

NATIONAL PARKS ASSOCIATION OF QUEENSLAND INC  
&  
FRASER ISLAND DEFENDERS ORGANISATION LTD



# **Environmental Impact Statement**

for

## **The George Haddock Track Section**

Fraser Island Great Walk

2012



# George Haddock Track Environmental Impact Assessment Statement - 2012



## Photos

Front Cover Top: *Melaleuca quinquinerva* on the shores of Hidden Lake (John Sinclair Snr)

Front Cover Bottom: Freshwater Lakes (John Sinclair Jr)

All photos below were taken during fauna survey by Ian Morris

L to R: Top row: *Ctenotus robusta* (Forest Skink), *Banksia robur* (Swamp Banksia), *Dipodium hamiltonianum*.

Second Row: *Lymnodynastes terrareginae*, ants and larvae.

Bottom Row: *Litoria freycineti*, *Calante triplicata* (Christmas Orchid), and *Melomys burtoni*.

## Foreword

This environmental impact statement provides an assessment of the proposal for a 51 kilometer George Haddock Memorial Track extension to the existing Fraser Island Great Walk. It provides a description of the proposed walk, its infrastructures, its route, and lists the significant regional ecosystems, flora, fauna, weeds and the cultural heritage sites of the proposed route. Noted here are the official indigenous names for Fraser Island, which are K'gari or alternatively Gari. The meaning given to these names is "Beautiful Place". It is the intention of this Environmental Impact Assessment Report to keep it that way.

## Acknowledgements

This draft environmental impact assessment was prepared by members and volunteers associated with the National Parks Association of Queensland Incorporated (NPAQ) and the Fraser Island Defenders Organisation Ltd (FIDO), proponents of the proposal.

We would like to acknowledge all the members, organizations and volunteers that have assisted with and supported the compilation of this assessment. In particular, we would like to make special mention of the following people for their authorship, consultation and assistance.

Authors - John Sinclair, John Bristow, John Ladbrook, Laura Simmons, Brad Jeffers, David Bouchard, Dr Scott Burnett, Dr Judy Powell and Stephanie Haslem.

Consultation and assistance by the Butchulla People, Queensland Bushwalkers, Tim O'Rourke (University of Queensland School of Architecture), QPWS and various scientific specialists.

We would also like to acknowledge the hard work done by specialist teams, e.g.

Track Survey Team – John and Mary Nowell, Len Lowry, John Ladbrook, Greg Neil, Al Hewson, Mike West, John Bristow, John Sinclair and Malcolm Burns.

Flora Survey Team – Stephanie Haslam (Noosa's Native Plants), Brad Jeffers and David Bouchard.

Fauna Survey Team - Dr Scott Burnett (University of the Sunshine Coast) and Ian Morris (Environmental Consultant – Darwin).

Cultural Heritage Assessment Team – Dr Judy Powell (Archaeologist), Joe Gala (Butchulla People), Peter Riedlinger, John Sinclair and Su (Tokiko) Dawson.

Kingfisher Bay Resort is acknowledged for their assistance in facilitating transport.

Edited by: Rob Hitchcock, NPAQ and Matt Hitchcock, Queensland Conservatorium Griffith University.

## Disclaimer

This document is for discussion and process approval and does not commit the organizations to either the views expressed or to any future action. This draft environmental impact assessment also does not necessarily represent Government policy.

This document also does not intend to affect, diminish or extinguish Native Title and associated rights.

Submitted;



T O'Brien  
President  
National Parks Association of Qld Inc



C. Enchelmier  
President  
Fraser Island Defenders Organisation Ltd.

## TABLE OF CONTENTS

<b>TABLE OF CONTENTS</b> .....	<b>I</b>
<b>TABLE OF FIGURES</b> .....	<b>V</b>
<b>LIST OF APPENDICES</b> .....	<b>VI</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>1</b>
<b>1 - INTRODUCTION</b> .....	<b>2</b>
1.1 THE GREAT WALKS PROJECT .....	2
1.2 OBJECTIVE OF THIS REPORT.....	2
1.3 INTRODUCTION AND SCOPE OF THE EIS REPORT .....	2
1.3.1 <i>Procedural Steps</i> .....	2
1.3.2 <i>Environmental Obligations</i> .....	3
<b>2 - PROJECT DESCRIPTION</b> .....	<b>4</b>
2.1 THE LATE GEORGE HADDOCK OAM.....	4
2.2 THE PROPONENTS.....	4
2.3 THE PROPONENTS OBJECTIVES .....	4
2.4 CONDITIONAL APPROVALS .....	5
<b>3 - THE ROUTE PROPOSED</b> .....	<b>6</b>
3.1 THE CHOSEN ROUTE HAS THE FOLLOWING FEATURES .....	6
3.2 THE ORIGINAL GREAT WALK .....	6
3.2.1 <i>The Fraser Island Great Walk:</i> .....	6
3.2.2 <i>Arch Cliffs Access Point:</i> .....	7
3.2.3 <i>Truncating the Great Walk:</i> .....	7
3.3 THE PREFERRED ROUTE.....	8
3.3.1 <i>Features of the George Haddock Track:</i> .....	8
3.3.2 <i>Design Features of the Track:</i> .....	8
3.4 CRITERIA FOR CHOOSING THE GEORGE HADDOCK TRACK ROUTE.....	9
3.5 PROJECTED USAGE .....	10
3.5.1 <i>Interstate comparisons</i> .....	10
3.5.2 <i>Maximum levels of use</i> .....	10
<b>4 - CONSULTATIONS</b> .....	<b>13</b>
<b>5 - ROUTE DETAILS</b> .....	<b>14</b>
5.1 FIELD SURVEYS;.....	14
5.2 POTENTIAL IMPACTS OF THE ABOVE DETAILED ROUTE;.....	14
5.2.1 <i>Potential Impacts</i> .....	14
5.2.2 <i>Impact Mitigation and Management Recommendations</i> .....	14
5.3 ROUTE SECTIONAL PROFILES.....	15
<b>6 - NAMING</b> .....	<b>21</b>
<b>7 - INFRASTRUCTURE</b> .....	<b>22</b>
7.1 GENERAL;.....	22
7.2 HIKERS SHELTERS GENERAL.....	22
7.2.1 <i>Site selection</i> .....	22
7.2.2 <i>Proposed construction</i> .....	22
7.2.3 <i>Detailed site description</i> .....	24
7.2.4 <i>Site location and servicing</i> .....	25
7.2.5 <i>Equipment</i> .....	25

7.3 TOILETS: .....	25
7.3.1 Pine Hill: .....	25
7.3.2 Lake Coomboo: .....	26
7.3.3 Lake Allom: .....	26
7.3.4 Lake Bowarrady: .....	26
7.4 TRACK WORK: .....	26
<b>8 - WASTE MANAGEMENT .....</b>	<b>28</b>
8.1 CONSTRUCTION WASTE .....	28
8.1.1 Description .....	28
8.1.2 Potential impacts .....	28
8.1.3 Impact mitigation and management recommendations .....	28
8.2 TOILET WASTE .....	29
8.2.1 Description .....	29
8.2.2 Potential impacts .....	30
8.2.3 Impact mitigation and management recommendations .....	30
8.3 GENERAL WASTE .....	30
8.3.1 Description .....	30
8.3.2 Potential Impacts .....	31
8.3.3 Impact Mitigation and Management Recommendations .....	31
<b>9 - SIGNAGE AND INTERPRETATION: .....</b>	<b>32</b>
9.1 SIGNAGE ALONG THE TRACK: .....	32
9.2 INTERPRETATION IN THE SHELTERS: .....	32
9.3 GUIDE BROCHURE: .....	32
<b>10 - LEGISLATIVE APPROVALS .....</b>	<b>33</b>
10.1 GENERAL .....	33
10.2 NATIVE TITLE ACT 1993 .....	33
10.3 CULTURAL HERITAGE ACT 2003 .....	33
10.4 NATURE CONSERVATION ACT 1992 .....	34
10.5 QUEENSLAND HERITAGE ACT 1992 .....	34
10.6 ENVIRONMENTAL PROTECTION ACT 1991 AND INTEGRATED PLANNING ACT 1997 .....	34
10.7 WILD RIVERS AND OTHER LEGISLATION AMENDMENT ACT 2007 - FRASER WILD RIVER DECLARATION 2007 .....	34
10.8 OTHER STATE GOVERNMENT APPROVALS .....	36
10.9 LOCAL GOVERNMENT APPROVAL .....	36
<b>11 - PARK MANAGEMENT PLANS .....</b>	<b>37</b>
<b>12 - LANDSCAPE, GEOLOGY, SOILS AND HYDROLOGY .....</b>	<b>38</b>
12.1 GEOMORPHOLOGY .....	38
12.2 LANDSCAPE AND AMENITY .....	38
12.3 ANTHROPOGENIC ENVIRONMENTAL MODIFICATIONS .....	39
12.3.1 Impact mitigation and management recommendations .....	40
12.4 LANDSCAPE .....	40
12.4.1 Potential impacts .....	40
12.4.2 Impact mitigation and management recommendations .....	40
12.5 LAKES, GROUNDWATER AND STREAMS .....	41
12.5.1 Potential impacts .....	41
12.5.1.a Water chemistry of the lakes .....	41
12.5.1.b Access to the lakes .....	41
12.5.1.c Lake aesthetics .....	42
12.5.2 Impact mitigation and management recommendations .....	42
12.5.2.a Altering lakes' chemistry .....	42
12.5.2.b Codes for washing and ablutions .....	42
12.5.2.c Lake access points .....	42
12.5.2.d Monitoring .....	42
12.5.2.e Freshwater Area .....	43
12.5.2.f Old Lake Coomboo .....	43
12.5.2.g Shelter Setback Profile .....	43

<b>13 - FLORA</b> .....	<b>44</b>
13.1 SEARCH EFFORT.....	44
13.2 THREATENED FLORA.....	44
13.2.1 <i>Detection and threat mitigation</i> .....	45
13.3 REGIONAL ECOSYSTEMS.....	45
13.4 ENVIRONMENTALLY SENSITIVE AREAS.....	46
13.5 INVASIVE SPECIES.....	46
13.6 ONGOING MONITORING OF IMPACTS.....	47
<b>14 - FAUNA</b> .....	<b>48</b>
14.1 INTRODUCTION.....	48
14.2 METHODOLOGY.....	48
14.2.1 <i>Study area</i> .....	48
14.2.2 <i>Fauna inventories</i> .....	48
14.3 RESULTS.....	50
14.3.1 <i>Background/desktop review</i> .....	50
14.3.2 <i>Field survey</i> .....	50
14.4 DISCUSSION AND CONCLUSIONS.....	50
<b>15 - CULTURAL HERITAGE</b> .....	<b>52</b>
15.1 CULTURAL HERITAGE SURVEY AND ISSUES - REPORT BY DR JUDY POWELL.....	52
15.1.1 <i>Background</i> .....	52
15.1.2 <i>Legislation</i> .....	52
15.1.3 <i>Previous Archaeological work on Fraser Island (K'gari)</i> .....	53
15.1.4 <i>Known cultural heritage sites within the vicinity of the George Haddock Track</i> .....	53
15.1.5 <i>Survey participants</i> .....	53
15.1.6 <i>Survey</i> .....	53
15.1.7 <i>Scarred trees</i> .....	54
15.1.8 <i>Survey results</i> .....	55
15.1.9 <i>Recommendations</i> .....	55
15.2 THE PROPONENT'S RESPONSE TO JUDY POWELL'S REPORT.....	59
15.2.1 <i>Potential Impacts - Benching of tracks</i> .....	59
15.2.2 <i>Potential Impacts - Campsites</i> .....	59
15.3 IMPACTS MITIGATION AND MANAGEMENT RECOMMENDATIONS.....	59
15.3.1 <i>Butchulla oversight of work on all new sites</i> .....	59
15.3.2 <i>Cultural Heritage discoveries during construction</i> .....	59
15.3.3 <i>Cultural Heritage management plan</i> .....	59
15.3.4 <i>Duty of Care Guidelines</i> .....	60
15.3.5 <i>Scar Trees</i> .....	60
15.3.6 <i>Road closure to protect Gonyah Trees</i> .....	60
15.3.7 <i>Cultural Induction</i> .....	60
15.3.8 <i>Cultural Interpretation</i> .....	60
<b>16 - EUROPEAN HERITAGE BY JOHN SINCLAIR</b> .....	<b>61</b>
16.1 EARLIEST RECORDED EUROPEAN CONTACT:.....	61
16.2 SANDY CAPE TELEPHONE LINE:.....	61
16.3 FORESTRY OPERATIONS:.....	61
16.4 FORESTRY IN NORTHERN FRASER ISLAND (KGARI):.....	62
16.5 MAPPING LAKE ALLOM:.....	62
16.6 LOGGING OPERATIONS MOVING NORTHWARDS:.....	62
16.7 ROADS & SHACKS EXTEND NORTH:.....	62
16.8 THE FRASER ISLAND NATIONAL PARK ESTABLISHED AND EXTENDED SOUTH IN STAGES:.....	63
16.9 THE LEGACY OF THE LOGGERS:.....	63
16.10 THE BOWARRADY SHANTY:.....	63
16.11 HISTORY OF FIRE:.....	63
16.12 CHANGES TO THE FOREST:.....	63
16.13 SCAR TREES:.....	64
16.14 SCAR TREES IN LAKE BOWARRADY AREA:.....	65
16.15 OTHER POST-CONTACT SCARS:.....	65

16.16 SHIELD TREES: .....	65
16.17 ARCH CLIFFS ACCESS POINT: .....	66
16.18 THE END OF FRASER ISLAND LOGGING: .....	66
16.19 THE DEMOLITION OF LOGGERS'S HUTS: .....	67
16.20 HUTS AS BASES FOR RESEARCHERS: .....	67
16.21 NETWORK OF LOGGING ROADS AND TRACKS: .....	67
16.22 THE TELECOM TRACK:.....	68
16.23 TELECOM ON BOWARRADY HILL: .....	68
16.24 THE WORALIE TRACK: .....	68
16.25 K'GARI:.....	68
16.26 THE 1990 FOREST PROTESTS: .....	68
16.27 QPWS WALKING TRACK STRATEGY: .....	69
<b>17 - REFERENCES .....</b>	<b>70</b>

## **TABLE OF FIGURES**

FIGURE 1 - DRAFT MAP (QPWS, 2001) PROPOSED WALK .....	7
FIGURE 2 - DRAFT MAP 2 (QPWS, 2001) GREAT WALK .....	11
FIGURE 3 - CONTOUR MAP (2011).....	12
FIGURE 4 - END OF GEORGE HADDOCK SECTION AT ARCH CLIFFS.....	32
FIGURE 5 - SECTION OF THE BOWARRADY TRACK THAT IS ALSO USED AS A MANAGEMENT ACCESS TO THE TELSTRA TOWER ON BOWARRADY HILL.....	39
FIGURE 6 - CULTURAL HERITAGE ASSESSMENT .....	39
FIGURE 7 - LAYOUT OF LIVE AND CAMERA TRAPS .....	49
FIGURE 9.....	56
FIGURE 8.....	56
FIGURE 10.....	56
FIGURE 11.....	57
FIGURE 12.....	57
FIGURE 14.....	57
FIGURE 13.....	57
FIGURE 15.....	57
FIGURE 16.....	57
FIGURE 18.....	58
FIGURE 17.....	58
FIGURE 20.....	58
FIGURE 19.....	58
FIGURE 21 - BLOCK 14, PREPARING A BLACKBUTT FOREST IN 1988 .....	64
FIGURE 22 - GUNYAH TREE .....	64
FIGURE 23 - SHIELD TREE.....	65
FIGURE 24 - SHIELD TREE WITH A SURVEY MARK INCISED WITH A STEEL AXE .....	66
FIGURE 25 - 1990 FOREST PROTESTS.....	69



## **List of Appendices**

- A -- Initial letter from NPAQ to Minister
- B -- Letter from the then Minister Andrew McNamara MP
- C -- Letter from the Minister, The Hon Kate Jones MP
- D -- Letter from Acting Assistant Director- General, QPWS, A Moody
- E -- Conceptual Shelter Design for George Haddock Track
- F -- Plant Species Recorded during the Field Survey
- G -- Plant Species Recorded at Selected Sites
- H -- Maps of Plant Communities and Location of Threatened Species  
along the George Haddock Track
- I -- Fauna Species Recorded from GSNP (incl Fraser Is)
- J -- Table 2 – Threatened and Migratory Fauna Species which will possibly occur at one or more  
of the proposed impact sites.

## **Executive Summary**

The National Parks Association of Queensland and the Fraser Island Defenders Organisation are proposing to build a 51 kilometre extension of the existing Fraser Island Great Walk.

These organizations are proposing to construct the track and associated infrastructure including shelters and toilets using volunteers, as a community project to honour the late George Haddock, who had a long connection with Fraser Island and was an exemplary volunteer in both administrative and practical capacities. They also believe that the walk will be a step towards a more sustainable visitation on Fraser Island.

The general route for this track follows a route first proposed by the Queensland Parks and Wildlife Service in 2001. The original proposal for the Fraser Island Great Walk was to run from Dilli Village to Dundubara, but the budget only allowed it to be built from Dilli Village as far as Happy Valley. This project will still allow Dundubara to be a terminus to the walk. This EIS proposes Arch Cliffs as a terminal, allowing hikers access to the walk from tourist boats in Harvey Bay.

This Environmental Impact Statement and Cultural Heritage Assessment has been the subject to careful consideration and deliberations by the proponents, who are intent on protecting the natural integrity of the Fraser Island World Heritage area.

The scope of the report addresses the original Great Walk proposal, its truncation and its subsequent proposed completion via this “George Haddock Track” extension.

The report discusses the parameters the proponents set for the environmental and physical design of the track. This was followed by the actual survey and subsequent recommendation of a best route, so as to minimise any environmental impacts. Recommendations were made for any infrastructure and signage required.

In so doing, detailed assessments were made of the flora and fauna that may be impacted along the route and also at the various locations of hiker’s shelter sheds. Impacts have been considered and recommendations made as to mitigation and maintenance.

In accordance with the “Duty of Care” provisions, specific attention has been given to Indigenous and European Cultural Heritage. Separate sections discuss these in detail.

## **1 - Introduction**

### **1.1 The Great Walks Project**

The previous Queensland Government had developed a series world-class walking tracks at various locations throughout Queensland. One of these was on Fraser Island, a National Park and World Heritage Area. The original concept by the Queensland Parks and Wildlife Department (QPWS) was of a bottom to top track, but it was truncated at Lake Garawongera, although an approximate route for the northern part to Lakes Bowarrady and Dundabara had been identified.

### **1.2 Objective of this Report**

The late George Haddock OAM was a member of both the NPAQ and FIDO. He had a strong connection with Fraser Island, the Environment movement and the Fraser Island World Heritage Community Advisory Committee. The body of the report elaborates further on this topic – see clause 2.1.

Upon his passing, a number of persons proposed that a suitable memorial be initiated. This ultimately took the form of completing the missing northern section of the Fraser Island Great Walk and naming it “The George Haddock Track” section of the Fraser Island Great Walk in his memory.

In July 2009 the Department and the then Minister gave conditional approval to this project and required an Environmental Impact Assessment Statement as part of the approval process - see clause 2.4

### **1.3 Introduction and Scope of the EIS Report**

#### ***1.3.1 Procedural Steps***

To carry out the necessary work to detail the proposal and the report, the following steps were deemed necessary;

- # Scope the departments’ proposed original route;
- # Conduct feasibility studies as to that route and any changes that were deemed necessary to use existing roads, old logging tracks and trails:
- # Proceed to finalise the actual design of the route and any facilities required to support its use:
- # Examine any relevant Legislation for impacts or additional requirements necessary for approval of the project:

- # Consult with any interested parties, such as the Butchulla People associated with Fraser Island and staff of the QPWS, to meet their requirements.

### 1.3.2 Environmental Obligations

In so doing, the proponents were cognisant of ;

- \* Any obligations to protect, conserve now and for all future generations and minimise any adverse impacts to the natural and cultural heritage values of the Protected Areas of the Nature Conservation Act, under the Cardinal Principal; i.e,

*“To provide to the greatest possible extent, for the permanent preservation of the areas natural condition and the protection of the areas cultural resources and values;*

*Present the areas natural and cultural resources and their values; and*

*Ensure that the only use of the area is nature based and ecologically sustainable.”*

- \* Providing any public information on the need for and the likely effects of the proposal;

- \* Providing information for the mitigation of any detrimental effects, enhancement of environmental values and for preparation of Management Plans.

In so doing, there was always recognition of the Principal stated in the Environmental Protection Act;

*“To protect Queensland’s environment while allowing for development that improves the total quality of life, both now and in the future in a way that maintains the ecological processes on which life depends.”*

## **2 - Project Description**

### **2.1 The late George Haddock OAM**

The late George Haddock OAM had a strong connection with Fraser Island. Although he made voluntary contributions to many community organizations, his greatest commitment was to the natural environment, which he loved and explored for much of his 78 years. George was an indefatigable worker for the extension and better management of Queensland National Parks, indeed the whole of the Protected Area Estate.

George Haddock was an outstanding volunteer. He made many contributions in many ways, from assisting in scientific studies in the Gondwana World Heritage Rainforests to the Outback arid lands and from track building in national parks to spending weeks weeding on Fraser Island. In addition, he volunteered his very capable services to administration, not just to conservation organizations but to other community organizations, particularly the ambulance service, for which he was honoured with an OAM.

As well as being a member of the NPAQ, he served as a Councillor and in all Executive positions of President, Secretary and Treasurer for almost a quarter of a century, until his untimely death. He was a member of the Fraser Island World Heritage Community Advisory Committee for over a decade.

Hence this project aims at honouring one of the longest serving office bearers of NPAQ and his devotion to the environment and Fraser Island.

### **2.2 The Proponents**

The NPAQ is a non-government, not-for-profit environmental organization, that was founded in April 1930 and has worked cooperatively with the Queensland Government since to extend and to improve the management of the state's National Park Estate. During the first sixty to seventy years of the NPAQ's existence, a great proportion of the existing National Park Estate is as a result of direct action, proposals and suggestions by the NPAQ.

For more than 41 years the FIDO, another non-government and not-for-profit group, has been pursuing its objective of ensuring the wisest use of Fraser Island's natural resources and the preservation of the environment in as natural a condition as possible.

Both organizations have a long proud association with Fraser Island and outdoor recreation in a natural environment and contributing to voluntary projects on the island and elsewhere.

### **2.3 The Proponents Objectives**

The proponents' objectives are to have a beneficial outcome for Fraser Island and to society as a whole.

The proposal is to deliver this walking track extension and infrastructure with the assistance and input of volunteers. Indeed this Environmental Impact Statement is exclusively the product of voluntary inputs. Once the project has obtained all of the requisite approvals and the necessary

finance, track work and construction can commence. The proponents plan to actively engage more of their members and others from the community to advance the project.

- ***For the volunteers***, the project aims give more people some involvement and a stronger proprietorial interest in protecting the natural values of Fraser Island.
- ***For the organizations***, the project will provide more opportunities to engage member participation in meaningful work, actively contributing to improved environmental management.
- ***For Fraser Island management***, the project will make a positive contribution to changing the patterns of recreation on Fraser Island, to make visitation more sustainable and enjoyable, by providing more direct exposure to the natural environment than is possible with vehicle-based recreation. To this extent, it separates people from vehicle based recreation with its consequent damage to the environment. It will be making a significant contribution to the overall environmental impact on Fraser Island.
- ***For the community***, as a whole the project has many economic benefits through increased use of this track that will attract walkers who may otherwise be tempted to undertake more famous walks in other places; It also should make a contribution to public health by encouraging more walking as a desirable exercise.
- ***For the Butchulla People***, the project aims to give them a special feeling of ownership of the project through participation, as well as helping them to identify more of their cultural heritage

## 2.4 Conditional Approvals

Soon after the death of George Haddock in March 2008, a proposal was put to the Queensland Environment Minister to honour his memory with a significant volunteer project. The proposal to extend the existing Fraser Island Great Walk was discussed with the then Executive Director of the Queensland Parks and Wildlife Service, Alan Feely, and the proposal was formally submitted to the then Environment Minister, the Hon Andrew McNamara, on 8<sup>th</sup> May 2008.

See Appendices A and B for a copy of that letter and his reply.

In July 2009, the then Queensland Environment Minister, the Hon. Kate Jones, gave conditional approval for the FIDO and the NPAQ to proceed with the project that had been jointly proposed. This was to extend the Fraser Island Great Walk north from Lake Garawongera to Lake Bowarrady and Arch Cliffs, subject to satisfying Cultural Heritage Assessment and Environmental Impact Assessments to be undertaken by the proponents to meet the requisite standard.

(See Appendix C)

The details of the conditional approval were detailed by the then Acting Director General of the QPWS, Annie Moody, in September 2009. (See Appendix D)

This Environmental Impact Assessment Report is to satisfy the terms of the Conditional Approval.

## **3 - The Route Proposed**

### **3.1 The Chosen Route has the Following Features**

- ✓ *It is aesthetically very attractive, passing close to five of Fraser Island's unique perched dune lakes - Hidden Lake, Lake Coomboo, Lake Freshwater, Lake Allom and Lake Bowarrady. Four of these lakes will only be accessible to hikers. The route also passes through some of the island's most pristine and spectacular old growth rainforest.*
  
- ✓ *The route closely follows the route originally proposed for the Fraser Island Great Walk before that project was truncated for budgetary reasons;*
  
- ✓ *Because there is already a designated walking track from Dundubara to Lake Bowarrady, the proposed extension will link with that track, but offer an alternative option to terminate or start at Arch Cliffs.*
  
- ✓ *The proposed track will have a total length of 51 kms, of which 40.1 kms follow pre-existing roads or tracks. These sections of former tracks will be linked by 10.9 kms of new track to be constructed according to Australian Standard AS2156.1 and AS2156.2-2001.*
  
- ✓ *There is only one stream to be crossed, Bowarrady Creek, and the crossing coincides with an existing recently replaced road bridge.*

### **3.2 The Original Great Walk**

#### **3.2.1 The Fraser Island Great Walk:**

In 2001, when the QPWS first released the Draft Management Plan for the Walking Track System on Fraser Island, entitled "*On Shifting Sand*", this was in part the outcome of the Arch Cliffs consultations the previous August. A route was originally proposed to go from Dilli Village to Dundubara, as a feeder route to the Fraser Island Great Walk. FIDO supported this proposal.

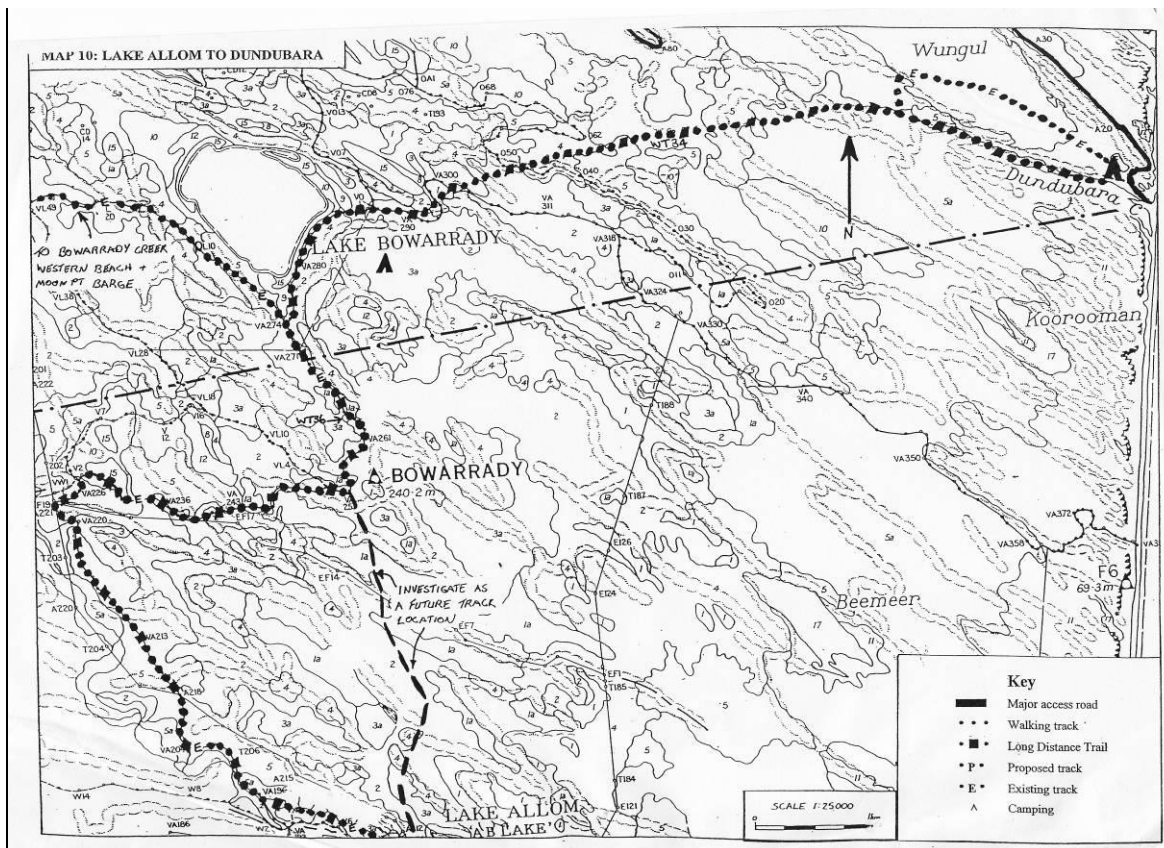


Figure 1 - Draft map (QPWS, 2001) proposed walk

The 2001 map above of the northern section of the proposed Great Walk, drafted by the QPWS, clearly shows that Arch Cliffs and Dundubara were seen as alternative terminuses. The route proposed for the George Haddock Track closely follows that concept plan.

### 3.2.2 Arch Cliffs Access Point:

Arch Cliffs beach is an access point for safaris, to unload to vehicles that then traversed the island on the Bowarrady Track, before heading north to Sandy Cape and then ultimately leaving the island via Ungowa.

### 3.2.3 Truncating the Great Walk:

Regrettably when the reality came, there were insufficient funds available to proceed with a walk all the way from Dilli Village to Dundubara. The project was curtailed to being a 90 kilometre walk meandering through the island from Dilli Village to Happy Valley, with feeder links from Eurong, Kingfisher Resort, Wabby Lakes and the Wangoolba Creek ferry.

While the plans for completing the walk all of the way through to Dundubara were not put into effect, concept plans had been drawn up for a route. There was by then, a walking track from Dundubara to Lake Bowarrady, but the Lake Bowarrady to Arch Cliffs proposed walk just languished.



### 3.3 The Preferred Route

As the current Fraser Island Great Walk extends from Dilli Village to Happy Valley and is complemented by a very good walk between Dilli Village and Hook Point, the proposed George Haddock Track is designed to extend the through-walk from Lake Garawongera to Lake Bowarrady. There is an existing designated QPWS walk linking Lake Bowarrady to Dundubara that was proposed in 2002 to be the northern terminus of the Great Walk. Since this is already a designated walking track, it is proposed to offer an alternative starting or end point by creating a new walking track to Arch Cliffs at the mouth of Bowarrady Creek.

Arch Cliffs introduces an element of Fraser Island that isn't available to the existing Fraser Island Great Walk and that is access to the open waters and sandy beaches of Fraser Island. Walkers can have the option of being dropped at Arch Cliffs by a tour boat, such as the "*MV Tasman Venture*" that regularly passes there on its way for whale watching or Sandy Cape tours. Alternatively, hikers have the option of making a day walk from Lake Bowarrady to Arch cliffs and back to the Lake Bowarrady shelter, before proceeding on to Dundubara or Lake Allom. The proponents and George Haddock have regularly done day walks from Arch Cliffs to Lake Bowarrady and back.

#### 3.3.1 Features of the George Haddock Track:

Apart from traversing some of the most pristine parts of the Fraser Island forests and passing close to five spectacular perched dune lakes, four of which are access-restricted to QPWS vehicles only, the George Haddock Track also helps encapsulate many critical elements of the history of Fraser Island since European contact. It also terminates near the Class 5 Wilderness in the northern part of the island.

#### 3.3.2 Design Features of the Track:

Once the 51 kilometre George Haddock Section is added to the existing Great Walk, and the Hook Point to Dilli Village-Hook Point track, it will extend the "K'gari" Track to a 160 kilometre traverse across Fraser Island's vast interior without going on any beaches. It will complement the 102 kilometre Cooloola Great Walk from Noosa to Rainbow Beach immediately to its south. It will pass beside 12 spectacular lakes and traverse spectacular heathlands and rainforest. See clause 5.2.

- Except for sharing the road bridge across Bowarrady Creek, the George Haddock Track route does not coincide with any roads used by the public.
- The route crosses only five roads used by motor vehicles. Three of those, the Lake Garawongera to Bogimbah road, the Yidney Scrub to Lake Garawongera Link road and the Awinya Road, are now used by an average of one or two vehicles a day. There is more traffic using the scenic route that incorporates Yidney Scrub and Lake Allom. The track will cross the Happy Valley-Moon Point Road in Yidney Scrub and the Woralie Track near Lake Allom.
- It needs to be noted that the route indicated, requires no elevated board walk sections, no lookouts, no bridges and avoids any steep sections that could require steps.

- Because 40.1 kms of the route uses pre-existing roads, some sections of these roads have slopes steeper than the preferred maximum 2% slope.
- To satisfy the cultural heritage concerns the route aims to avoid locating the track on side slopes that might require the benching of the track.
- The proponents will continue to engage the local Butchulla community to the fullest extent possible throughout the duration of the construction. This should avoid any accidental interference with anything of cultural significance. It is proposed that the local Butchulla provide a person or persons to inspect the site before any disturbance of the soil or removal of vegetation.
- Despite the steepness of some former roads, no part of the track will be so steep as to require steps.
- In the interest of efficient track construction and being able to provide track maintenance, it is proposed that the track should be wide enough to allow the passage of quad bikes. This facility will also be valuable in carrying out any search and rescue should that be required.
- Because old roads and tracks are used, the route requires no extensive removal of large trees on these 40.1 kms. However, it has been noted that many of these former roads have some quite dense regrowth of younger saplings that require removal.
- It will be necessary to remove some trees to make sufficient space to establish the camping shelters at Pine Hill, Lake Coomboo, Lake Allom and Lake Bowarrady. However, the orientation and precise siting of the structures can be manouvered to keep to a minimum the number of trees lost.

### **3.4 Criteria for Choosing the George Haddock Track Route.**

The route was selected on the basis of:

- (1) Capturing as many aesthetically interesting features of Fraser Island as possible in one walk;
- (2) Utilizing existing infrastructure where possible;
- (3) Utilizing pre-existing tracks as much as possible;
- (4) Providing as much variety of ecosystems as possible;
- (5) Selecting routes for the new sections (10.9 kms) that need to be constructed, that have comfortable gradients and no disturbance of the soil surface;

- (6) Avoiding the need to construct bridges and other structures requiring professional supervision, in the interests of public safety;
- (7) Avoiding environmentally sensitive areas where a walking track or walkers would have adverse impacts; and
- (8) Establishing easy stages for walkers carrying heavy packs.

### 3.5 Projected Usage.

The QPWS estimates that about 2,000 people annually use the existing Great Walk.

#### 3.5.1 Interstate comparisons

There are no estimates of the numbers using the Northern Territory's 223km long Larapinta Trail or the 1,000 kilometre Bibbulmun Track in the Western Australia. However more than 8000 walkers each year complete the Tasmania's 65 kilometre Overland Track each year. Most of these walkers complete the walk between October and April and few between May and September. The Tasmanian Parks Service limits the number of walkers to 60 per day at the peak of the season but they must all walk in the same direction from north to south.

The proponents anticipate that, when the George Haddock Track is added to the Fraser Island Great Walk, an overall 160 kilometre walk could draw about 10,000 annually, with an average of only 27 people setting out somewhere along the track each day. Being the remotest section, it is anticipated that the George Haddock Track will attract only half of the total number of people walking on Fraser Island— about 5,000.

The numbers that may end up using the track, though, are only speculative. However, there is a need in the planning to be able to anticipate possible numbers and to build a capacity to cater for it. Until the patterns of usage are established, it is not proposed to change the management from that applying to the existing Fraser Island Great Walk. Eventually it may be necessary to direct all people wishing to camp on the track to travel in the same direction and to book campsites ahead.

#### 3.5.2 Maximum levels of use

To determine the appropriate infrastructure for the 51 kilometre George Haddock Track, it has been necessary anticipate the maximum capacity that this is being designed for, recognizing that it may take some time before the maximum capacity is reached. Therefore the proponents have adopted the following limits:

- Maximum group size of 8;
- Maximum number of people at each camp site per night on the George Haddock Track is sixteen (16); and
- Maximum number of people on the walk at any one time is eighty (80).

Based on the campsite design capacity, it is anticipated that the numbers setting off each day will be limited to a maximum of 20 persons. However, this may have to be reviewed when the patterns of use are more clearly identified. For example, if 16 people set off on one day travelling north from Lake Garawongera and meet another group travelling in the opposite direction at an overnight George Haddock Track campsite, this might exceed the George Haddock Track camp capacity.

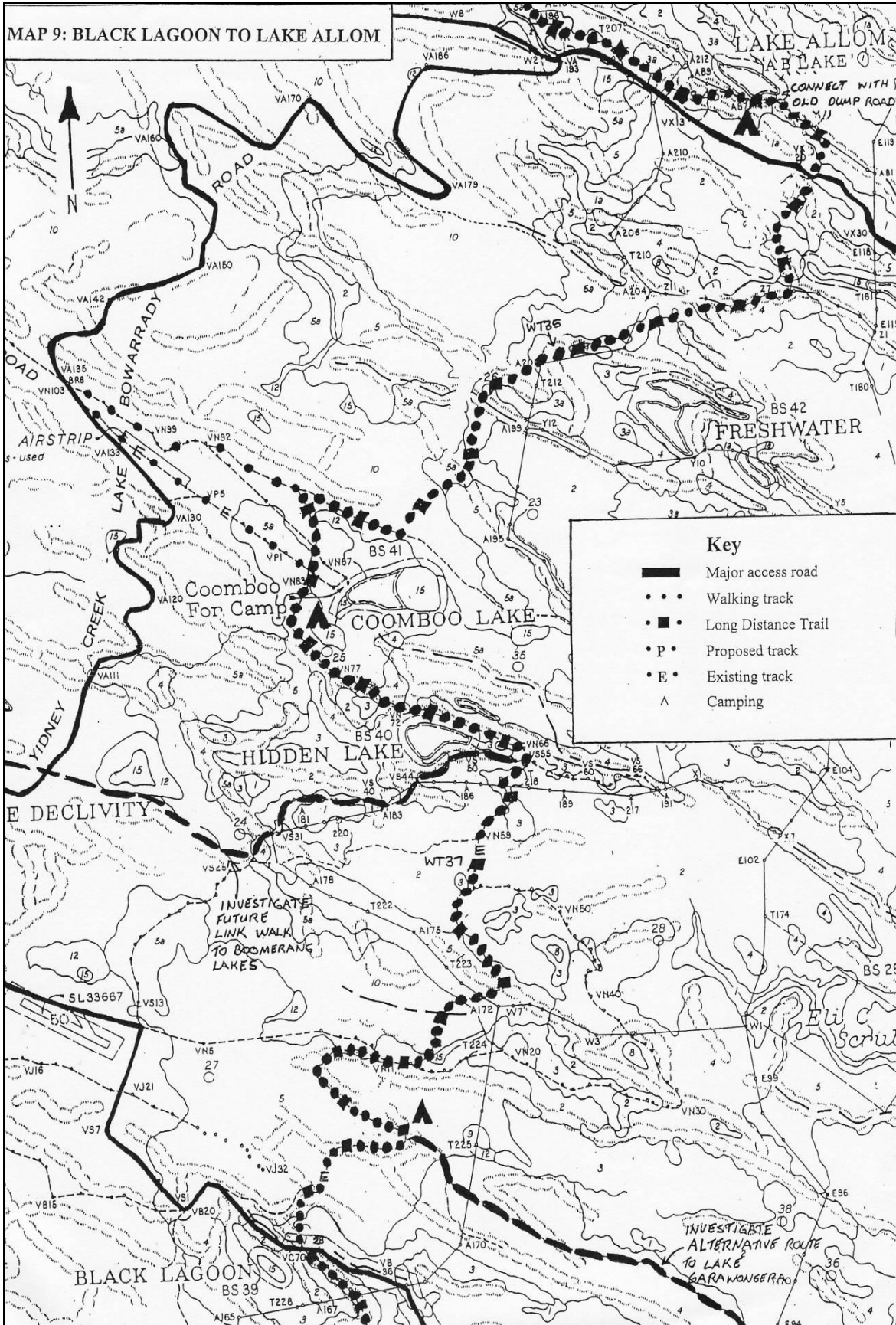


Figure 2 - Draft Map 2 (QWPS, 2001) Great Walk

This 2001 map shows the route then proposed by the QPWS for the Fraser Island Great Walk. It is similar in concept to the route chosen for the George Haddock Track except in the area of Yidney Scrub which now follows a similar course to that marked as an alternative route from Lake Garawongera

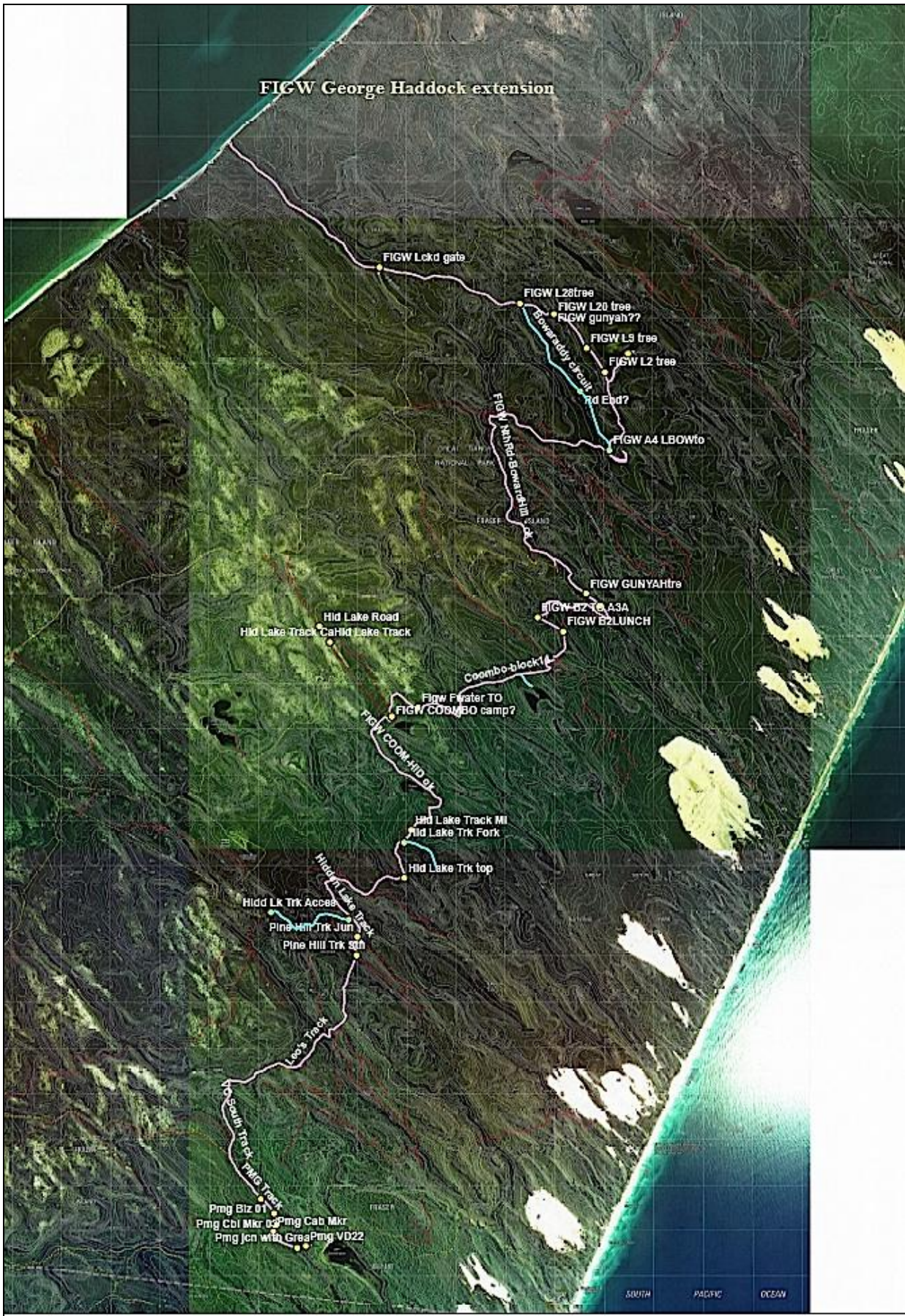


Figure 3 - Contour Map (2011)

This contour map prepared in 2011 shows the close correlation of the route then proposed in this assessment to the route proposed by the QPWS in “On Shifting Sands” for the Fraser Island Great Walk. Greg Neil.

## **4 - Consultations**

The Aboriginal and Cultural Heritage Act 1993 requires that Aboriginal Parties must be consulted when any activity poses a risk to cultural heritage.

The proponents have consulted with the traditional owners of K'gari (Fraser Island), the Butchulla people, from the time that the project was conceived. Consultations were conducted both informally and informally through the Fraser Island World Heritage Advisory Committees, as well as through meetings of the Fraser Island Natural Integrity Alliance (FINIA). Through these contacts there have been expressions not only of support, but of a desire that younger Butchulla people should be engaged in the development and building of the project. The Co-chair of the Fraser Island World Heritage Indigenous Advisory Committee, Malcolm Brown, actively participated in the weeklong survey to determine the route for the George Haddock Track. He nominated Patrick Joseph Gala (also known as Jo-Jo) to participate in the survey to assess the cultural values and assist in the Cultural Heritage Report by Dr Judy Powell.

The address for both Malcolm Burns and Joe Gala is 242 Scrub Hill Road, Dundowran Q, 4655.

Consultations with representatives of the QPWS began on the day of George Haddock's funeral with the then Executive Director Alan Feely and other officers. Discussions have continued since with QPWS staff in Brisbane, including Heath Rosen, Ross McLeod and Rebecca Williams, Acting Director Marine Parks. In the Great Sandy Region there has been close cooperation and collaboration involving field inspections with Regional Manager Ross Belcher and with Fraser Island Staff (John Stewart, Ranger in Charge), discussing the proposal and providing access to locked gates and roads, accessible only for management purposes, as well as access to QPWS barracks at Lake Coomboo.

The project has been also discussed with Environment Ministers McNamara and Jones and Lisa Collyer, Policy Advisor to the Minister for National Parks, Recreation, Sport and Racing, in June 2012.

In June 2012, Jill Farrell, then in Department of Environment and Resource Management, advised that no Aboriginal cultural heritage is currently recorded in the specific search area. Following that search, the proponents consulted with lawyers for the Native Title claimants, firstly Queensland South Native Title Service and in August, Just Us Lawyers, who advised that we were not required to prepare a Cultural Heritage Management Plan and drew our attention to our Duty of Care under the Act.

The community and other stakeholders have been consulted through the meetings and minutes of the Fraser Island World Heritage Advisory Committees and through the newsletter of the Fraser Island Defenders Organisation, MOONBI, that has been placed on the FIDO web site: [www.fido.org.au](http://www.fido.org.au).

## **5 - Route Details**

### **5.1 Field Surveys;**

During 2010-2011 volunteers representing FIDO, NPAQ, the Butchulla people, Queensland Bushwalkers and some scientific experts working in an honorary capacity as volunteers, carried out five field surveys on Fraser Island to:

- (1) define the preferred route to extend the Fraser Island Great Walk from Lake Garawongera to Arch Cliffs;
- (2) map and mark the preferred route and the site for proposed infrastructure; and
- (3) gather critical data and evidence to assess any potential environmental impacts and impact on the cultural heritage.

As a result of these on-ground surveys, conducted by walking the terrain and plotting positions, the table 1, para 5.3 below, describes the recommended route in detail and with descriptive comments.

### **5.2 Potential Impacts of the above Detailed Route;**

#### ***5.2.1 Potential Impacts***

Potential impacts from actual Construction of the George Haddock Track include:

- Potential disturbance of the cultural heritage through track construction;
- Potential impact on endangered or threatened plant species;
- Potential water erosion along the walking tracks;

#### ***5.2.2 Impact Mitigation and Management Recommendations***

- (1) **Oversight of the precise route and construction of 10.9 kilometres new track:** The proponents will ensure that there is a representative of the Butchulla as well as a competent botanist to determine the final route for the track, before any clearing or benching occurs. This is to ensure that no work will disturb or threaten sites of cultural significance or any threatened plant species.
- (2) **Benching:** Every effort will be made to select the final route that will minimize the need for benching of the tracks, while maintaining the objective of allowing no gradient on any new track to be greater than 5 degrees. However, some benching will be necessary for the safe operation of the quad bike. See clause 7.4.
- (3) **Final route determination:** As indicated for reasons of (a) cultural heritage, (b) threatened species, (c) erosion, (d) safety and (e) practicality, the final determination of the 10.9 kms of new track will be subject to further assessment before any work commences.

### 5.3 Route Sectional Profiles

Table 1 details the complete route, comprising five stages commencing at Lake Garawongera in the south, from camp site to camp site. Detailed navigational descriptions and construction elements for track sections are stated.

Legend: R = Old Road; U= Undisturbed Ground (new section of track); L= Total track section length.

Track Stage	R	U	L	Description & Comments (Traversing from South to North)
Lake Garawongera to Pine Hill Camp.	0.3	0.0	0.3	This section on the Southern end is a 14° decent shared with the steep Northern end of existing Great Walk. Track is from Great Walk Meeting Point 12 which is also VD28, at the Lake Garawongera end, to VD22, at junction with the VE1 road. <b>Vegetation is Satinay/Box forest at the Eastern end changing to tall mixed eucalypts at the Western end</b>
Total Dist = 11.1Km Old = 7.1Km New = 4.0Km	2.7	0.0	2.7	The track continues along the rest of a cable route. It is an easy walking track following existing disused blazed road between VD22 and VD1. VD1 is on the Happy Valley Road near a big Scrubby Gum and blaze 43G. it is essentially level. A marked PMG underground cable runs beside the road so care will be needed to ensure it is not damaged when clearing track. <b>Track is amongst mixed tall eucalypts and will be easy to clear.</b>
	0.0	0.5	0.5	This section is all new track. It has been named the Scribbly Gum track. At Southern end is a big Scribbly Gum which is near blaze 43G on the Happy Valley Road. Continuing North, after crossing the old Happy Valley Road, there is a pleasant short climb. from VD1 at Southern end to VC9/10. It has a short but steep section. <b>Initially track is through tall Blackbutt forest with cycads changing to mixed eucalypts as track climbs. After a moderate initial ascent it climbs on a 20° slope which may require zig zags.</b>
	1.0	0.0	1.0	This section is named VC Track. After climbing, it is easy walking on existing disused well defined old logging road which would require only moderate chain-saw clearing. Track is from VC9/10 at Southern, end to VC15. <b>Forest is tall mixed eucalypts.</b>
	0.0	0.4	0.4	This section of steep new track is named Burnt scrub track. This is a steep new track . It has a steep section VC15 at Southern end to VG23. Has a 20° descent and has different vegetation from the rest of the tracks. <b>Some zig zags may be required. Forest is open eucalyptus changing to Swamp Banksia and She-Oaks beside Yidney Creek.</b>
	1.7	0.0	1.7	This section of track track follows existing disused blazed level road from VG23 to VG35. VG35 is at junction with the GB logging road at GB1. SW section of this track is through low to medium mixed eucalypts and is covered with a thick layer of fallen she oaks. It is also infested with dodder. Fallen trees appear to be a result of



Track Stage	R	U	L	Description & Comments (Traversing from South to North)
				<p>storm damage. The track looks over attractive large-leaf banksia swamp. Track parallels the creek line and is at the base of a ridge. The Eastern 550 metres of the GPS log requires re-survey because the surveyors were unknowingly North of the road alignment. Road condition is good under the fallen trees and clearing would be labour intensive but not impossible.</p>
	1.3	0.0	1.3	<p>This section is existing disused blazed road from GB1 to GB14 (at junction with VC road between VC54/55). Slope ranging from 14° to 20°. Zig zagging not required and clearing will not be difficult. Begins in mixed eucalypts changing to taller ones. Pleasant walking in closed canopy. Carroll, then Satinay/Box forest at the top of the hill.</p>
	0.1	0.0	0.1	<p>This short almost level existing disused road is from GB14 on VC road to the start of the descent. The forest is tall Blackbutt providing semi-closed canopy. The Logging Road is now known to extend further than it was believed to be when the survey was initially done. It is now recommended that the walking track utilise more of this road before it turns back and down on the first zig zag where it become the Yidney Scrub South track. Clearing would not be difficult.</p>
	0.0	0.4	0.4	<p>This new track required down to VB46 on Old Happy Valley Road traverses a steep slope. There is parking room in the vicinity of VB46. The straiGeorge Haddock Track line descent from the ridge has a slope of about 18°. Requires moving to the East with one or more zig zags. It is believed to be in the area known as Beauty Spot 79. There is Satiny/Box/Kauri forest in the valley with Blackbutt and Carroll on the ridge.</p>
	0.0	2.7	2.7	<p>This section tarts at VB46 on the Happy Valley road and climbs steadily in a Northerly direction to the top of the ridge where there is a large flat area. Resurveyed in November but further reworking of route needed near northern end to shorten distance on the top where fallen trees will make clearing difficult. At southern end track must be moved in an Easterly direction away from the public road. Re-routing also required to the southern side of an attractive valley floor. Has interesting fungi near Southern end. Satiny/Box/Kauri forest in the valley with Blackbutt and Carroll on the ridge. There is an unacceptable amount of undergrowth at the Northern end. Solutions are to move the track west on to the slope or to reopen the disused road. Many fallen trees will make reopening the road difficult but not impossible. More survey work is required.</p>
Pine Hill Camp to Lake Coomboo	0.7	0.0	0.7	<p>This is an existing relatively level disused logging road cleared to 4WD standard in Nov 2010. Starts at Pine Hill camp site on the ridge at the northern end of Yidney Scrub North track and joins the existing QPWS Hidden lake walking track. This walk is interesting as it is virtually a monoculture of Blackbutt. It is a stunning</p>

Track Stage	R	U	L	Description & Comments (Traversing from South to North)
Camp. Totl Dist = 8.6Km Old = 8.6Km New = 0.0Km	7.9	0.0	7.9	<p>example of Forestry silviculture. Passes a couple of Forestry experimental plots.</p> <p>This is also the existing QPWS “Hidden Lake” walking track which follows a well formed road in semi-closed canopy and in parts, open Banksia plain. Track starts where the Pine Hill Track meets the QPWS track and follows the “Hidden Lake” track all the way to the proposed Campsite, in the vicinity of lake Coomboo. Although this section is an existing designated walking track on Fraser Island, it is presently overgrown except where it had recently been slashed by QPWS at the Northern end. Forest type is mixed tall eucalypts in south, passing through some saw-leaf Banksia, changing to Satinay/Box forest up to Hidden Lake. Then tall Blackbutt and mixed eucalypts nearing Lake Coomboo, with saw-leaf Banksia around the lake.</p> <p>NOTE: Although this stage of the George Haddock Track passes within a kilometre of the headwaters of Eli Creek, reputedly the most complex and richest rainforest on Fraser Island it is not currently proposed to extend a branch track to this feature.</p>
Lake Coomboo Camp to Lake Allom Camp Totl Dist = 9.3 Km Old = 6.0 New = 3.3Km	2.2	0.0	2.2	This section follows an old logging road connecting Coomboo Camp to top of ridge. It passes through banksia heathlands moving into scribbly gum forest near the top of the slope. Some clearing is needed near top of ridge.
	0.0	1.1	1.1	This new section designated the Giant Trees Track crosses a valley filled with large trees and an open forest floor. Some clearing is needed at South Western end but otherwise an attractive closed forest.
	0.0	0.6	0.6	The Connection Track passes through attractive closed forest at Southern end but thick clearing needed at Northern end.
	1.5	0.0	1.5	This track follows the route of a disused logging road. Very thick growth at Western end and some chainsaw work needed to clear some large logs at other locations.
	1.1	0.0	1.1	This section follows logging and snigging tracks at which point the track peters out.
	0.0	0.6	0.6	This new track is required to link the network of tracks radiating from the south to the tracks at a higher elevation coming down from the Woralie Road. This is a relatively steep rainforest covered slope.
	1.2	0.0	1.2	This tracks through relatively level ground with heavily logged rainforest to the Woralie Road.

Track Stage	R	U	L	Description & Comments (Traversing from South to North)
	0.0	1.0	1.0	<p>After crossing the road a new section of track is required through the rainforest and up a hill to the proposed Lake Allom Campground.</p> <p>NOTE: Although this stage of the George Haddock Track passes within a kilometre of Fraser Island's most pristine lakes (Freshwater) there are no current proposals to extend a branch track to these most attractive features.</p>
Lake Allom Camp to L. Bowarrady Camp	0.0	1.6	1.6	<p>From the Lake Allom campsite the new track follows generally west through closed forest and avoiding a very significant Aboriginal scar tree before linking up with the Dump road.</p>
Totl Dist = 11.1Km Old Dist = 9.5Km New Dist = 1.6Km	0.5	0.0	0.5	<p>Follows the former Dump Road to link up with the Bowarrady Track. This area marks one of the most demonstrable transitions from Dune System 4 to Dune System 5.</p>
	6.5	0.0	6.5	<p>The George Haddock Track here uses a management track that is little used by vehicles to gain access to the telecommunications Telstra Tower on the highest point of Fraser Island. This is a wide existing track through tall forest, mostly the closed forest with a few sections through schlerophyll forest particularly the southern part and adjacent to an ephemeral lake. The southern part runs parallel to Bowarrady Creek. This section ends a where the management road to the Telstra tower branches off.</p>
	2.7	0.0	2.7	<p>This last section of track between the Telstra Tower turn-off and the Lake Bowarrady campsite follows former Forestry Road through lovely rainforest particularly well endowed with massive hoop pines and diverse fungi.</p> <p>NOTE: The 0.7 kilometre deviation to the Telstra Tower is not a part of the proposed walk.</p>
Lake Bowarrady Camp to Arch Cliffs	3.8	0.0	3.8	<p>From the Bowarrady Camp this part of the track follows a former Forestry Road that is still maintained as a management road through closed forest of tall hoop pines and Satinays with some good views of the lake through the forest before being joined by another former Forestry road from the South. Much of this is down a steady slope.</p>
Totl Dist = 10.9Km Old Dist =	0.9	0.0	0.9	<p>There is little slope encountered between this road junction and the western beach and travels through mainly Dune System 6 with Banksia dominated heath vegetation.</p>
	0.0	2.0	2.0	<p>A separate walking track is proposed which runs roughly parallel to (but south of) the Awinya Road to the road</p>

<b>Track Stage</b>	<b>R</b>	<b>U</b>	<b>L</b>	<b>Description &amp; Comments (Traversing from South to North)</b>
8.9Km				bridge across Bowrarrydy Creek, to avoid walkers needing to use the road.
New Dist = 2.0Km	4.2	0.0	4.2	After leaving the Awinya Road, the track from the bridge to the beach at Arch Cliffs follows a former road, which is now maintained as a fire break. It is roughly parallel to Bowrarrydy Creek on the southern side.
<b>Totals</b>	<b>40.1</b>	<b>10.9</b>	<b>51.0</b>	



## **6 - Naming**

The name for the “George Haddock Track” section was accepted in 2009 following the death of George Haddock in 2008. Both the NPAQ and FIDO wanted to honour this admirable man, who voluntarily contributed so much to the National Park movement in Queensland and for Fraser Island in particular, all in an honorary capacity

The concept of a long distance walking track through the length of Fraser Island, from north to south, had been advocated by the FIDO since 1976. FIDO has always advocated that the **full-length** walk should be known as the **K’gari Track**, using the Butchulla name for Fraser Island, for the track itself.

Reference Clause 16.0 for History.

The use of individual track names is now widely used to identify them. For example, Western Australia has adopted the name the **Bibblumen Track** for that state’s long distance walk. The Northern Territory has adopted the name **Larapinta Track** for a great long distance walk though the West MacDonnell Ranges west of Alice Springs. Tasmania titles its most famous long-distance walks such as the **Overland Track** and the **Port Davey Track**. The great walks of New Zealand,

**Milford** and **Routeburn**, are famous worldwide. Queensland has one named and very popular long-distance walk, the **Thorsburne Track** on Hinchinbrook Island, but this is an exception rather than the rule. Most of Queensland’s long distance walks are simply known as “Great Walks”.

It is argued that naming a walk assists in identifying and popularizing the walk. The greater popularity of the Thorsburne Track in Queensland is some evidence for that. For this reason it is recommended that, when the George Haddock Track section is added, the whole through-walk should be known as the K’gari Track.

## **7 - Infrastructure**

### **7.1 General;**

To keep disturbance to a minimum, it is proposed to reopen as walking tracks, some 40.1 kilometres of former roads and logging tracks, all of which are currently closed for public use. It is also proposed to establish 10.9 kilometres of new tracks to link them. The proponents also propose to provide the following infrastructure outlined below:

There are compelling budgetary reasons for the proponents to keep the infrastructure associated with this track to a minimum. In addition, minimizing infrastructure also has significant environmental benefits.

The main infrastructure proposed, apart from the track work, is for four hikers shelters to be located approximately ten kilometres apart. Associated with three of these shelters will be new toilets.

### **7.2 Hikers Shelters General**

#### **7.2.1 Site selection**

The establishment of the hikers shelters will be a new innovation for Queensland walking tracks. Apart from the appeal of shelters for most hikers, they will reduce the environmental impacts by reducing the footprint of campers, provide a secure place for hikers and their equipment from dingoes and offer greater protection from weather and falling timber.

It is proposed to establish the four camping shelters rather than establishing hikers camp-grounds, as currently exist on the Fraser Island Great Walk. Four (4) shelters are proposed for the George Haddock Section —all between 10 and 13 kms apart — at Pine Hill (11.1 kilometers from Lake Garawongera, Lake Coomboo (8.6 kilometers from Pine Hill), Lake Allom (9.3 kilometers north of Lake Coomboo) and Lake Bowarrady (11.1 kilometers north of Lake Allom and 10.9 kilometers from Arch Cliffs). See clause 7.2.3.

These four sites have consideration in respect of the comfortable distance that walkers can undertake in a day, carrying a pack loaded with equipment and supplies. Although some walkers may prefer longer stages (up to 20 kms in a day), the proposal allows for more leisurely walking and more time to appreciate the environment. The shelters also offer emergency accommodation in the event of unanticipated bad weather or accidents.

See clause 7.2.3 regarding detail.

#### **7.2.2 Proposed construction**

These shelters would be enclosed dingo-proof shelters with sleeping and cooking benches. They would be along the lines of those used on the Bibbulmun track in Western Australia and the Larapinta Trail in the East Macdonnell Ranges. Veteran bushwalkers consulted have expressed a unanimous preference for these shelters. The justification for this is to lessen the environmental impact on the campsites:

- Hikers shelters have a much smaller footprint on the landscape than a fenced off dingo-proof 100m by 100m yard. To allow about 15 people to sleep would affect an area of about 15m by 20 metres

- It would be easier to maintain the hiker shelters as dingo and crow proof areas, than the alternative type of campground, even with dingo proof lockers.
- Hikers would be safer from falling branches in tall timber areas. A well-supported iron roof would provide better protection than the minimal protection that thin fabric provides.
- The roof could provide a water catchment for drinking water and that would be a great advantage for hikers. It is therefore proposed to install a tank to store an adequate supply of drinking water at each shelter. Providing alternative domestic water from ground or surface water could have more adverse impacts.
- The shelters would provide an under-cover sleeping bench, the edge of which would also serve as a seat, shelves for storing food and a bench to enable cooking to be done under cover in any weather.
- The option of not having to carry a tent would make this walk more attractive for hikers planning long distance walks, because of the extra food they need to carry in this remoter part of Fraser Island.
- The existence of such shelters would be most advantageous and help volunteers undertake the requisite walk for the track construction, maintenance and possible future rescue efforts.

The shelters have been designed as a University of Queensland School of Architecture project, to meet the building standards required by the local government and the Fraser Coast Regional Council.

See appendix E – Conceptual Shelter Shed Design

Having hikers shelters is a concept immensely popular with bushwalkers, particularly for an increasing percentage of bushwalkers, as it allows long distance walkers to lighten their loads and affords more comfort for hikers, especially in inclement weather. In addition;

- (a) Shelters will provide a catchment for rainwater tanks to provide a source of potable water along track;
- (b) The iron roof provides more safety for hikers from branch fall and enables camp sites to be established in areas that would not otherwise be available; and
- (c) The shelters will not only be more dingo safe, but will prevent other fauna such as kookaburras and crows becoming habituated from having humans constantly in their territories because they will have no access to food when it is being cooked inside.

The environmental footprints of shelters are significantly smaller than the footprints of the existing stand-alone hikers camps on Fraser Island, such as at Lake McKenzie (Boorangoora) and Lake Boomanjin.



### 7.2.3 Detailed site description

All the sites except for Pine Hill were selected on the basis of their appeal as a destination and for the amenity they offered. The precise location has not been finally determined and will be subject final approval after more joint site inspections with Queensland Parks and Wildlife Service officers.

**Pine Hill Site:** Pine Hill was chosen because it was a convenient mid-way staging point between Lake Garawongera and Lake Coomboo. The site chosen is a former log dump and it has been previously disturbed, although there has been some significant regrowth since the logging moved away. Pine Hill would be the last of the four hikers shelters to be built because it is a less attractive site and it is possible for fit walkers travel the 19.7 kilometres between Lake Coomboo and Lake Garawongera in a day. It is only 8.6 kms from Lake Coomboo. However, having a shelter there provides the option of a shelter if the weather is bad, have a drinking water supply and allow time for a more leisurely appreciation of the environment along the route, including features such as Yidney Scrub and Hidden Lake.

**Lake Coomboo Site:** There is some concern about the precise positioning of the Lake Coomboo hikers shelter, because of the prevalence of the threatened plant, *Acacia bauerii* that is widespread in the proposed area. Although a provisional site was nominated for purposes of the fauna survey that would avoid damage to any of these plants, several factors need to be taken into account before the final site is established;

1. Wild Rivers setback requirement: It is assumed that the hikers shelter would need to be set back at least 200 metres from the lake, although the existing QPWS barracks and EC toilet that long preceded the Wild Rivers declaration are within the 200 metre exclusion set back.
- 2 Separation from other users is desirable. Lake Coomboo attracts day visitors who have a walking track access from the Northern Road. It is also desirable to maintain some separation from the QPWS barracks.
- 3 Lake Coomboo is a perched lake and there needs to be soil drilling carried out to ensure that any drainage or run-off from the shelter and particularly the toilet, occurs outside the perched water table as the lake.
- 4 The environs of the site need careful survey to ensure that any rare plant species are unlikely to be impacted by the normal use of the site.

**Lake Allom Site:** The flexibility for the location of the shelters is best demonstrated by the siting of the proposed Lake Allom shelter. It was initially proposed to be located close enough to the day-use toilet block at Lake Allom, but out of site of day visitors. This would have involved constructing a shelter in a greenfield rainforest site. During the initial survey, this site was nominated because it was preferred to keep the hikers shelters at some distance from the former Forestry and QPWS barracks. When the proponents were advised that the Lake Allom barracks were to be demolished on safety grounds, it was decided to take advantage of this site, which has some existing infrastructure of a water supply and toilet in-situ and abandon the greenfield rainforest site. The more open barracks site allows potential utilization of the existing sewage

system and the water supply that were installed for the barracks. It also offers a much greater separation from day-use visitors and Lake Allom.

Because of access, the readiness of the site and the existing facilities, it is proposed that Lake Allom shelter would be the first one constructed. It could then serve as a base camp for volunteers' accommodation while working on the track construction and infrastructure at other sites.

**Lake Bowarrady Site:** To achieve a 200 metre set back away from the lake as required under the Wild Rivers declaration, the site of the Lake Bowarrady campers shelter has to be a greenfield site. Subject to the approval of the QPWS and confirmation that it complies with the Wild Rivers requirement, it is proposed to use the site identified and used by the fauna survey team. A prerequisite although, is to conclusively establish by drilling, that the shelter is not inside the same perched water table of the lake.

#### **7.2.4 Site location and servicing**

All four sites chosen for the camping shelters are accessible by management vehicles. This means that they can be easily serviced as required, although movement of vehicles along the access to the campsites should be minimized as far as possible. The ease of relative access also minimizes the site impacts during the construction stage.

#### **7.2.5 Equipment**

It is not proposed to provide any furniture or equipment in the shelters, because the walkers who may use this amenity will be advised to be self-sufficient with their own stoves, food and equipment. See Appendix E

It is proposed that, although there will be a water tank at the rear of the building to catch the roof runoff, there will be no reticulation of the water caught there, as this could encourage excessive and wasteful usage of water that is primarily being supplied for human consumption. If it was used for washing it could also create problems of waste disposal.

The location of the water tank and other features of the shelter are being critically assessed as part of the University of Queensland School of Architecture project.

### **7.3 Toilets:**

The provision of environmentally appropriate toilets potentially represents the most expensive items of this total project. Part of this cost may be offset by utilizing some existing infrastructure such as existing QPWS toilets. The buildings to house the toilets pose no particular problem as the proponents can use designs also used by the QPWS. These will be small basic structures appropriate for the site and the method of human waste disposal. The main issue focuses on the type of waste disposal system. It is also noted that, throughout New South Wales, the National Parks Service installs long-drop earth closets (ECs) in most remote and difficult to service locations, similar to those nominated below.

#### **7.3.1 Pine Hill:**

When the shelter is built at Pine Hill, it will be necessary to provide a toilet and being on a hill 130 metres high, it will be reliant exclusively on rainfall catchment from the hikers shelter and the toilet roof. This restricts the toilet options that can be provided, such as a

flush toilet. The QPWS barracks at Lake Coomboo uses an EC toilet. While not impossible, vehicle access to the Pine Hill site is difficult and to regularly maintain and pump out a toilet at that site would result in unnecessary impacts. Given that siting of the toilet is tens of metres above the regional water table, the preferred toilet option for Pine Hill is a long-drop EC.

### **7.3.2 Lake Coomboo:**

It is currently planned that with the permission of the QPWS, the hikers shelter will be able to use the existing toilet used for the QPWS barracks at Lake Coomboo.

### **7.3.3 Lake Allom:**

The condition of the septic system and the water supply system at the Lake Allom barracks is yet to be assessed. Although the same case could be made for the provision of a long-drop EC as for the sites described above, it is proposed to utilize the septic system and the existing facilities, if at all practical.

### **7.3.4 Lake Bowarrady:**

As indicated above the siting of the hikers' shelter at Lake Bowarrady will be subject to being sited outside the perched water table for the lake itself. The lake is approximately 120 metres above sea level and it is expected that the eventually approved site, more than 200 metres from the lake, and will be at a still higher elevation, making obtaining groundwater difficult and impractical. Despite its proximity to the lake, this site poses a similar situation to Pine Hill as far as the most practical type of toilet is concerned and again, given that siting of the toilet is anticipated to be tens of metres above the regional water table, the preferred toilet option for Bowarrady is a long-drop EC.

## **7.4 Track Work:**

For the 40.1 kms of former roads and tracks, the only work involved in track construction will be clearing of regrowth on those sections of track that have become overgrown since last used by vehicles. There will be no change to the gradient or benching, just track clearing. In some instances, such as the extension of the Northern Road to Lake Bowarrady, this is used as a management road to access the Telstra relay station on Bowarrady Hill. Other parts of the route such as sections between Lake Bowarrady and Arch Cliffs are used by QPWS for fire management and little clearing is required.

The most sensitive problem is with the precise location and construction of the 10.9 kilometres of new sections of track highlighted in Table 1, clause 5.3. Because the pre-existing roads mainly avoided the steeper gradients, most of the sections of new track have to confront some quite steep slopes between former vehicular tracks at both the top and bottom of the slopes. To avoid too steep a gradient that would result in severe water erosion along the track, it is necessary that most of the new tracks would have to maintain a gradient of less than 5 degrees by ascending or descending across the slopes.

This raises the issue of benching and the possible impact on the cultural heritage through ground disturbance. This issue is addressed in Section 15 on Cultural Heritage.

To separate walkers from a road used by the public to access Awinya Creek east of the Bowarrady Creek bridge, it is necessary to create 2 kilometres of new track. If this road had been closed as was

proposed under the 1994 Great Sandy Region Management Plan, this section of new track would not now be required.

However, there is a great prevalence of the threatened species *Acacia bauerii* and it is important that these be located and identified and the track diverted to avoid these species. One objective for the track is that, for safety and rescue purposes, the track should be able to be travelled by a Quad bike for management purposes in its totality. It is also proposed to use a Quad bike and trailer for construction and maintenance. This means that the track needs to avoid relying on steps to tackle steeper slopes. Currently, the main through route of the Fraser Island Great Walk can be travelled, if required, by Quad bike.

Some circumstances have changed since the original survey work identified a site in the rainforest at Lake Allom as the location of the proposed shelter. Since then the proponents have been advised that the site of the current Lake Allom barracks will be available and this is a preferred site. However, it means some adjustment of the track route will be required to direct walkers to the site of the shelter. It is anticipated that, while marginally extending the length of the walk, the rerouting should not result in any greater length of new work required.

The exact route of this new track, like all of the other new tracks, must be agreed on by a botanist and a representative of the Butchulla People, so as not to pose any threat to vulnerable species or cultural values.

## **8 - Waste Management**

### **8.1 Construction waste**

#### ***8.1.1 Description***

The bulk of construction materials for the track and infrastructure will be sourced locally. It is hoped to be able to use recycled timber from the demolition of the Lake Allom barracks. However, there will be a need to import construction materials for the hikers shelters, toilet systems, buildings, water tanks and the tank stands.

#### ***8.1.2 Potential impacts***

Potential impacts from construction waste on the George Haddock Track might include:

- Reduced remote area aesthetics due to the dumping of construction materials;
- Obvious vehicle use of access tracks during the construction stage;
- Some vegetation will be cleared as part of track construction.

#### ***8.1.3 Impact mitigation and management recommendations***

The following measures are recommended to reduce the impacts from construction waste on the World Heritage Area of Fraser Island and specifically on the George Haddock Track extension from Lake Garawongera.

- Limit the amounts of construction materials that need to be transported into the construction sites. The imperatives of small budget voluntary conservation bodies minimizing costs will ensure that there is minimum waste;
- Construction will be carried out by teams of volunteers, who have to provide transport for personnel and construction material to the site. Those teams will have the capacity to promptly remove any construction waste as the teams leave the sites;
- Monitor the campsites and track for any evidence of disturbance following construction. Continue monitoring to evaluate the effectiveness of management strategies during the first five years following completion of construction;
- Ensure adherence to the Australian Standards for Walking Tracks (AS2156 Parts 1 and 2, 2001);
- Recycle as much of the removed vegetation as possible into the track construction, to help reduce any erosion and need for ground disturbance.
- All elements of the natural fabric of the settings should be protected to maximise the social and environmental qualities of the walk;

## 8.2 Toilet Waste

### 8.2.1 Description

There are four campsites which require permanent toilets along the route of the proposed George Haddock Track. These are:

- **Pine Hill**, north of Lake Garawongera, where there is no facility.
- **Lake Coomboo**, where there is an existing long drop toilet.
- **Lake Allom**, where there is a flushing septic toilet facility associated with an old ranger camp building, scheduled to be demolished. Provisional permission has been given to utilise this infrastructure after the building has been demolished. It is a flush toilet facility. Water for flushing will continue to be available at the site.
- **Lake Bowarrady**, where there is no facility.

The potential usage of the proposed George Haddock Track is, based on the usage experienced on the Fraser Island Great Walk, of the order of 2000 persons per annum. This represents something less than 5.5 persons per day or 40 persons per week. Because the usage of the track is anticipated to increase, it is proposed to develop toilets with the capacity to met the needs of 16 people, the capacity of the proposed shelters.

The Great Sandy Region Management Plan 1994 - 2010 indicates that no pit toilets exist on the Island. This is not correct. There is at least one EC at Lake Coomboo.

The plan seeks to ensure that there is no contamination of the groundwater by any toilet waste. With the low numbers anticipated on this track, it is considered that a pit toilet could achieve this standard, provided the ground water level is well below the storage pit. The New South Wales QPWS experience is that long drop toilets can achieve the desired result in a low usage situation. It is proposed to utilise long drop toilets at the Pine Hill and Lake Bowarrady sites where there are no existing facilities. Providing vehicle access to service alternative types of toilets at either of these sites will have some undesirable impacts, incompatible with the remote area zoning.

To ensure that contamination of the groundwater is avoided it is proposed that the proposed toilet site will be core drilled prior to any other work proceeding to confirm the depth to ground water and confirm the suitability for a long drop system.

If the long-drop EC is approved, Ross Belcher, Manager Great Sandy, has agreed to provide a concrete pipe support for the hole and a tractor and auger to drill the hole. Discharge to ground at campsites on the Great Walk is not allowed.

## **8.2.2 Potential impacts**

Provision of formal toilets at the four campsites would reduce the potential impacts from toilet waste along the George Haddock Track and around the campsites, viz:

- Reducing remote area aesthetics through inappropriate toileting practices;
- Discouraging the formation of unofficial toileting areas;
- Preventing reduction of water quality as a result of inappropriate toileting practices;
- Avoiding increased nitrification in high use areas;
- Avoiding build up of non-degradable or slowly degradable toiletry products.

## **8.2.3 Impact mitigation and management recommendations**

The following measures are recommended to reduce the impacts from toilet waste on the values of the World Heritage Area of Fraser Island, specifically, the George Haddock Great Walk extension from Lake Garawongera:

- Education/interpretative materials to be produced to promote low impact bushwalking;
- Continue monitoring campsites to capture impact trends and evaluate the effectiveness of management strategies by establishing door counters on toilets along the proposed route;
- Provide sufficient resources to maintain infrastructure on a regular basis, including regular removal of toilet waste where necessary to avoid overflow situations;
- Introduce a systematic procedure for measuring changes to track and camping areas and visitor usage conditions.

## **8.3 General Waste**

### **8.3.1 Description**

For this report, general waste has been identified as the waste materials generated by walkers and includes food and beverage packaging. Most experienced bushwalkers have an excellent ethos towards removal of rubbish. However, it only takes a few careless individuals to leave their rubbish behind, to reduce the remote area experience of the George Haddock Track. It must be a

requirement that all walkers “must carry out what they carry in”, including all packaging and scraps.

### ***8.3.2 Potential Impacts***

Potential impacts from general waste on the proposed George Haddock Track Great Walk extension might include:

- Reducing the amenity of the remote wilderness experience
- Causing native wildlife to become habituated to the campsite.

### ***8.3.3 Impact Mitigation and Management Recommendations***

The following measures are recommended to reduce impacts for general waste on the values of the proposed George Haddock Track:

- Education/interpretation materials to be produced to promote low impact bushwalking;
- Prompt removal of waste material that may encourage the formation of unofficial deposit areas.



## **9 - Signage and Interpretation:**

### **9.1 Signage Along The Track:**

It is proposed to limit the signage along the track to navigational aids only and these will conform to the standards used by the QPWS on other parts of the Fraser Island Great Walk. It is also proposed to install star-picket markers at 2 km spaces to assist in distance compilation while walking.

### **9.2 Interpretation in the Shelters:**

The proponents propose to place most of the interpretive panels inside the hikers shelters where they will be better protected from the elements and also be in a place where the walkers can read this more informative on-site interpretation at leisure. These will also include the proposed Hikers Code.

### **9.3 Guide Brochure:**

It is proposed to place this Environmental Impact Statement on the proponent's respective web sites, as well as be a downloadable guide to the George Haddock Track, to help hikers have a better understanding of the geomorphology and ecology of Fraser Island. These guide notes may have references linked to numbered pegs along the route, to enable the walkers to gain a better appreciation of the Fraser Island Lake System. Five of those lakes mentioned in the guide notes, Hidden, Coomboo, Freshwater, Allom and Lake Bowarrady, are also features of the George Haddock Track, with campsites being located in the proximity to Lake Coomboo, Lake Allom and Lake Bowarrady. Each of these campsites is proposed to be located more than 200 metres back from the respective lakes and will not be visible from the lakes or their immediate surrounds.



Figure 4 - End of George Haddock Section at Arch Cliffs

## **10 - Legislative Approvals**

### **10.1 General**

This section summarises the process that needs to be followed to obtain statutory and other approvals for the construction of a 51 km extension of the Fraser Island Great Walk.

### **10.2 Native Title Act 1993**

Native Title is the communal group or individual rights and interests of the indigenous people of Australia in relation to their lands and associated waters, as recognised by the common law of Australia and the *Native Title Act 1993*. Native title will only exist in relation to a particular area of land if the indigenous people in question have maintained a continuing connection to their traditional land and their native title rights and interests have not been extinguished by a grant of tenure or use of land by the Crown or a third party.

The area of the George Haddock Track is of interest to the Butchulla People, (refer Cultural Heritage Section 15).

Native Title Applicants representing the Butchulla People, include: Cepha Roma, Peter Martin, Sandra Page, Lurline Lillian Burke, Jan Williams, Kate Doolan, Annette Broome, Shereene Currie and Joan Brown.

Where Native Title has not been extinguished by a previous action, a Native Title Notification process for the propose works is usually required. Consideration must be given to any comments received in relation to this notification before any works can commence which may affect Native Title.

### **10.3 Cultural Heritage Act 2003**

The *Cultural Heritage Act 2003* recognises and protects Aboriginal and Torres Strait Island cultural heritage and establishes workable processes for dealing with cultural heritage matters. Those undertaking activities in an area must ensure that they meet the cultural heritage duty of care by complying with the Duty of Care Guidelines defined in the Act, or by entering into an agreement with the Aboriginal or Torres Strait Islander party of the area.

The Duty of Care provisions (Section 28 of the Act) calls for a precautionary approach, requiring that due diligence and reasonable precautions are applied before undertaking any activity which may harm Aboriginal Cultural Heritage.

In order to fulfil their duty of care, the NPAQ and FIDO Officers have ensured that, where-ever possible, the walking track and camping shelters are well away from all known, new or previously

unrecorded Aboriginal cultural heritage sites. The proponents will continue to observe this Duty of Care throughout the assessment and will continue to do so when the project is approved to proceed.

The Fraser Island World Heritage Committees have urged that a Cultural Heritage Management Plan (CHMP) be done for the whole of Fraser Island. The proponents fully support this and are prepared to assist tin this development. However, the scope of this proposal extends much further than just the George Haddock Track and its immediate environs.

## 10.4 Nature Conservation Act 1992

The George Haddock Track extension meets the requirements of s.17 of the Nature Conservation Act 1992.

## 10.5 Queensland Heritage Act 1992

No historical places have been identified in the conduct of this Environmental Impact Study so the provisions of the Act should allow the project to proceed.

## 10.6 Environmental Protection Act 1991 and Integrated Planning Act 1997

The *Environmental Protection Act 1994* is the legislative basis for the protection of the environment in Queensland. Environmental authority is required under the Act for all environmentally relevant activities prescribed by the *Environmental Protection Regulation Act 1998*.

The *Integrated Planning Act 1977* is a framework to integrate planning and development assessment in Queensland; including activities triggered under the *Environmental Protection Act 1994*.

A material change of use of premises for an environmentally relevant activity under the Environmental Protection Regulation 1998 requires development approval under the *Integrated Planning Act 1997* unless a code of environmental compliance has been made for it under regulation.

The Fraser Island George Haddock Track extension does not require any additional approvals under either the Environmental Protection Act 1994 or the *Integrated Planning Act 1997*.

Infrastructure developments such as toilets and water collection shelters are considered as minor and the track and camp design, location and construction are such that they will be of minimal environmental impact.

## 10.7 Wild Rivers and other Legislation Amendment Act 2007 - Fraser wild river Declaration 2007

The Fraser Island Wild River Area is cited as the Fraser wild river Declaration 2007 and is applicable to the area traversed by the George Haddock Track. Only one of the declared Wild Rivers, Bowarrady Creek, is relevant to for purposes of the Act. The track runs parallel and close to Bowarrady Creek for over five (5) kilometres particularly the 4.2 kms from the junction with the

Awinya road to Arch Cliffs. However in this section, the George Haddock Track utilizes the exact route of a former road that is now used also as a firebreak.

There are no major tributaries for the Wild Rivers area. However, of the Fraser Island Lake System, which is part of the Wild Rivers Declaration, five of those lakes, Hidden, Coomboo, Freshwater, Allom and Lake Bowarrady, are also features of the George Haddock Track

The special features shown on the map accompanying the Declaration, have strong hydrologic connections to the river system and play a significant role in maintaining the natural values.

Most water requirements will be provided by rainfall caught on the roof of the proposed shelter and stored in a rain water tank.

Acceptable solutions for vegetation clearing activities as described in part 12 of the Wild Rivers Code are set out below:

Minimum setback distances are:-

- (a) stream order 5 or greater - 50 meters;
- (b) stream order 3 or 4 – 25 meters and
- (c) stream order 1 or 2 – 10 meters.

No vegetation clearance is proposed in the wild rivers area.

The minimum setback distance for acceptable solutions for part 12, other than section W of the Wild Rivers code, is 200 meters. The design considers this and other requirements.

“The maximum slope values for acceptable solutions for sections E, P, R and W for the Wild Rivers Code are:

- (a) for section P –
  - (i) very stable soils is 30% ;
  - (ii) stable soils is 20% ;
  - (iii) unstable soils 15% ;
  - (iv) very unstable soils is 10%.
  
- (b) for section R –
  - (i) very stable soils is 15% ;
  - (ii) stable soils is 12% ;
  - (iii) unstable soils is 8% ;
  - (iv) very unstable soils is 5%.
  
- (c) for section W –
  - (i) very stable soils is 20% ;
  - (ii) stable soils is 15% ;
  - (iii) unstable soils is 12% ;
  - (iv) very unstable soils is 8%. “

The soils throughout the length of the George Haddock Track are recognized as “very unstable”. The Wild Rivers Act prescribes the maximum slope values for acceptable solutions . For Section P, the maximum acceptable slope is 10%. For Section R it is 5% and for Section W it is 8%.

None of the the 10.1 kms of new track that is to be constructed, to link previous vehicular roads, will have a gradient greater than 5%. The aim is to ensure that, as far as possible, the new track will have a less than 2% gradient. This will comply with the Wild River Declaration.

## **10.8 Other State Government Approvals**

The George Haddock Track extension of the K’Gari Great Walk does not require any additional state government approvals.

## **10.9 Local Government Approval**

The George Haddock Track extension does not require any additional Local Government approvals.

## **11 - Park Management Plans**

Under the Great Sandy Region Management Plan, the proposed Great Walk extension covers areas classified as semi-remote and remote. These zones provide areas with a dual purpose of providing an experience of remoteness for visitors and protecting the Park's natural and cultural resources. To achieve this balance, the public access is by foot. Access by vehicles is limited to management staff and other authorised personnel, (eg. emergency services), and then only where no other option is feasible. All visitors wishing to use the Remote and Semi-Remote areas (Natural Zones), as a safety measure, are required to register their intentions with the Park staff. The number of persons and the length of stay may also be regulated in particular areas.

Overnight camping by those who wish to backpack will normally be allowed in this zone, provided camping permits are obtained. Because open fires are prohibited on Fraser Island except in designated sites, there will be no fires lit along the George Haddock Track. Minimal impact bushwalking techniques will be encouraged. Particular sites will be specified in the camping permits, namely, Pine Hill, Lake Coomboo, Lake Allom, and Lake Bowarrady, Arch Cliffs or Dundabarra, to ensure that use remains within sustainable limits and that visitor experiences are maintained.

Some visitor facilities are provided at all locations except Arch Cliffs. Trial markers may be used to aid visitor safety and environmental protection.

Walking tracks and associated infrastructure will be designed and constructed to meet the following standards;

- AS2156.1 - 2001 Australian Standard Walking Tracks Part1: Classification and signage;
- AS 2156.2 – 2001 Australian Standard Walking Tracks Part 2:Infrastructure design;

Guidelines Protecting Indigenous Cultural Heritage Sites at Fraser Island;

- QPWS Landscape Classification System (QPWS 2003 and 2004);
- QPWS Infrastructure Delivery Standard Operational Procedures and Policy.

## **12 - Landscape, Geology, Soils and Hydrology**

### **12.1 Geomorphology**

Fraser Island is composed almost entirely of aeolian siliceous sand. The sand has been derived by erosion of ancient sandstones in highland areas to the south, particularly the Sydney sandstones of the Blue Mountains. It has been moved northwards from its origin by littoral transportation. The sand extends 30-60 metres below the current sea level. The dune systems of Fraser Island reflect the Quarternary sea level fluctuations that have resulted in episodic depositions of new invasions of sand that overlie older layers, to an increasingly greater degree on the eastern side of the island.

While the deposition of new younger sand continued through the Holocene, the area traversed by the George Haddock Track covers mainly older depositions.

The soils of the older dunes in Dune Systems 5 and 6 are some of the deepest podzol soils observed in the world, from observations of the depth of the A horizon at Arch Cliffs.

### **12.2 Landscape and Amenity**

The natural landscape of Fraser Island is still relatively intact with most of the anthropogenic modifications to the environment being located south of the proposed walk.

Amenity: The route chosen is deemed to be most attractive for walkers because:

- a) The George Haddock Track passes close to five of Fraser Island's unique perched dune lakes — Hidden Lake, Lake Coomboo, Lake Freshwater, Lake Allom and Lake Bowarrady. Four of these lakes are accessible to hikers. Only Lake Allom can be reached by the public using a vehicle.
- b) The route also passes through some of the island's most pristine landscape, including what has been dubbed as a "Cathedral Forest" a spectacular old growth rainforest near Freshwater Lakes. It also passes close to the headwaters of Eli Creek, an area considered to contain the best and most complex rainforest on Fraser Island.
- c) The track deliberately meanders in and out of the Island's tall forests, to enable the walkers to experience the full diversity of the island's vegetation patterns and to enjoy the spectacular season displays of wildflowers that occur in the heathlands.
- d) The very best rainforest on Fraser Island is to be found in the headwaters of Eli Creek and Fraser Island's natural australian scrubs, which are only accessible by walking. The northern perched lakes, especially Freshwater Lakes which can only be reached by walking, are the most pristine on Fraser Island. Bowarrady Hill is the highest point on Fraser Island.
- e) This walk offers the opportunity to include the open waters and the fine beaches of Hervey Bay. During the spring months whales can regularly be seen from the shores of Hervey Bay near the mouth of Bowarrady Creek, one of the most pleasant picnic or camp sites on the whole of Fraser Island. Arch Cliffs also feature the exposure of great Posol soil profiles recognized as one of Fraser Island's important World Heritage Values.

- f) The area north of Lake Allom offers a greater sense of a wilderness experience than any part of the existing Fraser Island Great Walk.

### 12.3 Anthropogenic Environmental Modifications

A post-contact history of the parts of Fraser Island that the George Haddock Track passes through is attached to this assessment. See clause 16.0.

The scenic beauty of Fraser Island has not been greatly compromised by human activity. There has been even less on the landscape traversed by this proposed route of the George Haddock Track. The most notable exceptions are Lake Allom and Lake Coomboo. Some modifications are required to provide visitor facilities around Lake Allom, with road access, car-park, toilet and picnic facilities and a walking track around the lake. The now derelict barracks site at Lake Allom is the proposed campsite and this is located seven hundred meters from the Lake. There is barracks accommodation located near Lake Coomboo. While parts of the forest has been logged, there is a much greater proportion of unlogged forest in the area north of Yidney Scrub than in Fraser Island's commercial forest south of Yidney Scrub.

While a number of former roads constitute about 80% of this 51 kilometres route, it is now more than 20 years since most of these were open to traffic and the visual evidence of human activity and landscape modification is not readily apparent. 6.5 kilometres of the track between Lake Allom and Lake Bowarrady are still used as a management road to occasionally access the Telstra tower on Fraser Island's highest point, Bowarrady Hill. This, though, shows little impact of the very occasional vehicle usage.

One of the great attractions of the route chosen is its high scenic value and the fact that it manages to cross only two roads that have regular (daily) usage, the Woralie Track near Lake Allom and the Happy Valley Moon Point Road in Yidney Scrub. These are both parts of a scenic drive on Fraser Island. The walking trail crosses only three other roads that are not used on a daily basis. They are the Happy Valley to Bogimbah Creek Road, the link road between Lake Garawongera and the Yidney Scrub and the Awinya Track. Each of these will be defined and identified as meeting points when the walk becomes functional.



**Figure 5** - Section of the Bowarrady Track that is also used as a management access to the Telstra tower on Bowarrady Hill



**Figure 6** - Cultural Heritage Assessment



### **12.3.1 Impact mitigation and management recommendations**

To avoid adding anything further to the anthropogenic impacts on the landscape, as indicated elsewhere, it is proposed to:

- a) improve hikers awareness of the history and heritage values along the course of the route by strategically placed signage and interpretation, especially located in the hikers shelters; and
- b) develop a hikers code of practice, to be published on the web site and that will be reinforced through the signage in the hikers shelters. This Code will focus on;
  - staying to the track,
  - minimizing trampling anywhere else ,
  - practicing the “Carry-in carry-out” principle,
  - avoiding and not interfering with flora and fauna that might be encountered along the way.

## **12.4 Landscape**

The substrate on the George Haddock Track is composed entirely of unconsolidated siliceous sand that could be highly susceptible to water erosion where the slope exceeds 2%. The George Haddock Track as designed, runs through Dune Systems 4, 5 and 6, as classified by Thomson et al. While the slopes in Dune systems 5 and 6 are relatively gentle, Dune System 4 has many slopes exceeding 10%

The tall forests are almost exclusively in Dune System 4. However, when the track moves west of the tall forests as described in the vegetation maps (Appendix H), as well as tall forests, Dune System 4 is characterized by dunes with much steeper slopes than the older Dune Systems 5 and 6, where the slopes are much more subdued.

### **12.4.1 Potential impacts**

The most serious potential impacts to the track are erosion, accidental or intentional damage to the vegetation beside the track, litter and fire. Quad bike use must be monitored.

### **12.4.2 Impact mitigation and management recommendations**

In the *Fraser Island Sustainable Transport Management Study*, the consultants GHD noted that road gradients of more than 6 degrees causes water runoff to flow down the pavement. This results in erosion. Walkers prefer a much gradient much less than 5 degrees. Therefore, the route selected, has kept any gradients of new tracks at below 5 degrees and preferably below 2 degrees.

- a) Where former roads are being incorporated in the track, some gradients may exceed 5 degrees. However it is deemed to be unlikely that the low volume of pedestrian traffic will significantly disturb the leaf litter and the absorption capacity of the surface and contribute to increased runoff and erosion.
- b) A recommendation of the Cultural Heritage Assessment is that there should be no benching of the track that could add to the surface disturbance of the ground. This means that the

route also will need to keep any new tracks from being constructed across steep slopes, or at least, to a minimum.

- c) The route will try to avoid creating new sections of the track that may traverse across the sides of steep slopes that could require benching.

## **12.5 Lakes, Groundwater and Streams**

The lakes represent a major feature along the course of this 51 kilometre track. They also are recognized as World Heritage Values and need to be protected from both visual and physical impact.

Great care was taken in the selection of this route to avoid creek crossings. Only one creek is encountered on the track midway between Lake Bowarrady and Arch Cliffs. The track is therefore deemed to have negligible impact on Fraser Island hydrology.

Because of its remoteness and work already done there, Hidden Lake is of great scientific significance and, along with Old Coomboo, has been subject to detailed chemical and physical studies by Dr Maureen Longmore. Old Lake Coomboo is reported to contain lake sediments dated back 300,000 years, making it the oldest known lake sediment in eastern Australia. These lakes provide valuable baseline data in the scientific understanding of Fraser Island's unique lake system and it is critical to maintain their natural integrity.

### **12.5.1 Potential impacts**

#### **12.5.1.a Water chemistry of the lakes**

The most serious potential threat to the lakes arises from any change to the water's chemistry.

The water quality of the Fraser Island lakes has been recognized by limnologists as being some of the freshest water in the world occurring in natural water bodies. This is due to the absence of positive ions from phosphate, potash and calcium. Longmore's studies at Hidden Lake have also shown that it is an almost entirely closed system, with an equilibrium between precipitation and evaporation. Studies showed that there had been negligible leaching of radioactive Caesium from the lake in the decades following atmospheric nuclear testing. It is vital therefore, to avoid and mitigate any activities that could introduce any impurities into the lakes.

#### **12.5.1.b Access to the lakes**

A lesser but still serious impact will be if the shores of the lake are needlessly trampled. For example, it has been noted that the reed bed at Lake Allom has been destroyed where access has been provided to the lake.

A further problem is that water can flow down pedestrian tracks that access the lake shores. This can create an alluvial plume at the edge of the lakes. This is more probable on lakes surrounded by slopes greater than 5 degrees. An alluvial plume has developed on the southern side of Lake Allom where people used to access the lake more than 25 years ago.

While the current relatively steep access path to Hidden Lake is not part of the George Haddock Track, it does have the potential to result in an alluvial plume at the foot of the slope. This needs to be carefully monitored and remedial action taken as soon as any evidence is noted of sediment moving down this access track.

Although there is very little slope close to Lake Coomboo, observations there over 40 years have also demonstrated that some water erosion along tracks can result in eroding out significantly deep potholes, over a meter deep, which end up holding permanent water. They provide some rare opportunities for canetoads to breed in higher pH water following rain. Thus, there is no room for complacency in maintaining the natural features, while providing access to the lakes.

#### 12.5.1.c Lake aesthetics

Fraser Island's recognized World Heritage Outstanding Universal Value includes the aesthetic appeal of the lakes and their natural unspoilt setting. Any infrastructure should not intrude on the visual landscape surrounding the lakes or be visible from the immediate lake precinct. The aesthetics also need to be protected by controlling and keeping trampling to a minimum. Of particular importance are the margins of the lakes and their shores .

### **12.5.2      *Impact mitigation and management recommendations***

#### 12.5.2.a Altering lakes' chemistry

Before any further work is carried out, drilling will be done to ensure that any infrastructure associated with the hikers shelters is located outside each lake's perched catchment. This will ensure that any disposal of any waste water from the shelter and its environs will occur outside the perched water table and will not impact on the water quality of any lake and will move down into the regional water table.

#### 12.5.2.b      Codes for washing and ablutions

The Hikers Code will emphasize the need to avoid use of any soaps or additives to the water of any lake along the route and only use soap in prescribed areas and to preserve the natural features surrounding the lake. To ensure that nobody uses the lakes for washing or for a bath, it is proposed to locate buckets, not normally part of a hiker's kit, in the shelters at Lake Coomboo and Lake Bowarrady, with explicit notes that if a person wishes to wash, they should use the bucket and move at least 100 metres away from the lake edge to carry out their personal ablutions. Since there is no lake at Pine Hill and water there needs to be conserved for drinking purposes, it is not proposed to place a bucket at that shelter. At Lake Allom it is anticipated that there will be an adequate water supply at the site of the shelter, to allow for some ablutions on site and therefore a bathing bucket will not be used anywhere near the lake.

#### 12.5.2.c Lake access points

To preserve each lake's natural setting hikers will be directed to approach the lake only by defined tracks and to restrict their entry to the lakes at the specified location on the lake edge. The Hikers Code will also encourage them to respect the foreshore and environs of the lake.

#### 12.5.2.d Monitoring

Because of the sensitivity of the foreshores and tracks leading to the edge of the lakes, it is important to closely monitor the environment for any human induced changes and to address the cause of any changes as soon as they are noted, to avoid impacting on some of Fraser Island's most precious natural sites. For example, it may be necessary to install boardwalks or duckboards along the access paths to some lakes.

#### 12.5.2.e Freshwater Area

It is not proposed to make any access to the most pristine of all of Fraser Island's lake areas, Freshwater Lakes. Hikers will not be encouraged to go there.

However, the locations of Freshwater Lakes, Hidden Lake and possibly the nearby source of Eli Creek that lie close to the George Haddock Track route, need to be carefully monitored. This is to determine if there is any undesirable level of access or impacts.

#### 12.5.2.f Old Lake Coomboo

This lake is of great scientific interest. The George Haddock Track passes quite close to it. It is very difficult to approach and it is proposed to notify hikers that it is an exclusion area, with limited access only to scientists for monitoring or research purposes.

#### 12.5.2.g Shelter Setback Profile

To maintain the natural integrity and aesthetics of the lakes, and to comply with Wild Rivers legislation, it vital to ensure that the shelters should not be visible from any part of the lake. This means that, apart from being at least 200 metres back from the lake, each shelter has to maintain a low profile.

## 13 - Flora

This section examines the environmental impacts on the flora of the proposed 51 kilometre extension (George Haddock Track) of the Fraser Island Great Walk and was conducted by the Fraser Island Defenders Organisation (FIDO) and the National Parks Association Queensland (NPAQ). The flora study involved botanical record searches and a 5 day field assessment of the proposed track route and associated campsites.

Three qualified botanists were involved in the desktop review, field assessment, and reporting. Five species of protected flora were detected during desktop searches as potentially occurring in the vicinity of the project footprint.

### 13.1 Search Effort

A desktop review of available information was conducted prior to the field assessment. Wildnet and HerbRecs data, along with Regional Ecosystem and Essential Habitat mapping were reviewed in order to determine an appropriate alignment for the George Haddock Track and identify target species and habitats for the field search.

A field search was conducted by Brad Jeffers and David Bouchard, from 27th November to 5th December 2010, walking the length of the proposed track. A few sections following public roads were surveyed from slow moving vehicles.

Throughout all surveys incidental plants were recorded and unfamiliar or protected species sent to the Queensland Herbarium for identification/ confirmation. The locations of protected plant species were recorded in the field using a handheld GPS. Plant species and their location were recorded by Stephanie Haslam and are listed in Appendices F and G.

### 13.2 Threatened Flora

Ten threatened species were identified as having the potential to occur along the George Haddock Track and are listed below in Table A. These species are listed under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPC) or the Queensland *Nature Conservation Act 1992* (NCA).

**Table A Threatened species potentially occurring in the vicinity of the George Haddock Track** (NT: near threatened, C: of concern, V: vulnerable, E: endangered) Source: WildNet, DERM Website, accessed 3<sup>rd</sup> March 2011.

Scientific Name	Common Name	Habitat	Status NCA	Status EPBC
<i>Tecomanthe hillii</i>	Fraser Island creeper	rainforest	NT	
<i>Blandfordia grandiflora</i>	Christmas bells	wet heath	E	
<i>Archidendron lovelliae</i>	bacon wood	wet sclerophyll	V	V
<i>Acacia baueri subsp. bauera</i>	tiny wattle	sandy heath	V	
<i>Eucalyptus hallii</i>	Goodwood gum	dry forest & woodland	V	V
<i>Taeniophyllum muelleri</i>	minute orchid	rainforest epiphyte	C	V
<i>Phaius australis</i>	swamp orchid	swamp	E	E
<i>Pterostylis nigricans</i>	dark greenhood	coastal heath	NT	

	orchid		
<i>Liparis simmondsii</i>	a ground orchid	rainforest floor swampy heath /	NT
<i>Boronia rivularis</i>	Wide Bay boronia	forest	NT

### 13.2.1 Detection and threat mitigation

Only the following two threatened species were detected during the field survey of the George Haddock Track alignment and populations of these are marked on Maps.

1. ***Acacia baueri subsp. baueri* Vulnerable (NCA)** Numerous specimens were located in areas of disturbed low heathland on the Bowarrady Creek firebreak road stage (AB1), the Lake Coomboo (AB2) original camp footprint, the Hidden Lake to Pine Hill stage (AB3) and the Bowarrady Creek bridge to locked chain stage (AB4). Each population of *A. baueri* is occurring in numbers greater than 250 individuals and the track is able to be diverted around the populations at AB2 and AB4. The Lake Coomboo camp footprint is repositioned so as to avoid impacting on the individuals there (AB2). The populations at AB1 and AB3 are located on existing roads that will be utilised for the George Haddock Track and therefore these *A. baueri* populations are subject to recurrent QPWS maintenance activities.
2. ***Archidendron lovelliae* Vulnerable (NCA & EPBC)** Two specimens were found at Lake Allom and one specimen near Lake Bowarrady. All individuals are able to be avoided by a 15 metre track offset.

During track construction a botanist will spot and tag any of the threatened flora species and determine a suitable alternative route offset at least 15 metres from the nearest specimen. Additionally, species profile fact sheets will be produced and used by the construction crew during works.

Protected flora species located on existing tracks will remain undisturbed but are subject to recurrent Queensland Parks and Wildlife Service (QPWS) road/fire break maintenance activities.

What vegetation clearing and/or resurfacing activities that are required, will occur on the sections of track that follow existing, though infrequently maintained and generally overgrown, QPWS roads.

## 13.3 Regional Ecosystems

The George Haddock Track encounters a wide variety of vegetation communities from low heath shrublands to towering closed notophyll rainforests. Vegetation communities, defined by the regional ecosystem (RE) mapping from the Queensland Herbarium, reveal a great diversity of vegetation classifications along the proposed track. These are regional ecosystems (REs) (see Table B). The mapped communities were found to be reasonably consistent with what was observed in the field. The REs traversed are listed in Table B.

**Table B Vegetation communities traversed by the George Haddock Track on Fraser Island**

Regional Ecosystems	Comments
12.2.1	Evergreen notophyll vine forest often with abundant palm understorey. (VMA of concern)
12.2.3	Araucarian notophyll vine forest often with <i>Backhousia myrtifolia</i> understorey. (VMA of concern, but extensive on F.I.)
12.2.4	<i>Syncarpia hillii</i> and <i>Lophostemon confertus</i> tall open to closed forest with vine forest

understorey. (VMA of concern, but extensive on F.I.)

- 12.2.6 Eucalyptus racemosa / Corymbia intermedia woodland. (VMA not of concern)
  - 12.2.8 Eucalyptus pilularis / E. microcorys / Syncarpia hillii open forest. (VMA not of concern)
  - 12.2.9 Banksia aemula low shrubby woodland "wallum" (VMA not of concern)
  - 12.2.15 Coastal sedgeland, vegetated swamps and associated open water. (VMA not of concern)
- 

### 13.4 Environmentally Sensitive Areas

The construction and subsequent use of the bushwalking track and associated camps could have impacts on sensitive areas. Such areas may include water courses, steep slopes, fragile vegetation, ecosystems or locations susceptible to invasive weeds, fauna populations or habitat that is easily disturbed.

Watercourses requiring special track treatment are located at the Pine Hill to Yidney Scrub Road stage and Bowarrady Creek on the Lake Bowarrady to Bowarrady Creek Mouth stage. The watercourse on the Yidney Scrub stage is an ephemeral stream, with Piccabeen Palm grove and Gallery Rainforest. To avoid disturbing the stream bed, it is recommended that the track stay on the southern side of the ephemeral watercourse until the head of the gully is reached. The waterway crossing will utilise a bedding of clean coarse granite rubble, as commonly used by QPWS on Fraser Island for boggy sections of access road. The waterway on the Bowarrady Creek stage will utilise an existing road bridge appropriate for pedestrians and so no alterations will be necessary.

Whilst every effort has been made to delineate the George Haddock Track on gentle gradients, there are several sections where slopes are traversed. These sections of track will be constructed such that the track descends at a 5 percent gradient in a continuous direction, to arrive at the base of the slope, avoiding switchbacks that encourage short-cutting and subsequent erosion.

Fragile ecosystems may include waterways and vegetation types where an opening in the canopy may allow the incursion of weeds, or where the loss of root mass or ground crust microflora may destabilise soils subjected to overland flow. None of these potential situations were observed on the George Haddock Track delineation, as the vegetation clearing footprints are too small to create canopy entry for weeds and no delicate soil crusts are traversed. Disturbance to soils encrusted with lichen, ferns and non-vascular plants (mosses, liverworts etc) will be avoided wherever possible.

No existing erosion that is likely to be exacerbated by pedestrian use was observed anywhere on the proposed George Haddock Track delineation.

Potential habitat of easily disturbed fauna is limited to forest and woodland dominated by *Casuarina* and *Allocasuarina* spp., being the preferred feeding locations of *Calyptorhynchus lathamii* (Glossy Black Cockatoo). As feeding habitats for Glossy Black Cockatoo on Fraser Island is extensive, it is likely the impact of the track on these species will be minimal.

### 13.5 Invasive Species

Fraser Island Defenders Organisation (FIDO) has independently monitored weed invasion on Fraser Island since the inception of the National Park. National Park areas have largely remained weed free despite significant and rampant invasion occurring in the unallocated State Land allotments.

Most of the proposed track is weed free, although an insignificant number of annual weeds and exotic grasses, as listed in Table C, were observed along the Bowarrady Creek fire-break near the western beach. These are species most commonly dispersed by vehicles, machinery and pedestrians.

**Table C Weeds of concern on the Bowarrady Creek fire break section of George Haddock Track, near western beach.**

<b>Species</b>	<b>Comments</b>
<i>Cenchrus echinatus</i> (Mosman river grass)	Sporadic individuals and small patches within 1 km of the track termination at Bowarady Point.
<i>Melinis repens</i> (Red Natal Grass)	Sporadic individuals and small patches within 1 km of the track termination at Bowarady Point.

Prevention of weed incursion during construction, and once established, will be ensured through an integrated pest management strategy (IPM). The IPM will incorporate the relevant terms of a QPWS Great Sandy NP IMP strategy, and the following objectives and procedures:

- Construction workers and final track users (hikers and visitors) will be educated on **clothing, footwear, equipment and vehicle hygiene** to prevent introduction of weed propagules via these sources.
- Equipment and materials used in constructing the project will be **cleaned and inspected** for propagules and soil prior to transporting.
- Weed infested construction **areas will be made weed free** prior any construction.
- Other than weed treatment activities, all other activities i.e. work progress and movement, will be from **weed free areas first** to weed affected areas last.
- Weed treatment will incorporate an **integrated** selection of appropriate methods and **favour non-chemical** use where feasible.

### 13.6 Ongoing Monitoring of Impacts

Surveys should be conducted annually to monitor weed and disease infestations and identify new incursions.

Monitoring of damage to vegetation surrounding campsites and along the track, with particular emphasis on watercourse crossings, slopes and potential points of short-cutting. Impacts are expected in the form of soil compaction, trampling and handling of vegetation and cutting of trees.

Regularly review the impact and currency of educational materials.



## **14 - Fauna**

### **14.1 Introduction**

The purpose of this report is to provide a description of the fauna known or likely to be present within the footprint zone of four walker's camps associated with the George Haddock Track. The likely impacts of the proposed construction and operation of these walker's camps on the fauna are explored. Emphasis is placed on threatened or otherwise significant species listed under Queensland (Qld Nature Conservation (Wildlife) Regulation 1994) and Commonwealth (Environment Protection and Biodiversity Conservation Act 1999) legislation. See Appendices G and H.

### **14.2 Methodology**

#### ***14.2.1 Study area***

Each of the four proposed walker's camps; (i) Lake Coomboo walker's camp (-25.2218, 153.1673 GDA94), (ii) Lake Allom walker's camp (-25.1999, 153.2084 GDA94), (iii) Pine Hill walker's camp (-25.2681, 153.1591 GDA94) and (iii) Lake Bowarrady walker's camp (-25.1535, 153.2118 GDA94), are expected to measure roughly 50 square metres, and will require clearing of approximately that area of bushland to accommodate the camping structure (a raised, roofed platform and associated water tank).

This report limits itself to the fauna and impacts occurring at these four walker's campsites.

#### ***14.2.2 Fauna inventories***

Fauna lists for the study area were derived using both desktop and field studies.

##### **Desktop studies**

Two sources of information on the fauna of Fraser Island and its legislative significance were accessed;

- The Queensland Government's Wildlife Online fauna database was interrogated for a list of fauna recorded in Great Sandy National Park, of which Fraser Island is a part (interrogation date 20<sup>th</sup> Feb 2012), and,
- An EPBC Act Protected Matters report which was generated for Fraser Island and adjacent waters on 18/1/2012. These two lists provided the framework against which the presence of threatened species was assessed.

Species whose specific habitats are not present within the potential walker's camp sites were deleted from the generated Wildlife Online list (i.e. species confined to aquatic habitats, shorelines, wetlands, or those which are erroneously listed and do not occur near Fraser Island (as per [birddata.com.au](http://birddata.com.au)). This species list was then cross-matched against the EPBC Protected Matters

report to ascertain additional significance of species listed (e.g. migratory species) in order to construct a list of threatened or otherwise significant species that are potentially present on Fraser

Island. Species listed on the EPBC Protected Matters search, which are not listed by the Wildlife Online report, are not included in this report.

### Field surveys

A field survey was undertaken at each of the four proposed camp sites between 28/11/2010 and 3/12/2010. Field surveys targeted all vertebrate fauna groups (Table 1, Fig. 1). Mammal, reptile and amphibian surveys were conducted by Ian Morris and Scott Burnett, and bird surveys were conducted by Mike West.

**Table 1. Methods used to identify species present at each of four proposed George Haddock Track campsites surveyed during this study. Further details of survey methods are outlined below and in Fig 1.**

Target fauna group	Method used to survey each fauna group at each site
Small and medium mammals	80 elliot trap nights, 16 wire cage trap nights, 32 herptile funnel trap nights, 192 camera trap hours, 16 pitfall trap nights
Small and large terrestrial reptiles	16 pitfall trap nights, 192 camera trap hours
Frogs	16 pitfall trap nights, 32 herptile funnel trap nights,
Microchiroptera	1 bat detector night
Birds	Untimed observation (except Pine Hill site where no bird survey was completed)

A consistent intensity and configuration of survey tools was used at each of the four sites (Fig. 1 ) and are described in detail below.

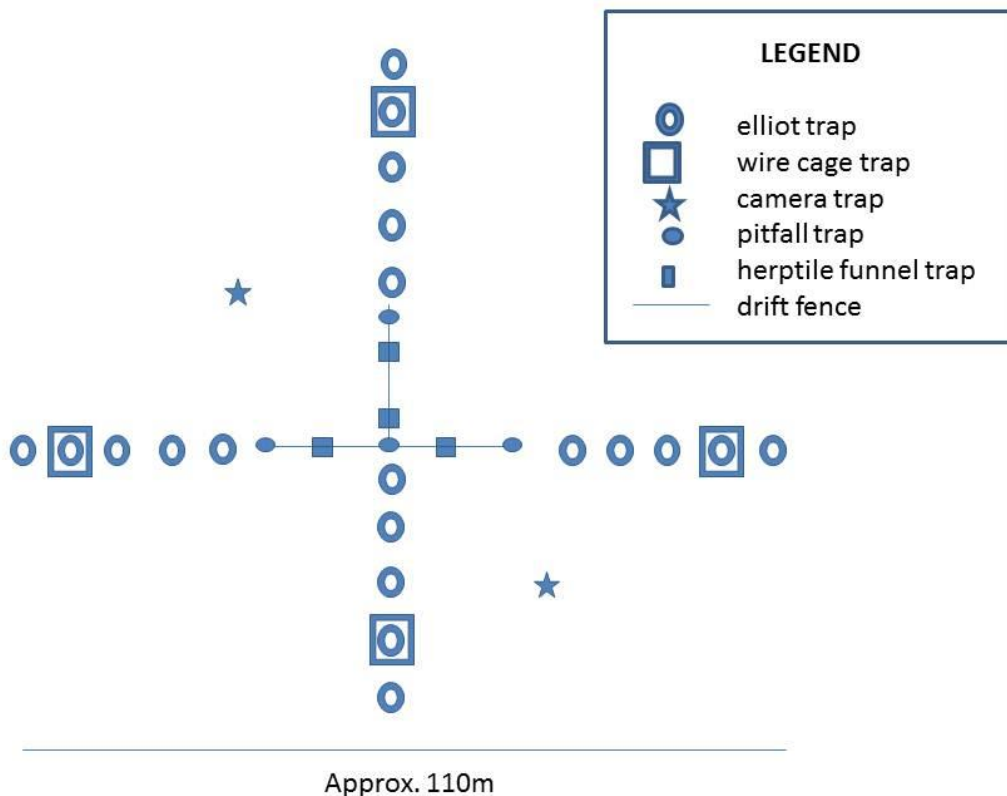


Figure 7 - Layout of Live and Camera Traps

Fig. 7 shows the layout of live-traps and camera traps within each of four putative areas in which walker's camps are proposed (see above for site locations). Note that this figure is roughly to scale. Refer to text below for further information regarding field survey methods.

At each site, 20 Elliot type A traps baited with peanut butter and rolled oats, were set 10-m-apart in a X-shaped transect, the centre of which was located at the centre of each putative walker's camp site. Four wire cage 'bandicoot' traps baited with peanut butter and rolled oats were also set at each site; one at the distal end of each of the four arms of the cross-shaped Elliot trapping array.

Four unbaited pitfall and eight unbaited herptile funnel traps were deployed in conjunction with an aluminium fly-wire drift fence array (Fig. 1) at each site. Each of these arrays consisted of 12m of flywire drift fence arranged in a 'T', where each of the two arms of the T measured 6m in length (Fig. 1). One 20L plastic pitfall bucket was dug into the ground at each of the three ends of the 'T' and at the intersection of the two arms of the 'T'. Four pairs of herptile funnel traps (i.e. total of eiGeorge Haddock Track funnel traps) were set at each drift fence array.

Two incandescent camera traps (Pixcontroller TrailCam (utilising a SonyCybershot digital camera), were set 10-m-away from the putative site centre point, at a 45<sup>0</sup> angle to the Elliot trapping transects. At each site, one camera trap was baited with a chicken frame, and the other with peanut butter and rolled oats.

An Anabat SD2 bat detector was set to remotely record for a single night at two sites (Pine Hill and Lake Coomboo) during the field survey. Heavy rain precluded bat detecting at Lake Allom and Lake Bowarrady sites.

Bird lists for each site were compiled over the 5 days of the field trip during targeted searches and as opportunistic observations during other activities at each surveyed site.

## 14.3 Results

### 14.3.1 Background/desktop review

397 terrestrial vertebrate fauna species occur within Great Sandy National Park (including Fraser Island and adjacent mainland), and thus potentially occur within the impact areas on Fraser Island (Appendices G and H). Of these, 37 are classed as threatened or otherwise significant under Queensland and/or Commonwealth Law (Table 2).

### 14.3.2 Field survey

Field surveys at the four sites revealed the presence of 58 species (Appendices I and J). All were species which were previously known from Fraser Island and one of these is a significant species (spectacled monarch, migratory terrestrial species – EPBC ACT 1999 (Table 2).

## 14.4 Discussion and Conclusions

Desktop studies reveal a diverse fauna occupying Great Sandy National Park and Fraser Island. Field surveys recorded a subset of these. Poor weather during the survey (heavy rainfall, overcast and cool conditions throughout the survey) impeded our ability to detect many species, especially reptiles and insectivorous bats. The former, because unseasonally cool conditions would have subdued animal movements, and the latter, because heavy rain rendered the bat detector inoperable.

The early summer timing of surveys also meant that several migratory significant species (Rainbow bee-eater, black-faced monarch) would have been in their summer grounds and so not present on

Fraser Island. These species have, none-the-less, been discussed in the discussion of impacts of this project on significant species (Table 2, Appendix J).

Given the small footprint and low operational impact of the walker's campsites, any impact on fauna is expected to be negligible.

## **15 - Cultural Heritage**

### **15.1 CULTURAL HERITAGE SURVEY AND ISSUES - Report by Dr Judy Powell**

#### **15.1.1 Background**

In late 2010 I was contacted by John Sinclair of the Fraser Island Defenders' Organisation (FIDO) and asked if I could provide technical advice relating to cultural heritage issues along the route of the proposed George Haddock track.

Queensland Parks and Wildlife Service have asked FIDO to develop an Environmental Impact Statement (EIS) for the project. The previous Fraser Island World Heritage Indigenous Advisory Committee (IAC) supports FIDO's proposal to develop the George Haddock Track and the past chairman of the IAC agreed to send a Butchulla representative to accompany the survey group on an inspection of the route of the track. Shereene Currie, one of the Butchulla applicants, was also invited to send a representative.

#### **15.1.2 Legislation**

Aboriginal cultural heritage in Queensland is protected by the *Aboriginal Cultural Heritage Act 2003 (ACHA)*. This Act establishes a duty of care and all persons undertaking work that has the potential to damage Aboriginal cultural heritage must take all reasonable steps to avoid damage to Aboriginal cultural heritage. Duty of Care guidelines provide the means to assess the degree of risk involved in any activity and identify five categories of risk determined both by the extent of previous disturbance in the area of activity and by the type of activity proposed.

Under Part 7 of the Act, when an Environmental Impact Statement (EIS) is required for any development works, a Cultural Heritage Management Plan (CHMP) is needed. Activities undertaken under a CHMP serve to fulfil the proponent's Duty of Care.

The Department of Environment and Resource Management (DERM) provides guidelines on developing a CHMP and also approved documents for use when initiating a CHMP. These are available at the department's website at [http://www.derm.qld.gov.au/cultural\\_heritage/legislation/cultural\\_heritage\\_management\\_plans.html](http://www.derm.qld.gov.au/cultural_heritage/legislation/cultural_heritage_management_plans.html)

The ACHA identifies the ways in which relevant Aboriginal Parties can be identified. Aboriginal Parties must be consulted when any activity poses a risk to cultural heritage (eg category 4 or 5 activities) and in the development of any CHMP.

The relevant Aboriginal Party for the area of the George Haddock walking track is identified by DERM as:

Butchulla People

Applicant Name/s: Cepha Roma, Peter Martin, Sandra Page, Lurline Lillian Burke, Jan Williams, Kate Doolan, Annette Broome, Shereene Currie and Joan Brown.

### **15.1.3 Previous Archaeological work on Fraser Island (K'gari)**

The Great Sandy Region (incorporating both Fraser Island and Cooloola) contains 450 to 500 recorded archaeological sites of Aboriginal significance, including numerous shell midden sites, stone artefact scatters, burial sites, scarred trees, stone quarries, grinding grooves, stone-walled fish traps and ceremonial bora rings.

In the 1970s and 1980s, Dr Peter K Lauer from the Anthropology Museum at The University of Queensland undertook surveys of Fraser Island and in 1993, Ian McNiven worked for the then QPWS as a Cultural Heritage Manager for the Fraser Island World Heritage Area. McNiven completed a PhD on the archaeology of the Great Sandy Region in 1990.

Both Lauer and McNiven recorded a range of archaeological sites, most notably middens along both east and west coasts, as well as collecting stone artefacts of a variety of types. Archaeological work on Fraser Island indicates that Indigenous people have lived and used the area continuously for more than 6 000 years. In the 1980s McNiven concluded that there were two major periods of Aboriginal occupation in the region, an Early Phase from 5500 BP to 2300 BP and a later phase from 900 BP until the early part of the twentieth century, when Aborigines were forcibly removed and their lifeways decimated.

Recent archaeological work conducted by McNiven in 2001 at Waddy Point confirms his earlier theories about the intensification of marine exploitation in the Great Sandy region and an increase in Aboriginal use of, and settlement in, both Fraser Island and Cooloola in the last thousand years.

### **15.1.4 Known cultural heritage sites within the vicinity of the George Haddock Track**

Fraser Island is a World Heritage site and entered in the National List. In the past, the Commonwealth maintained a Register of the National Estate (RNE) and although this register is no longer operational it is worth noting that one RNE place – Lake Bowarrady and surrounds – is within the area covered by the proposed walking track. Lake Bowarrady and Moon Point are said to have been “significant in the travels of the spirits of the dead.” (Steele, 1984:196). According to Steele, Yidney Creek and Moon Point are linked in Butchulla legend of the creator Yindingie.

According to these legends Yindingie made all creatures, and taught them the things that they had to do. He created the first clan of people near Moon Point. He gathered the men together, and under his instructions they heaped up a large circle of earth (the first dhur) and there he taught them their laws, magic, skills and crafts. (Steele, 1984: 196)

Steele says there have been reports of a bora ground at Yidney, but there is no confirmation of this.

### **15.1.5 Survey participants**

A survey of the route of the proposed George Haddock walking track took place over four days from 16<sup>th</sup> February to the 20<sup>th</sup> February 2011. Survey participants were: Joe Ross (Butchulla representative), John Sinclair (FIDO – track proponent) and Dr Judy Powell (archaeologist).

### **15.1.6 Survey**

Most of the route of the proposed track was accessed by car or on foot, although some parts were inaccessible due to tree fall and one 10 km section (from Lake Coomboo to the junction of the road to Lake Allom) was not walked.

Most of the proposed track follows pre-existing, but now disused, forestry tracks (Figure 1). In one area the track follows a line previously disturbed by the laying of a telephone cable (Figure 2). See end of section for figures (photographs).

On these sections of the track there will be no further disturbance to the ground surface and no further track widening. These sections, therefore, fall within Category 1 or 2 as defined by the Duty of Care guidelines for the *Aboriginal Cultural Heritage Act 2003* and the likelihood of damage to Aboriginal Cultural Heritage is extremely low.

The only part of the proposed walking track where new track construction will occur is a 3.3 kilometer section between Lake Coomboo and the junction with the Lake Allom road. In this section, there has been no previous ground disturbance and track construction – in particular benching – that has the potential to impact Aboriginal cultural heritage. This section of the walking track constitutes a Category 5 activity.

Four campsites are proposed for sections of the walking trail. Three are near lakes – Lake Allom, Lake Coomboo and Lake Bowaraddy – and one is on Pine Hill at the site of a 1960s forestry log dump. Some ground disturbance will occur at these areas. Given the prior disturbance at Pine Hill (Figure 3), work here constitutes a Category 4 activity but at the lake campsites the work is Category 5.

A visual inspection was made of the ground at all four camp sites. The campsite near Lake Coomboo had good ground surface visibility (see Figure 4) but at the other three campsites, ground surface visibility was medium to low.

No artifacts were found at any of the four proposed campsites.

Although three campsites are located near water sources, they are located at some distance from each lake and the topography does not suggest that they would have been particularly attractive as occupation sites, although this cannot be ruled out.

### 15.1.7 Scarred trees

A number of scarred trees occur in the vicinity of the track, in particular near the campsites at Lake Allom and Lake Bowaraddy. All are clearly recognizable and are well known to John Sinclair.

Three scarred trees line the current road to Lake Allom. John Sinclair calls trees with large and wide scarring to the height of a man and extending to the ground and explains that he has been told that the bark removed was used to construct a shelter, within which three adults could sleep. All the ‘gunyah trees’ recorded during this survey occurred on blackbutt (*Eucalyptus pilularis*). Blackbutt are hardwood trees that grow to moderate height and are found in coastal regions from southern New South Wales to Maryborough in Queensland. They have a fibrous bark in the lower part of the trunk and smoother gum type bark on the uppermost trunk and branches.

Two such ‘gunyah trees’ were recorded on the Lake Allom road. (See Figures 5 and 6).

Near these two trees was a third scarred tree (Figure 7), but in this case the scarring appears to have been done with a metal or steel axe.

At the foreshore of Lake Allom are other scarred trees, but in this case (see Figure 8) the scarring is natural and has been caused by a lightning strike.

A further group of scarred trees occur near the proposed campsite at Bowarrady. Small scarring is visible on a number of brushbox (*Lophostemon confertus*) and larger scarring occurs on satinay

(*Syncarpia hillii*). One of the scars on a brushbox near Lake Bowarrady appears to show stone axe tool marks (see Figure 9) but marks on the larger rectangular scars on the satinay trees may indicate the use of steel tools (see Figure 10 and 11). Oral reports suggest that the scarring on the satinay trees was done in recent times for use in constructing temporary bark huts. This scarring may have been done by Forestry or other timber workers and continued until as late as the 1960s. The fact that satinay bark is heavily fibrous and fissured can be used to lend weight to this interpretation, although specialist advice would be needed to confirm the theory.

In addition to the scarred trees recorded in the vicinity of Lakes Allom and Bowarrady, scarred trees occur throughout the island along Forestry roads (see Figure 12 and 13). These trees have surveying scars and they occur at juncture or turning points of the roads and tracks. The exact location of all these trees is marked on the Forestry maps produced by the then Department of Forestry. These maps were prepared by cartographer J.A. Craig in 1979 and revised in 1985.

### 15.1.8 Survey results

In general, the following observations can be made about separate areas within the George Haddock Track..

1. Areas A: Along the parts of the George Haddock Track which use previous forestry tracks or areas disturbed for the laying of telephone cables there is little likelihood of damage to cultural heritage. In much of this area there will be no further ground disturbance and under the duty of care guidelines this constitutes a Category 1 activity with no requirement for further assessment.
2. Areas B: Along parts of the George Haddock Track which follow no existing road and where track construction will involve ground disturbance the activity constitutes a Category 5 activity and has the potential to damage Aboriginal cultural heritage.
3. Areas C: The campsites will all involve some ground disturbance in otherwise undisturbed areas. Although no artifacts were evident, work in these areas constitutes a Category 5 activity and has the potential to damage Aboriginal cultural heritage.
4. Areas D: Areas adjacent to the track or in the general vicinity of the track include a number of scarred trees. Some of these are undoubtedly Aboriginal while others may be scarred by Forestry or timber workers, or by natural causes. Complete identification and recording of all scarred trees within the vicinity of the George Haddock Track has not been undertaken. FIDO might consider this as part of the development of an interpretation plan for the completed George Haddock Walk.

### 15.1.9 Recommendations

1. That FIDO commence planning to develop a CHMP with the relevant Aboriginal party and that this be facilitated by the Fraser Island World Heritage Indigenous Advisory Committee.



2. Some Cultural Heritage issues that might be included in this CHMP are:

- a. The identification of issues relating to non-material Aboriginal significance that might be adversely impacted by the George Haddock Track.
- b. That all construction work at campsites and any work involving ground disturbance on the tracks (Areas B and C) require monitoring by Butchulla representatives to ensure no cultural heritage is adversely impacted.
- c. Agreement on mitigation measures to be taken should cultural heritage be impacted adversely by work on any part of the George Haddock Track, including provisions for any material found.
- d. That all scarred trees remain outside the area of impact and that a protective buffer of 20 meters be maintained to protect tree roots etc (Areas D)
- e. That a cultural heritage induction by Butchulla representatives be conducted for all volunteers involved in construction of the George Haddock Track. This induction might include technical advice from a relevant non-Butchulla expert.

3 That QPWS be advised of the proximity of scarred trees (known as a 'gunyah tree') to the access road to Lake Allom and that they be alerted to the potential for damage to the tree from traffic and ground disturbance. FIDO may recommend that QPWS close this section of the road to protect the tree and to ensure that DERM meets its legislative Duty of Care to protect Aboriginal cultural heritage.

4 That FIDO consider sponsoring a study to record the scarred trees of Fraser Island, with a view to developing interpretation material to complement the George Haddock Track.





Figure 11



Figure 12



Figure 14



Figure 13

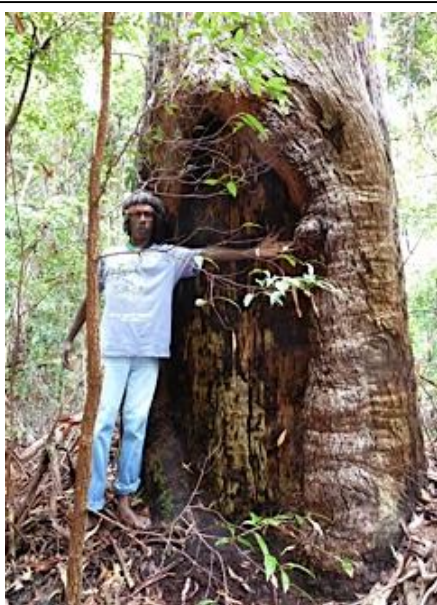


Figure 15



Figure 16



Figure 18



Figure 17



Figure 19



Figure 20

## 15.2 The Proponent's Response to Judy Powell's Report

The proponents have, from the outset, worked in close consultation with representatives of the Butchulla people, out of respect for the traditional owners and to engage the Butchulla in the development of this project and as a collaborative effort, with the intention of recognizing this as a part of the *K'gari Track*, rather than as a section of the Fraser Island Great Walk. Representatives of the Butchulla have been engaged in all of the surveys.

The Proponents have adopted all of Dr Powell's recommendations and have already implemented some, such as the identification of issues relating to non-material Aboriginal significance that might be adversely impacted by the George Haddock Track.

### 15.2.1 Potential Impacts - Benching of tracks:

Where the George Haddock Track follows no existing road and where track construction will involve ground disturbance, such as through benching as the track crosses the sides of a steep hill to keep the gradient of the track at less than five degrees, there is a potential to damage Aboriginal cultural heritage.

### 15.2.2 Potential Impacts - Campsites:

Construction of the campsite shelters and toilets will involve some ground disturbance in otherwise undisturbed areas. Although there is no evidence of any artifacts in these areas, there may still be some potential to damage Aboriginal cultural heritage.

## 15.3 Impacts Mitigation and Management Recommendations

### 15.3.1 *Butchulla oversight of work on all new sites:*

The proponents undertake to ensure that there is a representative of the Butchulla people, as well as a competent botanist, on site for any new construction work, to ensure that the work does not disturb the ground on any site of cultural significance. This rule applies to all construction work at campsites and any work involving ground disturbance on the 10.9 kilometres of new track. This monitoring by Butchulla people will ensure no cultural heritage is adversely impacted.

### 15.3.2 *Cultural Heritage discoveries during construction:*

If in spite of the mitigation precautions proposed above the site, should work accidentally discover anything of cultural significance, the proponents undertake to deal with anything discovered. This undertaking includes any material found in ways agreed to by the Indigenous Advisory Committee and, if necessary, work will be stopped until the issue is resolved.

### 15.3.3 *Cultural Heritage management plan:*

The proponents are advised by Departmental Officers that they are not required to develop a Cultural Heritage Management Plan (CHMP). However, the Fraser Island World Heritage Advisory Committees are supporting the development of such a CHMP and the proponents will cooperate fully with the development of that plan. The documentation of the non-Aboriginal history (Section 16) is one step towards developing the CHMP.

#### **15.3.4 Duty of Care Guidelines:**

It is noted that, under the Cultural Heritage Duty of Care Guidelines, the proposed activity is a Category 5 activity. For this reason, proponents plan to adhere to the Duty of Care Guidelines. Because there may be a high risk that there could be harm to Aboriginal cultural heritage, the proponents undertake to not proceed with any activity without cultural heritage assessment. The Butchulla people will be consulted through the Fraser Island Indigenous Advisory Committee, who will be notified. Representatives will be invited to provide advice as to whether the feature constitutes Aboriginal cultural heritage; and if it does, by agreement, determine how best the activity may be managed to avoid or minimise harm to any Aboriginal cultural heritage.

#### **15.3.5 Scar Trees:**

There are already many scarred trees adjacent to old roads and tracks utilized for the George Haddock Track. While most of these were as a due to Foresters with steel axes during the 20<sup>th</sup> Century, there are some very significant trees, such as a large gunyah tree immediately adjacent to the road into Lake Allom, that are of great cultural significance and deserves better protection. However, where there is new track work, it is proposed to deviate around any identified scarred trees, and to establish a protective buffer zone of at least 20 meters to protect tree roots.

#### **15.3.6 Road closure to protect Gunyah Trees:**

The proponents have carried out a search of the DEHS database to ensure that there is no conflict with any site of cultural significance. It was noted that, although the proponents have previously advised the QPWS of the proximity of a gunyah scarred trees on the access road to Lake Allom, this has not yet been recorded on the official database. Dr Powell has proposed that this section of the road be deviated to protect the trees and to ensure that DEHP meets its legislative Duty of Care to protect Aboriginal cultural heritage.

#### **15.3.7 Cultural Induction:**

The proponents accept the recommendation that a cultural heritage induction by Butchulla representatives be conducted for all volunteers involved in construction of the George Haddock Track. This induction might include technical advice from a relevant non-Butchulla expert.

#### **15.3.8 Cultural Interpretation:**

The proponents propose to make a feature of interpreting the cultural heritage, as part of its overall program to provide quality interpretation for the George Haddock Track.

## **16 - European Heritage By John Sinclair**

### **European History Relative to the George Haddock Track**

This history of Fraser Island pertains primarily to the general area between Lake Garawongera and Arch Cliffs that would be traversed by the proposed 51 kilometre walking track extension.

#### **16.1 Earliest Recorded European Contact:**

Although Aborigines had occupied Fraser Island for thousands of years, the first recorded European to have contact with any part of the proposed George Haddock Track route was Matthew Flinders. During the first of his three landings on Fraser Island in 1799, Flinders also sailed well up into Hervey Bay from Sandy Cape to what is now known as Moon Point and Woody Island. Flinders named Arch Cliffs, one of the first European named features on the island, and the coloured sands formation near the mouth of Bowarrady Creek in the process.

#### **16.2 Sandy Cape Telephone Line:**

The next event of significance was the building of the Sandy Cape light house in 1870. To maintain communications in the event of an emergency, a telephone link was established from the lighthouse to the mainland at Hervey Bay. Most of the wire ran up Fraser Island just inland from the west coast to Bogimbah, where a linesman was stationed. He was responsible for maintaining both that line and to ensure that the submarine link to Hervey Bay was always usable. The Sandy Cape telephone line route crosses the proposed George Haddock Track within 2 kilometres of Arch Cliffs. It was strung between a series of cast iron poles.

Rollo Petrie recounted in his reminiscences how efficiently the telephone line was maintained. Walter Petrie had sent a young forester, Buck Geoghan, to assess the timber reserves in the vicinity of Lake Bowarrady. Geoghan had the misfortune to severely scald himself by tipping a billy of boiling water over himself at his camp. Being then crippled and unable to catch his horse, Geoghan took his rifle and crawled several kilometres until he was lying directly below the lighthouse telephone wire, rolled on his back and took aim with the rifle and broke the wire. He then passed out. The Bogimbah linesman, then Hans Bellert, realizing that the line had been broken somewhere, immediately set off in his “T” model Ford to drive the length of the line, to discover and repair the break. That is how he discovered Buck still lying beneath the shattered line, and repaired the line as well as rescuing Buck.

The path of the line was still visible both from the ground and air in the 1970s and there were still cast iron poles to be noted along the path, but the site of the line and the once cleared path that Hans Bellert patrolled are now undetectable on the landscape.

#### **16.3 Forestry Operations:**

The history of the area surrounding the George Haddock Track, like that of Fraser Island as a whole, is largely bound up with forest operations. In 1863 the whole of Fraser Island had been declared an Aboriginal reserve. This was progressively reduced and, following the closure of the Bogimbah Mission in 1905 and the central part of Fraser Island, was declared a Forestry Reserve in 1908. By 1925, most of the island had been set aside as State Forest and for most of the 20<sup>th</sup> Century, State Forest 3 included more than 99% of the island.

## 16.4 Forestry in Northern Fraser Island (Kgari):

The survey that Buck Geoghan was engaged in, was assessing the timber potential of the unexploited forests of the island. Although the exploitation of the island's forest had begun in 1863, more than half a century later they were still confined to an area south of Yidney Scrub. The remoteness of the forests between Yidney Scrub and Bowarrady meant that they were difficult to reach. The forests north of Eli Creek were the only ones on Fraser Island that contained Hoop Pine (*Auracaria cunninghamii*), which was much coveted and sought by the sawmillers at the time.

It is reported that, by the end of the 1870's, hoop pine, kauri pine and white beech were being taken from Yidney, Woralie and Bowarrady Scrubs and that Cypress pine was being taken from an area between Yankee Jack Creek and Bowarrady (Powell 1998)

The presence of the large volume of much desired hoop pine was the driver for the survey being undertaken by Geoghan and others in the 1920s and 30s, to gauge the extent of the resource. However, it was the difficulty in shipping out the logs that saved them until the 1970s. Even in the 1960s an unsuccessful attempt was made to take a trial shipment of logs from just north of Woralie Creek. However the difficulty of mooring and loading barges anywhere along the shallow waters and exposed beaches in this part of the island meant that the shipment of logs was left to rot. They could still be seen from the water level as late as the 1970s, lying atop the beach cliffs.

## 16.5 Mapping Lake Allom:

One of the foresters who was active in mapping and exploring the extent of the forest resources in this part of the island was a surveyor, Noel Allom, who was in the 1930's was the District Forester. His surveys left one lake along his "AB" survey line left marked on Forestry maps as "AB Lake". This was recognized as a nonsensical name and in 1978 the Queensland Place Names Board officially renamed it as Lake Allom. Noel Allom's daughter, Billie Watts, was to become FIDO's Honorary Secretary and serve in that role, being most active in seeking an end to logging, for 17 years until her death in 2004.

## 16.6 Logging Operations Moving Northwards:

The exploitation of the forests along the George Haddock Track route north of Yidney Scrub began in the 1960s. Initially this was only in the area south of the Yidney Scrub. However, as resources were progressively depleted in the southern part of the island, exploitation kept slowly pushing north towards Lake Bowarrady. This was only possible using more motorized and ever more powerful trucks and establishing Puthoo Creek, just east of Moon Point, as the log dump. A network of tracks radiating from Puthoo Creek enabled exploitation to begin.

Even as logging intruded more and more into the virgin forests surrounding the George Haddock Track route, not all of the forest was touched. Small coups were offered by the Forestry Department for auction. The only two eligible bidders for the resources were the two large Maryborough sawmillers, Hyne and Son and Wilson Hart Pty Ltd. In between these coups offered for sale, were areas of virgin forest that evaded the loggers' axes and saws. One such is what has been dubbed "a Cathedral Forest" north of Lake Coomboo, through which the track passes. It is acclaimed to contain some of the most attractive areas of forest on Fraser Island

## 16.7 Roads & Shacks Extend North:

As the focus of Forestry operations moved further north and away from the bases at Central Station and Ungowa, workers built shacks beside some of the lakes to reduce travelling time. Shacks with galvanised corrugated iron and sawn timber floors were established at Lake Garawongera and Lake Coomboo. These were only removed in the 1980s.

## **16.8 The Fraser Island National Park Established and Extended South in Stages:**

The 1970's were very significant because of the controversy associated with sandmining. This also put the spotlight on the failure of the Queensland Government to protect any part of Fraser Island with National Park status. Thus began a Queensland Government response by first establishing a small (24,807ha) National Park in the remote north of the island south to behind Indian Head in 1971 and then extending it southwards by instalments as a result of continuing public pressure.

The second instalment in 1977 brought the National Park boundary south. This included all of Lake Bowarrady and the commercial forests north of the road that extended from Arch Cliffs on the shores of Hervey Bay to the Cathedrals coloured sands on the East Coast of the island. While some of this road east of Lake Bowarrady is now overgrown, much of the western section of that road now forms part of the George Haddock Track.

## **16.9 The Legacy of the Loggers:**

Apart from the roads and buildings left as a result of a century of forestry operations in the area covered by the George Haddock Track, there is a more subtle legacy.

The fire history, the changes to the structure and composition of the forest and other archaeological relics such as the scar trees, deliberately and accidentally created, are all testimony to this era.

## **16.10 The Bowarrady Shanty:**

A shanty constructed of round bush timber and clad with huge slabs of Satinay bark was located almost at the edge of Lake Bowarrady. That had almost disintegrated by the time of the first FIDO Top End Safari in 1973 and was gone by 1974.

## **16.11 History of Fire:**

While much of the early fire history remains a mystery, most ecologists explain the natural occurrence of Hoop Pine (*Auracaria cunninghamii*), only occurring in the northern part of the Fraser Island forests, and indeed only in the rainforest north of Eli Creek, as attributable to an ancient pre-history Fraser Island fire that allowed hoop pine to establish in this area.

## **16.12 Changes to the Forest:**

Logging clearly changed the forest in many significant ways. Areas subjected to selective logging are now depleted of many of the target species that were taken and now have a different composition. Logging also opened the canopy, allowing more light to penetrate, resulting in a significantly denser understory and in a few cases, weeds have taken advantage of the opening of the forest.

In some cases there has been a deliberate manipulation of the forests to encourage Blackbutt regeneration. This particularly occurred in what was identified on Forestry maps as "Block 14", which covered a large area of Blackbutt and was a closed forest between Lake Coomboo and Lake Allom. This area had entirely escaped the axe and the saw until the 1980's. When loggers did enter the area, the impacts were very severe and significant areas north and east of Freshwater Lakes were clearfelled to promote Blackbutt regeneration.



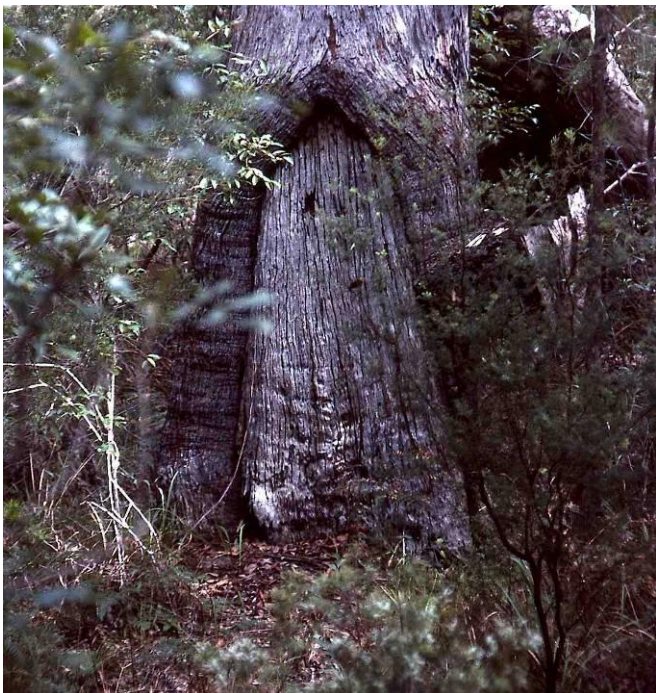


**Figure 21 - Block 14, Preparing a blackbutt forest in 1988**

Figure 21 shows block 14 with a Blackbutt forest being prepared for regeneration in 1988. After clearfelling, the area was burnt to create a seedbed, to permit small Blackbutt seedlings to grow without competition

### **16.13 Scar Trees:**

There are deliberate and accidental scar trees and there are also Aboriginal scar trees and more modern post-contact scar trees. The number of Aboriginal scar trees everywhere is rapidly diminishing due to the age of the tree. Along the George Haddock Track or close to it, there are some significant Aboriginal scar trees. The most obvious of these is beside the road leading down to Lake Allom.



**Figure 22 - Gunyah tree**

Figure 22 shows what is believed to be a “Gunyah Tree”, where the bark of this huge blackbutt was peeled off in a classic Church-window shape to form the roof of a gunyah that would provide a weather proof shelter for a family group. The height is usually as high as a standing man could reach with his stone axe and the width usually about as wide as he could reach. On Fraser Island most scar trees with this shape are Blackbutts.

### 16.14 Scar Trees in Lake Bowarrady Area:

It is worth mentioning that, because the bark to cover a bush shack was exclusively from old Satinay trees, forestry workers saw it as having no commercial value. They therefore removed huge slabs, with sharp steel axes, from trees adjacent to the roads leading to the campsite. These scar trees have been thought by some to be “gunyah” trees created by Aborigines. However, not only did Aborigines almost exclusively select Blackbutt trees to provide the roofs of their gunyahs, but these bark slabs were cut in the shape of church windows, not square cut as the Lake Bowarrady Satinay scar trees are. The bark was also cut and peeled off using stone axes. The writer can attest to seeing the deep cut of the steel axes on the Satinay scar trees still evident in the 1970’s before the bark grew over them. These personal observations are significant because these scar trees are associated with the timber industry and not with indigenous heritage.

### 16.15 Other Post-Contact Scars:

There are many trees on Fraser Island scarred during the 20<sup>th</sup> Century, apart from securing bark for shanties. Some trees have been scarred accidentally by machinery knocking the bark off unintentionally. There are also many trees bearing fire or lightning scars that may sometimes resemble Aboriginal gunyah trees in shape. Interpretation of such scars requires some expertise.

### 16.16 Shield Trees:

A number of trees along the roads were marked deliberately by Forestry surveyors, so that they could fix the routes of roads on maps. To do this they would use steel axes to give the tree the Alpha name of the survey and a sequential number. The Alpha characters were chosen to be easier to chisel out with an axe, such as the “VA” traverse used for the Northern Road leading to Lake Bowarrady. (No surveyors used “B”, “O,” or “S”). The George Haddock Track follows this route for some kilometres and passes a number of what the surveyors nominated as “shield tree”. While bark has grown almost completely over many of these scars since the last such survey in the 1960’s, some are visible and they are all protected under Queensland law.



Figure 23 - Shield Tree

The above “Shield Tree” VA 239 has the numbers placed horizontally whereas the shield on the tree below is vertical because the tree was much smaller in diameter. In both cases the size of the scar has shrunk as the bark has grown back.



Figure 24 - Shield tree with a survey mark incised with a steel axe

### 16.17 Arch Cliffs Access Point:

The Fraser Island Defenders Organisation (FIDO) was established in 1971 to oppose sandmining and argue for the wisest use of the natural resources of Fraser Island. In 1973, after having developed experience in operating safaris in the southern section of Fraser Island, FIDO began to offer Top End Safaris coinciding with the August school vacations and the flush of spring wildflowers. These safaris became annual events and carried up to 36 people, with all of the food and camping gear being ferried ashore from the “Island Queen” and then loaded into two ex-Army trucks on the beach in front of Arch Cliffs. The safari would then traverse the island on the Bowrady Track, to reach the east coast before heading north to Sandy Cape and then ultimately leaving the island via Ungowa.

From the late 1980’s onwards, a flotilla of whale watching vessels from Hervey Bay has streamed past Arch Cliffs each year, particularly between August to October. This fleet uses Arch Cliffs as a major reference point, while tracking the movements of migratory Humpback whales that move into Hervey Bay at this time on their migration southwards to feed in Antarctic waters. This additional linkage between tour boats, whales and Arch Cliffs is one of the reasons for including Arch Cliffs as a terminal point for the George Haddock Track.

Because commercial tour boats regularly pass close to Arch Cliffs heading out on whale watching or to take tours to Sandy Cape, it is thought that, by prior arrangement, walkers could arrange to be dropped off on the beach to commence this most attractive walk. Alternatively, they could walk up the beach from Moon Point and turn inland at Arch Cliffs to commence the walk.

### 16.18 The End of Fraser Island Logging:

The controversy over the adequacy of the Fraser Island National Park and the sustainability of logging operations continued throughout the era of the Bjelke-Petersen Government in Queensland.

The controversy was hoped to have been resolved by the election of the Goss Government, elected on a platform of creating the whole of Fraser Island as a National Park. However, when the Goss Government extended the National Park only as far south as a line from Eli Creek to Moon Point in 1990 (but including the eastern coast strip for the first time), there was a public outcry of being short-changed. The furore resulted in the Goss Government establishing the Fitzgerald led Commission of Inquiry in 1991, to examine the Conservation, Management & Use of Fraser Island & the Great Sandy Region.

In the late 1970s and 1980s, with logging operations moving progressively northwards, two more buildings were placed close to Fraser Island lakes. The two sawmilling companies decided to build a new hut close to Lake Coomboo to allow the companies' own assessors to value the timber coups being offered for auction. Unlike most previous huts in the northern part of the island, the Lake Coomboo building was a professionally built dwelling. It was located further from the lake's edge on the top of an old lake lunette. This became, for a time, the second building at Lake Coomboo.

### **16.19 The Demolition of Loggers' Huts:**

The deterioration of the workers' shanty and its replacement with new barracks at Lake Allom, resulted in its removal in the 1980. The subsequent extension of the National Park in 1990 to include Lake Coomboo and the forests north of Eli Creek, meant that the sawmillers' hut was no longer needed for timber assessors. It now serves as barracks for National Park Rangers when they are working in this part of Fraser Island.

### **16.20 Huts as Bases for Researchers:**

In the last decade before its removal, the forest workers shanty had served as a field base for researchers carrying out some of the more significant research projects undertaken on Fraser Island.

Dr Maureen Longmore used the shanty while carrying out some of the most defining studies of Fraser Island's perched dune lakes. Her studies at Hidden Lake showed that it was a totally closed system with equilibrium between evaporation and precipitation. She established this by drilling 25 metres out from the lake-shore to prove that the water table did not even extend that far. She was also able to establish that there had been no loss of radioactive caesium since the fallout from atmospheric nuclear testing in the 1950s. In another project, she also was able to age the lake sediments in Old Lake Coomboo at 300,000 years, the oldest known lake sediment in eastern Australia.

Dr Arthur Georges carried out the research for his doctoral thesis on the turtles in Lake Coomboo on his way to gaining acclaim as an expert in Australian freshwater ecology and reptiles, particularly freshwater turtles.

Coincidental with the removal of the disintegrating forest workers shanty at Lake Coomboo and the movement of forestry operations further north, the Forestry Department established a professionally built set of barracks on a hill near Lake Allom in about 1985. At the same time it opened up a camping ground and a day use area straddling the road leading up the hill to the barracks. The day-use area was on the lakeside of the road and the small campground was on the uphill side. The campground quickly deteriorated and the area closed to camping within a few years. Ironically the Lake Allom barracks were not used by forestry workers in 1990-91 but by the Queensland Police, who were based there to ensure that blockades by "greenie" protesters were not able to disrupt the on-going logging operations at the time.

### **16.21 Network of Logging Roads and Tracks:**

As the logging operations were extending progressively northwards, the network of timber haul roads and tracks to access the timber was also extended into previously untouched areas. The George Haddock Track utilizes many of these former roads and tracks, adopting them to form the basis of the route and linking them with the minimum short sections of new tracks. One section of

new track though, is required to avoid walkers having to share part of the Awinya Road with vehicular traffic.

### **16.22 The Telecom Track:**

One of the former tracks used for the George Haddock Track just west of Lake Garawongera was not installed by Forestry Department. In 1971-72 Telecom laid an underground cable from Happy Valley to a hilltop south-east of the mouth of Bogimbah Creek. This established a telephone link for Fraser Island residents in Happy Valley via a microwave tower that transmitted to Hervey Bay. The route along which this cable was laid became known as the Telecom Track.

### **16.23 Telecom on Bowarrady Hill:**

In another communications exercise at the same time, Telecom established a similar tower to transmit microwave signals to Hervey Bay from the highest point of Fraser Island, Bowarrady Hill, 240 metres above sea level. This tower receives signals from another microwave tower near Orchid Beach village and relays them. The George Haddock Track passes close to this tower. The service road to allow technicians to occasionally access the tower forms part of the George Haddock Track.

### **16.24 The Woralie Track:**

In the late 1970s, with the proposal to establish a new resort that is now known as Cathedral Beach, a private organisation paid for a Forestry track that extended just east of Lake Allom to the east coast. This provided a reliable all-tide access to the then new resort. This has now become a major cross-island road, the Woralie Track.

### **16.25 K'gari:**

What is now K'gari Camp run by a Butchulla organization, was subsequently established at the eastern terminus of the Woralie Track and opened in 1995 as the Thoorgine Educational and Cultural Centre. The 7.5 hectare site was originally set aside on the condition that it was to be operated by indigenous interests. This saved it being sold to non-indigenous interests when it went into receivership in 1998. After four years in receivership, in 2003 a new group of Butchulla took over its management when the Centre was renamed K'gari.

### **16.26 The 1990 Forest Protests:**

The network of Forestry Roads and logging tracks played a significant part in the intensification of the campaign to end logging on Fraser Island altogether. The extension of a new road to access the virgin forests of Block 14 only occurred in 1979. Its progress and the resulting devastation was followed, photographed and documented by the Fraser Island Defenders Organisation. This led to increasing opposition to the continuance of the logging operations into other virgin forests further north. Block 14 was the scene of some of the more dramatic protests against the logging in 1990.



Figure 25 - 1990 Forest Protests

During 1990 forest protesters from around Australia demonstrated against the continuance. During 1990 they set up tree-top platforms and banners such as this “Ancient Forests — Too precious to lose — Save our planet - Stop Logging” when the then Commissioner, Tony Fitzgerald, was passing to assess forest impacts.

The report of the Fitzgerald Commission of Inquiry in 1991 marked the end of Fraser Island logging and led to the World Heritage listing of Fraser Island in 1992, as well as the creation of the Great Sandy Region Management Plan in 1994. Subsequent to that plan was the development of a Walking Track Strategy.

### 16.27 QPWS Walking Track Strategy:

In its submissions to the QPWS in 2001 on the development of the walking track strategy, FIDO argued for the establishment for a K’gari Track. This would be a long distance walking track running the full length of Fraser Island. The name is still being advocated for the long distance walking track on Fraser Island. The QPWS has ruled out a formal walking track north of Dundubara because that section of the island is zoned in the Management Plan as “Remote”. This would effectively preclude building or defining an actual track between Lake Bowarrady to Sandy Cape.

The 44.5 of the 52.5 kilometres of the George Haddock Track utilises infrastructure roads and a bridge developed during the post-contact period. It opportunistically uses mainly the legacy of the timber industry, but also draws on some legacies of the tourism and communication industries.

## **17 - References**

- Brown, Elaine. (2000). *Cooloola Coast. Noosa to Fraser Island, the Aboriginal and settler histories of a unique environment*. University of Queensland Press, St Lucia. 2000.
- Fitzgerald A (1991). *Report of Commission of Inquiry into the Conservation, Management & Use of Fraser Island & the Great Sandy Region* Queensland Government
- Fraser Island Defenders Organisation (1971 to 2012). *MOONBI newsletter Issues 1 to 126*, Fraser Island Defenders Organisation
- GHD, (2002). *Fraser Island Sustainable Transport Management Study — Transport Strategies Working Paper, October 2002 Report 41-10875*.
- Haslam, S (2012). *Noosa's Native Plants 3<sup>rd</sup> Edition*, Noosa Integrated Catchment Association.
- McNiven, Ian J., Thomas, Ian and Zoppi, Ugo. (2002). *Fraser Island Archaeological Project (FIAP): Background, aims and preliminary results of excavations at Waddy Point 1 Rockshelter*". *Queensland Archaeological Reports*. Volume 13. 2002. Pp 1-20.
- Petrie, R (1995). *Early Days on Fraser Island 1913-1922* GO BUSH Safaris, Gladesville NSW
- Powell, J. (1998). *Travel Routes, Forest Towns and Settlements — A report for the Joint Commonwealth and Queensland RFA Steering Committee*.
- Queensland Parks and Wildlife Service (1994). *Great Sandy Region Management Plan 1994-2010* Queensland Government
- Queensland Parks and Wildlife Service (2009). *Environmental Impact Assessment Carnarvon Great Walk* Queensland Government
- Queensland Parks and Wildlife Service (2001). *On Shifting Sands* Queensland Government
- Queensland Parks and Wildlife Service (1994). *Great Sandy Region Management Plan 1994-2010* Queensland Government
- Queensland Parks and Wildlife Service (2005). *Great Sandy Region Management Plan 1994-2010 Revised Version* Queensland Government
- Queensland Government Legislation: as applicable
- Petrie, R (1995). *Early Days on Fraser Island 1913-1922* GO BUSH Safaris, Gladesville NSW
- Powell, J. (1998). *Travel Routes, Forest Towns and Settlements — A report for the Joint Commonwealth and Queensland RFA Steering Committee*.
- Sinclair, J (1997). *Discovering Fraser Island and Cooloola*, Australian Environmental Publications.
- Steele, J.G. (1984). *Aboriginal Pathways in southeast Queensland and the Richmond River*. University of Queensland Press, St Lucia. 1984.

## Appendix A – Initial Letter from NPAQ to Minister



(FOUNDED 1930)

Unit 10  
Fortune House  
Cnr Finchley & Black Sts  
Milton 4064  
(Not for postal purposes)

Telephone  
(07) 3367 0878  
Fax  
(07) 3367 0890

POSTAL ADDRESS:  
P.O. BOX 1040, MILTON CENTRE  
QUEENSLAND 4064  
Website: www.npaq.org.au  
Email: npaq@npaq.org.au  
ABN 60 206 792 095

# National Parks Association of Queensland Incorporated

Thursday, 8 May 2008

Hon Andrew McNamara MP,  
Minister for Sustainability, Climate Change and Innovation,  
PO Box 15155,  
CITY EAST, QLD. 4002

Dear Andrew

### RE HONOURING THE LATE GEORGE HADDOCK, OAM.

You are doubtless aware of the enormous contribution made by the Late George Haddock who died at the celebration of the centenary of Queensland National Parks at Tamborine on 29<sup>th</sup> March. George was an indefatigable worker for the extension and better management of Queensland National Parks. He has served in an Executive position in the National Parks Association of Queensland (NPAQ) for almost a quarter of a century as President, Hon. Secretary and Treasurer until his untimely death. He was a member of the Fraser Island World Heritage Community Advisory Committee for over a decade and it is hard to enumerate his many contributions to conservation and the community.

It is therefore fitting that the Queensland Parks and Wildlife is sympathetic to honouring George Haddock in some appropriate way. John Sinclair, as a close friend of George, and a voluntary Project Officer with the Fraser Island Defenders Association (FIDO) has been discussing this proposal with George's family and has their support.

They agreed that it would be most appropriate to remember George's contribution to both Fraser Island and National Parks throughout Queensland in general with the proposed panel at Eli Creek, if it can be prepared and installed before you open the new walk, which we understand is imminent. This is fitting because, as you would be aware, the first Eli Creek boardwalk was constructed entirely by volunteers with working bees organized by the Fraser Island Defenders Organisation over 16 weekends in 1982-83. Fraser Island and National Parks throughout Queensland generally are indebted to the input of volunteers who have provided advice and experience and voluntary labour to assist managing these very precious places.

However, this organization with the concurrence of his family, also proposes something larger to honour George Haddock and his exemplary role as a volunteer.

We are suggesting that the section of the Fraser Island Great Walk that was originally proposed some years ago but which couldn't be built due to a lack of funds, be now built by volunteers and named the George Haddock Section of the Great Walk. This would run from Lake Garawongera to Lake Bowarrady through some of the most spectacular rainforest on Fraser Island and passing near some of its most beautiful lakes. Because there is already a walking track from Lake Bowarrady to Dundubara, it would mean that, in time, the proposed Great Walk from Dilli Village to Dundubara would be Queensland's longest Great Walk. It is already one of the most popular of the Great Walks.

We appreciate that your department will need to define the route and clarify the issues related to Native Title and this may take some time. However from the time you agree to our proposal, it will take us time to organize and coordinate with the Department, volunteers and resources to put the necessary arrangements in place.

We look forward to your endorsement for this proposal,

Yours sincerely

John Bristow, President



## Appendix B – Letter from the then Minister Andrew McNamara MP



**Hon Andrew McNamara MP**  
Member for Hervey Bay



**Queensland  
Government**

**Minister for Sustainability,  
Climate Change and Innovation**

Ref: BNE21419-2  
BNE2008/6690  
SU/08/2094

13 JUN 2008

Mr John Bristow  
President  
National Parks Association of Queensland Inc  
PO Box 1040  
MILTON CENTRE QLD 4064

Dear Mr Bristow *John,*

Thank you for your letter of 13 May 2008 concerning the late George Haddock, OAM.

Both Queensland Parks and Wildlife and I share your high regard for George's conservation achievements in Queensland and his tireless efforts to help improve and extend the State's National Park Estate.

The Environmental Protection Agency is currently working on various options for a fitting memorial to honour George's work and close affinity with national parks and his particular affection for Fraser Island. I welcome your suggestion of naming a George Haddock Section of the Fraser Island Great Walk, if a northern extension of this Great Walk was to be developed. I understand that John Sinclair has also proposed this idea at a recent meeting of the Fraser Island World Heritage Area Community Advisory Committee (FIWHACAC) of which George was an active and engaging member.

Once a range of memorial options has been developed, they will be presented to the FIWHACAC for further input and consideration.

Thank you for bringing this matter to my attention. Should you wish to discuss the matter further, please do not hesitate to contact Peter Tierney of Queensland Parks and Wildlife on telephone 4121 1938.

Yours sincerely

*Andrew McNamara*

**Andrew McNamara MP**  
**Minister for Sustainability,**  
**Climate Change and Innovation**

Level 17  
160 Ann Street Brisbane 4000  
PO Box 15155 City East  
Queensland 4002 Australia  
**Telephone +61 7 3336 8032**  
**Facsimile +61 7 3227 6309**  
**Email sustainability@ministerial.qld.gov.au**  
ABN 65 959 415 158

## Appendix C – Letter from the Minister, The Hon Kate Jones MP



Hon Kate Jones MP  
Member for Aspley



Queensland  
Government

Minister for Climate Change  
and Sustainability

Ref: BNE14453-1  
BNE2009M925  
CC:09/03/3

27 JUL 2009

Mr John Sinclair  
Honorary Project Officer  
Fraser Island Defenders Organisation  
1/32 Weston Street  
COORPAROO QLD 4151

Dear Mr Sinclair

Thank you for meeting with me on 26 May 2009 concerning, amongst other issues, your proposal for the Fraser Island Defenders Organisation (FIDO) and the National Parks Association of Queensland (NPAQ) to construct a northern extension to the existing Great Walk on Fraser Island.

Based on earlier initial planning for the Fraser Island Great Walk, the proposed extension would follow a route from Lake Garawongera to Dundubara, via Coomboo and Bowrady Lakes.

As requested, I would like to confirm my and the Department of Environment and Resource Management's (DERM) support in principle for your proposal, including the request to name the proposed new section after George Haddock. I understand that now in-principle support has been granted, FIDO and NPAQ aim to provide a detailed project plan to DERM, independently obtain the necessary planning and construction approvals for the project, and subsequently undertake construction consistent with standards established for the existing sections of the Fraser Island Great Walk. I share your view that this project would be suitable for gradual completion as funds and volunteer capacity become available over the long-term.

I am advised that typical approval processes are invariably complex and likely to include: Native Title Notification; Cultural Heritage Assessment; Environmental Impact Assessment (with possible referral under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*); and requirements under the *Integrated Planning Act 1999*, *Wild Rivers Act 2005* and the *Workplace Health and Safety Act 1995*. Compliance with the Australian Standards for Walking Tracks (Class 4) and any applicable Local Authority approvals should also be factored in.

I would be pleased if you could confirm your interest in proceeding with the project on this basis by writing to Andrea Leverington, Assistant Director-General, Queensland Parks and Wildlife Service, PO Box 15155, CITY EAST QLD 4002.


Level 17  
150 Ann St West Brisbane QLD 4000  
PO Box 15155 City East  
Queensland 4002 Australia  
Telephone +61 7 3336 8032  
Facsimile +61 7 3227 6309  
Email [sustainability@ministerial.cio.q.gov.au](mailto:sustainability@ministerial.cio.q.gov.au)  
Website [www.derm.qld.gov.au](http://www.derm.qld.gov.au)

- 2 -

If you require any further information, Heath Rosen of the Department of Environment and Resource Management on telephone 3202 0285, would be happy to assist.

Thank you for your Organisation's interest in enhancing the Fraser Island Great Walk.

Yours sincerely



**Kate Jones MP**  
**Minister for Climate Change and Sustainability**

## Appendix D – Letter from A/A Director General A Moody

File Number: MOG 2326  
MOG 2009/217



**Queensland  
Government**

Enquiries      Heath Rosen  
Telephone      (07) 3202 0285  
Your reference  
Our reference      BNE2009/8681

Department of  
**Environment and  
Resource Management**

22 September 2009

Mr John Sinclair  
Honorary Project Officer  
Fraser Island Defenders Organisation  
PO Box 70  
BALD HILL QLD 4036

Dear Mr Sinclair

**Re: Proposed George Haddock Section Fraser Island Great Walk**

Thank you for your letter of 1 September 2009 confirming your interest to proceed with the proposed George Haddock Section of the Fraser Island Great Walk. Generally, the Department supports the Fraser Island Defence Organisation's (FIDO) proposal as outlined in your letter.

As previously indicated, it will be FIDO's responsibility to ensure that a detailed project plan, all necessary approvals, compliance with all Local, State and Federal regulations including Queensland Parks and Wildlife Service (QPWS) walking track and infrastructure standards are in place and approved before any on-ground work commences.

In regard to the support you require from QPWS, kindly note:

- a) You will need to apply for vehicle exemptions through the Maryborough office. In order for the exemption and associated conditions (i.e. restricted to work site & camp) to be issued, you will need to provide details of the vehicle, registration, ownership, names of occupants, timeframes, dates and areas relating to the program.
- b) The Department is unable to issue you with QPWS master keys. However, consideration will be given for the temporary fitting of dual locks that can be placed in series to the points of access you may regularly require.
- c) The QPWS buildings at Lake Coomboo are in a state of disrepair (earmarked for removal) and the location is considered unsuitable for camping. It would be preferable if formal

camping sites with appropriate facilities are reserved instead. The QPWS Regional contact will be able to provide advice about tools and equipment and their storage.

- d) The requirements for track design/construction, signs, dingo deterrence and buildings will require QPWS approval before on-ground works begin. QPWS will be able to provide advice on standards or appropriate designs.
- e) Marc Dargusch will be the QPWS Regional Contact and Heath Rosen the contact for project governance. Both Marc and Heath have been involved in previous Great Walks and will be able to provide you with expert advice.

As you would be aware, QPWS is a safety conscious organisation and approved safety plans will be required as part of the project plan. Also, essential insurances will be required to cover volunteers, staff and the public. Copies of these insurances will need to be forwarded to the QPWS before the project begins and thereafter access and programmed work will be subject to conditions and prior approval.

Finally, once the project is underway, you will need to submit quarterly reports to QPWS indicating the work that has taken place and the proposed work schedule for the following quarter.

I wish FIDO every success in the completion of this project and should like to thank you for your initiative and enthusiasm in proposing the construction of a new George Haddock Section of the Fraser Island Great Walk.

Should you have any further queries, please do not hesitate to contact Heath Rosen on (07) 3202 0285.

Yours sincerely



Annie Moody  
Acting Assistant Director-General  
Queensland Parks & Wildlife Service

## **Appendix E – Conceptual Shelter Shed Design for George Haddock Track**

### **C 1 Parameters**

The final design of the shelters must meet the requirements of the Fraser Coast Regional Council and also have the approval of the Queensland Parks and Wildlife Service before any construction can begin. However the concept is clear. The buildings are not huts, just shelters. They will be completely enclosed to keep out all larger animals but much of the enclosing will be done only with mesh.

The reason for not fully enclosing them is to allow light and ventilation and to discourage them being used for more than overnight stopovers.

The University of Queensland School of Architecture is assisting the proponents in the design of the Hikers shelters. They have contributed the shelter concept designs (See sketch next page ), and are keen to engage more in the project once approval has been obtained to move to the construction stage. The School of Architecture will also provide a building design and material specifications that will be structurally sound and suitable for the purposes and meet the requisite building standards required by the Fraser Coast Regional Council.

The concept design is to comfortably accommodate eight people but, should the level of usage justify it, this capacity can be easily increased by the addition of a loft.

The concept drawing for the shelters shows it having a roof area of 4.2 metres by 9.1 metres. The design allows for a second sleeping tier, if and when usage justifies. The back and sides will be covered with corrugated galvanized iron to the height of 2.0 metres. The remainder will be enclosed with mesh for security from birds, natural light for ventilation. The front will be enclosed with iron only to 1.5 metres to allow an outlook. It is proposed buildings will be oriented to face the north-west. The building will have a spring loaded wire mesh doors to keep wildlife out. There will be a second door at the opposite end.

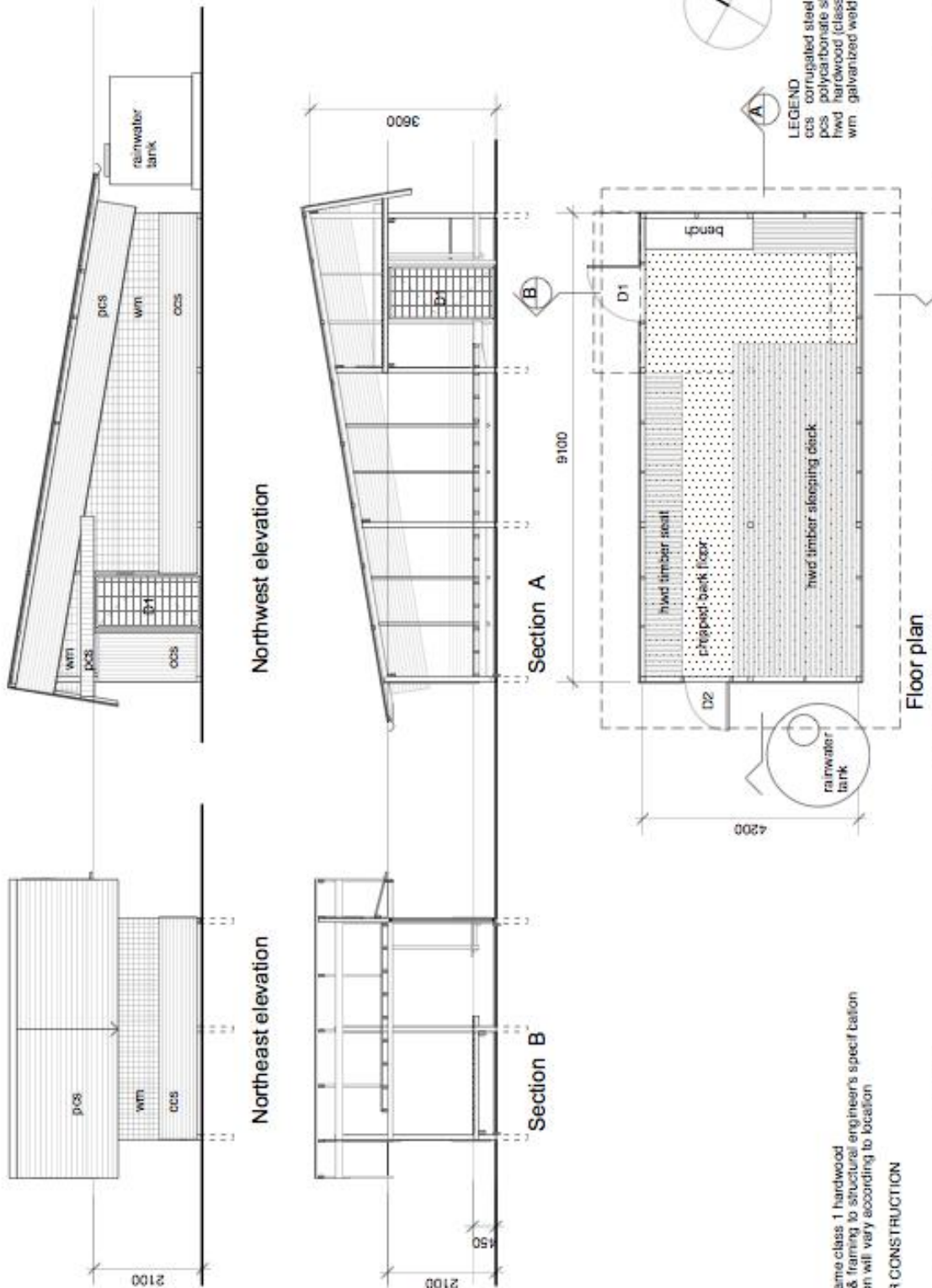
The sleeping bench 0.45 metres above ground will each sleep four people and also serve as seats. A bench with a shelf below will serve as a cooking area. The one metre wide passages between the benches will be simple woodchip covered ground.

### **C 2 Equipment**

It is not proposed to provide any furniture or equipment because the walkers who may use this amenity will be advised to be self-sufficient with their own stoves, food and equipment.

It is proposed that there will be a water tank at the rear of the building to catch the roof runoff. However there will be no reticulation of the water caught there, as this could encourage excessive and wasteful usage of water that is primarily being supplied for human consumption. If it was used for washing it could create problems for waste disposal.

The location of the water tank and other features of the shelter are being critically assessed as part of the University of Queensland School of Architecture project.



PROJECT		TITLE		SCALE		DRAWN		DATE		DATE		REVISED	
George Haddock Track Shelters		Sketch design		1:100 @A4		A		1202		20/11/12		SD01	
PROJECT		TITLE		SCALE		DRAWN		DATE		DATE		REVISED	
Tim O'Rourke AIA		George Haddock Track Shelters		1:100 @A4		A		1202		20/11/12		SD01	
16 Copeland St, Milton Qld 4064		Sketch Design Nov 2012		1:100 @A4		A		1202		20/11/12		SD01	
tel 07 3369 4789				1:100 @A4		A		1202		20/11/12		SD01	
fax 07 3369 4759				1:100 @A4		A		1202		20/11/12		SD01	
email tim.orourke@tpa.com.au				1:100 @A4		A		1202		20/11/12		SD01	

## Appendix F -- Plant species Recorded during the Field Survey

<b>FAMILY</b>	<b>GENUS</b>	<b>SPECIES</b>	<b>COMMON NAME</b>
Agavaceae	<i>Cordyline</i>	<i>rubra</i>	red-fruited palm lily
Aizoaceae	<i>Carpobrotus</i>	<i>glaucescens</i>	pigface narrow-leaved
Apiaceae	<i>Platysace</i>	<i>linarifolia</i>	platysace
Apocynaceae	<i>Alyxia</i>	<i>ruscifolia</i>	chain fruit
Apocynaceae	<i>Parsonsia</i>	<i>straminea</i>	monkey vine
Araliaceae	<i>Astrotriche</i>	<i>glabra</i>	
Araucariaceae	<i>Agathis</i>	<i>robusta</i>	kauri pine
Araucariaceae	<i>Araucaria</i>	<i>cunninghamii</i>	hoop pine
Arecaceae	<i>Archontophoenix</i>	<i>cunninghamii</i>	piccabeen palm
Asclepiadaceae	<i>Hoya</i>	<i>australis</i>	wax flower
Asteraceae	<i>Rutidosis</i>	<i>murchisonii</i>	
Azioaceae	<i>Sesuvium</i>	<i>portulacum</i>	sea purslane
Bignoniaceae	<i>Pandorea</i>	<i>pandorana</i>	wonga vine
Burmanniaceae	<i>Burmannia</i>	<i>disticha</i>	christmas candles
Caesalpiniaceae	<i>Caesalpinia</i>	<i>schortechini</i>	large prickly vine
Campanulaceae	<i>Lobelia</i>	<i>trigonocaulis</i>	
Casuarinaceae	<i>Allocasuarina</i>	<i>littoralis</i>	black sheoak
Casuarinaceae	<i>Casuarina</i>	<i>equisettifolia</i>	horse-tail oak
Comelinaceae	<i>Commelina</i>	<i>diffusa</i>	wandering sailor
Convolvulaceae	<i>Ipomoea</i>	<i>pes capre</i>	goat's foot convolvulus
Cunoniaceae	<i>Schizomeria</i>	<i>ovata</i>	crabapple
Cyperaceae	<i>Caustis</i>	<i>blakei</i>	fox tails
Cyperaceae	<i>Caustis</i>	<i>recurvata</i>	curly sedge
Cyperaceae	<i>Cyperus</i>	<i>polystachos</i>	bunchy sedge
Cyperaceae	<i>Gahnia</i>	<i>clarkei</i>	tall saw sedge
Cyperaceae	<i>Lepidosperma</i>	<i>laterale</i>	variable sword sedge
Cyperaceae	<i>Lepironia</i>	<i>articulata</i>	grey rush
Dennstaedtiaceae	<i>Pteridium</i>	<i>esculentum</i>	bracken
Dilleniaceae	<i>Hibbertia</i>	<i>aciculais</i>	
Dilleniaceae	<i>Hibbertia</i>	<i>linearis</i>	guinea flower
Dilleniaceae	<i>Hibbertia</i>	<i>scandens</i>	twining guinea flower small-leaved guinea flower
Dilleniaceae	<i>Hibbertia</i>	<i>vestita</i>	flower
Dioscoriaceae	<i>Dioscorea</i>	<i>transversa</i>	native yam
Droseraceae	<i>Drosera</i>	<i>binata</i>	fork-leaved sundew
Droseraceae	<i>Drosera</i>	<i>pygmaea</i>	pygmy sundew
Droseraceae	<i>Drosera</i>	<i>spatulata</i>	spoon-leaf sundew
Elaeocarpaceae	<i>Elaeocarpus</i>	<i>reticulatus</i>	blueberry ash
Epacridaceae	<i>Brachyloma</i>	<i>daphnoides</i>	daphne heath wallum heath, coral heath
Epacridaceae	<i>Epacris</i>	<i>microphylla</i>	heath
Epacridaceae	<i>Leucopogon</i>	<i>leptospermoides</i>	whitebeard
Epacridaceae	<i>Leucopogon</i>	<i>parviflorus</i>	whitebeard
Epacridaceae	<i>Leucopogon</i>	<i>sp.</i>	whitebeard



Epacridaceae	<i>Monotaca</i>	<i>scoparia</i>	prickly broom heath
Epacridaceae	<i>Trochocarpa</i>	<i>laurina</i>	tree heath
Epacridaceae	<i>Woollsia</i>	<i>pungens</i>	woollsia
Euphorbiaceae	<i>Breynia</i>	<i>oblongifolia</i>	native coffee
Euphorbiaceae	<i>Homalanthus</i>	<i>stillingifolius</i>	bleeding heart
Euphorbiaceae	<i>Ricinocarpus</i>	<i>pinifolius</i>	wedding bush
Fabaceae	<i>Aotus</i>	<i>ericoides</i>	eggs and bacon
Fabaceae	<i>Bossiaea</i>	<i>ensata</i>	
Fabaceae	<i>Bossiaea</i>	<i>heterophylla</i>	
Fabaceae	<i>Callerya</i>	<i>megasperma</i>	native wisteria
Fabaceae	<i>Desmodium</i>	<i>nemorosum</i>	
Fabaceae	<i>Gompholobium</i>	<i>pinnatum</i>	poor man's gold
Fabaceae	<i>Gompholobium</i>	<i>virgatum</i>	
Fabaceae	<i>Hardenbergia</i>	<i>violaceae</i>	sarsaparilla vine
Fabaceae	<i>Hovea</i>	<i>acutifolia</i>	hovea
Fabaceae	<i>Jacksonia</i>	<i>stackhousii</i>	wallum dogwood
Fabaceae	<i>Mirbelia</i>	<i>rubifolia</i>	wallum mirbelia
Fabaceae	<i>Phyllota</i>	<i>phillicoides</i>	false parrot pea
Flagellariaceae	<i>Flagelaria</i>	<i>indica</i>	supplejack
Flindersiaceae	<i>Flindersia</i>	<i>bennettiana</i>	Bennet's ash
Gleicheniaceae	<i>Gleichenia</i>	<i>rupestris</i>	coral fern
Haemodoraceae	<i>Haemodorum</i>	<i>tenuifolium</i>	blood root
Haloragaceae	<i>Gonocarpus</i>	<i>sp.</i>	smoke bush
Hemerocallidaceae	<i>Dianella</i>	<i>caerulea</i>	common flax lily
Iridaceae	<i>Patersonia</i>	<i>fragilis</i>	native iris
Iridaceae	<i>Patersonia</i>	<i>sericea</i>	native iris
Juncaceae	<i>Juncus</i>	<i>krausii</i>	sea rush
Lauaceae	<i>Cassytha</i>	<i>filliformis</i>	dodder
Lauaceae	<i>Endiandra</i>	<i>sieberi</i>	corkwood, tell
Lauraceae	<i>Litsea</i>	<i>leafeana</i>	brown bolly gum
Lauraceae	<i>Neolitsea</i>	<i>dealbata</i>	white bolly gum
Laxmanniaceae	<i>Laxmannia</i>	<i>gracilis</i>	slender wire lily
Laxmanniaceae	<i>Lomandra</i>	<i>hystrix</i>	mat rush
Laxmanniaceae	<i>Lomandra</i>	<i>multiflora</i>	club rush
Laxmanniaceae	<i>Lomandra</i>	<i>obliqua</i>	
Laxmanniaceae	<i>Sowerbaea</i>	<i>juncea</i>	vanilla lily
Lentibulariaceae	<i>Utricularia</i>	<i>uliginosa</i>	
Loranthaceae	<i>Muellerina</i>	<i>celestroides</i>	mistletoe
Menispermicaceae	<i>Hypserpa</i>	<i>decumbens</i>	
Mimosaceae	<i>Acacia</i>	<i>baueri</i>	tiny wattle
Mimosaceae	<i>Acacia</i>	<i>flavescens</i>	primrose ball wattle
Mimosaceae	<i>Acacia</i>	<i>penninervis</i>	mountain hickory
Mimosaceae	<i>Acacia</i>	<i>ulicifolia</i>	prickly moses
Mimosaceae	<i>Acacia</i>	<i>suaveolens</i>	sweet wattle
Mimosaceae	<i>Archidendron</i>	<i>lovelliae</i>	bacon wood
Monimiaceae	<i>Wilkiea</i>	<i>macrophylla</i>	large leaf wilkiea
Moraceae	<i>Trophis</i>	<i>scandens</i>	burny vine

Myrsinaceae	<i>Embelia</i>	<i>australiana</i>	embelia
Myrsinaceae	<i>Myrsine</i>	<i>variabilis</i>	muttonwood
Myrtaceae	<i>Angophora</i>	<i>leiocarpa</i>	smooth-barked apple
Myrtaceae	<i>Austromyrtus</i>	<i>dulcis</i>	midyim
Myrtaceae	<i>Backhousia</i>	<i>myrtifolia</i>	carrol
Myrtaceae	<i>Baekkea</i>	<i>frutescens</i>	weeping baeckea
Myrtaceae	<i>Corymbia</i>	<i>gummifera</i>	red bloodwood
Myrtaceae	<i>Corymbia</i>	<i>intermedia</i>	pink bloodwood
Myrtaceae	<i>Eucalyptus</i>	<i>pilularis</i>	blackbutt
Myrtaceae	<i>Eucalyptus</i>	<i>racemosa</i>	scribbly gum
Myrtaceae	<i>Eucalyptus</i>	<i>robusta</i>	swamp mahogany
Myrtaceae	<i>Eucalyptus</i>	<i>tereticornis</i>	blue gum
Myrtaceae	<i>Eucalyptus</i>	<i>umbra</i>	white mahogany
Myrtaceae	<i>Leptospermum</i>	<i>polygalifolium</i>	wild may
Myrtaceae	<i>Leptospermum</i>	<i>semibaccatum</i>	
Myrtaceae	<i>Leptospermum</i>	<i>trinervium</i>	
Myrtaceae	<i>Lophostemon</i>	<i>confertus</i>	brush box
Myrtaceae	<i>Melaleuca</i>	<i>quinquenervia</i>	broad leaved paperbark
Myrtaceae	<i>Ocrosperma</i>	<i>lineare</i>	straggly baeckea
Myrtaceae	<i>Syncarpia</i>	<i>hillii</i>	satinay
Myrtaceae	<i>Syzygium</i>	<i>hemilamprum</i>	lillipilli
Olacaceae	<i>Olax</i>	<i>retusa</i>	
Oleaceae	<i>Notelea</i>	<i>longifolia</i>	long-leaved mock orange
Oleaceae	<i>Notelea</i>	<i>longifolia</i>	
Orchidaceae	<i>Calanthe</i>	<i>major</i>	flying duck orchid
Orchidaceae	<i>Calanthe</i>	<i>triplicata</i>	christmas orchid
Orchidaceae	<i>Cymbidium</i>	<i>sp.</i>	
Orchidaceae	<i>Dipodium</i>	<i>hamiltonianum</i>	yellow hyacinth orchid
Pandanaceae	<i>Pandanus</i>	<i>tectorius</i>	screw pine
Phileseaceae	<i>Eustrephus</i>	<i>latifolius</i>	wombat berry
Philesiaceae	<i>Geitonoplesium</i>	<i>cymosum</i>	scrambling lily
Phyllanthaceae	<i>Poranthera</i>	<i>microphylla</i>	small poranthera
Picrodendraceae	<i>Pseudanthus</i>	<i>orientalis</i>	coastal pseudanthus
Piperaceae	<i>Piper</i>	<i>hedaceum</i>	giant pepper vine
Pittosporaceae	<i>Pittosporum</i>	<i>undulatum</i>	sweet pittosporum
Poaceae	<i>Blechnum</i>	<i>indicum</i>	bungwall fern
Poaceae	<i>Eragrostis</i>	<i>interruptus</i>	
Poaceae	<i>Imperata</i>	<i>cylindrica</i>	blady grass
Poaceae	<i>Ischaemum</i>	<i>triticeum</i>	
Poaceae	<i>Oplismenus</i>	<i>imbecillis</i>	pademelon grass
Poaceae	<i>Spinifex</i>	<i>sericeus</i>	beach spinifex
Poaceae	<i>Themeda</i>	<i>triandra</i>	kangaroo grass
Poaceae	<i>Zoysia</i>	<i>macrantha</i>	
Polygalaceae	<i>Comesperma</i>	<i>defoliatum</i>	fairy wings
Polypodiaceae	<i>Platynerium</i>	<i>bifurcatum</i>	elkhorn fern
Proteaceae	<i>Banksia</i>	<i>aemula</i>	wallum banksia
Proteaceae	<i>Banksia</i>	<i>integrifolia subsp.</i>	coast banksia

		<i>compar</i>	
Proteaceae	<i>Banksia</i>	<i>robur</i>	swamp banksia
Proteaceae	<i>Conospermum</i>	<i>taxifolium</i>	devil's rice
Proteaceae	<i>Persoonia</i>	<i>virgata</i>	geebung
Proteaceae	<i>Petrophile</i>	<i>shirleyae</i>	cone sticks
Proteaceae	<i>Strangea</i>	<i>linearis</i>	strangea
Proteaceae	<i>Xylomelum</i>	<i>salicinum</i>	woody pear
Restionaceae	<i>Baloskion</i>	<i>pallens</i>	
Restionaceae	<i>Baloskion</i>	<i>tetraphyllum</i>	
Restionaceae	<i>Coleocarya</i>	<i>gracilis</i>	
Restionaceae	<i>Empodisma</i>	<i>minus</i>	spreading rope rush
Rubiaceae	<i>Cyclophyllum</i>	<i>coprosmoides</i>	coast canthium
Rubiaceae	<i>Pomax</i>	<i>umbellata</i>	
Rubiaceae	<i>Psycotria</i>	<i>loniceroides</i>	hairy psychotria
Rutaceae	<i>Acronychia</i>	<i>imperfurata</i>	beach acronychia
Rutaceae	<i>Boronia</i>	<i>rosmarinifolia</i>	forest boronia
Rutaceae	<i>Halfordia</i>	<i>kendack</i>	kerosene wood
Rutaceae	<i>Phebalium</i>	<i>woombye</i>	
Rutaceae	<i>Zieria</i>	<i>smithii</i>	
Santalaceae	<i>Exocarpus</i>	<i>cupressiformis</i>	cherry ballart
Santalaceae	<i>Leptomeria</i>	<i>acida</i>	currant bush
Sapindaceae	<i>Dodonea</i>	<i>triquetra</i>	hop bush
Sapindaceae	<i>Jagera</i>	<i>pseudorhus</i>	foambark
Sapindaceae	<i>Mischocarpus</i>	<i>pyriformis</i>	yellow pear fruit
Schizaeaceae	<i>Schizia</i>	<i>bifida</i>	forked comb fern
Selaginellaceae	<i>Selaginella</i>	<i>uliginosa</i>	swamp selaginella
Smilacaceae	<i>Ripogonum</i>	<i>sp.</i>	supplejack
Smilacaceae	<i>Smilax</i>	<i>australis</i>	barbed wire vine
Smilacaceae	<i>Smilax</i>	<i>glyciphylla</i>	sweet sarsaparilla
Spigeliaceae	<i>Mitresacme</i>	<i>paludosa</i>	
Stylidiaceae	<i>Stylidium</i>	<i>graminifolium</i>	grass trigger plant
Stylidiaceae	<i>Stylidium</i>	<i>ornatum</i>	wallum trigger plant
Tetragoniaceae	<i>Tetragonia</i>	<i>tetragonioides</i>	new zealand spinach
Thymelaeaceae	<i>Pimilea</i>	<i>linifolia</i>	rice flower
Verbenaceae	<i>Chloanthes</i>	<i>parviflora</i>	
Vitaceae	<i>Cissus</i>	<i>hypoglauca</i>	five-leaf water vine
Winteraceae	<i>Tasmania</i>	<i>insipida</i>	pepper bush
Xanthorrhoeaceae	<i>Xanthorrhoea</i>	<i>fulva</i>	swamp grasstree
Xanthorrhoeaceae	<i>Xanthorrhoea</i>	<i>johnsonii?</i>	wallum grasstree
Xanthorrhoeaceae	<i>Xanthorrhoea</i>	<i>macrodenia</i>	bottlebrush grasstree
Xyridaceae	<i>Xyris</i>	<i>juncea</i>	hatpins
Zamiaceae	<i>Macrozamia</i>	<i>douglasii</i>	
Zingiberaceae	<i>Alpinia</i>	<i>arundelliana</i>	native ginger

## Appendix G -- Plant Species Recorded at Selected Sites

\*Note: The road from Woralie creek to the western beach is not along the proposed George Haddock Track, but is representative of the flora likely to be encountered between Bowarrady creek bridge and the western beach.

GENUS	SPECIES	proposed Pine Hill camp site	Lake Allom	lake Allom area	proposed Lake Allom camp site	communications tower	Bowarrady creek bridge	along road Woralie/ Bowarrady	Woralie creek/beach *	Coomboo to Hidden Lake	Coomboo, around cabin	proposed Coomboo camp site	Lake Coomboo	proposed L. Bowarrady campsite
<i>Acacia</i>	<i>baueri</i>										Y		Y	
<i>Acacia</i>	<i>flavescens</i>								Y					
<i>Acacia</i>	<i>penninervis</i>	Y	Y							Y				
<i>Acacia</i>	<i>ulicifolia</i>						Y	Y			Y	Y	Y	
<i>Acacia</i>	<i>suaveolens</i>													Y
<i>Acronychia</i>	<i>imperforata</i>									Y				
<i>Agathis</i>	<i>robusta</i>		Y											
<i>Allocasuarina</i>	<i>littoralis</i>									Y	Y	Y	Y	
<i>Alpinia</i>	<i>arundelliana</i>			Y										
<i>Alyxia</i>	<i>ruscifolia</i>		Y	Y	Y									
<i>Angophora</i>	<i>leiocarpa</i>									Y				
<i>Aotus</i>	<i>ericoides</i>									Y				
<i>Araucaria</i>	<i>cunninghamii</i>		Y	Y										Y
<i>Archontophoenix</i>	<i>cunninghamii</i>			Y										
<i>Astrotriche</i>	<i>glabra</i>						Y			Y	Y			
<i>Austromyrtus</i>	<i>dulcis</i>	Y	Y	Y			Y		Y	Y				
<i>Backhousia</i>	<i>myrtifolia</i>		Y	Y										
<i>Baeckea</i>	<i>frutescens</i>		Y				Y			Y				Y
<i>Baloskion</i>	<i>pallens</i>		Y				Y							Y
<i>Baloskion</i>	<i>tetraphyllum</i>						Y							
<i>Banksia</i>	<i>aemula</i>								Y		Y	Y	Y	
<i>Banksia</i>	<i>integrifolia</i>		Y							Y				
<i>Banksia</i>	<i>robur</i>						Y							
<i>Blechnum</i>	<i>indicum</i>						Y							
<i>Boronia</i>	<i>rosmarinifolia</i>						Y			Y				
<i>Bossiaea</i>	<i>ensata</i>										Y	Y		
<i>Bossiaea</i>	<i>heterophylla</i>									Y	Y			
<i>Brachyloma</i>	<i>daphnoides</i>											Y		
<i>Breynia</i>	<i>oblongifolia</i>		Y	Y						Y				
<i>Burmannia</i>	<i>disticha</i>		Y											Y
<i>Caesalpinia</i>	<i>schortechini</i>			Y		Y								
<i>Calanthe</i>	<i>major</i>						Y				Y			

GENUS	SPECIES	proposed Pine Hill camp site	Lake Allom	lake Allom area	proposed Lake Allom camp site	communications tower	Bowarrady creek bridge	along road Woralie/ Bowarrady	Woralie creek/beach *	Coomboo to Hidden Lake	Coomboo, around cabin	proposed Coomboo camp site	Lake Coomboo	proposed L. Bowarrady campsite
<i>Calanthe</i>	<i>triplicata</i>													
<i>Callerya</i>	<i>megasperma</i>		Y	Y										
<i>Carpobrotus</i>	<i>glaucescens</i>								Y					
<i>Cassytha</i>	<i>filliformis</i>		Y						Y		Y	Y	Y	
<i>Casuarina</i>	<i>equisettifolia</i>								Y					
<i>Caustis</i>	<i>blakei</i>	Y	Y				Y			Y				
<i>Caustis</i>	<i>recurvata</i>											Y	Y	
<i>Chloanthes</i>	<i>parviflora</i>									Y				
<i>Cissus</i>	<i>hypoglauca</i>			Y						Y				
<i>Coleocarya</i>	<i>gracilis</i>						Y			Y	Y		Y	
<i>Comesperma</i>	<i>defoliatum</i>													Y
<i>Commelina</i>	<i>diffusa</i>								Y					
<i>Conospermum</i>	<i>taxifolium</i>											Y	Y	
<i>Cordyline</i>	<i>rubra</i>			Y		Y								
<i>Corymbia</i>	<i>gummifera</i>										Y			
<i>Corymbia</i>	<i>intermedia</i>							Y		Y				
<i>Cyclophyllum</i>	<i>coprosmoides</i>								Y					
<i>Cymbidium</i>	<i>sp.</i>		Y											
<i>Cyperus</i>	<i>polystachos</i>								Y					
<i>Desmodium</i>	<i>nemorosum</i>			Y										
<i>Dianella</i>	<i>caerulea</i>	Y	Y	Y			Y		Y	Y				
<i>Dioscorea</i>	<i>transversa</i>			Y										
<i>Dipodium</i>	<i>hamiltonianum</i>													
<i>Dodonea</i>	<i>triquetra</i>	Y								Y				
<i>Drosera</i>	<i>binata</i>							Y						Y
<i>Drosera</i>	<i>pygmaea</i>		Y											
<i>Drosera</i>	<i>spatulata</i>													Y
<i>Eleaocarpus</i>	<i>reticulatus</i>			Y			Y		Y					
<i>Embelia</i>	<i>australiana</i>		Y	Y										
<i>Empodisma</i>	<i>minus</i>						Y							
<i>Endiandra</i>	<i>sieberi</i>	Y		Y						Y				
<i>Eragrostis</i>	<i>interruptus</i>								Y					
<i>Eucalyptus</i>	<i>pilularis</i>	Y												
<i>Eucalyptus</i>	<i>racemosa</i>								Y		Y	Y	Y	
<i>Eucalyptus</i>	<i>robusta</i>						Y							
<i>Eucalyptus</i>	<i>tereticornis</i>							Y						

GENUS	SPECIES	proposed Pine Hill camp site	Lake Allom	lake Allom area	proposed Lake Allom camp site	communications tower	Bowarrady creek bridge	along road Woralie/ Bowarrady	Woralie creek/beach *	Coomboo to Hidden Lake	Coomboo, around cabin	proposed Coomboo camp site	Lake Coomboo	proposed L. Bowarrady campsite
<i>Eucalyptus</i>	<i>umbra</i>						Y							
<i>Eustrephus</i>	<i>latifolius</i>	Y		Y										
<i>Exocarpus</i>	<i>cupressiformis</i>													Y
<i>Flagelaria</i>	<i>indica</i>		Y	Y	Y									
<i>Flindersia</i>	<i>bennettiana</i>			Y										
<i>Geitonoplesium</i>	<i>cymosum</i>		Y	Y										
<i>Gleichenia</i>	<i>rupestris</i>						Y							
<i>Gompholobium</i>	<i>pinnatum</i>										Y	Y	Y	
<i>Gompholobium</i>	<i>virgatum</i>													Y
<i>Gonocarpus</i>	<i>sp.</i>		Y											
<i>Haemodorum</i>	<i>tenuifolium</i>							Y						
<i>Halfordia</i>	<i>kendack</i>	Y		Y										
<i>Hardenbergia</i>	<i>violaceae</i>						Y							
<i>Hibbertia</i>	<i>aciculais</i>										Y	Y	Y	
<i>Hibbertia</i>	<i>linearis</i>		Y				Y			Y	Y			
<i>Hibbertia</i>	<i>scandens</i>	Y						Y	Y					
<i>Hibbertia</i>	<i>vestita</i>							Y						
<i>Homalanthus</i>	<i>stillingifolius</i>			Y										
<i>Hovea</i>	<i>acutifolia</i>	Y								Y				
<i>Hoya</i>	<i>australis</i>	Y	Y	Y										
<i>Hypserpa</i>	<i>decumbens</i>		Y	Y										
<i>Imperata</i>	<i>cylindrica</i>										Y			Y
<i>Ipomoea</i>	<i>pes capre</i>							Y						
<i>Ischaemum</i>	<i>triticeum</i>							Y						
<i>Jacksonia</i>	<i>stackhousii</i>										Y	Y	Y	
<i>Jagera</i>	<i>pseudorhus</i>			Y										
<i>Juncus</i>	<i>krausii</i>							Y						
<i>Laxmannia</i>	<i>gracilis</i>						Y				Y	Y	Y	
<i>Lepidosperma</i>	<i>laterale</i>						Y							Y
<i>Lepironia</i>	<i>articulata</i>		Y											Y
<i>Leptomeria</i>	<i>acida</i>							Y						Y
<i>Leptospermum</i>	<i>polygalifolium</i>						Y							
<i>Leptospermum</i>	<i>semibaccatum</i>										Y			
<i>Leptospermum</i>	<i>trinervium</i>							Y			Y	Y	Y	
<i>Leucopogon</i>	<i>leptospermoides</i>		Y				Y							
<i>Leucopogon</i>	<i>parviflorus</i>		Y				Y							

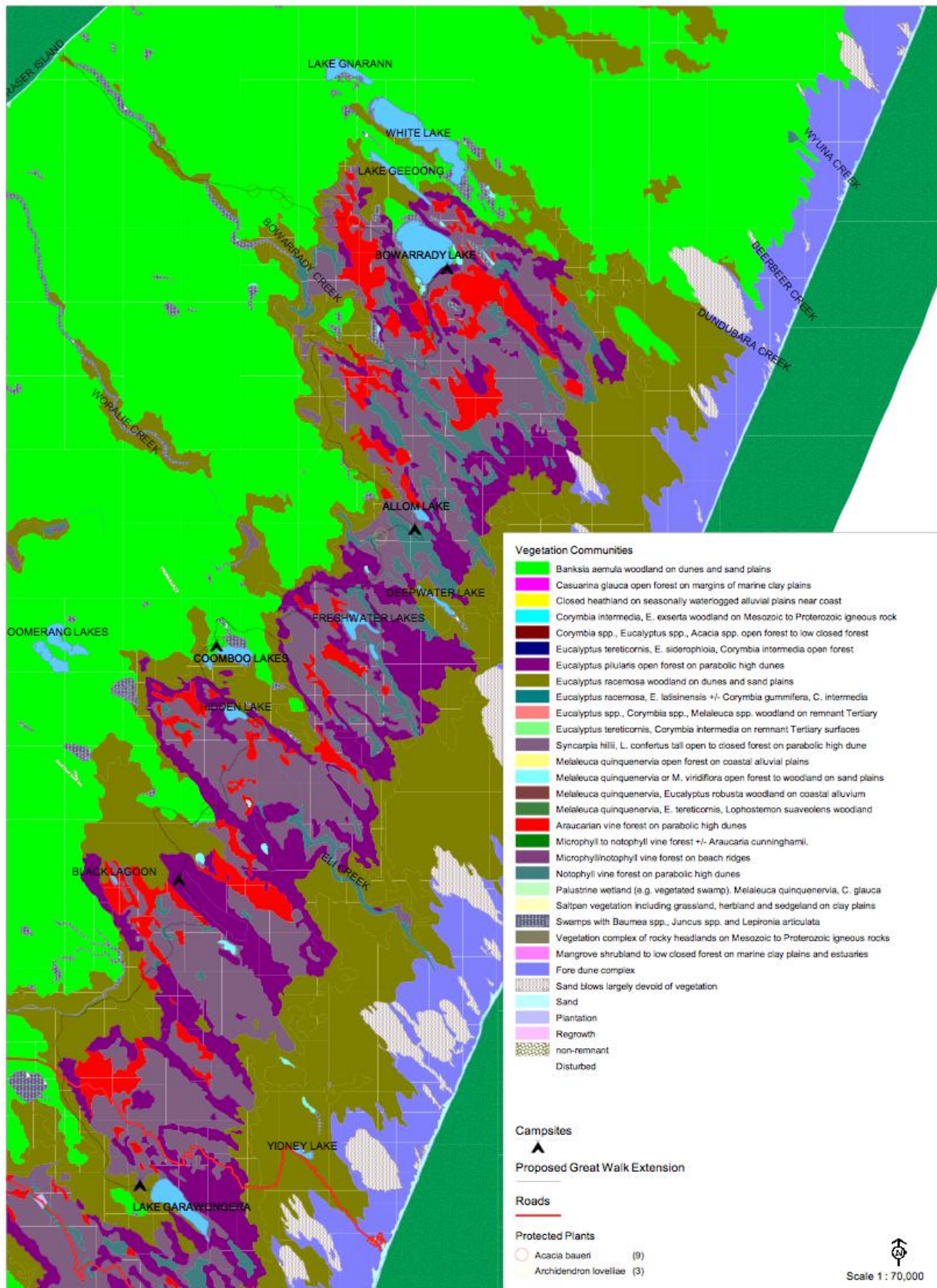
GENUS	SPECIES	proposed Pine Hill camp site	Lake Allom	lake Allom area	proposed Lake Allom camp site	communications tower	Bowarrady creek bridge	along road Worallie/ Bowarrady	Worallie creek/beach *	Coomboo to Hidden Lake	Coomboo, around cabin	proposed Coomboo camp site	Lake Coomboo	proposed L. Bowarrady campsite
<i>Leucopogon</i>	<i>sp.</i>						Y				Y	Y	Y	
<i>Litsea</i>	<i>leafeana</i>			Y										
<i>Lobelia</i>	<i>trigonocaulis</i>			Y										
<i>Lomandra</i>	<i>hystrix</i>		Y											
<i>Lomandra</i>	<i>multiflora</i>									Y				
<i>Lomandra</i>	<i>obliqua</i>	Y	Y	Y						Y				
<i>Lophostemon</i>	<i>confertus</i>	Y								Y				
<i>Macrozamia</i>	<i>douglasii</i>	Y	Y	Y						Y				
<i>Melaleuca</i>	<i>quinquenervia</i>		Y						Y					Y
<i>Mirbelia</i>	<i>rubrifolia</i>									Y				
<i>Mischocarpus</i>	<i>pyriformis</i>		Y	Y										
<i>Mitresacme</i>	<i>paludosa</i>						Y			Y				
<i>Monotaca</i>	<i>scoparia</i>	Y	Y	Y			Y				Y	Y	Y	
<i>Muellerina</i>	<i>celestroides</i>		Y											
<i>Myrsine</i>	<i>variabilis</i>									Y				
<i>Neolitsea</i>	<i>dealbata</i>			Y										
<i>Notelea</i>	<i>longifolia</i>		Y	Y										
<i>Notelea</i>	<i>longifolia</i>			Y										
<i>Ocrosperma</i>	<i>lineare</i>						Y							
<i>Olax</i>	<i>retusa</i>										Y			
<i>Oplismenus</i>	<i>imbecillis</i>			Y										
<i>Pandanus</i>	<i>tectorius</i>								Y					
<i>Pandorea</i>	<i>pandorana</i>			Y										
<i>Parsonsia</i>	<i>straminea</i>								Y					
<i>Patersonia</i>	<i>fragilis</i>													
<i>Patersonia</i>	<i>sericea</i>										Y		Y	
<i>Persoonia</i>	<i>virgata</i>	Y	Y							Y	Y		Y	
<i>Petrophile</i>	<i>shirleyae</i>							Y						Y
<i>Phebalium</i>	<i>woombye</i>						Y	Y						Y
<i>Phyllotta</i>	<i>philicoides</i>						Y	Y		Y	Y	Y	Y	Y
<i>Pimilea</i>	<i>linifolia</i>						Y							Y
<i>Piper</i>	<i>hedaceum</i>			Y										
<i>Pittosporum</i>	<i>undulatum</i>			Y										
<i>Platycerium</i>	<i>bifurcatum</i>		Y		Y									
<i>Platysace</i>	<i>linarifolia</i>						Y					Y	Y	
<i>Pomax</i>	<i>umbellata</i>						Y	Y	Y					

<b>GENUS</b>	<b>SPECIES</b>	proposed Pine Hill camp site	Lake Allom	lake Allom area	proposed Lake Allom camp site	communications tower	Bowarrady creek bridge	along road Woralie/ Bowarrady	Woralie creek/beach *	Coomboo to Hidden Lake	Coomboo, around cabin	proposed Coomboo camp site	Lake Coomboo	proposed L. Bowarrady campsite
<i>Poranthera</i>	<i>microphylla</i>								Y					
<i>Pseudanthus</i>	<i>orientalis</i>										Y	Y	Y	
<i>Psycotria</i>	<i>loniceroides</i>		Y	Y										
<i>Pteridium</i>	<i>esculentum</i>	Y				Y		Y	Y	Y				
<i>Ricinocarpus</i>	<i>pinifolius</i>							Y	Y	Y	Y	Y		
<i>Ripogonum</i>	<i>sp.</i>			Y										
<i>Rutidosis</i>	<i>murchisonii</i>								Y					
<i>Schizia</i>	<i>bifida</i>										Y	Y	Y	
<i>Schizomeria</i>	<i>ovata</i>			Y										
<i>Selaginella</i>	<i>uliginosa</i>													Y
<i>Sesuvium</i>	<i>portulacum</i>								Y					
<i>Smilax</i>	<i>australis</i>	Y	Y	Y						Y				
<i>Smilax</i>	<i>glyciphylla</i>	Y		Y						Y				
<i>Sowerbaea</i>	<i>juncea</i>							Y						Y
<i>Spinifex</i>	<i>sericeus</i>								Y					
<i>Strangea</i>	<i>linearis</i>										Y	Y		
<i>Stylidium</i>	<i>graminifolium</i>										Y			Y
<i>Stylidium</i>	<i>ornatum</i>							Y						
<i>Syncarpia</i>	<i>hillii</i>	Y	Y							Y				
<i>Syzygium</i>	<i>hemilamprum</i>			Y						Y				
<i>Tasmania</i>	<i>insipida</i>			Y										
<i>Tetragonia</i>	<i>tetragonioides</i>								Y					
<i>Themeda</i>	<i>trianra</i>						Y							
<i>Trochocarpa</i>	<i>laurina</i>		Y	Y										
<i>Trophis</i>	<i>scandens</i>			Y										
<i>Utricularia</i>	<i>uliginosa</i>													Y
<i>Wilkiea</i>	<i>macrophylla</i>		Y	Y										
<i>Woolfsia</i>	<i>pungens</i>							Y				Y	Y	
<i>Xanthorrhoea</i>	<i>fulva</i>						Y							
<i>Xanthorrhoea</i>	<i>johnsonii?</i>							Y				Y	Y	
<i>Xanthorrhoea</i>	<i>macrodenia</i>	Y								Y				
<i>Xylomelum</i>	<i>salicinum</i>						Y							
<i>Xyris</i>	<i>juncea</i>		Y											Y
<i>Zieria</i>	<i>smithii</i>	Y												
<i>Zoysia</i>	<i>macrantha</i>								Y					

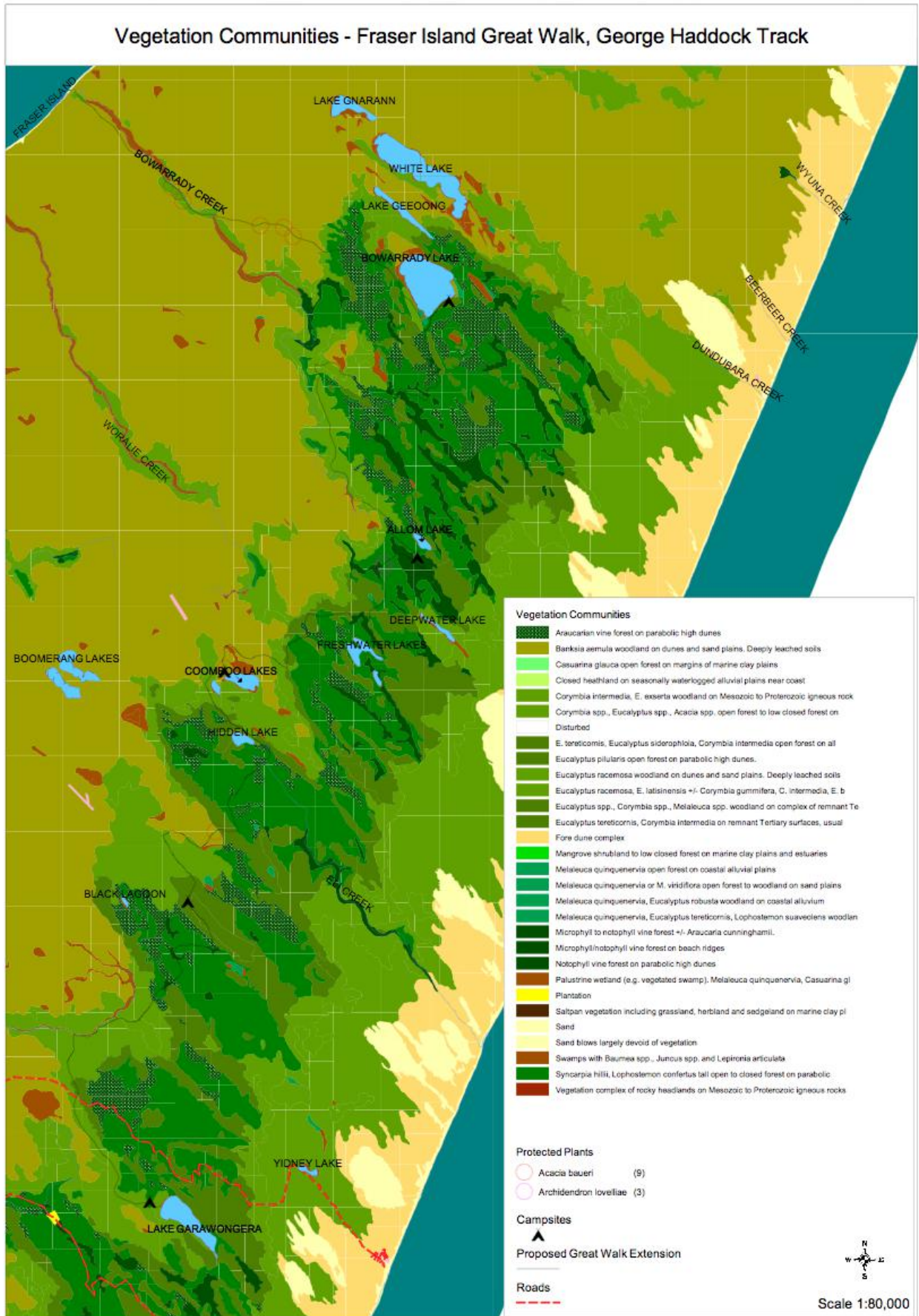


# Appendix H -- Maps of Plant Communities and Location of Threatened Species along the George Haddock Track

Vegetation Communities - Fraser Island Great Walk, George Haddock Track



Regional Ecosystems Remnant Vegetation Cover, DEHP, 2007, Qld Govt.



Regional Ecosystems Remnant Vegetation Cover, DEHP, 2007, Qld Govt.

## Appendix I – Fauna Species Recorded from Great Sandy National Park, including Fraser Island

Wildlife Online Database extract, 20 Feb 2012. 'X' indicates that the species was found at that site during field surveys. "?" that there is uncertainty around the identification of these bat species based on the Anabat recordings. *Chalinolobus nigrogriseus* is difficult to distinguish from *Scotorepens* sp., and it is not possible to distinguish the species of *Nyctophilus* apart on ultrasonic calls alone.

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Bufo	<i>Rhinella marina</i>	cane toad				
Hylidae	<i>Litoria caerulea</i>	common green treefrog				
Hylidae	<i>Litoria cooloolensis</i>	Cooloola sedgefrog				
Hylidae	<i>Litoria dentata</i>	bleating treefrog				
Hylidae	<i>Litoria fallax</i>	eastern sedgefrog				
Hylidae	<i>Litoria freycineti</i>	wallum rocketfrog				
Hylidae	<i>Litoria gracilentata</i>	graceful treefrog				
Hylidae	<i>Litoria latopalmata</i>	broad palmed rocketfrog				
Hylidae	<i>Litoria nasuta</i>	striped rocketfrog				
Hylidae	<i>Litoria olongburensis</i>	wallum sedgefrog				
Hylidae	<i>Litoria peronii</i>	emerald spotted treefrog				
Hylidae	<i>Litoria rothii</i>	northern laughing treefrog				
Hylidae	<i>Litoria rubella</i>	ruddy treefrog				
Hylidae	<i>Litoria tyleri</i>	southern laughing treefrog				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Limnodynastidae	<i>Adelotus brevis</i>	tusked frog				
Limnodynastidae	<i>Limnodynastes peronii</i>	striped marshfrog				
Limnodynastidae	<i>Limnodynastes terraereginae</i>	scarlet sided pobblebonk				x
Limnodynastidae	<i>Platyplectrum ornatum</i>	ornate burrowing frog				
Myobatrachidae	<i>Crinia parinsignifera</i>	beeping froglet				
Myobatrachidae	<i>Crinia signifera</i>	clicking froglet				
Myobatrachidae	<i>Crinia tinnula</i>	wallum froglet				
Myobatrachidae	<i>Mixophyes fasciolatus</i>	great barred frog				
Myobatrachidae	<i>Pseudophryne major</i>	great brown broodfrog				
Myobatrachidae	<i>Pseudophryne raveni</i>	copper backed broodfrog				
Myobatrachidae	<i>Uperoleia fusca</i>	dusky gungan				
Myobatrachidae	<i>Uperoleia laevigata</i>	eastern gungan				
Agamidae	<i>Amphibolurus nobbi</i>					x
Agamidae	<i>Chlamydosaurus kingii</i>	frilled lizard				
Agamidae	<i>Diporiphora australis</i>					
Agamidae	<i>Intellagama lesueurii</i>	eastern water dragon				
Agamidae	<i>Pogona barbata</i>	bearded dragon				
Agamidae	<i>Pogona vitticeps</i>					
Boidae	<i>Antaresia maculosa</i>	spotted python				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Boidae	<i>Morelia spilota</i>	carpet python				
Chelidae	<i>Chelodina expansa</i>	broad-shelled river turtle				
Chelidae	<i>Chelodina longicollis</i>	eastern snake-necked turtle				
Chelidae	<i>Emydura macquarii krefftii</i>	Krefft's river turtle				
Chelidae	<i>Emydura macquarii nigra</i>	Fraser Island short-neck turtle				
Chelidae	<i>Wollumbinia latisternum</i>	saw-shelled turtle				
Colubridae	<i>Boiga irregularis</i>	brown tree snake				
Colubridae	<i>Dendrelaphis punctulata</i>	common tree snake				
Colubridae	<i>Tropidonophis mairii</i>	freshwater snake				
Crocodylidae	<i>Crocodylus johnstoni</i>	Australian freshwater crocodile				
Diplodactylidae	<i>Diplodactylus vittatus</i>	wood gecko				x
Diplodactylidae	<i>Oedura jacovae</i>	clouded gecko				
Diplodactylidae	<i>Oedura rhombifer</i>	zig-zag gecko				
Diplodactylidae	<i>Oedura tryoni</i>	southern spotted velvet gecko				
Elapidae	<i>Acanthophis antarcticus</i>	common death adder				
Elapidae	<i>Cacophis harriettae</i>	white-crowned snake				
Elapidae	<i>Cacophis krefftii</i>	dwarf crowned snake				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowraddy	Pine Hill	Lake Coomboo
Elapidae	<i>Cacophis squamulosus</i>	golden crowned snake				
Elapidae	<i>Cryptophis nigrescens</i>	eastern small-eyed snake				
Elapidae	<i>Demansia psammophis</i>	yellow-faced whip snake				
Elapidae	<i>Demansia vestigiata</i>	black whip snake				
Elapidae	<i>Hemiaspis signata</i>	black-bellied swamp snake				
Elapidae	<i>Hoplocephalus bitorquatus</i>	pale-headed snake				
Elapidae	<i>Notechis scutatus</i>	eastern tiger snake				
Elapidae	<i>Oxyuranus scutellatus</i>	coastal taipan				
Elapidae	<i>Pseudechis porphyriacus</i>	red-bellied black snake				
Elapidae	<i>Pseudonaja textilis</i>	eastern brown snake				
Elapidae	<i>Tropidechis carinatus</i>	rough-scaled snake				
Elapidae	<i>Vermicella annulata</i>	bandy-bandy				
Gekkonidae	<i>Gehyra dubia</i>					
Gekkonidae	<i>Hemidactylus frenatus</i>	house gecko				
Pygopodidae	<i>Lialis burtonis</i>	Burton's legless lizard				
Pygopodidae	<i>Pygopus lepidopodus</i>	common scaly-foot				
Scincidae	<i>Anomalopus verreauxii</i>					
Scincidae	<i>Bellatorias frerei</i>	major skink			x	

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Scincidae	<i>Calyptotis lepidorostrum</i>					
Scincidae	<i>Calyptotis scutirostrum</i>					
Scincidae	<i>Carlia pectoralis</i>					
Scincidae	<i>Carlia vivax</i>					X
Scincidae	<i>Coeranoscincus reticulatus</i>	three-toed snake-tooth skink				
Scincidae	<i>Coggeria naufragus</i>	satinay sand skink	X			
Scincidae	<i>Cryptoblepharus pulcher pulcher</i>	elegant snake-eyed skink				
Scincidae	<i>Ctenotus arcanus</i>					
Scincidae	<i>Ctenotus robustus</i>					
Scincidae	<i>Ctenotus taeniolatus</i>	copper-tailed skink				
Scincidae	<i>Cyclodornis gerrardii</i>	pink-tongued lizard				
Scincidae	<i>Eroticoscincus graciloides</i>					
Scincidae	<i>Eulamprus martini</i>					
Scincidae	<i>Eulamprus quoyii</i>	eastern water skink				
Scincidae	<i>Eulamprus tenuis</i>					
Scincidae	<i>Lampropholis amicula</i>					
Scincidae	<i>Lampropholis delicata</i>					
Scincidae	<i>Lampropholis guichenoti</i>					

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Scincidae	<i>Lygisaurus foliorum</i>					
Scincidae	<i>Menetia greyii</i>					
Scincidae	<i>Morethia boulengeri</i>					
Scincidae	<i>Morethia ruficauda</i>					
Scincidae	<i>Morethia taeniopleura</i>	fire-tailed skink				
Scincidae	<i>Ophioscincus cooloolensis</i>					
Scincidae	<i>Ophioscincus ophioscincus</i>					
Scincidae	<i>Ophioscincus truncatus</i>					
Scincidae	<i>Tiliqua scincoides</i>	eastern blue-tongued lizard				
Typhlopidae	<i>Ramphotyphlops nigrescens</i>					
Typhlopidae	<i>Ramphotyphlops proximus</i>					
Typhlopidae	<i>Ramphotyphlops silvia</i>					
Varanidae	<i>Varanus gouldii</i>	sand monitor				
Varanidae	<i>Varanus varius</i>	lace monitor				
Acanthizidae	<i>Acanthiza chrysorrhoa</i>	yellow-rumped thornbill				
Acanthizidae	<i>Acanthiza lineata</i>	striated thornbill				
Acanthizidae	<i>Acanthiza nana</i>	yellow thornbill				



Family	Scientific Name	Common Name	Lake Alloom	Lake Bowraddy	Pine Hill	Lake Coomboo
Acanthizidae	<i>Acanthiza pusilla</i>	brown thornbill		x		x
Acanthizidae	<i>Acanthiza reguloides</i>	buff-rumped thornbill				
Acanthizidae	<i>Chthonicola sagittata</i>	speckled warbler				
Acanthizidae	<i>Gerygone albogularis</i>	white-throated gerygone				
Acanthizidae	<i>Gerygone levigaster</i>	mangrove gerygone				
Acanthizidae	<i>Gerygone mouki</i>	brown gerygone	x			
Acanthizidae	<i>Gerygone palpebrosa</i>	fairy gerygone				
Acanthizidae	<i>Sericornis citreogularis</i>	yellow-throated scrubwren				
Acanthizidae	<i>Sericornis frontalis</i>	white-browed scrubwren				
Acanthizidae	<i>Sericornis magnirostris</i>	large-billed scrubwren	x			
Acanthizidae	<i>Smicrornis brevirostris</i>	weebill				
Accipitridae	<i>Accipiter cirrocephalus</i>	collared sparrowhawk				
Accipitridae	<i>Accipiter fasciatus</i>	brown goshawk				
Accipitridae	<i>Accipiter novaehollandiae</i>	grey goshawk				
Accipitridae	<i>Aquila audax</i>	wedge-tailed eagle				
Accipitridae	<i>Aviceda subcristata</i>	Pacific baza				
Accipitridae	<i>Circus approximans</i>	swamp harrier				
Accipitridae	<i>Circus assimilis</i>	spotted harrier				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowraddy	Pine Hill	Lake Coomboo
Accipitridae	<i>Elanus axillaris</i>	black-shouldered kite				
Accipitridae	<i>Erythrotriorchis radiatus</i>	red goshawk				
Accipitridae	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle				
Accipitridae	<i>Haliastur indus</i>	brahminy kite				
Accipitridae	<i>Haliastur sphenurus</i>	whistling kite				
Accipitridae	<i>Hamirostra melanosternon</i>	black-breasted buzzard				
Accipitridae	<i>Hieraaetus morphnoides</i>	little eagle				
Accipitridae	<i>Lophoictinia isura</i>	square-tailed kite				
Accipitridae	<i>Milvus migrans</i>	black kite				
Acrocephalidae	<i>Acrocephalus australis</i>	Australian reed-warbler				
Aegothelidae	<i>Aegotheles cristatus</i>	Australian owl-niGeorge Haddock Trackjar				x
Alaudidae	<i>Mirafra javanica</i>	Horsfield's bushlark				
Alcedinidae	<i>Ceyx azureus</i>	azure kingfisher				
Apodidae	<i>Aerodramus terraereginae</i>	Australian swiftlet				
Apodidae	<i>Apus affinis</i>	house swift				
Apodidae	<i>Apus pacificus</i>	fork-tailed swift				
Apodidae	<i>Collocalia esculenta</i>	glossy swiftlet				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowraddy	Pine Hill	Lake Coomboo
Apodidae	<i>Hirundapus caudacutus</i>	white-throated needletail				
Artamidae	<i>Artamus cinereus</i>	black-faced woodswallow				
Artamidae	<i>Artamus cyanopterus</i>	dusky woodswallow				
Artamidae	<i>Artamus leucorhynchus</i>	white-breasted woodswallow				
Artamidae	<i>Artamus minor</i>	little woodswallow				
Artamidae	<i>Artamus personatus</i>	masked woodswallow				
Artamidae	<i>Artamus superciliosus</i>	white-browed woodswallow				
Artamidae	<i>Cracticus nigrogularis</i>	piebald butcherbird				x
Artamidae	<i>Cracticus tibicen</i>	Australian magpie				
Artamidae	<i>Cracticus torquatus</i>	grey butcherbird				
Artamidae	<i>Strepera graculina</i>	piebald currawong				
Burhinidae	<i>Burhinus grallarius</i>	bush stone-curlew				
Cacatuidae	<i>Cacatua galerita</i>	sulphur-crested cockatoo	x			x
Cacatuidae	<i>Cacatua sanguinea</i>	little corella				
Cacatuidae	<i>Cacatua tenuirostris</i>	long-billed corella				
Cacatuidae	<i>Calyptorhynchus banksii</i>	red-tailed black-cockatoo				
Cacatuidae	<i>Calyptorhynchus funereus</i>	yellow-tailed black-cockatoo				x

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Cacatuidae	<i>Calyptorhynchus lathamii</i>	glossy black-cockatoo				
Cacatuidae	<i>Eolophus roseicapillus</i>	galah				
Cacatuidae	<i>Nymphicus hollandicus</i>	cockatiel				
Campephagidae	<i>Coracina lineata</i>	barred cuckoo-shrike				
Campephagidae	<i>Coracina maxima</i>	ground cuckoo-shrike				
Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike				
Campephagidae	<i>Coracina papuensis</i>	white-bellied cuckoo-shrike				x
Campephagidae	<i>Coracina tenuirostris</i>	cicadabird				x
Campephagidae	<i>Lalage leucomela</i>	varied triller				x
Campephagidae	<i>Lalage sueurii</i>	white-winged triller				
Caprimulgidae	<i>Caprimulgus macrurus</i>	large-tailed niGeorge Haddock Trackjar				x
Casuariidae	<i>Dromaius novaehollandiae</i>	emu				
Cisticolidae	<i>Cisticola exilis</i>	golden-headed cisticola				
Climacteridae	<i>Climacteris picumnus</i>	brown treecreeper		x		
Climacteridae	<i>Cormobates leucophaea</i>	white-throated treecreeper	x			x
Columbidae	<i>Chalcophaps indica</i>	emerald dove				
Columbidae	<i>Columba leucomela</i>	white-headed pigeon				
Columbidae	<i>Columba livia</i>	rock dove				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowraddy	Pine Hill	Lake Coomboo
Columbidae	<i>Geopelia cuneata</i>	diamond dove				
Columbidae	<i>Geopelia humeralis</i>	bar-shouldered dove	x			x
Columbidae	<i>Geopelia striata</i>	peaceful dove				
Columbidae	<i>Leucosarcia picata</i>	wonga pigeon				
Columbidae	<i>Lopholaimus antarcticus</i>	topknot pigeon				
Columbidae	<i>Macropygia amboinensis</i>	brown cuckoo-dove	x	x		x
Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon				
Columbidae	<i>Phaps chalcoptera</i>	common bronzewing				
Columbidae	<i>Phaps elegans</i>	brush bronzewing				
Columbidae	<i>Ptilinopus magnificus</i>	wompoo fruit-dove	x			
Columbidae	<i>Ptilinopus regina</i>	rose-crowned fruit-dove	x	x		
Columbidae	<i>Ptilinopus superbus</i>	superb fruit-dove				
Columbidae	<i>Streptopelia chinensis</i>	spotted dove				
Coraciidae	<i>Eurystomus orientalis</i>	dollarbird				
Corcoracidae	<i>Corcorax melanorhynchus</i>	white-winged cough				
Corvidae	<i>Corvus coronoides</i>	Australian raven				
Corvidae	<i>Corvus orru</i>	Torresian crow				x
Cuculidae	<i>Cacomantis flabelliformis</i>	fan-tailed cuckoo		x		x
Cuculidae	<i>Cacomantis pallidus</i>	pallid cuckoo				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowraddy	Pine Hill	Lake Coomboo
Cuculidae	<i>Cacomantis variolosus</i>	brush cuckoo				x
Cuculidae	<i>Centropus phasianinus</i>	pheasant coucal				x
Cuculidae	<i>Chalcites basalis</i>	Horsfield's bronze-cuckoo				
Cuculidae	<i>Chalcites lucidus</i>	shining bronze-cuckoo				
Cuculidae	<i>Chalcites minutillus minutillus</i>	little bronze-cuckoo				
Cuculidae	<i>Chalcites osculans</i>	black-eared cuckoo				
Cuculidae	<i>Cuculus optatus</i>	oriental cuckoo				
Cuculidae	<i>Eudynamis orientalis</i>	eastern koel				x
Cuculidae	<i>Scythrops novaehollandiae</i>	channel-billed cuckoo				
Dicruridae	<i>Dicrurus bracteatus</i>	spangled drongo				
Estrildidae	<i>Lonchura castaneothorax</i>	chestnut-breasted mannikin				
Estrildidae	<i>Lonchura punctulata</i>	nutmeg mannikin				
Estrildidae	<i>Neochmia temporalis</i>	red-browed finch				x
Estrildidae	<i>Stagonopleura guttata</i>	diamond firetail				
Estrildidae	<i>Taeniopygia bichenovii</i>	double-barred finch				
Eurostopodidae	<i>Eurostopodus argus</i>	spotted niGeorge Haddock Trackjar				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Eurostopodidae	<i>Eurostopodus mystacalis</i>	white-throated niGeorge Haddock Trackjar				
Falconidae	<i>Falco berigora</i>	brown falcon				
Falconidae	<i>Falco cenchrooides</i>	nankeen kestrel				
Falconidae	<i>Falco longipennis</i>	Australian hobby				
Falconidae	<i>Falco peregrinus</i>	peregrine falcon				
Falconidae	<i>Falco subniger</i>	black falcon				
Gruidae	<i>Grus rubicunda</i>	brolga				
Halcyonidae	<i>Dacelo leachii</i>	blue-winged kookaburra				
Halcyonidae	<i>Dacelo novaeguinae</i>	laughing kookaburra				x
Halcyonidae	<i>Todiramphus chloris</i>	collared kingfisher				
Halcyonidae	<i>Todiramphus macleayii</i>	forest kingfisher				
Halcyonidae	<i>Todiramphus pyrrhopygius</i>	red-backed kingfisher				
Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher				
Hirundinidae	<i>Cheramoecia leucosterna</i>	white-backed swallow				
Hirundinidae	<i>Hirundo neoxena</i>	welcome swallow				
Hirundinidae	<i>Hirundo rustica</i>	barn swallow				
Hirundinidae	<i>Petrochelidon ariel</i>	fairy martin				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowraddy	Pine Hill	Lake Coomboo
Hirundinidae	<i>Petrochelidon nigricans</i>	tree martin				
Maluridae	<i>Malurus cyaneus</i>	superb fairy-wren				
Maluridae	<i>Malurus lamberti</i>	variegated fairy-wren				
Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren				X
Maluridae	<i>Stipiturus malachurus</i>	southern emu-wren				
Megaluridae	<i>Cincloramphus cruralis</i>	brown songlark				
Megaluridae	<i>Cincloramphus mathewsi</i>	rufous songlark				
Megaluridae	<i>Megalurus gramineus</i>	little grassbird				
Megaluridae	<i>Megalurus timoriensis</i>	tawny grassbird				
Megapodiidae	<i>Alectura lathami</i>	Australian brush-turkey				
Meliphagidae	<i>Acanthagnys rufogularis</i>	spiny-cheeked honeyeater				
Meliphagidae	<i>Acanthorhynchus tenuirostris</i>	eastern spinebill				
Meliphagidae	<i>Anthochaera chrysoptera</i>	little wattlebird				X
Meliphagidae	<i>Anthochaera phrygia</i>	regent honeyeater				
Meliphagidae	<i>Caligavis chrysops</i>	yellow-faced honeyeater				
Meliphagidae	<i>Conopophila rufogularis</i>	rufous-throated honeyeater				
Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater				X



Family	Scientific Name	Common Name	Lake Alloom	Lake Bowraddy	Pine Hill	Lake Coomboo
Meliphagidae	<i>Gavicalis fasciogularis</i>	mangrove honeyeater				
Meliphagidae	<i>Grantiella picta</i>	painted honeyeater				
Meliphagidae	<i>Lichenostomus melanops</i>	yellow-tufted honeyeater				
Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater				
Meliphagidae	<i>Manorina melanocephala</i>	noisy miner				
Meliphagidae	<i>Meliphaga lewinii</i>	Lewin's honeyeater	x	x		x
Meliphagidae	<i>Melithreptus albogularis</i>	white-throated honeyeater				x
Meliphagidae	<i>Melithreptus brevirostris</i>	brown-headed honeyeater				
Meliphagidae	<i>Melithreptus gularis</i>	black-chinned honeyeater				
Meliphagidae	<i>Melithreptus lunatus</i>	white-naped honeyeater				
Meliphagidae	<i>Myzomela obscura</i>	dusky honeyeater				
Meliphagidae	<i>Myzomela sanguinolenta</i>	scarlet honeyeater				
Meliphagidae	<i>Nesoptilotis leucotis</i>	white-eared honeyeater				
Meliphagidae	<i>Philemon citreogularis</i>	little friarbird				
Meliphagidae	<i>Philemon corniculatus</i>	noisy friarbird				x
Meliphagidae	<i>Phylidonyris niger</i>	white-cheeked honeyeater				x

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Meliphagidae	<i>Phylidonyris novaehollandiae</i>	New Holland honeyeater				
Meliphagidae	<i>Plectorhyncha lanceolata</i>	striped honeyeater				
Meliphagidae	<i>Ptilotula fuscus</i>	fuscous honeyeater				
Meliphagidae	<i>Sugomel niger</i>	black honeyeater				
Meropidae	<i>Merops ornatus</i>	rainbow bee-eater				x
Monarchidae	<i>Carterornis leucotis</i>	white-eared monarch				
Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark				
Monarchidae	<i>Monarcha melanopsis</i>	black-faced monarch				
Monarchidae	<i>Myiagra alecto</i>	shining flycatcher				
Monarchidae	<i>Myiagra cyanoleuca</i>	satin flycatcher				
Monarchidae	<i>Myiagra inquieta</i>	restless flycatcher				
Monarchidae	<i>Myiagra rubecula</i>	leaden flycatcher		x		x
Monarchidae	<i>Symposiachus trivirgatus</i>	spectacled monarch	x	x		
Motacillidae	<i>Anthus novaeseelandiae</i>	Australasian pipit				
Motacillidae	<i>Motacilla alba</i>	white wagtail				
Nectariniidae	<i>Dicaeum hirundinaceum</i>	mistletoebird		x		x
Nectariniidae	<i>Nectarinia jugularis</i>	olive-backed sunbird				
Neosittidae	<i>Daphoenositta chrysoptera</i>	varied sittella				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Oriolidae	<i>Oriolus sagittatus</i>	olive-backed oriole				
Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian figbird				
Orthonychidae	<i>Orthonyx temminckii</i>	Australian logrunner				
Pachycephalidae	<i>Colluricincla harmonica</i>	grey shrike-thrush	x	x		x
Pachycephalidae	<i>Colluricincla megarhyncha</i>	little shrike-thrush				
Pachycephalidae	<i>Falcunculus frontatus</i>	crested shrike-tit				
Pachycephalidae	<i>Pachycephala pectoralis</i>	golden whistler	x	x		
Pachycephalidae	<i>Pachycephala rufiventris</i>	rufous whistler				
Pardalotidae	<i>Pardalotus punctatus</i>	spotted pardalote				
Pardalotidae	<i>Pardalotus striatus</i>	striated pardalote				
Passeridae	<i>Passer domesticus</i>	house sparrow				
Petroicidae	<i>Eopsaltria australis</i>	eastern yellow robin	x	x		x
Petroicidae	<i>Microeca fascinans</i>	jacky winter				
Petroicidae	<i>Petroica rosea</i>	rose robin				
Petroicidae	<i>Tregellasia capito</i>	pale-yellow robin				
Phasianidae	<i>Coturnix pectoralis</i>	stubble quail				
Phasianidae	<i>Coturnix ypsilophora</i>	brown quail				
Phasianidae	<i>Excalfactoria chinensis</i>	king quail				
Pittidae	<i>Pitta versicolor</i>	noisy pitta				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowraddy	Pine Hill	Lake Coomboo
Podargidae	<i>Podargus ocellatus marmoratus</i>	marbled frogmouth				
Podargidae	<i>Podargus ocellatus plumiferus</i>	plumed frogmouth				
Podargidae	<i>Podargus strigoides</i>	tawny frogmouth				
Pomatostomidae	<i>Pomatostomus temporalis</i>	grey-crowned babbler				
Psittacidae	<i>Alisterus scapularis</i>	Australian king-parrot	x			x
Psittacidae	<i>Aprosmictus erythropterus</i>	red-winged parrot				
Psittacidae	<i>Cyclopsitta diophthalamia coxeni</i>	Coxen's fig-parrot				
Psittacidae	<i>Glossopsitta pusilla</i>	little lorikeet				
Psittacidae	<i>Melopsittacus undulatus</i>	budgerigar				
Psittacidae	<i>Neophema pulchella</i>	turquoise parrot				
Psittacidae	<i>Pezoporus wallicus wallicus</i>	ground parrot				
Psittacidae	<i>Platycercus adscitus</i>	pale-headed rosella				x
Psittacidae	<i>Platycercus elegans</i>	crimson rosella				
Psittacidae	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Psittacidae	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet				X
Psophodidae	<i>Cinclosoma punctatum</i>	spotted quail-thrush				
Psophodidae	<i>Psophodes olivaceus</i>	eastern whipbird		X		X
Ptilonorhynchidae	<i>Ailuroedus crassirostris</i>	green catbird				
Ptilonorhynchidae	<i>Ptilonorhynchus violaceus</i>	satin bowerbird				
Ptilonorhynchidae	<i>Sericulus chrysocephalus</i>	regent bowerbird				
Rhipiduridae	<i>Rhipidura albiscapa</i>	grey fantail				
Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail				
Rhipiduridae	<i>Rhipidura rufifrons</i>	rufous fantail				
Strigidae	<i>Ninox boobook</i>	southern boobook				
Strigidae	<i>Ninox connivens</i>	barking owl				
Strigidae	<i>Ninox strenua</i>	powerful owl				
Sturnidae	<i>Aplornis metallica</i>	metallic starling				
Sturnidae	<i>Sturnus tristis</i>	common myna				
Sturnidae	<i>Sturnus vulgaris</i>	common starling				
Timaliidae	<i>Zosterops lateralis</i>	silvereve				
Turdidae	<i>Turdus merula</i>	common blackbird				
Turdidae	<i>Zoothera heinei</i>	russet-tailed thrush				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Turdidae	<i>Zoothera lunulata</i>	Bassian thrush				
Turnicidae	<i>Turnix maculosus</i>	red-backed button-quail				
Turnicidae	<i>Turnix melanogaster</i>	black-breasted button-quail				
Turnicidae	<i>Turnix pyrrhoroax</i>	red-chested button-quail				
Turnicidae	<i>Turnix varius</i>	painted button-quail				
Turnicidae	<i>Turnix velox</i>	little button-quail				
Tytonidae	<i>Tyto javanica</i>	eastern barn owl				
Tytonidae	<i>Tyto longimembris</i>	eastern grass owl				
Tytonidae	<i>Tyto novaehollandiae novaehollandiae</i>	masked owl (southern subspecies)				
Tytonidae	<i>Tyto tenebricosa tenebricosa</i>	sooty owl				
Acrobatidae	<i>Acrobates pygmaeus</i>	feathertail glider				
Bovidae	<i>Bos taurus</i>	European cattle				
Canidae	<i>Canis familiaris</i>	dog				
Canidae	<i>Canis lupus dingo</i>	dingo				
Canidae	<i>Vulpes vulpes</i>	red fox				
Dasyuridae	<i>Antechinus flavipes</i>	yellow-footed antechinus		x		
Dasyuridae	<i>Dasyurus maculatus maculatus</i>	Spotted-tailed quoll				
Dasyuridae	<i>Planigale maculata</i>	common planigale				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Dasyuridae	<i>Sminthopsis murina</i>	common dunnart				
Emballonuridae	<i>Saccolaimus flaviventris</i>	yellow-bellied sheathtail bat				
Equidae	<i>Equus caballus</i>	horse				
Felidae	<i>Felis catus</i>	cat				
Leporidae	<i>Lepus capensis</i>	brown hare				
Macropodidae	<i>Macropus giganteus</i>	eastern grey kangaroo				
Macropodidae	<i>Macropus rufogriseus</i>	red-necked wallaby				
Macropodidae	<i>Wallabia bicolor</i>	swamp wallaby				
Molossidae	<i>Mormopterus beccarii</i>	Beccari's freetail bat				
Molossidae	<i>Mormopterus loriae ridei</i>	little north-eastern freetail bat				
Molossidae	<i>Tadarida australis</i>	white-striped freetail bat				
Muridae	<i>Hydromys chrysogaster</i>	water rat				
Muridae	<i>Melomys burtoni</i>	grassland melomys				
Muridae	<i>Melomys cervinipes</i>	fawn-footed melomys		x		
Muridae	<i>Mus musculus</i>	house mouse				
Muridae	<i>Pseudomys delicatulus</i>	delicate mouse				
Muridae	<i>Pseudomys gracilicaudatus</i>	eastern chestnut mouse				
Muridae	<i>Rattus fuscipes</i>	bush rat	x	x	x	
Muridae	<i>Rattus lutreolus</i>	swamp rat				
Muridae	<i>Rattus rattus</i>	black rat				

Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Muridae	<i>Rattus tunneyi</i>	pale field-rat				x
Muridae	<i>Xeromys myoides</i>	water mouse				
Peramelidae	<i>Isodon macrourus</i>	northern brown bandicoot				
Peramelidae	<i>Perameles nasuta</i>	long-nosed bandicoot		x		
Petauridae	<i>Petaurus australis australis</i>					
Petauridae	<i>Petaurus breviceps</i>	sugar glider				
Petauridae	<i>Petaurus norfolcensis</i>	squirrel glider				
Phalangeridae	<i>Trichosurus caninus</i>	short-eared possum			x	
Phalangeridae	<i>Trichosurus vulpecula</i>	common brushtail possum				
Potoroidae	<i>Aepyprymnus rufescens</i>	rufous bettong				
Potoroidae	<i>Potorous tridactylus tridactylus</i>	long-nosed potoroo				
Pseudocheiridae	<i>Petauroides volans</i>	greater glider				
Pseudocheiridae	<i>Pseudocheirus peregrinus</i>	common ringtail possum				
Pteropodidae	<i>Nyctimene robinsoni</i>	eastern tube-nosed bat				
Pteropodidae	<i>Pteropus alecto</i>	black flying-fox				
Pteropodidae	<i>Pteropus poliocephalus</i>	grey-headed flying-fox				
Pteropodidae	<i>Pteropus scapulatus</i>	little red flying-fox				
Pteropodidae	<i>Syconycteris australis</i>	eastern blossom bat				



Family	Scientific Name	Common Name	Lake Alloom	Lake Bowarrady	Pine Hill	Lake Coomboo
Suidae	<i>Sus scrofa</i>	pig				
Tachyglossidae	<i>Tachyglossus aculeatus</i>	short-beaked echidna				
Vespertilionidae	<i>Chalinobius gouldii</i>	Gould's wattled bat				
Vespertilionidae	<i>Chalinobius morio</i>	chocolate wattled bat				
Vespertilionidae	<i>Chalinobius nigrogriseus</i>	hoary wattled bat			?	?
Vespertilionidae	<i>Kerivoula papuensis</i>	golden-tipped bat				
Vespertilionidae	<i>Miniopterus australis</i>	little bent-wing bat				
Vespertilionidae	<i>Miniopterus schreibersii oceanensis</i>	eastern bent-wing bat				
Vespertilionidae	<i>Myotis macropus</i>	large-footed myotis				
Vespertilionidae	<i>Nyctophilus bifax</i>	northern long-eared bat			?	?
Vespertilionidae	<i>Nyctophilus geoffroyi</i>	lesser long-eared bat				
Vespertilionidae	<i>Nyctophilus gouldi</i>	Gould's long-eared bat				
Vespertilionidae	<i>Scotorepens greyii</i>	little broad-nosed bat				
Vespertilionidae	<i>Vespadelus pumilus</i>	eastern forest bat				

**Appendix J -- Table 2. Threatened and Migratory Fauna Species which possibly occur at one or more of the proposed impact sites.**

- **Q**, (Conservation status under Qld Nature Conservation (Wildlife) Regulation 1994);
- **A**, conservation status under Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

**Conservation status codes:**

- **NT**, near threatened,
- **V**, vulnerable,
- **E**, endangered.

**Occurrence codes under each site name:**

- **un**, unlikely to occur at that site,
- **po**, possibly occurs at that site,
- **pr**, probably occurs at that site.

Species		Conservation significance		Occurrence				Comments	Potential Impact
Scientific Name	Common Name	Q	A	Lake Allom	Lake Bowrardy	Pine Hill	Lake Coomboo		
<i>Litoria cooloolensis</i>	Cooloola sedgefrog	NT		un	un	un	Un	This species is restricted to vegetation within and immediately surrounding water bodies on Fraser Island. None of the sites are likely to be habitat for this species.	n/a

Species		Conservation significance		Occurrence				Comments	Potential Impact
<i>Litoria olongburensis</i>	wallum sedgefrog	V	V	un	po	un	Un	This species is restricted to vegetation within and immediately surrounding water bodies on Fraser Island. None of the sites are likely to be habitat for this species.	n/a
<i>Litoria freycineti</i>	wallum rocketfrog	V		un	po	un	Po	This species is tied to acid waters, however it can be found further from water than the acid sedge frogs. Given relative proximity of Lake Bowarrady and Lake Coomboo sites to the water edge it is conceivable that this species can be found at these sites from time to time.	n/a
<i>Adelotus brevis</i>	tusked frog	V		po	po	po	Po	Tusked frogs occur in ponded water in a range of habitats and could potentially occur at any of the sites	Destruction of individual frogs possible during construction at all sites, but unlikely given small footprint of construction, lack of breeding habitat at the sites and no evidence of tusked frogs

Species	Conservation significance	Occurrence				Comments	Potential Impact
<i>Crinia tinnula</i>	V	un	un	un	Un	This species is restricted to vegetation within and immediately surrounding water bodies on Fraser Island. None of the sites are likely to be habitat for this species.	n/a
<i>Coeranoscincus reticulatus</i>	NT	po	po	po	Po	This species lives in leaf-litter and loose sand such as found at all sites and is therefore likely to occur at these sites.	Destruction of individual lizards a very minor possibility during construction at all sites, but unlikely given small footprint of construction and large area of potential habitat available on Fraser Island. There are no anticipated operational stage impacts.
<i>Acanthophis antarcticus</i>	NT	pr	pr	pr	Pr	This species lives in leaf-litter and loose sand such as found at all sites and is therefore likely to occur at these sites. Fraser Island is renowned as a refuge	Destruction of individual snakes a very minor possibility during construction at all sites, but unlikely given small footprint of construction and large area of potential habitat

Species		Conservation significance		Occurrence				Comments	Potential Impact
								available on Fraser Island. There are no anticipated operational stage impacts.	
<i>Erotioscincus graciloides</i>	elf skink	NT		un	po	po	Po	Destruction of individual lizards a very minor possibility during construction at Lakes Bowarrady, Lake Coomboo and Pine Hill, but unlikely given small footprint of construction and large area of potential habitat available on Fraser Island. There are no anticipated operational stage impacts.	
<i>Ophioscincus cooloolensis</i>	a skink	NT		pr	pr	pr	Pr	Destruction of individual lizards a very minor possibility during construction at all sites, but unlikely given small footprint of construction and large area of potential habitat available on Fraser Island. There are no anticipated operational stage impacts.	

Species	Conservation significance		Occurrence				Comments	Potential Impact
	NT		pr	pr	pr	Pr		
<i>Ramphotyphlops sylvia</i> a blind snake	NT		pr	pr	pr	Pr	This species lives in leaf-litter and loose sand such as found at all sites and is therefore likely to occur at these sites.	Destruction of individual snakes a very minor possibility during construction at all sites, but unlikely given small footprint of construction and large area of potential habitat available on Fraser Island. There are no anticipated operational stage impacts.
<i>Anthochaera Phrygia</i> regent honeyeater	E	E	un	un	un	Un	n/a, not known to occur on Fraser Island (birddata.com.au)	
<i>Cyclopsitta diophthalma coxeni</i> Coxen's fig-parrot	E	E	un	un	un	Un	This species has not been confirmed alive for more than 50 years. There are no historical records of the species on Fraser island and therefore it is unlikely to occur at any of the sites.	n/a
<i>Erythroriorchis radiates</i> red goshawk	E	V	un	un	un	un	This is a widespread species, occupying a large home range and could potentially occur anywhere within the species distribution.	There is little chance of any impact on this species unless nest trees occur within the construction area of any site, which is highly

Species	Conservation significance	Occurrence				Comments	Potential Impact
<i>Lophoicinia isura</i>	NT	po	po	po	Po	This is a widespread species, occupying a large home range and could potentially occur anywhere within the species distribution.	There is little chance of any impact of this project on this species unless nest trees occur within the construction area of any site, which is highly unlikely, and able to assessed prior to clearing. There are no anticipated operational stage impacts.
<i>Accipiter novaehollandiae</i>	NT	pr	pr	pr	Pr	This species is reasonably common in thick forests in south-east Queensland and likely occurs at all sites.	There is little chance of any impact of this project on this species unless nest trees occur within the construction area of any site, which is highly unlikely, and able to assessed prior to clearing. There are no anticipated operational stage impacts.
<i>Aerodramus terraereginae</i>	NT	po	po	po	po	This species possibly flies over all of the sites but is unlikely to	This species will not be impacted by the small scale clearing at each of

Species		Conservation significance		Occurrence				Comments	Potential Impact
								use the sites themselves	the sites as it is an aerial species which is active well above the canopy layer.
<i>Melithreptus gularis</i>	black-chinned honeyeater	NT	un	Po	Po	Po	Po	This highly mobile species could potentially occur at any of the sites at times when flowers of forest trees and shrubs are available.	Construction will potentially remove some food plants utilised by this species at Lake Bowarrady, Lake Coomboo and Pine Hill, however, given the very small total area to be cleared and high mobility of this species, impacts will be negligible.
<i>Neophema pulchella</i>	turquoise parrot	NT	un	un	un	un	Un	n/a, not known to occur on Fraser Island (birddata.com.au)	
<i>Tyto tenebricosa tenebricosa</i>	sooty owl	NT	po	po	po	po	un	This is a species of dense forests and could potentially occur in any of the forested sites	There is little chance of any impact of this project as there are no potential nest trees at any of the sites. This owl has a large home range and overall extent of clearing will be negligible compared to an owl's home range area.



Species		Conservation significance		Occurrence				Comments	Potential Impact
<i>Turnix melanogaster</i>	black-breasted button-quail	V	V	un	po	po	po	Fraser Island is part of the core range of this species which occurs in a range of habitats where a thick leaf litter layer and dense shrub layer provide foraging habitat.	Construction will result in a very minor loss of habitat (much less than a single bird's home range) at Lake Bowarrady, Lake Coomboo and Pine Hill. Impact negligible. There are no anticipated operational stage impacts.
<i>Calyptorhynchus lathamii</i>	glossy black-cockatoo	V		un	un	po	un	This species is dependent on the fruits of <i>Allocasuarina</i> species. <i>Allocasuarinas</i> occurred at the Pine Hill site only.	Construction will result in a very minor loss of habitat at a single site (Pine Hill). No evidence that GBC feed on the <i>Allocasuarinas</i> at this site during field surveys. There are no anticipated operational stage impacts.
<i>Stipiturus malachurus</i>	southern emu-wren	V		un	un	un	un	This species is unlikely to occur at any of the sites, as they do not support its preferred habitat of dense heathland.	n/a
<i>Grantiella picta</i>	painted honeyeater	V						n/a, not known to occur on Fraser Island (birddata.com.au)	

Species		Conservation significance		Occurrence				Comments	Potential Impact
<i>Podargus ocellatus plumiferus</i>		V		po	un	un	un	This species possibly occurs at one site where suitable rainforest habitat occurs.	Construction at Lake Allom will remove a very minor amount of potential habitat, much less than a single bird's home range and impact will be negligible. There are no anticipated operational stage impacts.
	plumed frogmouth								
<i>Pezoporus walllicus wallicus</i>		V		un	un	un	un	This species is unlikely to occur at any of the sites, as they do not support its preferred habitat, dense heathland.	n/a
	ground parrot								
<i>Ninox strenua</i>		V		po	po	un	po	This is a species of dense forests and could potentially occur in any of the forested sites	There is little chance of any impact of this project as there are no potential nest trees at any of the sites. This owl has a large home range and overall extent of clearing will be negligible compared to an owl's home range area.
	powerful owl								
<i>Pteropus poliocephalus</i>		C	V	pr	pr	pr	pr	This highly mobile species could potentially occur at	Construction will potentially remove some food plants utilised by
	grey-headed flying-fox								

Species	Conservation significance	Occurrence				Comments	Potential Impact
<i>Kerivoula papuensis</i>	NT	po	po	un	un	any of the sites at times when flowers or fruits of forest trees are available.	this species at each site, however, given the very small total area to be cleared and high mobility of this species, impacts will be negligible.
<i>Dasyurus maculatus maculatus</i>	V	un	un	un	un	This species potentially occurs along forest edges at three of the four sites.	Construction will potentially increase habitat for this species by creating extra forest edge habitats utilised by this species. There are no anticipated operational stage impacts.
<i>Xeromys myoides</i>	V	un	un	un	un	This species is unlikely to occur at any of the sites, as they	n/a
	V	un	un	un	un	This species is unlikely to occur at any of the sites, as they	n/a

Species	Conservation significance		Occurrence				Comments	Potential Impact
<i>Potorous tridactylus tridactylus</i>	V	V	po	po	po	po	do not support its preferred, saline wetlands.	Construction at all sites will potentially remove shelter and foraging habitat for this species. However, given the very small impact footprint at each site and the patchy distribution of the species, this impact will be negligible. There are no anticipated operational stage impacts.
							This species is known from Fraser Island and potentially occurs in dense undergrowth associated with all of the sites.	
<i>Apus pacificus</i>		Migratory marine birds	po	po	po	po	This species possibly flies over all of the sites but is unlikely to use the sites themselves	This species will not be impacted by the small scale clearing at each site as it is an aerial species which is active well above the canopy layer.
<i>Haliaeetus leucogaster</i>		Migratory Terrestrial fauna	po	po	po	po	This species possibly flies over all of the sites but is unlikely to use the sites themselves	n/a
<i>Hirundapus</i>		Migratory	po	po	po	po	This species possibly	This species will not be

Species		Conservation significance	Occurrence				Comments	Potential Impact
<i>caudacutus</i>	throated needle-tail	Terrestrial fauna					flies over all of the sites but is unlikely to use the sites themselves	impacted by the small scale clearing at each site as it is an aerial species which is active well above the canopy layer. There are no anticipated operational stage impacts.
<i>Merops ornatus</i>	rainbow bee-eater	Migratory Terrestrial fauna	pr	pr	pr	pr	This species probably uses all of the sites, sallying from perches in emergent vegetation	This species will not be impacted by the small scale clearing at each site as it is an aerial species which is active above the canopy layer. If anything, the clearing associated with this project may create extra foraging areas within the small forest clearings created.
<i>Monarcha melanopsis</i>	black-faced monarch	Migratory Terrestrial fauna	pr	pr	pr	pr	This species probably occurs at all sites, all provide potential habitat for this forest/woodland species	This migratory species probably nests and forages within or close to each of these sites, however, given the small total area to be cleared, this is unlikely to have any impact on the species. There are no anticipated operational stage impacts.

Species	Conservation significance	Occurrence				Comments	Potential Impact
<i>Symposiarchus trivirgatus</i>	Migratory Terrestrial fauna	known	known	pr	pr	This species is known from two of the four sites (Lake Allom & Lake Bowarrady), and probably also utilises the remaining sites as they constitute suitable habitat.	This migratory species probably nests and forages within or close to each of these sites, however, given the small total area to be cleared, this is unlikely to have any impact on the species. There are no anticipated operational stage impacts.
spectacled monarch							



Watchdog for Fraser Island