
ABORIGINAL TENURE OF THE SEA IN NORTHERN ARNHEM LAND

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INTRODUCTION

In 1931 Arnhem Land was legislatively reserved for the use of Aboriginal people who had traditionally occupied the area. Within this area the coastal Aboriginal people of north-eastern Arnhem Land may be considered an homogenous group both culturally and in terms of their exploitation of marine resources. They refer to themselves as Yolngu (a vernacular term meaning Aboriginal man) and are variously referred to in the literature as 'Murngin' (Warner, 1937), 'Wulamba cultural bloc' (Berndt, 1951) and currently as the Yolngu bloc.

The Yolngu world is divided into two patrilineal moieties, **Dhuwa** and **Yirritja**. Each person is born into a patrilineal group (clan) within one of the moieties which afford them, among other things, economic use of particular tracts of land and/or sea (commonly referred to as estates), and confer attendant ritual responsibilities. Yolngu also obtain varied rights to other tracts through their matrilineal affiliation.

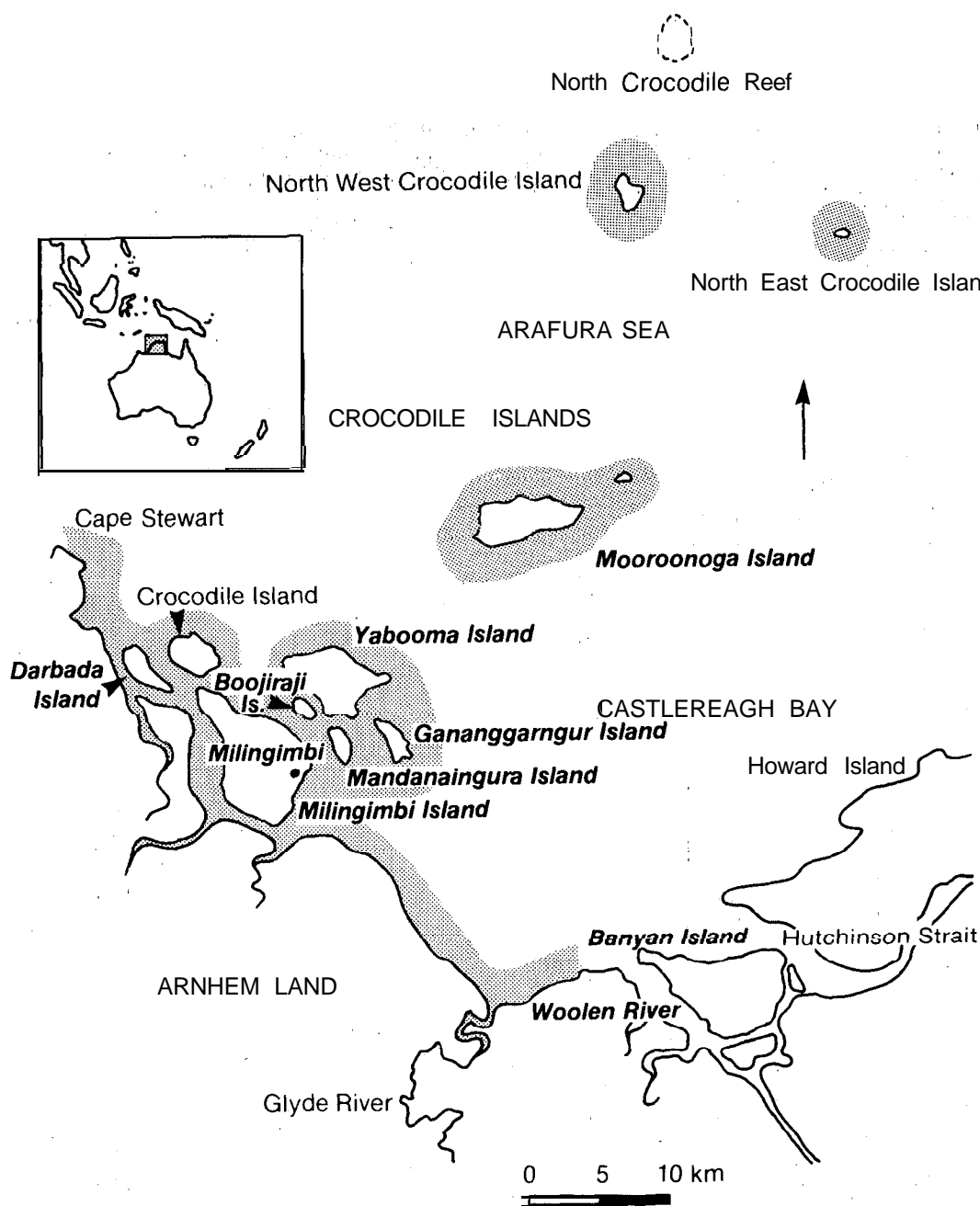
The Crocodile Islands and Castlereagh Bay area of north-eastern Arnhem Land represents seventeen clan estates, each ranging from the mainland and inshore estuarine localities to offshore islands, reefs and sand-bars up to eighty kilometres from the mainland (Figure 1). The marine component of each estate averages approximately 320 square kilometres. I conducted my initial research among the Yolngu with whom I lived for three years from 1979. The Northern Territory Fishing Industry Research and Development Trust fund then afforded an opportunity for a continued research programme specifically to examine tenure of the sea among the Yolngu in view of present legislation affecting the use of seas and future management programmes. The research programme included documenting the boundaries of clan estates, economic zones, sites and paths of ancestral activity, the location of residential and hunting camps and the knowledge and use of the sea and foreshore throughout the yearly cycle.

ACKNOWLEDGEMENT OF ABORIGINAL RIGHTS

From earliest contacts, Aboriginal people on the, northern Australian coast have asserted rights over seas adjoining the coast. Many accounts of contact give evidence of, or acknowledge, Aboriginal rights over the sea. Prior to European contact with Aboriginal people in Arnhem Land there were at least three sources of non-Aboriginal contact (Berndt and Berndt, 1954).

Aboriginal people speak of the **Baydjini** people who came from the north-west beyond the Arafura and Timor Seas, travelling on the monsoons in praus and bringing with them women and cloth. They stayed long enough to cultivate the land and build permanent stone dwellings. Berndt and Berndt (1954) record stories from older Aboriginal people which suggest the **Baydjini** originated from the East Indies.

Figure 1. Locality map of the Crocodile Islands, **Castlereagh** Bay, Northern Territory, delineating closure of seas in the, Milingimbi and Glyde River areas.



Contact with another group of people known by Aborigines as the **Badu** is recorded in a cycle of songs which deals with pre-European contact (Berndt and Berndt, 1954). The **Badu** people came from the north-east, an area which is mythologically associated with the spirits of dead Aboriginal people. The third and major pre-European contact with Aboriginal people in Arnhem Land came from the Macassans of Celebes. These contacts, which began perhaps as early as the sixteenth century, were much more frequent and continued well into this century, as recently as forty years ago (Berndt and Berndt, 1977; MacKnight 1969a, 1976).

The Macassans attempted to develop a good relationship with Aboriginal people, whom they often needed to supplement their labour force to fish for trepang. The Macassans also traded for rights to set up camps and for access to fresh water. These same rights were acknowledged in a letter carried by Captain James Cook in 1768 on his voyage to the southern continent in the Endeavour. The letter, from the President of the Royal Society as co-sponsor of the voyage, gave Cook the following advice in relation to indigenous persons:

They are the natural, and in the strictest sense of the word, the legal possessors of the several regions they inhabit. No European nation has a right to occupy any part of their country, or settle among them without their voluntary consent.
(Beaglehole, 1955)

From earliest known contacts, then, various acknowledgements have been made of Aboriginal rights over territorial seas and the economic resources therein, whether by payment, recompense or otherwise.

TRADITIONAL ECONOMIC RIGHTS

Each clan group among the Yolngu acknowledges the rights of other clan groups over particular areas or estates encompassing the sea and foreshore. These estates are not always continuous and may be composed of a number of areas encompassing different habitats. This distribution allows exploitation of resources in differing areas at various and appropriate times of the year. A common spread of such areas shows a marked break-up of localities consistent with seasonal differences in the availability of fish, shellfish, turtles, dugongs and other sea resources such as turtle eggs. The boundaries are rigid and rarely, if ever, subject to dispute among Aboriginal people.

Aboriginal people consider their estates as encompassing all parts of their territorial seas which extend from the land to the seaward horizon, as viewed from the shore, with that area beyond the horizon being "for government".

It is a mark of the responsibility of a man for his estate that he should hunt and fish on it and **occupy it**. Yolngu regard hunting, fishing and foraging as responsible management.

The management of natural resources is an integral part of 'owning' land and sea in the Aboriginal sense of ownership. This is not so much a 'matter of 'owning' as it is a matter of fulfilling obligatory responsibilities. One might say that it is not a state of having or possessing land and sea in such a way as to be able to legally effect disposal or sale, but that of being an inseparable part of the estate.

The act of ownership requires physical management such as systematic burning in order to "clean up" land, 'harvesting' from land and sea, maintaining ritual song cycles in the performance of ceremonies, and other similar activities, which are obligatory and fulfil spiritual responsibilities. Such management is the responsibility, and prerogative of particular senior men. To not perform such acts leaves one open to accusations of gross neglect by other custodians who may also have specified rights to those same areas of land and sea.

POPULATION MOVEMENT PATTERNS

The Crocodile Islands and Castlereagh Bay area are daily traversed by members of the residential clan groups for the purposes of hunting, travel to adjoining clan areas for ceremonies and travel to central communities such as Milingimbi, **Nangala** and Galiwin'ku.

This movement of people is a daily occurrence much as might occur in any local population area.

However, in terms of seasonal movement there is a high positive correlation between the changing emphasis on different kinds of marine food resources and the movement of Yolngu through the Crocodile Islands and Castlereagh Bay area during the yearly cycle.

Yolngu knowledge of seasonal fish movements would lead one to positively correlate such movements with Yolngu population movements. However, Western marine biology has little knowledge of such seasonal fish movements. In view of the lack of such base data no reliable evaluation of Yolngu knowledge may be concluded with reference outside its own system. One must then take such knowledge at face value and evaluate it within the system in which it operates. This assumption suggests that Yolngu population movements display a high positive correlation with the movement of fish within the Crocodile Islands and Castlereagh Bay area.

Similarly the 'fat' cycle is a phenomenon about which little is known by western biologists. The emphasis on the condition of the food source being in prime condition (djukurrmirr: fat-possessing) again shows a high positive correlation with the seasonal movement of Yolngu populations. This fat-possessing quality extends to fish, crustaceans, molluscs, birds, mammals and reptiles.

The seasonal movement pattern from a sedentary wet season existence through to the highly mobile hunting groups of the dry season is underpinned with considerations of potential product value and prestige in visiting particular economic and camp sites. Consideration of rights of access to estates punctuate planned hunting expeditions while asserting rights in succession to estates may often be the motive for dry season occupation of sites on mother's or mother's mother's estates.

The seasonal Yolngu population movement pattern, then, is the product of interplay between the political, social and economic spheres of Yolngu life.

The following account of the Yolngu calendar illustrating Aboriginal seasonal activities and knowledge of the littoral zone is based on my fieldwork from 1979 to 1981 supplemented with regular field trips from 1982 to 1984 with intensive regular fieldtrips at ~~the~~ the height of each season as sponsored by the Northern Territory Fishing Industry Research and Development Trust Fund.

TRADITIONAL KNOWLEDGE AND SEASONAL USE OF THE LITTORAL ZONE

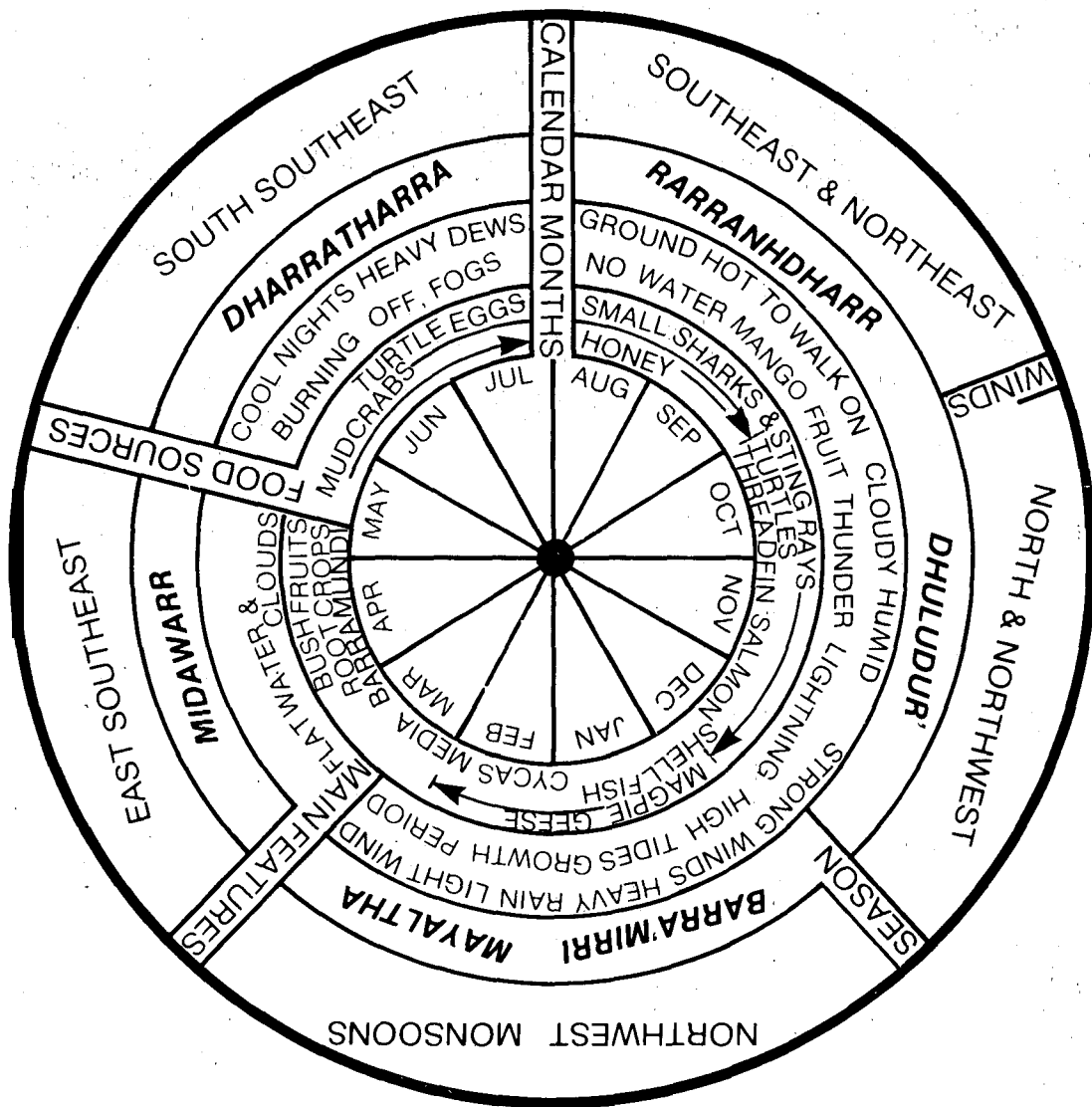
Seasonal calendar

Yolngu generally recognise six major seasons in the yearly cycle of natural events. Each season is heralded by distinct changes in faunal, floral and climatic conditions. Aboriginal people view the ~~natural environ~~ a-s. a total, integrated. system of which they are a part.

The main seasons which they recognise correspond roughly with our **seasonal** calendar as follows:

- Dhuludur':** The pre-wet season (October to November)
- Barramirri:** The growth season (December to January)
- Mayaltha:** The flowering season (February to March)
- Midawarr:** The fruiting season (March to April)
including Ngathangamakulingamirri: (harvest season of about two weeks) (April)
- Dharratharramirri:** Early dry season (May to July)
including Burrugumirri: (birth of 'sharks and stingray, about three weeks) (July to August)
- Rarrandharr:** Main dry season (August to October)

Figure 2. Yolngu seasonal calendar. The months of the year have been included in the calendar only for orientation purposes.



Pre-wet season

During the late dry season and pre-wet season, daily hunting activities extend to the most seaward regions of Yolngu marine estates. The calmness of the sea makes this the safest season to travel. The clear sky assists Yolngu sea voyages which at times rely upon celestial navigation, especially for longer voyages. Such voyages occur less frequently now with the ready **access** to charter aircraft and relatively abundant supply of money for such charter.

Traditionally, long voyages and hunting trips extending over many days involved hunting parties requiring access to several estates and thus the party included members of a number of clans.

During the pre-wet season tidal amplitude is large and the floodplains are covered with water for the first time since the fruiting season in the last wet season. The sea is flat and the water is clear. The weather is still cool during the night, as it was in the main dry season, with mists settling in the stillness of the night and rising early in the morning after the light north-west wind has started blowing. Just before dawn it is cold and the stars shine brightly through clear skies. The winds are mixed, with the south-west, the south-east, north-east and north-west winds, each blowing at different times, often within the same day.

~~Yolngu believe that the 'male' thunder that comes early in the~~
~~pre-wet season shrinks the water holes. When the sky is covered~~
~~by heavy cloud most of the day, the 'female' thunder brings the~~
~~rain.~~

Along the shoreline, the incoming tide often brings floating pornupan mangrove (*Sonneratia alba*) flowers.

The green turtle (Chelonia mydas), flatback turtle (Chelonia depressa) and hawksbill turtle (Eretmochelys imbricata) are the most commonly hunted turtles at this time of year. Before the storms of the wet season the calm seas allow extensive trips to the furthest turtle hunting grounds.

With the extreme low tides of the pre-wet season, false trumpet shells (*Syrinxaranus*) and yellow bailer shells (*Melomelomphora*) are found in abundance on the exposed sand bars, especially those surrounding reefs. Cooperative hunting trips of men from various clans are arranged to exploit these shellfish. On the reefs themselves and the rocky shorelines of the outer islands, black lipped oysters are 'fat' and are constantly harvested by women throughout the pre-wet season. The occurrence of the largest of such oyster beds is on the seaward islands of the Crocodile Islands, including Murrungga and Gurriba Islands.

Close into shore Raphana and Pinctada maxima are the main shellfish collected. At the edge of the mangroves, oysters (Saccostrea tuberculata) are found attached to the aerial roots of the small-stilted mangrove (Rhizophora stylosa). This shellfish is also found in abundance on the mangrove roots overhanging the water of small tidal creeks.

The lined nerite (Nerita lineata) is yet another shellfish which is found on mangrove trees. Unlike the oyster it does not attach itself to the roots. Rather, it crawls on the roots and the trunk of the tree. Oysters are always cooked in hot ashes whereas the lined nerites may be either cooked in hot ashes or boiled.

The shellfish Geloina coaxans is collected from the mud further into the mangroves. Shells which have been broken open are often found strewn around the mud. The thick shell has been crushed by mud crabs (Scylla serrata) which come with the rising tide to look for food. During the pre-wet the mud crabs are no longer fat. There is considerably less emphasis on inshore shellfish resources during the pre-wet.

The barramundi (Lates calcarifer) move back to the mouth of the creeks and around the mangroves before they swim up the creeks to breed during the heavy rains. Yolngu men often idle their boats close to the banks in the quiet waters of the tidal creeks in search of the barramundi. Such fish are taken by a single hunter with his spear poised in the bow of the boat. As in turtle hunting, the spearman in the bow gives discrete direction and speed signals with his fingers. The men most often engaged in such inshore hunting are from clans with estates fringing estuarine areas or from distant estates but now living in central communities. Inshore hunting from boats is generally an ad hoc activity in that it most often takes place close to the central community. The hunt only actively engages one hunter. Such hunting thus often takes place en route to another destination or while waiting for someone at the predetermined 'landing' or meeting place, which consists of a clearing in the mangroves fringing the mainland.

During the pre-wet season the threadfin divide into two groups. Sheridan's threadfin (Polydactylus sheridani) move to the creek mouths with the barramundi, while giant threadfin (Eleutheronema tetradactylum) swim out to join other fish around the reefs. Skinnyfish (Scomberoides lysan), spotted trevally (Caranx melampygus) and oides (Caranx oides) move out into the deeper water around the reefs. Yolngu with estates encompassing the offshore islands fish the shallow reef water on the incoming neap tides. Birds which flock to dive at the young great trevally (Caranx nobilis), which live in the shallow waters surrounding the reefs, are used by Yolngu to indicate the presence of fish. In this same locality threadfin swim in the pre-wet season. Barracuda (Agriposphyraena barracuda) have moved out past the reefs into the deepest water and will return later in the wet season.

Towards the end of the pre-wet season the rain is brought only by the north-west wind. It rains almost every evening. This is the start of the next season which is signified by heavy rain and an abundance of plant growth.

The season of heavy rain and plant growth

The abundance of water which fosters the growth in plants also brings new populations of mosquitoes which infest the mangroves. However, mangrove worms are, considered so deliciously fat, that even the mosquitoes, are tolerated in order to gather them.

Although mud crabs, which also live in the mangroves are frequently encountered, they are not 'fat' until early in the dry season and so are not hunted by Yolngu.

The black-lipped oyster will not be 'fat' again until the north-east wind returns in the dry season. With the change in weather conditions other shellfish are not fat. These include the turban shell (Subinella anguis), the giant gem chiton (Acanthopleura gemmata), P. hiantina, Anadara granosa, the telescope mud creeper (Telescopium telescopium) and the lined nerite.

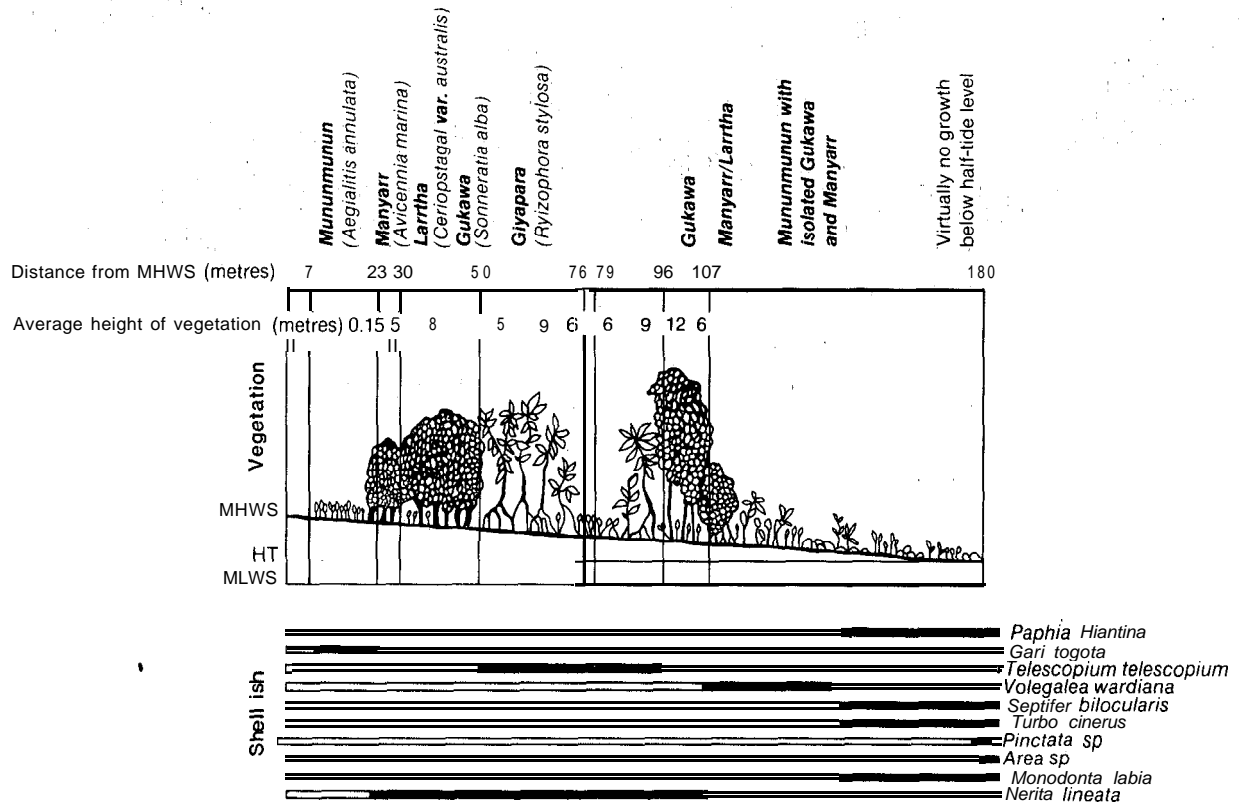
Along the beaches young tamarind trees (Tamarindus indicus) sprout from the seeds which had ripened in the dry season. The large tamarind trees are bright green with all their new growth.

Further down on the beach there are often large swarms of dragonflies (Notoneura sp.). They swarm on the north-west wind and hover around the water's edge and often a little further inland past the beach. When this swarming occurs regularly, the sea mullet (Mugil cephalus) and the diamond-scaled mullet (Liza raigienis) are considered to be fat and can be caught as soon as the seas are calm. Such fishing is limited to sheltered inshore areas. Barramundi can be found swimming lazily along in the quiet water under the overhanging mangrove trees in the creeks. Soon they will be found in large schools moving around past rocky areas and beaches as they begin to populate tidal creeks and mangroves in search of food. When barramundi are searching for food like this, they lose the black on their backs which developed when they were feeding near-the-fresh water. Sheridan's threadfin has left the giant threadfin and is living with the barramundi. They will stay together until later in the dry season. Salmon catfish (Netuma thalassina) and blue catfish (Neoarius australis) are also moving from the creek mouths to the mangroves and are fat. Turrum are living around the rocks and small reefs close in to the islands. Skinnyfish are living with the turrum, but also move along the edge of the beaches when there are very high tides. At this time of year the tides start to become higher than normal. A few days after the full moon the highest tides occur. These are the spring tides. Soon, the soil is soaked with rain and most of the later rainwater lies on top of the soil.

Yolngu withdraw from hunting camps on the outer islands. Fishing and turtle hunting activities are quickly curtailed. Yolngu move to more permanent campsites which generally afford access to extensive shellfish beds and mangroves which are gleaned daily. Shellfish gleaned by Yolngu women from such systems often yield in excess of sixty per cent of the daily diet. Women forage as the receding tide exposes successive shellfish beds.

Yolngu delineate zones in the mangrove system by the distribution of the dominant species of mangrove flora. These zones are labelled by Yolngu, as in Western scientific taxonomies, by the dominant floral species. Each zone has particular species of shellfish associated with it (Figure 3).

Figure 3. Mangrove vegetation and shellfish habitats at Top Camp (Ngamuyani).



The high spring tides rise up the creeks and meet with the rain water flowing out of the bush. All the water joins together and floods the saltpans and grassy floodplains. These areas stay full of water until the end of the wet season. This is the time when the barramundi swim up across the floodplains and are easily speared in the grass.

The barracuda move back from the deep water and can be caught close into the rocky shore of the islands. They appear to frequent localities where the water runs deep and fast. Black-finned long-toms (Tylosurus melanotus) leap up and fish-tail across the top of the water, often for long distances. Yolngu consider them good to eat during the heavy rains. Often young long-toms can be seen swimming in the sheltered waters of the creeks while larger ones are found almost anywhere in the open water. They are caught by opportunistic hunters using spears from the bow of an idling dinghy.

As the north-west wind brings storms daily, the sea is dirty and rough so most fishing is done close to shore and around the creeks. Purple tusk fish (Choerodon cephalotes) and other reef fish are 'fat' but Yolngu often believe weather conditions to be too dangerous for people to travel out to reefs and other islands. Violent rain squalls quickly spring up and small dinghies may not be able to outrun them. There are still plenty of stringrays inshore, but the water is usually too dirty or too rough to be able to see them before the presence of the hunter frightens them and they escape.

Sharks such as the black-tipped shark (Carcharhinus spallanzani) and the lemon shark (Carcharhinus amblyrhynchoides), which were born in the middle of the dry season, are now living around the mouths of the creeks and along the edges of the mangroves. Later in the wet, they will move further out into deep water, with the black-tipped shark subsequently frequenting the reefs.

Sometimes there may be a calm day when turtles can be seen, but mostly it is too rough to hunt turtles. There are no turtle eggs to be collected until the dry season.

Soon the bush passionfruit (Passiflora foetida) flowers. Many other plants flower, and the rain becomes infrequent and sometimes stops for several weeks. These are indications that the season of heavy rain and growth is drawing to a close and the season of flowering plants is starting.

The flowering season

The flowering season is a season of short duration. It marks a distinction between the main wet season, being the season of heavy growth, and the fruiting season.

The sandflies appear when the sandy soil dries out, and they stay until the next rain. Mosquitoes appear in large numbers after every rain. This signals to Yolngu the change of seasons which brings the time for plants to flower. During the flowering season the trunks of many trees are covered by lush green vines but there is very little bush food.

The flowering season is so called because of the abundance of plants that flower at this time. Among the grasslands and throughout the bush, small plants flower wherever growth is possible; Generally these small plants are like grasses and are only significant in that they confirm to Yolngu that the present season is the flowering season.

Shellfish continue to be gleaned from beds adjacent to the wet season camps but fishing activities are infrequent, 'as in the previous season. Food sources have changed little since the previous season.

The fruiting season

The wind changes from north-west to the north-east, bringing rough seas and heavy waves which crash onto the shore; Early in the fruiting season the storms still bring heavy rain daily, often with thunder and lightning. The deep sea is heavy and rolls with large waves. Travel across the sea at this time is considered very dangerous.

By the middle of the fruiting season the wind has changed to the east and the heavy storms are less frequent. Light easterly winds blow throughout most of the day bringing cooler weather.

When the mango trees shoot new leaves, which are, red, the first south-east wind blows gently in the early morning before sunrise. Shortly after sunrise the east wind blows and continues for the rest of the day. The seas are very flat at this time and it is often hard to see where the sea ends and the sky starts, because the horizon is lost in the reflection of the sky on the sea. This is the time for turtle hunting.

Turtles begin to lay their eggs again, but serious hunting for their eggs will not occur until the dry season. Turtle hunting is a daily occurrence during the fruiting season with flatback, green, loggerhead (*Caretta caretta*) and hawksbill turtles being common. Dugongs (*Dugodugon*) may be hunted at night during the fruiting season. Yolngu state that dugongs sleep on the surface and are carried by the sea currents. On moonlit nights dugongs can be found floating in the channels. It is easy to follow the channels because white foam marks the middle of the channel where the dugong sleeps. Hunters quietly follow the white foam line in the moonlight until they see a sleeping dugong and spear it with harpoons.

The first turtle spearing is generally around the time of the last wet season storm. This turtle forms the focus of a turtle hunting ceremony in which all people in the local community participate. The turtle is decapitated. The head is given to the captain of the boat. The internal organs are removed through the neck opening created by the decapitation. A large fire is then built and a layer of stones, each of approximately ten centimetre diameter, is placed on the firewood. The turtle carcass is then placed on the layer of stones and the fire lit. When the wood has burnt down to coals the turtle is removed and the hot stones placed inside the carcass through the neck opening

and the carcass is then replaced on the hot coals. When the turtle is cooked the lower epidermal shell is removed to allow access to the meat. This part of the shell is taken and stood vertically in the sand in an area of the beach immediately adjacent to the fire. A mock turtle hunt then takes place. The women dance in a large circle, surrounding the performance. A man with acknowledged senior ritual status dances as the spearman with harpoon and rope in hand. Several men hold the turtle rope in line as the spearman advances on the lower epidermal of the turtle shell which has been stood vertically in the sand to represent the turtle in the hunt. Each advance and retreat matches another verse in the song cycle which is sung to accompany the dance. This ceremony signals the 'opening' of the turtle hunting season.

With the growth of so many plants providing food sources in the bush during the fruiting season, there is not as much emphasis on shellfish. Only a handful of shellfish species are eaten during the fruiting season. *Tapes hiantina* accounts for most of the shellfish collected during this season, while the balance is made up of *Modialis proslivis*, *Gafrarium tumidum*, *Pinctada chemnitzii*, *P. maxima*, *P. sugillate*, *Gari togota*, and Ward's volema (*Volegalea wardiana*). All of these species are fat during this season. As the next season (the early dry season) approaches, the black-lipped oyster will become fat and can be found on the rocky shoreline and reefs of outer islands where the water is clear. The lined nerite will be collected in great numbers in the mangroves by people hunting for mud crabs.

The heavy rain and high spring tides early in the fruiting..season bring flooding along the grass-covered floodplains and the salt pans. The barramundi may again be found in this shallow water where they are easily speared. Otherwise, barramundi are usually found in the mangroves, or around the rocky areas close to the mangroves.

Hunting fish across the floodplains is undertaken by individuals with spears. Sometimes men sit in trees above gutters leading to the main watercourses waiting for fish to pass on the ebb and flood tide.

Thomson (1937) documented many cooperative fishing parties across the inundated floodplains. Such cooperative efforts involved the construction of large fish traps and weirs which redirected the fish to catching baskets: Thomson also noted the use of fish fences in much the same way as commercial fishermen use nets for barramundi. On Gurriba, Murrungga, Mararrtharayngur and Yurriwi Islands the rock base for the fish fences remain in place. These were often used in the wet season when sea travel was at a minimum and in island locations where there was little access to appropriate wet season shellfish beds such as mudflats and mangroves. Such fish fences were also used on inshore islands, but more particularly in the late wet and early dry season, due to the reliance on shellfish during the wet season.

During the fruiting season, Sheridan's threadfin live closely with barramundi and skinnyfish which have come in from the outer islands and reefs.

Giant threadf in which were commonly found with skinnyfish early in the wet, have moved out to the shallow offshore reefs to live with great trevally. Turrum move further out from the mainland and join the large barracuda which are returning from deeper water. Towards the end of the wet, the sea becomes calmer, with the east wind blowing gently. This is, the time when purple tusk fish, pikey break (Acanthopagus berda), black-spot tusk fish (Choerodon schoenleinii) and most reef fish are becoming fat.

The changing weather conditions and increased availability of fish and shellfish on offshore islands leads to a general feeling of expectation among Yolngu who start to plan hunting expeditions. Older men often sit under tamarind trees on the beaches discussing the weather conditions and the likely abundance of fish and turtle eggs at various offshore locations.

There is considerable prestige attached to the first offshore hunting trip of the dry season. The success of such a trip must be ensured, for an unsuccessful trip may be an outstanding embarrassment and temporarily diminish a man's power to co-opt people into joint ventures through his accumulated obligations and alliances. Therefore, with mutual understanding to the potential prestige of a successful hunt, senior men discuss possible hunting grounds and the composition of hunting parties which will ensure access to such sites.

Towards the end of the fruiting season, the days are becoming much more like the dry season. But, in the small harvest time, when most plant food is ready in the bush, the weather often builds up to threaten a storm. Then, when the grass, Heteropogon contortus, has dried out and is bending with the weight of seed, one last storm of the wet season comes and flattens it. This storm is brought on the strong south-east wind, which is the main dry season wind. Sometimes, isolated fires have already been lit, but the real burning off is held back until early in the dry season, the next season.

The early dry season

After the first storm in the early dry season the winds vary in direction. Heavy dews come with the light east-south-east to south-east wind that blows every night. The nights are cool with mist early on some mornings. When well into the early dry season, the south-east kind swings further south and becomes south-east to south-south-east and is stronger. The salt pans dry out and the plant Arthrocnemum leiostachyum turns red.

The lined nerite and Gelonia coaxans are the only shellfish which are significant in the mangroves during this season. Not all shellfish which were eaten earlier in the year taste good during the dry season. With changes in the weather conditions the taste of some shellfish change. Shellfish which Yolngu eat at this time of the year are: the faded sunset shell (Asaphis deflorata), Tellina linguaefolis, Tapes variegata, the turban shell, Gari togata, Anadara granosa, Septifer bilocularis, Lopha folium, Gafrarium tumidum, Latona cuneata, Modialis proslivis, Nerita polita and Nerita ambicilla.

Crustaceans which are common in this season include: immature and mature mud crabs, sand crabs (Portunus pelagicus), horn-eyed ghost crabs (Ocypode ceratophthalma) and fiddler crabs (Uca sp).

Preparations are completed for the first of the dry season hunting expeditions to offshore islands such as Gurriba and other coastal localities such as Ngandwa (Cape Stewart) which are still not accessible by land because of flooding. The shafts of turtle harpoons have often been renewed. Similarly new ropes have been acquired and fitted to the harpoon tips which have been ground to a fine point.

If the north-west monsoons persist into early May then it is very likely that the first major hunting expedition will coincide with the nesting of the crested tern (Sterna bergii). The crested tern lays a single egg on the sand immediately adjacent to the beach above the high water mark. Approximately one week later a second egg is laid. The eggs are much sought after by Yolngu. Turtle eggs are invariably found in close proximity to the crested tern colonies. There is considerable social pressure to time the expedition such that both an abundance of turtle eggs and crested tern eggs are collected.

However, to arrive at the tern colony before the first egg is laid or later when embryos have formed in the eggs thus making them unsuitable for consumption is a considerable embarrassment to the hunters and one which will not quickly be forgotten by other senior men.

The product of the hunt, then, is seen by Yolngu to be a concrete validation of one's knowledge of the marine environment. Knowledge is power and thus the diminished product of an expedition caused by any one of a number of circumstances such as inappropriate timing of the hunt, inexperienced boat handlers or unreliable equipment may compromise the social and political status of the senior organisers of the hunt.

Early in the dry season the sea is the most significant place for food. Barramundi, Sheridan's threadfin and the giant threadfin are the most important fish because of the large amount of fat they have. Other fish which are a common food source during this time are; skinnyfish, salmon catfish, diamond-scaled mullet, pikey bream, mangrove jacks (Lutjanus argentimaculatus), purple tusk fish, estuary rock cod (Epinephelus tauvina) and sea mullet.

Yolngu start fishing in earnest and often set up hunting camps of single day or overnight duration in the early dry season. For an overnight hunt the catch on the first day is cooked with the hunters consuming their fill. The catch on the second day and the cooked remainder of the first day's catch are returned to the main camp at the conclusion of the hunt. For long trips only the fish catch from the final two days are returned to the main camp or settlement. Turtles are kept live for the return journey. The location of turtle nests are noted with excavation often being left until the final days of the hunt so as to minimise cartage and ensure the freshness of the eggs.

When the south-east wind blows stronger in the latter half of the season, most fish that live near the reefs move away to sheltered water near the shore. Skinnyfish can often be found near the barramundi, which come in to feed on the small mangrove plant Aegialitis annulata around the rocky areas of mangroves. Where A. annulata grows in the mud, Yolngu say that Sheridan's threadfin and giant threadfin come in and use their long whiskers to find food in the muddy water.

Although most of 'the five common marine' turtles can be found at some time in the early dry Season, the green and the flatback turtle are the most commonly hunted.

"When Pandanus yirrkalaensis fruit starts to change from green to red, then the early dry season is nearly finished. As soon as the first fruit drops to the ground, the flatback turtle starts to lay its eggs. At the same time the red flowering Kurrajong (Brachychiton paradoxis) has lost all its leaves and begins to flower. This indicates to Yolngu that sharks are giving birth to their young and the early dry season is over. The next season, the, main dry season, does not start immediately.

The north-east, south-west and south-east winds vary for a few weeks. These are signs that the early dry season has finished.

Morinda citrifolia produces fruit, Grevillea pteridiifolia flowers produce nectar and Eucalyptus confertifolia is flowering, from which honey is produced. Acacia torulosa is also flowering, indicating that sweetlip (Lethrinus chrysostomus) are good to eat and may be found around reefs. Acacia auriculiformis flowers, and this is associated with turtles having a lot of fat. When the winds settle down the main dry season will start.

It is a very short season which lasts only for a few weeks. Stingrays, such as the brown stingray (Dasyatis fluviorum), the rat-tailed ray (Gymnura australis) and the cowtail ray (Dasyatis sephen) are fat. When Buchanania dbovata flowers, this indicates the stingrays are fat.

During this intermediate season, small sharks and stingrays are cooked in a special way. First the liver is cut out and washed in clean water. Then the rest of the body is cooked on hot ashes. The soft backbone, head and tail are removed after cooking. The meat is then kneaded and washed with fresh water, The liver is lightly cooked on the hot ashes for a few moments, cut up and kneaded through the meat. This makes it sweet.

The main dry season

The wariner south-east wind starts to blow and the fruit of the pandanus, which turned red when sharks gave birth, begins to fall to the ground. This indicates that there will soon be lots of turtle eggs on the islands further out to sea and the turtles, themselves will be full of fat. This is the start of the main dry season. During this season all five species of turtles are fat. Each turtle has several different types of fat. Unlaid yellow eggs are fat, green fat is attached to the inside of the shell, yellow fat is sometimes found inside the stomach, round fat is found near the back legs of the turtle and the round

pieces of meat around the shoulders contain a lot of fat. The long piece of meat in the shoulders also contains a lot of fat.

Turtles' eggs are usually found high on the beach. The large ones are from the **flatback** turtle which lay up to fifty eggs, while the smaller eggs are from the Pacific ridley (Lepidochelys olivacea), green and hawksbill turtles, which lay around one hundred eggs. Yolngu say that the loggerhead turtle eggs are never found because they lay their, eggs out on the sandbars in the water.

On some beaches, Gould's **goanna** (Varanus gouldii) comes down early in the morning and digs up the turtle nest. It eats as much as it can, often returning later to eat any eggs that remain.

The mangrove monitor (Varanus indicus) is also fat at this time of year and is often hunted when a group of people are hunting for mud crabs in mangroves.

When the light breezes are blowing offshore the sea is very flat and the water is clear. The mangrove tree Sonneratia alba, which flowers early in the main dry season, indicates that **the diamond-scaled mullet** are fat, while sea mullet are losing their fat because they are laying their eggs.

Barramundi are moving down out of the creeks to join the Sheridan's threadfin around the edge of the mangroves. Barramundi have a black back showing they still possess the fat **derived** when they-we-re---b-r-eed-ing in the fresh water at the-head of the creeks. Giant threadfin have moved out to the reefs with the skinnyfish and coral cod (Cerphalopholis minatus) are losing their fat.

Most fish which have fat during the main dry season live around the reefs. They are:

black-spot tusk fish (Choerodon schoenleinii);
sweetlip (Lethrinus chrysostomus);
red emperor (Lutjanus sebae);
diamond fish (Monodactylus argenteus);
yellow emperor (Dipoprion bifasciatum);
white trevally (Caranx sexfasciatus).

On the outer islands where most reef fish live, the large **black-lipped oysters**, which are found during the main dry season are fat. Other oysters, such as Saccostrea tuberculata and Lopha folium, are found in similar habitats, providing an ample food source. The lined nerite and Gelonia coxans are shellfish which are still collected from the mangroves is the mangrove worm, which is found in several species of mangrove trees. Large land snails (Xanthomelon pachystylum, X. spheroiderum) are still collected and eaten during the main dry season.

The young saltwater **crocodiles** (Yroporoſus) which were born in the wet season, can now be seen sleeping on their mothers' backs.

When Guettarda speciosa flowers, the reef fish, such as the black-spot **and** purple tusk fish, are fat.

When the first white-breasted wood swallows, (Artamus leucorhynchus) arrive, the next season - **the** pre-wet 'season' - is about to **begin**. The weather changes and the thunder begins.

TRADITIONS AND CHANGE

The work of Warner (1928-1929) and Thomson (1935-1936) confirms that the patterns of, estates **and** seasonal activities presently evidenced in the Crocodile Islands applied with equal significance fifty years ago to all clan groups among the Yolngu. The continuity of estates and **activities** suggests that few significant changes have taken place even further **into** the past.

Today, while the significance of rights in estates retains its importance and the knowledge about the location of boundaries is maintained, there is less reliance on subsistence activities, amongst some members of the community. Predominantly it **is those** clans who live in **central** communities a considerable **distance** from their estates who evidence least reliance on subsistence activities. The receipt of pensions and social security payments has given such clans an ability to buy foods and goods to the extent of negating their need for hunting and gathering activities, apart from recreational purposes. Clans who are estate owners in the vicinity of the central community tend to expend their pensions and social security payments on capital goods such as aluminium dinghies and outboard motors which are used in the conduct of subsistence activities.

Both **individuals** and families of the community have emigrated to Darwin, living in town camps and government housing. Such people rely most commonly on government welfare payments, while a few individuals have entered state politics or taken up public, service positions and have not time to engage in subsistence activities.

There are, however some events which might serve to reduce the importance of territory within the Aboriginal community, or create **difficulties** for those Aboriginals who seek to retain the traditional **close** relationship with the land and sea.

ABORIGINAL COMMERCIAL ACTIVITIES

The only commercial activity in which Yolngu have significantly engaged is fishing. Yolngu traditionally fish for subsistence purposes only. There have been numerous attempts to institute commercial fishing programmes in each of the major Aboriginal, communities along the Northern Territory coast. Without exception, each attempt ultimately failed, with the Aboriginal men returning to subsistence fishing after the withdrawal of non-Aboriginal advisers.

Commercial fishing operations were initially instituted by **church** mission staff in an effort to make the new communities self-sufficient and as a means of teaching Aboriginal people to be more productive rather than pursuing a hunter-gather type **life**. Most operations flourished initially but all eventually degenerated and ultimately 'ceased'.

Marine resources themselves were extensive and the ultimate demise of the operations was not due to lack of capital equipment. The collapse of commercial operations is due, at least in part, to the fact that, without an outside agent to act as their medium of operation, Yolngu cannot circumvent their kinship system and social structure in such a way as to dispose of their catch for financial gain or otherwise outside their community.

Within the social and political structure to which each Yolngu is subject, there is a culturally prescribed mechanism for the distribution of all of the catch resulting from turtle hunting, fishing, dugong hunting, and all other activities which harvest the environment. Where the catch is clearly more than will meet the needs of the immediate family, claims on the remainder may be made in line with established cultural rules.

Thus, there is no surplus. There is no sale, no capital return on the product. But such distribution patterns are vital to the building of reciprocal obligations. For example, accrual of such obligations is an important part of wife bestowal and calling on allies for dispute resolution. Indeed, the day to day functioning of life in a Yolngu community is underpinned with a network of reciprocal obligations helping to maintain social control.

However, the presence of a non-Aboriginal who operates as the catalyst for a commercial operation, particularly if he is seen as a government agent, allows for the Yolngu rules of product distribution to be by-passed. Although this may then result in an inflow of cash or goods, the Yolngu social structure will again intervene by not allowing any Yolngu person to acquire that which will elevate him beyond his position in Yolngu society as determined by traditional rules.

This may be effected by socially ostracising the person acquiring excess goods or money. Such will be the social discrimination against that person and his family that his impetus to maintain the commercial enterprise will be lost. Conversely, the Yolngu system of product distribution may operate so effectively that the Aboriginal fisherman engaged in commercial activities may be left with little of the catch after kinship obligations have been resolved.

However, this will not mean endless obligations on behalf of all those to whom the product has been distributed. The system will maintain an equilibrium such that the fisherman will still lose his fish but relatives will only be required to meet a reasonable level of obligation. Hence in such cases the return from the produce does little to meet the energy expended or the inherent social problems. Subsequently one should not be surprised to learn that Yolngu may avoid commercial operations such as fishing.

NON-ABORIGINAL COMMERCIAL ACTIVITIES

Exploration and mining have not occurred in the Howard Island and Castlereagh Bay area. However, offshore oil drilling did recently create a need for onshore bases and radar beacon positions from which drilling rigs could obtain a position fix to drill a well. Yolngu rejected the proposal for a shore base on Gurriba or Murrungga Islands largely on the advice of non-Aboriginals. Further consultation with Yolngu resulted in permission being obtained for the erection of the radar beacons. At present the Yolngu on Howard Island are considering an exploration proposal over their estates. Those wishing to accede to the proposal generally are not the owners of the estates but claim affiliation through various other links. The matter is yet to be resolved and seems to be the first of many such proposals waiting to be considered.

However, commercial fishing has been occurring for some time and is creating difficulties. Barramundi fishing represents the largest sector of commercial fishing operations in the Northern Territory. It is an activity which directly contributes two million dollars each year to the Northern Territory fishing industry and yields a further eight million dollars annually throughout the Northern Territory economy in terms of activities such as tourism and boat sales. Barramundi and associated threadfin salmon fishing are conducted largely in close proximity to estuarine areas. The continued objections by Aboriginals to such usage of estuarine areas and river mouths has led many commercial fishermen to see themselves in commercial competition with Aboriginal people for the resources of such areas. However, such localities are rarely, if ever, fished by Yolngu.

Yolngu generally regard estuarine areas as being sites which are the focus of the activities of ancestral beings and therefore subject to severe restrictions on access. Some areas are subject to total prohibitions on entry, while access to other areas may be permitted only in the presence of senior ritual leaders. There is a range of conditions of entry applying to areas of restricted access. The outstanding feature of estuarine sites is that it was through the river system that ancestral beings who travelled from the sea impregnated the land, giving it form and meaning. The entry, then, of commercial fishermen into these areas is a matter of considerable concern to Yolngu in terms of their spiritual well-being.

Yolngu attribute the deaths of several senior Aboriginal men to supernatural punishment in consequence of not having been able to prevent the violation of their marine estates and sites by non-Aboriginal commercial fishermen.

Yolngu knowledge of the movement of fish indicates that apart from daily feeding patterns, the majority of barramundi move through the estuarine areas twice a year. Yolngu state that barramundi inhabit the mangroves and adjacent shallow foreshores throughout the dry season until spawning, after which they move up the river during the wet season to feed across the floodplains which are inundated by the spring tides and the wet season storms. After gorging themselves with food, the majority of barramundi move downstream to the sea. Yolngu state that the majority of barramundi then funnel through the river mouth into,

the adjacent mangrove communities of the open coast. Some remain in the river system, moving in and out of small gutters and around the river mouth with the ebb and flow of the tide.

Yolngu therefore see commercial fishermen who set their nets at the river mouth as seriously interrupting the natural movement of the species and diminishing the barramundi population in the mangroves and adjacent foreshore, as well as putting both themselves and Aboriginal custodians at risk in terms of reprisal from ancestral beings for the violation of restricted sites. It is in the channels which penetrate the mangroves that Yolngu fish in the dry season. They rarely fish in the mouths of major river systems due to dangers associated with the activities of ancestral beings and limitations in traditional fishing technology appropriate to such areas.

COMMERCIAL AND SUBSISTENCE CONFLICT

Gross misunderstandings between commercial fishermen and Aboriginal people located in close proximity to prime commercial fishing grounds have led in some cases to confrontation and threats of shooting and spearing. Commercial fishermen claim the fish as a resource for all Australians, which any person should be able to harvest. Several species of fish such as large specimens of barramundi and salmon catfish which are taken by commercial fishermen are of a totemic significance to Yolngu, and within Aboriginal law, the Yolngu are charged with ensuring the continued well-being of such species within their clan estate and its surrounds. The use of the Aboriginal Sacred Sites Act 1978, in such cases has, in practice i--totally restricted access to, such areas under any and all circumstances.- However, it is possible to specify circumstances of access in consultation with Aboriginal custodians. Where a particular species of fish may be nominated as being of particular significance to Aboriginal groups, then alternative legislation may be appropriate.

In accordance with Section 57 of the Regulations under the Northern Territory Fish and Fisheries Act 1980,

"The Administrator may, by notice in the Gazette, declare that an area is reserved -

- (a) for the purpose of protecting or re-establishing a marine environment or an aquatic environment; or
- (b) for the purpose of protecting or re-establishing fish or fish breeding grounds."

Within the terms of section 57, fish species of a particular totemic significance for specific Aboriginal groups may be protected. Of course the detriment to other persons and the extent of the distribution of the totemic influence of the species are critical considerations.

There has not been any case to date whereby the above legislation has been used to protect species of fish of totemic significance to Aboriginal persons but it may yet prove to be a viable interpretation of the legislation.

Issues surrounding the conflict between commercial fishermen and Aboriginal people have become so emotionally charged that the participants have failed to look analytically at each other's operations in terms of the species sought, the time of the year such species are sought by each group, or the area over which each group conducts its fishing activities.

Barramundi, as 'the main inshore fish resource sought by, commercial fishermen, is the primary target of conflict., The methods employed and areas fished at times of operations of each opposing group are quite disparate. There is sufficient information from commercial fishermen's monthly fishing returns and records of the daily aerial coastal surveillance to assess their methods, areas fished and times of operations. Research on the subject of Aboriginal fishing methods, areas fished and the seasonality or otherwise of such fishing activities is being supported by the Northern Territory Fishing Industry Research and Development Trust Fund. This programme should provide critical information on areas of apparent conflict and Aboriginal tenure of the sea in general.

Yolngu perceive the presence of a commercial fishing vessel in their area as positive intent to violate their traditional rights and put Aboriginal lives under threat through desecration of sites. However, it is crucial to realise that Yolngu do not perceive the taking of fish in the economic sphere as the most threatening aspect. The ability of a non-Aboriginal to enter a Yolngu clan estate without permission from the Yolngu custodians, to remain on the area and then to proceed to move freely in that area and take resources from that estate are acts which, if committed by an Aboriginal person but a few years ago, would, probably have resulted in the death of the intruder. Today such an offence in Aboriginal law would certainly incur a penalty of open social redress and compensation.

In an effort to alleviate potential conflict between Aboriginal fishermen and commercial fishing regulations the Northern Territory Government has introduced a new regulation, namely 7B: Conditions for Aboriginal Licence for Non-commercial Fishing under the Fish and Fisheries Act 1980, which allows the Director of Fisheries to license a member of an Aboriginal community whereby the licensee shall not:

- (a) use gill-netting exceeding 200 metres in length;
- (b) use gill-netting in waters closed to gill-netting; or
- (c) supply fish or dispose of fish except to an Aboriginal community.

This new regulation then, recognises the traditional use of fish fences and nets, the mesh size of such fences and nets as approximately that of commercial fishing nets, the distribution of such fishing practices and the means of distribution of the product. The distribution of the product may prove to be a more reasonable criterion of assessing the commercial status or otherwise of fishing rather than the equipment employed. In the Northern Territory regulations, the supply or disposal of fish in the local Aboriginal community ensures a negligible effect on the commercial fishing market.

LEGISLATIVE PROTECTION

The traditional boundaries of clan estates, sites, and economic zones established in Aboriginal law are generally unrecognised by government and commercial fishermen. To fail to recognise them is a threat within Aboriginal law, to usurp the position, power and identity of the people of that estate and those upon whom they may call for allegiance.

Hence, Aboriginal people have sometimes used European law in an effort to curtail such violations of their clan estates. Such recourse was for several years couched only in terms of apprehending and prosecuting, under the Northern Territory Fish and Fisheries Act 1980, commercial fishermen acting illegally. For a number of reasons most prosecutions either failed to be secured or resulted in insignificant fines.

The Aboriginal Sacred Sites Act 1978 has provided a number of Aboriginal clans with opportunities to restrict access to **sites** of considerable significance in both marine and terrestrial areas. A number of marine sites have been registered under the act including sites up to 80 km from the mainland of Australia. The marine sites registered to date range in size from a few square kilometres up to 600 sq km, as in the case of a marine site north-west of Murrungga Island. Of the total 4,140 sq km of marine habitat in the Crocodile Islands and Castlereagh Bay area, 25.39 percent of the total area has been registered as "sacred sites" under the Aboriginal Sacred Sites Act 1978. The total registered area of 1 051 sq km includes all seven river mouths and estuarine system; entering Castlereagh Bay. In the case of marine sites the legislation has been directed primarily at restricting access by commercial fishermen who, apart from Aboriginal people, are the main users of such areas.

The Commercial Fishermen's Association has had moderate success in discussions with Aboriginal custodians, but the process of communication with senior Aboriginal persons involves communication techniques uncharacteristic of European communication. Aboriginal custodians of sites in the area have been dissatisfied with the policing of registered marine site violations by the Aboriginal Sacred Sites Authority and have consequently sought relief in the Aboriginal Land Act 1978 in an effort to close seas adjacent to Aboriginal land.

CLOSURE OF SEAS

The Aboriginal Land Rights (Northern Territory) Act 1976 Section 73(1) empowers the Legislative Assembly of the Northern Territory to make laws:

"... regulating or prohibiting the entry of persons into, or controlling fishing or other activities in, waters of the seas, including waters of the territorial sea of Australia, adjoining, and within two kilometres of, Aboriginal land, but so that any such laws shall provide for the right of Aboriginals to enter, and use the resources of, those waters in accordance with Aboriginal tradition."

In exercise of that authority, the Assembly enacted Part III of the **Aboriginal Land Act 1978** - "Control of Entry Onto Seas Adjoining Aboriginal Land".

Section 12(1) of the Act empowers the Administrator of the Northern Territory of Australia, by notice in the Gazette, to close the seas adjoining and within two kilometres of Aboriginal land:

"... to any persons or classes of person, or for any purpose other than to Aboriginals who are entitled by Aboriginal tradition to enter and use those seas and who enter and use those seas in accordance with Aboriginal tradition."

Section 12(2) provides that the notice in the Gazette shall specify:

- "(a) the area closed by the notice by description of the boundaries and by a diagram showing the approximate position of the boundaries:
- (b) the persons or classes of persons to whom the area is closed; and
- (c) the purpose for which the area of the sea is closed."

The Administrator of the Northern Territory may, before deciding to close a part of the seas, refer the matter of closure to the Aboriginal Land Commissioner, according to Section 12(3), for report and inquiry. In the event of the Administrator not being prepared to close an area within 56 days of the matter being referred to him, he is obliged to refer it to the Aboriginal Land Commissioner.

Section 12(3) lists for inquiry:

- "(a) whether, in accordance with Aboriginal tradition,, strangers were restricted in their right to enter those seas;
- (b) whether the use of those seas by strangers is interfering with or may interfere with the use of those seas in accordance with Aboriginal tradition by the Aboriginals who have traditionally used those seas;
- (c) whether the use of those seas by strangers is interfering with or may interfere with the use of adjoining Aboriginal lands by the traditional Aboriginal owners;
- (d) whether any person would be disadvantaged if the seas were closed to him;
- (e) the commercial, environmental and recreational interests of the public; and
- (f) such other matters as the Aboriginal Land Commissioner considers relevant to closure to those seas."

Several Aboriginal groups have made application to the Administrator to close seas adjacent to Aboriginal land. In practice, however, all such applications have subsequently been referred to the Aboriginal Land Commissioner at the expiry of the statutory 56 days in accordance with Section 12(3). This has resulted in the hearing of two of the applications. Both applications were in the Crocodile Islands and Castlereagh Bay area.

The Aboriginal Land Commissioner is not required, under the Aboriginal Land Act, to make recommendations. His function is to enquire into and report to the Administrator on those matters mentioned specifically in Section 12(3) of the Act and on such other matters as he considers relevant to the closure of the seas.

Two years after the Commissioner's report of the first case, Closure of Seas: Milingimbi, Crocodile Islands and Glyde River Area, which was forwarded to the Administrator on 28 August 1981, the Northern Territory Government directed the Administrator of the Northern Territory to close the seas in the Milingimbi, Crocodile Islands and Glyde River area as specified in The Northern Territory Government Gazette No. G30, 29 July 1983 in pursuance of Section 12(1) and (2) of the Aboriginal Land Act. The areas of the seas specified were closed:

- (i) to provide for the quiet enjoyment of those seas by
Aboriginals who are entitled by Aboriginal tradition to
enter and use those seas; and
- (ii) for the protection of sacred sites important to the
Aboriginals referred to in sub-paragraph (i).

The location of "sacred sites" was not specified, but assumed to lie within the gazetted area. This, however, was not the case with all sites. The basic document for the closure of seas application, prepared on behalf of the Aboriginal applicants and known as a claim book, was prepared in this case by a legal officer of the Northern Land Council. There was no reference to expertise in traditional coastal resource management and little data on Aboriginal knowledge of the littoral zone included in the claim book. Such omissions became apparent just days before the court hearing. Local knowledge then became the cornerstone of the case with most evidence being introduced orally during the hearing. As in Aboriginal claims to land previously heard under the Aboriginal Land Act 1978, the Commissioner made an on-site inspection of the seas under application. Evidence was taken in open court on-site as well as in closed sessions restricted to Aboriginal men only. In such closed sessions evidence was generally given as to the ritual significance of marine areas and details of related mythology.

The second closure of seas application Closure of Seas: Howard Island and Castlereagh Hay to be heard before the Aboriginal Land Commissioner made considerable use of indigenous knowledge of coastal marine resources. The claim book was prepared by consultants engaged directly by the applicants in view of their experience with Aboriginal marine knowledge and familiarity with the Aboriginal applicants.

The third application is the Groote Eylandt claim which has had its preliminary hearing before the Aboriginal Land Commissioner.

A draft copy of the Bathurst and Melville Islands Sea Closure Application was completed in November, 1983. The maps in the report delineated the location of marine economic zones and specified marine 'food' sources used by the Tiwi people of Bathurst and Melville Islands. Specific clan boundaries, hunting camps, ceremonial sites, marine areas of significance due to the activities of ancestral beings and named localities were detailed on the maps. Such data in this case has facilitated discussions between the Tiwi Aboriginal people of Bathurst and Melville Islands and other prospective users of the marine area, being commercial and amateur fishermen in particular.

Due to its close proximity to Darwin the seas adjacent to the 1,100 km in Bathurst and Melville Islands coastline represents an outstanding marine resource. If the case can be resolved through negotiation, then considerable advances will have been made in communicating to non-Aboriginal Australians detailed Aboriginal knowledge of marine resources and the indigenous significance of marine areas.

LAND RIGHTS AND SEA RIGHTS

Non-Aboriginal Australians generally espouse a freedom of the seas and regard marine fauna, such as fish, as a common resource. Aboriginal people in north Australia perceive a continuity between the land and the sea such that there is a natural extension of the system of tenure of the sea to that of the land.

Sea rights legislation preserves anchorages and rights of transit for all vessels. Equivalent provisions are not made in land claims, however.

Whereas the right of veto on the extraction of minerals is maintained in land claims, it is not as significant a consideration in sea claims. In the Howard Island and Castlereagh Bay Sea Closure Application mineral extraction was a consideration only to the extent of agreeing to permit right of passage for possible future land-based exploration on adjacent Aboriginal land.

PROBLEMS WITH PRESENT LEGISLATIVE PROTECTION

Most applications for closure of seas, if proceeded in the manner of applications in the Northern Territory, could be expected to cost between half and one million dollars each. The size of the marine area under consideration makes little difference to the total cost of the application.

court proceedings are an adversary situation and as such inevitably bring Aboriginal applicants into confrontation with objectors to sea closures. Such situations are difficult in that it is most often old senior Aboriginal men who are custodians of the areas under application. They invariably seek to avoid such confrontations which lead to degeneration of race relations. Furthermore, such senior men are also the custodians of restricted ritual information. They often feel obliged to reveal

such information in the course of the court proceedings. This causes them considerable stress as, they believe, 'any possible abuse of the information may be viewed by ancestral beings as tantamount to mismanagement of ancestral activity sites with fatal consequences for Aboriginal custodians.

There is, then, a considerable amount of anxiety and stress for senior Aboriginal custodians inherent in the court proceedings which are the vehicle of an application to close the seas under the present Northern Territory legislation.

The successful Milingimbi and Glyde River Sea Closure Application resulted in little change for the protection of marine areas for the Aboriginal applicants. The final report on the application found that existing holders of barramundi commercial fishing licences could continue to enter and fish in the closure area. This situation does not apply to licences that are transferred upon the sale of the boat and/or licence. Naval vessels, Commonwealth Government personnel and vessels supplying goods to coastal communities appear to be exempt from closure restrictions. Ultimately, then, it is only the rare touring yacht that may be subject to restrictions applying to areas of closed seas and yet Aboriginal people have often shown considerable hospitality to such yachts.

With no determination of the term "low water" in the Arnhem Land Grant, the base from which to measure the two kilometres closure is obscure, hence negating the usefulness of the gazetted map.

--The closure of the seas is operative from the low-water mark of the adjoining Aboriginal land. However there is no indication in the Arnhem Land Land Grant (1933) as to which low water mark was intended (low water indian spring, low water neap, mean low water, lowest astronomic tide). In areas of large tidal amplitude and low gradient coastline such as are dominant along the coast of north Australia, small variations in vertical height as may be evident between alternative interpretations of "low water mark" may result in large horizontal shifts in the seaward extent of the closure zone. In the Milingimbi region, for example, from the high water indian spring tide mark there is approximately a 13 km seaward exposure of substrate from the site known as Malwanhatharra on the foreshore of the Milidjingi clan estate on a 0.1 m tide which approximates to lowest astronomic tide. The lateral shift in the 2 km wide closure zone declared under Northern Territory legislation in this area consequent to various interpretations of the term "low-water mark" could conceivably be of such magnitude that the closure zones from lowest astronomic tide and low water mean tide respectively were entirely disparate. In such a situation, with the closure operating from mean low water mark, there would be occasions such as extremely low tides approaching 0.1 m when the zone of sea closure would be entirely exposed . . . a sea closure with no sea!

Policing closed areas of sea has proved to be a problem. Areas subject to closure applications are most often remote with little or no police presence. The government-sponsored daily aerial coastal surveillance documents and photographs each vessel encountered in the vicinity of closed seas. However, not only

are coastal surveillance authorities reluctant to be party to possible resultant prosecutions but there seems to be no mechanism for ensuring the passage of data relating to official sightings of intrusions through to policing authorities.

It is therefore left to local Aboriginal people in the vicinity of the closure area to perform police functions.' Within Aboriginal tradition such functions, were clear-cut; but Aboriginal people do not feel the same confidence in applying legislation which they perceive as distinct from Aboriginal law.

For Yolngu and other Aboriginal groups in north Australia, Australian law does not have the immutable quality of Aboriginal law and inevitably results in confrontation. Hence Aboriginal people prefer to avoid active 'involvement in' the administration of Australian law.

The administration of Aboriginal 'sacred sites legislation similarly suffers from the problems of policing marine areas registered or declared as sacred sites along the Northern Territory coastline.

FUTURE OF ABORIGINAL SEA RIGHTS

The Groote Eylandt sea closure application is presently before the Aboriginal Land Commissioner. Draft claim books presenting the cases of the Aboriginal applicants have also been prepared on the Croker Island and Daly River areas of the Northern Territory coast. The Daly River case is expected to draw significant objections from mineral exploration companies as well as commercial fishing interests.

All three cases will receive objections on behalf of the recreational interests of the Northern Territory public. The Groote Eylandt case, however, is the first sea case to evidence considerable economic detriment to present users of the area under application for closure.'

Commercial fishing interests claim that at least 2,000 persons are dependent on commercial fishing in the Groote Eylandt area under application. Furthermore, half the northern prawn fleet, representing an investment of approximately \$111 million, conducted fishing activities in the area during 1982-1983 (the most recent figures available) and the catch value from that area in the last few years has amounted to several million dollars. To be weighed against this and other evidence from objectors to the proposed sea closure is the traditional and contemporary significance of the area to Aboriginal people. The presentation of a case on behalf of the Aboriginal applicants such as to outweigh the detriment alleged in the submissions by commercial fishing interests is a formidable task. Yet the claim book states that it was prepared with only three weeks of fieldwork by a person with no previous experience either with that Aboriginal group or in tenure of the sea and with no recourse to any discipline other than anthropology.

The case to close seas adjacent to Aboriginal land is presented by a lawyer on behalf of the Aboriginal applicants. The case is based on data gathered and interpreted by an anthropologist. But

can any one discipline reasonably contend to adequately interpret the spectrum of information necessary to produce a cohesive and coherent representation of the entire system of tenure of the sea as it relates to a specified physical area and the attendant social group's spiritual and economic reliance on that system?

The system of tenure relies on information from social anthropologists interpreted against a background of geographic data such as tidal amplitude and flow, coastal sedimentation and river formation. Similarly, biological data such as the movement and habits of marine species is critical in its potential correlation with human population movements through the biosphere.

By far the most desirable resolution of claims is one of mutual agreement reached by all parties, thus either negating the necessity for a pitched battle in court or requiring legal ratification of an agreement between parties. This has been the situation among the Tiwi Aboriginal people of Bathurst and Melville Islands. Documentation on tenure of the sea was produced over a two year period by a research team. The resulting data was used as the basis for negotiations between Tiwi and other users of the seas adjacent to Tiwi Aboriginal Land.

The negotiations have produced amicable relations between all parties through a mutual understanding of each group's interests and concerns. Non-Aboriginal fishermen have been considerably impressed by Tiwi knowledge of fish species and the sea in general. Soon the Tiwi hope to have the results of such negotiations formally recognised by the government of the Northern Territory.

The drafting of legislation on Aboriginal claims to seas is presently being conducted and was recently considered in the Aboriginal Land Inquiry in Western Australia on a national basis. The system of tenure of the sea is similar throughout the coastal Aboriginal groups of northern Australia where spiritual affiliation and economic usage along traditional lines remains strong. The Northern Territory is unique in that its entire coastline falls within the bounds of such usage patterns. Queensland and Western Australia both evidence considerably diminished economic usage of marine areas of Aboriginal people in their southern latitudes. How then will their legislation and the national legislation adequately reflect the breadth of Aboriginal claims?

CONCLUSION

Yolngu acquire a considerable knowledge of the marine environment primarily by experience in the company of older men. Their knowledge of the habits of individual species is framed within a seasonal knowledge of a complete system of tenure of the littoral zone. At the same time it is circumscribed by social, political and economic factors. Such factors are used, through co-operating hunting expeditions, to build social and political alliances.

The daily and seasonal movement of the Yolngu population is closely tied to the shifting emphasis on various natural species throughout the marine environment necessitating access to the resource of estimates other than one's **patriclan** estate. Marine estates and sites are **strictly** delineated, not so much as to preclude access, 'as to ensure acknowledgement' of rights across boundaries.. This principle underpins cooperative hunting expeditions.

Future research on Aboriginal **tenure of** the sea would be considerably advanced if it proceeded on a cooperative multidisciplinary basis. There is no doubt that the **results** of such research should be made available to **legislators** in order that legislation reasonably reflect the reality of the daily life situation., If this is not done **then** the implementation of the legislation may prove to be frustrating and costly. Therefore such multidisciplinary research should proceed with considerable support at the earliest opportunity.

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WORKSHOP DISCUSSION

The discussion covered the following points:

Many people **recognise** that traditional fishermen have a large amount of knowledge of the marine resource but the form of such knowledge (paintings, stories, etc.) may not be well understood or **recognised** by Western culture.

The transmission of traditional knowledge is being undertaken in selected schools in the Northern Territory.