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SUBJECT: **REPORT ON VISIT TO MONTE BELLO ISLANDS AUGUST 13 - 17, 1990**

Attached is a report on this visit. Any further action will presumably have to wait on the handover of the area to the State.

H. Chevis

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REGIONAL MANAGER
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September 14, 1990

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REPORT ON VISIT TO MONTE BELLO ISLANDS
AUGUST 13 - 17, 1990

The Monte Bello Islands are the subject of a proposed Marine Park to be vested in the NPNCA. For this to occur the islands have to be cleared of radiation hazards resulting from the British nuclear tests in 1952 and 1956.

A party, consisting of Hugh Chevis, Greg Oliver (CALM Karratha), Helen Allison (EPA Karratha), Bob Prince, Andy Williams (CALM Woodvale), Bruce Hartly (WA Department of Health) and Geoff Williams, Malcolm Cooper (Australian Radiological Laboratories) visited the islands between August 13 and 17 using a charter boat from Dampier.

The main aims of the visit were to:

1. Form some opinions on the logistics of managing the area as a marine park.
2. Gather data on the flora and fauna, in particular turtles, coral health and add to species lists for the islands.
3. Gather data on the distribution of Rattus rattus on the islands.
4. Assess the degree of radiological hazard still remaining from the nuclear tests.

FLORA AND FAUNA

See Appendix 1 for observations made during this visit. Major observations are:

(a) Green and hawksbill turtles nest on the islands.

(b) Rattus rattus are present on many of the islands (see map).

(c) Humpback whales were seen migrating past the islands.

(d) The report of unhealthy coral was proven incorrect. Crown of Thorns were present in low numbers. Several shells were collected, possibly Drupella.

RADIOLOGICAL HAZARDS

The ARL staff will produce a more detailed report. Their recommendation is likely to be that, despite some continuing radiation contamination around the bomb sites, the islands are safe for short term visitation. The Commonwealth appear anxious to hand the management of the islands over to the State, possibly before the end of 1990. Many of the warning signs had been blown over and need to be repaired and their design modified.

COMMENTS ON FUTURE MANAGEMENT ISSUES

1. **Tenure and vesting** - it is proposed that the area be a Marine Park. We have sufficient knowledge to know that the islands are worthy of reservation but the marine environment is less well known and further survey work is required to define a boundary for the Park.

2. **Biological survey** - biological survey should concentrate on the marine environment although knowledge of the terrestrial environment is limited and needs to be expanded. A number of significant observations were made in the brief period we were on the islands. The biological survey work should be carried out as quickly as possible after the Commonwealth agrees to hand over.

3. **Identification of radiological hazards** - there will be an ongoing requirement for signs, information displays, brochures etc to highlight these hazards. The remoteness of the islands will require that any information is presented in a durable way. CALM will presumably take on this responsibility once the islands are handed over.

4. **Commercial use** - the islands are already being used by a number of commercial operators. Dick Morgan has a number of Pearl Leases around Hermite Island. Charter boats visit the islands for diving and fishing. Professional fishermen regularly visit the waters around the islands. This established use of the islands will be an immediate management issue which will necessitate negotiation with the interested parties.

5. **CALM management presence** - given the current level of use of the islands, which can be expected to increase once the Prohibited Area designation is lifted, a CALM Manager will be required to spend time on the islands.

The draft Management Proposals drawn up in August 1989 proposed that access to the islands could be gained initially by charter boat or the Navy and that CALM may eventually buy a boat and work out of Varanus or Barrow Islands.

If we are to rely on charter boats for access then visits will probably be limited to two or three weeks per year. This is probably adequate initially but eventually we will have to consider purchasing a seagoing boat (10 + metres) to operate out of Dampier or establish a manager at Barrow or Varanus also with a boat (7 + metres). Either option involves considerable cost.

6. **Eradication of rats** - the rats are on many of the islands. Given the size, shape and terrain of some islands, it will be very difficult to get rid of them. Our recommendation is to attempt to eradicate rats from a small island initially, such as Ah Chong Island, to get a handle on the logistics and to observe responses from their eradication.

7. **Information Centre** - It has been suggested that the Control Block on Hermite Island would be suitable as an Interpretive Centre. It was burnt out several years ago and is now totally unsuitable. Information should be presented in simple Information Shelters or gazebos.

8 **Funds for management** - the funds specified in the draft Management Proposals were:

CRF	Year 1	$55,000	Includes purchase of boat
~~of~~	Annually	$25,000	
Commonwealth	Year 1	$60,000	Biological survey
		$100,000	Rat and cat eradication
		$150,000	Interpretation centre

The funds from the Commonwealth will certainly be required but not necessarily for the projects specified. If the CRF funds aren't forthcoming, then the Commonwealth funds will have to get used for ongoing management. Also a seagoing boat would cost well in excess of $55,000.

9. Management Plan - The Management Proposals drawn up by Keith Morris in 1989 are suitable to facilitate the handover of the islands from the Commonwealth to the State. The document will need to be expanded considerably if it is to be used as a Management Plan.

I suggest that once the Commonwealth agrees to the handover and the results of the biological survey are available, the Department should initiate an Area Management Plan through our Planning Branch. The Plan for the Dampier Archipelago Nature Reserves would serve as a useful model.

Appendix 1

OBSERVATIONS ON THE FLORA AND FAUNA OF THE MONTE BELLO ISLANDS

AVIFAUNA

Thirty two species of birds were recorded from the Monte Bello Islands during the five day visit and comprised 20 sea birds and 12 land birds.

Bird numbers were generally low. The greatest aggregations were observed on tidal flats at Shell and Willy Nilly Lagoons (Hermite Island) where seven and eight species and total individual counts of 94 and 163 respectively were made.

Areas of tidal mud/sand flats at the Monte Bellos eg Claret Bay, Turtle, Shell and Willy Nilly Lagoons provide important habitat for shore birds and should be provided adequate protection.

Mangrove communities at Home and Willy Nilly Lagoons, Brandy Bay and Cambell Island were found to support a significant proportion of the islands land birds. The Mangrove Kingfisher Halycon chloris was noted in the mangrove community of Willy Nilly Lagoon.

Ospreys were found to be nesting on Hermite, Dandelion, Trimouille, North West, Ah Chong and Bluebell Islands and White-breasted Sea-eagles at North West Island.

Active Wedge-tailed Shearwater burrows were present on Dandelion and Ah Chong Islands, the latter supporting a large rookery covering the entire sand plain area of the island.

A possible Fairy Tern rookery was observed on Hollyhock Island and warrants future investigation.

KEY TO HABITATS/LOCATIONS

LOCATION	SYMBOL
Alpha Island	A
Trimouille Island	T
Hermite Island	HE
North West Island	NW
Ah Chong Island	AC
Dandelion Island	D
Hollyhock Island	HO
Bluebell Island	B
North Delta Island	ND

HABITAT	SYMBOL
Coastal rocky shore/cliffs	rc
Tidal mud/sand flats	t
Beaches	b
Mangroves	m
Sandy inland areas	si
Rocky inland areas	ri
Aerial	a

BIRD RECORDS FOR THE MONTEBELLO'S AUGUST 14th to 18th.

	HABITAT								
SPECIES	A	RC	T	B	M	SI	RI	LOCATION	MAX NO.
GREY TAILED TATTLER			X					HE	6
*OSPREY	X	X						NW,HE	4
*WHITE-BREASTED SEA EAGLE	X	X						NW,HE	2
BRAHMINY KITE	X				X			HE	2
AUSTRALIAN BLACK SHOULDERED KITE						X	X	B,AC,HE	3
SPOTTED HARRIER	X							HE	1
NANKEEN KESTREL							X	HE	2
MANGROVE KINGFISHER					X			HE	1
BLACK-FACED CUCKOO-SHRIKE							X	HE,B	4
WHITE-BREASTED WOODSWALLOW								HE,B	4
WELCOME SWALLOW	X	X		X		X	X	HE,T,NW,B	3
RICHARDS PIPIT						X	X	B,HE,T,NW	2
BAR-SHOULDERED DOVE					X	X	X	HE,T,NW,B	8
BROWN HONEY EATER					X	X		HE	1
YELLOW WHITE-EYE					X	X		HE,B	4
BROWN QUAIL						X		HE	1

BIRD RECORDS FOR THE MONTEBELLO'S AUGUST 14th to 18th.

	HABITAT								
SPECIES	A	RC	T	B	M	SI	RI	LOCATION	MAX NO.
SILVER GULL			X	X				HE,T,NW,B	6
PIED OYSTERCATCHER		X	X	X				HE,A.T.NW,B	22
SOOTY OYSTERCATCHER		X	X	X				HE,A,T,NW,B	6
CASPIAN TERN	X		X	X				HE,NW,B	14
PIED CORMARANT		X						HE,ND	4
AUSTRALIAN PELICAN	X							HE.	1
EASTERN REEF HERON (grey)		X	X					D,B,HE	3
EASTERN REEF HERON (white)		X						NW,AC	1
* WEDGE-TAILED SHEARWATER	X					X		AC,D	*
RED-CAPPED DOTTEREL			X	X				T,NW,HE	16
BEACH STONE-CURLEW				X				NW	2
RUDDY TURNSTONE			X	X				HE,B	34
CRESTED TERN			X					HE	30
BAR-TAILED GODWIT			X					HE	80
FAIRY TERN	X			X				HE,HO	1
GREEN SHANK			X					HE	4
EASTERN CURLEW			X					HE	#

REPTILES.

	LOCATION					
	HE	A	B	NW	AC	T
LOGGERHEAD TURTLE	X					
GREEN TURTLE				X		
HAWKSBILL TURTLE						X
CTENOTUS SAXTILIS						X
SPHENOMORPHUS ISOLEPIS		X		X		X
GEMMATOPHORA GILBERTI	X					X
HETERONOTIA BINOEI	X					X
VARANUS TRACK		X	X	X		X
UNIDENTIFIED SKINK				X		
LERISTA TRACKS			X	X		X
UNIDENTIFIED AGAMID						X

MAMMALS

Rattus rattus

The known distribution of Rattus is displayed in Figure 1. Sources of information include K Morris (field notes), B Prince (personal communication) and observations from the recent visit.

It appears that only the SE Island chain and small islets are free from rats. A number of small islands remain unassessed.

Ten rats were trapped on Trimouille Island on August 16. All were adult males and six showed evidence of reproductive activity (distended testes). Six specimens were collected and will be forwarded to the WA Museum.

Cats

Cat tracks/scats were observed on Hermite Island. Cat activity was concentrated around the tidal flats and mangroves of Willy Nilly Lagoon.

Bats

One unidentified bat was observed overhead on Hermite Island.

Dugongs

Two dugongs were observed in shallow waters NE of Ah Chong Island.

Whales

Whales, probably Humpbacks were observed north of North West Island

REPTILES

Past season evidence of turtle nesting was found at a number of locations (figure 1). Current season turtle tracks were observed on the eastern side of Trimouille and Drambuie Bay, North West Island. Trimouille and North West Island appear to be the major nesting areas.

Turtles were not common in the waters of the Monte Bello's. Two Loggerheads were observed in Home Lagoon and a few unidentified turtles were seen near Ah Chong Island.

MANGROVES

Four species of mangroves were noted during the visit - Avicennia marina, Rhizophora stylosa, Ceriops tagal and Bruguiera exaristata.

The locations of three major mangrove blocks are displayed in Figure 1. At site 2, the most significant block, Avicennia reached 6 metres, Bruguiera reached 4 metres and Ceriops reached 3 metres. All areas of mangroves in the Monte Bellos should be afforded a high degree of protection.

At site 3, a pathway through the mangroves has been cut and chains attached to tree trunks, possibly to provide a cyclone mooring.

Visitors to the Monte Bellos fish for mud crabs in mangrove areas.

INTRODUCED PLANTS

Kapok bush Aerva javanica is present on Alpha Island on sand plain and exposed limestone behind Burgundy Bay. The plant is dominant.

Buffel grass Cenchrus ciliaris is present around the blast site on Alpha Island and on the metal grid track leading from Brandy Bay landing to the command post and surrounding the command post on Hermite Island.

A solitary Acacia ampliceps is growing on the disturbed ground at the Brandy Bay landing. As no other Acacia ampliceps were seen at the Monte Bellos it is probable that this plant has been introduced.

REPORT ON THE HEALTH OF THE EPSILON ISLAND CORAL ASSEMBLAGE

MONTE BELLO ISLANDS

Background

In April, the Department of CALM received a memo from the Australian Institute of Marine Science (AIMS) which expressed concern for the health of corals in the waters adjacent to Epsilon Island (Lat 20 26' 85S, Long 115 34' 75E) - Monte Bello's.

Observations which had been made by Mr Russell Baker, the Commanding Officer of HMAS Geraldton, and son of Dr Baker (AIMS) suggested that corals were dying in the area and linked these deaths to the drilling of "Sinbad" well, Lat 20 29' 02S, Long 115 43' 36E, approximately eight (8) nautical miles E.S.E of Epsilon Island.

CALM staff undertook the task of investigating the report of coral deaths during a planned visit to the Monte Bello's in August.

LOCATIONS

Epsilon Island forms part of the SE island chain of the Monte Bellos. It is a low lying limestone island.

To the west a limestone pavement extends from datum to a depth of 13.4 metres, before rising again to 5m. The resultant channel comprises the southern shipping entrance into the Monte Bellos and is subject to long periods of southerly wave action and strong tidal currents. Resuspension of the pavement's sand veneer would maintain relatively high turbidity in this area.

"Sinbad" well is located in 37m of water approximately eight nautical miles to the E.S.E of Epsilon Island. The well was completed on April 3, 1990.

OBSERVATIONS EPSILON ISLAND

A 55 minute dive, traversing approximately 300m in a figure eight pattern was conducted in the channel and the NE tip of Epsilon Island to assess coral health. The dive was conducted during neap tides and strong winds - 20 to 25 knots.

Waves to 2.5m were passing through the channel. Visibility was reasonable in the channel but decreased with decreasing depth as the island was approached. The sloping pavement supported a variety of small aggregations of turbid and clear water corals and gorgonians, though occasionally large bombies supporting a diverse coral matrix were encountered. A number of dead patches were encountered on Acropora and Porites colonies. These patches were extensively fouled and had not died recently. One Acanthaster planci (diameter 30 - 35cm) was observed in an exposed position, on dead coral substrate fouled by algae. The animal's stomach was distended and was presumably feeding.

In general, coral colonies were found to be in good health. No evidence of a recent major coral death could be found. Discussions with representatives from oil and environmental consultant industries indicated that it would be very unlikely for the localised effects of a drilling operation to reach and affect a location eight nautical miles away.

Figure 1.

RAT DISTB.: MONTE BELLO'S

R. rattus present

R. rattus not present.

SIGNIFICANT MANGROVE BLOCKS

① Rhizophora stylosa, Avicennia maruna

② Avicennia maruna, Ceriops tagal, Bruguiera exaristata, Rhizophora stylosa

③ Avicennia marina

INTRODUCED PLANTS

(K) Aerva javanica

(B) Cenchrus ciliaris

(A) Acacia ampliceps

TURTLE NESTING.