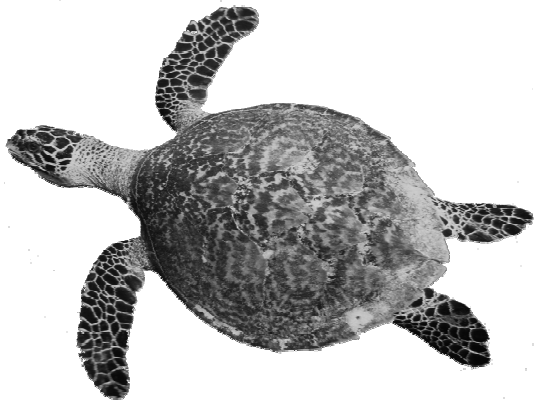
Towards Sustainable Management of Dugong & Turtle Tourism



Final Report to the Commonwealth Department of the Environment and Heritage - Phase II

31 October 2005

Alastair Birtles[1], Matt Curnock[1], Kirstin Dobbs[2], Dermot Smyth[3], Peter Arnold[4], Helene Marsh[1], Peter Valentine[1], Colin Limpus[5], William Hyams[1], Andy Dunstan[6], David Charles[7], Cathy Gatley[5], Arnold Mangott[1], Dean Miller[1], Amanda Hodgson[1], Sam Emerick[5], Alan Kendrick[7]

[1]James Cook University
[2]Great Barrier Reef Marine Park Authority
[3]Smyth & Bahrdt Consultants
[4]Museum of Tropical Queensland
[5]Environmental Protection Agency/Queensland Parks and Wildlife Service
[6]Undersea Explorer
[7]Department of Conservation and Land Management Western Australia

This project has been funded by the Natural Heritage Trust through the Commonwealth Department of the Environment and Heritage (DEH) and aims to develop National Codes of Conduct for tourism activities involving dugong and marine turtles and establish World's Best Practice management of Australian dugong and turtle tourism.

Dugong image courtesy of the Great Barrier Reef Marine Park Authority. Turtle image courtesy of *Undersea Explorer*.

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Natural Heritage Trust
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Towards Sustainable Management of Dugong and Turtle Tourism
Phase II: Field Trials of Codes of Conduct

1. PURPOSE OF RESEARCH PROJECT

To minimise negative anthropogenic impacts of tourism activities on dugong and marine turtles through trialing codes of conduct for tourism related activities on dugong and marine turtles. Phase I of the project identified key issues relating to the protection of biological and cultural values associated with dugong and turtles, including the significance of the species in the context of Indigenous Australians' broader cultural and economic relationship with their sea country. Phase II involved the testing and evaluation in field trials of the dugong and turtle codes of conduct developed under Phase I.

2. PERIOD OF RESEARCH PROJECT

Start Date: October 2004
End Date: End August 2005 (extended to end-October on 26 August 2005)

3. OBJECTIVES

During Phase I, the threats to dugongs and turtles from tourism activities were identified and draft codes of conduct for tourism operators were developed. The objectives of Phase II were to:

1. Further refine Draft Initial Codes of Conduct.
2. Trial these codes in the field in consultation with tourism operators, Traditional Owners and other stakeholders.
3. Evaluate the effectiveness of the Draft Codes with input from key stakeholders including the tourism industry, visitors, managers, Indigenous participants, conservation NGOs and researchers.

4. TIME FRAMES FOR COMPLETION OF WORK:

Table 1: Progress on Project Milestones for Phase II (October 2004-October 2005)

Date*	**Milestone**	***Progress towards Milestone***
By end September 2004	Finalisation of Contract	*Contract finalised early October*
October 2004	Appointment of Project Manager; Initial planning of evaluation trials with Expanded Research Team.	*Project Manager (Matt Curnock) appointed on 4th October 2004.*
By mid-November 2004	Expanded Research Team (ERT) Scoping & Methodology Workshop to refine Draft Codes, develop methods for their presentation and develop evaluation methodology.	*ERT Workshop held on 17-18 November at James Cook University, Townsville.*
November 2004	Online Workshop commences, runs until end of project.	*Online Workshop commenced, invitation for Project Participants to contribute emailed on 12 November 2004.*

November 2004 - January 2005	Trial Draft In-Water Turtle Codes of Conduct: northern GBR Visitor Survey (VS) and Key Informant Survey (KIS).	*Northern GBR VS commenced 17 November 2004. VS sampling completed 29 May 2005.* *Northern GBR KIS commenced late March '05; completed mid-July '05.*
November-December 2004	Stakeholder input via phone link up & Online Workshop to review proposed field evaluation methods.	*A number of meetings and phone link ups with the ERT and a range of Project Participants including Key Informants was ongoing from November 2004 until Project completion.*
December 2004 – January 2005	Trial Draft Beach-Based Turtle Codes of Conduct (Mon Repos: VS and KIS).	*Mon Repos VS commenced end December 2004. VS sampling completed end March 2005.* *Mon Repos KIS conducted 3-10 May '05.*
February-April 2005	Trial Draft Boat-Based Dugong and Turtle Codes of Conduct (Cardwell/ Hinchinbrook and Shark Bay: KIS only). Analyses of results.	*Cardwell/Hinchinbrook KIS commenced late March '05; completed mid-May '05.* *Shark Bay KIS commenced late June'05; completed mid-July'05.*
End April 2005	Phone conference of ERT re: analyses of results.	*Phone and email contact with the Expanded Research Team was ongoing from November 2004 until Project completion.*
April – June/July 2005	Possible field trials of beach- and boat-based winter nesting turtle tourism at Bare Sand Island.	*Not funded as part of this study – Note that field trials were conducted independently by two Project Participants: Gummer and Guinea (Charles Darwin University) as fieldwork for Gummer's Masters Thesis in Sept/Oct 2004.*
May 2005	Online Workshop to consider results of field trials.	*Brief interim report on outcomes of Online Workshop submitted to DEH on 31 May 2005.* *Mon Repos VS Preliminary Results were posted to the Online Workshop in on 27th June '05.* *GBR VS Preliminary Results were posted to the Online Workshop in on 20th July '05.* *Summary results of Mon Repos, Cardwell/Hinchinbrook and Shark Bay KIS. Summary Results posted to Online Workshop on 13 Sept '05. Summary results of GBR KIS and TO CoP posted to the Online Workshop on 13 Oct 05.*
June-August 2005	Finalise analysis and revise Draft Codes for submission to Department.	*ERT Workshop held on 18 Aug '05 to incorporate results of field trials and Online Workshop feedback into revised Code of Practice and developed recommendations for implementation.*
Sept-Oct 2005	Revise Draft Codes further using additional research outcomes and stakeholder input.	*Draft Final Report including revised Code of Practice and Codes of Conduct submitted to DEH on 5th October '05.* *Draft Final Report and Code of Practice uploaded to Online Workshop on 13 Oct 05 for Project Participants' feedback.*
End of October 2005	Incorporate feedback from Online Workshop into Final Report. Submit Final Report to DEH 31 Oct '05.	*Final Report to DEH submitted on 31 Oct '05.*

*Note: Dates open to modification; subject to Start Date and acceptability of End Date.
KIS = Key Informant Survey; VS = Visitor Survey

5. PROJECT OUTCOMES AND ACHIEVEMENTS

5.1 Expanded Research Team Workshops

Two Expanded Research Team (ERT) Workshops were held during Phase II.

1. **On 17-18 November 2004**: the ERT met to refine the Draft Codes of Practice (see 5.2 below), develop methods for their presentation and develop the field evaluation methodology (See 5.3 below).

ERT Workshop Participants (17-18 Nov 2004):

Chief Investigators:

1. Dr Alastair Birtles (James Cook University)
2. Dr Peter Arnold (Museum of Tropical Queensland)
3. Assoc Prof Peter Valentine (JCU)
4. Dr Dermot Smyth (Smyth & Bahrdt Consultants)
5. Dr Col Limpus (Queensland Environmental Protection Agency/Parks and Wildlife Service)
6. Dr Kirstin Dobbs (Great Barrier Reef Marine Park Authority)

Associate Investigators:

7. Mr David Charles (WA Dept. of Conservation and Wildlife Management)
8. Mr Andy Dunstan (Undersea Explorer)
9. Mrs Cathy Gatley (EPA/QPWS; *via phone link up from Mon Repos*)

Additional:

10. Mr Matt Curnock (Project Manager; JCU)
11. Mr William Hyams (JCU M.Tourism student & Research Assistant)
12. Mr Dean Miller (JCU PhD candidate; scuba dive tourism)
13. Dr Amanda Hodgson (recently completed JCU PhD candidate; dugong behaviour)
14. Ms Susan Sobtzick (JCU Research Assistant; observer only)
15. Ms Nell Hamilton (Visiting Scholar; observer only)

Apologies from Prof Helene Marsh (JCU)

NB. A pre-Workshop meeting was held with Marsh, Hodgson, Birtles, Valentine, Arnold, Charles & Curnock to incorporate Marsh's comments on agenda items (Draft Codes of Practice and field evaluation methodology) at this ERT Workshop.

2. **On 18 August 2005**: an additional ERT Workshop was held (not included in original Project Milestones), to:
   a) Discuss results of Key Informant and Visitor Surveys and feedback from the Online Workshop.
   b) Examine issues arising and make necessary changes to the four Draft Codes of Practice.
   c) Plan Phase II Final Report to Commonwealth DEH.
   d) Explore implementation ideas and issues for a possible Phase III project.
   e) Plan other outputs from Phase II (continuation of Online Workshop, additional papers).

ERT Workshop Participants (18 Aug 2005):

Chief Investigators:

1. Dr Alastair Birtles (James Cook University)
2. Dr Peter Arnold (Museum of Tropical Queensland)
3. Assoc Prof Peter Valentine (JCU)
4. Prof Helene Marsh (JCU)
5. Dr Dermot Smyth (Smyth & Bahrdt Consultants)
6. Dr Kirstin Dobbs (Great Barrier Reef Marine Park Authority)
7. Dr Col Limpus (EPA/QPWS; *via phone link up from Brisbane*)

Associate Investigators:

8. Mr Andy Dunstan (Undersea Explorer)

Additional:

9. Mr Matt Curnock (Project Manager; JCU)
10. Mr William Hyams (JCU M.Tourism student & Research Assistant)
11. Mr Dean Miller (JCU PhD candidate; scuba dive tourism)
12. Mr Arnold Mangott (JCU Research Assistant)

Apologies:

13. Mrs Cathy Gatley (EPA/QPWS)
14. Mr David Charles (CALM; Shark Bay)
15. Mr Alan Kendrick (CALM; Shark Bay)

NB. Subsequent feedback on specific Workshop outcomes and revised drafts of the Code of Practice was obtained from Charles, Kendrick, Gatley and Hodgson via phone link ups and email.

A folder of all Workshop materials was sent to DEH after the 18 August ERT Workshop, containing:

1. The Workshop Agenda;
2. Project objectives and reports of Phase I and Phase II (up to 18 Aug 05);
3. Complete lists of Key Informants and Project Participants;
4. A summary of Online Workshop feedback on the four Draft Codes of Practice;
5. Copies of the four Draft Codes of Practice (from March 2005);
6. Preliminary results summaries of the two Visitor Surveys (Mon Repos and GBR);
7. Results summaries of the Key Informant Surveys from the four study sites (Mon Repos, GBR, Cardwell/Hinchinbrook and Shark Bay); and
8. Copies of the Visitor Survey questionnaires, and Key Informant Survey interview questions from all study sites.

5.2 Refinement of the Draft Codes of Conduct & Draft Codes of Practice (October 2004-March 2005)

Recommendations of the Planning Workshop (20-21 May '04) to achieve World's Best Practice dugong and turtle tourism included a range of objectives which were deemed to be of a much broader scope than could be achieved by Codes of Conduct, which are limited to specific provisions for managing interactions. The Planning Workshop made a series of recommendations to all parties involved in the planning and management of dugong and turtle tourism, and it was agreed that these broader recommendations should be included

within Codes of Practice. These recommendations included the development of interpretation (to improve tourists' compliance and enhance their experience), the initiation of long-term monitoring of tourism programs to evaluate their sustainability, and the engagement with Indigenous Traditional Owners in the planning and management of such tourism. Much of this was flagged in our application for Phase II as appropriate objectives for a Phase III Project, but substantial progress has been made in more clearly defining the elements which should be included in these broader Codes of Practice, and these are outlined in this Final Report on Phase II to DEH.

The revision of the original Draft Codes of Conduct developed by the Planning Workshop (20-21 May '04), and development of the broader recommendations to be included in the Codes of Practice, was initiated by the Expanded Research Team at the ERT Scoping and Methodology Workshop (17-18 Nov '04). After incorporating some preliminary feedback from the Visitor Surveys, four revised Draft Codes of Practice (with embedded Draft Codes of Conduct) were finalised and posted to the Online Workshop for comments and feedback from Project Participants on 11 March 2005. These four Draft Codes of Practice provided the basis for evaluations in the Key Informant Surveys.

Four Draft Codes of Practice evaluated in field trials (available in Online Workshop):

1. Draft Code of Practice for Sustainable Management of Beach-Based Marine Turtle Tourism (Appendix 1);
2. Draft Code of Practice for Sustainable Management of Vessel & In-Water Marine Turtle Tourism (Appendix 2);
3. Draft Code of Practice for Sustainable Management of Vessel-Based Dugong & Marine Turtle Tourism (Appendix 3);
4. Draft Code of Practice for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong & Marine Turtle Tourism (Appendix 4).

5.3 Field evaluation of the Draft Codes of Practice (Dec '04 – July '05)

The four Draft Codes of Practice and embedded Draft Codes of Conduct were evaluated in field trials at four study sites around Australia, via Key Informant Surveys (KIS) and Visitor Surveys (VS). The sites at which each of the Draft Codes were evaluated are presented below in Table 2.

Table 2: Summary of field evaluation methods of Draft Codes of Practice and Draft Codes of Conduct (November 2004 – July 2005; KIS = Key Informant Survey; VS = Visitor Survey)

Code of Practice / Code of Conduct evaluated	Method of evaluation, study site/s and timescale
Beach-Based Marine Turtle Tourism: *Draft Code of Practice*	1. KIS; Bundaberg & Burnett Shire region, QLD (for Mon Repos Conservation Park study site). 3-10 May 2005.
Beach-Based Marine Turtle Tourism: *Draft Code of Conduct Provisions*	1. VS; Mon Repos Conservation Park (turtle rookery), Burnett Shire, QLD. End-December 2004 to end-March 2005. 2. KIS; Bundaberg & Burnett Shire region, QLD (for Mon Repos Conservation Park study site). 3-10 May 2005.
Vessel & In-Water Marine Turtle Tourism: *Draft Code of Practice*	1. KIS; Cairns region, QLD (for northern GBR study site). Late March to mid-July 2005.

Vessel & In-Water Marine Turtle Tourism: *Draft Code of Conduct Provisions*	1. VS; Four live-aboard dive tourism vessels visiting the Ribbon Reefs, Cairns Section, GBRMP QLD (for northern GBR study site). 17 November 2004 to 29 May 2005. 2. KIS; Cairns region, QLD (for northern GBR study site). Late March to mid-July 2005.
Vessel-Based Dugong & Marine Turtle Tourism: *Draft Code of Practice & Draft Code of Conduct*	1. KIS; Cardwell/Hinchinbrook region, QLD. Late March to mid-May 2005. 2. KIS; Shark Bay region, WA. Late June to mid-July 2005.
Draft Code of Practice for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong & Marine Turtle Tourism	1. KIS; Cardwell/Hinchinbrook region, QLD. Late March to mid-May 2005. 2. KIS; Cairns region, QLD (for northern GBR study site). Late March to mid-July 2005. 3. KIS; Bundaberg & Burnett Shire region, QLD (for Mon Repos Conservation Park study site). 3-10 May 2005. 4. KIS; Shark Bay region, WA. Late June to mid-July 2005.

5.3.1 Key Informant Surveys (KIS)

Aims of the KIS

The aims of the Key Informant Surveys were:

1. To gather feedback from highly experienced Key Informants from a range of backgrounds and stakeholder groups on the key issues for managing dugong/turtle tourism in their specific location;
2. To gather detailed feedback on specific provisions within the Draft Codes of Practice (including the *Draft Code of Practice for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong and Marine Turtle Tourism*) and Codes of Conduct; and
3. To explore issues for implementing the Codes of Practice and Codes of Conduct.

Methods

A semi-structured interview of the Key Informants (KI's) was conducted at each study site, taking between one to two hours to complete. Interviews were recorded and later transcribed for comparison and analyses. As many of the broader recommendations in the first three Codes of Practice were the same, this allowed for comparison of KI's responses to questions relating to these recommendations at all study sites. The *Draft Code of Practice for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong & Marine Turtle Tourism* was also evaluated at all four study sites via the Key Informant Survey (see Table 2 above).

Sample

Key Informant Surveys for the four study sites were conducted between March and July 2005. A total of 63 KI's were interviewed in total from the four sites (see number of KIs for each site in Table 3 below).

Table 3: Number of Key Informants interviewed for each study site

Study Site	Number of KIs
Northern Great Barrier Reef, QLD	12
Cardwell/Hinchinbrook, QLD	15
Mon Repos (Bundaberg region), QLD	20
Shark Bay, WA	16
Total	**63**

A KIS sample size of 12-15 respondents per study site was originally proposed for the evaluation of each Draft Code of Practice, however a slightly larger sample size was obtained for Mon Repos and the surrounding area.

Key Informants for each site included members of the tourism industry, protected area and wildlife management agencies, researchers, members of conservation NGOs, members of the local community and Traditional Owners, with expert knowledge of their respective site. Summary results of the KIS for each study site were posted to the Online Workshop for comments. All results of the KIS have been de-identified and the transcripts are being kept in confidence (a requirement of JCU Ethics Policy). A complete list of Key Informants is attached as Appendix 5 to acknowledge their contribution, however specific contributions or statements from the KIS are not linked with any named individuals.

Major findings and key outcomes of the Key Informant Surveys

Key Informants were generally highly supportive of the Draft Codes of Practice and Draft Codes of Conduct. Feedback provided on specific provisions in the Draft Codes of Practice and embedded Draft Codes of Conduct highlighted a diverse range of issues associated with each provision, reflective of the broad range of stakeholders and backgrounds within the sample of Key Informants.

Feedback on the broader Code of Practice recommendations

The broader provisions in the Draft Codes of Practice received few criticisms, however a number of recommendations relating to these were incorporated into the revised Code of Practice to clarify their scope and intent, for example:

- Requirements for Environmental Impact Assessments to include additional considerations for specific types of tours. Note that many Key Informants were concerned about resourcing of the EIA process for individual operations, and highlighted a need for a more integrated and holistic approach (i.e. in an appropriate regional planning process) by the appropriate management agency, taking into account cumulative impacts of all operations on the tourism resource and perhaps establishing a maximum number of permits to be issued in an area;
- Additional suggestions for local implementation and management issues;
- Clarification of some research and monitoring priorities.

The need for clearer definitions and the use of key terms in the Draft Codes of Practice was identified by a number of Key Informants, and these have been addressed in the revised Code of Practice, for example:

- “Important habitat” for dugongs and turtles;
- “High risk areas”; and
- “Dedicated” vs. “incidental” tours.

Additional recommendations
A range of additional recommendations were made by Key Informants which were not specifically related to tourism operations, addressing specific threats facing Australian dugong and marine turtle populations. These recommendations have been summarised in a new section ("*Addressing threats to dugong and marine turtle populations*") in the revised Code of Practice to promote awareness of these issues and encourage tourism operators and local communities to support conservation efforts to reduce these threats.

Feedback on the Draft Code of Practice for Engaging with Traditional Owners
There was a high level of support overall from Key Informants for the *Draft Code of Practice for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong and Marine Turtle Tourism*. Some specific concerns raised by some KI's (e.g. Traditional Owner "consent" of tourism implying the power of veto) have been addressed and clarified in the revised *Best Practice Guidelines for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong and Marine Turtle Tourism,* however overall these recommendations have not been extensively modified.

An important point brought up by many KI's was the consultation of Traditional Owners in the permitting process and in the development of coastal management plans. In protected areas under the jurisdiction of the Commonwealth/State management agencies, this consultative process is already a matter of policy, however outside these areas the extent of this consultation varies and in some cases requires improvement to meet the new national standards set out by the NRM Regional Plans. An integrated approach to the management of sea country (i.e. not just focusing on particular species or specific issues) was identified as an important objective for management agencies across all jurisdictions.

The identification and recognition of the Traditional Ownership for some specific areas (e.g. Shark Bay and offshore regions of the northern Great Barrier Reef) emerged as a concern for some KI's, highlighting a need for broader awareness of the process for identifying the appropriate Traditional Owner groups (i.e. through the Native Title Representative bodies; in most cases the Land Councils), and of the importance of Traditional Owners' role in the management of sea country. In some areas Native Title determinations of sea country are in dispute (i.e. have more than one claim) and managers and tourism proponents may be advised to consult with more than one group over such areas.

Feedback on the Draft Codes of Conduct
Specific provisions for the beach-based and in-water turtle Draft Codes of Conduct received strong support from most Key Informants, and only a small number of changes were made to clarify their intention to tourists and operators (e.g. movement and approach protocols to pre-nesting turtles; tour guides use of lights to establish egg-laying phase). Additional changes were made to improve their presentation (e.g. layout of in-water turtle interaction recommendations). The use of flash photography of nesting and hatchling marine turtles was an important concern of several Key Informants, and the research team felt it necessary to include a new section to address this ("*Guidelines for photography and filming of nesting and hatchling marine turtles*").

Specific provisions for vessel-based dugong interactions (evaluated at both the Cardwell/Hinchinbrook and Shark Bay study sites) received varied levels of support from Key Informants, reflecting the differing environmental conditions and types of operation of these two sites. After consideration of Key Informants' feedback on vessel approach

distances to dugongs, the research team decided that the national standard (Level 1) minimum vessel approach to a dugong distance should remain at the current CALM license condition stipulation of 40m, however the team recognises that at some locations it may be possible to consider a closer approach distance as a Level 2 (location-specific) provision (dependent upon a pre-impact assessment of disturbance to dugongs). Additional changes were made to clarify the intention of some specific provisions (e.g. "if a dugong approaches the vessel closer than 40m, the vessel need not move away").

Results summaries of the Key Informant Surveys available in the Online Workshop
Summary results of the Cardwell/Hinchinbrook and Shark Bay KIS (combined; Appendix 6), as well as summary results of the Mon Repos KIS (Appendix 7) were uploaded to the Online Workshop on 13 September 2005. Summary results of the GBR KIS (Appendix 8) were uploaded to the Online Workshop on 13 October 2005. In addition, a summary of results of KIS feedback on the *Draft Code of Practice for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong and Marine Turtle Tourism* (TO Code; Appendix 9) from all four study sites was uploaded to the Online Workshop on 13 October 2005.

5.3.2 Visitor Surveys (VS)

Aims of the VS
The aims of the Visitor Surveys were:

1. To gather tourists' feedback on specific provisions within the *Draft Codes of Conduct*;
2. To understand tourists' experiences when interacting with marine turtles;
3. To evaluate tourists' perceptions of the impacts of their interactions on marine turtles; and
4. To understand tourists' information and interpretation needs for in-water marine turtle interactions.

Methods
Self-administered questionnaires were distributed to visitors at the Mon Repos Conservation Park (to elicit feedback on beach-based turtle interaction provisions) and passengers on four live-aboard dive tourism vessels operating in the Cairns Management Area of the GBRMP (to elicit feedback on in-water turtle interaction provisions). A series of Likert rating scales were used for passengers to rate their support/opposition to specific management provisions and space was provided for passengers to explain any reasons for their reactions to the provisions.

Samples
The GBR VS was conducted from 17th November 2004 until 29th May 2005. The Mon Repos VS was conducted from 29th December 2004 until 31st March 2005. A total of 243 visitor questionnaires were collected from passengers on four live-aboard dive vessels operating in the Cairns and Far Northern Sections of the GBR, and a total of 683 visitor questionnaires were collected from the Mon Repos study site (including visitors to the Conservation Park and some adjacent beaches).

Major findings and outcomes of the Visitor Surveys
These Visitor Surveys provided an excellent insight into the experiences and perceptions of tourists interacting with marine turtles on the beach (at Mon Repos) and in-water (in the

northern GBR). Results of the Mon Repos VS indicated strong support for all suggested management provisions in the Beach-Based Code of Conduct. There was also a high level of support overall for the in-water management provisions from the GBR VS, however the mean rating of a specific minimum in-water approach distance to turtles was somewhat lower.

Visitors' explanations of their support/opposition for some provisions highlighted issues which were subsequently addressed in the revised Codes of Conduct, for example:

- Large group sizes and too much flash photography during beach-based turtle interactions decreased some visitors' enjoyment of the experience;
- There was some opposition to introducing an in-water approach distance to turtles on dive sites, particularly where resident turtles are approached closely on a regular basis.

Only a small number of changes to these two Codes of Conduct were required as a result of this overall positive response (including feedback from the KIS), however specific comments provided by VS respondents identified a need to rephrase the wording of some provisions to help explain them more clearly and provide reasons for their use, for example:

- "If you can clearly see the turtle moving up the beach, you should not approach any closer," and
- "Turtles will often sleep inside a coral crevice and they may flee this enclosed space if startled – there may be a risk of injury to the turtle or diver as well as coral damage from sudden fleeing."

Some initial difficulties with the Visitor Surveys

Mon Repos VS comparison with beaches adjacent to the Conservation Park

The later start date of Phase II of the Project (October 2004; originally proposed to begin by end August 2004) reduced the time available to design the Beach-Based Turtle VS and prepare for sampling to coincide with the Dec '04/ Jan '05 school holidays. The Expanded Research Team had initially planned to conduct the VS at both the Mon Repos Conservation Park, and at adjacent unmanaged nesting beaches in the Burnett Shire to allow a comparison of visitors' perceptions of the Draft Code of Conduct between the intensively managed Mon Repos site and these unmanaged beaches. The process of developing the visitor questionnaires and attaining the necessary Ethics approvals was completed just prior to Christmas 2004, and sampling began on 29 December 2004. The peak visitation period at the adjacent nesting beaches in the Burnett Shire was reported to occur for a brief period only, for approximately two to three weeks beginning just prior to Christmas (D. Limpus, QPWS, pers comm.). Due to the shifting of tides during this period (high tide occurring later in the night and through the early morning hours), female nesting turtles on these beaches and at Mon Repos were reported to begin nesting later at night in conjunction with the high tide. As a result, fewer visitors were present on these beaches in the latter half of the brief peak visitation period when turtles were nesting. Therefore only a handful of visitors who experienced interactions with nesting turtles at these unmanaged beaches were sampled (n=12), resulting in an insufficient sample size to compare with the Mon Repos sample. The VS sample size collected at the Mon Repos Conservation Park in contrast was excellent (n=671) as their level of visitation was consistently high through the extended turtle nesting and hatchling season.

Proposed Shark Bay VS

The original scope and milestones of the Project did not include a Visitor Survey at either the Shark Bay or Missionary Bay study sites, as most provisions in the *Draft Code of Conduct for Sustainable Management of Vessel-Based Dugong and Marine Turtle Tourism* are vessel maneuvering protocols for adherence by the tour operator. However, it was decided at the ERT Scoping and Methodology Workshop (17-18 Nov '04) that a visitor survey of Shark Bay vessel-based dugong tour passengers was feasible and could be included in the study, to explore issues including visitor expectations and experiences, perceptions of impacts of vessel-based interactions on dugong behaviour, and interpretation needs. This would have allowed field trials of all Draft Codes of Conduct via Visitor Surveys. Operations of the only permitted dedicated dugong watching operator in Queensland (Missionary Bay) were too infrequent to allow data collection from passengers, hence Shark Bay WA offered the only possibility in Australia to field test this Draft Code of Conduct on dedicated permitted dugong watching tours.

After an initial positive response to the research project from the two CALM-permitted dugong watching operators based in Monkey Mia (our first request for their participation was made on 14 Dec '04), some concerns were expressed by both operators regarding the confidentiality of the VS questionnaire results. Both operators expressed a distrust in the WA State management agency CALM, and despite our verbal and written assurances of complete data confidentiality, they were still concerned about the potential for passenger data to be used against them in prosecutions and/or permit renewals by the agency. (*It should be noted that both operators had previously been prosecuted by CALM for breaching their interaction conditions*.) After numerous telephone and email attempts over an extended period to explain the aims of the questionnaires to the operators and encourage their participation in the VS (including a written statement supplied by CALM detailing that they would not have access to the VS data, nor would they prosecute on the basis of any such data), the operators declined to participate in conducting the VS on their vessels (final response on the matter received on 4 March '05). The research team's interactions with these operators however remained positive through this process, and we received positive and extremely useful feedback from both operators on the Draft Codes of Practice. Both operators expressed a desire to have a continued role in the development and evaluation of management protocols in their area of operations, which could be developed further in a Phase III of the Project.

Potential additional surveys could be conducted in a Phase III study on operations that regularly encounter dugongs on multi-species marine wildlife tours (e.g. in Moreton Bay & Hervey Bay, QLD), which do not have specific dugong-watching tour permits. Such surveys would provide a useful comparison with the Shark Bay situation, and would help develop and evaluate site-specific (Level 2) provisions in the Code of Conduct (see Section 6.1 below). *NB. Moreton Bay and Hervey Bay were originally proposed as potential sites for field evaluations of the Draft Codes of Practice, which were not able to be funded by DEH for Phase II*.

Results summaries of the Visitor Surveys available in the Online Workshop

A summary of preliminary results of the VS for the Mon Repos was uploaded to the Online Workshop for comments on 27 June 2005 (Appendix 10). A summary of preliminary results of the VS for the northern GBR was uploaded to the Online Workshop for comments on 20 July 2005 (Appendix 11).

5.4 Online Workshop

The Online Workshop represents the trial of a new approach to achieve wider stakeholder consultation, ownership and participation in the development of national Codes of Practice. The collective experience and knowledge of the 79 Project Participants involved through Phase I of the study represented a magnificent resource for guiding the process and development of these Draft Codes. Whilst it was beyond the scope of Phase II to bring this group together again physically, the opportunity for ongoing involvement and consultation was provided for them through the Online Workshop. It was intended that this would help to build stakeholder involvement in, and hence ownership of, the resulting Code of Practice.

5.4.1 Aims of the Online Workshop

The aims of the Online Workshop were:

1. To facilitate the broadest possible input into the development of the Draft Codes of Practice by Project Participants, including Government protected area and wildlife management agency staff, tourism operators and industry representatives, Indigenous Traditional Owners, conservationists, researchers, local council and other community stakeholders from around Australia and overseas, to ensure that the resulting Codes of Practice are effective and able to be implemented at locations around Australia.
2. To develop a sense of ownership of the Draft Codes by the above Project Participants and stakeholders.
3. To conduct a transparent development and evaluation of the Draft Codes by the research Project.

Project website: http://www.dugongturtletourism.org
Project Participants' Area and Online Workshop: http://dugongturtletourism.org/forum
User name to access Online Workshop: *****
Password to access Online Workshop: *****

5.4.2 Project Participants

Phase I of the Project enlisted the involvement of 79 people from around Australia (see Appendix 6 of the Draft Issues Paper). Additional Project Participants (including some overseas researchers) were enlisted through Phase II of the Project, with input being sought from people highly experienced with dugong/turtle tourism issues, who were suggested for inclusion by other Project Participants and members of the research team. This list of Project Participants grew as Key Informants recommended additional people during the interview process. Contact details of Project Participants, their roles and organisations are stored and managed in an Access database. Participants were kept informed of significant Project developments and were invited to comment on Project materials (including the Draft Codes of Practice) within the Online Workshop via an email list. The current total number of Project Participants on the emailing list (as at 31 October 2005) is 182.

For each group email to the Project Participants, instructions to access the Online Workshop (including login name and password) were provided for new Participants to the emailing list, and to serve as a reminder for others.

5.4.3 Outcomes of the Online Workshop at end October 2005

To date, a relatively small number of comments have been posted to the Online Workshop by Project Participants (excluding those by members of the research team; see Table 4 below). These comments have however provided some extremely valuable feedback on the Draft Codes, which was considered by the research team at the ERT Workshop on 18th August

with resulting changes incorporated into the revised *Code of Practice for the Sustainable Management of Dugong and Marine Turtle Tourism in Australia* (Appendix 12). The Online Workshop usage summary statistics (Table 4) indicate that many more Participants were involved in the Online Workshop by looking at the materials but did not necessarily post their comments. The Online Workshop will continue for the duration of the Project, with a further round of feedback sought on the revised Code of Practice (including the Codes of Conduct) and this Final Report, to be posted in mid-October for two weeks of comments.

5.4.4 Security and other features of the Online Workshop

The software package used for the Online Workshop was phpBB (http://www.phpbb.com/), an Open-Source bulletin board package, recommended by the web host/site developer (Cyber Factory) for its user-friendly interface and simple administration panel. A security password was added to the Online Workshop to limit access from anonymous Internet users and automated 'search-robot' programs designed to harvest web content for display in web search engines (e.g. Yahoo™ and Google™). The intention of the password security feature was to create a safe online environment for Participants to post constructive feedback and discuss relevant issues, and to ensure quality of feedback by preventing inappropriate or malicious postings by anonymous users. Instructions to access the Online Workshop (including URLs and username: password) were included with invitations to comment on materials as they were uploaded (see Table 4 below for dates on which invitations were sent). Some Project Participants who were able to gain access to the Online Workshop and download the Draft Codes submitted their comments via email (five in total). The emailed comments were subsequently posted to the Online Workshop to allow other Participants an opportunity to view and respond to the comments.

5.4.5 Some reported difficulties

The security features of the Online Workshop represented a minor barrier to access for some Project Participants, however in each case these problems were easily overcome with guidance by the Project Manager over the telephone. It is possible that some Participants attempting to access the site may have abandoned their efforts without asking for help (and two Participants did not follow up when help was offered), and a higher rate of response may have been achieved without the use of a security password. However, allowing free access to anonymous users could have compromised the integrity of the site and therefore potentially the quality of Participant contributions.

Table 4: Timeline of the Online Workshop

Date	**Content uploaded to Online Workshop**	**Project Participant contact**	**Usage summary statistics** (includes Online Workshop and main page: www.dugongturtletourism.org)
Nov '04 - Feb 2005	• Phase I Report • Report of the Planning Workshop • Draft Initial Codes of Conduct.	12/11/04 - Email invitation to approximately 80 Project Participants with information about Phase II field trials and Online Workshop instructions.	November 04 summary • 5931 hits • 118 separate visits • 25 unique user agents • 13 registered users (in total) Dec 04–Feb 05 summary • 2037 hits • 152 separate visits • 46 unique user agents • no new registered users
Mar-May 2005	Four revised Draft Codes of Practice: • Draft Code of Practice for the Sustainable Management of Beach-Based Marine Turtle Tourism • Draft Code of Practice for the Sustainable Management of Vessel-Based Dugong and Marine Turtle Tourism • Draft Code of Practice for the Sustainable Management of Vessel and In-Water Marine Turtle Tourism • Draft Code of Practice for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong and Marine Turtle Tourism.	11/3/05 - Email invitation to approximately 130 Project Participants with a flyer outlining details on accessing the Draft Codes, registering and posting to the Online Workshop. 27/4/05 - Reminder email (extending interim closing date for round of comments on Draft Codes of Practice until 16 May '05) to approximately 140 Project Participants.	March 05 summary • 8370 hits • 249 separate visits • 48 unique user agents • 6 new registered users (19 total) • 7 comments about CoPs posted (1 external to research team) April 05 summary • 4845 hits • 138 separate visits • 38 unique user agents • 3 new registered users (22 in total) • 2 comments about CoPs posted (2 external to research team) May 05 summary • 2052 hits • 96 separate visits • 28 unique user agents • 1 new registered user (23 total) • 6 comments about CoPs posted (4 external to research team)
June-Aug 2005	Preliminary results of field trials: • Preliminary results of Mon Repos VS (28 June '05); • Preliminary results of northern GBR VS (20 July '05);	28/06/05 – Email invitation to approximately 160 Project Participants to comment on Preliminary results of Mon Repos VS. 20/07/05 – Email invitation to approximately 180 Project Participants to comment on Preliminary results of northern GBR VS.	June 05 summary • 2104 hits • 79 separate visits • 24 unique user agents • No comments posted July 05 summary • 2214 hits • 91 separate visits • 30 unique user agents • 1 comment posted (external to research team) August 05 summary • 1636 hits • 114 separate visits • 35 unique user agents • 1 new registered user (24 total) • No comments posted (external to research team)

Sept-Oct 2005	Preliminary results of field trials: • Preliminary results of Cardwell/Hinchinbrook and Shark Bay KIS (13 Sept '05); • Preliminary results of Mon Repos KIS (13 Sept '05); • Preliminary results of northern GBR KIS (13 Oct '05); • Results summary: KIS feedback on Draft TO Engagement Code (13 Oct '05) New Code of Practice & Draft Final Report: • Newly Revised Draft Codes of Practice (13 Oct 05); • Draft Phase II Final Report (13 Oct '05).	13/9/05 – Email invitation to 181 Project Participants to comment on KIS Summary Results. 13/10/05 – Email invitation to 182 Project Participants to comment on new Code of Practice, Draft Final Report and KIS Summary Results.	<u>September 05 summary</u> • 2572 hits • 143 separate visits • 31 unique user agents • 2 new registered users (26 total) • 3 comments posted (external to research team) <u>October 05 summary (up to 31 Oct 05)</u> • 5353 hits • 217 separate visits • 41 unique user agents • No new comments posted as at 31 Oct 05.

5.5 Revision of the Code of Practice

Feedback from the Online Workshop, and results from the Key Informant Surveys and Visitor Surveys were used by the Expanded Research Team in their revisions to the overall structure of the Code of Practice as well as specific provisions (described above in Section 5.3). In considering results of the Phase II field trials and Project Participants' feedback via the Online Workshop, the ERT felt it appropriate that the four Draft Codes of Practice (as evaluated in the Field Trials from Nov 2004 – July 2005) should be merged into a single Code of Practice, with the individual Codes of Conduct and Best Practice Guidelines for Engaging with Traditional Owners embedded within. This recognizes the overlap of several of the broader provisions in the Draft Codes of Practice, and allows for the incorporation of the *Best Practice Guidelines for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong and Turtle Tourism* within the Code of Practice to unite its recommendations within a single document aimed at developing World's Best Practice management of dugong and turtle tourism in Australia.

The resulting ***Code of Practice for the Sustainable Management of Dugong and Turtle Tourism in Australia*** is attached as Appendix 12.

6. EXPANDED RESEARCH TEAM RECOMMENDATIONS

6.1 Presentation and scope of the Code of Practice

The use of a tiered structure (e.g. as used within the *Australian National Guidelines for Whale and Dolphin Watching 2005*) is considered an essential component of this Code of Practice to enable its effective implementation at a local scale. A nationally-applicable set of Level 1 recommendations form the basis of the Codes of Conduct, with specific provisions identified requiring development of Level 2 restrictions at the site-specific level, to be developed and implemented under the jurisdiction of the relevant management authority. This is one of the potential objectives of a Phase III to the Dugong & Turtle Tourism Project (see below).

Level 1: National standards
Level 1 provisions are recommended as being applicable to all users of dugong/marine turtle habitats, including:

- Dedicated and incidental vessel-based tourism operations.
- All other commercial and private vessels (e.g. fishing vessels, recreational vessels, ferries, etc.).
- Dedicated and incidental beach-based tourism operations (operating on turtle nesting beaches during turtle breeding season).
- All other users of turtle nesting beaches during the turtle breeding season (e.g. independent travelers, members of the local community).

Level 2: Additional management provisions
The applicability and requirements of Level 2 provisions may vary between different locations, for different species and/or for different activities or types of interaction (e.g. approach distances to dugongs/turtles under Level 2 provisions may be closer than those recommended by the national standards (Level 1) if interactions are managed carefully and are led by appropriately trained guides). These additional management provisions may vary because of:

- Environmental characteristics (topography & geography of the land/waters, marine protected areas);
- Target species' characteristics (particular biological and behavioural sensitivities, importance of local population, importance of local habitat);
- Social characteristics (types and intensity of human activities).

It is recommended that development of these Level 2 provisions include:

(i) An assessment of the potential impacts on the target animals and their habitat, from tourism operation(s) adhering to the proposed Level 2 provision;
(ii) Application of the Precautionary Principle where knowledge of potential impacts is deficient;
(iii) Adequate consultation of all stakeholders; and
(iv) Development and implementation of a monitoring program for impacts of the tourism activities on the target animals' behaviour and local population.

6.2 Phase III Project

A number of issues emerged through Phase I of the Project that were deemed to be of broader scope than could be addressed through codes of conduct (as were required by the objectives of Phase I). An outline of a possible Phase III was therefore included as an Appendix to our Phase II application, which foreshadowed a need for:

- Implementation of the Codes for sustainable management of dugong & turtle tourism,
- Development and testing of interpretation (see Appendices 13 & 14 for example draft brochures),
- In-service training of guides (staff/volunteers),
- Development and testing of Sustainability Indicators,
- Monitoring of processes and outcomes of the implementation of the Codes.

Phase II began to address these issues (even though they were not included as objectives of Phase II), and a series of broad recommendations are made in Part 1 of the Code of Practice (Appendix 12). Additional issues have also been identified which could be also addressed in a Phase III project, including:

- Development and testing of Level 2 (location, species and activity specific) provisions at selected sites in Australia.
- Development of educational and public awareness raising projects for coastal communities in northern Australia.
- Development of a national accreditation course for tourism operators conducting dugong and/or turtle watching activities.

Implementation of these recommendations clearly requires sufficient time and resources and we are pleased to note that DEH has recognised this and advertised for a Phase III project in August 2005.

We are also pleased to note that elements of Phase II evaluations and Phase III implementation by the JCU Dugong & Turtle Tourism Project research team were included in the Ningaloo Turtle Program's recently successful Cross Regional Community Turtle Conservation Project (funded through NHT's Regional Competitive Component), and we are exploring ways that this can be used as an initial trial of the Code of Practice and Beach-Based Turtle Code of Conduct at a site other than Mon Repos. Ningaloo was one of our other selected sites for field evaluations in Phase II which was not able to be funded by DEH. Ningaloo WA and other turtle nesting areas around Australia (e.g. Bare Sand Island NT with day-nesting flatbacks in winter), represent a very different situation to Mon Repos: (a) biologically (mostly loggerhead turtles), (b) physically (carefully designed infrastructure and interpretive centre to manage tens of thousands of visitors each season) and (c) with respect to management (under QPWS management); and hence present very different requirements for implementing the Code of Practice. It is therefore important that some of these sites be included in a Phase III project.

The research team recommends that a Phase III project, addressing the objectives identified above, be conducted once the Code of Practice and Codes of Conduct are formally adopted as a 'national standard' by the Commonwealth DEH, the relevant State/Territory wildlife

management agencies and the Natural Resource Management Ministerial Council (see Recommendation 6.3 below).

The continuation and further development of the Dugong and Turtle Tourism Project website and Online Workshop through Phase III is recommended, to maintain and continue to develop broad stakeholder involvement and ownership of the Code of Practice and its implementation in a transparent process. Species and location-specific user-friendly versions of the Codes of Conduct (e.g. visitor brochures) could be developed and made available online, along with other relevant information for managers, Traditional Owners, tour operators, tourists, and the broader community.

6.3 Adoption of the Code of Practice and Codes of Conduct as a 'national standard'

The Expanded Research Team (ERT) recommends:

1. That the Department of the Environment and Heritage (DEH) consider formally adopting the Code of Practice and embedded specific Codes of Conduct (attached as Appendix 12) as the minimum national standard for turtle and dugong watching, both recreationally and commercially; and

2. That the DEH adopt the Code of Practice via a similar process to that followed by the review of the *Australian National Guidelines for Cetacean Observation and Areas of Species Interest for Cetacean Observation (2000)* into the *Draft Australian National Guidelines for Whale and Dolphin Watching 2005*.

   The ERT understands that this has occurred through a process of direct engagement with the relevant State/Territory wildlife management agencies and two rounds of public consultation (1st round: comments on 2000 guidelines; 2nd round: comments on a revised guidelines). We also understand that the *Draft Australian National Guidelines for Whale and Dolphin Watching 2005* are to be submitted for endorsement at the next Natural Resource Management Ministerial Council.

   Through both Phase I and Phase II of this Project, the ERT has attempted to involve the relevant government departments in the development of this Code of Practice and as such we believe that the Department may achieve cross-jurisdictional agreement on the Code with little extra effort.

3. That a Phase III of this project could be achieved after the adoption of the Code of Practice by the NRMMC.

The ERT make these recommendations based on:

(i) The need for government agencies to adopt similar management principles, irrespective of jurisdiction, for turtle and dugong watching activities around Australia;
(ii) The need for a nationally consistent approach for the management of all vessel users and incidental tourists when in marine turtle and/or dugong habitats, regardless of the jurisdiction in which they occur; and

(iii) The need to promote World's Best Practice for turtle and dugong conservation initiatives, including tourism activities, as part of being a world leader in marine turtle and dugong conservation.

List of Appendices:

Appendix 1: Draft Code of Practice for Sustainable Management of Beach-Based Marine Turtle Tourism (as uploaded to the Online Workshop on 11 March 2005).

Appendix 2: Draft Code of Practice for Sustainable Management of Vessel & In-Water Marine Turtle Tourism (as uploaded to the Online Workshop on 11 March 2005).

Appendix 3: Draft Code of Practice for Sustainable Management of Vessel-Based Dugong & Marine Turtle Tourism (as uploaded to the Online Workshop on 11 March 2005).

Appendix 4: Draft Code of Practice for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong & Marine Turtle Tourism (as uploaded to the Online Workshop on 11 March 2005).

Appendix 5: List of Key Informants Interviewed during the Key Informant Survey.

Appendix 6: Preliminary Results of KIS feedback on the Draft Code of Practice for Sustainable Management of Vessel-Based Dugong & Marine Turtle Tourism, for Online Workshop discussion (Cardwell/Hinchinbrook and Shark Bay KIS; as uploaded to the Online Workshop on 13 Sept 2005).

Appendix 7: Preliminary Results of KIS feedback on the Draft Code of Practice for Sustainable Management of Beach-Based Marine Turtle Tourism, for Online Workshop discussion (Mon Repos KIS; as uploaded to the Online Workshop on 13 Sept 2005).

Appendix 8: Preliminary Results of KIS feedback on the Draft Code of Practice for Sustainable Management of Vessel and In-Water Marine Turtle Tourism, for Online Workshop discussion (GBR KIS; as uploaded to the Online Workshop on 13 Oct 2005).

Appendix 9: Preliminary Results of KIS feedback on the Draft Code of Practice for Engaging with Indigenous Traditional Owners in the Planning and Management of Dugong and Marine Turtle Tourism, for Online Workshop discussion (Combined KIS from all four study sites; as uploaded to the Online Workshop on 13 Oct 2005).

Appendix 10: Mon Repos Visitor Survey 2004-05 Preliminary Results (as uploaded to the Online Workshop on 27 June 2005).

Appendix 11: Great Barrier Reef Marine Turtle Visitor Survey 2004-05 Preliminary Results (as uploaded to the Online Workshop on 20 July 2005).

Appendix 12: Code of Practice for the Sustainable Management of Dugong and Turtle Tourism in Australia.

Appendix 13: Draft A4 brochure for beach-based turtle watching ("Turtle watching guidelines").

Appendix 14: Draft A4 poster for dive tourism vessels ("In-Water Interactions with Marine Turtles – Code of Conduct").