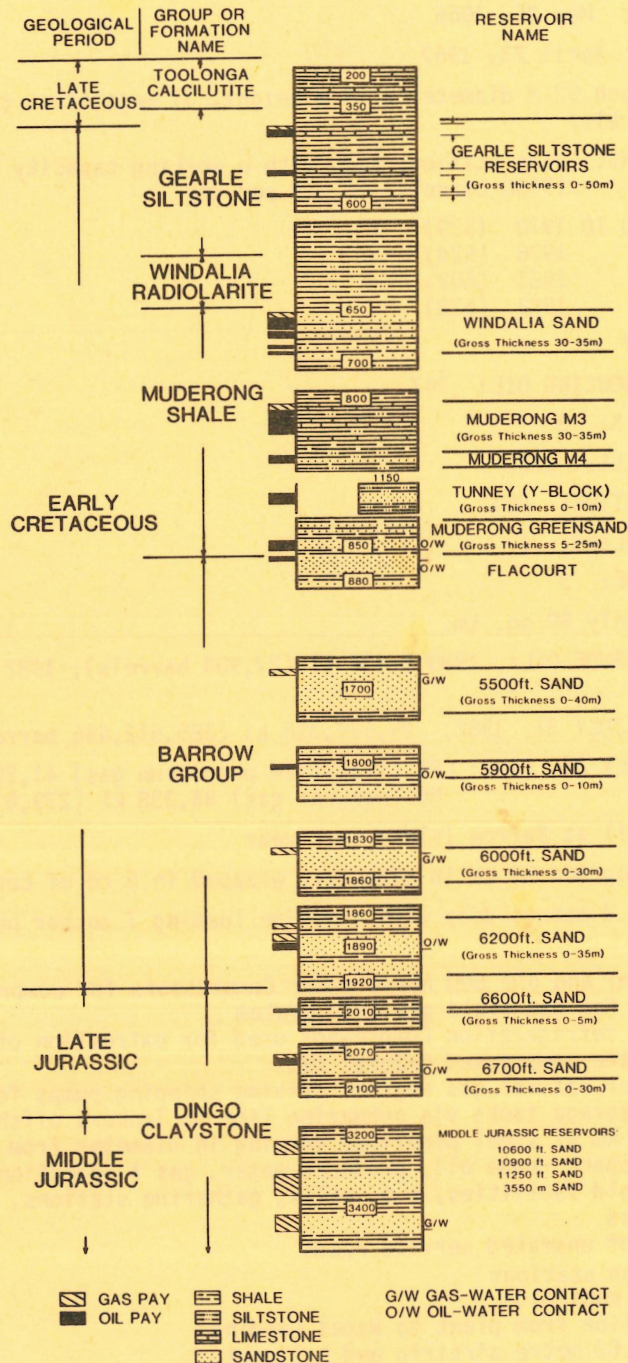
*Two remote flowline manifolds

*Fifteen km LPG pipeline from plant to Wapet Landing

*An all weather 1524.02 metre airstrip and heliport

ERRATA: Page 8, last line - 1 millionth barrel should read 100 millionth barrel

SCHEMATIC SECTIONS OF BARROW ISLAND PRODUCTIVE RESERVOIRS



GAS PAY	SHALE	G/W GAS-WATER CONTACT
OIL PAY	SILTSTONE	O/W OIL-WATER CONTACT
	LIMESTONE	
	SANDSTONE	

FIGURES INSIDE COLUMNS INDICATE APPROX. WELL DEPTH IN METRES