

3.0 RESEARCH METHODOLOGY

3.1 Timetable

STAGE I:

Nov - Dec 1983	- Initial literature search; preparation for field work
Jan - March 1984	- field work at Hopevale
April - May 1984	- literature research in Canberra and Brisbane
May 1984 - Mar 1985	- field work at Hopevale
August 1984	- brief trip to Lockhart River
March 1985	- literature research in Canberra
March - June 1985	- analysis and report writing
June 1985	- Stage I report submitted

STAGE II:

September 1985	- preparation for field work
Sept - Dec 1985	- field work at Lockhart River
Jan - Feb 1986	- field work at Hopevale
March - Aug 1986	- data and specimen analysis (half-time)
August 1986	- literature research and meetings in Canberra, Sydney and Brisbane
Sept 1986-June 1987	- data and specimen analysis and final report writing (half-time)
June 1987	- final report submitted

3.2 Literature Research

A general literature search was carried out using the facilities of the James Cook University Library in November and December 1983.

More detailed literature searches were later undertaken using the facilities and personnel of the Australian Institute of Aboriginal Studies (AIAS), the National Library and the Australian National University (ANU) libraries in Canberra, the Queensland State Library, the University of Queensland libraries and the Queensland State Archives (QSA). Collectively these institutions contain a large proportion of the literature and personnel necessary to gain an historical perspective of the east coast Cape York Peninsula Aborigines. Both early Government records and anthropological accounts were studied for biological information which may have passed unrecognised, and also for the historical/cultural background necessary for working successfully in Aboriginal communities.

Dr J. Haviland and Dr L. Devereaux's excellent historical database for Hopevale (and the earlier Cape Bedford missions), containing Government and mission records and letters, was used to extract further historical information.

3.3 Background

I carried out a brief feasibility study in late June 1983 to assess the potential for a long term marine ethnobiological project at Hopevale (see Smith, 1983). The results of that study indicated that it would be both feasible and desirable to carry out an ethnobiological project, especially due to the community's utilisation of the dugong population in the Starcke River region. The Aboriginal Council gave permission for the project and provided considerable support.

In August 1984, I visited Lockhart River community in company with two 'old men' from Hopevale who had distant relatives at Lockhart. The trip was to assess the possibility of working at Lockhart River to acquire comparative data for Hopevale. The Aboriginal Council expressed interest in the work, and gave permission for the study.

3.4 Field Work

I undertook four periods of field work during the two stages of this project: January to March 1984 (Hopevale); May 1984 to March 1985 (Hopevale); September to December 1985 (Lockhart River); and January to February 1986 (Hopevale). Thus a total of 16 months were spent at Hopevale, and three months at Lockhart River.

For Hopevale, these phases encompassed three summer marine hunting and fishing periods as well as most of an annual cycle of fishing seasons. During these periods, my time was divided fairly evenly between Hopevale and the various beach camps. Whilst in Hopevale, I lived in a tent on the property of an Aboriginal family with whom I ate my meals. My time at the beach camps was determined by the movements of Hopevale residents, especially the informants with whom I worked. Most weekends and all public holidays were spent at the beach camps or out fishing. In addition, I spent considerable time staying with the few permanent residents at Elim and Manbaa (see Figure 1*).

At the request of the Hopevale School headmaster, I prepared and gave a brief course to the Year 8 students on marine food webs and chains (producers, consumers and decomposers), showing the possible effects of removing one of the links. The course included a one-day field trip.

The time spent at Lockhart River coincided with the pre-wet season calm weather, when a considerable amount of marine hunting and fishing occurs. At the request of the Executive Officer (Qld Dept of Community Services) I stayed in the guest house rather than with an Aboriginal family. The majority of my time was spent on fishing and marine hunting trips, the remainder on interviewing informants.

During all field work, I adhered to the code of behaviour outlined by the Australian Institute of Aboriginal Studies (1980).

3.4.1 Biological Methods

Whenever possible, data and specimen material were obtained from dugongs caught, to determine their size, age, reproductive status and diet as described in Marsh (1980), Marsh, et al (1984b) and Marsh, et al (1984c). In addition, peduncle measurements (circumference and dorsal angle) were obtained as a basis for designing a tether for VHF and satellite PTT transmitters, which are being used by Marsh to study dugong movements.

When I was not present during butchering of dugongs, a number of hunters co-operated by bringing me the dugong heads, from which I extracted the skulls and tusks for later analysis.

* All maps are located after Appendices

The following were monitored and evaluated: (1) the number of dugongs caught, (2) size and sex composition of the catch, (3) who was doing the hunting, (4) the hunting techniques, (5) when the hunting was occurring and (6) for what reason.

Whenever possible, measurements and specimens were also obtained from any marine turtles caught. The measurements included tail and curved carapace lengths. The specimens collected were the eyes, reproductives and stomach contents. These were fixed in 10% neutral buffered formalin (NBF). The data and specimens were forwarded to Dr C. Limpus (QNPWS).

Data were also obtained (when possible or practical) for fish and marine invertebrates caught or collected. These data included (1) the species, (2) the size, (3) the sex (where applicable) and reproductive status, (4) where they were caught, (5) when they were caught, (6) the quantity caught, (7) how they were taken and (8) who caught them and (9) for what purpose.

3.4.2 Ethnobiological Methods

The first phase of the field work (January to March 1984) was used to develop rapport with the members of the Hopevale community and to gather certain basic anthropological information, including (1) the acquisition of basic data on household composition and genealogical links, (2) the delineation of co-operative networks operating in marine resource exploitation and (3) the gathering of place names and site locations of significance to the project. I was able to assess the informant pool and to develop a working competence in hearing and transcribing the sounds of *Guugu Yimidhirr* using Dr Haviland's unpublished *Guugu Yimidhirr/English* dictionary and two of his language papers (Haviland, 1979a, 1979b). I maintained a general field work journal, a daily diary, a photographic record and transcribed all tape-recorded interviews.

The second phase of the field work involved more intensive and directed interviewing. The general informant pool consisted of approximately 48 men and five women; the key informant pool comprised ten men, selected for their marine knowledge and/or their ability and interest in fishing or marine hunting. There is therefore a distinct bias towards male-orientated information and activities.

The formal interviews were based on the development research sequence outlined by Spradley (1979, 1980), whereby a series of descriptive, structural and contrast (verification) questions were asked over an extended period of time. Informant reliability was tested by asking two series of questions on fishing or on the biology of fish or other animals: (a) questions to which the answers were already known and (b) plausible questions to which the informant could not possibly know the answers (Johannes, 1981a).

The types of ethnobiological information which were collected on dugongs, turtles, fish and invertebrate marine resources included:

1. the indigenous taxonomies for such species and the total number of categories known and recognised: these were compared with scientific designations for the same localities;
2. the uses of such species e.g. (a) food, (b) non-food economic uses, (c) medicinal (e.g. dugong oil), (d) social and religious;
3. knowledge of the biology and ecology of different species e.g. life histories, behaviour;
4. knowledge and techniques of marine resource appropriation;
5. knowledge and techniques of management and manipulation of the physical marine environment.

This information was used to reconstruct former systems of marine resource exploitation through historical records and the memories of the elder members of the community (through interviews).

All my fishing and marine hunting trips occurred in company with Hopevale residents. In most cases I accompanied them on their trips, however, at times I invited them to accompany me to specific loca-

tions. This aspect of the field work was based largely on the method of participant observation (Spradley, 1980). I was an active participant in order to check on the validity and reliability of information derived from interview materials.

Due to the brevity of my stay at Lockhart River, more time was spent in participant observation. Interviews were more directed and were aimed primarily at acquiring comparative information for Hopevale. Very little time was spent obtaining information on marine resource taxonomies and structure of classifications, as this work has already been covered by Dr A. Chase (unpublished, see Chase, 1980a:258). Most emphasis was placed on acquiring information on (3), (4) and (5) above. The general informant pool consisted of approximately 14 men and one woman; the key informant pool comprised five men, selected for their marine knowledge and/or their ability and interest in fishing or marine hunting. Again there was a distinct bias towards male-orientated information and activities.

3.5 Data Analysis

3.5.1 Biological

All dugong specimens collected were forwarded to Dr H. Marsh (JCUNQ) for processing and analysis. The stomach contents were analysed by Ms J. Lanyon (JCUNQ) using the technique outlined in Channells and Morrissey (1981). The reproductive specimens were analysed by Marsh using the techniques outlined in Marsh, et al (1984b) and Marsh, et al (1984c). For age determination, one tusk for each animal was bisected longitudinally and prepared as per Marsh (1980) and the growth layer groups counted. A specimen of each aged tusk was returned, with an explanation of how to 'read' the tusk, and its age, to each hunter who allowed a tusk to be collected.

All turtle specimens were forwarded to Dr C. Limpus (QNPWS) for processing and analysis. The reproductive status was based on the criteria outlined in Limpus and Reed (1985a).

Mollusc and some crustacean specimens were sent to the Queensland Museum for identification and storage.

3.5.2 Ethnobiological

The ethnobiological information and interview transcripts were incorporated into a database management system for easier handling, assessing and comparison. This information was compared and related to the historical and current material available. It has been appraised primarily in regard to objectives 2.2.4 and 2.2.5.

3.5.3 Coastal Surveillance Data

The Coastwatch post-flight reports were examined for peak periods during the field work phases (January to February 1984 through 1987 for Hopevale; September to December 1985 for Lockhart River). These were compared with known activities that occurred during those periods.

3.6 Limitations on the Research

3.6.1 General

Ethnobiologically orientated studies have a number of inherent limitations. In summary the main limitations are:

- (1) Problems of different cultural perspectives: it was, for example, difficult for some Aborigines I worked with to comprehend the western notion of conservation and its resultant management regimes (see Section 8.1).
- (2) There are sometimes cultural impediments: some information relating to fishing and marine hunting is considered confidential or secret by the owners of that knowledge. That confidentiality should be respected. Cross-cultural communication can create problems if not approached properly (see Von Sturmer, 1981).
- (3) Indigenous knowledge may often be incomplete. It may also be distorted in various ways by social, magical or religious beliefs. European contact, and the impact of modern technology may also corrupt this knowledge (Webb and Smyth, 1984). Dugong hunting at Hopevale, for example, has been considerably influenced by the commercial take for the dugong oil industry in the early 1900s.
- (4) At times the 'culturally-correct' information supplied during interviews, may be markedly different to what actually occurs in reality. On a few occasions I was told by informants the 'proper way' to do something, and then later observed the activity being carried out in a different manner.
- (5) Not all indigenous fishermen are valuable sources of information. The best fishermen (i.e. recognised as such within the community) and the older fishermen, are usually the most knowledgeable. A greater proportion of my time was therefore spent with the older fishermen and hunters.
- (6) Informants may provide information they believe the researcher wants, or that would make the informant appear more important. By checking, whenever possible, the reliability of information received in interviews, I found the key informants' information extremely reliable. They always told me if they were uncertain or did not know something.
- (7) The degree to which fishing or hunting activities are influenced by the presence of a researcher can be difficult to determine. For example, my presence on dugong hunting trips at Lockhart River possibly restrained some hunters from using rifles to kill dugongs after harpooning. (I was informed that rifles were used on at least two occasions during the period of my field work).
- (8) By concentrating on male-orientated information and activities, a major source of information remains unrecorded.
- (9) Being associated (unintentionally or deliberately) with Government bodies, especially enforcement agencies, usually has a negative effect. By arriving at Hopevale at the same time as the introduction of the dugong hunting permits, I was unavoidably associated with the restrictions as I was partly working on dugongs and had a University-labelled vehicle.

3.6.2 Logistical

The logistical problems of attempting to cover numerous beach camps, fishing and hunting activities, and landing sites spread over more than 100nm (180km) of coastline, restricted direct information collection considerably. With the exception of dugong and turtle take, no detailed quantitative consumption data on marine resources were collected; qualitative estimates, however, were made.

3.6.3 Problems Which Affected The Objectives

A. During the first few weeks of the initial field work phase at Hopevale (January to February, 1984), the objectives proposed for that time were largely unrealisable due to the general discontent and confusion within the community concerning the dugong hunting permits introduced by the GBRMPA in late 1983. The timing of my arrival in the community was sufficiently close to the date of implementation of the permit system for the two to be inextricably linked in the eyes of most members of the community. Some considered Marsh and I as 'spies for the GBRMPA'.

After discussing the situation with Marsh and at the suggestion of a number of Hopevale residents, it was decided to temporarily alter the direction of the field work and document the community's reaction to the management initiatives associated with the GBRMP. The matter was referred to the Chairman of the GBRMPA before proceeding. The details are contained in Marsh, Smith and Kelly (1984e). As a result, there was a greater emphasis placed on recording information on dugongs and turtles in the subsequent field work.

After this period the necessary rapport developed satisfactorily, although there remained, to a slight degree, some confusion as to the exact purpose of my work, primarily those with whom I was not directly working.

B. The fourth field work phase at Hopevale (January to February, 1986) was hindered during the first few weeks by the following rumours and misunderstandings concerning my work.

They had three causes:

- (a) A misinterpretation of a heavily reduced and distorted version of a James Cook University press release about the research project in the 'Sunday Sun' (15/12/85). This resulted in a misunderstanding of what my work actually involved.
- (b) A misunderstanding arising from a meeting between the Hopevale Council and QNPWS, causing a rumour that I was trying to stop all dugong hunting.
- (c) I was once again unavoidably linked with GBRMPA's dugong permit system.

These problems were cleared up after about two weeks, however, they considerably affected my work plans for the remaining field work time.

C. No such problems were encountered at Lockhart River. The GBRMP Far Northern Section Zoning Plan had not yet come into effect. Thus there were no resultant restrictions or problems with which I could be associated. As a result of the problems encountered at Hopevale, it was decided during GBRMPA's public participation process for the Far Northern Section, to delay considering restrictions on dugong hunting until information was obtained from this study.

There are a number of points which arise from these problems:

- (1) They demonstrate the reactive nature of ethnobiological field work. The ability to be able to accommodate quickly to changing circumstances is essential for these studies.
- (2) Aboriginal communities require clear information when being presented with new situations such as management programmes.
- (3) These problems affected this study through the time lost in having to disassociate myself from GBRMPA and its restrictions, and in establishing (Jan. 1984), and then re-establishing (Jan. 1986) the rapport necessary to obtain a flow of information.
- (4) As a direct result of the problems with the dugong hunting permits, considerably more time and effort were directed towards collecting information on dugongs and dugong hunting than was originally proposed.