
3 GBRMPA RESEARCH REPORTS

3.1 BIBLIOGRAPHY

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- 82 Unisearch Limited (D. Gallagher). 1981. Recreation Site Carrying Capacity.
- 83 Unisearch Limited (S. Glasser & I. Wilkinson). 1981. Reef Tourism Attitudinal and Socio-Economic Study. A Report to the GBRMPA.
- 83 Vanclay, Frank. 1988. Tourist Perceptions of the Great Barrier Reef. Report to the GBRMPA.
- 84 Whitem, Noel. 1983. A Comparative Study of Preferences of Two Distinct Day-Visitor Groups to the Great Barrier Reef: A Case Study of Visitors to Beaver Cay. Thesis.

3.2 COMMENTARIES

**AUSTRALIAN TRAVEL INDUSTRY ASSOCIATION - J. CLARINGBOULD,
J. DEAKIN, P. FOSTER DATA REVIEW OF REEF-RELATED TOURISM
1946-1980** GBRMPA Research Publication, February 1984

The data in this report is spotty but may be useful as a background document. There is some data on length of stay and seasonality for tourists.

**S. M. DRIML GREAT BARRIER REEF TOURISM - A REVIEW OF
VISITOR USE** GBRMPA Research Publication, June 1987

On pp.36-37 in the section on Island Tourist Resorts, there is some data presented on people who visit island resorts taken from surveys from the Queensland Tourist and Travel Corporation. Four tables describe trip purpose, origin of visitors, what attracts visitors to the island resorts, and the activities in which the visitors had participated.

This report is otherwise an important background document describing the extent of tourism on the Great Barrier Reef with respect to visitor nights at island resorts, commercial passenger boating, and private boat use. In her concluding comments, the author points to the technological changes that have made the reef more accessible to tourists. These changes are significant for issues of social carrying capacity.

**ECONOMIC ASSOCIATES AUSTRALIA GBRMPA - GREEN ISLAND
ECONOMIC STUDY** GBRMPA Research Publication, 1983

Section 4 of the Green Island report goes into some detail on visitor attitudes toward their experiences on Green Island. The consultants drew on studies conducted by the National Parks and Wildlife Service in 1979 and one by the Queensland Fisheries Service in 1978. Some of the data is most pertinent to basic policy development on social carrying capacity, including:

- the attractions which prompted visits to the Cairns region,
- an assessment of the relative importance of a visit to Green Island during the visit to the Cairns region,
- the patronage and preferences of the island's attractions,
- the perception of crowding on the island,
- valuation of the island attractions based on willingness-to-pay,

- a question about the features that attracted visitors to Green Island,
- ratings of the features as very good, satisfactory or needing improvement, and
- suggestions about how the island experience could be improved.

**ENVIRONMENT SCIENCE AND SERVICES APPLICATION OF
RECREATION OPPORTUNITY SPECTRUM CONCEPTS TO MARINE PARK
PLANNING** A Report to GBRMPA, September 1984

No application of ROS concepts were attempted in this report. Rather a discussion of and argument for the use of certain ROS concepts is made with respect to Marine Park planning. As with the preceding study by Means, the authors conclude by encouraging GBRMPA to place greater emphasis on the provision and management of 'recreation settings' rather than sticking to an 'activities-based' approach. A number of points are given in justification of this recommendation. The advice seems appropriate and consistent with the social carrying capacity literature which emphasises the provision of experience diversity in recreation settings.

**ENVIRONMENT SCIENCE AND SERVICES A USER-BASED EVALUATION
OF THE ZONING PLAN AND DAY-TO-DAY MANAGEMENT IN THE
CAPRICORNIA SECTION OF THE GBRMP** GBRMPA Research
Publication, March 1987

Although the subject of this report does not pertain directly to social carrying capacity concerns, there are some useful data and approaches contained in the report. First, there is a comprehensive list and definition of users in the Capricornia area. Second, the study design, incorporating user awareness of the Zoning Plan, impacts of the Zoning Plan on users, and user attitudes and preferences, could serve as a example for a similar study on visitor use, characteristics, expectations and goals for Marine Park experiences, and social impact indicators. Any research on visitor use for social carrying capacity should be at least as thorough.

M. J. GIBBINGS TOURISM AND THE GREAT BARRIER REEF A
Report Prepared for the GBRMPA 1979

No pertinent data.

**WENDY D. GOODBURN APPLICATION OF THE RECREATION
OPPORTUNITY SPECTRUM PLANNING FRAMEWORK TO SAILING IN THE
VICINITY OF THE WHITSUNDAY ISLANDS, NORTH QUEENSLAND**
Thesis, University of Sydney, 1987

Like the Pearce & Moscardo study on Norman Reef, the Whittem study at Beaver Cay, and the Means study at four islands, this honours thesis directly addresses carrying capacity issues in the Marine Park setting. She uses the ROS model in the Whitsundays.

Three distinct types of yachtsmen are defined in this study - locals, those who reside outside the region, and charterers. The author then interviewed a sample of these groups about their preferences for environmental settings in which activities were undertaken at selected anchorage locations. The results showed that there are statistically significant differences between the three groups of yachtsmen in regard to preferences for trips, their boats and the environmental settings of their chosen anchorages.

The author shows understanding about the pressures that managers of the Marine Park are facing and, using the ROS model, approached her task with these problems in mind. She finds the ROS model applicable to the Marine Park setting (as did K. Means, see "An Investigation into the Use of the Recreation Opportunity Spectrum within a Marine Park", 1984) and shows how she applied ROS concepts and criteria. Her interviews were thorough and yielded good information. She emphasises, as do many others, that "quality recreation experiences are best assured by providing a diversity of opportunities (Clark and Stankey, 1979)". Her conclusions and recommendations to management are detailed and specific. This report is one of the few that is directly pertinent to carrying capacity concerns.

**FRANCIS GREENLEAF ENVIRONMENTAL CONCERN FOR THE GREAT
BARRIER REEF - AN INVESTIGATION OF ATTITUDES OF THE CAIRNS
AND TOWNSVILLE COMMUNITIES** Dissertation, James Cook
University, November 1980

Residents of Townsville and Cairns were interviewed in this study to assess and compare their attitudes toward the GBR environment. Although the style of this author's presentation is quite technical and heavy-going, her research conclusions on pp.125-126 provide a detailed characterisation of persons who have strong feelings about the 'fragility of the reef in coping with the activities of man' and the 'utility of the GBR'. Among other characteristics, these individuals are more likely to visit the GBR with greater frequency than other individuals interviewed. Such characterisations of residents may be useful for comparison with other studies on the environmental attitudes toward the GBR of visitors who reside outside the immediate region.

**DARYL HUDSON A PRELIMINARY STUDY OF ISLAND DAYTRIPPERS
AND NATIONAL PARK VISITORS IN THE CAIRNS REGION**
Dissertation, Griffith University, 5 November 1981

This study also contains information relevant to social carrying capacity concerns. It describes characteristics, perceptions and travel patterns of visitors to the Cairns region who visited one of three National Parks or made daytrips to nearby islands, including Dunk Island, Bedarra Island, Fitzroy Island, Green Island, and Low Isles.

The author admits to study design faults that may limit the accuracy of the results. The interpretation of the findings is also lacking in great insight. However the data could be put to use in conjunction with other studies of those islands to produce a picture of tourist use over time.

**INSTITUTE OF APPLIED SOCIAL RESEARCH - T. HUNDLOE, S.
DRIML, S. SHAW, J. TRIGGER, PROPOSED CAIRNS SECTION
ECONOMIC IMPACT STUDY 1981**

Does not focus on user experiences or expectations beyond very general statements about resort use.

**A. M. KAY & M. J. LIDDLE MANUAL FOR THE ASSESSMENT,
LOCATION AND DESIGN OF REEFWALKING ACTIVITIES 1985**
Technical Report for the GBRMPA

This report contains some information on:

- visitor characteristics and party sizes of those doing reef walking (p.3).
- the motivations of the tourists, students and scientists who reef walk (p.4)
- the expectations of each of these groups of reef walkers when they go to the reef (p.4-5).

The discussion on Resource Evaluation begins by asking a few questions about use and the attraction that a reef offers to satisfy visitor needs, but most of the manual focuses strictly on environmental concerns rather than social.

There is a brief discussion (5.8, p.21) of the concept of carrying capacity which focuses strictly on the environmental capacity and numbers of visitors. This assessment is appropriate for organised reef-walking experiences. It does not address other types of recreation experiences that may be desired by other visitor types who visit reefs.

The manual concludes with the statement - "Very detailed studies looking at patterns [of use] within the reef walking site and visitor behaviour are beyond the scope of this manual." It then suggests that visitors fill out a

questionnaire such as the one in the manual (Figure 26). For more useful information about the visitors themselves, their expectations, and their impressions of their experience this questionnaire might easily be expanded for GBRMPA research on social carrying capacity issues.

A. M. KAY & M. J. LIDDLE THE IMPACT OF REEF WALKING AT HARDY REEF 1984 Report to the GBRMPA

This report has a section and a table (Table 2) on Levels of Use at Hardy Reef (Sec. 3.1) that describe the major sources of reef walking groups and an estimate of the frequency of visits and the number of people per visit. A good starting point for further descriptive research on visitor use at Hardy Reef.

KATHY A. MEANS AN INVESTIGATION INTO THE USE OF THE RECREATION OPPORTUNITY SPECTRUM WITHIN A MARINE PARK College of Idaho Thesis, November 1984

Four camping islands located in the Marine Park (Tryon, Northwest, Masthead, and Lady Musgrave) were studied with respect to application of the Recreation Opportunity Spectrum, a concept for recreation management that is closely attuned to social carrying capacity concepts. As such the data obtained directly relate to visitor use, perceptions and expectations in the Marine Park although their activity (camping) is a terrestrial one rather than marine.

Three categories of campers were delineated, conflict between users was studied, and camper attitudes toward Marine Park management was assessed. There is an emphasis on the collection of social and management impact data that is lacking in or represent a very small portion of all other GBRMPA project reports. The author provides useful interpretation and application of ROS concepts with respect to the Marine Park setting. She encourages managers to adopt an approach based on the provision of recreational settings rather than activities in order to meet the desires of a diversity of campers.

A useful and highly recommended report.

PHILIP L. PEARCE & GIANNA M. MOSCARDO STUDY OF THE SOCIAL IMPACT OF TOURIST BOATS AND FACILITIES ON EXISTING USERS OF NORMAN REEF October 1987

The research findings of this report are an important beginning in defining the goals and experiences of visitors to coral reefs in a Marine Park rather than those of wilderness visitors to national parks. This is a prime example of the kind of information that GBRMPA should be seeking for different types of reef users. The consultants studied the influence of a tourist-focused reef viewing operation on the clients of dive charter operators at one reef, specifically - perceptions of

crowding, level of satisfaction with the total experience at Norman Reef, perceptions of the quality of Norman Reef and the wilderness aspect of their experience. These variables match those found in the carrying capacity literature.

The findings suggest that the addition of a tourist operation to a reef previously used only by dive charter operators did not adversely affect the overall satisfaction or perceptions of crowding of the divers. The carrying capacity literature warns, however, that user satisfaction always remains high despite vastly differing experiences and is thus not a very useful indicator for social carrying capacity where managers are attempting to preserve a range of experiences.

Significant findings include:

- the fact that the presence of tourist hardware is negatively influences diver satisfaction, more so than the tourists themselves. (This finding is similar to wilderness visitors who may perceive the evidence of human use of the wilderness more perturbing than contacts with other visitors.)
- the concern by divers that the tourist operation would harm the reef. (This again supports the above point.)
- the fact that diver goals are to master diving and view marine life rather than to achieve a 'wilderness experience'. (It will be important to survey the goals of other types of reef users and divers who may express more interest in a natural rather than commercially developed marine experience. The term 'wilderness' may be a misnomer in this setting.)

GBRMPA managers, in the wake of this report, must keep in mind that the experiences and perceptions of the divers are representative only of that population of reef users. Other studies will be required to assess the impacts that various commercial operations have on the specific experiences sought by other reef visitors.

UNISEARCH LIMITED - DAVID R. GALLAGHER RECREATION SITE
CARRYING CAPACITY University of NSW September 1981

A brief theoretical discussion of the concepts of ecological and social carrying capacity is presented in terms of economics. Not useful for direct application of concepts by managers.

UNISEARCH LIMITED - S. GLASSER & I. WILKINSON REEF
TOURISM ATTITUDINAL AND SOCIO-ECONOMIC STUDY A Report to
the GBRMPA, June 1981

Much like the 1988 Vanclay study of tourist perceptions, this study reports on the characteristics, vacationing behavior, and attitudes of visitors to the Great Barrier Reef in general. It found a diversity of tourist types who visit the Reef who get "different satisfactions" from their vacations. Its recommendations for future research (p.vii) are most pertinent to this review.

This study should be reviewed in conjunction with Vanclay's report to compare overall results and to assess any changes that may have occurred over time, as is suggested in the carrying capacity literature. The sample size is nearly three times that of Vanclay's study and the discussion and interpretation of the overall material seems more thorough.

In follow up to this report conducted in 1980/81 and Vanclay's study conducted in 1986, it would be useful to summarise the results and standardise an investigative format for future longitudinal studies of visitors to the Great Barrier Reef.

FRANK VANCLAY TOURIST PERCEPTIONS OF THE GREAT BARRIER
REEF Report to the GBRMPA, March 1988

This report is ambitious, far-reaching and relevant to the concept of social carrying capacity. It contains information on each of the categories of interest - visitor characteristics, nature of visitor use, visitor expectations or goals, and general perceptions of crowding. The data should provide a very useful basis for consideration of the concept of social carrying capacity when decisions are being made about visitor use and Marine Park development.

Of the visitors who visit North Queensland primarily to visit the Reef, these tend to be first time visitors who may or may not intend to visit ever again. The majority of international visitors are in this category. Most tourists, regardless of whether they were first time international visitors or Australians whose goal was relaxation in a tropical climate, expressed concern about over-development and that there should be no more development on the Reef. The physical facility needs of these two groups was found to be similar. The author suggests that facilities planned for tourists need not be different for the different groups, that there already might be too much luxury hotel development and not enough provided for low and middle income family groups. Vanclay also found that tourists are sensitive to coral quality and expressed greater satisfaction when the coral viewed was higher quality.

Due to the report's relatively small sample size (354) which included two tourist seasons and covered locations

throughout the vast region of the Marine Park, it will not be appropriate to generalize its findings to specific sites in the Marine Park. Rather it should serve as a general guide to GBRMPA managers on domestic and international visitor perceptions. It should also spur interest in making more specific investigations in regions of concern to managers.

**NOEL WHITTEM A COMPARATIVE STUDY OF PREFERENCES OF TWO
DISTINCT DAY-VISITOR GROUPS TO THE GREAT BARRIER REEF: A
CASE STUDY OF VISITORS TO BEAVER CAY Thesis, November
1983**

This honours thesis is an excellent example of a detailed examination of two types of visitors to a specific site - Beaver Cay. The information it contains is relevant to considerations of social carrying capacity and includes all four types of information of concern to this review - visitor characteristics, nature of use, expectations and preferences, and perceptions of crowding. The author's recommendations are concise and pertinent to Marine Park management concerns.