



The Role of the Wet Tropics World Heritage Area in the Life of the Community

A Survey of the
North Queensland Community
Revised Edition

Edited by
J. M. Bentrupperbäumer and J. P. Reser



Rainforest CRC

Cooperative Research Centre for Tropical Rainforest Ecology and Management

THE ROLE OF THE WET TROPICS WORLD HERITAGE AREA IN THE LIFE OF THE COMMUNITY

A SURVEY OF THE
NORTH QUEENSLAND COMMUNITY

REVISED EDITION

Joan M. Bentrupperbäumber^{1,2} and Joseph P. Reser^{1,3}

¹ Rainforest CRC

² School of Tropical Environment Studies and Geography, James Cook University

³ School of Psychology, Griffith University



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Contact the Authors:

Dr Joan M. Bentrupperbäumer
James Cook University
PO Box 6811, Cairns QLD 4870, Australia
Tel: +61 (7) 4042 1357
Email: joan.bentrupperbaumer@jcu.edu.au

Dr Joseph P. Reser
Griffith University
PO Box 1431, Mudgeeraba QLD 4213, Australia
Tel: +61 (7) 5533 2156
Email: joseph.reser@bigpond.com

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Prefatory Note to Revised Edition:

This report was initially published in 2003, in part to meet the then pressing requirements and deadline of the consultancy brief. Since the initial date of publication, and the limited circulation of the report that followed, the authors have incorporated more comprehensive data analyses and address a number of considerations and stakeholder requests for further information and analyses. The report has also been more fairly situated within the context of community and catchment surveys in general, and protected area focussed natural resource management surveys over the three-year period from 2001 to 2003. This revised edition will hopefully serve as a more complete and final report of the community survey and related site-level surveys undertaken by the authors.

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ACRONYMS USED IN THIS REPORT

ABS	Australian Bureau of Statistics
AFFA	Department of Agriculture, Fisheries and Forestry (Commonwealth)
AHC.....	Australian Heritage Commission
ANZECC.....	Australia and New Zealand Environment and Conservation Council
ASEC.....	Australian State of the Environment Committee
CAFNEC.....	Cairns and Far North Environment Centre
CRC.....	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEET	Department of Employment, Education and Training (Commonwealth)
DEH.....	Department of the Environment and Heritage (Commonwealth)
DEST.....	Department of Environment, Sport and Territories (Commonwealth)
DNR.....	Department of Natural Resources, Mines and Water (Queensland)
DPI	Department of Primary Industries and Fisheries (Queensland)
DTSR.....	Department of Tourism, Sport and Racing (Commonwealth)
EPA	Environmental Protection Agency (Queensland)
FNQRPAC.....	Far North Queensland Regional Planning Advisory Committee
GBRMPA.....	Great Barrier Reef Marine Park Authority
IUCN.....	The World Conservation Union
NPWS.....	National Parks and Wildlife Service (New South Wales)
NRM	Natural Resource Management
NSW	New South Wales
OECD	Organisation for Economic Co-operation and Development
QPWS	Queensland Parks and Wildlife Service
TAFE	Technical and Further Education (College)
UNESCO.....	United Nations Educational, Scientific and Cultural Organization
VMS.....	Visitor Monitoring System
WTMA	Wet Tropics Management Authority
WTWHA	Wet Tropics World Heritage Area

TERMS OF REFERENCE

WET TROPICS COMMUNITY SURVEYS 2001 / 2002 / 2003

The following Terms of Reference are directly from the contract document.

Background

Specific information is required to enable the comparison of data collected within this project component with aspects of previous [AGB McNair] community attitude studies. The survey of the community must:

- Measure current awareness of the [Wet Tropics World Heritage Area (WTWHA)] and its management;
- Measure current level of support for the WTWHA and its management;
- Measure intentions to visit the WTWHA;
- Identify and prioritise perceived issues of significance;
- Establish patterns of use of the WTWHA; and
- Identify current expectations of the WTWHA.

Aims

- To compare community attitudes and perceptions relating to key aspects of the Wet Tropics World Heritage Area against previous survey exercises with respect to Wet Tropics bioregion catchment area and in particular the AGB (1992, 1993, 1996) community attitude surveys;
- To contribute to measuring social and psychological indicators for the State of the Wet Tropics reporting; and
- To provide links / input into the [Visitor Monitoring System].

(Ref. Contract No. 654)

This research project incorporated a clarification and expansion of aims to encompass and ensure independent assessment of community attitudes and perceptions of the Wet Tropics World Heritage Area as distinct from the Wet Tropics Management Authority and other management agencies, and other issues and concerns. The research was also undertaken with an appreciation of the IUCN interest in and emphasis upon the role of World Heritage Areas in the life of the community (e.g. de Merode *et al.* 2003).

EXECUTIVE SUMMARY

An overriding objective of this research was to establish a substantive social survey database and standardised instrument for the ongoing monitoring of important natural resource management (NRM) relevant changes in the human landscape of the Wet Tropics World Heritage Area (WTWHA) catchment region. This survey differs from other existing NRM social surveys in its focus on the management needs of those agencies charged with the responsibility for managing the WTWHA; in its representative sampling of all residents of the WTWHA and catchment region (including urban, semi urban and rural residents); in its strategic articulation with a more encompassing research program focusing on the impacts of visitation and use in a World Heritage protected area and bioregion; and in its additional and more exploratory focus on the diverse roles of the WTWHA in the life of the regional community. Finally, this survey addresses current community awareness, knowledge, and support levels for the WTWHA and its management agencies following what have been several decades of controversy, community polarisation, and dramatic environmental, political and socio demographic changes nationally and regionally.

Research Statement

These catchment community survey results are based on the responses of 788 WTWHA residents participating in a community survey and a further 1,012 community residents who participated in a companion WTWHA site-level visitor survey. While the content focus of the *community* survey was on knowledge, attitudes and appraisal of the WTWHA as a whole, the Wet Tropics Management Authority, and the role of the WTWHA in the life of the community, the content focus of the *site-level* survey, which included community residents, was on perceptions and appraisals of the natural environment, the infrastructure and facilities, the social environments within the Area, and visitors' experiences at WTWHA visitor sites. Overlapping areas of survey content focus included community awareness and knowledge levels with respect to the WTWHA and the Wet Tropics Management Authority, as well as community endorsement of, support for, and appraisals of WTWHA and WTMA management effectiveness and performance.

Report Statement

This report presents and discusses the findings of the community survey of the Wet Tropics bioregion, and relates these findings to past and current levels of community awareness and knowledge of the WTWHA and the Wet Tropics Management Authority, community support for the WTWHA, and community expectations of and endorsement of those management agencies responsible for its management. The report also addresses types and patterns of use of the WTWHA by community residents, the diverse impacts of visitation and use of the WTWHA, including both the impacts of the WTWHA environment on local visitors and community residents as well as the impacts of visitation and use on the biophysical environment of the WTWHA, and on the social environment of adjacent communities. Additional considerations addressed in the community survey and covered in this report include the identification of social and psychological indicator domains and items for *State of the Wet Tropics* reporting, the development of a Visitor Monitoring System for the WTWHA and bioregion, and the role of the WTWHA in the life of the community.

Study Catchment

The study catchment for this project encompassed the whole of the Wet Tropics bioregion, with principal data collection focused on 23 community locations within four subregions (Southern, Northern, Central, Tableland) of the Wet Tropics bioregion.

KEY POINTS

Current Perceptions and Support Levels

1. *The Wet Tropics World Heritage Area*

- a) The catchment community appears to be very aware of the existence of the WTWHA and strongly supportive of its protected area character and charter.
- b) Levels of community awareness and support for the WTWHA have changed dramatically and progressively over the course of successive surveys undertaken between 1992 and 2003.
- c) Survey findings show that the community residing in the Wet Tropics bioregion views the World Heritage Area as an integral and cherished part of their surrounding natural and cultural landscape and natural environment.
- d) Direct comparisons between community resident visitors to WTWHA sites and overseas and domestic visitors indicate that local resident appraisals of the natural environment, the infrastructure and facilities, and the social environment at visitor sites are remarkably similar to and consistent with overall visitor appraisals.

2. *The Wet Tropics Management Authority and Other Agencies*

- e) Community perceptions of and support for the Wet Tropics Management Authority and other management agencies is mixed, with some residents having well articulated reservations with respect to the performance and effectiveness of management and agency policies and processes, and partnership arrangements with the community.
- f) While 12% of respondents reported some level of involvement in consultation processes related to the WTWHA, 64% of respondents felt that opportunities for a meaningful contribution were inadequate.

3. *Overall*

- g) This survey exercise indicates quite clearly that there have been very marked changes taking place in the human landscape of the WTWHA and catchment with respect to community perceptions, understandings and views of the World Heritage Area, its pressures and threats, and its management regime.
- h) Survey findings suggest that while the majority of respondents support cultural heritage listing and Aboriginal co-management of the WTWHA, there needs to be carefully considered public communication strategies to increase the level of support for these initiatives within the community as there also exist strongly held opposing views.

Issues and Concerns

1. *Threats*

- a) The survey findings evidence both a very strong commitment to and concern for the well being and sustainability of the WTWHA, with the human impacts of development, rural industries, and introduced species being particularly salient and matters of serious concern (i.e. human activities outside the WTWHA).
- b) The nature and salience of threats to the WTWHA for community residents appear to be rather different than management assessments and priorities, and some residents feel that the threats that they believe are particularly important are not being adequately addressed (e.g. feral animals and plants, human impacts).

2. Visitation and Use

- c) Community residents are clearly experiencing some adverse impacts of increasing levels of visitation and use, both at heavily used icon sites within the WTWHA, and with respect to perceived changes in regional quality of life and environment.

Knowledge and Awareness

1. Awareness and Importance

- a) Overall, community survey respondents report being quite aware of the World Heritage status of the rainforests, but tend to feel that their knowledge of the Area is modest, a perception supported by more objective knowledge measures.
- b) On the other hand, site-level survey respondents were considerably less aware that the site they were actually visiting was in a World Heritage Area.

2. Boundaries, Extent, Criteria

- c) Findings suggest that the community as a whole remains unclear with respect to the boundaries and extent of the WTWHA, the specific attributes and values for which the Areas was listed, aspects of its nature and status as a World Heritage property, and what the implications of World Heritage protected area status are.
- d) Community survey respondents, on the whole, did not know why the rainforests were listed as a World Heritage Area, and less than 10% were able to identify at least one of the four criteria that a natural property must meet in order to be inscribed as a World Heritage Area.

3. Agencies

- e) Survey findings suggest that the community is, on the whole, unclear about which agency or agencies are responsible for managing the Wet Tropics, and how and to what extent the World Heritage status of the WTWHA has altered on-the-ground management functions, responsibilities and policies.
- f) Confusion in the public mind appears to be exacerbated by what have been major structural changes within and between organisations and the introduction of multiple new logos within management agencies.
- g) Comparisons with previous survey findings for the WTWHA region, where such comparisons were possible, indicate marked improvement in general community awareness levels over the past decade, but again a surprising lack of specific knowledge about World Heritage Area boundaries or management regimes or policies.

4. Ownership, Rights, Responsibilities

- h) It is clear that most respondents view the WTWHA as both public land and a public trust. Responses were also very assertive with respect to this being an 'ownership' by citizens of Australia and the world, with government and government agencies being explicitly mentioned by only 15.3% of respondents.

The Role of the WTWHA in the Life of the Community

1. Patterns of Visitation and Use

- a) The catchment community of the Wet Tropics bioregion regularly visits and uses the WTWHA as a recreational venue and escape, and views the existence of the

WTWHA as a primary contributor to quality of life in the region and to environmental quality generally.

- b) That almost 6% of respondents visit or pass through the WTWHA virtually every day, and another 16.4% at least once a week, is an important index of just how interwoven this landscape is with the lives of community residents.
- c) Local residents are not only a very important stakeholder group who directly experience the psychosocial and biophysical impacts of visitation and use, they also constitute a very important visitor group proportionally (34%), and indeed are the principal visitors and users to the majority of visitor sites in the WTWHA.

2. Place Meaning, Attachment, Identity

- d) The WTWHA is a very important part of and contributor to place meaning, place attachment, and place identity in the region, with the outstanding attributes of the WTWHA constituting very familiar, meaningful, and highly valued elements of the surrounding natural and cultural landscape and visual amenity.
- e) For local residents, their experienced sense of connection with and their enjoyment of WTWHA sites are just as powerful and as positive as is the case for overseas or domestic visitors. These connections and place attachment and meanings, however, reflect very different personal, family, and cultural histories of association and involvement.

Positive and Negative Impacts

1. Benefits / Positive Impacts

- a) Community residents rated quality of environment, the provision of places for relaxation and contemplation, and recreational and social opportunities as very important personal benefits of the WTWHA, with 'just knowing it is there' rated as the most important benefit overall.
- b) The local community sees the WTWHA as an integral part of their quality of life and environment, as an important component of place identity, as an amenity and resource that provides for community recreation, restoration, and inspiration, and as providing important ecosystem services such as clean water and air.

2. Costs / Negative Impacts

- c) The most salient perceived community costs and adverse impacts of the World Heritage Area listing, mentioned by a small minority of respondents, related to reduced employment and economic opportunities, industry and agricultural issues, regulations and restrictions, adverse impacts relating to management policies and regulations, contentious political issues, feral plants and animals, and increasing tourism numbers and emphasis.

3. Overall

- d) Overall, the positive impacts and benefits appear to be far more salient and important to community residents than adverse impacts or perceived costs, with only a minority of respondents reporting appreciable negative impacts or costs.
- e) These community and site-level survey findings suggest that continuing impact assessments and monitoring exercises should incorporate and give balanced consideration to the positive and often non-economic impacts of living in, visiting and using the WTWHA on the resident community as well as the adverse impacts of people on the biophysical environment.

- f) The most salient and important reported benefits, costs and impacts of the WTWHA, the Wet Tropics Management Authority, and visitation and use of the WTWHA to the regional community in the context of this survey, are not primarily socio-economic impacts, but rather they are experience-based psychological and lifestyle benefits and impacts.

Methods, Measures and Indicators

1. Methods

- a) This survey exercise clearly demonstrates the critical need for an established and comprehensive database relating to the human landscape of the WTWHA and catchment region, the need for a standardised survey procedure, instrument and indicator items, and a strategic longitudinal monitoring plan.
- b) Despite the substantial effort made to articulate the present survey exercise and instrument with previous community surveys, the nature, quality and diversity of these earlier undertakings precluded credible or substantive comparative analyses over time.
- c) The accompanying site-level survey methodology and findings for local visitors allowed for a particularly valuable ground-truthing of community survey findings, and ensured that the perceptions and appraisals of many participants were in situ, immediate, and particularly salient to the WTWHA site they had experienced.

2. Measures

- d) What is clear with respect to the measurement and monitoring of specific and important perceptions, appraisals and attitudes, is that a systematic and pragmatic, and social-science based research strategy and process, must be set in place to carefully monitor social, psychological and behavioural changes over time.
- e) Changes in community perceptions, understandings, attitudes, values and concerns may be as important to the effective management of the WTWHA as changes registered through biophysical indicators.

3. Indicators

- f) Community perceptions, understandings, attitudes, values and concerns constitute important social and psychological indicator domains for the State of the Wet Tropics reporting, as well as for the monitoring of perceived environmental quality more generally, both natural and psychosocial.

4. Environmental Social Science

- g) The survey results allow for a more participative, evidence-based, and social science informed consideration of human factors (psychological, social, community, and cultural) critical to the effective and sustainable management of the WTWHA and bioregion.

Education / Intervention

An important dividend of this community survey research exercise was that over 2,000 residents of the WTWHA and catchment region and the site-level survey residents participated in a very substantial educational experience, providing them not only with many vantage points and considerations, reflective insights, and information relating to the Area, its management, and their connection with it, but also with an opportunity to express their views and be involved in a very important management undertaking.

ABOUT THE AUTHORS

Dr Joan M. Bentrupperbäumer

The principal researcher for the project, Dr Joan M. Bentrupperbäumer was responsible for the administration and implementation of this research. Over a two-year period she worked full time on the WTWHA site-level research project and the WTWHA community survey.

Dr Bentrupperbäumer is a Senior Research Fellow and Project Leader with the Rainforest CRC (Project 4.1). She is also a Lecturer at the School of Tropical Environment Studies and Geography and the School of Psychology, James Cook University, Cairns. Her research interests include human-natural environment transactions using social, psychological and biophysical perspectives. Her research incorporates an interdisciplinary approach exploring reciprocal relationships that both indigenous and non-indigenous people have with the natural / built / social / cultural environment of the WTWHA and the implications of such relationships for environmental management, the tourism industry and the local communities in the region. A particular emphasis in her research is placed on the 'real world' application of results in terms of planning for, managing, monitoring and reporting on the State of the Wet Tropics, and developing practical mechanisms and strategies to mitigate impacts on those features of the WTWHA inherent to its World Heritage status.

Dr Joseph P. Reser

Dr Joseph P Reser is an Adjunct Associate Professor in the School of Psychology, Griffith University, and Project Co-leader with Rainforest CRC Project 4.1. He is also Emeritus Reader in Environmental and Social Psychology at the University of Durham, United Kingdom.

His research interests include human-environment transactions from environmental, social and cross-cultural psychological perspectives. He studies the application of social science insights into the human experience of the natural environment, and with respect to the design of visitor settings, interpretive materials and visitor experience in national parks, World Heritage Areas and other natural and cultural heritage contexts. These interests include a long-term commitment to the development of effective and appropriate models, methods and measures for researching and monitoring the nature of individual transactions and encounters with particular environments and landscapes, and the reciprocal biophysical and psychosocial impacts of these environmental interactions.

His current research emphases include the human side of natural resource management in World Heritage and other protected environments, natural and cultural heritage management in protected areas and the WTWHA, and the nature and representation of environmental values and concerns.

ACKNOWLEDGEMENTS

The success of this research project, which was undertaken across twenty-three community locations within the Wet Tropics bioregion and at ten selected WTWHA visitor sites over a period of three years, has depended greatly on the many people involved in various research-related tasks. In particular, we would like to acknowledge Sue-Ellen O'Farrell for her substantial assistance in all aspects of the research, including field program administration, data entry and analyses as well as report writing, preparation and delivery. Without her it would have been very difficult to achieve what we have in the relatively short period of time available to us to undertake this project.

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Wet Tropics Management Authority Personnel

Max Chappell, Campbell Clarke, Dr Steve Goosem and Ellen Weber.

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The more encompassing research initiative referred to in this report (site-level visitor survey across ten WTWHA sites), together with the WTWHA Community Survey (Contract No. 654) was funded by the Wet Tropics Management Authority, the Rainforest CRC and James Cook University.

1. INTRODUCTION

1.1 COMMUNITY AND SITE-LEVEL SURVEYS

The Wet Tropics World Heritage Area (WTWHA) experiences an estimated 4.4 million visits each year (Bentrupperbäumer and Reser 2002a), and 40% or 1.76 million of those visits are made by residents of the adjacent local communities (Bentrupperbäumer *et al.* 2004). It is the residents of these communities that were the focus of both the Community Survey and the Site-level Survey that were undertaken for this project for the Wet Tropics Management Authority (WTMA). Researchers from the Rainforest CRC designed and undertook the local Community Survey, which involved extensive data collection during late 2002 and early 2003. This survey was designed to complement the Site-level Survey that was carried out at designated WTWHA sites during the previous dry season (September to October) of 2001 and wet season (March to April) of 2002 (Bentrupperbäumer and Reser 2002a).

An important objective of the Community Survey was to collect data that could be used for comparison with the previous AGB McNair community surveys that were undertaken in 1992, 1993 and 1996, as well as the 1999 'WTWHA Neighbours' survey (AC Nielsen 1999). The nature and scope of these previous surveys was inadequate for current planning and management needs, requiring the drafting of a new survey that was both broader in scope and more complementary to ongoing research initiatives and the companion Site-level Survey that was being undertaken by Project 4.1 of the Rainforest CRC (Bentrupperbäumer and Reser 2002a). Reference to and articulation with previous surveys was nevertheless important for the inclusion and equivalent wording of items where direct comparisons were possible and useful. Project 4.1 was undertaken, in the main, to continue with and strategically expand and focus the longitudinal monitoring of important impacts and changes in the WTWHA catchment relating to community resident and visitor attitudes, perceptions, and experiences, initiated during 1998 and 1999, in response to WTMA, community and tourism industry requests. While this project and its predecessor invested considerable effort into the development of appropriate methodologies, protocols and indicators in concert with end users, a core strategic priority has been to maintain and continue to implement the monitoring program, which has now been established and running for an eight-year period.

The Community Survey examines the local community's awareness, perceptions, attitudes, and personal appraisals of the WTWHA, the WTMA and other management agencies, and also explores and documents the role of the WTWHA in the life of the community. An important aim of the Site-level Survey was to record local community residents' (as well as domestic and overseas visitors') perceptions and appraisals of the WTWHA, in situ, while residents were actually visiting and 'using' a World Heritage site. Site-level data collection resulted in a more holistic understanding of how individuals' behaviour translates into biophysical impacts and how specific environments or features impact upon individuals' experiences, attitudes and judgments. The Site-level Survey focused upon visitors' perceptions of the natural, built and social environments as well as on visitors' experiences and appraisals at WTWHA sites.

These two surveys were independent, single contract commitments that were designed to complement previous and ongoing site-based and community survey undertakings involving longitudinal monitoring and indicator development, and the impacts of visitation and use in the WTWHA and catchment region.

General Comment

Recently, a number of initiatives were undertaken in Australia to review existing protected area survey instruments and procedures with respect to community and visitor surveys. There have also been attempts at the standardisation of best practice and useful indicators (Rainforest CRC 2000; Hornemann 1999; NSW NPWS 2001; Moscardo and Ormsby 2000). These reports and recommendations were not available to the authors when the current survey instrument was designed and the surveys were undertaken. In addition, these initiatives have predominantly focused on interstate and overseas visitor profiling. Such undertakings are different in both nature and objectives to Community Natural Resource Management (CNRM) surveys generally (Margoluis and Salafsky 1998; Kellert *et al.* 2000) or other natural resource oriented visitor surveys (Cordell and Bergstrom 1999; Hockings *et al.* 2000).

Community survey research identifies single or multiple communities for the purpose of establishing and addressing the views, concerns and involvement of local community residents and stakeholders. Increasingly, such research examines the role of protected areas in the life of adjacent communities and the impacts of increasing levels of visitation and use (Bushell *et al.* 2002; de Merode *et al.* 2003). Community surveys typically rely on a spectrum of sampling and contact procedures, including phone interviews, postal questionnaires and face-to-face interviews (e.g. De Vaus 2002; Robson 2002). Such community surveys differ from other regional level monitoring approaches in that most respondents are local residents, often with particular involvement in an adjacent protected area through employment, other income generation, residence or property proximity, or recurrent visitation and use.

1.2 ADDRESSING 'COMMUNITY'

'Community' is a curiously ambiguous and much-abused construct in a research context (e.g. Kuper and Kuper 1996). What is and who are 'the community'? 'Community' can describe a region's total population or a particular group of people with shared interests and concerns, for example, a stakeholder group or a 'community of concern'. In brief, 'community' is not a good population specifier or sampling frame without explicit specification and operationalisation, yet community or regional surveys continue to dominate as the methodology of choice in natural resource management and tourism industry-based research initiatives.

In this project the scope of the research has been more socio-demographic, geographic, and management and planning oriented, which is in contrast to visitor profile research undertaken by the tourism industry, where there is a tendency to focus squarely upon particular visitor user groups and salient marketing considerations. The rationale of community surveys is also different from that of site-level monitoring surveys, which normally include all visitors and 'users' with a focus on in situ experiences and perceptions, and 'on the ground' management issues and concerns. Community surveys typically examine local community perceptions, place meaning, aspirations, frustrations, conflicts, joint-management possibilities and perceived community impacts.

1.3 VISITOR MONITORING SYSTEMS

For the past seven years the Project 4.1 of the Rainforest CRC, entitled 'Strategies for Sustainable Rainforest Visitation and Use', has been investigating the psychosocial and biophysical impacts of visitation and use of sites within the WTWHA (Bentrupperbäumer *et al.* 1998; Bentrupperbäumer and Reser 2000a, 2002a; Bentrupperbäumer *et al.* 2001). This

research has used site-based visitor surveys and audits and community survey methods, as well as a variety of other social and natural science based methodologies, to better understand the multiple and reciprocal impacts of visitation and use in the WTWHA, i.e. the impacts of visitation and use *on* the WTWHA and its human community, and the impacts of the WTWHA on both local residents and on local, interstate and international visitors.

The larger compass of this integrated, multi-disciplinary research program, of which the current community survey is a part, has included all *visitors* and *users* of the WTWHA (including local residents, domestic and international tourists, council employees, researchers, indigenous residents and virtual users), as well as the impacts of visitation and use of the WTWHA on adjacent regional communities. While the focus of this larger research program has not been on tourists or tourism per se, this research nevertheless examines the behaviour and experiences of both *local visitors*, and *interstate and international tourists*, as they pass through, encounter, impact upon, and are impacted by World Heritage Area visitor sites.

An integral component of this research and a current subproject of Project 4.1 has been the development of meaningful and sensitive indicators of the psychosocial and biophysical impacts of visitation and use. Again, this research focus includes, in an integrated, multi-disciplinary way, the impacts of this World Heritage environment *on* visitors and users as well as the impacts *of* visitors and users on the natural environment. Along with the development and standardisation of sensitive and meaningful measures, Project 4.1 has made a substantial investment in the development of appropriate models and methodologies for both researching and monitoring biophysical and psychosocial impacts, as well as providing useful data for the more adequate addressing and management of these diverse impacts (e.g. Bentrupperbäumer and Reser 2002a, 2002b, 2003; Bentrupperbäumer *et al.* 2004; Reser and Bentrupperbäumer 2000, 2001a, 2001b, 2006). This has included addressing the clear need for a standardised survey procedure, instrument, and items for establishing a database and monitoring regime relating to important management-relevant considerations in the social environment.

In the context of this larger research program and in response to an invitation from WTMA, Project 4.1 has undertaken these two large-scale survey exercises, the site-based survey of ten selected visitor sites within the WTWHA (n = 2780) (Bentrupperbäumer and Reser 2002a) and the community survey of WTWHA regional residents (n = 788). While the whole of the community survey findings are analysed and reported here, this community survey report incorporates only selected and comparable information from the local residents who participated in the site-based survey. Although these two surveys were independent, single contract commitments, they were designed in such a way as to complement and articulate with previous site-based and community surveys involving longitudinal monitoring and indicator development.

1.4 SITUATING THE RESEARCH

Research addressing the role of a protected area in the life of the community increasingly takes into account convergent theoretical and research literatures relating to place meaning, attachment and identity (Carr *et al.* 1995; Altman and Low 1992; Groat 1995; Gustafson 2001) and the restorative, recreational and other benefits of natural environments (e.g. Hartig 1993; Herzog *et al.* 2002; Kaplan 1995). As is the case with many other World Heritage Areas, the WTWHA encompasses a number of established and historically significant national parks and state forests (Newsome *et al.* 2002; WTMA 1997), along with a spectrum of other outdoor recreation and relaxation locations. These 'spaces' and 'places' have specific and often differing meanings and associations for indigenous residents, for individuals, families, and communities with pastoral, farming, logging, and mining histories and connections, and for other urban, semiurban and rural residents who live in the region

and who may be involved in tourism, the hospitality industry, or a myriad other economic and/or life circumstance connections to the region. In addition, all of these community members occupy various positions as 'stakeholders', 'communities of concern', 'neighbours', 'partners' and 'end users'.

The environmental psychological and social science approach taken in the current research (e.g. Bechtel and Churchman 2002; Bell *et al.* 2001; Gifford 2002; Manfredo *et al.* 2004) melds these differing people and place perspectives and differing disciplinary perspectives in an attempt to accurately and usefully capture, document and communicate how this protected area is perceived, valued, used and experienced by those who live in the catchment region, whether as backdrop, vista, and amenity, or as immediate context and environment while visiting or passing through the Area. It is also particularly important to appreciate that many local residents visit the WTWHA as *visitors*, and that for many if not most of the designated WTWHA visitor sites, resident visitors constitute the most significant and populous visitor/user group. The availability of both site-based and community survey-based data in the context of the present research has allowed for a fuller exploration of community perspectives and experience, both from one's living room or verandah, or while visiting and experiencing a particular WTWHA site (Bentrupperbäumer and Reser 2000a, 2002a). The larger research context has also allowed for more meaningful direct comparisons of the perceptions and experiences of local residents, while actually visiting and/or 'using' sites, with the perceptions and experiences of interstate and international visitors.

It is important to appreciate that an exercise such as this community survey and the thematic focus of 'the role of the WTWHA in the life of the community' addresses a number of objectives, responsibilities, and needs. Management agencies need to understand, address, and to some extent 'manage' the perceptions, aspirations and concerns of catchment communities and stakeholders. In the case of World Heritage Areas, these communities of interest and stakeholders also encompass distant vicarious users and the international 'community'. More particularly and practically, management agencies must foster and achieve effective and sustainable working relationships with multiple community groups and neighbours, and to accomplish this they need to appreciate and monitor community perceptions, views and concerns about the protected area as well as their own agency performance and effectiveness. Indeed natural resource management generally, and protected area management in particular, requires a fundamental understanding that the changes taking place in the human landscape are as important to effective management as are changes in the biophysical landscape, and that these are often interdependent and reciprocal. In addition to management responsibilities, management agencies are increasingly required to engage in 'State of the Environment' reporting exercises relating to the condition of the respective protected area and, indirectly, management effectiveness and overall agency performance. All of this requires a more holistic and ecological examination of *living in* a World Heritage environment, and a sensitive monitoring and strategic addressing of changes and impacts in the biophysical and human landscape.

The WTWHA also has its own regional history of controversy, conflict, competing interests, polarised communities and political saliency (Australian State of the Environment Committee 2001; EPAQ 1999, 2003; Mercer 2000; McDonald and Lane 2000; Wachenfeld *et al.* 1998). Indeed, an important motivation in preceding community surveys in the WTWHA catchment has been to assess changes in community perceptions relating to the listing and establishment of the WTWHA and its management. This initial community polarisation, the complexity of competing interests and differential community impacts, and the changing economic and demographic character of the catchment region, all underscore the challenge of undertaking a sensitive, meaningful and useful 'community survey' relating to the Area and respective management agencies, and 'community' connections, involvements and concerns, which can address and achieve multiple monitoring, reporting and management

objectives. The authors of this report and their colleagues have attempted to address these challenges in a pragmatic but reflective way, with the continuing involvement of both management agencies and interest groups in the development of both the methodological approach and the survey instrument utilised. An important objective has been to put in place a set of approaches, procedures, and measures that would allow for a more systematic, longitudinal and convergent monitoring over time of important changes in the human landscape of the WTWHA, particularly as these pertain to changes in, concerns about, and support for the WTWHA, as well as perceptions of and satisfactions with the management of the Area.

A final and very important consideration addressed by this community survey has to do with the *impacts* of visitation and use on the WTWHA and catchment communities, that is, how changing patterns and the volume of visitation and use (including local resident use, and in some cases, displacement) are impacting not only on the condition of the biophysical protected area and its infrastructure, but on local individuals and communities, and general perceived environmental quality and quality of life. Such a consideration focuses more on perceived and experienced biophysical and psychosocial impacts and concerns relating to visitation and use, community satisfactions and dissatisfactions, and judged reasonableness and effectiveness of management agency policies and planning relating to visitation and use, than on instrument-based, biophysical measures and indicators focusing on biophysical landscape change, though standardised measures, scales and indicators are employed, along with qualitative accounts and statements, to fully, credibly, and objectively capture salient changes from the perspectives and behaviours of community respondents.

1.5 DISTINGUISHING SOCIAL SURVEYS

It is also important to distinguish the current community survey from the increasing number of natural resource management (NRM) 'social' surveys being undertaken in Queensland, Australia generally, and overseas (e.g. Byron *et al.* 2004, 2005; Carey *et al.* 2000; Stirzacker *et al.* 2000). Whereas the typical NRM social survey has a particular focus on attitudes, perceptions, knowledge base and motivations of the individuals who manage agricultural and pastoral holdings, the present community included both rural property owners and urban and suburban catchment residents in its representative sampling of the catchment region, and respondents were not limited to actual land managers. All residents of the WTWHA catchment region are 'users' of the WTWHA, and the benefits and impacts of the WTWHA on people's lives and well being are far more encompassing than strictly socio-economic considerations. In addition, the focus of the present survey on a World Heritage protected area and its role and impacts in the life of the community is rather different than more generic agricultural and pastoral land management perceptions and practices. Nonetheless there are commonalities across NRM social surveys and the present survey exercise, in that the perceptions, attitudes, values, and concerns of catchment region residents toward NRM policies, practice and agency effectiveness and performance are very important considerations, as is their collective perception of the condition of this natural environment, threatening processes and impacts, and ultimate sustainability considerations.

2. METHODS

2.1 STUDY LOCATION

The consultancy brief for the community survey states, “the survey will include representative communities across the Wet Tropics bioregion and will be structured in a way that will enable sub-regional (e.g. Cairns, Tableland, Northern Region and Southern Region) comparisons to be made.” Figure 2.1 identifies the population centres that were selected as sampling frames and focal areas for this survey. The areas reflect a strategic decision to include population centres that are adjacent to the visitor sites selected for the WTMA funded site-level survey component of this study, for which a longitudinal data set exists in the context of ongoing Rainforest CRC site monitoring (Bentrupperbäumer and Reser 2000a, 2002a; Bentrupperbäumer *et al.* 1998).

It is important to emphasise at the outset that standardised survey protocols or measures for conducting a community survey such as the one reported here do not exist. While generic social science approaches and methodologies certainly exist for undertaking surveys (e.g. Babbie 2001; DeVaus 2000; Fowler 2002), and increasingly surveys and evaluation research in natural resource management and tourism contexts (e.g. Fraser and Lawley 2000; Margoluis and Salafsky 1998; Veal 1997), the particular context, needs and objectives of any given survey in a specific region for a particular population require some purpose and situation-specific procedures and items, and a situation-specific instrument format.

The WTMA consultancy proposal specified a ‘phone-based’ regional community survey to be comparable with the Manidis Roberts survey (1993/1994) and other previous surveys. Problems relating to phone-based survey methods, and the limited value of attempting to replicate previous surveys that differed markedly from each other and did not meet current needs, led to the decision to design a hard copy survey questionnaire that could be delivered in person to randomly selected households and into post office boxes for rural households. The use of this ‘paper and pencil’ format questionnaire (six pages) allowed respondents more time to provide a reflective response to the structured questions that involved both six point rating scales and an open-ended response format (e.g. DeVaus 2000, 2002; Robson 2002; Singleton and Straits 1999). This was a necessary and strategic procedural and instrument format change given the detailed needs and scope of the survey and the desirability of both documenting and sensitively measuring respondent perceptions and judgements relating to multiple domains (e.g. WTWHA, WTMA, concerns), and exploring a number of issues via selected open-ended questions.

2.2 INSTRUMENT AND MEASURES

The survey questionnaire used in this research is presented in Appendix 8 Survey Procedure. This Community Survey was the product of expressed management priorities, specific issue and problem relevance, and pragmatic time and administration constraints. The priorities of the survey were discussed during the consultation process with the WTMA Planning Team and identified in relevant management agency documents.

An attempt was made to simplify and standardise the response format by using both quantitative rating scales and categorical open-ended items. The selection of items was guided by the researchers’ experience with previous WTWHA focused surveys (Bentrupperbäumer *et al.* 1998, Bentrupperbäumer and Reser 2000a, 2002a). The survey instrument underwent pilot testing prior to field distribution with a final version submitted to and granted James Cook University Ethics Approval. The Community Survey instrument consisted of the following key sections as outlined in Table 2.1.

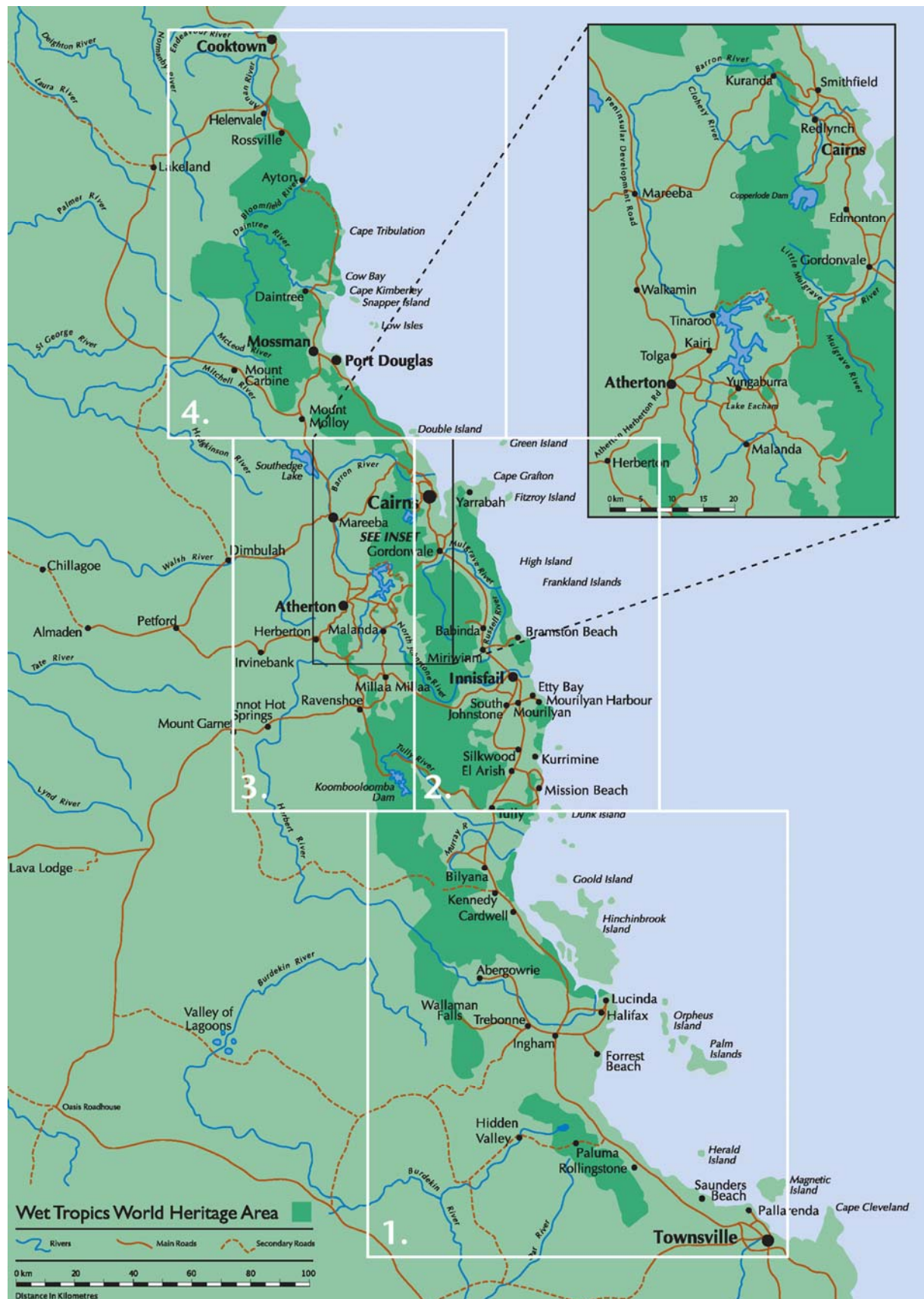


Figure 2.1: Map showing subsections of the Wet Tropics World Heritage Area that were surveyed during this study. 1 = Southern Bioregion; 2 = Central Bioregion; 3 = Tableland Bioregion; 4 = Northern Bioregion. Map courtesy of Wet Tropics Management Authority.

As mentioned, a definitional problem that frustrates researchers is the meaning of 'community'. Many social scientists have addressed this issue, but with the inherent problems unpackaged rather than resolved (Kuper and Kuper 1996; Rappaport 1977; Sarason 1974). In this report we understand the term 'community' to refer to the greater population of the Wet Tropics bioregion. Our use of 'community' and 'communities' in this text refers to the population nodes commonly designated as separate communities within the region. It also refers to the community of residents, neighbours and stakeholders for whom the WTWHA is an important geographic, economic and symbolic landscape feature and resource.

Table 2.1: The key sections of the community survey.

Key Sections	Content
Background information of the respondents	Age; gender; period of residency; education, ethnicity.
Awareness and knowledge of the WTWHA	Awareness and importance; ownership, extent and location.
Current support	Listing; protection.
Advantages / disadvantages	Personal; community.
Indigenous involvement	Co-management; cultural heritage.
Threats to the WTWHA	Humans; plants and animals.
Actual visitation and recreation	Site use, patterns of use; visitation profile.
Information on the WTWHA	Availability; accessibility.
Management and conservation	Management agencies; performance indicators

Residents of communities adjacent to the WTWHA were surveyed about their knowledge of, attitudes and values toward, support for, and use of the protected area. Three survey methods were used to collect data from the community for this research, reflecting relative remoteness of the household and whether the survey context was that of the site-level survey or the community survey:

1. A drop-off / pick-up / mail-back procedure;
2. A post box delivery procedure; and
3. A site-level survey.

Details of these methodologies are presented in Appendix 1.

3. RESULTS

This results section, which analyses the specific items of the survey questionnaire, has not and cannot convey the full scope and detail of individual responses and observations. An attempt has been made to capture the richness and value of these responses in the Appendices. It is helpful to refer to these and the survey instrument itself (see Appendix 8 Survey Procedure) when reading and thinking through the survey results and their meaning and implications. It is important to appreciate that these research findings demonstrate the enormous utility of a community survey such as that undertaken, its complementarity to other types of social surveys undertaken at protected area sites and visitor portals, as in the context of natural resource management generally, and the potential value of such surveys with respect to documenting and monitoring important changes and/or concerns in the human landscape.

3.1 PROFILE OF RESPONDENTS

The questions in this section were designed to profile the survey respondents in relation to where they live and their period of residency, their ethnicity, level of education, current occupation, and their gender and age.

Findings

Responses to the Community Survey were received from residents of 28 different postcode areas in 69 towns or suburbs within 13 shires, providing a very representative cross-section of residents living within the Wet Tropics bioregion (Appendix 1). The majority of these respondents live in suburban (53.4%) and rural residential (26.5%) areas.

Place and Period of Residency

Nearly 70% of the community survey participants have lived in North Queensland for more than ten years, with an average of 25.1 years' residency, while 50.5% of the Site-level Survey respondents were residents of the region for more than ten years, averaging 15.5 years (Table 3.1.1).

Table 3.1.1: The period of residency of respondents.

	Community Survey n = 763	Site-level Survey n = 988
≤ 10 years	30.3%	49.5%
> 10 years	69.7%	50.5%
Mean	25.1 years ± SD = 19.8	15.5 years ± SD = 11
Range	0.8-85 years	0.1-83 years

The proportion of community survey respondents who could be considered as either living in rural or rural-residential properties and being directly involved in natural resource management (NRM) issues on their own land was 34%. This is important, as many NRM surveys focus exclusively on rural and semi-rural primary production properties and households. The remaining two thirds of the sample came from suburban and semi-urban locations.

Ethnicity

The catchment 'community' appeared to be relatively heterogeneous in terms of ethnic identification (Appendix 2), with 95.4% of community survey respondents being Australian citizens. Aboriginal or Torres Strait Islander respondents were found to be under-represented in both surveys, with 3.6% of the community survey and 4.6% of the site-level survey respondents identifying themselves as indigenous Australians, compared to the Australian Bureau of Statistics (ABS) (2001) figure of 11.8% for the Northern Queensland region.

Education Levels

Reported education levels suggest that the population of the Wet Tropics bioregion was well-educated, with approximately 50% of respondents to both the community survey and the site-level survey having either a university degree or a technical / TAFE qualification (Table 3.1.2).

Table 3.1.2: Education levels of respondents.

	Community Survey n = 771	Site-level Survey n = 1001
Primary (1-7 years of education)	6%	5.2%
Secondary (8-12 years of education)	46%	41.4%
Tertiary A (tech. or further education)	26.7%	21.2%
Tertiary B (University)	21.3%	30.7%

Occupation

Just over 37% of the community survey respondents were not officially employed at the time of the survey, with 25.1% either retired, on the pension or unemployed, while 12.4% performed home duties. Of the total, 23.5% of respondents worked as professionals or semi-professionals and 11.2% were employed in the trades (Figure 3.1.1).

Gender

The gender ratio of respondents to the community survey was approximately 40% males to 60% females, while the site-level survey ratio was 45% males to 55% females. These results are slightly different to the ABS (2001) figures for Australia of 50.1% males to 49.9% females, and may reflect a greater willingness of females to participate in survey research.

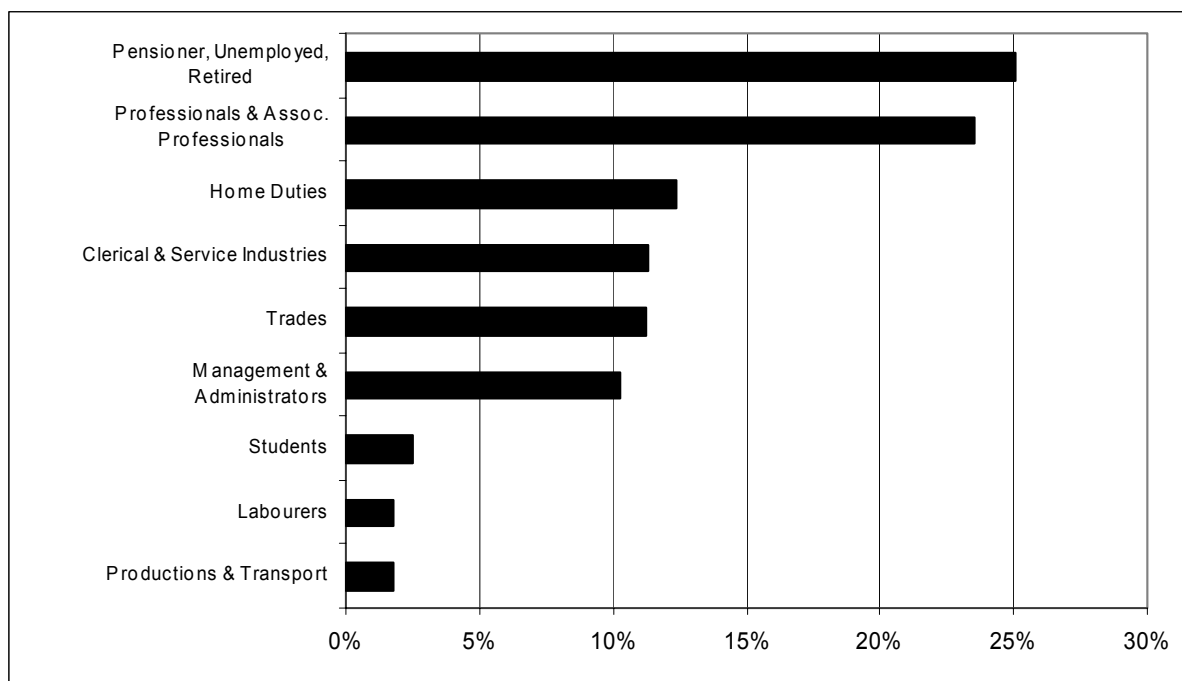


Figure 3.1.1: Occupation of the community survey respondents (n = 671).

Age

The mean age of respondents to the community survey was 49.2 years, while those surveyed at the site-level averaged 35.7 years (Table 3.1.3). This is closer to the ABS (2001) median age of 35 years for North Queensland. The community survey results indicate that older householders may be more likely to complete the survey if dropped off at their residences, with the majority of respondents being older than 60 years, while the main group represented in the site-level survey were between 30 and 39 years.

Table 3.1.3: Age of respondents.

	Community Survey n = 767	Site-level Survey n = 927
< 20 years	1.4%	10.1%
20-29 years	9.1%	24.6%
30-39 years	17.3%	28.5%
40-49 years	24.3%	20.9%
50-59 years	22%	11%
> 60 years	25.8%	4.9%
Mean	49.2 years ± SD = 15.6	35.7 years ± SD = 13.08
Range	12-88 years	12-88 years

Comparative Findings

It should be noted that demographic statistics for the community sample as contrasted with the site-level survey sample are more representative of the WTWHA region catchment as a whole. The site-level sample reflects a number of selection biases associated with motivation to visit a World Heritage site, physical health and mobility, and discretionary time and transport, etc. Importantly, however, from an on-the-ground, site management perspective, it is this site level community sample that provides the most useful information for addressing specific site-level management needs.

One would expect that the demographic profile of the community residents completing the community survey would be fairly different to those of most visitor surveys in the region (Bentrupperbäumer and Reser 2000a, 2002a; Burke 2002; Pearce and Moscardo 1994, 1997). Community residents would be expected to be older and more knowledgeable about the area and the recreation sites in question, as they live in much closer proximity to these sites and they would be visiting these areas more often. Visiting a WTWHA site suggests reasonable health and mobility, as well as interest and particular leisure activity motivations. Community residents would also be using very different experiences, time frames and touchstones in their appraisal of the WTWHA management agency effectiveness.

It is useful to compare the modal community survey respondent with that of the site-level survey. The site-level resident respondents sampled at visitor sites were on average thirteen years younger (35.7 years versus 49.2 years) than the community survey participants. Those taking part at the site level were on average better educated, with 30.7% having completed a university degree compared to 20.9% of residents participating in the community survey. The length of residency of locals participating at the site level was ten years less than was the case for community survey participants (15.54 years versus 25.07 years). The proportion of Aboriginal respondents at the site level was almost double that for community survey respondents (4.6% versus 2.9%), with eighty Aboriginal respondents participating in the site-level survey, 46 of whom lived in the WTWHA bioregion.

Key Points

Period of Residency

- The average period of residence was 25.1 years.
- Seventy percent of respondents had resided for *more than ten years* in the region.
- Just under 25% of respondents had *lived their whole life* in the Wet Tropics bioregion.

Stability, Familiarity and Place Attachment

The reported period of residence suggests a *relatively stable bioregional community*, which over time would have become very *familiar* with the area and developed *strong connections* to the area.

Education Level

- Of the site-level and community survey respondents, 47% and 52% of respondents had no more than a secondary education level, respectively.
- Almost a third of the site-level survey respondents (31%) and less than a quarter (21%) of community survey respondents have a university education.

3.2 AWARENESS AND KNOWLEDGE OF THE WORLD HERITAGE AREA

These questions were designed to establish respondents' *awareness* of the World Heritage status of the Wet Tropics rainforests, their self-assessed and objective *knowledge* of the Area, and the *degree of importance* it has to them. It was necessary to ask these questions at the beginning of the survey to establish individual respondents' self-reported awareness and knowledge prior to any possible influence of subsequent questions. The questions were also designed to provide some insight into how community respondents view their own relationship with and connection to the WTWHA; to indirectly address potential issues of perceived ownership, responsibilities, access and rights; and to address matters relating to local and global considerations and local community as distinct from management agency responsibilities and authority.

Findings

Awareness

A total of 93.2% of community survey respondents indicated that they were aware of the World Heritage status of the rainforests in North Queensland (Figure 3.2.1). This high awareness level is undoubtedly inflated by the fact that there is some social desirability associated with saying yes rather than no to the question asked. Respondents were also cued by the language of the question and its explicit but necessary reference to the 'World Heritage Area'. This item also followed an introductory statement reading, "It is very important for us to first know if you are aware of the existence of the Wet Tropics World Heritage Area (WTWHA)". While the need to approximate earlier survey questions, client request, and the inherent awareness-raising nature of such an awareness item make any strong conclusions tenuous, it is likely that widespread general community awareness that most rainforests in the region are part of a World Heritage Area exists.

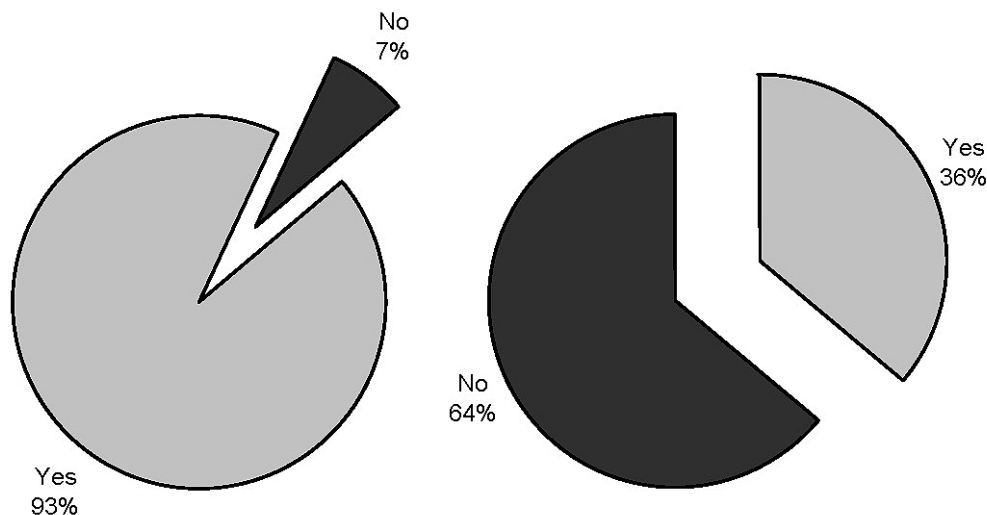


Figure 3.2.1: Local awareness of the WTWHA as evident from (left) community, and (right) site-level surveys.

This apparent high awareness finding is put into perspective by the significant and quite surprising fact that 63.6% of site-level survey respondents were unaware that the site they were actually visiting was a World Heritage area.

Perceived Knowledge

It is apparent that the community as a whole does not feel very well informed or knowledgeable about the WTWHA, with 32.6% of respondents rating themselves as being 'not at all knowledgeable' or only 'slightly knowledgeable' (Figure 3.2.2). It is noteworthy that only 13.4% of respondents rated themselves as 'considerably' or 'very knowledgeable' (Figure 3.2.2). It is important to compare and contrast these self-rated levels of knowledge with objective knowledge items to more fully appreciate the actual knowledge levels in the community (see *Actual Knowledge*, below).

Perceived Importance

The results suggest that the World Heritage Area is indeed important to the North Queensland community, with 77.1% of the community survey respondents rating the WTWHA as 'considerably important' (22.9%) and 'very important' (54.2%) (Figure 3.2.2).

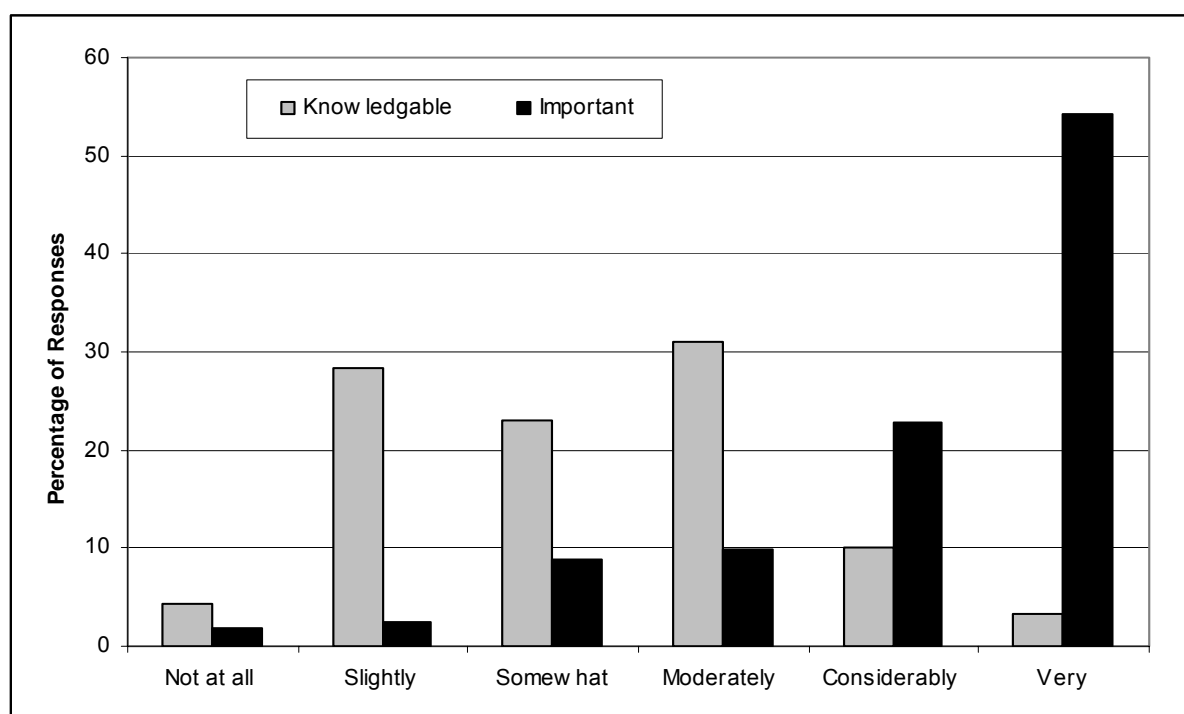


Figure 3.2.2: Perceived community knowledge levels (n = 722), and importance (n = 730) of the World Heritage Area (community survey).

Actual Knowledge

WTWHA Boundaries and Extent: When asked to identify the northern boundary of the WTWHA, 32.7% of the community survey respondents indicated that they did not know, while another 37.8% indicated that they did not know where the southern boundary was (Table 3.2.1). Only 18% of community survey respondents gave what could be considered a correct response for the northern boundary, i.e. indicating that it was in the general Cooktown area or a location within 20 kilometres of the actual boundary. Only 20.4% of respondents gave what could be considered a correct response for the southern boundary, i.e. in the general Paluma area or a location within 20 kilometres of the actual boundary. Many community survey respondents did have a more general idea of the location of the boundaries, for example, 15.4% indicated either the Daintree or Cape Tribulation as being

where the WTWHA ends in the north (Table 3.2.1). What is nonetheless quite surprising is that approximately 80% of respondents either did not know or were quite mistaken about where the northern and southern boundaries of the WTWHA actually are.

Table 3.2.1: Responses relating to knowledge of the WTWHA boundaries (shaded sections are the correct answers) (community survey).

Southern Boundary	n	Northern Boundary	n
Southern Queensland / Southern States: e.g. Brisbane, Bundaberg, Rockhampton, Mackay, Victoria, Tasmania	51	Cape York Region: e.g. Cape York, Bamaga, Lockhart River, Weipa, Thursday Island	205
Paluma / Townsville Region: e.g. Paluma, Blue Water, Mount Fox, Rollingstone	161 (20.4%)	Cooktown Region: e.g. Cooktown, South of Cooktown, Black Mountain	142 (18.0%)
Central-South Region: e.g. Ingham, Hinchinbrook, Lucinda, Cardwell	154	Daintree Region: e.g. Daintree, Bloomfield, Mossman, Port Douglas, Cape Tribulation	121
Central-North Region: e.g. Tully, El Arish, Cairns, Gordonvale, Bartle Frere	63	Cairns Region: e.g. Cairns, Gordonvale, Fishery Falls	5
Tablelands Region: e.g. Atherton, Kuranda, Tablelands, Mareeba	6	Tablelands Region: e.g. Ravenshoe, Millaa Millaa, Tablelands	6
Northern Region: e.g. Cooktown, Daintree, Cape York, Port Douglas	15	Southern Region: e.g. South Johnstone, Innisfail, Mission Beach, Ingham	8
Don't Know Unanswered	298 40	Don't Know Unanswered	258 43
TOTAL	788	TOTAL	788

Listing of Rainforest: In response to the open-ended question about why the rainforests were listed as a World Heritage Area, 13.2% of respondents either did not answer the question or indicated that they did not know why. Of those who did answer, responses were grouped into nine major categories (Figure 3.2.3). Only twelve individuals (1.5%) identified the four criteria that a natural property must have in order to be inscribed as a World Heritage Area – georepresentation, significant ecological processes, natural beauty and habitat. Another 66 respondents (8.3%) made some reference to at least one of these criteria. In fairness, community survey respondents appeared to be generally aware that the World Heritage status did involve some further provision for protection and conservation.

The vast majority of community survey respondents (58%) made reference to 'protection' and/or 'preservation' or 'conservation' in their answers (e.g. protection, monitoring, preservation, restoration, conservation). These findings suggest that the regional community is reasonably clear about the protected area nature and status of the WTWHA, notwithstanding their lack of clarity with respect to World Heritage criteria and inscription. Very few respondents (1%) made reference to cultural or historical heritage in their reasons for the listing. An important cautionary note is that for many indigenous community residents, little distinction is made between natural and cultural heritage.

While this question was designed as a knowledge item that could contribute to a composite knowledge score, a systematic coding of correctness of responses was not considered of particular value given the overwhelming incorrectness or irrelevance of most responses to this knowledge item. The diverse responses included frequent reference to the unique and

threatened character of the WTWHA and to the critical importance of its protection and preservation for science, ecosystem health, human well being, biodiversity and for future generations.

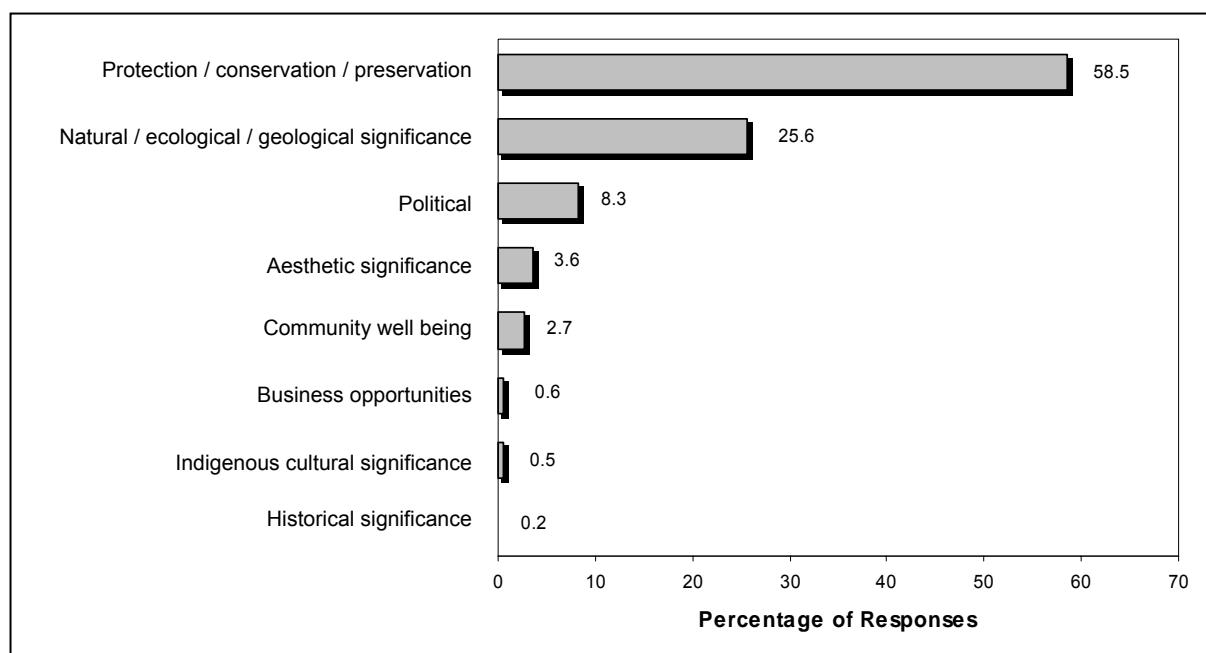


Figure 3.2.3: Responses relating to the listing of the WTWHA (community survey; n = 788).

Why were the rainforests of the Wet Tropics listed as a World Heritage Area?

A sample of responses received:

- “A political stunt designed to win elections.”
- “Collateral for the country’s debt.”
- “Political, to win votes of the uninformed of the capital cities of Australia.”
- “For political reasons, as there is absolutely no management apparent at ground level.”
- “[To} stop them being cut down, breed up feral animals.”
- “To keep people out of them.”
- “To keep the ‘greenies’ happy and win votes for the Labor party in the southern states.”

Ownership, Rights and Responsibility

A variety of responses were given when community survey respondents were asked about ownership of the WTWHA. A total of 32.8% of respondents indicated that they saw the WTWHA as a global asset. In contrast, 29.9% indicated that they felt the area was first and foremost an Australian property and a protected area, with 7.8% indicating that the area belonged to Queenslanders or local residents (Figure 3.2.4). A further 19 individuals believed the WTWHA belongs to indigenous people. This is significant given the importance of land tenure issues for Aboriginal residents.

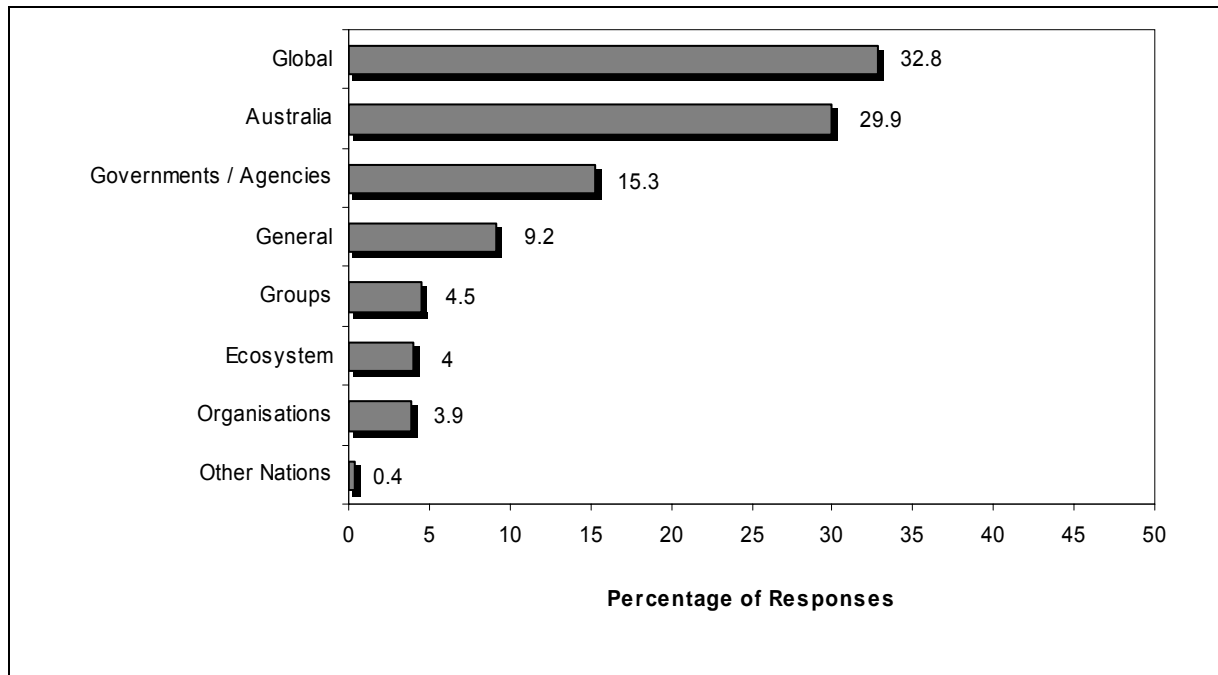


Figure 3.2.4: Responses relating to ownership of the WTWHA (community survey).

Who owns the Wet Tropics World Heritage Area?

A sample of responses received:

- “It belongs to me, my family, my state, nation and its neighbours, the world in its entirety, the plants, insects, aquatic life, birds and mammals.”
- “Legally Australian, morally the world.”
- “Primarily, the people of Australia, to be used as an ongoing asset for flora and fauna found within.”
- “Queensland people, then Australians, then the world.”
- “It belongs to mankind, in practice it doesn’t even belong to Australia.”
- “Traditional Owners, thus representing the whole of Australia and people who visit.”
- “It should belong to the people and animals of the world, but it’s probably the Queen’s.”
- “The fauna and flora – people are only visitors, and as visitors we must respect it as such.”
- “No one or Government of the day.”
- “Nobody ‘owns’ it, but everyone can enjoy it.”

General Comment

The findings on awareness and knowledge relate very directly to the research consultancy brief to “measure current awareness of the WTWHA and its management” (iii). They also have important implications for other measures of attitudes and support, premised as they are on a modicum of knowledge and understanding concerning the WTWHA and its management. Finally, these awareness and knowledge results relate directly to the mandate of management agencies to *present* the WTWHA and foster community participation and involvement in its management. The findings, overall, would suggest that there remains

much to be done on this community awareness and education front. In particular, the knowledge findings suggest that the community information initiatives that have been in place to date have been only modestly successful in communicating the reasons for the World Heritage listing and the geographic extent and tenure of the WTWHA to the regional population. The community as a whole is still unclear about where the boundaries of the WTWHA actually are and the status of this area. This is surprising given the extended controversy in North Queensland relating to the history of the Wet Tropics and the substantial community awareness and education initiatives of the WTMA. It is important that several standardised survey knowledge items be adapted for future monitoring if ongoing changes in community knowledge levels are to be documented, or education initiatives evaluated.

Comparative Findings

Awareness

The level of awareness found in the community survey results (93.3%) was far higher than that from previous surveys (AGB McNair 1996). The AGB McNair findings for the 1996 survey found that one third (34%) of sampled city residents mentioned the Wet Tropics (unprompted) as a World Heritage Area. This was a significant increase from the 1993 survey result of only 26%. Regional residents displayed the same level of awareness of the WTWHA (68%) in both 1996 and 1993.

It should be noted that AGB McNair (1996) included an additional awareness item that read, "Before today, which of the following World Heritage listed areas had you heard of?" followed by an actual listing of World Heritage Areas in Australia that included the Wet Tropics. This total awareness item arguably provided an inflated indication of awareness given the cuing nature of the question. The current survey item, "Are you aware that most of the rainforests in this region are part of a World Heritage Area?" was less about name recognition and more about the World Heritage status of a local geographic region. It is noteworthy that the World Heritage status of the WTWHA appears to be an important reason for visiting, with almost 50% of visitors crossing the Daintree River in a 1999 survey of 927 visitors, indicating that the World Heritage status of the rainforests was a "main reason for visiting the Daintree area" (Greimer and Walker in Rainforest CRC 2000). This suggests a relatively high level of awareness of the World Heritage status of the Area on the part of international tourists visiting the Wet Tropics bioregion.

Knowledge

There are no comparative findings from other surveys with respect to community knowledge about specific aspects or features of the WTWHA property. This absence is surprising as such knowledge items are a standard measure and indicator for assessing community understanding and effectiveness of community education initiatives. Reference to the World Heritage 'values' for which the WTWHA was listed is possibly more confusing than might be apparent. Independent studies within the WTWHA (Day 1999; Bentrupperbäumer and Reser 2000a; Bentrupperbäumer *et al.* 2006; Reser and Bentrupperbäumer 2005) have shown that residents, visitors and management agency staff have very different understandings of what World Heritage values are and what they mean. Such confusion could arguably be influencing residents' understandings of the World Heritage value criteria for which the Wet Tropics was listed.

Key Points

Awareness and Importance

- Overall, community survey respondents reported being very aware of the World Heritage status of the rainforests, and tended to feel that their *knowledge* of the Area was modest, but that the WTWHA was very important.
- On the other hand, site-level survey local respondents were considerably less aware that the site they were actually visiting was in a World Heritage Area.
- Comparisons with previous survey findings for the WTWHA region, where such comparisons were possible, indicate marked improvement in general community awareness levels over the past decade, but a surprising lack of knowledge about Area boundaries or management regimes or policies.

Knowledge

- Responses suggest that the regional community is not very knowledgeable about the general extent and approximate north-south boundaries of the WTWHA, and much less clear than might be expected given the interest in and salience of boundaries to local residents, and the wide circulation of WTWHA maps and/or boundary information readily available in other area maps and brochures.
- Community survey respondents, on the whole, did not know why the rainforests were listed as a World Heritage Area, and less than 10% were able to identify one or more of the four criteria that a natural property must meet in order to be inscribed as a World Heritage Area.

Ownership, Rights, Responsibilities

- It is clear that most respondents view the WTWHA as both *public land and a public trust*. Such perceptions are both accurate and positive in that they suggest both identification with and collective responsibility for such an area. Responses were also very assertive with respect to this being an '*ownership*' by *citizens of Australia and the world*, with government and government agencies being explicitly mentioned by only 15.3% of respondents.

3.3 SUPPORT FOR WORLD HERITAGE LISTING AND PROTECTION OF THE WET TROPICS RAINFORESTS

These questions were designed to assess current community support for and endorsement of WTWHA listing and protection.

Findings

Listing

The results of the community survey found that 58% of respondents ‘strongly supported’ World Heritage listing of the Wet Tropics and a further 19.9% of respondents indicated ‘moderate support’ (77.9% total). Opposition for the listing was evident for only 12.4% of respondents (Figure 3.3.1).

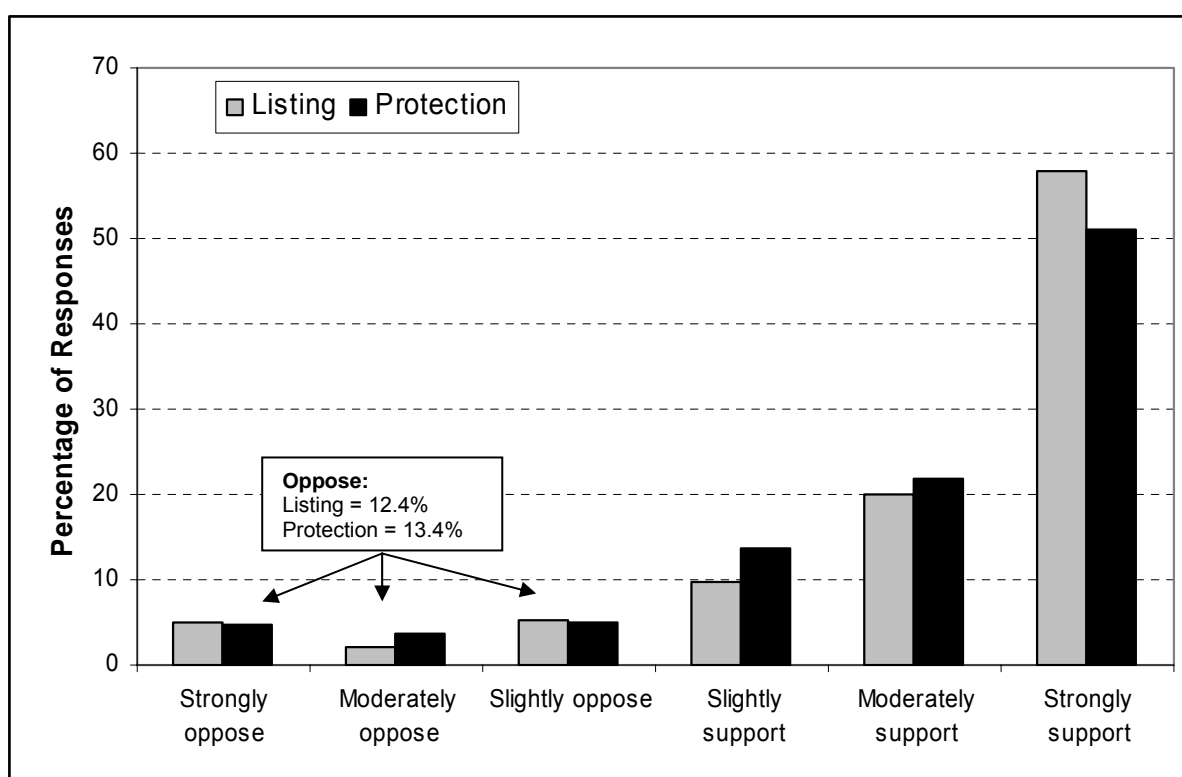


Figure 3.3.1: Level of support for World Heritage listing and protection of the rainforests of the WTWHA (community survey; n = 788).

Protection

A total of 51.1% of respondents indicated ‘strong support’ for the general level of protection of the WTWHA, with an additional 21.9% of respondents indicating ‘moderate support’ (73% total). Opposition to the general level of protection was 13.4%. This finding could reflect quite differing views, i.e., respondents could be indicating either too great or too little protection (Figure 3.3.1).

General Comment

It must be stressed that notwithstanding the stated brief to “measure current level of support for the WTWHA and its management”, this research has made a clear distinction in the survey items and progression between the WTWHA itself, and those management agencies responsible for managing the WTWHA.

Comparative Findings

The AGB McNair survey item that most directly addressed support for the WTWHA asked, “To what extent do you personally support or oppose its (the Wet Tropics of Queensland) listing as a World Heritage Area?” To some extent the meaning and import of this question has undoubtedly changed, as the WTWHA has now been inscribed since 1988. The 1996 findings for the regional sample found that 80% of respondents indicated either slight or strong support for the listing, with these figures being 74% in the 1992 survey and 80% in the 1993 survey respectively.

This support was markedly different across the Wet Tropics bioregion in 1996 and in the previous surveys, with the Tablelands and the North region (in 1996) indicating 68% and 72% support respectively as compared with Cairns (84%) and Townsville respondents (83%). It should be stressed that ‘slightly support’ has a rather different weighting and meaning than ‘strongly support’, notwithstanding the effective five point scale used, particularly in a phone survey. The proportion of regional respondents who indicated strong support for the listing of the WTWHA in 1996 was only 50% overall, with this falling to 40% in the Tablelands region.

Key Points

- It seems clear from current findings and past history that the World Heritage listing and protracted debate ensured that the WTWHA was a particularly important feature of the political and historical ‘landscape’ of the region.
- These findings suggest that there has been a continuing and dramatic shift in perceptions and attitudes throughout the WTWHA catchment, with the community being far less polarised or negative with respect to the changed status, management policies, or impacts of the WTWHA.

3.4 PERCEIVED ADVANTAGES OF THE WORLD HERITAGE AREA

These questions, along with questions relating to perceived disadvantages (Section 3.5), directly address the role of the WTWHA in the life of the community. Community survey respondents were asked to rate each of seven identified possible advantages of the WTWHA as they related to them personally (personal advantages/benefits). They also had the option of completing an additional, open-ended, personal benefit category. In addition, community survey respondents were requested to rank order five provided advantages of the WTWHA “for the regional community as a whole”. Essentially, individual respondents were asked to make a judgment on the relative importance of these designated benefits for the entire regional community (community advantages / benefits). The nominated categories of benefit for the personal and community questions were somewhat different however, with the community advantage items emphasising and differentiating *protection benefits*, *ecosystem services*, *experience* and *personal development benefits* as distinct from *economic benefits*.

These questions deal with the contribution that the WTWHA is seen to make towards the quality of life and perceived environmental quality, which constitute core considerations in most national level surveys that monitor quality of life and environmental quality. Such items provide a sensitive and very meaningful way to assess the psychosocial impacts of the WTWHA and the associated impacts of visitation and use on the local community.

Findings

Personal Advantages / Benefits

Over 40% of the community survey respondents felt that the designated personal benefits were ‘very important’, with this figure approaching 58% when the ‘considerably important’ rating was included. It is important to note that “just knowing that it is there, that it exists”, received the highest importance rating from respondents (Mean = 5.11), indicating that *vicarious use* and *symbolic value* are fundamentally important benefits of protected areas for the regional residents whose views are not often assessed or taken into serious account (Figure 3.4.1). Of the personal advantages that require actual visitation and use, “providing respite” received the highest rating followed by “providing recreational opportunities”.

The dramatic difference between the residents’ rating of ‘very important’ for “quality of life” (>50%) and “direct and indirect economic benefits” (< 20%) suggests that socio-economic assessments need to be strongly qualified and contextualised when considering community perceptions and priorities. An exclusive socio-economic focus may well miss factors that are actually most important to the community in question. This is a finding that consistently appears in other NRM community surveys when addressing the importance of one’s rural property (e.g. Bryon *et al.* 2004, 2005).

Approximately 10% of the community survey respondents contributed an additional personal benefit or advantage in the open-ended section, and all such responses were idiosyncratic (Table 3.4.1). Replies included a number of ecosystem services such as clean water and air, educational value, noise and traffic minimisation, creative inspiration, limits to urban expansion, enhanced land values, and provision for the future.

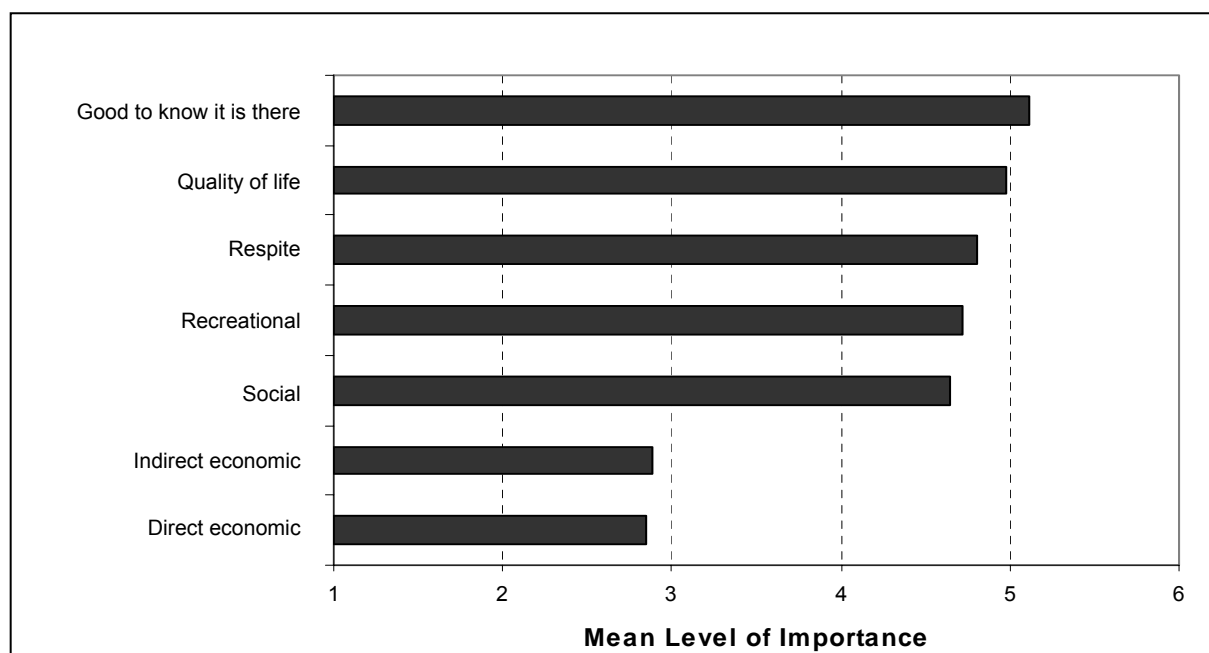


Figure 3.4.1: Level of importance of personal advantages of the WTWHA (community survey).

Table 3.4.1: Example of responses to the open-ended section (community survey).

Issue	Response
Human-Nature Relationship	“a wonderful connection with nature, flora and fauna, sight and sound to visually behold.” “healthy lifestyle, positive thinking through the environment.”
Tourism related	“brings tourists and money.” “puts Kuranda on the map.”
Employment / Economy related	“information centres that could sell t-shirt novelties for extra funds.” “to create jobs that help the environment and the residents.”
Education value	“education”
Providing for humans	“Potential physical benefits: medicine, pollution repair, etc.” “Supplying infrastructure.”
Providing for animals	“habitat for creatures, food.” “providing habitat for cassowaries.”
Management issues	“eradication of wild pigs.” “greenhouse effect.” “high biodiversity.”

Community Advantages / Benefits

Community survey responses relating to perceived benefits for the regional community, as a whole, tended to parallel the personal advantage findings. Over 65% of respondents labelled the designated benefits as ‘very important’, with the benefits relating to protection and ecosystem services considered the most important (Figure 3.4.2). The protection of the natural features of the WTWHA (e.g. animals and landscapes), and the additional environmental benefits of the WTWHA (e.g. providing clean air and water and environmental awareness) were all considered as being considerably important in terms of community advantages. Commercial and economic benefits were again deemed the least important of all the nominated benefits. The proportion of community survey respondents giving

economic benefits a rating of 'very important' (34.5%) was dramatically different to environmental protection and environmental quality, which received ratings of 'very important' from 72.5% and 81.2% of respondents respectively.

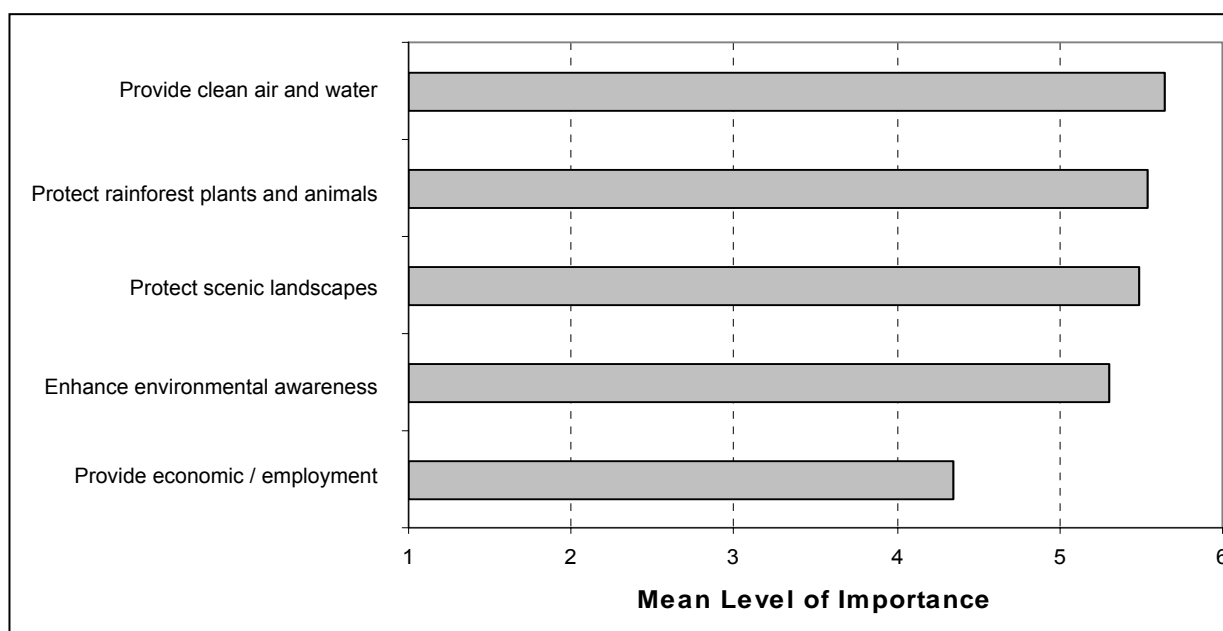


Figure 3.4.2: Level of importance of advantages of the WTWHA to the community (community survey).

Additional benefits mentioned by 8.4% of respondents, who used the open-ended category of perceived benefits for the community, included a variety of enhancements to community life, such as a “beautiful amenity”, “a source of inspiration”, “research potential”, “a source of community pride and achievement”, and “keeping people in touch with nature”. A number of respondents also mentioned the symbolic value of the WTWHA for the community as an expression of community values and priorities, and as a touchstone and barometer of quality of life. Several of the respondents saw the benefit to the community as being a demonstration and model of sustainable development and conservation practice.

Comparative Findings

The AGB McNair survey (1993) addressed personal and community benefits by asking regional respondents “What, if any, are the main benefits of the World Heritage listing of the Wet Tropics for you as a North Queenslander?” The wording of this item changed in 1996 to “What do you think are the advantages (disadvantages) for local communities”? The perceived benefits reported from the 1996 survey results were tourism (50%), environmental protection (27%), preservation (14%), scenic amenity (21%), rainforest protection (15%), ensuring for future generations (24%), preserving an ecosystem (10%), protecting wildlife (15%) and enabling visitation and recreation (15%). Only 2% of respondents indicated that there was no personal benefit to them of the World Heritage listing.

An interesting comparison in the AGB McNair (1996) results was that regional respondents were twice as likely as non-regional, urban respondents to cite rainforest protection and wildlife protection as important benefits. They were also three times as likely as non-North Queensland urban respondents to cite ‘ensuring for future generations’ and ‘enabling public access and recreation’ as benefits. The salience and importance of the WTWHA for local

residents is arguably and understandably much stronger for specific benefits and costs, as well as with respect to place attachment and identity.

Clearly, the survey responses reflect the nature of the questions asked. The AGB McNair questions specified *benefits* and *effects* of the *listing* of the Wet Tropics. The question of effects referred specifically to the “*economy* of the local community”. The survey organisation did not explore community perceptions or views with respect to the perceived costs and benefits, the personal and community impacts of current management practices or the impacts of current visitation and use. There was also no reference to experienced impacts, quality of life, or displacement.

Key Points

- The most salient community advantages mentioned by the majority of respondents relate to the provision of clean water and air, the protection of the rainforest plants and animals, and the protection of the scenic landscape.
- Responses concerning the importance of particular benefits of the WTWHA indicate that the community feels that quality of life and quality of environment benefits are very important, and much more important than direct or indirect economic benefits.
- The local community sees the WTWHA as an integral part of their quality of life and environment, as an important component of place identity, as an amenity and resource which provides for community recreation, restoration, and inspiration, and as providing important ecosystem services such as clean water and air.

3.5 PERCEIVED DISADVANTAGES OF THE WORLD HERITAGE AREA

These survey questions addressed the perceived disadvantages of the WTWHA to respondents both personally and to the community as a whole. Community respondents were asked to provide their own list of the perceived or experienced disadvantages of living in and around the WTWHA. These items provide an important vehicle for identifying and quantifying the psychosocial impacts of the WTWHA, including the impacts of visitation and use on the local community. Because nominating certain disadvantages beforehand can influence replies in a survey such as this, and because the disadvantages were largely a matter of judgement and difficult to anticipate, the decision was made to keep these as open response categories.

Findings

Personal Disadvantages

It is significant that 115 respondents (14.6%) indicated no personal disadvantages while 552 respondents (70.1%) left this item unanswered. Perceived personal disadvantages were clearly relatively few compared with the provided and elicited advantages and benefits of the WTWHA. Community respondents identified a range of disadvantages, which were subsequently placed into nine categories (Appendix 3). Responses were diverse and idiosyncratic, and related to specific restrictions (speed limits, camping, road closures), feral animals, mosquitoes, unemployment, community conflict, too many tourists, and management agency bureaucracy and red tape.

For the 15.3% of community survey respondents who identified personal disadvantages, the most frequently reported related to rules, restrictions and regulatory issues (25.2%), followed

by feral plants, animals and pests (22.8%), rather than to adverse impacts of the WTWHA or the impacts of visitation and use on the respondent (Figure 3.5.1). The most salient issues appeared to be effective displacement, the inconvenience of restricted access, restricted activities, pet restrictions, and limited places for camping, though the absolute number of respondents identifying such disadvantages was again very small. In addition to being the most frequently reported personal disadvantages, rules, restrictions and regulatory issues were also considered the most important, receiving the highest mean rating score for level of importance (Mean = 5.73), followed by economic and employment costs (Mean = 5.66).

Community Disadvantages

Identified *community* disadvantages were similar in type and frequency to those of the *personal* disadvantages, with an expected expansion and elaboration of community level issues. Again it is significant that only 7.7% of respondents explicitly indicated “no disadvantage”, while 70.6% left the disadvantages items blank, suggesting that advantages are far more salient than disadvantages. The types of disadvantages mentioned do indicate that some residents have identified a number of costs or negative impacts for the community resulting from the WTWHA. The perceived community disadvantages most frequently identified were those associated with economic and employment issues (e.g. reduced employment opportunities due to lack of development; loss of employment regarding the timber industry; 20.7%) (Appendix 4; Figure 3.5.2). As with personal disadvantages, many respondents referred to issues associated with industry and agricultural practices (e.g. restrictions and too much red tape for agriculture), and limitations and restrictions to resident access and use. Even though economic and employment issues were the most frequently reported community disadvantages, respondents considered feral animals, plants and pests to be the most important (Mean = 5.68), followed by management issues (e.g. lack of management, mismanagement; Mean = 5.62).

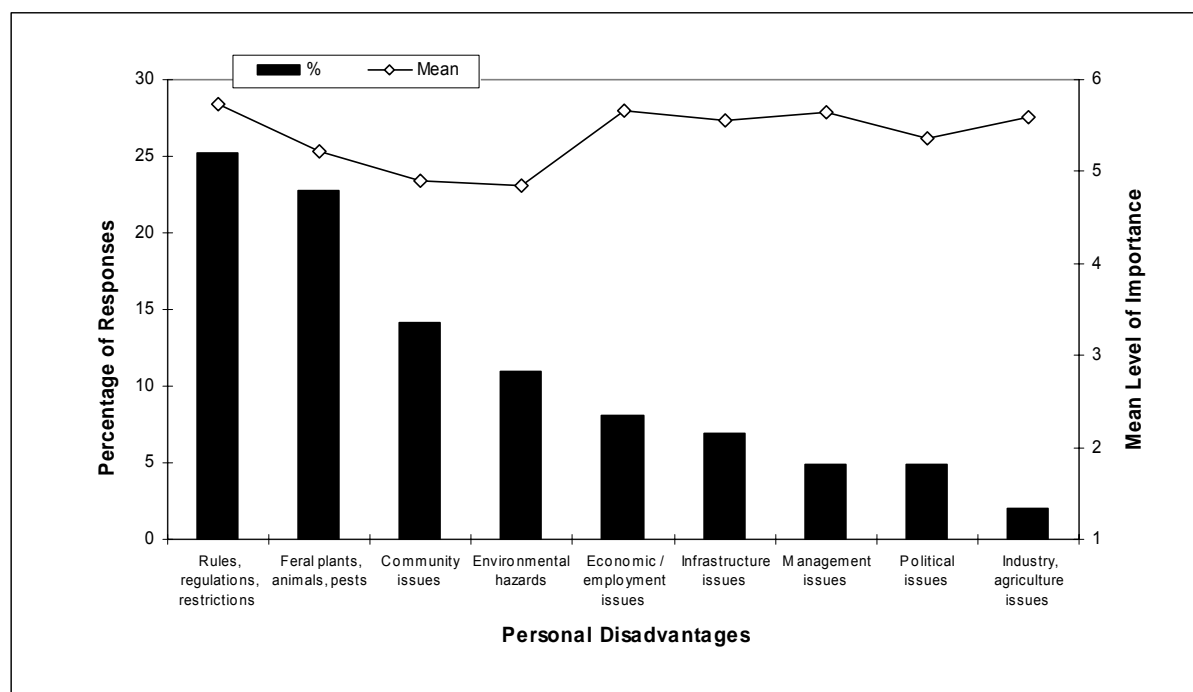


Figure 3.5.1: Personal disadvantages experienced from living in and around the WTWHA (community survey; n = 246 for combined first, second and third response).

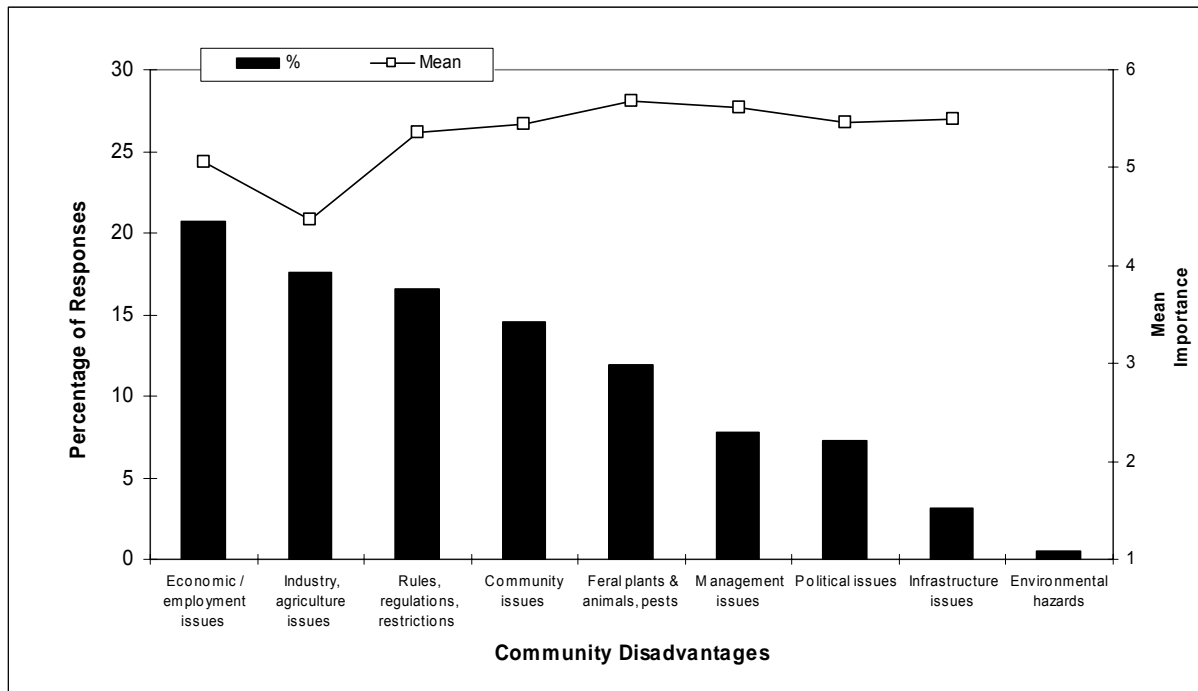


Figure 3.5.2: Disadvantages of the WTWHA to the regional community (community survey; n = 193 for combined first, second and third response).

It is probable that the perceived costs to the community of the WTWHA have something of a stereotypic and common knowledge quality to them, with respondents reiterating what are more shared beliefs and collective accounts rather than reflective assessments based on personal experience or knowledge. In any case, the relative mention of such possibly stereotypic costs is very low and possibly more historically true than relating to current adverse impacts. It is noteworthy that a number of these open-ended responses to perceived community costs and disadvantages relate more directly to the management agencies, their policies and the decision making processes, than to substantive psychosocial impacts of the WTWHA itself or the impacts of visitation and use on adjacent communities.

Social impact assessment generally tends to focus on possible negative impacts, and such assessments are typically anticipatory rather than being post intervention assessments (e.g. Barrow 1997; Burdge and Vanclay 1995; Dale *et al.* 2001; Vanclay 2002). This community survey was designed to invite a more balanced consideration of actual and both positive and negative impacts (Reser and Bentrupperbäumer 2001b). This was particularly important in identifying what roles the WTWHA might be playing in the life of community. It also constituted an important and more objective assessment of support for the WTWHA and its World Heritage protected area status. An exploration of psychosocial as well as socio-economic impacts also allows for and legitimises consideration of how an amenity like the WTWHA impacts on the everyday life and experience of individuals and the community as a whole, and quality of environment and place of residence.

Comparative Findings

The AGB McNair survey (1996) further addressed perceived costs and benefits by asking regional respondents “What effect, if any, has the World Heritage listing had on the economy of your local community so far, a positive effect, no effect, or a negative effect?” The reported perceived disadvantages of World Heritage Listing for the 1996 regional respondents were loss of jobs / damage to local economies (36% for region overall, 51% for

Tablelands), cessation of logging (24% overall, 36% for Tablelands), too many tourists (5% overall, 15% for Northern region), restrictions on landowners (22% overall), restricted public access (15% overall), problems for property owners on the World Heritage Area's boundary (13% overall), stops new infrastructure (8% overall), loss of control (5% overall) and road closures (4% overall). It would appear that the proportion of respondents identifying these perceived costs was proportionally greater at that point in time, and that this evident current reduction in perceived costs parallels a wide spread realisation on the part of the regional community that a number of anticipated costs and adverse impacts had simply not materialised.

Key Points

Personal Disadvantages

- Perceived personal disadvantages of living in and around the WTWHA were relatively few, with only 15% of respondents identifying any.
- Responses suggest that while relatively few respondents feel there are disadvantages compared with the provided and elicited advantages and benefits of the WTWHA, nonetheless the most salient were those to do with rules, regulations and restrictions. Issues for individuals related to the inconvenience of restricted access, restricted activities, pet restrictions, and limited places for camping.

Community Disadvantages

- Only 22% of respondents thought that the WTWHA disadvantaged the community in any way.
- The most salient community costs and adverse impacts mentioned by a minority of respondents related to employment and economic opportunities (reduced employment due to lack of development and loss of timber industry).
- Loss of control over the area was also identified as a cost to the community, possibly reflecting a sense on the part of some that local control and involvement in the decision making process has been substantially eroded by World Heritage listing.

3.6 SUPPORT FOR CULTURAL HERITAGE LISTING AND ABORIGINAL CO-MANAGEMENT

These survey questions were designed to assess current community support for cultural heritage listing and Aboriginal co-management of the WTWHA.

Findings

Aboriginal Co-management

Community support for some form of Aboriginal co-management was divided, with 58.4% of respondents indicating some degree of support, whereas 30.5% were ‘strongly’ or ‘moderately’ opposed to the idea (Figure 3.6.1). The results showing that over 20% of participants were ‘strongly’ opposed suggest that there are very different considerations involved here as compared with support for the WTWHA listing and protection (see Section 3.3).

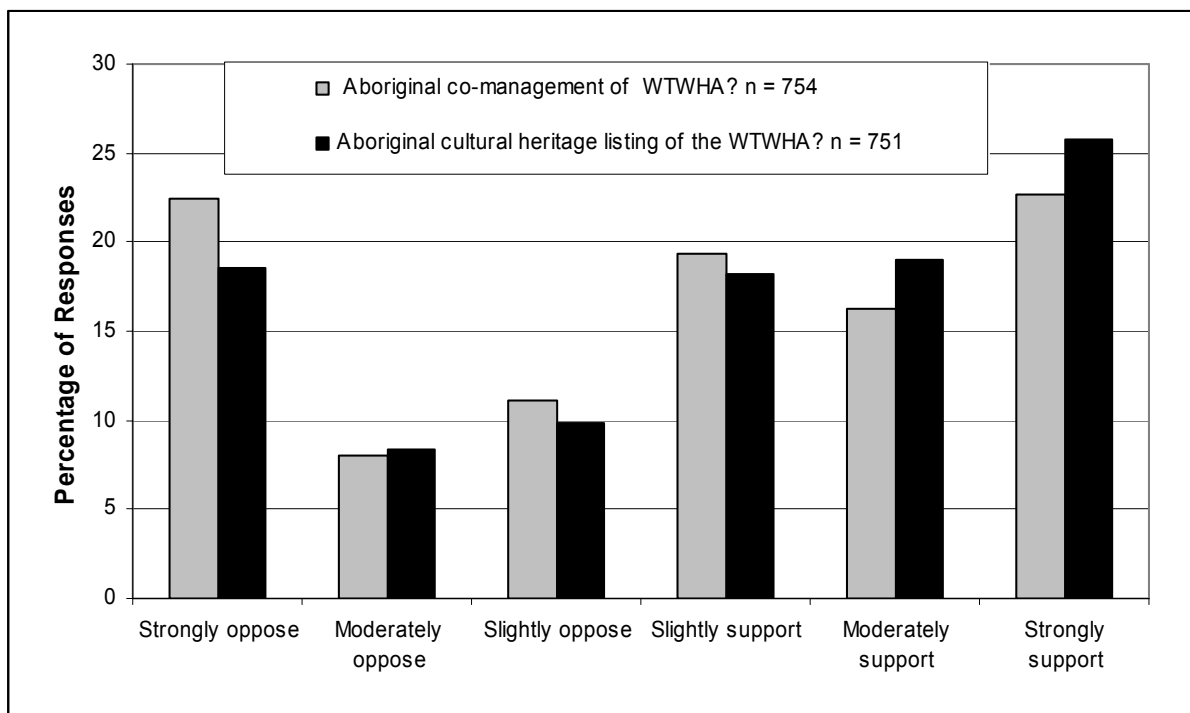


Figure 3.6.1: Respondents’ support for Aboriginal co-management of the WTWHA and the inclusion of Aboriginal cultural heritage in future World Heritage listing (community survey).

Cultural Heritage Listing

The inclusion of Aboriginal cultural heritage in future listing of the WTWHA was supported by 63% of the community survey respondents, with 25.8% of respondents ‘strongly’ supporting this listing. However 18.6% of respondents ‘strongly’ opposed such inclusion (Figure 3.6.1).

Key Points

Community support for Aboriginal co-management and cultural heritage listing is divided within the community.

- Fifty-eight percent of respondents support Aboriginal co-management, while 42% oppose it.
- Sixty-three percent of respondents support the inclusion of Aboriginal cultural heritage in future World Heritage listing, while 37% of respondents oppose.

These findings suggest that while the majority of respondents support cultural heritage listing and Aboriginal co-management of the WTWHA, there needs to be carefully considered public communication strategies put in place to increase the level of support for these initiatives within the community.

3.7 THREATS TO THE WORLD HERITAGE AREA

The survey questions in this section relate to respondent-identified perceived threats to the WTWHA, or threatening processes. Perceptions of these threats or risks are particularly important to perceived environmental quality, environmental concern, and felt responsibility for looking after one's local environment. Such community perceptions are also important to land management agencies because the salience and magnitude of particular threats for the community may not coincide with the threatening processes identified by management as being high priorities. Community survey respondents were asked to identify what they considered to be the three most serious threats to the WTWHA and the extent to which such threats were being addressed.

Findings

Perceived Threats

The results revealed that feral animals, plants and pests were considered by the community to constitute the most serious threat to the WTWHA, with 31% of respondents identifying such threats as their first, second or third response. Human activity within the WTWHA was seen as posing the second most serious threat by 28% of respondents in their first, second or third response. Human activity outside the WTWHA was a concern for 22% of respondents. Management and political issues were identified as areas of concern by 6% of respondents. Human caused impacts and threats accounted for 98% of replies received in this survey, whilst the threat from natural hazards and disasters account for only 2% of the perceived threats (Figure 3.7.1).

Management of Threats

In addition to being seen as the most serious threat to the WTWHA, feral animals, plants and pests were believed to be inadequately managed (Mean = 2.9 out of 6, Figure 3.7.1). Human activities both within and outside the WTWHA were also seen as serious threats. These threats were rated as being managed / addressed to a 'slight' to 'moderate' extent (Mean = 3.5 and 3.3 respectively). These results are not surprising and are very consistent with open-ended responses concerning expectations for the perceived effectiveness of WTWHA management agencies (Section 3.10), where frequent reference to protection from human impacts and introduced species, and problematic management responses and priorities from the perspective of some respondents, is made.

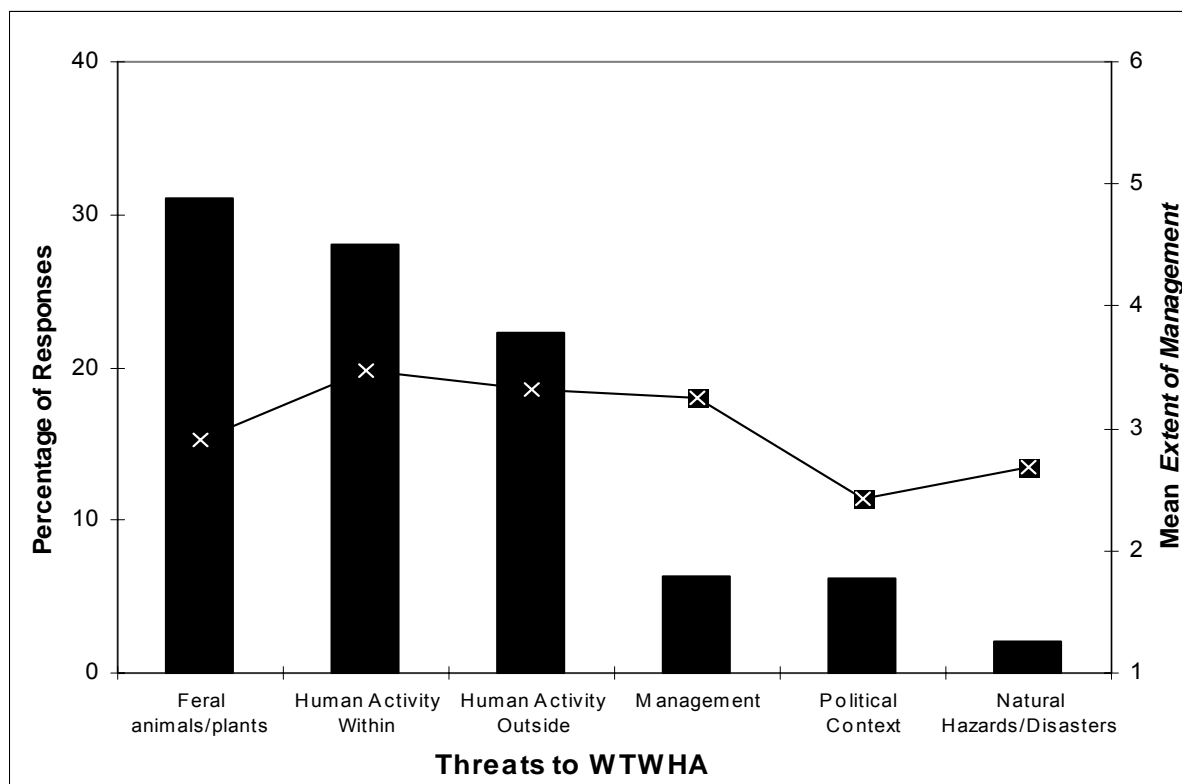


Figure 3.7.1: The most serious threats to the WTWHA as identified by community respondents and the extent to which they are being managed (community survey).

Key Points

- Feral animals, plants and pests and human activities both within and outside the WTWHA were identified as the most serious threats to the WTWHA.
- It is significant that half of the cumulative responses with respect to perceived threats related to human activities both within and outside the WTWHA. This would seem to have a direct bearing on community appraisals of management effectiveness and response, given that the perceived management challenge, as far as the community is concerned, is very much about managing human activities.
- In terms of the efficacy of management response to threats, the political context, natural hazards (cyclones, fire), and feral animals, plants and pests were considered the least adequately addressed threats.
- Residents' responses to survey items relating to threats suggest reasonable levels of community concern about the condition of the protected area and the adequacy of current management strategies and practices.

3.8 VISITATION AND USE

The community survey questions in this section were designed to ascertain actual community resident visitation rates and patterns of WTWHA site use, by looking at that proportion of the respondent population who have actually visited the WTWHA, and to establish when, where, why and how often such visits took place. Further questions relating to respondents' favourite places within the WTWHA were designed to explore place meaning and attachment of residents to specific sites and the Area as a whole, as well as to provide more detail about how and in what ways the WTWHA might be interconnected with their every day personal, social and recreational lives. The local residents surveyed at WTWHA sites (site-level survey) were also canvassed to determine if they were observing noticeable changes to the sites they visited, their impressions of the natural features and other visitors at the site, and the quality of their WTWHA experience.

Findings

Frequency of Visits

Eighty-five percent of community respondents indicated that they had visited the WTWHA, with 11.6% indicating that they 'visit' the WTWHA virtually every day (Figure 41). Clearly many residents see, pass through, work in, and otherwise visit the area every time they pull out of their driveway, and a number of respondents actually live within the Area itself. The 15.1% figure for respondents who indicated that they have never visited the WTWHA should be treated with caution, as they may be unclear about what actually constitutes the WTWHA.

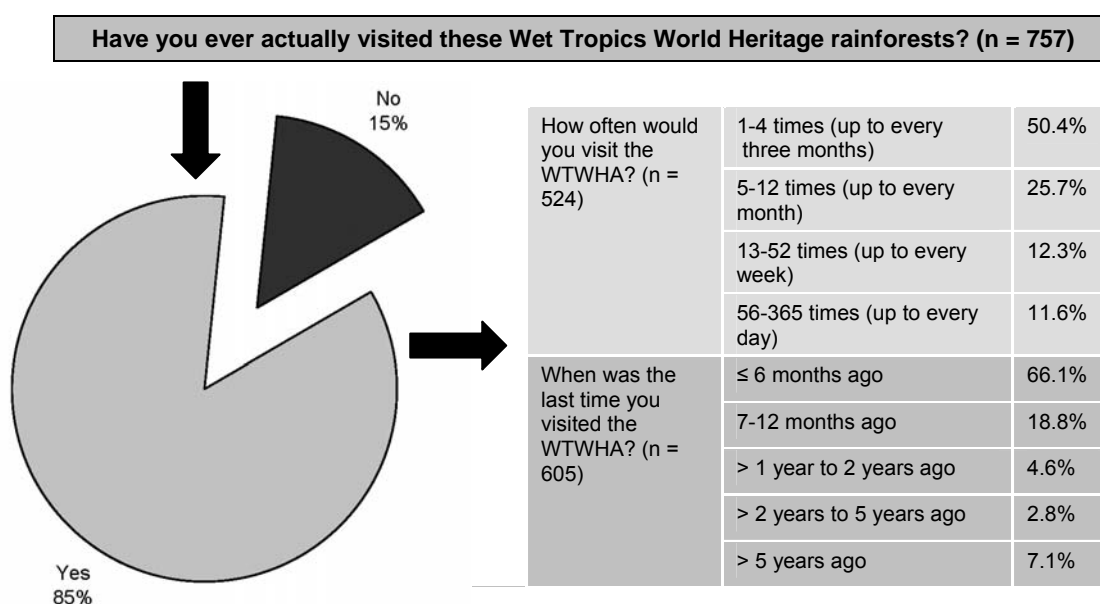


Figure 3.8.1: Percentage of community respondents who had visited the WTWHA, how often, and when (community survey).

Of those who reported having visited the WTWHA, the majority of respondents indicated a quite recent experience, with 66.1% of respondents reporting having been to sites within the Area during the previous six months (Figure 3.8.1). A further 18.8% had visited within the past year. Many of these visits to WTWHA sites were made on a regular basis, with 23.9% of residents visiting the Area every day or at least once a week (Figure 3.8.1). The results indicate that half of the community respondents (50.4%) are visiting the WTWHA between once a year and once every three months.

It must be remembered that the WTWHA was inscribed as a World Heritage Area long after the area had been a familiar and adjacent landscape and recreation and restoration venue for many non-indigenous residents, and, of course, an integral part of life, subsistence, and identity for Aboriginal residents for tens of thousands of years.

Reasons for Visiting

Community residents visit the WTWHA for many diverse reasons, however the results of the community survey indicate that the majority of visits relate predominantly to recreational activities (56.7%), and/or a particular type of experience, either personal or social (36%) (Table 3.8.1).

Table 3.8.1: Community respondents' reasons for visiting the WTWHA (community survey; n = 587).

	Examples	Percentage of visitors
Educational	<ul style="list-style-type: none"> • Educational / Research • Study animals • Showing and educating children and adults 	1.5%
Experiential, Restorative	<ul style="list-style-type: none"> • To have a break / rest and relax • To experience tranquillity / peacefulness • Enjoyment / Pleasure 	36.0%
Recreational Activity	<ul style="list-style-type: none"> • Bird watching (cassowary) / Spotlighting • Bush walking • Swimming 	56.7%
Other	<ul style="list-style-type: none"> • Access to my property • Local / live near the WTWHA • Defining boundaries 	5.6%

Many respondents made reference to the peaceful, tranquil, and restorative benefits of visits to the WTWHA (Table 3.8.1). This finding is consistent with current research on the restorative and therapeutic properties of natural settings such as National Parks and wilderness areas (Kaplan 1995; Korpela and Hartig 1996; Hartig *et al.* 1991). Such visitation and use is seen as a very natural and familiar extension of residents' lifestyles and involvement with the natural environment, unlike the one-off experience associated with visiting a distant National Park or World Heritage Area. For the region's residents, the WTWHA is an everyday, well-known extension of their backyard or neighbourhood park. It is just this type of natural area that many researchers feel plays an important role in the everyday well being and enjoyment of residents (e.g. Kaplan *et al.* 1998; Malle *et al.* 2002). It is significant that only 1.5% of respondents reported visiting the WTWHA as an educational experience, although, essentially, all experiences are learning experiences and are not always easily articulated or measured.

In contrast to the community survey, participants in the site-level survey were asked to rate the relative importance of a number of nominated reasons for visiting the site they were at (Table 3.8.2). The responses to this question suggest that for local residents, activities appeared to be of less importance than the opportunity to experience and appreciate the aesthetic and natural features of the sites. They also visit sites to socialise with family and friends as well as to rest and relax. Local residents indicated that these experiential, restoration and appreciation motivations were very important, with over 50% of respondents giving 'seeing natural features and scenery' and 'rest and relax' a rating of 6 (very important), and with these reasons achieving overall mean ratings of 5.02 and 5.01 respectively. 'Experiencing tranquillity' (Mean = 4.83) and 'being close to nature' (Mean = 4.71) were also considered of importance to the respondents. To 'learn about native animals and plants' (Mean = 2.97) and 'learn about Aboriginal culture' (Mean = 2.09) appear not to be viewed by local respondents as particularly important motivations for visiting the WTWHA sites. This could be a consequence of local residents already feeling quite knowledgeable about places they regularly visit, in a bioregion they know well.

Table 3.8.2: The importance rating of the reasons for visiting the WTWHA (site-level survey).

Items	n	1 Not Important	2 Slightly Important	3 Moderately Important	4 Important	5 Quite Important	6 Very Important	\bar{X}
a) Learn about native animals and plants (<i>Educational</i>)	946	27.5%	15.0%	22.2%	15.2%	8.6%	11.5%	2.97
b) Learn about Aboriginal culture (<i>Educational</i>)	926	52.5%	17.9%	11.9%	8.4%	4.3%	5.0%	2.09
c) See natural features and scenery (<i>Experiential</i>)	972	3.4%	2.0%	6.7%	15.1%	22.4%	50.4%	5.02
d) Be close to / experience nature (<i>Experiential</i>)	958	5.2%	4.2%	9.8%	17.8%	21.5%	41.4%	4.71
e) Socialise with family / friends (<i>Experiential</i>)	954	8.7%	3.7%	7.4%	14.4%	22.3%	43.5%	4.68
f) Rest and relax (<i>Experiential</i>)	969	3.3%	3.2%	7.5%	11.9%	23.2%	50.9%	5.01
g) Experience tranquillity (<i>Experiential</i>)	952	4.2%	4.1%	8.8%	15.9%	21.8%	45.2%	4.83
h) Experience the Wet Tropics (<i>Experiential</i>)	948	11.1%	7.5%	13.6%	18.7%	19.3%	29.9%	4.17
i) Outdoor exercise (<i>Activity</i>)	957	13.7%	11.2%	14.8%	19.5%	20.6%	20.1%	3.89
j) Opportunities for short walks (<i>Activity</i>)	954	13.7%	11.2%	14.8%	19.5%	20.6%	20.1%	3.82
k) Opportunities for long walks (<i>Activity</i>)	931	26.6%	17.7%	17.6%	13.7%	12.7%	11.6%	3.03

Facilities

The results of the site-level survey indicate that over 50% of locals visiting WTWHA sites prefer to visit areas that have ‘fairly well developed’ or ‘very well developed’ facilities (areas with well marked walking tracks and camp grounds, etc.), whereas 24% of respondents expressed a preference for more limited facilities and infrastructure (Table 3.8.3). This might well reflect the challenges of moving through and/or comfortably spending time in a typical rainforest environment that has a less developed and maintained access, infrastructure and trails.

Table 3.8.3: Respondents’ preferred type of site (site-level survey; n = 979).

Natural area with:	Percentage of Respondents
• No facilities (e.g. no toilets, no designated camping ground)	4.8%
• Few facilities (e.g. rough walking tracks)	10.8%
• Limited facilities (e.g. walking tracks evident, some directional signage)	24.0%
• Fairly well developed facilities (e.g. well marked tracks, extensive signage)	30.6%
• Very well developed facilities (e.g. camping grounds, visitor centre)	20.4%
• Don’t know / Don’t care	9.3%

Natural Environments

Site-level survey participants were asked to appraise aspects of the natural environment at the site they were visiting. Results indicated that the majority of local visitors perceived the sites to be well managed and in good condition (Table 3.8.4). These replies are strikingly similar, overall, to past surveys of international, Australian domestic and local visitors (Bentrupperbäumer and Reser 2002a).

Table 3.8.4: Respondents’ ratings on the natural features of the WTWHA (site-level survey).

Items	n	1 Strongly Disagree	2	3	4	5	6 Strongly Agree	\bar{X}
The natural environment at this site is interesting.	1003	0.7%	1.0%	3.2%	18.1%	25.5%	51.4%	5.21
I would like to spend more time exploring this natural environment.	997	1.1%	3.9%	9.1%	27.9%	25.6%	32.4%	4.70
In terms of natural attractions and scenic beauty, this site is appealing.	996	0.3%	1.4%	3.6%	13.6%	29.6%	51.5%	5.25
The condition of the natural environment at this site appears to be good.	992	0.7%	1.2%	4.7%	14.5%	35.3%	45.5%	5.13
The natural environment at this site is well managed.	994	0.8%	1.5%	5.0%	17.8%	34.2%	40.6%	5.05
I am concerned about the impacts of human activity on the natural environment at this site.	992	12.4%	12.1%	16.4%	21.2%	16.6%	21.3%	3.81
This site appears to be disturbed and impacted.	987	27.7%	26.7%	19.9%	13.4%	7.0%	5.4%	2.61

Social Behaviour

While at the sites, resident visitors were also asked to appraise the social environment. Responses suggest that the presence of other visitors was not a main consideration and did not, on the whole, detract from their experience or enjoyment of the site. Nevertheless, 26% of respondents did indicate that the site they visited was crowded to some degree, and 14.4% reported that the presence of others at the site detracted from their experience (Table 3.8.5).

Table 3.8.5: The respondents' impressions of the other visitors at the WTWHA site they were visiting (site-level survey).

Items	n	1 Strongly Disagree	2	3	4	5	6 Strongly Agree	\bar{X}
There were too many people at this site today.	982	34.9%	19.5%	19.6%	12.0%	5.3%	8.8%	2.60
The presence of other people at this site prevented me from doing what I wanted to.	977	52.6%	20.8%	12.2%	6.3%	3.3%	4.8%	2.01
The behavior of other visitors at this site has been on the whole environmentally responsible.	973	11.9%	6.3%	8.3%	15.4%	27.1%	30.9%	4.32
The behaviour of some visitors at this site detracted from my enjoyment of this site.	975	51.6%	20.2%	12.1%	6.8%	4.3%	5.0%	2.07

There does appear to be a considered selection choice exercised by locals and tourists with respect to visitation to WTWHA sites, with local residents often selecting sites where they know tourist numbers are likely to be lower. While some local residents might still periodically visit an icon site such as Mossman Gorge or Cape Tribulation with their interstate or overseas visitors, for example, they would normally frequent less congested sites. The results of the site-level survey were consistent with past-site level and postal survey respondent appraisals. Locals provided replies similar to those of both the international and domestic visitors in relation to the perceived crowding and the negative impacts of having other people at the site they are visiting.

Environmental Change

Community perceptions of and judgments about changes to the environment are increasingly being viewed as valuable input into the assessment of environmental conditions, threatening processes, and the possible degradation or alteration of the biophysical, built and social setting (e.g. Gasteyer and Flora 2000). Two hundred and eighty respondents (35.5%) indicated that they had noticed changes to the places they were visiting. The types of changes that respondents mentioned included development pressures, increased visitation, alterations and improvements to infrastructure and amenities at the site, as well as better access and a more visible management presence. Slightly more negative changes (144) than positive changes (118) were noted, though it was very difficult to categorise many of the observed changes as positive or negative. Responses to this question were not place or situation-specific enough to assess the sensitivity or objective 'accuracy' of residents' judgments or monitoring with respect to indicator development. This matter requires more careful and strategic consideration and item development.

Place Meaning and Attachment

When naming their two favourite sites in the WTWHA, community survey respondents nominated areas of iconic status as well as other, lesser-known and more secluded sites. The Daintree, Cape Tribulation and Mossman Gorge are very important sites that are well used by locals, but also experience heavy interstate and international tourist visitation. Lake Eacham, the Babinda Boulders, the Palmerston area, Josephine Falls, Licuala State Forest and Lacey Creek are also sites and areas with high local resident attraction and attachment. Respondents gave diverse reasons for their choice of favourite place, but the beauty of the place, its affordance of a peaceful escape, its proximity and convenience, as well as its suitability for particular recreational activities and pursuits were recurring reasons given. A number of respondents made reference to the fact that a particular place had figured very strongly in their life as they were growing up in the region, either as a site adjacent to one's home or a place frequently visited.

Local Visitor Experiences

When those participating in the site-level survey were asked to rate their experience of the WTWHA site they were visiting, 67% agreed that they had experienced a real sense of involvement and connection to the site, while 76.5% agreed their visit had been a special experience for them (Table 3.8.6). Ninety-three percent of local visitors reported enjoying their visit to the WTWHA, but 20% indicated that they were disappointed to some degree with some aspects of their visit. For local residents, their experience, sensed connection with and enjoyment of these WTWHA sites are just as powerful and positive as they are for overseas and domestic visitors, but clearly in different ways.

Table 3.8.6: Respondents' experience at the WTWHA sites (site-level survey).

Items	n	1 Strongly Disagree	2	3	4	5	6 Strongly Agree	\bar{X}
I experienced a real sense of involvement and connection with this place.	968	5.4%	6.6%	20.4%	32.9%	18.6%	16.2%	4.01
For me, visiting this site has been a special experience.	977	3.5%	6.2%	13.8%	31.5%	24.6%	20.4%	4.29
I thoroughly enjoyed my visit to this site today.	984	0.6%	0.7%	5.5%	22.1%	29.8%	41.4%	5.04
It was well worth the money I spent to come to this site.	911	4.0%	1.5%	7.0%	22.4%	24.3%	40.8%	4.84
I was disappointed with some aspects of this site.	964	44.0%	20.7%	14.7%	10.5%	5.6%	4.5%	2.26

General Comment

The results, overall, document the many and varied 'uses' and 'users' of the WTWHA, the embracing activities, experiences, place and identity meanings, environmental quality, and ecosystem services and benefits. Many of these uses and benefits are not picked up in activity-based Recreation Opportunity Spectrum assessments and planning exercises, or in socio-economic based audits. They are nonetheless critical to the social component of triple bottom line impact assessments and to any monitoring exercises addressing reciprocal changes in natural and human landscapes.

Key Points

Frequency of Visits

- A total of 84.9% of community respondents indicated that they had visited the WTWHA, 66.1% reported having been to sites within the area during the past six months, and a further 18.8% had visited during the past year.

Reasons for Visiting

- Community survey respondents visit the WTWHA primarily for recreational opportunities but also for recreational reasons, especially appreciation, relaxation and restoration. To 'accompany and to show the area to visitors and friends' was also a reason frequently nominated.
- For local residents surveyed at the sites, the opportunity to experience and appreciate the aesthetic and natural features of the site, and to rest, relax, and recharge are, again, the most important reasons for visiting.

Appraisal of Natural, Social and Built Environments

- Over 50% of locals visiting WTWHA sites prefer to visit areas that have fairly well developed or very well developed facilities and infrastructure.
- Twenty-six percent of respondents indicated that the site they visited was crowded to some degree, and 14.4% reported that the presence of others at the site detracted from their experience.

Environmental Change

- Responses suggest that local residents are indeed monitoring what is happening at WTWHA places they know well. Some of the changes reported clearly equate with negative impacts upon the WTWHA and the community generally. Most changes deemed worthy of mention were nonetheless positive changes largely related to improved access, infrastructure and policies.

Place Meaning and Attachment

- The Daintree, Cape Tribulation and Mossman Gorge are very important, popular sites that are well used by locals, but these iconic sites also experience heavy interstate and international tourist visitation. Many other, lesser known, more secluded sites were also nominated throughout the region.

3.9 INFORMATION ACCESS AND USE

The survey questions in this section were designed to provide useful information with respect to what sources the community residents were most likely to use for obtaining information about the WTWHA, and how they viewed the availability of WTWHA specific information.

General Findings

Information Sources

When community survey respondents were asked to identify all of the sources of information they had accessed to *learn about the WTWHA*, the most frequently mentioned were 'newspapers' (71.1%) and 'TV' (65.7%), followed by 'word of mouth' (56%) (Figure 3.9.1). Over 40% of community respondents indicated learning about the WTWHA from 'general information centres' (42.8%) and 'books' (44.1%). The least frequently mentioned information sources used were environmental management agency information centres (32.7%), Tropical Topics, the interpretive newsletter of the EPA/QPWS (28.3%), 'at work' (27.5%), and sources at school or university (20.4%).

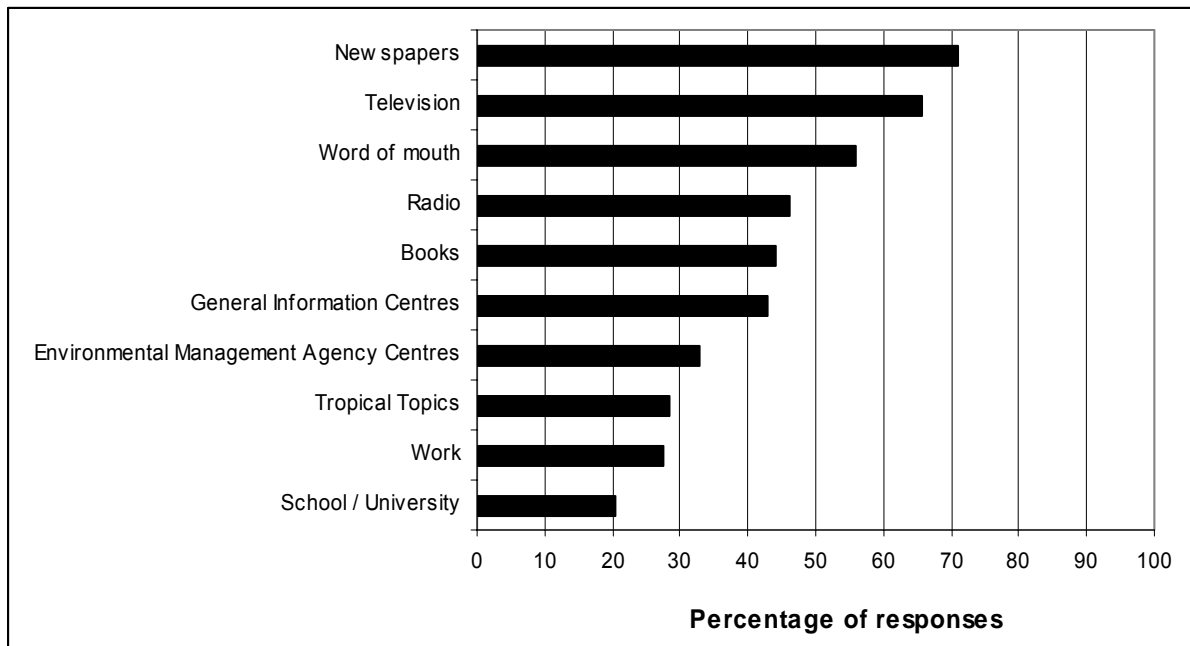


Figure 3.9.1: Information sources respondents accessed to learn about the WTWHA. Respondents were asked to identify all of the sources they had accessed (community survey; n = 675).

When community survey respondents were asked specifically about their use of information sources provided by the WTMA, over two-thirds indicated that they had not accessed any of those information sources (Figure 3.9.2). Of the one-third of respondents who had accessed WTMA produced information, the most frequently mentioned source was 'signage at WTWHA sites' (38%) and 'WTMA leaflet' (27.3%). The WTWHA Newspaper was used by 13.4% of community respondents, while the Neighbours Newsletter was used by 8.9%. The WTWHA website was the least accessed information source used by community respondents (8%).

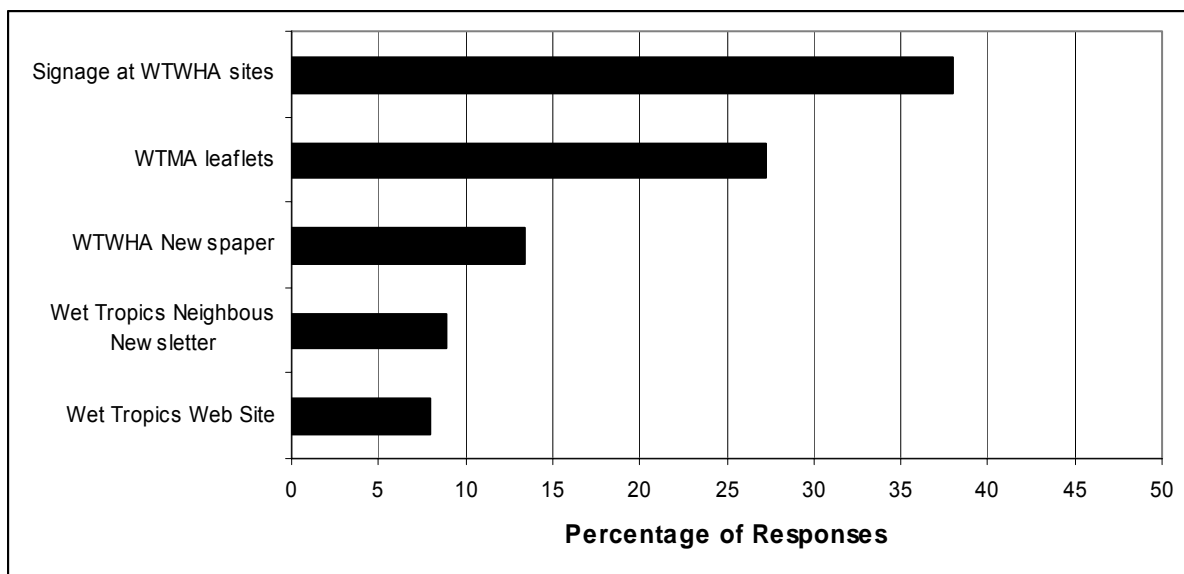


Figure 3.9.2: WTWHA information sources used by respondents (community survey; n = 225).

When questioned at the site level, over half of the locals surveyed (55.7%) indicated that they had not accessed any of the information that was available to them. However, 16.9% of respondents did indicate that they had accessed information about the site prior to visiting from a variety of sources. Most of these local visitors to the sites knew about the sites because they ‘had been before’ (63.8%) or had heard by ‘word of mouth’ (31.3%) (Figure 3.9.3).

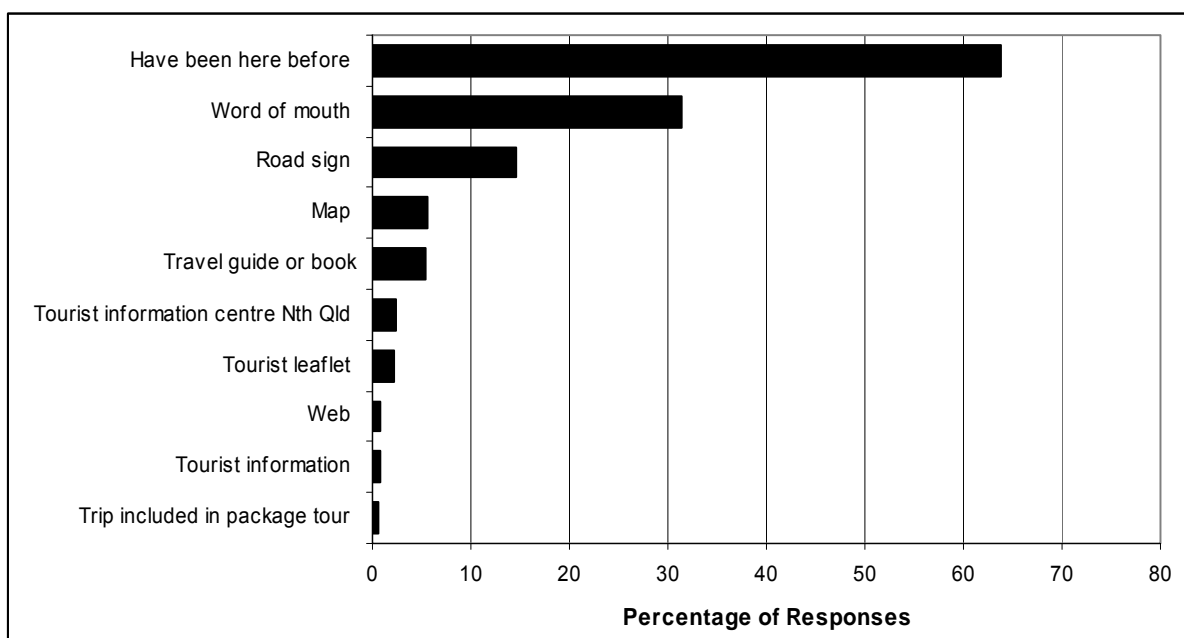


Figure 3.9.3: Sources of information accessed by respondents to the site-level survey before visiting a WTWHA site (n = 1010).

Availability of Information

When community survey respondents were asked to rate the availability of information on the WTWHA and its management, half (49.8%) gave a rating at the lower end of the scale (1, 2 or 3 out of 6). The mean rating of 3.49 would suggest that there is a concern about the ready availability of information (Table 3.9.1). This could indicate that information access is an issue for a substantial proportion of the community. As the question concerned information about both the WTWHA (Area) and its management body, the WTMA (Authority), it is possible that many respondents were referring to a perceived absence of information about WTMA processes, policies and decision-making, rather than information about the WTWHA (Area). Such an interpretation is consistent with open-ended responses to other survey questions suggesting that a perceived lack of transparency with respect to management decision-making has led to some dissatisfaction and experienced frustrations.

Seventy-four percent of the community survey respondents indicated that they did not wish to further access information about the WTWHA, which would suggest that their information requirements are either being satisfied or they are disinterested.

Table 3.9.1: Ratings of the extent to which information about the WTWHA and its management is available (community survey; n = 677).

Scale	Rating (Mean = 3.49)	Percentage of Respondents
Full extent	6	7.1%
Considerable extent	5	16.7%
Moderate extent	4	26.4%
Slight extent	3	24.7%
Very little extent	2	17.9%
Not at all	1	7.2%

The site-level survey respondents' appraisal of the information and signage available at the ten survey sites indicates that the majority of respondents found the information accessible, interesting, and easy to understand (mean rating of >4 out of 6) (Table 3.9.2). Over 36% indicated that the indigenous cultural information at the sites was not interesting, clearly presented, or of assistance in understanding the significance of the area. Their appraisal of the site-level information and signage available at the ten survey sites is remarkably similar to survey respondent appraisals overall, which were moderately positive, but with appraisals varying across sites. These site differences are detailed in Bentrupperbäumer and Reser 2002a.

Table 3.9.2: Ratings of the on-site information available at WTWHA sites (site-level survey).

Items	n	1 Strongly Disagree	2	3	4	5	6 Strongly Agree	\bar{X}
The maps and directions at this site:								
• Were easy to locate.	897	4.9%	3.8%	9.6%	19.3%	27.3%	35.1%	4.65
• Helped me to find my way around.	849	6.9%	4.5%	11.0%	22.9%	25.7%	29.1%	4.43
The rules and regulations at this site:								
• Were easy to determine.	894	4.3%	5.3%	9.3%	20.1%	24.3%	36.8%	4.65
• Enabled me to clearly identify acceptable activities.	868	4.4%	5.5%	10.0%	19.4%	24.9%	35.8%	4.62
The safety information at this site:								
• Was easy to locate.	882	10.1%	7.6%	14.2%	19.3%	21.9%	27.0%	4.16
• Was easy to understand.	844	9.1%	6.4%	12.7%	18.8%	22.6%	30.3%	4.30
The natural / ecological information at this site:								
• Was interesting.	882	4.3%	5.6%	10.4%	21.4%	27.2%	31.1%	4.55
• Was clearly presented.	860	4.7%	5.2%	11.0%	21.3%	27.8%	30.0%	4.52
• Helped me better understand the ecological processes of this area.	852	5.5%	7.0%	12.0%	23.6%	24.8%	27.1%	4.36
The indigenous cultural information at this site:								
• Was interesting.	762	36.0%	10.9%	15.7%	18.0%	11.0%	8.4%	2.82
• Was clearly presented.	751	35.4%	11.1%	15.0%	15.4%	13.0%	10.0%	2.90
• Helped me to understand the significance of this area for indigenous Australians.	752	36.6%	11.7%	13.8%	16.9%	11.4%	9.6%	2.84

Key Points

- Available community awareness and education materials and visitor information brochures are not being accessed and utilised effectively by the community. The reasons for this are unclear.
- The sources of information about the WTWHA most readily utilised by community residents are television, newspapers and word of mouth.
- For those community residents visiting the WTWHA sites, prior experience, word of mouth and road signage are the most frequently utilised sources of WTWHA information.

3.10 MANAGEMENT OF THE WORLD HERITAGE AREA

Survey items in this section of the report were designed to explore how knowledgeable the resident community was regarding those agencies responsible for managing the WTWHA, their respective management responsibilities, community expectations of these agencies, and their perceived performance in managing and protecting the Area. Other items explored how residents view the cultural heritage attributes of the WTWHA, and how they perceived the effectiveness of current management and protection strategies. Survey items also looked at the partnership process the WTMA promotes as a management strategy for this protected area.

Findings

Management Agencies

Who are they? Community survey results indicate that the community appears to be unsure which agency or agencies manage the WTWHA, evident in the labels and number of organisations identified, and the percentage of respondents who did not or could not provide an answer. Just over thirty-six percent of the community survey respondents could not answer (5.5%) or stated they did not know (31%) who managed the WTWHA. Many respondents who did answer this open-ended question gave multiple answers, leading to 962 responses. Only 16.7% of the responses identified the WTMA as the relevant management agency, with 21% identifying environmental agencies such as DEH, NP, EPA and QPWS (Table 3.10.1).

Table 3.10.1: The organisations nominated by respondents as those responsible for the management of the WTWHA (community survey; n = 788). Note, this listing represents terms/labels used by respondents, and the numbers account for multiple responses often given by an individual.

Government Departments	Environmental Management Agencies	
Federal: DEET, AFFA, Federal Minister for Environment 23	DEH, NP, EPA, QPWS, Department of Environment 208	
State 24	WTMA, Wet Tropics 161	
Local: Councils, Shires 26	DPI, DNR, Forestry 60	
Government 42	Fisheries 3	
(115)	Conservation Commission 1	
International	Conservation and Land Management 1	
World Heritage Organisation 3	Conservation Department 4	
UNESCO 2	GBRMPA 7	
(5)	Department of Mines 2	
Community / Conservation Organisations	(447)	
Australian Tropical Rainforest 1	Other	
C4 7	CSIRO 3	
CAFNEC 3	Us, locals, everyone, no one 7	
Envirocare 1	Private landowners 1	
Indigenous Community, Aboriginal Land Council 4	(11)	
Conservation groups 2	Total number of responses given:	610
Rangers 7		
Landcare 2	Don't Know 299	
Green Peace 2	Did not answer 53	
Qld Tourism/Tourist Info Centres 3	(352)	
(32)		

Logo: As part of this management agency recognition, community survey respondents were asked to describe the logo/logos that identify these areas as the WTWHA. Forty-nine percent of the respondents to this open-ended question indicated that they did not know of a logo (Figure 3.10.1)



Figure 3.10.1: Examples of Wet Tropics logos referred to by community survey respondents.

When asked to describe the logo, only 27.8% of respondents attempted to do so. Ten percent of the community survey respondents linked the cassowary with the logo, while 7.1% named the frog. Nearly 3% of respondents stated that the logo was once the cassowary and was now the frog. Only 23% of those surveyed were able to correctly identify some general elements of the design. There is obviously some confusion in the public mind reflecting the diversity of logos used to not only represent the different management agencies across the WTWHA, but also the now multiple logos used to identify area, agency and partnerships.

Examples of responses relating to the design of WTWHA logos:

- “Because the agencies have done nothing to conserve cassowaries, it is now just a common cane toad.”
- “Dead frog on leaf; bring back the big chook and feather duster.”
- “It’s a frog, [a] tree would be better.”
- “Leaf symbolising diversity of plants, frog symbolising more than one hundred animal species.”
- “Originally [the] cassowary, bowenia fern, better than current frog.”

Expectations: When asked about their expectations of the management agency, 42.3% of the community survey respondents did not reply. The remaining 455 provided 661 responses to the open-ended question, which were categorised into four major and fourteen minor categories (Table 3.10.2). These answers must be viewed within the context of considerable community confusion about which agency is responsible for managing the WTWHA, as evident in the above-mentioned results.

Table 3.10.2: Community expectations of management agencies (community survey). Responses were provided by 58% of total respondents.

Expectations of Management Agencies		Percentage of Total Responses
What Management Agencies should <u>do</u>:		
Protect, Conserve, Preserve (59.5% of responses identified)	Direct language use	30.7%
	General Maintenance: Manage; maintain; look after; care for; upkeep; retain.	16%
	Regulatory: Enforcement; policing; prosecuting; patrolling; controlling; permitting; stop / control logging, development, industry, mining, commercial exploitation and destruction.	7%
	Resource Management: Kill, control feral animals and plants; restoration.	4.1%
	Strategic Management: Decision making; develop policies, laws; strategic planning.	1.7%
Consult, Educate, Promote (12.3% of responses identified)	Public Relations: Consultation; communication; feedback; community involvement; consultation with Traditional Owners.	6.2%
	Public Education: Education; information; increase awareness; history.	5%
	Promotion: Indigenous ecotourism; assets of World Heritage Area; expansion and growth.	1.1%
Amenity, Infrastructure (9% of responses identified)	Access: Provide more and better; controlled; sustainable.	5.2%
	Infrastructure: Provide walking tracks, facilities, signage and access roads.	3.7%
What Management Agencies should <u>be</u>:		
Corporate Ethics, Behaviour, Competencies (19.2% of responses identified)	Behaviour: Fair; consistent; accountable; honest; committed; common sense; professional; understanding; considerate; respectful; culturally aware; proactive; realistic; integrity.	9.2%
	Outcomes / Productivity: More and better; effective; to the full; good standard; sustainable; sensible; practical; proper.	6.4%
	Informed / Knowledgeable: Research; assessment; monitor; knowledgeable; report changes.	2.3%
	Balanced: Conservation and economics; politics; realistic attitude to development and agriculture.	1.4%

Responses were very interesting and can be seen to be at odds with conventional wisdom and the seeming operating assumptions of some agencies. The majority of responses related to community expectations of management agencies to 'protect, preserve and conserve' (59.5%). The strong endorsement of protection is buttressed by the fact that 6.4% of responses specifically stated that 'management', 'good management', 'effective management', or 'better management' was the principal expectation of what management should be. A number of responses simply indicated 'more common sense', 'more management control', 'accountability' or just that the management agencies 'do their job'.

Protection and Management of Natural and Cultural Attributes

Community survey respondents were then asked to rate the extent of protection and management being given to the natural and cultural attributes of the WTWHA by management agencies. Responses to this question are particularly informative with respect to how respondents are viewing the effectiveness of management agencies in addressing the protection and management of natural and cultural attributes. At the same time, these responses are an indirect measure of how residents are appraising the condition of the environment that surrounds them. Pressure-condition-response frameworks utilised in State of the Environment reporting are increasingly focusing on performance measures, which are, in effect, what is being reported here (e.g. Eckersley 1998; Hockings 2003; Hockings *et al.* 2000; ASEC 1996, 2001).

Natural Attributes: Clearly, community respondents' knowledge about the WTWHA and natural resource management are generally interrelated with their appraisals and judgments concerning management policies and performance. Approximately 20% of respondents answered 'don't know' to this set of questions. Many residents of the Wet Tropics bioregion, particularly those in urban areas, might not have felt sufficiently competent or knowledgeable to offer a judgment on these particular and largely ecosystem issues. Of those respondents who did offer an opinion, between 11.9% and 13.5% feel that 'biodiversity', 'scenic landscape' and 'waterways and wetlands' were being protected and managed 'to the full extent' (Table 3.10.4). This drops to 5.3% and 5.9% respectively for 'feral animal pests' and 'environmental weeds'. Indeed, 22.5% of respondents believe that feral animal pests are not being managed at all. What is clear is that a considerable number of respondents, between 65.8% and 69.2%, are giving a rating of <3 on the 6-point scale for the domains 'feral animal pests' and 'environmental weeds'.

Table 3.10.4: Respondents' ratings of the extent of management and protection of the natural attributes of the WTHWA (community survey; n = 788).

Items	Don't Know	Positive Responses	1 Not at all	2	3	4	5	6 To the full extent	\bar{X}
Biodiversity – plants, animals and ecosystems of the rainforest (protected)	20%	630	2.5%	4.0%	11.7%	35.9%	34.0%	11.9%	4.30
Scenic landscape (protected)	18.2%	644	1.9%	6.1%	11.6%	33.9%	33.1%	13.5%	4.31
Waterways and wetlands (protected)	18.5%	642	2.0%	8.7%	16.7%	29.9%	30.4%	12.3%	4.15
Feral animal pests (managed)	19.1%	637	22.5%	26.1%	20.6%	17.3%	8.0%	5.3%	2.78
Environmental weeds (managed)	20.3%	625	16.3%	27.4%	22.1%	20.6%	7.7%	5.9%	2.94

Cultural Attributes: Just over 71% of community survey respondents either did not reply or answered that they did not know which agency was responsible for the management and protection of the cultural attributes of the WTWHA. Of those who did respond, the majority nominated environmental management agencies (23%), followed by Indigenous organisations, as those agencies responsible for cultural asset management.

Respondents were then asked to rate the extent of management and protection given to the cultural attributes of the WTWHA. The responses must be interpreted with caution, as there

would appear to be considerable confusion about what cultural attributes actually are in a World Heritage or WTWHA context. The survey items distinguished Aboriginal cultural heritage from non-indigenous cultural heritage, as the WTWHA has a rich post-contact colonial and more recent history of particular salience to both Aboriginal and non-Indigenous residents. Further, matters of place meaning and attachment are imbued with particular cultural meanings, and the presentation of the cultural values of the WTWHA has typically focused on particular cultural contexts and values (e.g. von Droste *et al.* 1995; Rose 1996; Uzzell and Ballantyne 1998; McKercher and du Cros 2002). The survey items have attempted to explore how community residents view this domain of cultural heritage values and attempts to assess perceived management effectiveness.

Approximately one-third of respondents answered 'don't know' when asked to rate the level of protection and management of non-indigenous and Aboriginal cultural sites. Responses to the non-indigenous historic sites indicate that many respondents are not impressed with how these sites are being protected and managed. Only 22.3% rated management of non-indigenous sites 'to a considerable extent' (16.5%) or 'to the full extent' (5.8%) (Table 3.10.5). A greater proportion of respondents (40.6%) believed that Aboriginal cultural sites were managed 'to a considerable extent' (23.3%) or 'to the full extent' (17.3%). It should be remembered that a relatively small and under-representative proportion of community respondents were indigenous (28%). It is possible that the collective judgment of the indigenous community of management performance and effectiveness is very different from the views expressed by this survey sample.

Table 3.10.5: Respondents' ratings of the extent of management and protection of the cultural attributes of the WTWHA (community survey; n = 788).

Items	Don't Know	Actual Responses	1 Not at all	2	3	4	5	6 To the full extent	\bar{X}
Non-indigenous historic sites	32.5%	497	11.9%	14.5%	20.9%	30.4%	16.5%	5.8%	3.43
Aboriginal cultural sites	32.7%	497	4.2%	9.9%	15.7%	29.6%	23.3%	17.3%	4.10

Community Involvement

Community survey participants were asked to indicate the degree of consideration that community interests have been given and their own involvement in the consultative processes of the WTWHA. Sixty-three percent of respondents who answered the question replied with a rating of between 1 and 3 (in a 6-point scale) (Table 3.10.6). This does not appear to be a strong expression of faith in WTMA's commitment to considering community interests in the development of management policies. Indeed, only 3.2% of respondents considered that their interests were being taken into account 'to the full extent'. However, an overwhelming majority of respondents (88.1%) report that they have not been involved in any discussion forum or consultation process. This could suggest either a lack of awareness and/or interest by community residents to be involved, or a lack of opportunity provided by the management agencies. Of those who have been involved in the consultative process, only 6.9% indicated that there was adequate opportunity to contribute 'to the full extent' (rating 6). The majority of respondents (63.7%) gave a rating of between 1 and 3 ('not at all' to 'slight extent'). Overall, the majority of respondents felt that no substantive partnership existed, nor was there adequate communication between management agencies and the community. The community management partnership being sought and fostered by the WTMA would appear to be some distance from being a success.

Comparative Findings

The AGB McNair Survey item relating to awareness of the WTMA read, “What government body currently has control over the Wet Tropics World Heritage Area?” In both the 1993 and 1996 surveys, only 5% of WTWHA regional city residents were able to correctly identify the WTMA as the governing body. Residents in the Northern region and Cairns were over twice as likely to correctly identify the WTMA (Northern region 12%, and Cairns 9%).

Support for the WTMA was not directly measured in the AGB McNair surveys. The 1996 report did conclude that local residents feel the public should be better informed of the WTWHA and its management (19%), and that some people feel it is important to have their views heard to a greater extent than they perceive currently occurs (16%). Two survey items could be seen as addressing support for the *Wet Tropics Management Plan* itself. These items related to the perceived effectiveness of the plan, and respondent support for the proposed measures outlined in the plan. Fifty-two percent of respondents indicated that they had no knowledge or understanding of the plan. Of the 48% of respondents who offered an opinion on the plan, 15% believed that it was not effective; another 10% felt that it was only somewhat effective, and 23% indicated they believed the plan to be effective. Overall support for the measures included in the plan again needs to be qualified by the fact that 49% of respondents indicated that they did not have sufficient knowledge of the plan to respond. Of those 5% of respondents who provided some indication of support, 11% selected ‘yes, definitely’, 27% selected ‘yes, mostly’, and 12% selected ‘no support’.

These results suggest that the most salient and important expectation of the community is for effective protection and preservation (60%). It is important to appreciate that for many community residents, the WTWHA is literally in their ‘backyard’. The Area’s boundaries are contiguous with the suburbs of Cairns and the edges of many population nodes in the Area, and the Area has neighbours who are physically and immediately adjacent. This is a rather different situation than in North America’s ‘gateway’ communities where demographic, residential and recreational trends have led to many large National Parks coming under virtual siege by a dramatic influx of affluent, middle-aged and retiring ‘baby boomers’ who want to live adjacent to a National Park or protected area. Yellowstone National Park has become a particular magnet for such haven seekers, with property values skyrocketing and development pressures dramatically escalating (e.g. Howe *et al.* 1997). Other communities are more similar to the WTWHA, with Estes Park, Colorado, for example, being virtually a suburb of Boulder and Denver, but also a ‘gateway’ to Rocky Mountain National Park, with much of the park wildlife moving backwards and forwards from park to community because of the constraints of a fractured ecosystem under dramatically increasing pressures and strains. The City of Cairns arguably provides a similar context.

General Comment

The questions in this section can be considered more of a general barometer of community feelings and sentiment than a set of specific judgments on nominated issues. Nonetheless these responses would suggest that the community management partnership being fostered by the WTMA is still at some remove from stated objectives, at least as far as a majority of community respondents are concerned. Local appraisals of site infrastructure and facilities were also remarkably consistent with visitor appraisals overall. It is evident that very few respondents believe these WTWHA attributes are being as adequately or effectively protected or managed as they could be.

The substance and significance of respondents’ perceptions and appraisals of management agency performance and effectiveness are inevitably coloured by catchment communities’ knowledge and understanding of World Heritage Area status and natural resource management considerations generally, and those of the WTWHA specifically.

Notwithstanding a surprising overall low level of perceived and objective knowledge of WTWHA management and management-related matters, respondents who addressed these survey items appeared to be reasonably well informed and clear about what were often strongly felt and expressed views.

Key Points

- It is clearly very important to distinguish the WTWHA (Area) from relevant management agencies as quite separate attitude and appraisal domains when undertaking a survey such as this.
- Community perceptions, support for, and endorsement of the WTWHA are very different from, and far more positive and unqualified, than are perceptions of and endorsement of management agency policies, practices and performance.
- The catchment community clearly sees and understands WTWHA protected area management as primarily consisting of protection, conservation and preservation, and it is with respect to these key areas of responsibility that perceived outcomes are falling short of the community's expectations.

4. DISCUSSION

It is useful to briefly situate the research undertaken and this reporting of survey findings in order to more strategically focus on a number of matters inviting discussion and consideration, and to address the expanded and refined terms of reference for this community survey. The research was intended, in part, to examine what changes in community perceptions, appraisals and attitudes might have taken place in the WTWHA catchment region since the 1992, 1993, and 1996 community surveys undertaken by AGB McNair and the 1999 AC Nielsen survey. This constituted both a monitoring exercise as well as an evaluation research exercise with respect to community perceptions of management policies and performance.

A further and important research objective was to establish a pragmatic methodology and survey instrument incorporating strategic and sensitive indicators for measuring, monitoring and researching salient changes in community knowledge, expectations of and support for the WTWHA and its management and policies, and for establishing, identifying, exploring and monitoring issues of community concern, patterns of use and impacts, and the multiple and changing roles of the WTWHA in the life of catchment communities. In this discussion we also raise and address a number of considerations and implications that do not stem directly from the community and site-level survey results themselves, but do follow directly from our experience and involvement in this survey research, and our many discussions with client agencies and catchment community residents.

4.1 ROLE OF THE WORLD HERITAGE AREA IN THE LIFE OF THE COMMUNITY

General

The role of the WTWHA in the life of the community can be understood in a number of ways. An immediate and conventional understanding relates to how local communities value the contribution of natural and cultural heritage to their well being and perceived environmental quality and quality of life (e.g. Bushell *et al.* 2002; Hartig 1993; Kaplan 1995; Kaplan and Kaplan 1989; Kaplan *et al.* 1998; Mannell and Kleiber 1997). This encompasses the benefits of recreation, relaxation, restoration, spiritual inspiration and renewal, and appreciation of the natural world. Such exceptional natural environments, which in the case of the WTWHA include a number of well known and popular national and state parks, also provide substantial employment and economic dividends particularly with respect to tourism (e.g. Clarke and Hills 2004; Driml 1997; Lynch and Veal 1996).

Protected areas provide a local amenity which supports local government in the provision of healthy environments, open spaces and recreation opportunities, provide large areas for carbon sequestration, contribute to energy policy and to Australia's international obligations, and provide research and education facilities. But above all there is the assumption that protected areas play a role in the maintenance of a set of cultural values which contribute to community health, well being and a strong sense of place (Bushell *et al.* 2002; de Merode *et al.* 2003; Eisenhauer *et al.* 2000; Hall and McArthur 1996; Malle *et al.* 2002; Muir 1999; Nassauer 1997; von Droste *et al.* 1995). In the present research context, the role of the WTWHA in the life of the community was also articulated and operationalised with respect to the project terms of reference, which aligned with more conventional NRM social survey objectives (iii) (e.g. Berkes *et al.* 2000; Worboys *et al.* 2001).

The survey addressed the role of the WTWHA in the life of the community through items relating to salience and importance, place meaning and attachment, use, favourite places and concerns (see Appendix 8 Survey Procedure). In addition, many respondents tended to

address this matter, at least indirectly, in their open-ended comments at the end of the questionnaire. The general findings relating to these items were reported and briefly discussed earlier in this report and a sampling of additional responses, comments, and observations is included in Appendix 6.

What do the findings, as a whole, tend to say with respect to how the 'community' sees, experiences and understands the role of the WTWHA in their life and the life of the community? It seems clear from the current findings and past history that the World Heritage listing, and the protracted debate leading up to the listing, ensured that the WTWHA was a particularly important feature of the political and historical 'landscape' of the region, and an object collective lesson in the nature and politics of local communities and protected areas (Hall 1992; McDonald and Lane 2000; Mercer 2000; Anderson 1987, 2002; Figgis 1999, 2000). It is also clear that the local community sees the WTWHA as an integral part of their quality of life and environment, as an important component of place meaning and identity, and as an amenity and resource which provides for community recreation, restoration, and inspiration, as well as a livelihood for many.

Recent reports and planning documents clearly attest to the importance of the surrounding natural environment, though the WTWHA is not always specifically identified (e.g. FNQRPAC 1998):

"The permanent population of the Shire feels a strong sense of attachment to and pride in the Shire, and a deep appreciation of its natural assets. Indeed, high environmental values are prominent among the community – albeit from potentially different motivations from different elements. For some with tourism interests it is regarded an economic necessity to protect and preserve the area's natural beauty in order to maintain a sustainable industry. For others, however, reef and rainforest is the prominent virtue in itself. Residents also feel a strong attachment to a tropical lifestyle that goes with their environmental values."
(Douglas Shire Council 1998, p. 35).

"My Favourite Places"

The local natural environment plays an important role not only in perceived environmental quality and quality of life but also in place meaning and self-identity, as alluded to earlier (e.g. Altman and Low 1992; Berleant 1997; Groat 1995; Gustafson 2001; Hirsch and O'Hanlon 1995). Survey responses here are particularly illuminating. When local residents of the Wet Tropics bioregion provided additional comments and observations that characterised the place where they live, the rainforest, national parks, ready access to peaceful and unspoilt natural environments, and specific sites within the WTWHA are invariably mentioned. Importantly, local residents' own identity and sense of being a responsible community member and/or landholder become intimately tied up with local geography and region, such that specific environmental values, concerns and specific issue-related attitudes are of particular salience and personal significance (e.g. Birksted 2000; Bonaiuto *et al.* 1996; Borschmann 1999; Eisenhauer *et al.* 2000; Davenport and Anderson 2005; Penning-Rowse and Lowenthal 1984; Ucko and Layton 1999), as responses in this community survey indicate:

"Licuala: Tully Gorge State Forest, Murray Falls – Hull River Heads and Tully River – beautiful spots for peaceful enjoyment of fauna and locations. Favourite place: hard to choose – perhaps Murray Falls – a lovely place to visit and take our friends visiting from Sydney on picnics and short walks."

(Female; aged 76)

“Russell River, between Chuckalunga Creek and the Golden Hole – this stream's source is predominantly from Bartle Frere and has virtually no human impact until it reaches the Golden Hole. It is a cathedral of waterfalls, stream crossings, granitic and volcanic features and a range of rainforest types, rare and ancient species, and magnificent clear water pools. BUT ALL OF THE [WORLD HERITAGE AREA] IS BEAUTIFUL.”

(Male; aged 64)

“Ten years ago I would climb Clump Mountain and take long walks on [the] Tablelands – now find it more difficult as I have no transport. Keep my little bit of rainforest as authentic as possible. Love to wake to the sound of so many birds. After rain [I] love to hear the frogs. Rainforest to me means peace.”

(Female; aged 74)

The impressive depth and strength of community attachment to, and emotional and lifestyle involvement with, the WTWHA is difficult to capture with a community survey exercise involving the completion of a structured six-page questionnaire. Importance ratings and open-ended responses nonetheless provide a sense of just how important these individual and community connections with the WTWHA are. In many ways the conferring of World Heritage status on the Area gave formal and international recognition to what was already a historical and community-conferred special status and sacred trust.

Over the past decade a number of in-depth PhD studies of community perceptions, understandings and appraisals of the WTWHA have been undertaken by James Cook University students (e.g. Bentrupperbäumer 1997; Bragg 1995; Sherlock 2001; Young 1997). The sentiments recorded by Bragg in her study of individual-environment connections in the Wet Tropics bioregion are particularly informative, and well capture this depth of feeling:

Participants indicated that they felt connected to a wide range of natural environments (e.g., “tops of mountains”, “the beach”, “the heavens”, “Far North Queensland rainforest”), which were often local places (e.g., “Mulgrave River”, “Lake Tinaroo”, “Tully Falls Gorge”). In other words, in places which participants felt ‘connected to’ they felt comfortable, secure, peaceful enjoyment and a sense of belonging. Connection to natural environments, however, also involved feelings of humility, wonder, awe, beauty, inspiration and spirituality not mentioned in relation to human-made or intermediate environments. Most of these experiential accounts were elicited by the words ‘nature’ and ‘the land’. It appears that these words not only elicit the most ‘systems’ conceptual understandings, but also carry a more cultural or spiritual meaning. (Bragg, 1995, p.186)

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Benefits and Costs

An important objective of the community survey was to document the perceived contributions and costs to the regional community of the WTWHA itself, its management and policies, and the positive and negative impacts of visitation and use. It is instructive that the original terms of reference for the community survey were in terms of “perceived socio-economic contribution and/or disbenefits of the WTWHA to the community”. Such a framing of the undertaking and research would seem to derive in part from a current and prevailing focus on ecosystem services in natural resource management and conservation biology, and a seeming philosophic and methodological stance on the part of the WTMA to the effect that a social survey of community “attitudes, awareness, satisfaction and support” is essentially a socio-economic assessment and analysis (WTMA 2000a).

Given the overall nature and intent of the terms of reference for the survey and the authors’ understanding of the multiple objectives and concerns of the agency and stakeholder steering committee, a collective judgment was made that framing the project as a socio-economic exercise was not helpful. Such a framework is also unsympathetic to research that is focusing on people’s experience, values and lifestyles, and their appraisals of non-monetary benefits or psychosocial environmental impacts (e.g. Bell and Morse 2000; Becker and Jahn 1999; Bazerman *et al.* 1997). Rather, the approach taken was to understand and conceptualise the undertaking as an in-depth survey of ‘community’ perceptions, appraisals, attitudes and concerns of the WTWHA, its management, and its contribution to the life of the community, with the salience and importance of socio-economic considerations left as an open empirical question to be explored. Given the stated areas of interest in the terms of reference and in consultations, it was deemed useful to simultaneously frame the research as a *psychosocial* impact assessment of the WTWHA, its management, and the impacts of visitation and use on the community (Reser and Bentrupperbäumer 2001b; 2005). This allowed for a clearer and more encompassing consideration of perceived benefits and costs to individual respondents and the community as a whole, and how and to what extent community residents saw and experienced the WTWHA as a part of their life and community.

Survey responses with respect to the *personal*, as distinct from *community* advantages and disadvantages, must be treated somewhat differently. The individual business person or property owner may have a particular issue with regulations or perceived economic loss or benefit relating to their livelihood, but would have a different view as a community resident providing comment on more general community impacts. It is noteworthy that AGB McNair changed their wording from “for you as a North Queenslander” in 1992 to “for local communities” in 1993 and 1996.

What is particularly salient is that the socio-economic advantages received the lowest importance ratings overall as contrasted with a spectrum of other social and psychological benefits. The differences in the importance ratings in this section of the survey were among the greatest found in both the community survey and the companion site-level study. It is noteworthy that the highest importance rating was given to the benefit / advantage “It is good to know it is there, that it exists”. This type of valuation and expression of fundamental importance is wholly missed in socio-economic assessments generally, as is the fact that everyone is a ‘stakeholder’ when it comes to World Heritage assets, and that the existence and health of the WTWHA may be of considerable importance to the perceived environmental quality and quality of life of individuals whose residence may be remote from North Queensland, or for those many local residents who do not physically visit or otherwise directly ‘use’ this environment. Such virtual use has indeed become an important touchstone and consideration in environmental assessment (e.g. Gee 1994). It is also noteworthy that the strong emphasis on the economic benefits of tourism for the local community, which finds repeated expression in the WTMA planning documents (e.g. WTMA 2000b), does not appear to align with community perceptions and priorities.

Open-ended responses with respect to the advantages and disadvantages associated with the WTWHA were nonetheless revealing of some particular discontents and issues. It should be kept in mind, however, that survey respondents on the whole are more likely to provide and detail disadvantages and dissatisfactions in an open-ended response format rather than what are often more intangible advantages. It was also the case that 14.6% of respondents replied that they could see no *personal* disadvantages, with a further 70.1% of respondents leaving this item blank. In the case of perceived *community* disadvantages, 7.7% replied 'none' and a further 70.6% left the item blank. This would suggest that advantages are far more salient than disadvantages.

Of particular interest with respect to the related open-ended question concerning perceived community disadvantages, is the fact that only forty individuals out of 788 respondents (5.1%) provided a response to the question that related to adverse employment impacts, a dramatic change from reported community level concerns at the time of WTWHA listing. For the minority of respondents who identified specific personal disadvantages, 'rules, regulations and restrictions' was the most frequent response, followed by 'feral plants and animals'.

"As a farmer, I have problems with feral pigs. They use these forests as a hideout, they come at night to destroy crops."

(Male; aged 47)

Open-ended responses with respect to the perceived disadvantages associated with the WTWHA for the regional community provide a different and arguably more important picture in terms of perceived social impacts, keeping in mind that the proportion of respondents who addressed this open-ended item was low (21.7%). The most salient 'community' costs and impacts related to a perception of restricted employment and economic opportunities, industry and agricultural issues, regulations and restrictions, and perceived impacts on the community relating to tourism influx and emphasis, community conflict, and incidental crime. Somewhat less salient for these respondents were adverse impacts relating to feral plants and animals, management issues and political issues.

"Millaa Millaa was a thriving town until the sawmill closed. There is high unemployment and the town is depressed. There are no jobs for people. The heritage rainforest does not make jobs for people living in small towns."

(Female; aged 56)

While these issues / disadvantages were clearly very important for those respondents who mentioned them, with most mean importance ratings well over 5 (scale of 1 to 6), both the nature of the issues, and the modest proportion of respondents who identified these as WTWHA-related disadvantages provide further evidence that the salience and importance of benefits far outweighed perceived disadvantages. Having said this, it is nonetheless important that management consider and address these issues and it is significant that the majority of these are, effectively, expressed 'dissatisfactions', rather than disadvantages, and typically relate to land management issues and responsibilities. Further, reference to disadvantages relating to employment and economic opportunities must be considered in the larger context of the clear trade-offs relating to a changing regional economic base, with regional tourism, for example, largely supplanting logging in the WTWHA and a number of other primary industry activities.

Impacts and Impact Assessment

The survey research has constituted, in part, a *psychosocial* impact assessment of the WTWHA, WTMA management, and WTWHA visitation and use (Reser and Bentrupperbäumer 2001b). It differs from conventional social impact assessments (SIAs) in that it is an assessment of the impacts of the changed status of an area to a World Heritage protected area, as well as being an assessment of an ongoing set of pressures and processes, including the management regimes in place, tourism, local visitation and use, the impacts of national and international visitation and use on local communities, residential development pressures, and regional industries and land management practices (e.g. Rao and Geisler 1990; Reading *et al.* 1994; Sun and Walsh 1998). Such a *psychosocial* impact assessment is also distinctive in that impacts on individual lives, experiences, perceived environmental quality, and community concerns are considered important impact parameters and domains, and a greater effort is made to measure and document related psychological variables, such as attitudes, appraisals, experienced conflict, and perceived involvement in decision making (e.g. Reser and Bentrupperbäumer 2001b; 2005). In addition, psychosocial impact assessment is more likely to give balanced consideration to both positive and negative impacts and consequences. (This is inherently more difficult in the case of the exclusively biophysical impacts of visitation and use in a protected area). The community survey format used in this research has allowed for a systematic sampling and documenting of individual and, collectively, community views on a spectrum of WTWHA and WTMA-related matters. In this way, the psychosocial impact assessment dovetails with an assessment of the role of the WTWHA in the life of the community, particularly when the frame of reference includes perceived advantages and disadvantages.

The preceding section addressed a number of the perceived benefits and costs of the WTWHA and WTMA in the eyes of catchment community residents. These are important components of a psychosocial impact assessment and a social survey addressing protected area management needs. It is worth more closely considering the nature of perceived threats and impacting processes, however, as these both create and constitute salient areas of community concern, and the extent to which these threats are viewed as being adequately addressed relates very directly to perceptions of management performance and effectiveness. The survey findings suggest that the threats to the WTWHA the community residents see as particularly salient relate to human activities and introduced animals, plants and pests. It is noteworthy that over 50% of all open-ended responses with respect to perceived threats related to human activities, both inside and outside the WTWHA.

The specificity of the introduced animal and plant threats mentioned, the frequency with which these threats were mentioned, and the very low ratings with respect to their being adequately managed, all suggest that these are real and important issues and matters of concern for the community, along with human impacts, concerns which they feel are not entirely shared or adequately addressed by management agencies, and in particular, the WTMA itself.

Perceived threats to the WTWHA:

“Inconsiderate and inappropriate PLANNING DECISIONS by COUNCIL; commercial interests – LOGGING, RESIDENTIAL, etc.; DEVELOPMENTS.”
(Female; aged 76)

“Feral animals, e.g. pigs, must be controlled. Feral plants, e.g. raspberry bushes along roadways; Singapore daisy along beaches; and stringing tree.”
(Female; aged 56)

In the context of comparing present findings with previous survey results, it is interesting that the AGB McNair surveys explicitly asked residents about perceived impacts, but particularly socio-economic impacts. “What effect, if any, has the World Heritage listing had on the economy of your local community so far, a positive effect, no effect or a negative effect?” The wording of this item changed in 1993 to “What sort of effect overall do you think the World Heritage listing of the North Queensland rainforests has had on the local communities?” (Response options were: ‘positive’, ‘none’, ‘negative’, ‘some positives and negatives’, and ‘don’t know’). An additional impact item in the 1992 survey was “Thinking about recreational activities, how do you think World Heritage listing will affect opportunities in the future?” While these items generated some interesting community responses, the questions were keyed to past and future impacts of the listing itself; they did not address the ongoing impacts of visitation and use on local residents or local communities. Current thinking in social impact assessment (e.g. Dale *et al.* 2001; Reser and Bentrupperbauer 2000, 2001a, 2005; Thomas and Elliott 2005; Vanclay 2002; Jackson *et al.* 2004) would argue strongly for a more encompassing set of indicator domains and measures which are sensitive to residents’ experience and everyday life circumstances, and to their judgments with respect to the nature and magnitude of changes around them. It is also very important to distinguish between perceived impacts on *the protected area* and perceived impacts on *adjacent human communities*. These are quite separate impact considerations and domains for monitoring (i.e. the respective biophysical and human landscapes), but are, of course, ultimately interrelated in their consequences.

Visitation and Use of the WTWHA by Community Residents

Community survey visitation and use figures clearly evidence a high level of use, with 85% of respondents indicating that they have visited WTWHA sites (66.1% of these respondents reported that they had visited these sites within the past six months). That just over 8% of respondents visit or pass through the WTWHA virtually every day, and another 12.3% at least once a week, is an important index of just how interwoven this landscape is with the lives of community residents. As might be expected, reported reasons for visitation are diverse for community residents and include a broad spectrum of motivations, and specific recreational activities and experience opportunities. While open-ended activity responses included substantial reference to bushwalking, swimming, camping, barbecues and sightseeing or flora and fauna observations, other activities included ‘driving through it’, ‘working in it’, participating in group tours or excursions, and fishing and photography.

The distribution of local visitors surveyed at the site level (across the ten WTWHA sites) would suggest that the Crater, Lake Barrine, Mossman Gorge and Big Crystal Creek are very popular local sites, but it is interesting that there were only two sites surveyed where local resident numbers are quite low, Henrietta Creek and Marrdja Boardwalk. These figures need to be placed in the context of visitation of these sites overall. The predominant visitors to Henrietta Creek and Marrdja Boardwalk, for example, were international tourists (45.5%) and interstate visitors (71.7%). The 126 local visitors surveyed over four data collection days at Mossman Gorge, while a substantial number, constituted only 17.1% of the 738 individuals surveyed at that site. At the Crater, however, the 202 local residents surveyed constituted 52.9% of the respondents at the site who completed a survey. The most ‘popular’ visitor sites of the ten survey sites for domestic Australian visitors were Barron Falls and Mossman Gorge. The most popular visitor sites for overseas visitors were Henrietta Creek and Marrdja Boardwalk (Bentrupperbauer 2002a-j).

A number of interesting demographic differences between local resident visitors and those community respondents who were contacted at their residence are immediately apparent. Community residents sampled at the site level are, on average, ten years younger (35.7 years versus 49.2 years). They are also, on average, better educated, with 30.7% having completed a university degree compared with 21.3% of residents participating in the

community survey. The length of residency for local visitors participating in the site-level survey was ten years less than was the case for community survey participants (15.5 years versus 25.1 years). It was also noteworthy that the proportion of Aboriginal respondents for the site-level survey was higher than that for the community survey (4.6% versus 3.5%), though still much less than demographic figures for the Far North Queensland region (11.8%, ABS 2001). It must also be remembered that the site-level survey research involved data collection at only ten of over one hundred nominated WTWHA visitor sites, hence many sites are not included in the above comparisons and contrasts.

Overall, the site-level survey results demonstrate that local residents not only say they are using, but clearly *are* regularly using these WTWHA sites, and that they are enjoying a range of highly valued benefits from such use. What is perhaps most important about the site-level survey findings, in comparison to the community survey, is that resident visitors appear to be the principal and majority group using most WTWHA sites. In the site-level survey (Bentrupperbäumer and Reser 2002a), local visitors outnumbered tourist visitors at six of the ten sites surveyed, and at many of the non-survey sites, visitation and use by locals is almost exclusively local.

There is a fairly widespread belief that tourists appreciate and value national parks and special places more than local visitors. Explanations for why this might be so vary, but typically make reference to the 'taken for granted' and 'everyday' nature of such an amenity for locals.

"The differences between tourists and local leisure-seekers are not confined to length of holidays or the accommodation component. Both may use the same resource for similar recreation opportunities, but there are possibly considerable differences in motivation, commitment and experience. Although little research has been undertaken regarding the motivation of tourists, "being there" is likely to mean more to a tourist who has invested considerable time, money and decision-making, and may regard the any particular experience as a once in a lifetime opportunity." (DTSR 1994, 2.1.6)

The current survey findings, and our own ongoing research, would suggest that this perception is not accurate. It is clear that both tourists and local resident visitors highly value both the WTWHA and its outstanding and unique attributes and character. It is also clear that the principal involvement for both when visiting is not activity-based, but experience, appreciation and restoration-focused (e.g. rest, relax, recharge). One possible reason why local appreciation of the Wet Tropics bioregion has been under-emphasised in research findings is the fact that most surveys, reports and planning documents have been tourism industry oriented, for understandable reasons, and the rich multidisciplinary literature on place meaning, connection and restoration is not widely known by many working in natural resource management or regional planning contexts. Australian sources make a powerful and cogent case for the central importance of place attachment and landscape meaning and identity for Australians of very diverse cultural backgrounds (e.g. Borschmann 1999; Haynes 1998; Read 2000; Rose 1996).

4.2 COMMUNITY PERCEPTIONS, APPRAISALS AND ISSUES

The Wet Tropics World Heritage Area as Distinct from the Wet Tropics Management Authority

The research team took some time, in consultation with the WTMA and other stakeholder representatives, to consider and clarify the important distinction between the Area and the Authority in drafting the survey objectives and survey items. There is considerable confusion in the natural resource management arena with respect to the principal focus of assessment and monitoring research, the 'state' or 'condition' of the protected area itself, the nature and magnitude of the threats or 'pressures', or the efficacy of management 'responses' (Selin, Schuett and Carr 2000; Cordell and Bergstrom 1999; OECD 1998; Bell and Morse 2000). These matters were somewhat clouded by the fact that previous surveys appear to have examined both of these attitudinal objects without clearly distinguishing them, as well as the listing of the WTWHA itself, and the Management Plan as additional attitudinal objects (e.g. AGB McNair 1992, 1993, 1996; Reser and Bentrupperbäumer 2005).

The research strategy adopted in the present research context was to clearly differentiate the WTWHA (Area) from the WTMA (Authority), and not to identify or address 'the listing' and assume that matters such as the Management Plan would be encompassed in survey items relating to the WTMA and its management policies. These decisions seemed to be reasonable given that a part of the research brief was to assess community perceptions of management effectiveness, and the extent to which the community felt it was involved in management consultations and decision-making. The reality is that there seems to be considerable confusion in the natural resource management arena generally with respect to the distinction between monitoring and reporting on the environment in question and evaluating the effectiveness of the management agency (Bentrupperbäumer and Reser 2000b; Reser and Bentrupperbäumer 2005; Yaffee *et al.* 1996). It is increasingly important for management agencies to think through and carefully consider these two different but related evaluation research and indicator domains, the state of the protected area itself and the performance of the management agency. This is a particularly important issue given that State of the Environment reporting seems to be increasingly focused on community perceptions of the performance of the management agency rather than on appraisals and assessments of the condition of the environment itself (Reser and Bentrupperbäumer 2005).

It is clear that there has emerged a conventional wisdom with respect to how the local community in the WTWHA viewed and currently views 'the listing' of the WTWHA and the (Area) agencies currently responsible for managing the Wet Tropics. This view is essentially that bioregion residents were deeply divided and concerned about adverse impacts and the region's future and economy during and following the WTWHA listing debate, and that these visions and strongly held dissenting views continue. It is equally clear that there is a stereotypic quality to this conventional wisdom view, and that the perceptions, understandings and attitudes of the regional community are both very diverse and very different from what might have been true ten or twenty years ago. It is also the case that there has not been a careful and sensitive documentation of particular attitudes and beliefs in the past, other than indirectly in the case of a number of PhD research theses and in the context of some insightful historical postmortems of the Wet Tropics debate and listing (e.g. McDonald and Lane 2000).

The 2000/2001 State of the Wet Tropics Report (draft) highlights the following survey findings:

“In August 1999 the Authority commissioned an independent survey of immediate neighbours of the Property. The telephone survey involved 500 neighbours. The results showed that 66% were satisfied with being an immediate neighbour with just 15% dissatisfied. Those less likely to be satisfied or supportive included the owners of properties larger than 40ha (52% support), owners of multiple properties (55%), non-resident property owners (52%), primary producers (47%), owners of properties for more than 20 years (52%) and those over 55 years of age (56%). The groups most supportive included owners of properties of less than 4ha (77%), owners of the property for less than 10 years (75%), less than 55 years old (70% for 18-39 years, 74% for 40-54 years), female (76%) and owners of residential land (78%).” (WTMA 2002a, p. 38)

Unfortunately, neither this survey instrument nor specifics with respect to item wording, response options, or methodology generally were available to the authors of this current report. It is unclear whether the ‘support’ reported is for the listing and/or the WTWHA, or support for the management agency, the WTMA, or other agencies. These community survey findings provide a considered and evidence-based examination of what current community perceptions and views are, and these findings confirm that previous concerns, conflicting views, and uncertainties with respect to listing of the Area and possible adverse impacts have been replaced by very strong endorsement and support for the WTWHA.

Evaluating Effectiveness and Performance

Evaluating community perceptions of and support for the WTMA and other management agencies requires an important caveat with respect to time. Community perceptions of and support for the listing of the Wet Tropics and management agencies with responsibilities for the Wet Tropics were very different in 1988 and 1992 from what these community views are currently (e.g. McDonald and Lane 2000). The agencies previously involved, and the current Wet Tropics Management Authority and the Management Plan under which it operates, have been a very fluid and changing gestalt for the local community, with many residents obviously unclear about who has jurisdiction over and responsibility for the WTWHA.

What many would consider an equally if not more important parameter than ‘community support’ is management effectiveness and performance, though these are of course interrelated. Indeed the ‘pressure-state-response’ framework which guides IUCN protected area management and policies (OECD 1994, 1998; Moldan 1997), and WTWHA State of the Environment reporting (now the pressure-condition-response framework (Australian State of the Environment Committee 2001), has become a de facto performance appraisal with respect to how well management agencies are discharging their management responsibilities (e.g. Hammit and Cole 1998; Lowe 1998; Mortensen 1997; OECD 1998). Similarly, monitoring systems such as the TOMM system promoted by Manidis Roberts and Taylor Consulting (1997) focus on performance indicators for optimal tourism environments and processes. While the consultancy brief for the community survey does not expressly address this agency / effectiveness consideration, it is increasingly clear that indicators and evaluation attention are turning to this somewhat different domain of interest. We should hasten to add that attempts to systematically evaluate conservation strategies and effectiveness in protected area contexts have been fraught with many difficulties and challenges (e.g. Hockings *et al.* 2000; Johnson *et al.* 1999; Kleiman *et al.* 1999; Salafsky and Margoluis 1999; Salafsky *et al.* 2001; Selin *et al.* 2000), notwithstanding the seductive notion that it is much easier to monitor and evaluate the organisation and organisational performance with ‘key performance indicators’ typically already in place rather than natural or social environmental ‘condition’ (Reser and Bentrupperbäumer 2005).

The survey findings across a number of topic domains indicate that a substantial number of community residents feel that the WTMA, and possibly other management agencies, are not

as directly and responsibly involved in actually managing the Area, people, and impacting processes as they could be or should be. This in turn relates to community perceptions, expectations and concerns, and felt involvement in planning and policies. It is important to note that these findings reflect respondent perceptions overall, rather than more objective performance indicators or outcomes. It is also the case that survey responses clearly evidence a generally poor level of community knowledge in respect to the WTWHA management regimes and responsibilities, and the nature and implications of WHA status and the location and extent of WTWHA boundaries. This would suggest that some community expectations and perceptions regarding agency performance and responsibilities are not adequately informed by the overlapping management agency plans, policies and practices in place with respect to the WTWHA or natural resource management considerations generally.

Correspondence of Views

A consideration increasingly viewed as central to management effectiveness in natural resource management is the extent to which meaningful correspondences exist between management perceptions and priorities with respect to protected area pressures and possibilities and those of the local community (e.g. Baker *et al.* 2001; Berkes *et al.* 2000; Bushell *et al.* 2002; Worboys *et al.* 2005).

“As the provision and management of protected areas is strongly influenced by the perceptions of managers and planners who often live outside local communities, it is crucial that park managers ensure that there is a coincidence of interest between their own perceptions of the benefits of conservation and those experienced by the local community. This common purpose is necessary to ensure that conservation is accepted and fostered by local communities and the wider public. Elsewhere, there is evidence that the perceptions of protected areas by Australian multicultural communities does not match with those of protected area managers.” (Bushell *et al.* 2002)

What is particularly important with respect to assessing and achieving mutual understanding, if not correspondence, of views is that impressions and perceptions of others do not misrepresent more ‘objective’ social realities. Community survey findings can provide an important corrective to conventional wisdom, and can equally influence public or community misconstructions of where management thinking and priorities may lay. The expressed importance and priorities of community residents with respect to particular threats to the WTWHA, for example, and the relative unimportance of tourism as income source and community priority, do not appear to align with the public policy directions of the WTMA. Perhaps more importantly, the community responses documented in the survey suggest that some community residents have their own strong and problematic preconceptions of what WTMA’s thinking is. These *perceptions* are *reality*, in the sense that they very directly influence community support for management actions and policy initiatives. Equally, community educational initiatives and resistance to policy change and land management practices can be frustrated not only by inadequate knowledge and understanding but clear misunderstandings and erroneous beliefs.

The current community survey findings would suggest that, at least in places, there is not a very good match between community and management views, at least as the latter are articulated in documents such as the *Wet Tropics Nature Based Tourism Strategy*. Whereas the priorities for the community in the context of the WTWHA, for example, relate to quality of environment and quality of life, with a clear and articulated de-emphasis of WTWHA-related tourism and socio-economic benefits, the public priorities of the lead management agency appear to be more tourism industry and market economy focused.

“The Wet Tropics represents an outstanding visitor destination and tourism plays a key role in presenting the Area’s value to millions of visitors each year. Tourism is of central importance to local and regional economies and represents a strong social element in tropical North Queensland. ...The Wet Tropics WHA is an outstanding visitor destination and the tourism industry is the prime medium which brings most visitors into contact with World Heritage values of the area.”
(WTMA 2000b, p. 33)

It is noteworthy that the *Wet Tropics Nature Based Tourism Strategy* is presented as a regional framework and planning document for tourism and ‘recreation’, the term and operating framework which appears to have been used to cover local resident visitation and use.

Community Participation

Clearly the logic for, and the short and long term benefits of, community participation and involvement in planning, decision-making, management and monitoring are self-evident, well-canvassed and persuasive (e.g. Ceballos-Lascurain 1996; Davenport and Anderson 2005; Gobster and Hull 2000; Hammitt and Cole 1998; Irons 2001; Miller 1997; Sinclair and Didiuck 1995, 2001). Community involvement in an *assessment* and *analysis* of the impacts of WTWHA visitation and use on local communities is a somewhat different and critically important exercise. In this instance, a community assists researchers in monitoring how an intervention, or in this instance, the establishment and existence of a protected area, its management regime, and visitation and use, are impacting on and influencing the life of the community, the quality of their environment, and the quality of their life. Community judgments about the quality of their natural environment and the effectiveness of its management are an important aspect and outcome of this community participation. This can include, of course, community perceptions of their own participation and involvement in the process (e.g. Didiuk and Sinclair 2002, Selin *et al.* 2000). The community survey was designed to structure and formalise this involvement and monitoring role of the community in such a way that specific issues, parameters, and impacts could be specified, considered, and documented.

Without going back to the important and somewhat vexed issue of who constitutes the ‘community’, it is important to note that the catchment survey has given many residents an opportunity to provide input into WTMA research and decision making, and communicate their perceptions, thinking and judgments to management. The representation of these 788 community respondents and 1,012 resident site visitors was broad and diverse. What remains unsatisfactory is the fact that a critically important community group, indigenous residents and owners, were under-represented (e.g. Beltran 2000; WTMA 1998). What is also particularly important about this survey exercise, other than the questions asked and general findings, is that it has taken place. The survey has provided individuals with an opportunity to have a say, to be listened to, to feel that their views are important, and to know that management authorities are actively seeking their input and involvement.

Survey responses to those questions specifically addressing participation and involvement are sobering. That 63% of respondents did not feel that community interests were being adequately taken into account may not directly reflect experienced involvement, but does suggest a less than favourable perception. An overwhelming majority of respondents (88.1%) reported that they themselves have not been involved in ‘any’ discussion forums or consultation processes related to the WTWHA, which is surprising, given the efforts to which the WTMA has gone to invite and foster such involvement (e.g. WTMA 1997). Of the respondents who did report some level of involvement, 63.7% felt that there were ‘inadequate opportunities to meaningfully contribute’ (ratings of 1, 2 or 3) – further evidence of a less than ideal outcome, notwithstanding the many real-world constraints and

frustrations involved in initiating and retaining community involvement in such planning and consultation exercises. This lack of reported involvement is particularly striking given the dramatic rural community involvement in Landcare and other community based and initiated land management and land care groups in Australia and North Queensland (e.g. Alexandra *et al.* 1996; Campbell 1992; Carr 2002; Cary and Webb 2000; Curtis and de Lacy 1996).

A relevant research issue and a finding in previous research in the Wet Tropics bioregion in 1999 that relates to addressing possibly displaced local users (Bentrupperbäumer and Reser 2000a) was that it was often difficult to bring potential respondents in the Daintree area to even consider speaking with researchers or completing a survey relating to the WTMA, their use of the WTWHA, or perceptions of its management. Survey findings relating to knowledge and awareness of the WTWHA and its management must again be taken into account here. Felt ignorance can be directly related to felt powerlessness and frustration, and it is clear that a substantial proportion of the WTWHA community are unclear about the nature and extent of the Area, what agency or agencies have management authority and responsibility, and what mechanisms exist for individual or collective community involvement.

It is important for relevant agencies to compare and contrast the current survey findings with published reports from other such community participation initiatives (e.g. Chavis and Wandersman 1990; Diduck and Sinclair 2002; Frideres 1992; Kellert *et al.* 2000;; Richards and Aitken 2004; Selin *et al.* 2000) to gain a realistic idea of what might constitute a relatively heartening response profile. The experience of the Great Barrier Reef Marine Park Authority with respect to extensive public consultation is of particular relevance (e.g. Lawrence *et al.* 2002; Ross *et al.* 2002). It would seem to be equally important, however, to consider what these current community survey findings seem to be saying with respect to the effectiveness of existing partnership arrangements and policies, whatever the 'level of support' appears to be.

Awareness and Knowledge

While the community survey results might initially suggest a high general awareness level for the World Heritage status of the Wet Tropics, at the same time, the findings indicate that the community residents are not well informed or knowledgeable about many aspects of the WTWHA, including the criteria for its listing, its specific boundaries and extent, the nature and identity of this management regime, the management plan and policies. In terms of assessing changes over time and/or evaluating the effectiveness of management initiated community information and education programs, the survey findings would suggest only modest success, and confusion and relative ignorance about particularly salient matters, such as boundary locations, participation and partnership opportunities, and the significance of World Heritage listing. At the site level, survey results suggest that local visitors are not availing themselves of information beforehand, nor is this type of information to be found at the survey sites. These findings may nevertheless be too general to provide specific direction to management with respect to how these social survey findings might be best incorporated in strategic planning. It is clear, however, that enhanced community knowledge and understanding would facilitate cooperative partnership arrangements and general appreciation of the management challenges facing agencies such as the WTMA and QPWS. The findings also have implications for the adequacy of presentation and interpretation information at visitor sites. It is very surprising that so many *resident* visitors to WTWHA sites were unaware that they in fact were in the WTWHA.

4.3 RESEARCH PERSPECTIVES

Strategic Planning to Measure and Monitor Change

The objectives of the current survey were both descriptive and exploratory, that is, the intent was to document and describe particular characteristics, attitudes, perceptions and concerns of WTWHA community residents and to explore possible relationships between and among variables of possible relevance to the understanding and management of particular psychosocial or biophysical impacts (e.g. Babbie 2001; Leach 2002; Singleton and Straits 1999). While an important objective of the current survey was to allow for comparison with earlier surveys, there were a number of important differences, for example, between the AGB McNair surveys and this current Wet Tropics Community Survey:

- AGB McNair conducted telephone surveys, whereas this community survey involved a hard copy, self-administered questionnaire and a drop-off and pick-up procedure;
- The AGB McNair surveys included a national survey component involving 2,600 respondents, which was undertaken in Sydney, Melbourne, Brisbane, two other capital cities (2000 total) and regional Australia (600) during the initial benchmark study (1992), and in Sydney, Melbourne and Brisbane for the second and third (1996) waves. (The total number of respondents involved in this current community survey was 788, with an additional 1,012 respondents from the site-level survey);
- Approximately one half of the regional survey respondents in the three AGB McNair surveys were undertaken in Cairns and Townsville (1001 of 2003, 1000 of 2000 and 950 of 1900, respectively);
- The sequenced, three-wave nature of the AGB McNair surveys and the changed wording of some items, as well as item additions and deletions, constitute an important difference and direct comparison challenge;
- AGB McNair used a quota sampling procedure which specified 50% males, 50% females, 50% under 40 years, 50% over 40 years. The Wet Tropics community survey utilised a multistage cluster sampling procedure (DeVaus 2002).
- Researchers involved with the community survey identified themselves to prospective participants as “researchers from James Cook University, exploring community resident perceptions and views with respect to the WTWHA. We are interested in how the WTWHA impacts on local residents’ everyday lives, and the life and quality of the community and environment in which you live. The main purpose of our research is ... This is an opportunity for you to offer your comments as a resident of the region ...” The AGB McNair telephone introduction was, “Good morning / afternoon / evening. I’m ... from AGB Australia, the national market research company. Today we are doing a survey on issues about Queensland. I need to speak with...” (AGB McNair 1992, 1993, 1996).

Notwithstanding the clear differences in method, approach, item wording, context and organisational survey research, it is meaningful and worthwhile to compare community responses over time with respect to comparable variables and issues, and we have endeavoured to make and explore such comparisons in this report. What would, of course, be far more helpful, is the adoption of a standardised procedure, instrument and set of survey items for future longitudinal survey research. To the extent that this community research, for example, could be articulated with systematic site-based visitor surveys, there would be the possibility for comparison, convergence, and a far more accurate and useful regional picture of objective and perceived changes and biophysical and psychosocial impacts, as well as use (e.g. Babbie 2001; Bentrupperbäumer and Reser 2000a, 2002a; Bentrupperbäumer *et al.* 2004; Fowler 2002; DeVaus 2002; Neuman 2006; Wilson *et al.* 2004).

A number of open-ended items, and many closed items, were included in the community survey. This differs from the practice of many commercial survey organisations where an initial, more qualitative phase of the survey research utilises focus group discussions or other avenues for eliciting and identifying broader impact themes, issues or concerns. In our own research in the WTWHA, we have engaged in extensive background research to identify important variable domains, issues and concerns, and our work is informed by multiple previous studies with which we have been closely involved. We continue, however, to incorporate both qualitative and quantitative formats in current survey studies in order to ensure that we are not missing important considerations and parameters from respondent perspectives. The open-ended items employed in this current survey have allowed us to avoid a number of stereotypic expectations and assumptions with respect to how the community views the WTWHA and the WTMA, and also allows for an assessment of the relative salience (as measured by relative frequency of particular open-ended responses) of particular responses and views. We have also underscored the importance of using continuous, interval level, rating scales for important attitude, concern and appraisal items to ensure sensitive and precise measurement, as well as parametric statistical comparisons across time and between groups. Notwithstanding the fact that this current data could not be directly compared with the previous survey findings, it provides a useful database for future community surveys and assessments of change.

While this report has been able to consider some changes in community perceptions over time with respect to the WTWHA, the WTMA, and perceived positive and negative impacts, it is noteworthy that respondents were not asked to give their own judgments about the nature, direction or magnitude of 'changes over time', either with respect to their surrounding natural environment, their communities and social environment, or with respect to their own quality of life and well being. Many community surveys would be designed to incorporate such *perceived changes* and compare and contrast these collective perceptions with other measures of change. Equally importantly, this report has not been able to compare and contrast current or past survey findings for the WTWHA or the WTMA with survey research findings from other Australian World Heritage Areas. Are community residents of the Wet Tropics bioregion more or less satisfied with their involvement with the management of the Area than is the case for residents of southeast Queensland, or Tasmania? Is the WTWHA playing a more important and consequential role in the life of the community than is the case for the GBRMPA? What comparative data exists for indigenous community participation, perceived impacts, and satisfactions in the case of the Wet Tropics bioregion as compared with the Kakadu National Park bioregion? What kinds of changes in the human landscape are being tracked in other WHA regions and what are the magnitude and implications of these changes?

The reality is that it is currently very difficult to make comparisons across World Heritage Areas and adjacent bioregions. Quite apart from the very different nature of these Areas' geographic, demographic, economic and historical contexts, there are no standardised procedures and indicators in place, or existing or comparable databases, which might allow for this. This is a very consequential state of affairs, because it means that survey findings such as those presented in this report are less interpretable and informative and must ultimately stand alone. While this report has attempted to provide a context for the survey findings and discussion points covered, it has not fully canvassed or reviewed the extensive amount of material that exists with respect to community views and perceptions of the WTWHA and the WTMA at different points in time. A comprehensive database, for example, exists in the submissions made to the WTMA on the Draft Wet Tropics Plan (e.g. Hill and Purcell 1996), in the many regional planning documents relevant to the Wet Tropics bioregion that now exist (e.g. Australian Heritage Commission 1996; Douglas Shire Council 1998; FNQRPAC 1998; WTMA 1997, 2000) and in the archives of the Cairns and Far North Environment Centre (CAFNEC).

It is also the case that there now exists a number of Master of Applied Science and PhD theses for which the perceptions, values and attitudes of local community residents toward the Wet Tropics bioregion was a principal focus (e.g. Bentrupperbäumer 1997; Bragg 1996; Young 1997). To this could be added the extensive local newspaper and coverage of WTWHA-related issues, in cover stories, editorial comment, letters to the editor, and local history sections. What is clear, though, with respect to the measurement and monitoring of specific and important perceptions, judgments and attitudes, is that a systematic and manageable research strategy and process must be set in place to track changes over time. These changes in community perceptions, understandings and attitudes may be as important to the effective management of the WTWHA as any changes registered through biophysical indicators.

The *State of the Wet Tropics Report 2000-2001* clearly states the need for an enhanced social science involvement under the heading of 'improved management through research':

"Managing and conserving the Area's natural values requires accurate, reliable scientific information from both the natural and social sciences. Sound science allows us to devise suitable environmental and social policies and to develop management strategies that are applicable to the complex natural and social systems that comprise the World Heritage Area and its relation to the broader region. Intensified efforts are being made to identify information gaps, to improve our information base, to harmonise information from different sources and to strengthen capacities in information collection and analysis." (WTMA 2001, p. 37)

We would strongly endorse such a change in strategy and have documented the case for such a change on multiple occasions (e.g. Bentrupperbäumer and Reser 2000a,b; Reser and Bentrupperbäumer 2001a, b, 2005). We would hope that this community survey report and our companion site-level report (Bentrupperbäumer and Reser 2002a) make the case for why such information regarding changes in the human landscape is essential to managing the impacts of visitation and use in World Heritage Areas and understanding the broader human landscape.

Social Indicators for Monitoring Salient Changes

This research exercise and the community survey findings would suggest a number of useful social indicators for monitoring salient changes in the human landscape for the WTWHA. These potential indicator domains include the following:

- The nature and magnitude of specific environmental concerns and perceived threats (e.g. human impact; feral animals);
- Attitudinal measures of strategic attitudinal object domains (e.g. specific management policies);
- The nature and reported importance of perceived changes in the natural environment at known visitor sites (e.g. degradation);
- The nature and reported importance of perceived changes in the social environment at known visitor sites, (e.g. crowding);
- The nature and relative importance of particular motivations and preferences (e.g. recreation, restoration, social cohesion);
- Reported enjoyment and experience opportunities – as distinct from conventional measures of satisfaction and recreation opportunities, and rated degree;
- The relative and rated importance of personal costs and benefits of living in a World Heritage Area (e.g. quality of life, visual amenity, economic / employment opportunities);

- The relative importance of what is valued about one's local protected natural environment, and why; and
- Perceptions and appraisals of management agency effectiveness and performance in addition to but as distinct from perceptions and appraisals of the protected area.

The above are all indicator domains which do not 'find a place' in most conventional frameworks for assessing impacts and reporting on 'sustainability' in those natural, protected area environments that are a familiar backdrop to many people's lives. These psychosocial indicator domains are particularly apposite and meaningful for local residents and repeat visitors to the protected area involved in this research, as well as for local management agency staff and environmental researchers.

Specific survey instrument items that relate to these indicator domains can be found in the Appendix 8 of this report and Attachment A in the site-level report (Bentrupperbäumer and Reser 2002a). What is equally important to the identification and specification of indicator domains and items, however, is the standardisation and adaptation of a basic methodology and data collection protocol for longitudinal monitoring exercises. This standardised procedure and instrument should closely approximate the procedure and instrument used to establish the reference database being used. Some flexibility with respect to the inclusion and/or substitution of particular indicator items is advantageous and strategic, as long as the basic procedure and survey instrument is retained. The current research experience would suggest that the endorsement and use at a National and State level of both a site-level survey and a catchment community survey would best serve the needs of World Heritage management agencies, community organisations, and State of the Environment and State of the Wet Tropics needs and requirements (Bentrupperbäumer and Reser 2002a; Bentrupperbäumer *et al.* 2004; Wilson *et al.* 2004 a, b).

The matter of appropriate social science based indicators, with respect to important parameter domains and measures in the human landscape, requires a consideration of appropriate methodologies and approaches as well as specific measures. It is increasingly clear that existing and more readily available 'structural' and socio-demographic and archival parameters, such as household income, population dispersal, service provision, etc., are not particularly relevant or sensitive to important changes relating to attitudes, values, understandings, environmental appraisals, concerns, support levels, participation or other psychological and social considerations and/or impacts. Unfortunately, available environmental indicators found in such documents as Australia's State of the Environment reports and other source documents (e.g. Alexandra *et al.* 1998; ANZECC 2000; ASEC 1996, 2001) are not very helpful.

The systematic and sensitive measurement of community attitudes, knowledge levels, concerns and behaviour requires survey methodologies and strategic population-based and geographically-focused sampling frames. Further, where possible the type and level of measurement reflected in survey items needs to include continuous and interval level rating scales to sensitively and adequately document changes relating to appraisals and judgments concerning the social environment, psychological matters, and the perceived condition and concerns about the biophysical environment. The present community survey instrument and items, along with the site-level survey instrument developed in the context of our Rainforest CRC research project, can hopefully serve as reasonably refined prototypes for a continuing, standardised, systematic monitoring of important changes in the human landscape, with the current research findings themselves serving as a credible and useful data base for subsequent survey exercises and benchmarking.

An additional and important point is that the site-level survey allowed for a much more in-depth and site-specific exploration of community resident appraisals and WTWHA

experiences than would have been possible in a community survey. The complementary perspectives provided by the community survey, along with this companion site-level survey, have been invaluable. Exigencies of time, funding and strategic need typically ensure that a community survey coverage of interesting research and/or management issues is limited to eight to twelve telephone survey questions, or at best, a one-sided sheet of critical concerns (e.g. Fink 2006; Robson 2002). In the present context, community respondents provided extensive information in their homes in the context of a postal survey, and while at WTWHA sites in the context of a face-to-face but self-administered survey. This allows for a much more complete picture of the role of the WTWHA in the life of the community, and an invaluable database for monitoring changes in community perceptions and appraisals (Bentrupperbäumer and Reser 2002a).

Monitoring and Reporting Changes Over Time

There are a number of important considerations that must be kept in mind when examining and interpreting changes in the human landscape, such as those addressed in this community survey. All situations are dynamic and myriad background changes characterise any longitudinal natural resource management research context. A number of salient background changes that might well be influencing reported changes over time in community perceptions and concerns are the following:

- Changes relating to management plans, policies and practices that relate to an initial unfamiliarity and ignorance on the part of the community, which changes as plans and policies become better known and in place;
- Changes relating to background societal changes, such as those relating to environmental values;
- The dramatic changes relating to the changing socio-economic and socio-demographic profile of Far North Queensland;
- Changes in the majority political party in Queensland and related environmental policies and support;
- Structural and other organisational changes in environmental management agencies and organisations;
- Regional changes in place meaning, destination image, regional stereotypes and relative salience of tourism;
- Changes in particular management policies and community interactions;
- Emergent environmental threats and/or damage, such as global warming and cyclone impacts.

The important point here is that 'history' effects are inevitable in the context of such survey research and may well 'explain' some of the changes in community perceptions and concerns that are found. These background changes are not necessarily a problem with respect to the documentation of changes in community perceptions, support or satisfaction levels, but can pose serious problems with respect to the reporting of, interpretations of, and evaluations of such matters as management effectiveness and performance. The survey findings, for example, would appear to clearly document a dramatic change in community perceptions of and support for the WTWHA. This may well be a joint reflection of greater familiarity, a now known and in-place management regime, a changing conservation ethos in Australia, a substantially different population base in Far North Queensland, and a dramatic increase in the tourism industry and related tourism promotion of places such as the WTWHA.

As noted, it has not been as easy to document changes in community perceptions of management agencies involved in WTWHA management, as earlier surveys did not clearly differentiate agencies from the Area itself, and there has been considerable change in the nature and structure of management agencies and their respective responsibilities, policies and profiles at WTWHA sites. It is, of course, also possible that changes in community views with respect to management agency performance reflect substantive changes in agency policies and community interactions and partnership arrangements. Once again it is difficult to articulate present findings with past survey results, as such agency-specific and important performance indicators were not included, as such, in previous surveys. It is critical that greater analytic clarity and specificity with respect to survey objectives and domains be achieved in future survey undertakings.

What the survey results also clearly show is that the WTWHA plays many and varied roles in the life of the community, from that of familiar and cherished landscape, to the provision of a spectrum of essential ecosystem services, to leisure, recreation and restoration venues, to tourism destination and livelihood. As well as immediate and tangible functional roles, the WTWHA plays a powerful symbolic role as a protected, superlative, natural environment, one of Australia's natural and cultural heritage jewels, whose well being and sustainability is a visible reassurance and barometer of environmental quality and quality of life in Far North Queensland, and indeed nationally. While these symbolic, historic and place connection and identity roles are somewhat less tangible, they are of fundamental importance to effective and enlightened management, and particularly relevant to community perceptions, satisfactions, and concerns.

The survey results were somewhat surprising in their documentation of substantial ignorance and uncertainty about WTWHA boundaries, relevant management agencies and policies, and WHA status of well-known local sites. Unfortunately, there exist few reliable touchstones with respect to how community knowledge levels and understandings have changed over the past several decades since listing. It is therefore difficult to make substantive assessments of the relative success of management agency community awareness and education initiatives, i.e. the catchment community may be much more aware and knowledgeable than it was. It is also likely that it is reasonably normal for 'gateway' and hinterland communities to be somewhat unclear about what are often changing statuses and management regimes in a natural environment that many infrequently visit. This may be particularly true of the WTWHA catchment region, which has seen dramatic change in management agency structures and respective responsibilities, and which has been characterised by dramatic population shifts and residential developments. Nonetheless these findings would suggest that there still exists an important and challenging educational mission for the WTMA and other agencies in the discharging of their mandate to protect, conserve and present the WTWHA.

Again, it is also important to appreciate that the surveys themselves constitute a very powerful awareness and education exercise. As well as allowing for the measurement and monitoring of important shifts in community and stakeholder groups' perceptions, thinking, and judgments, participation in a community survey can both inform and change respondents' thinking and views. Hence management agencies simultaneously achieve multiple important objectives through their use of community surveys: enhancing awareness and knowledge, promoting the nature and functions of the agency, and, of course, measuring and monitoring important changes in community perspectives and concerns. Ultimately, published survey findings also inform and change community views, and provide important social comparison information for community members and stakeholder groups. These education and inherent reactivity aspects of community surveys must be factored into repeated surveys over time. Finally, 'the public' by and large understand surveys and survey research, and survey findings constitute a meaningful and credible 'measure' in their terms of what their fellow community members think, and how they as a community collectively judge

management performance. Reality testing one's own views with the findings of a community survey can also both validate, and/or influence one's own view in a particular direction.

4.4 SITE-LEVEL SURVEYS, COMMUNITY SURVEYS AND VISITOR MONITORING SYSTEMS

An important objective of the community survey was to explore where and how a community survey approach and findings could articulate with a WTWHA Visitor Monitoring System (Bentrupperbäumer *et al.* 2004; Wilson *et al.* 2004a,b). These considerations are more fully addressed in the companion site-level survey report (Bentrupperbäumer and Reser 2002a) and in a comprehensive discussion paper (Reser and Bentrupperbäumer 2002a), but it is helpful to briefly address these considerations here.

Where and how can existing social science based surveys articulate with natural science based monitoring systems and other regional survey and monitoring and reporting exercises and indicators in the context of a WTWHA Visitor Monitoring System? Our own experience of undertaking integrated biophysical and psychosocial assessments at WTWHA visitor sites suggests that there are substantial areas of disciplinary and operational alignment and common ground at a visitor site-level and quite marked efficiencies. Almost all visitors and users of the WTWHA pass through these sites, with the important exceptions of the virtual and displaced visitors and users. These sites are arguably important venues for the measurement of changes and impacts of management relevance. A small multidisciplinary team working at the same site over several days can collect biophysical data, observe visitor and other user behaviour patterns, note critical incidents and behaviour-impact sequences, and interview or administer a questionnaire to a substantial number of visitors or users, including local residents, interstate and international tourists, free and independent travellers, structured tour visitors, and local council employees. Such pooled data sets allow for indicator refinement; cross-validation of differing methods and measures; a more interdisciplinary and ecological understanding of impacting processes and the specific linkages between moderating and mediating; and biophysical and psychosocial variables (Bentrupperbäumer and Reser 2002a; Reser and Bentrupperbäumer 2006).

Figure 4.1 represents the ways in which differing types of research and monitoring surveys tend to overlay and align with each other with respect to data collection venues and visitor and user populations and catchments. Figure 4.1 attempts to demonstrate the efficiencies of a Visitor Monitoring System that articulates with existing research and monitoring programs by taking advantage of the naturally occurring overlap and intersection of visitation and data collection at WTWHA visitor sites. This Venn diagram illustrates the functional overlap, but independent character of objectives and domains for the principal operating research and monitoring programs.

The more substantial overlap occurring between WTWHA sites and resident communities reflects the proximity of many visitor sites to communities and the high level of visitation and use of WTWHA sites by local residents. The substantial overlap between natural science based monitoring in the WTWHA and visitor sites in the WTWHA reflects the reality that most biophysical monitoring of the impacts of visitation and use is undertaken at nominated visitor sites. The figure suggests the appreciable overlap and mutual use of WTWHA sites by tourists and local visitors. It also reflects the reality that visitor sites are important locations for biophysical impact assessment and monitoring, and that researchers themselves are important 'users' of these sites, with their own 'impacts', as are site managers, maintenance workers, other council employees, and those who live in the WTWHA and pass through or by particular sites on a daily basis. These latter groups and activities are all a part of the resident community of the Wet Tropics bioregion, as are the many local visitors to WTWHA visitor sites.

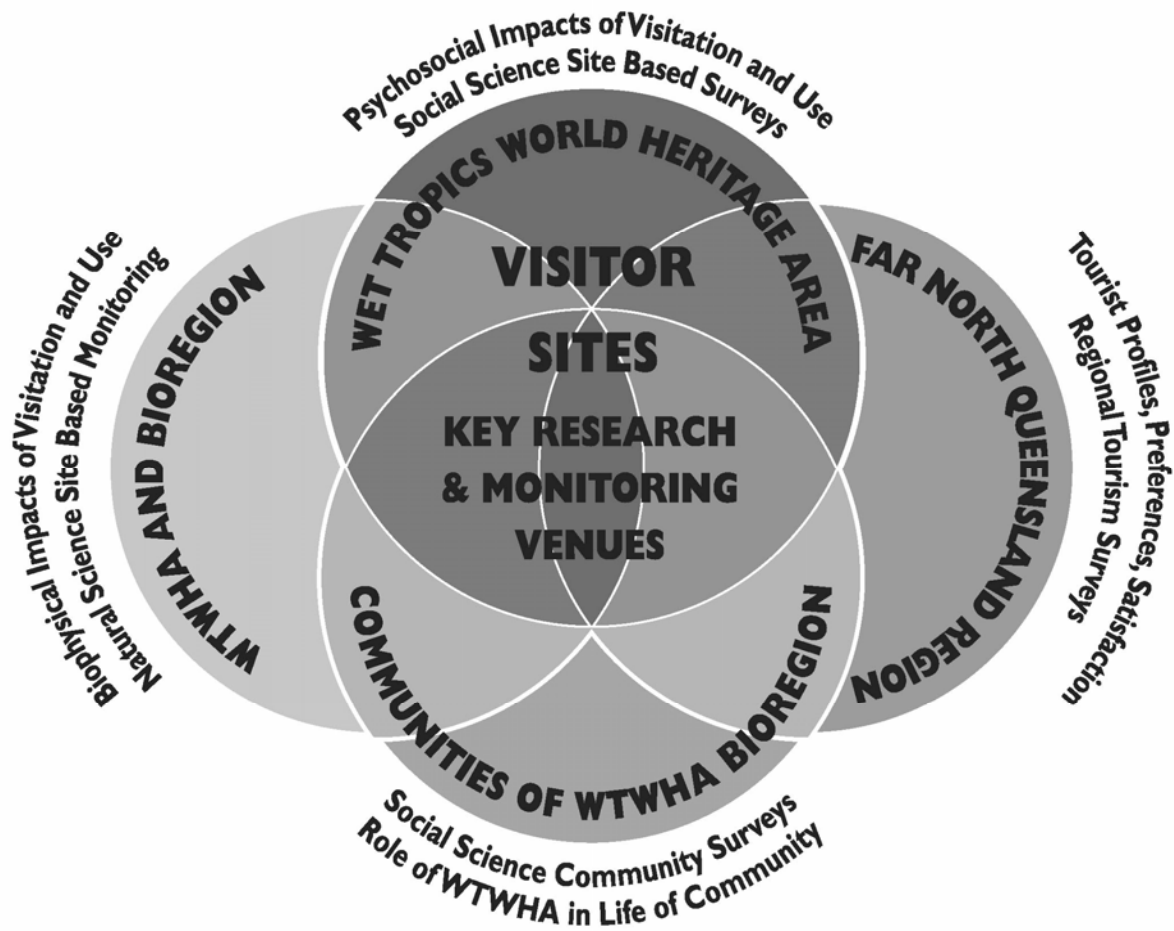


Figure 4.1: The overlaying and alignment of different types of research and monitoring surveys.

This shared space and place character of visitor sites, and the fact that sites are where much of the impacts of visitation and use take place, makes these very apposite, efficient and informative venues for researching and monitoring impacting processes, environmental changes, people-environment transactions and management effectiveness. Figure 4.1 also communicates that site-based sampling and monitoring can efficiently and effectively sample a substantial proportion of the tourist population visiting a region. Importantly, it is that sector of the tourist visitor population who visit the WTWHA who are of direct concern with respect to protection and presentation, enjoyment and appreciation. Equally importantly, visitor site based data collection and monitoring allows for an informed and in-depth, albeit selective, sampling of community residents from the surrounding region. It is much more difficult to achieve an effective and informative sampling of WTWHA site visitors, or management relevant activities, experiences and perceptions, from community or tourism portal surveys. The elegance and efficiency dividends of such a site-based visitor monitoring system from WTWHA and WTMA perspectives include the fact that data and information collected is all directly relevant to pressures and potential problems at particular sites. Having common or shared research venues and data collection sites allows for multiple efficiencies with respect to logistics and personnel, cross-disciplinary integration and exchange, integrated data analyses and cross-method and discipline comparisons and convergence.

There are other advantages and efficiencies relating to standardised methodologies and measures. These include a more ecological and ecosystem-based monitoring system, and the possibility of more strategic, longitudinal research and monitoring, including a more strategic and efficient selection of sites and data points. Finally, such an articulated system

maximises efficiencies with respect to the impact and inconvenience of research undertakings, by using the smallest number of sites, visitors and users necessary for the maximum research and monitoring benefit.

Clearly, there are tradeoffs, and a pragmatic, efficient visitor monitoring system cannot possibly cover and/or duplicate what each independent research and monitoring system can achieve independently. Other needs and other agencies may well require information that is not WTWHA Area and site specific. For example, the tourism industry or regional planning authorities may well need to sample and profile all tourists visiting the Far North Queensland region, not just those visiting WTWHA sites. Community surveys address needs and requirements that site-level surveys cannot really encompass if they are to achieve their purpose in documenting visitor perceptions and appraisals of the immediate natural, human-made and social environment. In the present context, the community survey has been able to more fairly and extensively sample the whole community, including those who do not visit the WTWHA, but for whom the existence and status of the Area is an important part of their experienced quality of environment. For the WTMA, the community survey results can provide data and insights that are not coloured by the fact that surveys were conducted exclusively with actual visitors to WTWHA sites, as was the case with site-level survey companion. These community survey results also provide an additional and independent perspective and set of findings that can be compared and contrasted with site-level research findings and tourism-based 'regional studies' to achieve both convergent validity and a more balanced overview of the multiple considerations which must inform management decisions. Hopefully, these two reports, side by side, can provide the information and findings needed to make a final determination with respect to the methodologies and survey choices for future monitoring and longitudinal research.

Research as Intervention

An important truism in community psychology and action research generally is that researching a community changes the community, or at least those respondents who participated in the research. This is a form of 'reactivity', in that in attempting to measure such variables as 'awareness', we change the very thing we are measuring. In the case of this survey research with the WTWHA regional community we have undoubtedly changed the awareness of all of those individuals who completed a survey questionnaire, hopefully in a positive way. Observations by respondents are quite interesting in this regard.

"Doing the survey made me realise once again how lucky we are to live here, and what a fabulous environment our children are being raised in."

(Male, aged 39)

"Thanks for bringing to my attention that I have been too complacent about the welfare of [the] WTWHA, and that I don't know much about [it]. I will be trying to find out more from now on."

(Female; aged 42)

"This survey has made me aware of the fact that I know very little of the WTWHA and have never bothered to read or to look for information about the WTMA."

(Female; aged 54)

Unlike a four-minute phone survey, a completion-at-home (or at a visitor site) survey that involves a thought-provoking reflection on matters such as "the role of the Wet Tropics World Heritage Area in your life and the life of the regional community" involves respondents in the research process. They become active participants in presenting a community perspective and view. They have a voice in the information gathering that will be informing decision-making.

This is a role of research frequently overlooked by management agencies, in part because very little social or community-based research is undertaken face-to-face, in the field, or with substantive self-administered surveys addressing identified and important social and psychological variables (e.g. Manfredo *et al.* 2004), and in part because such research is typically contracted out to survey organisations in the context of short, efficient, phone-based interviews dealing with several salient issues at most. The present authors have found that the response by community residents to several successive waves of site-level and community surveys has been, on the whole, very positive. In a very direct operational sense the current community and companion site-level surveys undertaken have insured that almost 3,500 individuals have had an intensive workshop in WTWHA management issues and concerns, and they have hopefully left this consultation feeling that they have both learned a lot and given a lot.

“This survey has shown me I am very ignorant about [the] WTWHA and what agencies are involved. If these include State Forest Parks and Wildlife, I am more knowledgeable than this survey would show and have visited more areas than I have indicated. After doing this survey I will visit the web site and become better informed. I think tourism in these areas needs to be managed very carefully and based on eco-tourism.”

(Female; aged 42)

Data collected in previous site-level surveys (Bentrupperbäumer 2002 a-j; Bentrupperbäumer and Reser 2002a) allows for a more detailed consideration of local resident appraisal of the natural, built and social environments of specific WTWHA visitor sites.

4.5 SUMMARY STATEMENT

The survey exercise in which we have been involved indicates quite clearly that there have been very marked changes taking place in the human landscape of the WTWHA and catchment with respect to community perceptions, understandings, attitudes and concerns of the Area, its pressures and threats, and its management. Place meaning, attachment and identification have changed with community residents embracing and more fully appreciating and valuing the World Heritage status of what have been quite separate National and State parks and forests. While aspects of the Area's boundaries, management and ongoing 'partnerships' remain somewhat unclear – and in instances contentious – there has been, overall, a sea-change in community perceptions and support. What is also clear is that the dramatically increased pressure of overseas and interstate visitation and use have impacted markedly on community usage, lifestyles and concerns, particularly in the case of more heavily visited, icon-status sites such as Mossman Gorge and Cape Tribulation. What has frustrated a more sensitive and strategic documentation of these changes, articulated with changes in the biophysical landscape and a changing socioeconomic and demographic population base, has been the unavailability of standardised measures and research protocols, and an existing monitoring system and database directed toward independent and potentially interactive changes taking place in both the biophysical and human landscape, at convergent regional, community and site levels. The more sequenced and systematic community and site-level studies that have taken place over the past eight years throughout the project have moved this monitoring enterprise substantially forward, but a strategic and ongoing monitoring plan and database has yet to be put firmly in place. Hopefully this is imminent. Much will depend on the capacity and willingness of an institution or agency to undertake and underwrite this central research implementation and coordination and database maintenance task.

5. GLOSSARY

This glossary was compiled to assist in defining terms that may be unfamiliar to some readers as well as to provide a WTWHA specific definition or application of a term, concept or construct. Quotes have been used in many instances, as definitions of terms and specification of constructs can vary substantially, and in these instances the source document or organisation has been identified. The second edition of the *Australian Natural Heritage Charter for the Conservation of Places of Natural Heritage Significance* (AHC 2002) has been used as an important reference source, with cross-referencing across its definitions italicised, given the natural World Heritage listing status of the WTWHA. An inclusion of a definition in the glossary does not imply its endorsement by the authors, but rather acknowledgement of its general use and reference within current natural resource management, social science and environmental science discourses.

Adaptive Management

A process that integrates project design, management and monitoring to provide a framework for testing assumptions, adaptation and learning. It was originally developed to manage natural resources in large-scale ecosystems. (Margoluis and Salafsky 1998, p. 347)

Affordance

A natural or human-made feature of the environment that provides for or 'affords' the satisfaction of a need or behavioural requirement. A flat rock, for example, in a setting can afford a place to sit or constitute a 'table' to eat on. The theory underlying the notion of affordances suggests that organisms are particularly sensitised and attuned to things or features in the environment that might serve particular functions or needs. (Bentrupperbäumer and Reser 2000a)

Aggregate Picture

An overview of a number of site surveys or data collections characterised by an aggregation of all site, sample or group level data to allow for combined statistical treatment and analyses and the reporting of aggregate findings and scores. (Bentrupperbäumer and Reser, this document)

Appraisal

In a social science and environmental psychology context, *appraisal* refers to individual or observer-based judgments or evaluations of particular environmental or situation attributes, condition, or agency performance. Appraisal measures are often in the form of rating scales relating to judgments or perceived satisfaction levels.

An appraisal refers to a individual's personal impressions of a setting [where as] assessment refers to the combining of ratings by several observers (experts of setting users) onto a broader-based judgment of the environment. (Gifford 1997, p. 48)

Assessment

Assessment, as distinct from appraisal, in a social science or environmental psychology context, typically refers to a more structured objective, instrument and/or expert judgment-based, evaluation process and outcome.

Attitude

An enduring response disposition with an affective component, a behavioural component, and a cognitive component. We develop and hold attitudes towards persons, objects, and ideas. (Taylor *et al.* 2006)

A general and enduring positive or negative feeling about some person, object or issue. The term belief is reserved for the information that a person has about other people, objects or issues. The information may be factual or it may be an opinion. Furthermore, the information may have positive, negative or no evaluative implications for the target of the information. (Petty and Cacioppo 1981, p. 7)

Baseline Data

Data collected at the beginning of a project. They provide a benchmark against which change that occurs during the project can be assessed. (Margoluis and Salafsky 1998, p. 347)

Behaviour

Behaviour, in the context of researching the impacts of visitation and use or in a generic social science context, typically refers to the actual outward behaviour and activity of human and other organisms as distinct from 'internal' attitudes, judgments, or self-reported view. This typically observable action or activity can involve interactions with the physical or social environment; it can be more passive than active, for example, attentional involvement or quiet observation. (Bentrupperbäumer and Reser, this document). Ultimately, all human activities, including thinking, feeling, and appraising constitute behaviour, but there can be wide discrepancies between individuals' actual, overt behaviour, on the one hand, and self-reported preferences, intentions, and attitudes.

Behavioural

Behavioural is typically used as being synonymous with 'social' as a descriptor of a particular approach or discipline. A behavioural science approach might also be expected to be somewhat more natural and physical science-based. (Bentrupperbäumer and Reser 2000a)

Biodiversity

Biodiversity means the variability among living organisms from all sources (including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part) and includes diversity within and between species and the diversity of ecosystems. (Australian Heritage Commission 2002, p. 9)

Carrying Capacity

This term, widely used in ecological biology, ethology and anthropology, refers to the maximum population that can be supported from a given resource base. Its use in the natural resource management area with respect to human visitors refers to the maximum number of human visitors a particular setting can accommodate without undue or unsustainable adverse impacts on the setting or on visitor experience. This term is simplistic when used in the context of human visitation and use and should not be used as synonymous with 'crowding'. (Bentrupperbäumer and Reser 2000a).

The amount of use a resource can support; with respect to recreation, the carrying capacity could be variously defined as the number of people who can fit in a given area, the number of who can be accommodated without resource damage, or the number who can receive a satisfactory experience such as solitude. (Bell *et al.* 2001, p. 504)

Community

In this report we understand the term *community* to refer to the greater population of the Wet Tropics bioregion. Our use of *community* and *communities* in this text refers to the population nodes commonly designated as separate communities within the region. It also refers to the community of residents, neighbours and stakeholders for whom the WTWHA is an important geographic, economic and symbolic landscape feature and resource.

Composite Picture

An overview of separate research or survey findings that is characterised by the retention of the individual site-level or sample-level characteristics to allow for strategic comparisons and contrasts between different sites and/or samples. (Bentrupperbäumer and Reser, this document)

Congruence

Congruence refers to the 'fit' or complementarity between a design product or built setting and the behaviour for which the setting was designed or is used. (Bentrupperbäumer and Reser 2000)

The 'fit' between user needs or preferences and the physical features of a setting. (Bell *et al.* 2001, p. 505)

Conservation

All the processes of looking after places or objects so as to retain their heritage significance. (Australia State of the Environment Committee 1996, A-24)

Content Analysis

A method of studying the content of documents or other research material. It typically involves categorising information and then comparing the frequency of occurrence of different categories. (Robson 2002, p. 547)

Control

A procedure employed in experimental designs with the purpose of ensuring that extraneous factors or variables do not affect assessment of the effect of the independent variable(s) on the dependent variable(s). (Robson 2002, p. 547)

Crowding

Crowding refers to a situation in which people experience some stress or frustration because of the perceived and/or experienced presence of many people. It differs from density, which relates to the number of people per unit area; in that it is a psychological state that follows a situational appraisal. (Bentrupperbäumer and Reser 2000a)

Experiential state when the constraints of high density are salient to an individual. (Bell *et al.* 2001, p. 505)

Cultural Heritage

Cultural heritage refers to those aspects, features and products of a community or to people's collective historical and cultural life. In a natural resource management context, cultural often relates to place meaning, connections and associations following long-term residence and identification. (Bentrupperbäumer and Reser 2000a)

The ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values. (Australian Heritage Commission 2001, p. 58)

Culture

Culture is a construct that refers to the many different and complex ways in which people from across the world live. Culture is generally understood as being a dynamic set of shared understandings, values, lifestyle and material possessions that allows a group of people to live in and make sense of their current life circumstances as well as to address and interpret change. (Bentrupperbäumer and Reser 2000a)

Domestic Visitor

A visitor to the WTWHA and bioregion from elsewhere in Queensland or Australia, i.e. a non-local Australian visitor. (Bentrupperbaumer and Reser, this document)

Ecologically Sustainable Development (ESD)

Translated for the Daintree, *ESD* means determining the balance between economic use of the area's environmental resources for residential, tourism, agricultural and other activities, while protecting those resources for community and cultural well-being now and in the future. (Rainforest CRC 2000, p. 5)

Using, conserving and enhancing the community's resources so that the ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased. (Australian State of the Environment Committee 2001, p. 122)

Ecotourism

Ecotourism is nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable. *Australian National Ecotourism Strategy* (DTSR 1994)

Ecologically sustainable tourism that fosters environmental and cultural understanding, appreciation and conservation. Its ecological and social responsibility and educational element distinguish it from other tourism which focuses on experiencing natural areas, such as nature-based and adventure tourism. (Australian Heritage Commission 2001, p. 58)

Environment

Includes ecosystems and their constituent parts, including people and communities; natural and physical resources; the qualities and characteristics of locations, places and areas; the social, economic and cultural aspects of a thing mentioned in the previous three criteria. (Australian State of the Environment Committee 2001, p. 122)

One's surroundings; the word is frequently used to refer to a specific part of one's surroundings, as in social environment (referring to the people and groups among whom one lives), physical environment (all of the non-animal elements of one's surroundings, such as cities, wilderness, or farmland), natural (nonhuman) environment, or built environment (referring specifically to that part of the environment built by humans). (Bell *et al.* 2001, p. 506)

Environmental Psychology

Environmental psychology is a sub-discipline of psychology that focuses on the nature and behavioural implications of the physical and social settings in which people live and behave. Environmental psychology draws from natural and social science disciplines as well as the arts and humanities in its interest in aesthetics, design and the symbolic and also the functional nature of human buildings and settings. The nature of human interactions with the natural environment and attitudes, values and understandings of the natural environment are important areas of interest within environmental psychology. (Bentrupperbäumer and Reser 2000a)

Experience

Experience refers to individuals' phenomenological awareness of their interactions with and responses to their physical and social environment. Experience includes current and past emotional and cognitive responses and appraisals, attractions and anxieties. Experience is the psychological and phenomenological accompaniment of activity and behaviour. (Bentrupperbaumer and Reser, this document)

Fit

Fit refers to the complementarity or design appropriateness existing between a design product and a particular use or user. It is synonymous with the notion of 'congruence'. (Bentrupperbäumer and Reser 2000a)

Heritage Assessment

The process of defining the cultural significance of a place. (Johnston 1992)

Impact

Impact can refer to any causal effect. It is typically used in an environmental context to refer to the consequences of an introduced intervention or change in an environmental system or setting. Impacts can occur with respect to any component of the natural and/or physical environment, including individuals, institutions, communities and geographic regions. (Bentrupperbäumer and Reser 2000a)

Impacting Processes

Impacting processes refer to any process or complex of causal elements that are having an effect on the natural or social environment. The expression better captures the dynamic and interacting nature of a number of related causal elements. (Bentrupperbäumer and Reser 2000a)

Indicators

The environment is complex and discerning trends in it can be difficult. Environmental indicators help track changes in the environment by selecting key measures, which may be physical, chemical, biological or socio-economic, that provide useful information about the whole system. Using indicators, we can say something about the environment without having to capture the full complexity of the system. Importantly, indicators are based on the best scientific understanding currently available of how the environment works, so that changes in these simple measures can be related to environmental trends. (ANZECC 2000, p. 1-2)

Indicator. A unit of information measured over time that documents changes in a specific condition. A given goal, objective, or additional information need can have multiple indicators. A good indicator meets the criteria of being measurable, precise, consistent, and sensitive. (Margoluis and Salafsky 1998, p. 350)

Interpretation

A means of communicating ideas and feelings that help people understand more about themselves, their environment and other cultures. The process is commonly facilitated through guides, displays, on-site signage, brochures and electronic media. (Australian Heritage Commission 2001, p. 59)

Interval Level Scale

A continuous scale on which the distance between numbers is equal or otherwise known. With interval scales, meaning is given to the distance between points, and arithmetic operations are possible. (Ghiselli *et al.* 1981, p. 477)

Maintenance

Maintenance means the continuous protective care of the biodiversity and geodiversity of a place. (Australian Heritage Commission 2002, p. 11)

Monitoring

Monitoring means ongoing review, evaluation and assessment to detect changes in the natural integrity of a place, with reference to its baseline condition. (Australian Heritage Commission 2002, p. 12)

The periodic collection and evaluation of data relative to stated project goals, objectives and activities. Many people often also refer to this process as monitoring and evaluation. (Margoluis and Salafsky 1998, p. 351)

A process of determining and documenting changes in the natural environment, human-designed settings, or the social environment, and also changes in individuals and communities, with reference to baseline conditions or status. (Bentrupperbäumer and Reser 2000a)

Natural Heritage

Natural heritage comprises the natural living and non-living components, that is, the biodiversity and geodiversity, of the world that humans inherit. (Australian Heritage Commission 2002)

Natural features consisting of physical and biological formations or groups of such formations, which demonstrate natural significance; geological and physiographical formations and precisely delineated areas that constitute the habitat of indigenous species of animals and plants, which demonstrate natural significance, and/or natural sites or precisely-delineated natural areas which demonstrate natural significance from the point of view of science, conservation or natural beauty. *Australian Natural Heritage Charter* (2002) based on the definition used in the World Heritage Convention by UNESCO. (Australian Heritage Commission 2002, p. 8)

Natural heritage typically refers to those aspects, features and qualities of a natural environment that are valued and appreciated as an important part of a community or country's assets, life and well being. In a natural resource management context, natural heritage typically refers to the status of a natural environment or region as a particularly precious and irreplaceable resource and asset for which there are shared rights and responsibilities. (Bentrupperbäumer and Reser 2000a)

Natural Integrity

Natural integrity means the degree to which a place or ecosystem retains its natural biodiversity and geodiversity and other natural processes and characteristics. (Australian Heritage Commission 2002, p. 9)

Natural Science

The science of 'nature' typified by disciplines such as physics and chemistry. (Robson 2002, p. 548)

Natural Significance

Natural significance means the importance of ecosystems, biodiversity and geodiversity for their existence value for present or future generations, in terms of their scientific, social, aesthetic and life-support value. (Australian Heritage Commission 2002, p. 9)

Nominal Scale

A scale that uses numbers to identify classes or individuals for purposes of distinguishing one from another. Since the numbers only represent classes or types, any mathematical manipulation is inappropriate. (Ghiselli *et al.* 1981, p. 479)

Open-Ended Question

A question response format in which respondents formulate their own responses rather than selecting from a set of predetermined responses. (deVaus 2002, p. 362)

Ordinal Scale

A scale that orders individuals or groups in terms of frequency, amount, or degree to which they manifest the variable being investigated. With ordinal scales, we know only the relative positions and nothing about the real differences between positions. (Ghiselli *et al.* 1981, p. 480)

Ownership and Control

World Heritage listing does not affect ownership rights. Ownership remains as it was prior to nomination and State and local laws still apply. Nor does ownership of these World Heritage properties pass to any international body or foreign power. (Environment Australia 2002, p. 64)

Place

Place means a geographically defined site or area with associated natural features of biodiversity, geodiversity and ecological processes. (Australian Heritage Commission 2002, p. 8)

Presentation

Presentation means creating awareness and understanding of the natural significance of a place. (Australian Heritage Commission 2002, p. 12)

Presentation encompasses the look and experience or response of a visitor site, the communication of information about the site, its management, recreation and experience options and appropriate conduct. (Bentrupperbaumer and Reser, this document)

Portal Survey

A portal survey is a type of regional survey typically used by leisure or tourism researchers that attempts to sample or secure survey participants at airport departure lounges, bus stations, ferry crossings, rest stops, or other transportation nodes. (Bentrupperbaumer and Reser, this document)

Protection

Protection means taking care of a place by managing impacts to ensure that natural significance is retained. (Australian Heritage Commission 2002)

Psychosocial Impact

Psychological impact refers to the consequences of an introduced intervention or change in an environmental system or setting, which is being experienced at an individual or community level. Examples of psychological impacts are emotional responses such as pessimism or optimism, psychologically mediated behavioural conditions such as panic attacks or subjective well being as well as a spectrum of experiential states ranging from concern, to enthusiasm, to vigilance, to enjoyment, to enhanced appreciation or understanding. (Bentrupperbäumer and Reser 2000a)

Reactance

Reactance refers to a psychological state in which an individual feels that his or her freedom to act in a particular way has been taken away. The typical emotional state that accompanies reactance is anger and/or distress. An individual experiencing reactance will typically be motivated to symbolically restore his or her freedom by disregarding a prohibition and engaging in the sanctioned behaviour. (Bentrupperbäumer and Reser 2000a).

Reactivity

Reactivity refers to the classic phenomenon of how the process of measuring something typically changes what is being measured. There has been a growing realisation in survey research particularly, that the inherent reactivity associated with a respondents' reflection upon and answering of survey questions is itself a powerful community awareness and education tool.

Reciprocal

Reciprocal refers to a two-way interaction or process in which the action of one element in the system initiates and causes a complementary response. A reciprocal process is typically one in which feedback processes work together in a mutually complementary exchange. (Bentrupperbäumer and Reser 2000a)

Reliability

The extent to which a measuring device or a whole research project would produce the same results if used on different occasions with the same object of study. There are well-established procedures for assessing reliability in fixed design research. The issues are more difficult to deal with in flexible design research, where some researchers would regard the concept as inappropriate. (Robson 2002, p. 551)

Responses

The range of management actions taken to help mitigate pressures and achieve conservation of the Area's natural values. (WTMA 2001)

Response Rate

The percentage of a sample from which information is successfully obtained. (DeVaus 2002, p. 364)

Sample

A subset of a population. The method of obtaining a sample affects the extent to which sample results can be extrapolated to the population. (DeVaus 2002, p. 364)

The sample frame is the set of people that has a chance to be selected, given the sampling approach that is chosen. Statistically speaking, a sample can be representative only of the population included in the sample frame. (Fowler 2002, p. 11)

Scale

A composite measure where the individual measures are designed to tap the same underlying concept. The individual measures should be both logically and empirically related. (DeVaus 2002, p. 364)

Social Impact Assessment (SIA)

SIA can be defined as the process of assessing or estimating the social consequences likely to follow specific policy actions or project development, particularly in the context of national, state or provincial government policy legislation. Social impacts include all social and cultural consequences to human populations of any public or private actions that alter how people live, work, play, relate to one another, organise to meet their needs and generally cope as members of society. (Burdge and Vanclay 1995)

Social Impact

Social impact can refer to any consequences of an introduced intervention or change in an environmental system or setting that is impacting on a human community or institution. It can also encompass psychological impact. Social impact has come to be commonly (mis)understood as referring almost exclusively to measurable effects in the social environment that have economic or health implications, such as toxic exposure or rate of unemployment. (Bentrupperbäumer and Reser 2000a)

Social Sciences

The study of people and their ways, using a rigorous and systematic approach. Those disciplines that have adopted a scientific model for understanding human beings and their forms of social organisation. The social sciences include sociology, political science, anthropology, economics and parts of psychology, law and geography. (Robson 2002, p. 552)

Social science typically refers to those human sciences that share particular methodologies, histories of development and intellectual affinities. The term usually includes anthropology, psychology and sociology, and often includes economics, history, geography and education. (Bentrupperbäumer and Reser 2000a)

Social Value

It is the foundation of our identity as individuals and members of a community; an irreplaceable centre of significance. (Johnston 1992)

Social value and 'social values' are used to refer to many different constructs, including attitudes, beliefs, values, and societal standards. Such use and 'measures' can be very confusing. See Glossary for 'value' and 'values', this document.

Stakeholder

Refers to everyone in an organisation or other focus of a research study who has some interest (stake) in the research and its outcomes. Includes participants or clients, workers, management, etc. Particularly relevant in evaluation research and other approaches such as action research where there is a focus on change and hence there are likely to be direct effects on such stakeholders. (Robson 2002, p. 552)

State of the Environment Reporting

State of the Environment Reporting is a system for delivering useful information about the environment to all parts of Australian society including the public, the government, industry and non-government organisations. (ANZECC 2000, p. 1)

A scientific assessment of environmental conditions, focusing on the impacts of human activities, their significance for the environment and societal responses to identified trends. (Australian State of the Environment Committee 2001, p. 124)

Survey

A survey is not just a particular technique of collecting information: questionnaires are widely used but other techniques, such as structured and in-depth interviews, observations, content analysis and so forth, can also be used in survey research. The distinguishing features of surveys are the form of the data and the method of analysis. (DeVaus 2002, p. 3)

A formal survey is “a data collection method that uses a standardised approach to collect data on individuals (including people, plants and animals) or groups (household or organizations) through structured measurement or the questioning of systematically identified samples”. (Margoluis and Salafsky 1998, p. 349)

Sustainability

Development that improves the quality of human life while living within the carrying capacity of supporting systems. (IUCN 1991)

The confusion over the meaning of sustainable agriculture is also apparent when the meaning of sustainability in other arenas, for example in sustainable development, is considered. Although most would agree that sustainability implies ‘not cheating on your kids’, a clearer definition has proved to be elusive. This is a point that has been noted by many and appears to be a source of much frustration. Almost every article, paper or book on sustainability bemoans the fact that the concept is broad and lacks a broad consensus; this is usually followed by the author’s own preferred definitions which in turn add to the lack of consensus. (Bell and Morse 2000, p. 9)

Tourism

Tourism is travel away from home for recreation or pleasure and the activities that go with this. It can include visits to friends and spin-offs from business conferences. The term also covers industries and services that aim to satisfy the needs of tourists. (Worboys *et al.* 2001)

Travel for more than 40 km and involving at least one stay overnight. (World Tourism Organisation and the Australian Bureau of Statistics) (Worboys *et al.* 2001)

Transaction

A transaction refers to the holistic interaction of an organism and an environment or setting, typically to some purpose or end. An individual might engage in a transaction with an elevator or an airport in order to get to where they wanted to be. (Bentrupperbäumer and Reser 2000a)

Transactional

Transactional refers to a particular methodological and theoretical approach in the environmental domain which holds that behaviour must be understood and studied as an ongoing and unfolding interactive process with the environment. The study of behaviour or environment independent of each other cannot capture the dynamic process that mediates organisms' behaviour in and with environments. (Bentrupperbäumer and Reser 2000a)

Use

Use, as in 'visitation and use' refers to any functional, utilitarian, or occupational relationship that might exist between an individual and the physical environment which an individual is in. In this natural resource management context, conducting research, infrastructure maintenance, recreation, and restoration are all types of *use*, which might characterise an individual or group's transactions with World Heritage sites. (Bentrupperbäumer and Reser, this document)

Validation

The process of cross-checking to ensure that the data obtained from one monitoring method are confirmed by the data obtained from a different method. (Margoluis and Salafsky 1998, p. 356)

Validity

The degree to which what is observed or measured is the same as what was purported to be observed or measured. (Robson 2002, p. 552)

Whether an indicator measures the concept that we say it does. (DeVaus 2002, p. 366)

Values

Environmental values refer to individual and shared community or societal beliefs about the significance, importance, and well being of the natural environment, and how the natural world should be viewed and treated by humans. Environmental values are conventionally understood as more fundamental, and more salient and influential, normatively, emotionally and motivationally, than preferences or attitudes, with such values serving as moral and/or responsibility reference points and touchstones for how individuals and societies should interact with and treat the 'natural' environment, in all of its diversity, at local, system, and global levels. 'World Heritage Values' are shared beliefs about the worth and critical life-supporting and enhancing role of these exceptional natural environments and our global cultural heritage, and what should be done to protect and preserve these places and systems. (Reser and Bentrupperbäumer 2005).

A 'social value' is our identity as individuals and members of a community. 'Amenity' is the social value humans place on things outside the necessities of survival. The amenity value includes not only the importance and consequences of economic and recreational usage, but also of the social and cultural meanings and values that are basic to our civilisation. (Zann 2000, p. 130)

Value

A value is a social science and psychological construct that refers to a held position or evaluation with respect to a thing, a course of action or a particular domain of behaviour. Values are seen as more enduring than attitudes and as having an evaluative component that beliefs do not necessarily have. In a natural resource management context, having or 'possessing' value must be understood as being valued by a community or group. This 'value' may be with respect to its economic, cultural, spiritual, or scientific worth to human society. (Bentrupperbäumer and Reser 2000a)

Vicarious Use

Vicarious use refers to an indirect use of an item or place by knowing about it, thinking about it, making a decision on the base of it, being concerned about it. In a natural resource management context, vicarious use can refer to the fact that [an] individuals might well see a particular place or setting as somewhere where they might some day visit or as a place that in some way contributes to their sense of well being and security. (Bentrupperbäumer and Reser 2000a)

Virtual Reality

Virtual reality refers to any representation of the real world with which people interact in some way. A virtual representation of a holiday destination represents and stands for the place itself. (Bentrupperbäumer and Reser 2000a)

Visitation

Visitation refers to the process and phenomenon of people visiting a particular site, place or area. It is in many ways preferable to use the phrase 'visitation and use' in the context of environmental impact assessment or monitoring as almost all visitation implies some type of use, both biophysical and psychosocial impacts derive from and reflect all transactions with an environment. As well, reference to 'visitation and use', in a protected area environment context, ensures that the impacts of and impacts upon all visitors and users are taken into account, not just tourist visitors. (Bentrupperbäumer and Reser, this document)

World Heritage Sites

Sites of outstanding universal natural or cultural significance that are included on the World Heritage List. (Australian State of the Environment Committee 2001, p. 122)

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APPENDIX 1: COMMUNITY SURVEY METHODOLOGIES

The Community Survey involved two different methods of data collection. A total of 1,236 residents were canvassed in their homes using a drop-off / pick-up / mail-back procedure, and a further 1,138 residents were issued with questionnaires distributed through post office boxes. An alternative method for data collection was achieved through a Site-level Survey that involved 1,012 questionnaires being provided to members of the community as they visited sites within the WTWHA. Of the total 2,374 questionnaires distributed for the Community Survey, 33% or 788 were returned completed and comprise the data set analysed in this project. All 1,012 completed Site-level Surveys were deemed valid and subsequently analysed. A combined total of 1,800 respondents contributed to this study (Table 7.1).

Table 7.1: Total number of participants involved in each of the three survey methods.

	Community Survey		Site-level Survey	Total
	Drop-off / Pick-up / Mail-back Procedure	Postal Procedure	On-site Distribution	
Number of surveys distributed	1,236	1,138	1,012	3,386
Number of surveys returned	534	275	1,012	1,821
Number of surveys valid and analysed	518	270	1,012	1,800

DATA ANALYSES

Analyses of the survey data has been primarily by way of descriptive statistics, as the meaning of most survey responses relates directly to the relative frequency of particular responses. This analysis and reporting style is primarily used in the reporting of survey findings. Some correlation and group comparison analyses were undertaken to identify and highlight the divergent views of specific categories of community members, for example, rural or urban, Indigenous or non-Indigenous and short-term or long-term residents of the area. Correlation analyses were also undertaken where the relationship between particular variables, for example, age and attitude, were of interest.

DROP-OFF / PICK-UP / MAIL-BACK PROCEDURE

Six communities within the central sub-region of the WTWHA (Figure 7.2.1) were the focus of the drop-off / pick-up / mail-back procedure. Houses within these communities were selected using a stratified random sampling procedure. The distribution and collection of the surveys was carried out over weekends in an attempt to speak to as many residents as possible before leaving the questionnaire at the residence for them to complete.

A number of different strategies were employed in the drop-off / pick-up / mail-back procedure to ensure the maximum return of completed, valid survey forms. The distribution and collection figures obtained for the different procedures used in the drop-off / pick-up / mail-back methodology vary for each process (Figure 7.2.1).

The return rate for drop-off / pick-up was much higher than that of drop-off / mail-back. Clearly, face to face contact which established some measure of rapport and commitment from the residents proved to be a much more successful technique than leaving a survey and note behind at a residence. Response rates are presented in Figure 7.2.2.

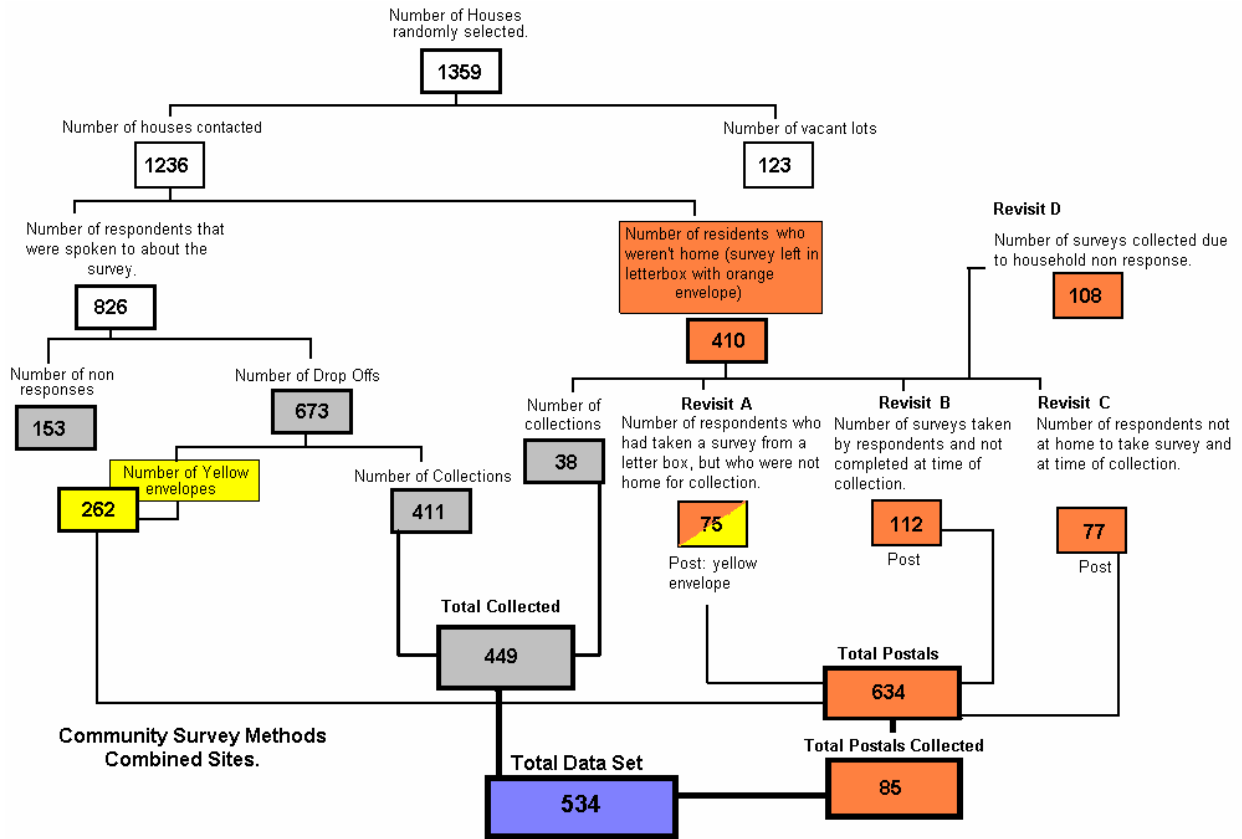


Figure 7.2.1: Distribution and collection figures for the different methods used in the drop-off / pick-up / mail-back procedure.

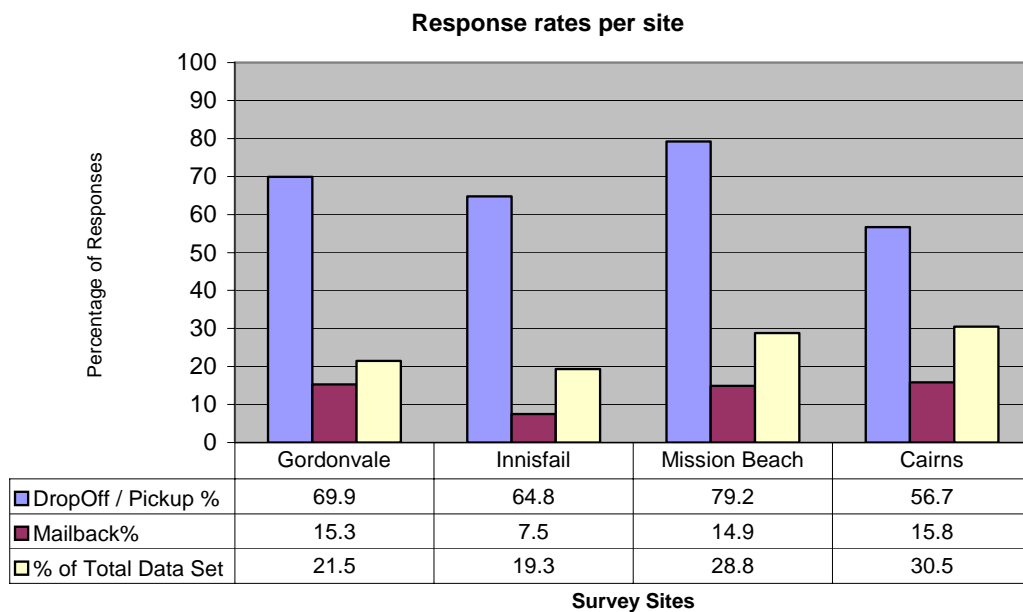


Figure 7.2.2: Response rates of selected communities to the drop-off / pick-up / mail-back procedure.

Non-Responses to the Drop-off / Pick-up / Mail-back Procedure

The reasons given for non-participation in the community survey are recorded in Table 7.2.1. The majority of the non-responses were experienced during the distribution of the survey when residents indicated that they were either unable to or not interested in completing a survey questionnaire. The majority of non-respondents were either elderly or claimed they could not speak or write English sufficiently to complete the questionnaire.

The lowest non-response figure found during this survey (32) was from the communities of Gordonvale, Babinda and Miriwinni. The majority of these non-responses were evident during the distribution of the survey when residents indicated that they were either unable to or not interested in completing a survey. Again, the majority of non-respondents were either elderly or claimed they could not speak or write sufficient English to complete the questionnaire.

Forty-seven non-responses were recorded in Innisfail, with the majority of these having declined to participate in the survey upon initial contact. Most community members who gave negative replies indicated that they were not interested in completing the survey. Other reasons included not feeling well, being unable to write or speak English or not having sufficient time available to complete the survey.

The Innisfail area was also characterised by a high non-response rate at the time of survey collection. Some residents left the unanswered survey questionnaire for collection without explanation, while others indicated that they either were not interested or they found the survey too confusing. Most of the non-responses that occurred at the time of collection originated from questionnaires that were left at unattended homes with an explanatory note and envelope attached, indicating no actual contact had been made with these residents.

There were 120 non-responses in the Mission Beach area. This high number relates to both the number of field staff working in the area and the nature of the location. Four field assistants at this location, instead of the usual two, enabled twice the number of community members to be approached to participate, hence the proportionately higher number of declines. As the Mission Beach area is a tourist destination with many holiday homes and apartments, a high number of the randomly selected residences were vacant at the time the survey was distributed. Most of the non-respondents indicated that either it was not a good time to complete the survey, that they were on holidays, or that they were not interested.

Three field staff were involved in delivering and collecting surveys in the Cairns area, with a total of 99 non-responses recorded. The majority of non-responses occurred during the survey distribution phase. Most of the potential respondents who declined to participate indicated that they were not interested or that it was not a good time for them to complete the survey.

The majority of the non-responses occurred on a Sunday; field staff were asking residents of Edge Hill (suburb of Cairns) if they would complete the survey that morning ready for collection later that afternoon. The distribution of the surveys coincided with a large annual festival being held at the Botanic Gardens in Edge Hill. This, combined with the short completion time given, may have accounted for the high non-response rate in Cairns. Another Cairns suburb, Manunda, was also canvassed. The number of vacant rental properties and units in the area were undoubtedly responsible for some of the non-responses recorded.

Table 7.2.1: Reasons for non-responses given by community members when approached to be involved in the Community Survey.

	Gordonvale	Innisfail	Mission Beach	Cairns
Delivery Non-Responses				
Feeling sick	-	3	-	3
Elderly – too much	3	1	-	4
Not interested	9	10	9	18
Very negative with respect to the Wet Tropics World Heritage Area	1	-	-	-
No English (Italian, Philippino, Indian)	5	2	2	2
Holidaying	-	-	5	1
Deaf – unable to communicate	1	-	1	-
Don't like participating in surveys	1	1	2	4
Can't do it	-	1	-	1
Not a good time / No time	1	2	10	18
Would not come to the door	-	-	-	3
Unknown	-	1	-	6
Total	21	21	29	60
Delivery Interrupted				
No junk mail	3	2	1	3
No letter box	1	3	-	1
No residents / vacant	2	3	67	19
Unable to enter property	-	-	2	3
Away on holidays	3	-	2	-
Dog/s	-	-	5	6
House was actually a business	-	-	3	-
Total	9	8	80	32
Collection Non-Responses				
Cannot speak / read English (Italian)	-	2	-	1
Not interested	1	3	6	2
Holidaying / Only visiting	-	1	2	1
Granddaughter's birthday (busy)	-	1	-	-
Lost the survey	-	-	-	2
Too busy	1	-	3	-
Survey contains too many irrelevant questions; is too confusing	-	3	-	-
Unknown	-	8	-	1
Total	2	18	11	7
Total Site Non-Response	32	47	120	99

POSTAL PROCEDURE

The decision to use the postal technique as a second method of distributing survey questionnaires was based on the need to obtain a good representative sample of the Wet Tropics bioregion in the most cost effective and time efficient way. Communities were selected on the basis of their location within the region and included Port Douglas, Kuranda, Atherton, Malanda, Millaa Millaa, Ravenshoe, Herberton and Cardwell. The postal method provided access to communities for which it would not have been financially or practically possible to include using the drop-off / pick-up method.

Residents of these communities were randomly selected by post office box numbers. The range of box numbers in each postal centre was supplied by the post office and entered into the statistical program SPSS, which randomly selected 20% of the post box numbers at each postal centre. The owners of these post boxes were unknown.

A brief covering letter was included with the questionnaire that explained the research project and encouraged their participation. The post office box owners were also issued with a return postage-paid envelope and an information request card. To maximise the response rate, a follow-up letter was sent out approximately ten days after the initial distribution.

A total of 1,960 questionnaires were issued for distribution via the postal procedure. Of these, 1,138 were issued to valid personal post office boxes. Only 270 surveys were returned, constituting 34.3% of the total data set (Table 7.1).

Atherton and Mossman contributed the most completed surveys (forty surveys returned from each community), while the residents of Halifax failed to return any of the surveys issued to them (Table 7.4.1). On a sub-regional level, the Tablelands communities contributed 145 surveys to the final postal data set (53.7%), the northern region contributed 74 surveys (27.4%), and the southern lowlands contributed 51 surveys (18.8%).

SITE-LEVEL SURVEY

The third method of data collection in this project was to survey local community members during an actual visit to a recreation site within the WTWHA. Prior to the commencement of the community survey, a comprehensive and independent site-level survey was undertaken at ten designated WTWHA visitor sites during the period between September 2001 and April 2002 (Bentrupperbäumer and Reser 2002a, Bentrupperbäumer 2002a-j). A total of 1,012 participants in this site-level survey were residents of the Wet Tropics bioregion (Table 7.4.1).

This site-level dataset provides a particularly informative perspective of the local community's perceptions about the WTWHA and its management. This survey provides a comprehensive analysis of local resident site-based visitation data as well as their appraisals of aspects of the site. This places local resident visitor responses within the site-level context of domestic Australian and overseas visitation and use.

Table 7.4.1: Number of local respondents surveyed at each WTWHA site-level survey sites.

Sites	N
Barron Falls	79
Lake Barrine	192
Marrdja Boardwalk	13
Henrietta Creek	34
Mossman Gorge	126
Goldsborough Valley	91
Big Crystal Creek	106
The Crater	202
Davies Creek	92
Murray Falls	77
Total	1,012

APPENDIX 2: OCCUPATION PROFILE OF RESPONDENTS

Respondents' Occupations	n	Respondents' Occupations	n
Unemployed / Retired / Semi-retired / Pensioner		Employed – Trades Person	
Pensioner	23	Boilermaker / Operator	3
Aged Pensioner	4	Builder / Landscape Designer	4
Disability Pensioner	2	Carpenter / Handy Person	5
Retired	118	Catering / Hospitality	10
Semi-retired	6	Food Tradesperson (Baker, Butcher, Meat Packer, Fisherman, Seafood Assistant)	10
Sickness Benefits	1		
Widower	2		
Unemployed	12	Electrical / Electronics (Systems Analyst, Electrician, Technician)	13
Volunteer	1	Agricultural / Horticultural (Farm Hand, Florist, Gardener, Green Keeper, Grazier, Horticulturalist)	11
Total	169 (25.2%)		
Employed – Clerical and Service Workers			
Administration	21	Defence (Navy)	1
Secretary / Receptionist / Consultations / Customer Relations	15	Mechanic	2
		Dressmaker / Seamstress	2
Clerk	7	Fitter and Turner	3
Bank Clerk / Teller / Officer	5	Locksmith	1
Bookkeeper	3	Plumber	1
Claims Assessor	1	Mill Hand	2
Night Fill (e.g. Supermarket)	1	Rigger	3
Retail / Sales	15	Signwriter	1
Tourism	2	Skipper (Tourism)	2
Waitress / Bar Attendant	3	Timber Merchant	1
Seasonal Fruit Packer	1	Total	75 (11.2%)
Postal Sorter / Operator	2	Employed – Managers and Administrators	
Total	76 (11.3%)	Farmer / Primary Producer	15
Employed – Professionals / Associate Professionals		Manager (Office, Business, Property, Retail, Sales, Power Station)	27
Accountant	8	Business (Owner, Self Employed)	27
Education (Adult Trainer, Tutor, Childcare, Teacher, Teacher's Aide, Officer, Librarian)	52		
Agricultural Scientist	1	Total	69 (10.3%)
Engineering (Aircraft, Civil, Domestic, Mining)	11	Employed – Production and Transport Workers	
		Bus Drivers / Operators	3
Medical (Ambulance Officer, Dental Technician, Doctor, Midwife, Nurse, Optometrist, Physiotherapist)	24	Delivery Driver	4
		Taxi Driver	1
		Train Driver	1
Health (Instructor, Natural Therapist, Disability Support, Psychologist, Speech Pathologist, Carer)	9	Truck Driver	3
		Total	12 (1.8%)

Respondents' Occupations	n	Respondents' Occupations	n
Professionals / Associated Professionals (cont'd)		Employed – Labourers	
Arts (Artist, Fashion Designer, Sculptor, Videographer, Writer, Creative Director)	9	Cleaner	8
Police Officer / Patrolman / Private Investigator	3	Garden Rubbish Collector	1
Community Care Coordinator	1	Labourer	3
Company Director / Representative	2	Total	12 (1.8%)
Corrective Services Officer	1	House Duties	
Customs Officer	2	Home Duties / Home Maker	55
Family Services / Support / Social Worker	7	Parent	15
Historian	1	Housewife	13
Human Resources	1	Total	83 (12.4%)
Natural Resources (Ranger, DPI Development Officer, QPWS Management Officer)	3	Students	
Instructor (Diving, Swimming)	3	High School / University / TAFE	17
Journalist	1	Total	17 (2.5%)
Marine Biologist / Engineer	3	DATA SET TOTAL: 671	
Project Officer / Manager	4		
Public Servant	2		
Proprietor	1		
Professional	1		
Purchasing Officer	1		
Real Estate Agent	2		
Town Planner	1		
Training Consultant / Designer	2		
Zoologist / Zoo Keeper	2		
Total	158 (23.5%)		

APPENDIX 3: PERSONAL DISADVANTAGES

This section summarises nine major categories and associated responses for the following open-ended question on personal disadvantages of living in or around the Wet Tropics World Heritage Area. This is not a frequency table, but rather an outline of the types of responses received, and the categories of those responses.

Role of the Wet Tropics World Heritage Area in your life:

For you personally, if there are any disadvantages in living in or around the Wet Tropics World Heritage Area, please list what these disadvantages are.

A. Rules, Regulations and Restrictions:	
<ul style="list-style-type: none"> • 80 km/hr speed limit is ridiculous; • Restrictions on private land usage; • Access restrictions; • Areas restricted to the individual, but not to commercial activity; • Can't cut down trees in your own yard / farm; • Domestic animal restrictions; • Permits needed to bushwalk; • Restricts construction of dams / hydropower; • Decreased access to local wood for domestic use; 	<ul style="list-style-type: none"> • Can't access WTWHA to shoot feral pigs; • Having to pay to camp / cannot camp; • Closing of recreational driving tracks / roads; • Fear of buffer areas; • Cannot ride motorbikes on trails; • Limited access to timber; • Constraints on fishing; • Intrusive cassowary protection; • Aborigines allowed to take weapons in, white people cannot.
B. Management Issues:	
<ul style="list-style-type: none"> • Misinformation of the area / difficulty in finding information; • Wet Tropics Management Authority and Queensland Parks and Wildlife Service bureaucracy; • Lack of management on the ground – top heavy; 	<ul style="list-style-type: none"> • Little to no management; • Management to interest groups, e.g. tourist operators and aboriginal groups; • Not enough common sense and observation.
C. Economic Issues / Employment:	
<ul style="list-style-type: none"> • Economic degradation by locking away sustainable renewable resource; • Employment generally limited to tourism, agriculture and development; • High numbers of visitors and associated higher costs of living; • Lack of development – no jobs for young people; • Limited employment because logging has ceased / logging ceased; 	<ul style="list-style-type: none"> • Costs of living due to council changes; • Lost job because of the WTWHA; • Reduced land value – unable to cut down trees in front yard; • Highest municipal rates in Queensland; • Real estate agents.
D. Industry / Agriculture:	
<ul style="list-style-type: none"> • Spraying of crops – pollution • Farming activities / impacts of rural land use; 	<ul style="list-style-type: none"> • Cattlemen using it for grazing; • Damage done to agricultural infrastructure.
E. Feral Plants and Animals / Pests:	
<ul style="list-style-type: none"> • Land is full of pests – both animals and vegetation; • Breeding feral animals and plants; cane toads; • Feral animals taking refuge in the WTWHA; • Flying foxes / cockatoos destroying fruit before ripening; • Feral animal access to property; • Mildew / snakes in the yard; 	<ul style="list-style-type: none"> • Mosquito-borne diseases; • White ants / mosquitos / sandflies; • Scrub ticks and their side effects; • Sharing the costs of eradication of weeds; • Stinging plants; • Dingoes from the WTWHA attack cattle.

F. Political:	
<ul style="list-style-type: none"> • Inability to utilise areas determined under Mabo legislation; • Seeing it threatened by lack of government action – making allowances for certain departments; • Too much local, State and Federal interference in any form of development; 	<ul style="list-style-type: none"> • Interference from Douglas Shire to use WTWHA for revenue raising; • Trying to run Mission Beach; • Area being overtaken by interest groups; • Having to listen to do-gooders.
G. Environmental Issues:	
<ul style="list-style-type: none"> • Dry times – fires due to old trees and wood not controlled by cleaning; • Fire safety; • Heat / high humidity / heavy rainfall constantly; • Loss of wildlife because of pets; 	<ul style="list-style-type: none"> • Running over small animals that come out of the forest; • Freeholders cleared acres of land when World Heritage Listing was announced.
H. Infrastructure Issues:	
<ul style="list-style-type: none"> • Power supply disruptions during cyclone season due to falling trees; • Damage done to roads and driveways due to heavy rain; • No clean water; • Lack of infrastructure; 	<ul style="list-style-type: none"> • No electricity; • Not being close to facilities found in larger towns; • Telephone that works; • Form of transport from place to place; • Closeness and efficiency of medical facilities; • IT line that works.
I. Community Issues:	
<ul style="list-style-type: none"> • Lack of open area; • Tourists; • Increased human traffic; • Urban development; • Only so many people can live here; • People who think they are threatened by world issues; 	<ul style="list-style-type: none"> • Claustrophobia; • Greenies; • Land next to WTWHA is not yours; • Motorbikes, low flying aircraft and speeding traffic.
NO DISADVANTAGES:	
<ul style="list-style-type: none"> • No disadvantages; • Must be preserved; • WTWHA helps to create the reason for living up on the Tablelands; • Leave it alone; 	<ul style="list-style-type: none"> • Keep it like the way it is; • If people don't like it, they should move; • A privilege to know that they are there and to visit them.

APPENDIX 4: COMMUNITY DISADVANTAGES

This section summarises nine major categories and associated responses for the following open-ended question on community disadvantages of living in or around the Wet Tropics World Heritage Area. This is not a frequency table, but rather an outline of the types of responses received, and the categories of those responses.

Role of the Wet Tropics World Heritage Area in community life:

For the regional community, if you consider there are any disadvantages associated with the Wet Tropics World Heritage Area, please list these disadvantages.

A. Rules, Regulations and Restrictions:	
<ul style="list-style-type: none"> • Completely closed off to the community / no public access; • Closing / no access; • Limited access leading to overcrowding at icon locations; • Limited camping areas / recreation areas; • Lack of attainable area for recreation; • Cannot ride in these areas to camp; 	<ul style="list-style-type: none"> • Paying to camp is discriminating to families; • Restrictions on marine access; • Restrictions on fishing are continuously changing; • Reduced freedom to decide and choose for yourself; • "Red tape"; • Hard on property adjacent to areas; • Speed and traffic restrictions (for cassowaries).
B. Management Issues:	
<ul style="list-style-type: none"> • Absolutely zero management; • Over-promotion; • Mismanagement; • Over-management / over-zealousness; • Lack of consultation with the community; • Dislike of Wet Tropics Management Authority by landowners; 	<ul style="list-style-type: none"> • Closed minds to others' opinions; • Lack of information about WTWHA; • "Too many Indians and not enough chiefs"; • Not quick to resolve matters – maintenance to roads; • Powerlessness towards being able to produce outcomes.
C. Economic Issues / Employment:	
<ul style="list-style-type: none"> • Economic pursuits; • Commercialisation puts cost of living up too high for locals; • Outdoor employment (wet season); • Limited capital expenditure; • Lock up private land and prevent economic opportunities to the community; • Reduced employment opportunities / lack of development; 	<ul style="list-style-type: none"> • Every development, be it estate / tourism / aquaculture, is not allowed to achieve; • More employment for highly paid office workers, pen pushers, and desk-bound experts; • Big loss of employment – timber and associated industries; • Millaa Millaa was a thriving town until the sawmill closed.
D. Industry / Agriculture:	
<ul style="list-style-type: none"> • Unnecessary clearing by freehold landowners due to government constraints; • Forestry industries; • Restriction of responsible forestry; • Demise of unsustainable forestry; • Effects freehold owners (farmers); • Restrictions / too much "red tape" on agriculture; • Agriculture and urban development limited to areas outside the WTWHA; 	<ul style="list-style-type: none"> • Commercial farming development; • Stopping traditional farming; • High scrutiny of agricultural practices; • Not being able to develop a water power industry; • Mining development. • Excluding individuals to allow commercial activity (tours, etc.); • Animosity of sawmills.

E. Feral Plants and Animals / Pests:	
<ul style="list-style-type: none"> • Not enough being done / allowing spread of pests; • Breeding areas for vermin (feral animals, pigs, dingoes); • Blanket protection of all wildlife; • Control and management of pigs, cats and dogs; • White cockatoos are over breeding; 	<ul style="list-style-type: none"> • Increased bird populations that attack crops and gardens; • Logging has ceased, allowing lantana, rubber vine and other vegetation to take over; • World Heritage Area exists as an island of protection.
F. Political:	
<ul style="list-style-type: none"> • Being controlled by government from southern States; • Giving our land to outside countries; • Globally, not locally owned; • Not to hand the land over to the Aborigines and have them take charge of it; • Government idiots feel that they can make decisions in our own backyard; 	<ul style="list-style-type: none"> • Political decision making; • Removing control of national assets through international control; • The guise of Indigenous land garb; • Too much local, State and Federal interference; • Control by political world order; • Too much emphasis given to minority groups that relate to all groups.
G. Environmental Issues:	
<ul style="list-style-type: none"> • Large trees falling on the road; • Rain; 	<ul style="list-style-type: none"> • Loss of access tracks – reduced possibility of fire protection in the dry areas.
H. Infrastructure Issues:	
<ul style="list-style-type: none"> • Maintenance of roads; • No electricity; 	<ul style="list-style-type: none"> • No good local camping; • Rural water supply.
I. Community Issues:	
<ul style="list-style-type: none"> • Increase in human traffic / influx of tourists; • Over-reaction by some greenies to central issues; • People will trash the area just because we don't want them to; • Too much focus on tourism; • Tourists leaving toilet paper; • Travellers ignore signage; • Uneducated greenies; • Destroying the rainforest for no need; • Local green groups not following the Act; 	<ul style="list-style-type: none"> • Loss of individual / Australian identity; • Lower populations; • Tendency to label locals as ecological vandals; • Too many one-eyed radical people who achieve nothing; • Too many inappropriate / illegal activities; • Having to listen to concerned persons protecting the land; • Tension between farmers and the greenies; • Community divisions over land development.
NO DISADVANTAGES:	
<ul style="list-style-type: none"> • No disadvantages – the timber industry was going to die anyway; 	<ul style="list-style-type: none"> • No disadvantages at all.

APPENDIX 5: EXPECTATIONS OF MANAGEMENT AGENCIES

Expectations of Management Agencies		Percentage of Total Responses
What Management Agencies should <u>do</u>:		
Protect, Conserve, Preserve (59.5% of responses identified)	Direct language use	30.7%
	General Maintenance: Manage; maintain; look after; care for; upkeep; retain.	16%
	Regulatory: Enforcement; policing; prosecuting; patrolling; controlling; permitting; stop / control logging, development, industry, mining, commercial exploitation and destruction.	7%
	Resource Management: Kill, control feral animals and plants; restoration.	4.1%
	Strategic Management: Decision making; develop policies, laws; strategic planning.	1.7%
Consult, Educate, Promote (12.3% of responses identified)	Public Relations: Consultation; communication; feedback; community involvement; consultation with Traditional Owners.	6.2%
	Public Education: Education; information; increase awareness; history.	5%
	Promotion: Indigenous ecotourism; assets of World Heritage Area; expansion and growth.	1.1%
Amenity, Infrastructure (9% of responses identified)	Access: Provide more and better; controlled; sustainable.	5.2%
	Infrastructure: Provide walking tracks, facilities, signage and access roads.	3.7%
What Management Agencies should <u>be</u>:		
Corporate Ethics, Behaviour, Competencies (19.2% of responses identified)	Behaviour: Fair; consistent; accountable; honest; committed; common sense; professional; understanding; considerate; respectful; culturally aware; proactive; realistic; integrity.	9.2%
	Outcomes / Productivity: More and better; effective; to the full; good standard; sustainable; sensible; practical; proper.	6.4%
	Informed / Knowledgeable: Research; assessment; monitor; knowledgeable; report changes.	2.3%
	Balanced: Conservation and economics; politics; realistic attitude to development and agriculture.	1.4%

APPENDIX 6: ADDITIONAL COMMENTS

An important advantage of a community survey such as this is that it gives respondents a voice and an opportunity to put in their own words the sense, value or personal impact of a particular consideration, issue or concern. The richness, insights and diversity of responses to open-ended items, and concluding comments and observations have been impressive and these comments and views have informed our analyses and interpretations. The sheer amount of data from both qualitative and quantitative question and response formats has meant that this report could only summarise, and select and present, representative or illustrative comments, views and perspectives.

The following comments and observations reflect some of this richness and diversity and articulate with some of our thoughts and commentary in the more quantitative data that we have summarised and reported. What is presented here is just a very small sampling of this extensive data.

COMMENTS IN RESPONSE TO PARTICULAR QUESTIONS

RESPONDENTS' DETAILS AND LOCATION: Male, aged 64, Atherton	
Question	Comment
20. Disadvantages to regional community.	Some aspects of access in areas where local usage was common. Obviously there are costs and impacts to consider, but each one-two metres of the stream above Davies Creek falls needs a management review.
22. Expectations from agencies.	Considered management consultation with the community. Practical and considered policies on research and issues such as controlling seed collecting, botanical and entomological collections. Severe restrictions on seed collecting can result in nurseries growing only exotics that may become threats [to the World Heritage Area].
37c. Main reason for visit.	Interpreting, revealing and showing the region to friends, visitors, societies. Relaxation, leisure/recreation and continued exploration.
38. Two favourite places, why?	<ol style="list-style-type: none"> 1. Lake Eacham – within a twenty-minute walk, one can show all the features of complex vine forest – large buttresses, lianas, epiphytes, every stone/rock is covered with mosses, lichens, ferns. Waterfalls, tree ferns, King Ferns, Potato Ferns are prominent. Liverworts present, also. 2. Russell River, between Chuckalunga Creek and the Golden Hole. This stream's source is predominantly from Bartle Frere and has virtually no human impact until it reaches the Golden Hole. It is a cathedral of waterfalls, stream crossings, granitic and volcanic features and a range of rainforest types, rare and ancient species, magnificent clear water pools. BUT ALL OF THE WORLD HERITAGE AREA IS BEAUTIFUL.
40. Change in WTWHA site visited.	Enormous visitation pressure on Mossman Gorge and Daintree / Cape Tribulation area. Some beautiful boardwalks in the latter area have helped mitigate pressures. Infrastructure has improved viewing Barron Falls, but road condition needs consideration. Road access and condition at Lake Eacham needs management consideration, and planting of gardens at Lake Barrine with exotics needs management.
42. Why you feel excluded from the WTWHA.	The restricted access area above Davies Creek Falls should be removed to some one-two kilometres further along the road, as the streambed here has magnificent granite boulders and some pools that are beautiful for recreational swimming and picnicking/relaxing. The approach of [the Department of Natural Resources and Mines] policing people for permits here leaves a bad taste and management needs a new approach, managing access and recreation in a positive way, taking into consideration minimising visitor impacts.

RESPONDENTS' DETAILS AND LOCATION: Male, aged 54, Kuranda	
Question	Comment
21. Agencies responsible for managing the WTWHA.	The buck keeps going around in circles and no one will give us a direct answer after 25 years and hundreds of meetings with us.
35. WTWHA information desired.	When are they going to buy some boots and get out here to do their taxpayer-funded jobs? In fact, we nearly tore this survey up because you will do it anyway. Don't ask us – get out here on a weekend and just sit in the bush and water! We do not expect you to believe us until you do.

RESPONDENTS' DETAILS AND LOCATION: Female, aged 56, Millaa Millaa	
Question	Comment
20. Disadvantages to regional community.	Millaa Millaa was a thriving town until the sawmill closed. There is high unemployment and the town is depressed. There are no jobs for people. The heritage rainforest does not make jobs for people living in small towns.

RESPONDENTS' DETAILS AND LOCATION: Female, aged 63, Cardwell	
Question	Comment
35. WTWHA information desired.	Only when controversy arises (Ergon Power re-alignment) is much heard from Wet Tropics [Management] Authority.

RESPONDENTS' DETAILS AND LOCATION: Male, aged 79, Cardwell	
Question	Comment
26b. Protection of Aboriginal cultural sites.	To the full extent and more than is their rights.
38. Favourite WTWHA sites, why?	Cardwell to Cooktown – no particular single place, can't camp and boil the billy any more – tragic. Ruined; too many restrictions; Aussies have lost the freedom we old-timers fought for.

RESPONDENTS' DETAILS AND LOCATION: Female, aged 73, Malanda	
Question	Comment
3. Importance of the WTWHA.	Very important – because you have us by the short and curlies.
12. Why rainforests made a World Heritage Area?	Goodness knows! I think the decision was made at a world conference in Brazil. Brazil!!!! As far as I am concerned, our forests have already been protected. Early on, settlers were forced to clear scrub but for years the rainforests have been managed well by selective logging. There is Queensland Maple in State and Federal Government Parliament Houses as well as other cabinet timbers and Tulip Oak flooring. Have you seen the Tulip Oak flowering trees these last few months?
14. Who does WTWHA belong to?	Us – all of us – the world. Our rainforests are very special. The work that TREAT is doing with Nigel Tucker at Lake Eacham is praiseworthy – they don't get colossal salaries – it is all voluntary valuable. They are planting up creeks and rivers and making wildlife corridors. The seats of their pants don't have time to get shiny.

RESPONDENTS' DETAILS AND LOCATION: Male, aged 36, Malanda	
Question	Comment
16b. Opposition to Aboriginal co-management of the WTWHA.	Strongly oppose – as soon as land was cleared the Aborigines couldn't get out of the rainforest quick enough!!
25. Protection of WTHWA.	Rainforests take care of themselves – regenerate aggressively – the WTMA doesn't have to do a bloody thing.

RESPONDENTS' DETAILS AND LOCATION: Female, aged 55, Wondecla	
Question	Comment
15. Support for protection of WTWHA.	I don't know enough about how successful they are at protection, and I know of and see many instances of lack of protection.

RESPONDENTS' DETAILS AND LOCATION: Female, aged 51, Ravenshoe	
Question	Comment
43. Reasons for not using the WTWHA for leisure.	Time – or shortage of. Too busy with our own acreage trying to combat introduced plants and feral animals. Don't think it's necessary to be constantly visiting a place to be appreciative of it.

RESPONDENTS' DETAILS AND LOCATION: Female, aged 66, Ravenshoe	
Question	Comment
42. Why you feel excluded from the WTWHA.	Gates across forestry road that was used to access rainforest exclude all but walkers. These include some roads – to Mackenzie Falls, track to Coolmoon Creek (Ebony Road) and Culpa Road to Blencoe Falls and Kirrama Station access.

RESPONDENTS' DETAILS AND LOCATION: Female, aged 62, Ravenshoe	
Question	Comment
14. Who does WTWHA belong to?	Am not sure to what extent our International Treaty obligations reduce Australia's decision-making with these World Heritage Areas. The name suggests these areas belong to "The World" but what authority represents this I don't know. The United Nations General Assembly?
19. Importance of the WTWHA.	Do not fully understand this. I believe much of the above could have been maintained without the World Heritage designation. Our Forestry did not destroy the forests – still have ten species of possums in forests logged for forty years.

GENERAL COMMENTS

Comment: Male, aged 54, Gordonvale
The protection of these areas is important but we should still be able to use them. The existing roads should be maintained. Lockouts should only be in the wet season and not exclusively for tour operators, as they are the ones who wrecked the Goldsborough Road. The USA has pristine areas but there are roads so all the people have access, young and old. Why can't we? What we have is overkill.

Comment: Female, aged 45, Gordonvale
I would have liked to have answered the question on this page but I am not sure of the specific area of WTWHA. If the Atherton Tablelands are part of this, then we do visit these areas regularly and love them. Some places do have heavy traffic areas, and not all visitors respect and appreciate how important and precious these places are. Is this just ignorance on their part? Is there enough information on the importance of these areas for future generations to enjoy? Are there people available to visit schools and share their knowledge with some children who don't have the opportunity to gain knowledge about these important areas right on our doorstep? If so, where can we access such people? I applaud JCU for conducting this survey and appreciate the opportunity to participate. Thank you, and well done!

Comment: Female, aged 67, Gordonvale
Years ago, my husband took our small sons and I into these areas to show us trees, plants, animals and the many interesting things there. I loved the isolation and peace. Things change – I guess it is called progress. They are very special areas and need protection.

Comment: Female, aged 80, Gordonvale

Please, please don't let too many people in at once to destroy it.

Comment: Male, aged 51, Gordonvale

The camping fees discourage parents from introducing children to pristine experiences in nature, and discriminate against families with children from camping due to fees.

This is outrageous and promotes anger against the Wet Tropics Management Authority for trying to exclude us from the pristine places we previously enjoyed.

Comment: Female, aged 33, Gordonvale

This has been a reminder of what is at our doorstep and I should be using it more often – life gets too busy for this sometimes.

Comment: Male, aged 33, Gordonvale

Feral pest management of WHA-bordering agricultural areas no problem. Hunting on farms but penalties if caught in WHA even if only returning dogs, etc. while hunting farms. Would like to see a better system of being in WHA with retrieving dogs, etc. with just cause.

Comment: Female, aged 51, Gordonvale

Why can't one take a dog on a lead for a walk? If dogs behave well they should be allowed on walks. This stops us from enjoying lots of walks and outings.

Comment: Female, aged 45, Gordonvale

The questions are not simple. I do not find it easy to write on the narrow lines.

I know there is WHA of private land, State Forests and National Parks, but I don't know who runs what and how much funding is wasted because of double management.

How much say has WTWHA over private owners, and whom does WH answer to?

Comment: Male, aged 52, Gordonvale

I believe that if occupation and exclusion of areas based on race is to be tolerated by the Management Authority, great damage will be done to their credibility.

Comment: Female, aged 57, Gordonvale

I find we can't use the places we used to when we were young! We can't gather bush tucker or fish because the rivers are becoming polluted and the bush is knocked down for houses.

Comment: Female, aged 43, Gordonvale

I hope the WTWHA doesn't become like Uluru where we have to pay the Aborigines for the pleasure of seeing something natural and that should belong to all of us.

Comment: Female, aged 78, Gordonvale

Why is "World Heritage" used to describe our rainforests? Surely it should be "Australian Heritage" rainforests. After all, the word "Heritage" means "birthright", "inheritance" or "possession".

Comment: Female, aged 76, Mirriwinni

Tolga Scrub damaged and farmers' fruit crops (lychee) by hordes of flying foxes. These bats must have had forest food before. What food source was it? What happened to it?

Comment: Male, aged 64, Babinda

I suppose I take it for granted that people will look after and retain [the WTWHA] for future generations, but I suppose, when we look around the world, a lot has disappeared.

Comment: Female, aged 48, Babinda

I have lived and worked in North Queensland all my life. I have lived and worked in Indigenous communities and rural areas for the last thirty years. When I was young, local people mixed well with ATSI people and went about their daily lives without too much impact on the environment. For the last twenty-five years, the impact on the environment by non-locals, tourists and ATSI people has defied description.

Rampant dumping of rubbish along National Park access roads, country roads and on freehold land wreaks havoc on native animals, domestic stock, birdlife and wildlife in and on our waterways. Travellers seem to think anywhere along any roadside is a toilet facility (try driving from Daintree to Cooktown along the coast road and you will see a proliferation of toilet paper "bombs" along the way). They also brag and display flora pillaged from our rainforests. In terms of outright cruelty in killing and maiming our native wildlife, I have yet to see any other group exceed the deeds of the ATSI people of Cape and Gulf communities.

I am saddened by our beautiful National Parks and rainforests being used to generate tourist dollars. Nobody seems to realise that locals LIVE their everyday lives here – it's our home. Our ancestors explored and settled the area and established the agriculture that contributed generously to the taxes of Australia. We want to live and work here and raise our children to appreciate what we have without being deprived of our livelihoods and dictated to by highly paid bureaucracy who play God with the lives of locals.

Stop the stampede of heedless idiots who wreak a trail of destruction through our environment. Allow for people who actually live here. Provide for all future generations and don't reduce preservation of our rainforests to a money-grabbing exercise for the benefit of the few.

Comment: Female, aged 54, Innisfail

This survey has me aware of the fact that I know very little about the WTWHA and have never bothered to read or to look for information about the WTMA.

Comment: Female, aged 36, Innisfail

Not informed enough; question setup needs to be simplified.

Comment: Female, aged 38, Innisfail

World Heritage Areas are important and without them this region would feel and be very different. However, many small towns in the region are suffering economically and the restrictions on development are not allowing new employment opportunities. Sometimes concessions need to be made.

Comment: Female, aged 53, Innisfail

I feel we all have to protect our WTWHA for future generations – the pleasure of watching frogs hop around our gardens. Have never seen kingfisher nests around banks any more. Seldom see bandicoots or native lizards, even snakes (butterflies and beetles shortage). The sea is often dirty – beaches have banana rubbish littered. We used to catch yabbies in drains and little tropical fish no longer here.

Comment: Anonymous, Innisfail

The world is dying and there is nothing we can do about it.

Comment: Male, aged 34, Innisfail

I hope to see many more WHAs in the near future – wouldn't that be good (for all life).

Comment: Female, Innisfail

We believe that North Queensland is green enough. We have plenty of trees so it's about time other states did their share.

Comment: Female, aged 42, Innisfail

The protection of the WTWHA will always be ongoing so therefore it is imperative that education of local communities is ongoing.

So to all of you who are lucky enough to have this for a profession – it is a job well done.

KEEP UP THE GOOD WORK.

Comment: Female, aged 61, Innisfail

I am very much disappointed in not understanding all of the questions.
I really wish that you really should have someone helping some people with understanding the questions so we could give you the right answers.

Comment: Male, aged 46, Innisfail

We used to fossick in the creeks, but this is now illegal. The areas we used to go to are overgrown with weeds. The area is of little interest to us as a family.

Comment: Female, aged 48, Innisfail

If I sound a bit harsh or critical with my answers it's probably because I'm not aware of what the Wet Tropics Management Authority is doing to protect our native areas. I think most of the public would feel the same. We see and hear very little.

Comment: Male, aged 85, Innisfail

Recommend the continuing management and protection of the natural ecology and habitat of the area for the future generations and in particular indigenous artefacts.

Comment: Male, aged 43, Innisfail

Now that forestry has been taken over by QPWS, please don't turn Forest Park visitor areas into National Park visitor areas. You have taken too many of our rights as it is.
Also, I suspect that due to the extreme distrust of Government and their associates fostered by Federal Government agencies like WTMA and GBRMPA as well as QLD EPA and people in this town may be reluctant to trust you and your survey.
You have pre-weighted this survey in terms of advantages for local community.
Please remember that before World Heritage listing most of the area was National Park and State Forest, while the State Forest was over-logged. There was no clear felling (despite media presentations to the contrary, which were not denounced by knowledgeable Federal Agencies at the time). And hence the change to heritage listing will have had little impact on the scenic backdrop or water quality. But much better protection of plants and animals.
WTMA doesn't want research done by agencies other than its close grouping of like-minded agencies. Now that forestry has been swallowed by QPWS, I expect genuine independent monitoring of the forest will cease (e.g. a supposedly extinct/very rare rifle frog endemic to Kaprum (?) / Henrietta Creeks – if only they would look).

Comment: Female, aged 63, Innisfail

Keep up the good work.

Comment: Female, aged 58, Innisfail

Nature at this point should be left alone without tourist and World Heritage as it destroys all our environment and nature. Because of this, nature isn't beautiful any more.

Comment: Female, aged 18, Innisfail

I'm not sure that my survey will be much help to you and apologise for my knowledge in these areas being a bit rusty and am unsure of things so answered as I could.

Comment: Female, aged 35, Manunda

I believe Aboriginal people should have more management in the World Heritage rainforest as protectors of the land.

Comment: Female, aged 39, Manunda

I'm sorry I couldn't understand some of the questions because it never crossed my mind to know or learn about our WTWHA. It goes to show people like me to know and understand and to take the time to learn.

Comment: Female, aged 49, Manunda

I feel perhaps some literature regarding the WTWHA would have been of advantage to the uninformed, for accuracy. I respect Aboriginal culture and its people. However, as an Australian born, I am getting tired of being excluded or feeling excluded from my country of which I am proud. I am tired of the whining of stolen children, money, land, etc. I feel Aboriginals are now stealing our children's heritage because of greed and government stupidity. Perhaps a survey in this area would be beneficial?

Comment: Female, aged 25, Manunda

I feel a lot more should be done to protect our Wet Tropics, especially the reef. We need to have a lot less usage of the reef as the tourism (among many other things) is killing it at an alarming rate. There also needs to be more done in relation to getting rid of the wild pigs in the rainforest before cassowaries and other native animals become extinct.

Comment: Female, aged 30, Manunda

Too much emphasis is placed on cultural or tourist use of these areas. They should only be used for low density or educational purposes. We have done enough damage to these areas. Now we all need to give the forests some time to heal.

Comment: Male, aged 74, Manunda

Should work on a plan similar to the Marine Park Authority where there are strict no-go areas to allow for regeneration. Allow some access to areas, but not spoil for future generations like my grandchildren.

Comment: Male, aged 69, Manunda

Any regulations imposed on these areas should apply to all people not only certain people.

Comment: Male, aged 58, Manunda

I would just like to say that a lot more should be done to completely rid the country of pigs, wild dogs, feral cats.

Comment: Male, aged 45, Manunda

Too much control from Government bodies. Not enough access: camping grounds, walk tracks, recreational areas, can't fish in rivers, can't hunt. Seems to be a lot of "CAN'T DO" and not enough "CAN DO".

Comment: Female, aged 50, Edge Hill

I feel very strongly that the current WTWHA must remain and more areas added. They must be carefully managed so that we don't have incremental compromises. Don't let these areas get over-developed for us tourists, make us WALK to get to the boardwalks, etc. Put the cafes, etc. outside the area. Acknowledge the particular Aboriginal groups that lived in and around the areas (where it can be agreed upon). Much, MUCH more can be made of the bush foods the local people ate and used. Make us stick to the tracks, etc.

Comment: Male, aged 48, Edge Hill

Fanatics of any kind worry me and the powers that control WTWHA have too many. They must understand that visitation rights are for all not just the like-minded.

APPENDIX 7: RECOMMENDED READING

This reference list directs the reader to a selected sample of literatures and sources of particular relevance to researching, measuring or monitoring community perspectives and views in a natural resource or protected area management context.

References cover survey research sources, psychosocial impact assessment sources, environmental management sources, conservation biology sources, protected area and World Heritage Area sources, community relevant sources and social science sources, as well as local region relevant research and reports.

All sources cited in the text are also found in this reference list.

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APPENDIX 8: SURVEY PROCEDURE

This section provides a summarised and simplified version of the research methodologies together with the survey instrument/questionnaire, and the various proformas and cards employed in the Wet Tropics community research project. The manual outlines all processes and procedures so that future longitudinal and/or evaluative research can be undertaken by replicating this process. The methodologies for the additional and complementary site-level research, from which the local community component has been extracted for this report, have not been included in this manual, however is presented in detail in the report, *Measuring and Monitoring Impacts of Visitation and Use in the Wet Tropics World Heritage Area 2001/2002: A Site Based Bioregional Perspective* (Bentrupperbäumer and Reser 2002a).

SURVEY INSTRUMENT

The main reason for using a hard copy survey questionnaire as a methodology in the community research was to obtain information from the residents of or adjacent to the Wet Tropics World Heritage Area (WTWHA), relating to:

- Awareness and knowledge of the WTWHA;
- Community support;
- The advantages and disadvantages of living in the region;
- Conservation and management concerns; and
- Actual visitation and use patterns within the WTWHA.

This survey approach constitutes the only practical avenue for accessing such detailed information.

The Community Survey conducted in 2002 was the product of expressed management priorities and needs, specific issue and problem relevance, and pragmatic time and administration constraints. Management priorities and needs were articulated during consultation with the WTWHA Planning Team, and identified in relevant management agency documents.

An attempt was made to simplify and standardise the response format as much as possible, and to utilise both quantitative rating scales and categorical and open-ended items. This approach was considered to be the most practical and effective in terms of community residents being able to clearly understand and respond appropriately to the survey, and for latter data input and processing. It was important not to limit the respondents to set responses – appropriate space was given for respondents to make any additional comments to specific questions.

The survey instrument underwent pilot testing prior to field distribution and a final version was submitted and granted James Cook University Ethics Approval.

Attached to each survey was an **information card** (Figure 1), pre-paid for return postage. This information card enabled respondents who wished to be further informed about the research and/or the World Heritage Area to request such information. On the completion of the community survey project the information was sent out to those who had requested it.



 Rainforest CRC	 JAMES COOK UNIVERSITY	Return to: School of Psychology James Cook University PO Box 6811, Cairns QLD 4870
Wet Tropics World Heritage Area (WTWHA) Community Survey		
If you would like any of the information listed below, please complete your name and address, tick the appropriate information boxes and mail this card to us. Postage has been paid.		
Name:	Information Requested (tick box):	
Postal Address:	1. Key findings from the WTWHA Community Survey <input type="checkbox"/>	
	2. Information about the WTWHA:	
	a. General <input type="checkbox"/>	
	b. Other <input type="checkbox"/>	
	Specify:	

Figure 1: Example of the information card used in the community survey project to give participants the opportunity to request feedback.

Survey No.:



Survey of Community Residents of the North Queensland Region



Dear Resident,

We are researchers from James Cook University, exploring community resident perceptions and views with respect to the Wet Tropics World Heritage Area (WTWHA). We are interested in how the World Heritage Area impacts on local residents' everyday life, and the life and quality of the community and environment in which you live.

The main purpose of our research is to provide advice and community views to the Wet Tropics Management Authority (WTMA) and other government agencies.

This is an opportunity for you (adult member of the household) to offer your comments as a resident of the region. We hope that you will take this opportunity to inform management and government agencies about the ongoing or possible roles that you see the WTWHA playing in the life of the local community. The questionnaire will take about 15-20 minutes to complete. Please answer all questions. All responses are completely anonymous.

If you would like a copy of the key findings of this survey or other information about the WTWHA, please complete and return the attached card. You may wish to send the card to us separately to this survey so as to maintain anonymity.

Thank you very much for your participation.

Environmental Psychology Section, School of Psychology, James Cook University
PO Box 6811, Cairns QLD 4870

Survey Information: Date Completed: _____ (day) _____ (month), 2002

How to complete this questionnaire:

- Where questions require a Yes or No answer or include multiple responses, please put a tick "☑" in the box beside the response which best applies.
- Other ways to respond are indicated at the beginning of each question.

Office Use Only:

Date Distributed:
Distribution Location:

a) Awareness and Importance of the Wet Tropics World Heritage Area

It is very important for us to first know if you are **aware** of the existence of the Wet Tropics World Heritage Area (WTWHA), and, in general, how important you consider it to be.

1. Are you **aware** that most of the rainforests in this region are part of a World Heritage Area? Yes No (if No, go to Question 4)

2. If Yes, how would you rate the level of your **general knowledge** about this World Heritage Area? (Please circle just one number that best reflects your general level of knowledge).

Not at all knowledgeable	Slightly knowledgeable	Somewhat knowledgeable	Moderately knowledgeable	Considerably knowledgeable	Very knowledgeable
1	2	3	4	5	6

3. How **important** do you consider this World Heritage Area to be, in general? (Please circle just one number that best reflects the level of importance).

Not important	Slightly important	Somewhat important	Moderately important	Considerably important	Very important
1	2	3	4	5	6

b) Background Information

The following section asks you for some information about **yourself and your place of residence**. This allows us to compare different residents' needs and experiences.

4. What is the **name** of the Shire (Local Government Area) and/or suburb, town, postcode where you currently live? Shire: _____
Suburb or Town: _____
Postcode: _____

5. How would you describe your current **place of residence**? Suburban Semiurban
 Rural Residential Rural

6. How **long** have you lived here in tropical North Queensland? Number of **years**: _____
and/or **months**: _____

7. How would you describe your **ethnicity**? (You may choose as many descriptions as you feel best reflect your ethnicity).

- a) **Australian citizen** Yes
- b) **Do you identify yourself as an:** Aboriginal Torres Strait Islander
- c) **And/or** any of the following ethnic categories whether you are an Australian citizen or not?
- | | | | | |
|-----------------------------------|----------------------------------|-------------------------------------|--|-------------------------------------|
| <input type="checkbox"/> American | <input type="checkbox"/> English | <input type="checkbox"/> Indonesian | <input type="checkbox"/> Malaysian | <input type="checkbox"/> Spanish |
| <input type="checkbox"/> Canadian | <input type="checkbox"/> French | <input type="checkbox"/> Italian | <input type="checkbox"/> New Zealander | <input type="checkbox"/> Swiss |
| <input type="checkbox"/> Chinese | <input type="checkbox"/> German | <input type="checkbox"/> Irish | <input type="checkbox"/> Norwegian | <input type="checkbox"/> Turkish |
| <input type="checkbox"/> Dutch | <input type="checkbox"/> Greek | <input type="checkbox"/> Japanese | <input type="checkbox"/> Scottish | <input type="checkbox"/> Vietnamese |
- Other (please specify): _____

8. What is the highest level of formal **education** you have completed so far? Primary (1-7 years of education)
 Secondary (8-12 years of education)
 Tertiary A (Technical or further education institution)
 Tertiary B (University)

9. What is your current **occupation**? Occupation: _____
10. What is your **gender**? Male Female
11. How **old** are you? Age: _____ OR Year born: _____

c) Knowledge of the Wet Tropics World Heritage Area

Given that most of the rainforests in this wet tropical region of Far North Queensland are protected, and are part of a World Heritage Area, please tell us what you **know or think** about them.

12. **Why** do you think these rainforests were made a World Heritage Area? _____
13. From what you know of the region, **where** do you think the Wet Tropics World Heritage Area begins in the south, and ends in the north? South: _____ Don't Know
North: _____ Don't Know
14. **Who** do you believe the Wet Tropics World Heritage Area belongs to? _____

Whatever your current level of awareness or knowledge of the Wet Tropics World Heritage Area is, we would very much like to know your views on the many issues concerning this area. So please complete the survey as best you can.

d) Current Support

It is important to know **your genuine opinion** about a number of key issues concerning the Wet Tropics World Heritage Area. Please tell us to what extent you **support or oppose** the issues outlined in Questions 15 and 16.

For each of the following questions, please circle the number that best reflects your opinion:

Strongly oppose	Moderately oppose	Slightly oppose	Slightly support	Moderately support	Strongly support
1	2	3	4	5	6

15. To what extent **do** you support or oppose:
- | | | | | | | |
|--|------------------------|---|---|---|---|-------------------------|
| | Strongly Oppose | | | | | Strongly Support |
| a) The World Heritage listing of these forests? | 1 | 2 | 3 | 4 | 5 | 6 |
| b) The general level of protection of the Wet Tropics World Heritage Area? | 1 | 2 | 3 | 4 | 5 | 6 |
16. To what extent **would** you support or oppose:
- | | | | | | | |
|--|---|---|---|---|---|---|
| a) The inclusion of Aboriginal cultural heritage in future listing of the Wet Tropics World Heritage Area? | 1 | 2 | 3 | 4 | 5 | 6 |
| b) Some form of Aboriginal co-management of the Wet Tropics World Heritage Area? | 1 | 2 | 3 | 4 | 5 | 6 |

e) Role of the Wet Tropics World Heritage Area in your life and the life of the regional community in tropical North Queensland.

With the Wet Tropics World Heritage Area right on your doorstep, it is essential for us to understand what you feel the area **offers you personally** and the **regional community** here in tropical North Queensland.

For each of the following questions, please circle the number that best reflects your opinion:

Not important	Slightly important	Somewhat important	Moderately important	Considerably important	Very important
1	2	3	4	5	6

17. **For you personally**, how **important** is the Wet Tropics World Heritage Area in terms of the following advantages?

	Not important					Very important
a) Providing recreational opportunities (e.g. a place to camp, walk, cycle, swim).	1	2	3	4	5	6
b) Providing social opportunities (e.g. a place to be with/share with family/friends).	1	2	3	4	5	6
c) Providing respite (e.g. a place to rest/relax, take time out, contemplate).	1	2	3	4	5	6
d) Providing a quality environment to live (e.g. enhancing quality of life).	1	2	3	4	5	6
e) It is good just to know it is there, that it exists.	1	2	3	4	5	6
f) Providing direct commercial / economic / employment opportunities for me personally (e.g. tour operator, ranger, researcher, etc.) Please specify:	1	2	3	4	5	6
<hr/>						
g) Providing indirect commercial / economic / employment opportunities for me personally (e.g. food outlets, accommodation houses, retail, etc.) Please specify:	1	2	3	4	5	6
<hr/>						
h) Other. Please specify:	1	2	3	4	5	6

18. **For you personally**, are there any **disadvantages** in living in or around the Wet Tropics World Heritage Area? Please list what these **disadvantages** are and their level of importance to you:

Disadvantages to you personally:	Not important					Very important
_____	1	2	3	4	5	6
_____	1	2	3	4	5	6
_____	1	2	3	4	5	6
_____	1	2	3	4	5	6

19. **For the regional community as a whole**, how **important** is the Wet Tropics World Heritage Area in terms of the following advantages?

	Not important					Very important
a) Protection of rainforest plants and animals.	1	2	3	4	5	6
b) Protection of scenic landscapes.	1	2	3	4	5	6
c) Providing clean water and air.	1	2	3	4	5	6
d) Enhancing environmental awareness and knowledge.	1	2	3	4	5	6
e) Providing commercial / economic / employment opportunities for the community.	1	2	3	4	5	6
f) Other. Please specify:	1	2	3	4	5	6

20. **For the regional community**, if you consider there are any **disadvantages** associated with the Wet Tropics World Heritage Area, please list these **disadvantages** and their level of importance.

	Not important					Very important
Disadvantages to regional community:						
_____	1	2	3	4	5	6
_____	1	2	3	4	5	6
_____	1	2	3	4	5	6
_____	1	2	3	4	5	6

f) Conservation and Management of the Wet Tropics World Heritage Area

Your assessment of the conservation and management of the Wet Tropics World Heritage Area is very important to us. Please answer all of the questions listed.

21. **What** agency or agencies do you think are primarily responsible for managing the Wet Tropics World Heritage Area rainforests?

Don't Know

22. In general, what do you **expect** from these agencies?

23. Have you noticed any **logo or logos** that identify these areas as the Wet Tropics World Heritage Area?

Yes No

24. If Yes, please describe the logo/s:

In Questions 25 to 31, we would like to know to what extent you feel that the conservation and management issues listed are being addressed by the management agencies.

For each of the following questions, please circle the number that best reflects your opinion.

Not at all	To a very little extent	To a slight extent	To a moderate extent	To a considerable extent	To the full extent
1	2	3	4	5	6

In terms of **natural / biological / aesthetic attributes** of the Wet Tropics World Heritage Area:

25. To what **extent** do you feel these **attributes** are being adequately protected or managed?

	Not at all						To the full extent	Don't know
a) Biodiversity – plants, animals and ecosystems of the rainforest (<i>protected</i>).	1	2	3	4	5	6		<input type="checkbox"/>
b) Scenic landscape (<i>protected</i>).	1	2	3	4	5	6		<input type="checkbox"/>
c) Waterways and wetlands (<i>protected</i>).	1	2	3	4	5	6		<input type="checkbox"/>
d) Feral animal pests (<i>managed</i>).	1	2	3	4	5	6		<input type="checkbox"/>
e) Environmental weeds (<i>managed</i>).	1	2	3	4	5	6		<input type="checkbox"/>

In terms of **cultural attributes** of the Wet Tropics World Heritage Area:

26. To what extent do you feel these **cultural attributes** are being adequately protected and managed?

	Not at all						To the full extent	Don't know
a) Non-indigenous historic sites.	1	2	3	4	5	6		<input type="checkbox"/>
b) Aboriginal cultural sites.	1	2	3	4	5	6		<input type="checkbox"/>

27. What agency of agencies do you think are primarily responsible for managing cultural sites in the Wet Tropics World Heritage Area?

.....

.....

In terms of **threats** to the Wet Tropics World Heritage Area:

28. a) Please list below what you think are the **three most serious threats** to the Wet Tropics World Heritage Area:

b) And, to what extent you consider these threats are being **addressed**:

	Not at all						To the full extent
1.	1	2	3	4	5	6	
2.	1	2	3	4	5	6	
3.	1	2	3	4	5	6	

In terms of **community involvement**:

29. In general, to what extent do you believe **community interests** are being taken into account when developing management policies for the Wet Tropics World Heritage Area?

	Not at all						To the full extent
	1	2	3	4	5	6	

30. Have you been or are you involved in any discussion forums or consultation processes related to the Wet Tropics World Heritage Area? Yes No
31. If Yes, to what extent were or are adequate opportunities made available for you to meaningfully contribute? **Not at all** **To the full extent**
- | | | | | | | |
|--|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
|--|---|---|---|---|---|---|

In terms of **information** about the Wet Tropics World Heritage Area:

32. How have you learnt about the Wet Tropics World Heritage Area?
Please tick "Yes" or "No" for each of the information sources listed.
- | Yes | No | | Yes | No | | Yes | No | |
|--------------------------|--------------------------|---|--------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|---------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Newspapers | <input type="checkbox"/> | <input type="checkbox"/> | General Information Centres | <input type="checkbox"/> | <input type="checkbox"/> | Word of Mouth |
| <input type="checkbox"/> | <input type="checkbox"/> | Radio | <input type="checkbox"/> | <input type="checkbox"/> | Tropical Topics | <input type="checkbox"/> | <input type="checkbox"/> | School / University |
| <input type="checkbox"/> | <input type="checkbox"/> | Television | <input type="checkbox"/> | <input type="checkbox"/> | Books | <input type="checkbox"/> | <input type="checkbox"/> | Work |
| <input type="checkbox"/> | <input type="checkbox"/> | Environmental Management Agency Information Centres | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Other. Please specify: _____ | | | | | | |

33. Have you used any of the following information sources provided by the Wet Tropics Management Authority (WTMA)?
Please tick "Yes" or "No" for each of the information sources listed.
- | Yes | No | | Yes | No | |
|--------------------------|--------------------------|---|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Wet Tropics Website | <input type="checkbox"/> | <input type="checkbox"/> | Signage at Wet Tropics World Heritage Area sites |
| <input type="checkbox"/> | <input type="checkbox"/> | WTMA leaflets | <input type="checkbox"/> | <input type="checkbox"/> | Wet Tropics Neighbours Newsletter |
| <input type="checkbox"/> | <input type="checkbox"/> | Wet Tropics World Heritage Area Newspaper (<i>Australian Tropical Rainforest World Heritage Magazine</i>) | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Other. Please specify: _____ | | | |

34. To what extent do you feel that **information** about the Wet Tropics World Heritage Area and its management are **readily available**? **Not at all** **To the full extent**
- | | | | | | | |
|--|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
|--|---|---|---|---|---|---|

35. a) Is there any particular Wet Tropics World Heritage Area information or information access you would like more of? Yes No
- b) If Yes, please specify: _____

g) Actual Visitation and Recreation in the Wet Tropics World Heritage Area
The following set of questions relates to your visits to the World Heritage Area rainforests.

36. Have you ever actually visited these World Heritage rainforests? Yes No (if No, go to Question 43).
37. **If Yes:**
- a) When was the last time (approx.)? _____
- b) In a year, how often would you visit (approx.)? _____
- c) What was/is the main reason for your visit? _____

38. If you have favourite places in the Wet Tropics World Heritage Area:

a) Please list your two most favourite places.

1.

b) Why are these your favourite places?

Why?

2.

Why?

39. Have you noticed a change, positive or negative, in the places you are now visiting in the Wet Tropics World Heritage Area compared to the past?

Yes

No (if No, go to Question 41).

40. If Yes, can you please explain what that change has been.

.....
.....
.....

41. Also, are there areas in the Wet Tropics World Heritage Area where you now feel unwelcomed, excluded from, or places you no longer enjoy to visit?

Yes

No

42. If Yes, please list these places and explain **why** you are feeling unwelcomed or excluded.

.....
.....
.....

43. If you are not using the Wet Tropics World Heritage Area at all for leisure / recreational / cultural / work activities, could you please explain why not?

.....
.....
.....

Thank you very much for your participation.

Please add any additional comments here and/or over the page.

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SURVEY DISTRIBUTION

Drop-off / Pick-up Procedure

Two primary methods were used in this research for the distribution of the surveys throughout the WTWHA community: a) *drop-off / pick-up* procedure, and b) *postbox* procedure.

Community and Household Sampling

Six coastal communities in the WTWHA bioregion were the focus of the *drop-off / pick-up* procedure – Cairns, Gordonvale, Babinda, Miriwinni, Innisfail and Mission Beach. These communities were selected on the basis of a number of factors:

1. They provided a representative sample of the population along the lowland coastal section of WTWHA bioregion;
2. They were communities within urban, semiurban and rural landscapes, and so accommodated a diversity of residents;
3. For some of these communities, time and financial limitations were also considerations.
4. Streets within the smaller communities were all systematically sampled (e.g. Gordonvale, Babinda, Mission Beach and Miriwinni);
5. In larger communities (Innisfail and Cairns), streets were selected on the basis of convenience, and depended on the suburb that was chosen; and
6. In Cairns, particular care was given to the representation of different socio-economic levels, which resulted in two very different suburbs being selected (Manunda and Edge Hill).

Houses within these communities were selected using the following random sampling technique.

- a) Field staff used a table of house numbers that had been prepared for this sampling technique;
- b) This procedure involved the random selection of odd and even numbered houses (from 1-9 and 2-8) with the number chosen being the starting residential number for a street; and
- c) Every second odd (i.e. 3, 7, 11, etc.) and every second even (i.e. 2, 6, 10, etc.) house number was then identified as the resident to be sampled.

A single survey was delivered to each randomly selected residence. In most cases (where face to face contact was possible), the survey was given to an adult or adolescent. In some cases, where an adult was absent from the household and a child answered the door, the field staff asked the child if they could pass on the survey to their parents.

The number of field staff used for each of the communities differed. In the case of Gordonvale, Babinda, Miriwinni and Innisfail, only two field staff were used. The number of field staff was increased to four at Mission Beach, and to three for Cairns. At all of the sites, the field staff worked in groups of no less than two for safety and distribution reasons.

Field Procedure

Before each field trip, field staff were briefed on the field procedures, responsibilities and safety requirements for that particular site.

- Each field member had with them a clipboard containing an instructions page (explaining the different types of methodologies), a table of selected house numbers, and a map of the area;
- One field member was allocated the role of field supervisor and was responsible for all field operations, materials, equipment and transportation;
- At Mission Beach, where there were two teams (of two) used, a member of each team kept in contact by mobile phone so transportation could be organised; and
- All field staff wore name badges, which also identified the University.

Survey Delivery Procedure

The *drop-off / pick-up* procedure involved a number of contingent strategies depending on whether the selected address was actually a residence. This procedure was:

- The field staff selected the residence on the basis of the prepared random selection number table;
- If the resident was home the research project was briefly explained and the resident asked to participate;
- If the resident agreed to participate, details of collection times and procedures were explained. If the resident declined, non-response information was recorded;
- If no one was home, a return trip to that household was made. If at the second call no one was home, a survey with an envelope attached and a note explaining the research project (see Figure 2) was left behind where the resident could find it.

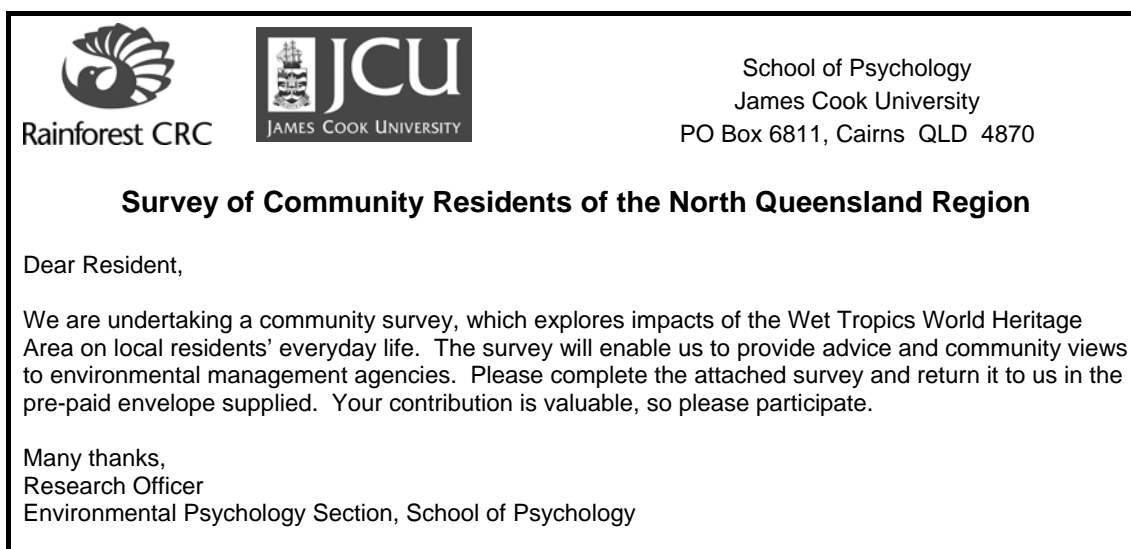


Figure 2: Example of note left at some residences explaining the purpose of the research project.

Survey Collection Procedure

- On collection day, field staff returned to the residences where a survey had been dropped off (either to the resident, or left behind with the note and envelope);
- If the resident had completed the survey, they were thanked, or a thank you note was left behind if the resident had left the survey out for collection and was not home (Figure 3).

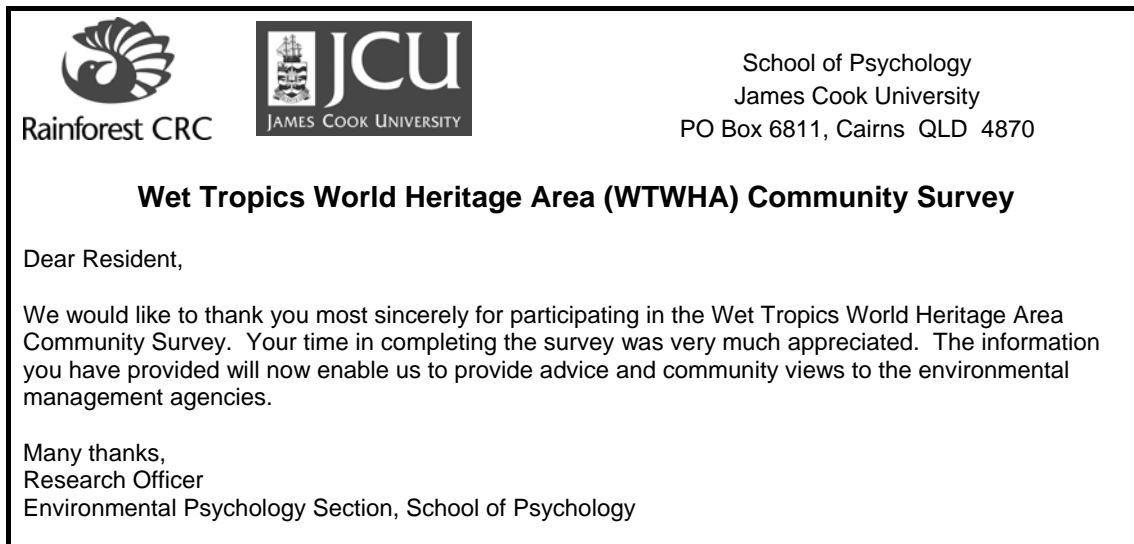


Figure 3: Example of note left at some residences, thanking the resident for taking part in the community survey.

- If residents had not completed the survey, they were given a postage-paid envelope and were asked if they could complete the survey at their convenience and send it in.
- If the resident was not home when the survey was to be collected, a postage-paid envelope was left behind with a note attached (Figure 4).

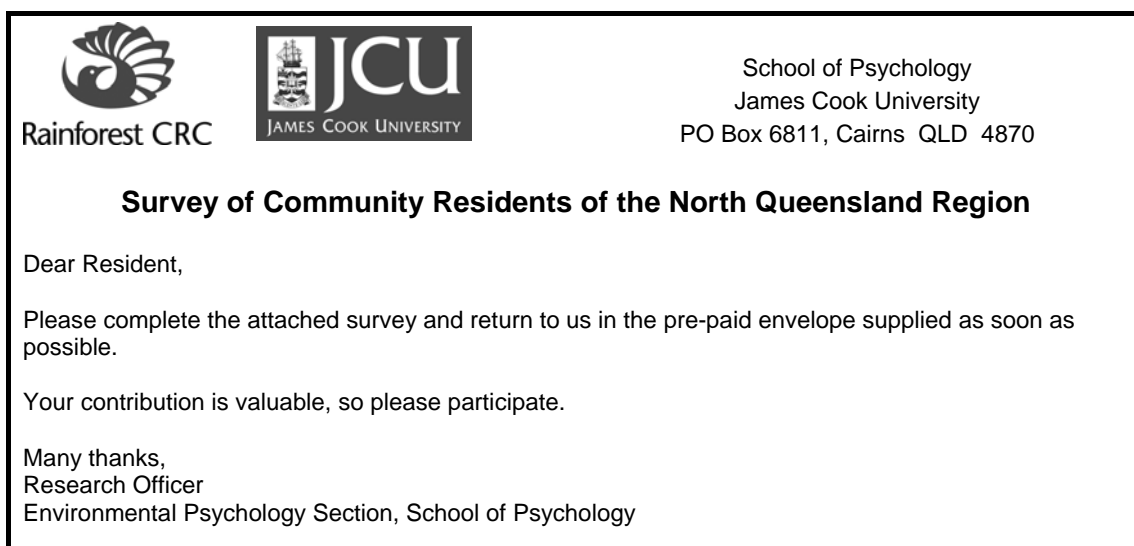


Figure 4: Example of note left at some residences, reminding residents to complete their survey and send it in.

Time Frame

- Babinda, Miriwinni and Gordonvale were surveyed over three days (Saturday, Sunday and Monday).
- Innisfail, Mission Beach and Cairns were surveyed over a two-day period (Saturday and Sunday).
- In most cases, all of Saturday was used to drop off surveys to residents, and Sunday to collect them.
- The purpose of distributing and collecting the surveys over the weekend was to maximise the likelihood of finding a resident at home who would be able to complete the survey.
- Field staff started distributing and collecting surveys at 9.00 a.m. each morning.
- In general, eight hours of distribution and collection were undertaken each day for each site.

Postbox Procedure

The decision to use the postbox procedure as a second method of distributing surveys was based on the need to obtain a representative sample of the Tableland and the northern and southern communities of the WTWHA bioregion in the most cost effective and time efficient way. These communities included Port Douglas, Kuranda, Atherton, Malanda, Millaa Millaa, Ravenshoe, Herberton and Cardwell. The postal method provided access to these communities which would not have been financially or practically possible using the *drop-off / pick-up* method. Communities were selected on the basis of their location within the region.

- Residents of these communities were randomly selected by post office box numbers.
- The range of box numbers (supplied by the post office) for each postal centre was entered into the statistical program SPSS, which randomly selected 20% of the post box numbers for each postal centre.
- Owners of these post boxes were unknown.
- To ensure anonymity, surveys sent out did not have survey numbers on them.
- The information sent to the resident included a brief cover letter explaining the research project and encouraging the resident to participate, a return postage-paid envelope, an information card, and the survey.
- To maximise the response rate, a follow-up letter was sent out approximately ten days after the first letter and survey.
- The follow up letter thanked residents who had returned a completed survey and encouraged those who had not to please participate.
- Residents who may have misplaced the survey were encouraged to contact the project leader on the phone number supplied so a new survey could be sent to them.
- Surveys sent out for the second time to those who requested them had a thank you note attached and a return postage-paid envelope.