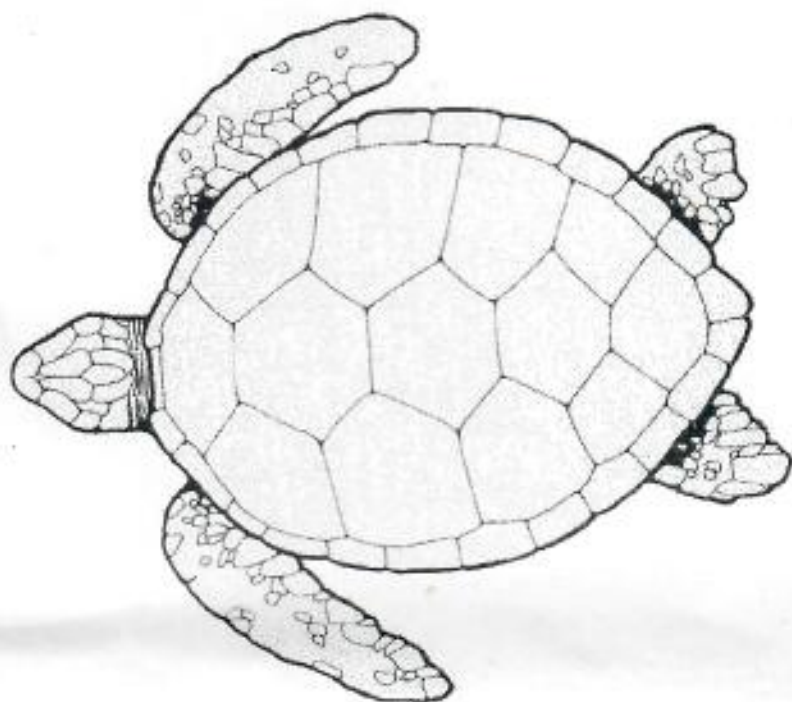


# GREEN TURTLE WORKSHOP



**15-16 June 1999**

**Hotel George Williams  
Brisbane**



QUEENSLAND  
GOVERNMENT



QUEENSLAND  
PARKS AND  
WILDLIFE  
SERVICE



RAINE ISLAND  
CORPORATION

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## **GREEN TURTLE WORKSHOP OVERVIEW**

The Queensland Parks and Wildlife Service has been conducting research and monitoring in respect of green turtle populations on the Great Barrier Reef for over 20 years. The last major, external review of the green turtle program was undertaken in 1986 while the Raine Island component was last reviewed in 1991.

The Service and the Raine Island Corporation believe the current review is timely to establish the status of investigations and to ensure the green turtle program continues to meet best practice standards and provide world leadership in the study of this species.

The principal aims of the green turtle workshop are to:

- assess the status of existing knowledge;
- investigate the appropriateness of current methodologies; and
- determine future requirements for research and monitoring to enable effective conservation management of green turtle populations in Queensland.

It is proposed the workshop will produce the following outcomes:

- identification of parameters which need to be quantified for use in planning the management of each of the green turtle stocks in Queensland, with particular emphasis on the nesting population at Raine Island and adjacent islands and the nesting population in the southern Great Barrier Reef;
- identification of appropriate methodologies to quantify such parameters;
- investigation of methodologies which are currently unavailable and need to be developed and new techniques which may be appropriate; and
- a recommended research program to monitor a green turtle stock and address the mechanisms underlying the trends and fluctuations in the population(s).

The outcomes will be reported in a review report to the Queensland Parks and Wildlife Service and the Raine Island Corporation. It is expected the main body of the report will be prepared to a preliminary stage during the workshop. Dr George Balazs, National Marine Fisheries Service, Honolulu, USA and Mr Michael Guinea, Northern Territory University, Australia will edit and finalise the report following the workshop.

## **Program**

### **Day 1: Tuesday, 15 June 1999 – Overview/methodology/results**

- 8.30 Welcome
- 8.45 Introduction to GBR green turtle studies – Dr Col Limpus
- 9.15 Distribution and migration – Dr Col Limpus
- 9.45 Discussion (distribution and migration)
- 10.15 Morning tea**
- 10.30 Genetics and stock issues – Dr Craig Moritz
- 11.00 Discussion (genetics and stock issues)
- 11.30 Southern GBR nesting biology & census – Dr Col Limpus
- 12.00 Lunch**
- 1.00 Northern GBR nesting biology & census: Raine Is./Bramble Cay – Dr Col Limpus
- 1.30 Northern GBR nesting biology & census: Milman Island – Dr Jeff Miller
- 2.00 Discussion (southern and northern GBR nesting biology & census)
- 2.45 Southern GBR feeding ground study – Dr Col Limpus
- 3.15 Northern GBR feeding ground study - Dr Jeff Miller
- 3.45 Afternoon tea**
- 4.00 Discussion (southern & northern GBR feeding ground study)
- 4.45 Questions to panel - Dr George Balazs/ Dr Mick Guinea
- 5.30 Close
- 7.00 Dinner** (outcomes of day 1 circulated)
- Gazebo Hotel, 345 Wickham Terrace, Brisbane

**Day 2: Wednesday, 16 June 1999 – Future requirements/directions/conclusions**

- 8.30 Management issues – Dr Col Limpus  
9.00 Discussion (management issues)  
9.30 Modelling - Mr Milani Chaloupka  
**10.30 Morning tea**  
10.45 Discussion (modelling)  
11.15 Future monitoring requirements – panel discussion  
**12.15 Lunch**  
1.15 Future research requirements – panel discussion  
2.15 Application of monitoring and research to management – panel discussion  
**3.15 Afternoon tea**  
3.30 Questions to panel – Dr George Balazs/Dr Mick Guinea  
4.15 Recommendations – panel discussion  
5.15 Summary  
5.30 Close

Studies on green turtles (*Chelonia mydas*)

22. Gordon, A.N., Kelly, W.R. and Cribb, T.H. (1998). Lesions caused by cardiovascular flukes (Digenea: Spirorchidae) in stranded green turtles (*Chelonia mydas*). *Veterinary Pathology*, **15**: 21-30.
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2. Bowen, B.W., Abreu-Grobois, F.A., Balazs, G.H., Kamezaki, N., Limpus, C.J. and Ferl, R.J. (1995). Trans-Pacific migrations of the loggerhead turtle (*Caretta caretta*) demonstrated with mitochondrial DNA markers. *Proceedings of the National Academy of Science, USA*. **92**: 3731–3734.
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3. Bowen, B.W., Clark, A.M., Abreu-Grobois, F.A., Chaves, A., Reichart, H.A. and Ferl, R.J. (1998). Global phylogeography of the ridley sea turtles (*Lepidochelys* spp.) as inferred from mitochondrial DNA sequences. *Genetica*. Vol. 10 1, pp 179–189.

### Studies on flatback turtles (*Natator depressus*)

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**Studies on diseases of marine turtles**

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**Studies on marine turtle nesting**

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RAINE ISLAND CORPORATION

*Ten Year  
Corporate Plan*

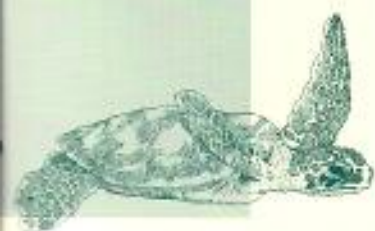
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RAINE ISLAND CORPORATION

*Ten Year  
Corporate Plan*

(1996-2006)



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# 1. MISSION STATEMENT

*To foster and ensure the conservation and management of the natural and cultural heritage resources of Raine Island, Moulter and Maclellan Cays and the surrounding seas.*



## 2. INTRODUCTION

### 2.1 Raine Island Corporation

The Raine Island Corporation was established in 1981 under the auspices of the *Meaker Trust (Raine Island Research) Act 1981* to promote research into, and the preservation and protection of the nature and the environment of Raine Island, Moulter and Maclellan Cays and the surrounding seas.

The Raine Island Corporation is a self-funding statutory body, established with a generous donation from the Benjamin Meaker Charities Trust (Jersey). Interest gained from investments is used to fund the Corporation and its activities.

The Corporation is responsible for the administration of funds which are applied toward research, conservation and management of Raine Island, Moulter and Maclellan Cays and the surrounding seas.

The *Meaker Trust (Raine Island Research) Act 1981* establishes the membership and sets out the framework for the administration of the Raine Island Corporation. The Board of the Raine Island Corporation consists of representatives from the Department of Environment; Department of Families, Youth and Community Care; Department of Primary Industries; a Torres Strait Islander and two members of the Butler family. It was the vision and interest of the Butler family which led to the establishment of the Corporation.

Figure One: Corporate Structure of Raine Island Corporation



## Meaker Trust (Raine Island Research) Act 1981

The Meaker Trust (Raine Island Research) Act 1981 specifies that the Corporation may do all things which are necessary or convenient to be done for or in connection with or incidental to the performance of its functions and in particular:

- may cause such restoration or preservation work to be carried out in respect of any improvements or relics situated on Raine Island as appears to it to be desirable; and
- may establish such research facilities on or in relation to Raine Island as appear to it to be necessary for the proper performance of its functions.

The functions of the Raine Island Corporation are:

- to promote research in respect of the nature and the environment of Raine Island, Moulter and Macleannan Cays, and the surrounding seas;

- to promote, by whatever means may be appropriate and practicable, the preservation and protection of the nature and the environment of Raine Island, Moulter and Macleannan Cays, and the surrounding seas;
- to promote the development and application of science and technology for the purpose of the preservation and protection of the nature and the environment of Raine Island, Moulter and Macleannan Cays, and the surrounding seas;
- to investigate the feasibility of restoring or preserving any improvements or relics situated on Raine Island; and
- to promote, through the publication of the results of the research conducted, the conservation of the nature and the environment of the regions of Great Barrier Reef Province of the South-West Pacific Ocean.

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## 2.2 Raine Island and Moulter and Macleannan Cays

Raine Island is situated approximately 620 km (11° 37'S, 144° 01'E) north-west-north of Cairns, in Far North Queensland, on the outer edge of the Great Barrier Reef. It is situated just off the eastern edge of the continental shelf and within the shipping channel known as the Raine Island Entrance. Moulter (11° 24'24"S, 144° 01'17"E) and Macleannan (11° 22'S, 143° 48'E) Cays are situated nearby.

Raine Island is a vegetated coral cay approximately 32 hectares in area. The cay is a sandbank with a broad beach, from 30-100 metres in width, surrounding a central rock platform 1-2 metres above the beach level.

Referring to the natural and cultural values of Raine Island and Moulter and Macleannan Cays, Claridge (1995) states "More than sixty separate values have been identified. It is highly unlikely that any comparable area in the Great Barrier Reef region, or even in Australia overall, could match the number and breadth of values associated with Raine Island and its environs."

Moulter and Macleannan Cays are smaller coral cays which also have large beaches and light herbaceous vegetation. Raine Island and Moulter and Macleannan Cays, together make up the site of the world's largest remaining rookery for the internationally endangered Green Turtle (*Chelonia mydas*).

Raine Island and Moulter and Macleannan Cays also support the most significant seabird rookery in the Great Barrier Reef World Heritage Area. Represented species include the endangered Herald Petrel (*Pterodroma arminjoniana heraldica*) and vulnerable Red-Tailed Tropicbird (*Phaethon rubricauda*).

The Green Turtle (*Chelonia mydas*) is a natural resource, use of which is shared by many indigenous peoples in the South-West Pacific. Aboriginal Australians and Torres Strait Islanders have traditionally used the Green Turtle and maintain those cultural traditions today. The Raine Island Corporation is actively working with indigenous peoples to ensure the conservation and management of those biological resources which are traditionally shared resources.

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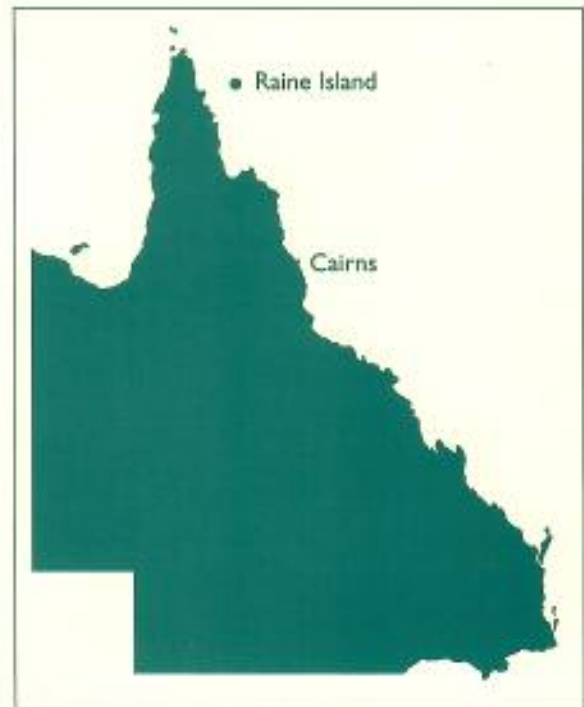


Constructed under the order of the British Admiralty in 1844, the stone beacon on Raine Island is a national historical landmark of navigational significance, and the most prominent evidence of human activities associated with the island. Other evidence remains, on Raine Island, of early guano mining activities.

It is conservatively estimated that the remains of more than 30 shipwrecks are located in the waters around Raine Island and Moulter and Maclellan Cays, including the HMS 'Pandora', the vessel associated with the capture of the HMS 'Bounty' mutineers.

Raine Island is a Departmental and Official Purpose Reserve under the trusteeship of the Department of Families, Youth and Community Care. In 1985, under the *Fauna Conservation Act 1974*, it was declared a Fauna Refuge. Moulter and Maclellan Cays are Reserves for Scientific Purposes under the provisions of the *Land Act 1994*, held under the trusteeship of the Raine Island Corporation.

Figure Three: Location of Raine Island



### 3. CORPORATE PLAN

This corporate plan provides a broad framework for the future activities of the Raine Island Corporation and identifies mechanisms for collaboration between the Corporation and other research and nature conservation bodies.

The corporate plan has three identified programs, the Natural Heritage Program, Cultural Heritage Program and Corporate Program. For ease of management each identified program has several sub-programs:

#### **Natural Heritage Program (4.1)**

##### **Sub-programs**

- Conservation and Management (4.1.1)
- Biology and Ecology (4.1.2)
- Physical Processes (4.1.3)

#### **Cultural Heritage Program (4.2)**

##### **Sub-programs**

- Conservation and Management (4.2.1)
- Maritime Heritage (4.2.2)

#### **Corporate Program (4.3)**

##### **Sub-programs**

- Corporation Management (4.3.1)
- Public Education (4.3.2)
- Fundraising (4.3.3)

## 4. PROGRAMS

### 4.1 Natural Heritage Program

Several internationally important species are resident on and migrate to Raine Island and Moulter and Maclellan Cays during their lifecycles. These cays make up the site of the world's largest remaining rookery for the internationally endangered Green Turtle (*Chelonia mydas*) and support the most significant seabird rookery in the Great Barrier Reef World Heritage Area. Represented seabird species include the endangered Herald Petrel (*Pterodroma arminjoniana heraldica*) and vulnerable Red-Tailed Tropicbird (*Phaethon rubricauda*).

#### 4.1.1 Conservation and Management

**Aim:** The effective conservation and management of the biological and other natural resources of Raine Island, Moulter and Maclellan Cays and the surrounding seas.



#### Strategies

- Promote the collection, assessment, review and reporting of baseline and monitoring data relevant to wildlife populations and communities;
- Manage access to and influence the actions of other agencies to ensure that Raine Island, Moulter and Maclellan Cays and the surrounding seas remain an area with restricted human impact;
- Investigate and monitor the impact of human visitation;
- Integrate the collection of data with the research activities of other agencies to maximise the efficiency and compatibility of data collection;
- Promote, initiate and participate in state, national and international discussions and negotiations relevant to the resident and migratory wildlife of Raine Island and Moulter and Maclellan Cays; and
- Report every five years on the conservation and management status of Raine Island, Moulter and Maclellan Cays and the surrounding seas.

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#### 4.1.2 Biology and Ecology

**Aim:** To investigate and document the population and community ecology of wildlife associated with Raine Island, Moulter and Maclellan Cays and the surrounding seas.

#### Strategies

- Establish systematic and quantitative investigations of the relationships between primary and secondary production on the reefs, and in the surrounding seas, supporting the abundance of turtles and seabird species using the cays as nesting grounds;
- Promote the identification of major physical, chemical and biological determinants of population and community structure and dynamics; and
- Promote the description, classification and monitoring of the habitat types present and their associated populations and communities.

#### 4.1.3 Physical Processes

**Aim:** To investigate and document the physical processes influencing Raine Island, Moulter and Maclellan Cays and the surrounding seas.

#### Strategies

- Promote the modelling of oceanographic and climatic processes, including the investigation of patterns on individual reefs and the influence of processes operating at various scales;
- Promote the investigation of the development of geological and geomorphological aspects of past reefs; and
- Collect and store relevant bathymetric and topographic data as it becomes available.

### 4.2 Cultural Heritage Program

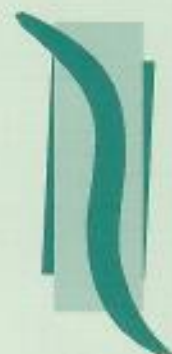
#### 4.2.1 Conservation and Management

**Aim:** To conserve evidence of human occupation and use of Raine Island, Moulter and Maclellan Cays and the surrounding seas.

#### Strategies

- Promote the recording and conservation of Aboriginal and Torres Strait Islander cultural links with Raine Island, Moulter and Maclellan Cays and the surrounding seas;
- Promote the investigation and recording of the social, economic and industrial history of Raine

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Island, Moulter and Maclellan Cays since their discovery by non-indigenous Australians;

- Arrange and conduct the work necessary to conserve evidence of human occupation and use of Raine Island and Moulter and Maclellan Cays; and
- Ensure that the evidence of human occupation recovered from Raine Island, Moulter and Maclellan Cays and the surrounding seas is deposited with an appropriate agency for conservation, preservation and storage.

#### 4.2.2 Maritime heritage

**Aim:** To locate, identify and survey shipwrecks associated with Raine Island, Moulter and Maclellan Cays and the surrounding seas.

##### Strategies

- Promote historical research into known early voyages and identify vessels which may be wrecked in the vicinity of Raine Island and Moulter and Maclellan Cays; and
- Through interagency cooperation locate, identify and survey historical shipwrecks.



## 4.3 Corporate Program

### 4.3.1 Corporation management

**Aim:** To carefully manage the funds and activities of the Raine Island Corporation to enable the continuation and enhancement of its conservation and management activities.

##### Strategies

- Maintain a Scientific Advisory Committee to provide advice on the directions and outcomes of the programs of the Corporation;
- Maintain a Financial Advisory Committee to advise the Corporation on the investment of the donation from the Benjamin Meaker Charities Trust (Jersey) and other bequests and donations;
- Employ appropriate staff to conduct the business of the Corporation; and
- Develop and implement appropriate research, financial and operational plans.

### 4.3.2 Education

**Aim:** To make a positive contribution to conservation education of the general public through the use of information and data collected from Raine Island, Moulter and Maclellan Cays and the surrounding seas.

##### Strategies

- Develop and implement a publication policy and schedule, and seek cooperative ventures to publish those reports which the Corporation has commissioned and are suitable for a variety of audiences concerning the natural and cultural heritage of Raine Island, Moulter and Maclellan Cays and the surrounding seas;
- Take an active role in the promotion of habitat conservation to younger Australians, including but not restricted to the promotion of the habitat requirements of the wildlife of Raine Island, Moulter and Maclellan Cays and the surrounding seas;
- Actively recruit, seek to educate and encourage undergraduate and postgraduate students to take part in the research and conservation of Raine

Island, Moulter and Maclellan Cays and the surrounding seas; and

- Produce displays and educational material suitable for exhibitions and tourism promotions.

### 4.3.3 Fundraising

**Aim:** To increase the funds available for scientific and cultural research at Raine Island, Moulter and Maclellan Cays and the surrounding seas.

##### Strategies

- Develop and implement a fundraising plan which increases the total amount of invested principal; and
- Develop proposals for external funding support for specific projects (Project Specific Funding) and co-operative funding arrangements.





## 5. FURTHER INFORMATION

### 5.1 Research Support Grant Applications

Raine Island Corporation supports a variety of research related to Raine Island, Moulter and MacLennan Cays and the surrounding seas.

Research Support Application Kits are available from the Raine Island Corporation. Applications are due by the end of March each year. Each application is assessed by the Corporation's Scientific Advisory Committee before recommendation to the Board.

A field trip is generally scheduled once a calendar year, usually in the last quarter. This co-ordinated field trip provides an opportunity for researchers to visit this otherwise inaccessible conservation reserve.

### 5.2 Correspondence Address

Correspondence to the Raine Island Corporation should be sent to:

Raine Island Corporation  
PO Box 180  
BRISBANE ROMA STREET QLD 4003  
AUSTRALIA

Phone: (AUST) (07) 3227 7960

Facsimile: (AUST) (07) 3227 7676

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## 6. REFERENCES

**Claridge G. (1995)** *A Risk Assessment for Raine Island and Environs in Relation to Values of the Natural and Cultural Environments*. Report for the Raine Island Corporation, Brisbane.

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NOTES

