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Research Program

TROPICAL ECOSYSTEMS *hub*

Technical Report

The Social and Economic Long Term Monitoring Program (SELTMP) 2014

Recreation in the Great Barrier Reef



Renae Tobin, Erin Bohensky, Matt Curnock, Jeremy Goldberg,
Margaret Gooch, Nadine Marshall, Bernadette Nicotra,
Petina Pert, Lea Scherl and Samantha Stone-Jovicich



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RESEARCH CENTRE

The Social and Economic Long Term Monitoring Program (SELTMP) 2014 Recreation in the Great Barrier Reef

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2014

SELTMP 2014: Recreation in the Great Barrier Reef

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SELTMP 2014:

Recreation in the Great Barrier Reef

An introduction to the SELTMP for the Great Barrier Reef

The Social and Economic Long Term Monitoring Program (SELTMP) for the Great Barrier Reef describes conditions and trends of the human dimension of the Great Barrier Reef (GBR) using both existing datasets (known as secondary data) and primary data obtained through social surveys. It was set-up in 2011 following repeated calls from managers of the Great Barrier Reef World Heritage Area for stronger and comprehensive social science data that could be used to assist managers in their day-to-day duties.

Long-term monitoring offers GBR managers, industries and communities the opportunity to understand the current status of Marine Park users, industries and communities, including those potentially impacting on the ecological components of the system. Long-term monitoring offers the opportunity to assess the future of each industry and community in the face of climate change impacts and other drivers of change such as environmental degradation, regulatory change, cultural change and short-term impacts. It provides the potential to evaluate the effectiveness of management interventions and to assess equity dimensions within the region. Long-term monitoring offers the best research approach available for refining theory and methods for conceptualizing and assessing how people are prepared for change and adapt.

The success of a programme such as the SELTMP can only occur with well-translated cutting-edge social and economic science data and knowledge that directly feeds into current management processes. The science must be excellent, collaborative and must itself adapt as learnings from the monitoring datasets are developed. Hence, the SELTMP is governed by a Steering Committee and an Advisory Panel (See Figure 1, next page). The design and working model for the SELTMP occurs through working groups. Each working group is led by a core researcher and comprises members from industry, government and community. Some 100 individuals are involved in this process.

The SELTMP is strongly guided by the scientific literature. Deciding ‘what should be monitored’ was both a “bottom-up” and “top-down” process. The variables chosen to represent and monitor the human dimension through time were identified by working group members and by modifying and referring to a well-known science framework (the ‘Millennium Ecosystem Assessment’ model). The resulting SELTMP framework provides a conceptual understanding of how the human dimension connects with the GBR. The variables chosen to support the framework were Specific (S), Measureable (M), Actionable (A), Relevant (R) and Timely (T) (SMART). The SELTMP for the Great Barrier Reef represents one of the first in the world to comprehensively identify and measure the important components of the human dimension of a natural resource system and that are useful for resource management.

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Introduction to the SELTMP contd.

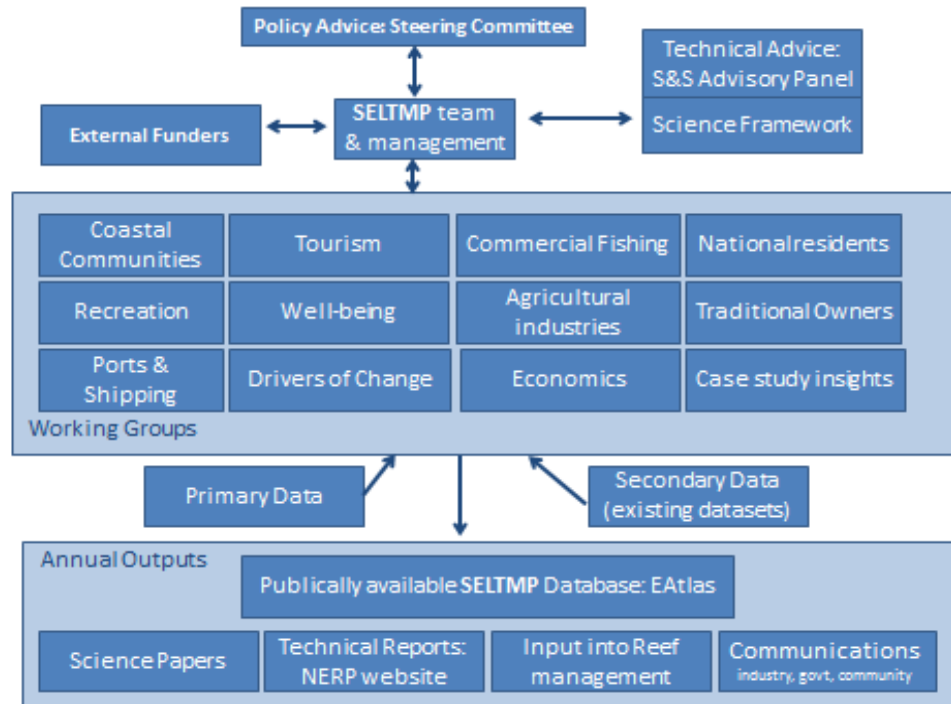


Figure 1. The operational structure of the SELTMP and its key outputs

Through monitoring existing regional datasets and undertaking survey work in the region, the SELTMP presents annual snapshots of coastal communities, national residents, **recreational users**, the marine tourism industry, the commercial fishing industry, Traditional Owners, ports and shipping, catchment industries and mining. The SELTMP monitors human use of and dependency on the GBR, human and community well-being (as they relate to the GBR), as well as a range of socio-cultural drivers such as perceptions, values, attitudes and behaviours.

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Introduction to the SELTMP contd.

Annual snapshots of the human dimensions of the Reef and learnings will be communicated via four main outputs:

- (i) A web-based database. Each year, the SELTMP web-based database will be updated to reflect the most up-to-date knowledge of the human condition of the GBR and its catchment. Through web-based facilities, researchers will be able to access data for research purposes, industry will be able to use data to inform their planning and management, and GBR and regional managers will be able to better understand the complex social and economic environment within which they operate and use the data in their day-to-day decision-making processes. The current database, held within the eAtlas (<http://eatlas.org.au/seltmp>) contains survey results from over 8,000 individuals across each of the following user-groups: commercial fishers, tourism operators, tourists, local residents, and Australians.
- (ii) Technical reports. Each year a series of technical reports are published that reports on conditions for that year based on both primary and secondary data. The SELTMP 2011 was the inaugural year in which the design and conceptual model were developed. It assembled and presented data from a range of existing sources relevant to people and industries in the GBR and catchment. The SELTMP 2012 was refined in terms of its design and included updated secondary data. The SELTMP 2013 was the first year in which data gaps were addressed and primary data collected to add to the secondary data. **This report represents Recreation within the “SELTMP 2014 Technical Report Series” and includes any additional updates from existing datasets, as well as SELTMP survey results which were weighted based population parameters** (see 2013 SELTMP survey methods, p6).
- (iii) Science papers. Human trends are analysed and communicated through science papers that showcase the science value and management application of the SELTMP. The SELTMP is currently in its design and implementation phase, and hence has limited longitudinal value at this stage. Science papers in the immediate term are drawn from the comprehensive baseline dataset for science and policy relevance and value.
- (iv) Communications for industry, government and community. Key findings will be highlighted through annual media campaigns in which communication products such as ‘key findings booklets’, press-releases, popular media articles, seminars and conferences, will be developed.

The framework chosen to guide the choice of indicators was based on the Millennium Ecosystem Assessment (2003, 2005), which established a ‘big picture’ conceptual overview of the relationship between people and natural resources for the purposes of assessing ecosystem condition. The Millennium Ecosystem Assessment conceptual framework was developed in consultation with over 2,000 scientists. It is based on the “DPSIR” model which focuses on drivers, pressures, states, impacts on and responses of systems. Human use and dependency, community wellbeing, and the direct and indirect drivers of change can influence the GBR ecosystem and its services at multiple spatial scales, from local to global. For more information on the SELTMP monitoring framework, please see the *SELTMP 2014 Key Findings Technical Report*, available via the NERP website.

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Data presented in this Report

This technical report presents a snapshot of socio-economic data and indicators relevant to the current state of **recreation** on the Great Barrier Reef region (i.e. Natural Resource Management (NRM) areas adjacent to the GBR). A wide range of secondary data and statistics are compiled from publicly available reports plus unpublished data provided by government and management agencies. Little interpretation is provided of these secondary data; however, sources are shown with links to online reports where available. Primary data are presented from the SELTMP surveys conducted over mid-2013 (described next). Indicators without available data are still included here, in the hope that data will be available in the future – the lack of data is denoted by ‘xx’. Data from all sources are presented under the following framework:

i) Use and Dependency

How people use and depend on the GBR. Components include:

- Use of the Environment: Where, When, How, How Much
 1. Activities (*what, how, how much*)
 2. Spatial and temporal patterns of use (*where and when*)
- Social Relationship with the Environment: Who and Why
 3. Cultural, spiritual and intellectual inspiration and experiences (*place, identity, aesthetics, satisfaction*)
- Economic Relationship with the Environment (What is the relationship like?):
 4. Employment, value and investment

ii) Human and Community Well-being

Societal benefits derived from the environment. Components include:

- Security (e.g. for livelihoods and lifestyles); • Opportunities (e.g. for access and development);
- Empowerment (e.g. in determining future outcomes)

iii) Drivers of Change

Includes direct and indirect drivers, including (but not limited to):

- Employability
- Environmental stewardship
- Information and Networks
- Sector-specific drivers

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2013 SELTMP Survey methods



Image by Petina Pert

Resident survey locations



Primary data were collected via semi-quantitative resident surveys, to fill multiple gaps in the secondary data available. Surveys were designed with input from key end-users and industry representatives. A total of 3181 coastal residents adjacent to the GBR were surveyed via face-to-face interviews in mid 2013, with responses to survey questions entered into an iPad, using the iSurvey application. In some cases respondents opted to complete the survey on paper, and their responses were later entered into the iPad app. For the purposes of this survey, **residents were defined as people who live within the GBR catchment** (bounded by Bundaberg in the south, Cape York in the north and the Great Dividing Range in the west). **Recreational users were defined as residents undertaking recreational activity in the GBRWHA**, anywhere from the mainland beaches to the eastern boundary of the GBRMP.

Surveys were conducted at locations in and around 14 coastal towns of the GBR region, from Cooktown to Bundaberg. Survey locations included (but were not limited to) public beaches and esplanades, nearby islands, airports, boat ramps, jetties, shopping centres, caravan parks, markets, popular public education locations (e.g. Aquarium, museum) and a limited number of Reef tourism vessels. The resident surveys were conducted at the same time as tourist surveys (see Curnock et al. 2014), and the response rate for both survey types combined was over 53%.

Data presentation

Most data are presented as **% of respondents**. Where 10-point scales were used to elicit agreement with statements (where 1 = strongly disagree, 10 = strongly agree), we display the **mean score** and the **% of respondents who agreed** with the statement (i.e. scored a 6 or above). All survey related data are referenced as "SELTMP Survey 2013"

Limitations to note

Data from the surveys are relevant to **residents of coastal towns** adjacent to the GBR only. They cannot be extrapolated to the entire catchment. Data are, however, 'weighted' according to demographic variables (age, gender, education, income, and NRM region) compared to the known population available through the Australian Bureau of Statistics (ABS) Census data (2011). Weights were determined via ranking (Battaglia et al. 2004) using the *anesrake* package within the statistical program R. These weights were then applied to categorical responses within Microsoft Excel.

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Introduction to Recreation on the GBR

People love to spend their recreational time visiting the Great Barrier Reef World Heritage Area (GBRWHA), (GBRMPA, 2014), and many people are doing it! The recent SELTMP surveys revealed that 95% of residents of coastal town adjacent to the GBR had visited the GBRWHA for recreation at least once, and 86% had visited in the previous 12 months. Many of these visits appeared to be to a mainland beach to walk, swim, and relax. However, 68% of people who told us about their recent trips had been beyond the mainland beach to islands, reefs, shoals, etc., to take part in activities such as fishing, snorkelling and diving. Other activities include boating, sailing, jet skiing, camping, kayaking, sight-seeing, photography, and wildlife viewing, to name a few. Recreational visitors are currently very satisfied with their use of the Marine Park.

While most trips beyond the beach were made by ferry, about a third of these trips were accessed by residents' own or someone else's boat. While not everyone is using their vessel very frequently, vessel registration by coastal residents has increased substantially in recent years (Qld Department of Transport, unpublished data, 2011).

Given all of this activity, it is not surprising that recreation in the GBRWHA provides significant social and cultural benefits as well as many health and wellbeing benefits associated with the psychological interaction with nature (Synergies Economic Consulting, 2012). In economic terms, recreation (defined by Deloitte Access Economics as GBR catchment residents visiting an island, sailing, boating and fishing), contributed \$126m in direct value or \$243.9m value added to the Australian economy in 2011/12 (Deloitte Access Economics, 2013). This estimate did not include beach visits.

Importantly, recreation differs from tourism. The Great Barrier Reef Marine Park Authority (GBRMPA) define recreation as *an independent visit for enjoyment that is not part of a commercial operation* (GBRMPA, 2012). For the purposes of the SELTMP Surveys (outline following), any resident of the GBR catchment who visits the GBRWHA is included within recreation; while tourists are defined as those residing outside of the GBR catchment (and therefore are included in the Tourism report – see Curnock et al., 2014).



SELTMP 2014: Recreation in the Great Barrier Reef

Introduction continued

There is potential for overlap between tourism and recreation in some instances; for example if a visitor to a GBR coastal region is staying within a caravan park, they are considered a tourist for that purpose; however when they make an independent visit to the region in their own boat, they are making an independent recreational visit. If a resident visits the Reef via a paid tour, they are considered a tourist for that trip, but in this report they are included as recreational users because they are residents of the catchment. This issue will likely be debated in subsequent versions of the SELTMP while we seek clarity on specific examples. For SELTMP 2014, this report focuses on residents making recreational visits to the WHA, in part due to data availability at this time.

Recreation in the WHA is managed by the Great Barrier Reef Marine Park Authority (GBRMPA) in partnership with multiple state agencies including the Department of National Parks, Sports, Recreation and Racing (NPRSR), Fisheries Queensland within Queensland's Department of Agriculture, Fishing and Forestry (DAFF), the Queensland Boating and Fisheries Patrol (QBFP), and Maritime Safety Queensland (MSQ). The Commonwealth Department of Environment (DoE) also assists with management of the WHA (GBRMPA, 2012). While many activities are subject to specific regulations (e.g. fishing, camping in national parks), others are not (e.g. visiting beaches, swimming), and aside from fishing, recreational activities can occur in almost all of the GBR region. Most non-extractive impacts from recreation are related to vessels, particularly inshore and close to population centres where use is highest (GBRMPA, 2014). The GBRMPA has developed a *Recreation Management Strategy* for the Marine Park, with the aim of providing an overarching framework for the management of recreation in the Park, and to facilitate coordination between agencies responsible (see GBRMPA, 2012). Their vision for recreation in the Park is: *Ecologically sustainable recreational use of the Great Barrier Reef Marine Park where the Great Barrier Reef is protected and where visitors can appreciate its values and enjoy recreational experiences, now and into the future*. This vision highlights the essential link between healthy ecosystems and enjoyable recreational use.

This report outlines available (secondary) data from 2014 (or as close to is as possible) and primary survey data from the 2013 surveys for recreation in the GBRWHA.

Images by Matt Curnock, Andrew Tobin and others © Creative Commons



SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – WHAT are people doing?

Total recreational visitation to the WHA

% residents that have visited the GBR for recreation (ever)

Cape York +	
Wet Tropics	: 96%
Burdekin	: 99%
Mackay-Whits	: 95%
Fitzroy Basin	: 94%
Burnett-Mary	: 89%

GBR overall : 95%

% of residents who visited GBR in prev 12 months

Cape York +	
Wet Tropics	: 92%
Burdekin	: 96%
Mackay-Whits	: 90%
Fitzroy Basin	: 81%
Burnett-Mary	: 67%

GBR overall : 86%

Ref: SELTMP Survey 2013

Proportion of visitors visiting BEACHES most recently~

Cape York +	
Wet Tropics	: 51%
Burdekin	: 57%
Mackay-Whits	: 74%
Fitzroy Basin	: 74%
Burnett-Mary	: 71%

GBR overall : 65%

Ref: SELTMP Survey 2013

Proportion of visitors going BEYOND the mainland beach*

Cape York +	
Wet Tropics	: 65%
Burdekin	: 75%
Mackay-Whits	: 73%
Fitzroy Basin	: 70%
Burnett-Mary	: 37%

GBR CTs overall : 68%

Ref: SELTMP Survey 2013

Most visitors had visited the mainland beach on their most recent trip to the GBR, rather than going offshore.

However, many had gone 'beyond' the mainland beach (e.g. to near-shore waters, islands, reefs – details to follow) in the previous 12 months, for all NRMs except for the Burnett-Mary (remembering the Burnett-Mary overlaps with the southern boundary of the GBR, and only GBR locations were included here).

Larson et al (2014a), found most GBR region residents had been to the beach (84.5%), to a GBR islands (81.5%) or on a paid boat trip (73.6%) at least once. Going to a mainland beach and swimming were the most frequent activities.

~Beach visits relate to going to a mainland beach on their most recent trip to the GBR. Only includes those who stated they had visited the GBR in the past 12 months. *Beyond the mainland beach is a trip taken beyond the mainland beaches, e.g. to an island, near-shore waters, reef, etc. This includes respondents' most recent trip, plus whether they had been beyond the mainland beach at all in the previous 12 months (for those whose recent trip was to a beach).

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – WHAT are people doing?

Proportion of visitors motorised BOATING*

Cape York +	
Wet Tropics	: 7%
Burdekin	: 8%
Mackay-Whits	: 10%
Fitzroy Basin	: 8%
Burnett-Mary	: 6%

GBR overall : 8%

Ref: SELTMP Survey 2013

Proportion of visitors SAILING*

Cape York +	
Wet Tropics	: 3%
Burdekin	: 3%
Mackay-Whits	: 7%
Fitzroy Basin	: 3%
Burnett-Mary	: 0%

GBR overall : 4%

Ref: SELTMP Survey 2013

Proportion of visitors JETSKIING*

Cape York +	
Wet Tropics	: 0%
Burdekin	: 2%
Mackay-Whits	: 1%
Fitzroy Basin	: 2%
Burnett-Mary	: 0%

GBR overall : 1%

Ref: SELTMP Survey 2013

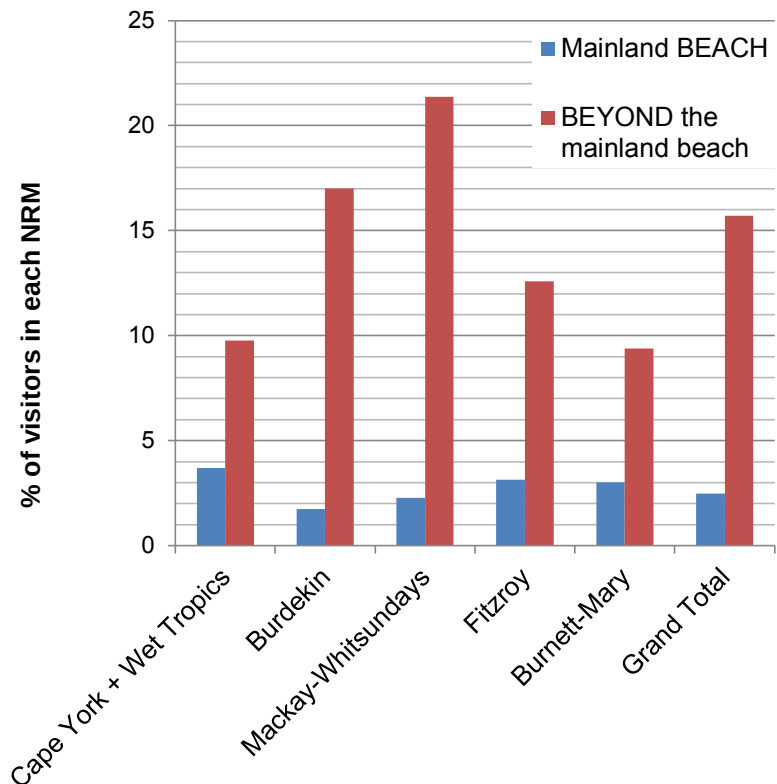
Proportion of visitors doing NON-Motorised WATER SPORTS#

Cape York +	
Wet Tropics	: 5%
Burdekin	: 5%
Mackay-Whits	: 7%
Fitzroy Basin	: 3%
Burnett-Mary	: 6%

GBR overall : 5%

Ref: SELTMP Survey 2013

% of trips with activity details, where visitors used a motorboat / sailboat / jetski



Ref: SELTMP Survey 2013

*Proportion of resident visitors who provided trip details, who listed each activity either as their 'MAIN' activity or 'other' (secondary). Does not include those who travelled by boat but did not list 'boating' as an activity. Details for MAIN activities to follow. #Non-motorised watersports includes kayaks, SUP, surfing and windsurfing.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – WHAT are people doing?

Proportion of visitors SWIMMING*

Cape York +	
Wet Tropics	: 34%
Burdekin	: 32%
Mackay-Whits	: 28%
Fitzroy Basin	: 27%
Burnett-Mary	: 25%

GBR overall : 29%

Ref: SELTMP Survey 2013

Proportion of visitors SNORKELING*

Cape York +	
Wet Tropics	: 32%
Burdekin	: 19%
Mackay-Whits	: 24%
Fitzroy Basin	: 25%
Burnett-Mary	: 18%

GBR overall : 22%

Ref: SELTMP Survey 2013

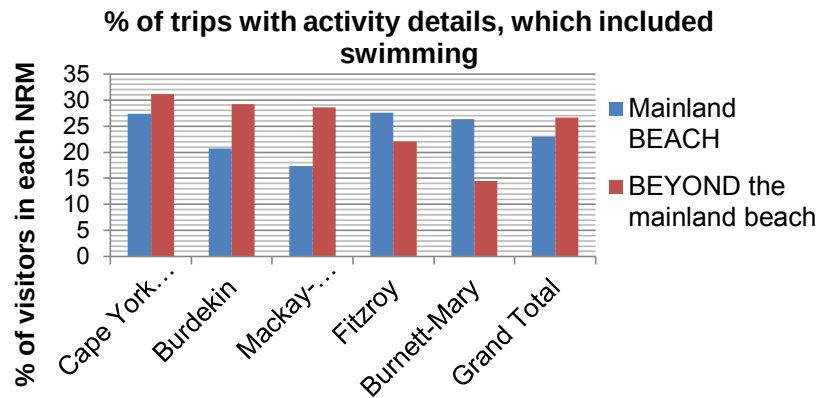
Proportion of visitors SCUBA diving*

Cape York +	
Wet Tropics	: 8%
Burdekin	: 6%
Mackay-Whits	: 5%
Fitzroy Basin	: 3%
Burnett-Mary	: 3%

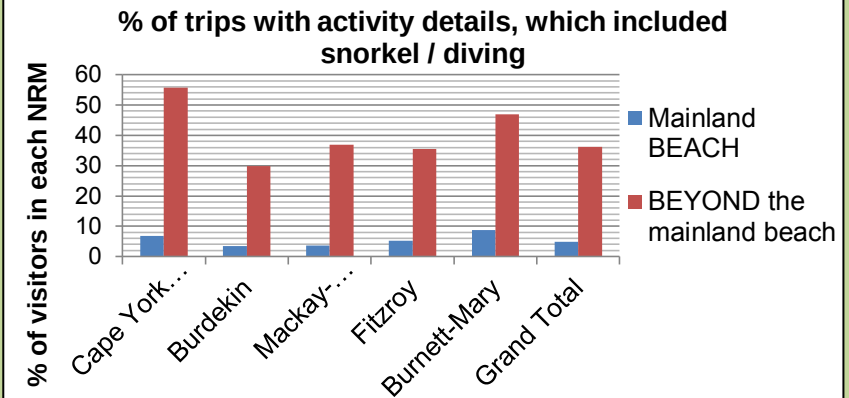
GBR overall : 5%

Ref: SELTMP Survey 2013

Swimming and snorkeling were popular activities, however while swimming was common at the beach and 'beyond', snorkeling and diving were most common 'beyond' the mainland beach.



Ref: SELTMP Survey 2013



Ref: SELTMP Survey 2013

*Proportion of coastal resident visitors who provided trip details, who listed each activity either as their MAIN activity or 'other'. Details for MAIN activities to follow.

SELTMP 2014: Recreation in the Great Barrier Reef

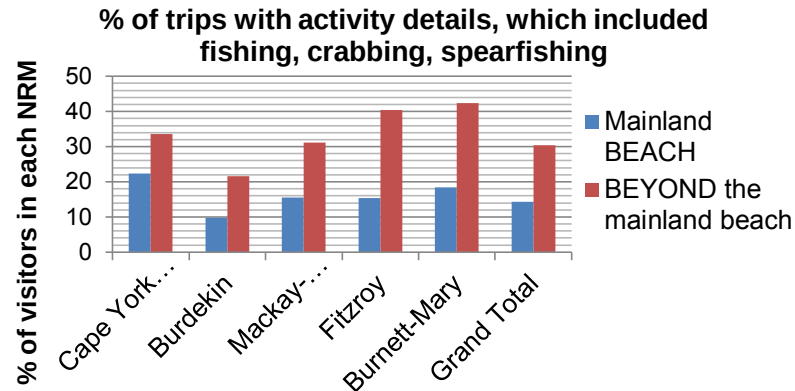
i) Use of the Environment: 1. Activities – WHAT are people doing?

Proportion of visitors* FISHING

Cape York +	
Wet Tropics	: 31%
Burdekin	: 20%
Mackay-Whits	: 28%
Fitzroy Basin	: 34%
Burnett-Mary	: 29%

GBR overall : 27%

Ref: SELTMP Survey 2013



Ref: SELTMP Survey 2013

Fishing is popular at the beach and beyond, but more common beyond the mainland beach.

The latest SWRFS results suggest participation (as % of population that has fished in the past 12 months) has decreased from 17% of the Qld population in 2010, to 15% in 2013.

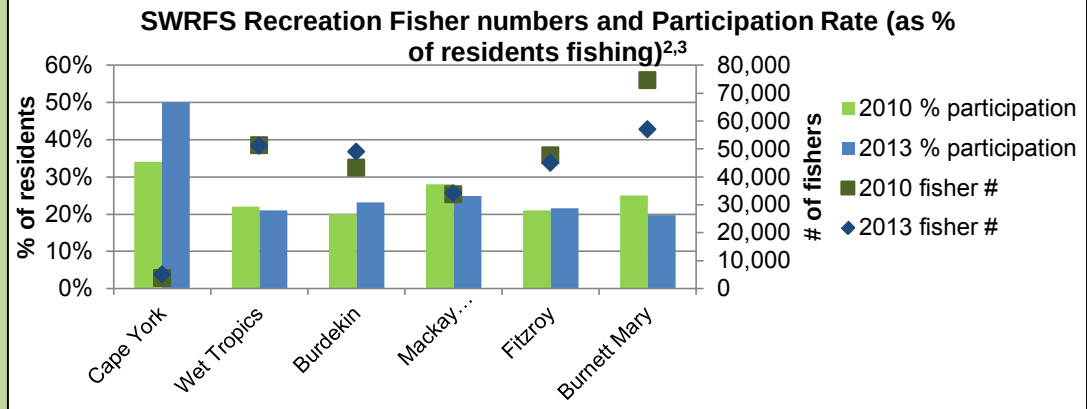
However, participation in the GBR region only changed from 23% to 22% (from ~254,000 to 241,000 people) .

Proportion (+ number +/- SE) of residents** FISHING

Cape York~	: 50% ²	(5,000 +/- 1,500)
Wet Tropics	: 21% ²	(51,000 +/- 4,400)
Burdekin	: 23% ²	(49,000 +/- 3,800)
Mackay-Whits	: 25% ²	(34,000 +/- 3,300)
Fitzroy Basin	: 22% ²	(45,000 +/- 3,600)
Burnett-Mary	: 20% ²	(57,000 +/- 4,200)

TOTAL GBR : 22%² (241,000)
TOTAL Qld : 15%¹ (639,000)

Ref: ¹DAFF (2014a); ²DAFF, unpubl. data (2014); ³DAFF, unpubl. data (2013)



*Proportion of coastal resident visitors who provided trip details, who listed each activity either as their MAIN activity or 'other'. Details for MAIN activities to follow.

**Residents from DAFF Statewide and Regional Recreational Fishing Survey 2013. ~ Cape York estimates are not considered reliable due to low sample size.

SELTMP 2014: Recreation in the Great Barrier Reef

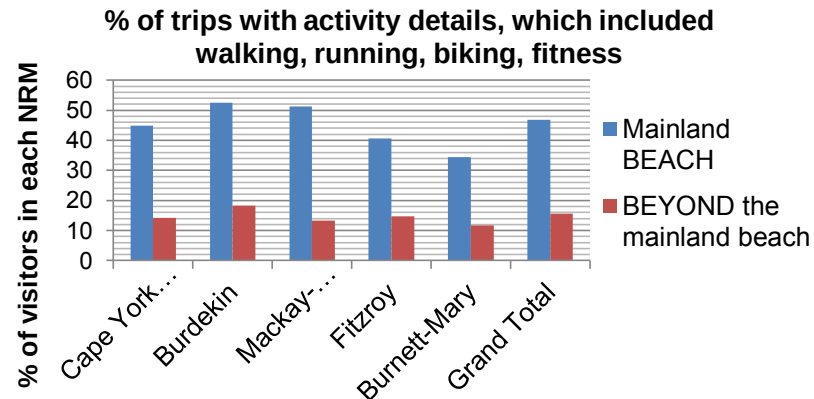
i) Use of the Environment: 1. Activities – WHAT are people doing?

Proportion of visitors WALKING+ etc

Cape York +	
Wet Tropics	: 37%
Burdekin	: 45%
Mackay-Whits	: 34%
Fitzroy Basin	: 27%
Burnett-Mary	: 30%

GBR overall : 36%

Ref: SELTMP Survey 2013



Ref: SELTMP Survey 2013

Walking is a very popular activity, particularly on mainland beaches. This includes walking in general (predominantly), walking on the beach, walking the dog, running, and general fitness.



Image by Matt Curnock

Proportion of visitors CAMPING~

Cape York +	
Wet Tropics	: 6%
Burdekin	: 3%
Mackay-Whits	: 3%
Fitzroy Basin	: 4%
Burnett-Mary	: 3%

GBR overall : 3%

Ref: SELTMP Survey 2013

Proportion of visitors HIKING#

Cape York +	
Wet Tropics	: 5%
Burdekin	: 4%
Mackay-Whits	: 7%
Fitzroy Basin	: 0%
Burnett-Mary	: 1%

GBR overall : 3%

Ref: SELTMP Survey 2013

Proportion of visitors SIGHTSEEING^

Cape York +	
Wet Tropics	: 23%
Burdekin	: 21%
Mackay-Whits	: 22%
Fitzroy Basin	: 11%
Burnett-Mary	: 13%

GBR overall : 18%

Ref: SELTMP Survey 2013

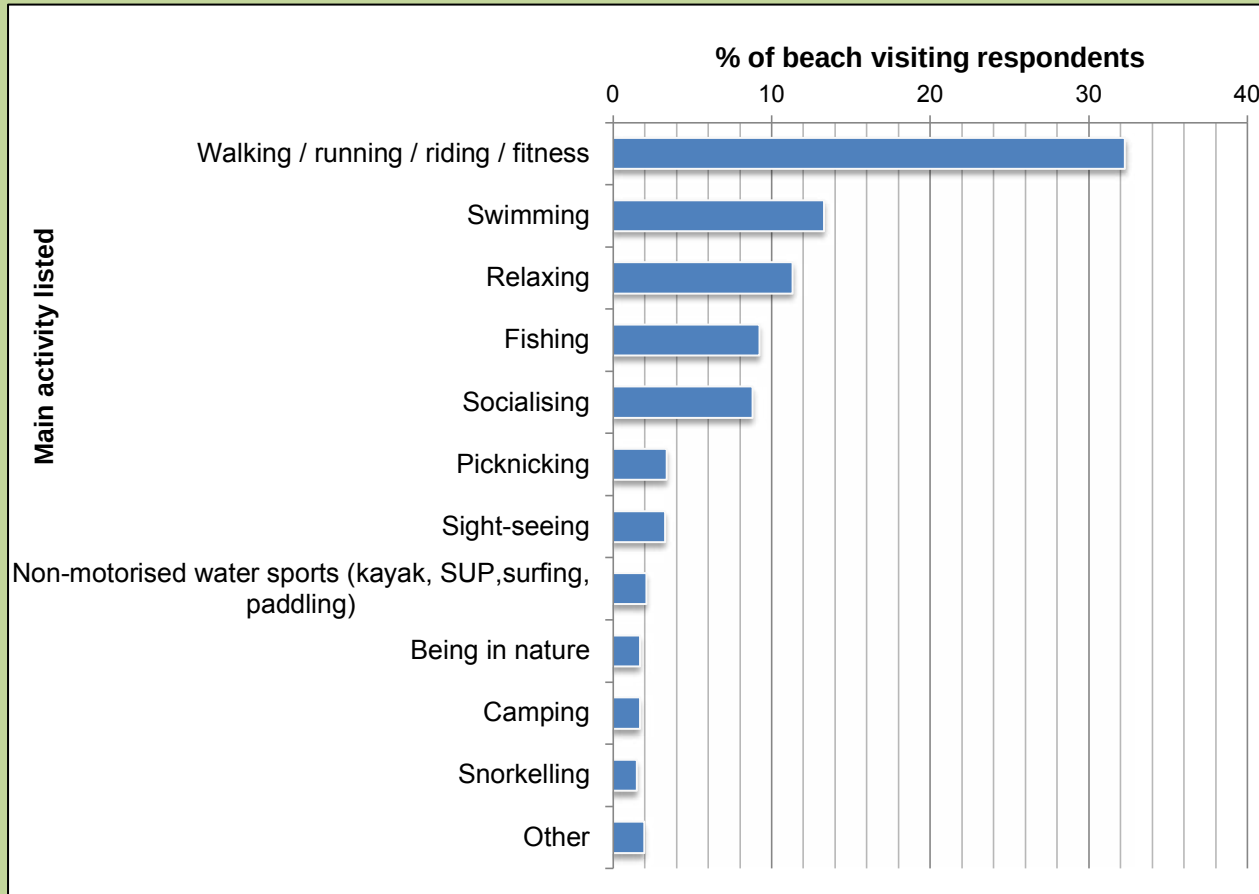
*Proportion of coastal resident visitors who provided trip details, who listed each activity either as their MAIN activity or 'other'. Details for MAIN activities to follow.
 ~Walking etc includes walking on beach, walking the dog, running, biking, general fitness, but not 'beach combing' (n=7). ~Camping can include caravanning, but predominantly relates to camping on islands and beaches. #Hiking does NOT include walking. ^Sightseeing includes photography.

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i) Use of the Environment: 1. Activities – WHAT are people doing?

At the Beach

Main activity at a mainland beach



Ref: SELTMP Survey 2013

Main activity

Most popular activity by region*

Cape York +
Wet Tropics : Relaxing
Burdekin : Walking etc
Mackay-Whits : Walking etc
Fitzroy Basin : Walking etc
Burnett-Mary : Walking etc

GBR overall : Walking etc

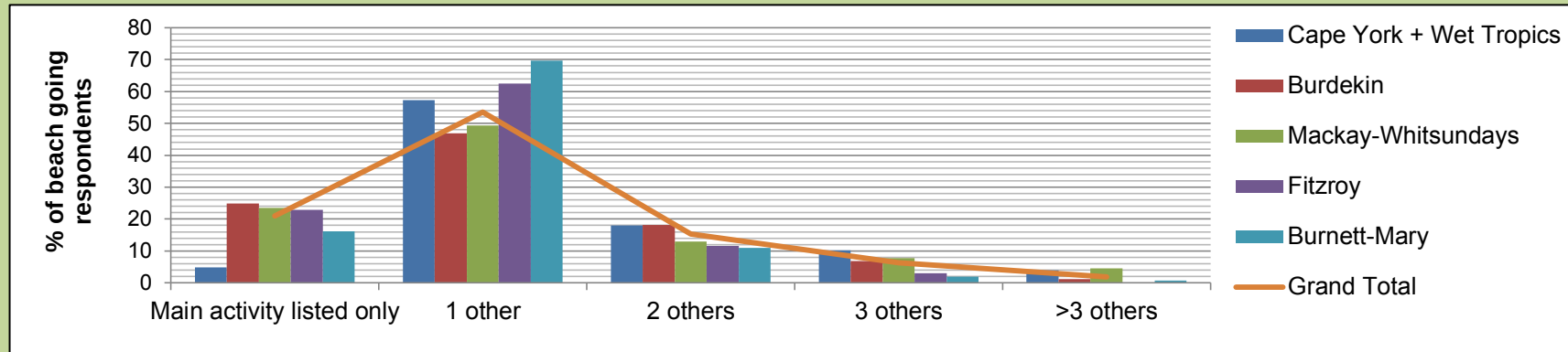
Ref: SELTMP Survey 2013

*For most recent trip to a mainland beach. Activities listed by >1% of respondents listed in graph

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – WHAT are people doing?

Diversity of activity*



Ref: SELTMP Survey 2013

Linked activities

Most common associations*

1 ^o (n trips)	2 ^o (% of trips)^
Motorboating (9)	+ Swimming (47%), then Fishing (38%)
Sailing (11)	+ Traditional use (27%), Snorkeling (25%)
Jet skiing (9)	+ None listed** (38%), Relaxing (24%)
Fishing (149)	+ None listed (25%), Relaxing (23%)
Snork/Diving (34)	+ Swimming (22%), Walking (16%)
Camping (27)	+ Fishing (60%), Walking (19%)
Hiking (9)	+ Being in nature (64%), Photography (43%)
Swimming (214)	+ Walking/running etc (23%), Relaxing (22%)

Ref: SELTMP Survey 2013



Image by Matt Curnock

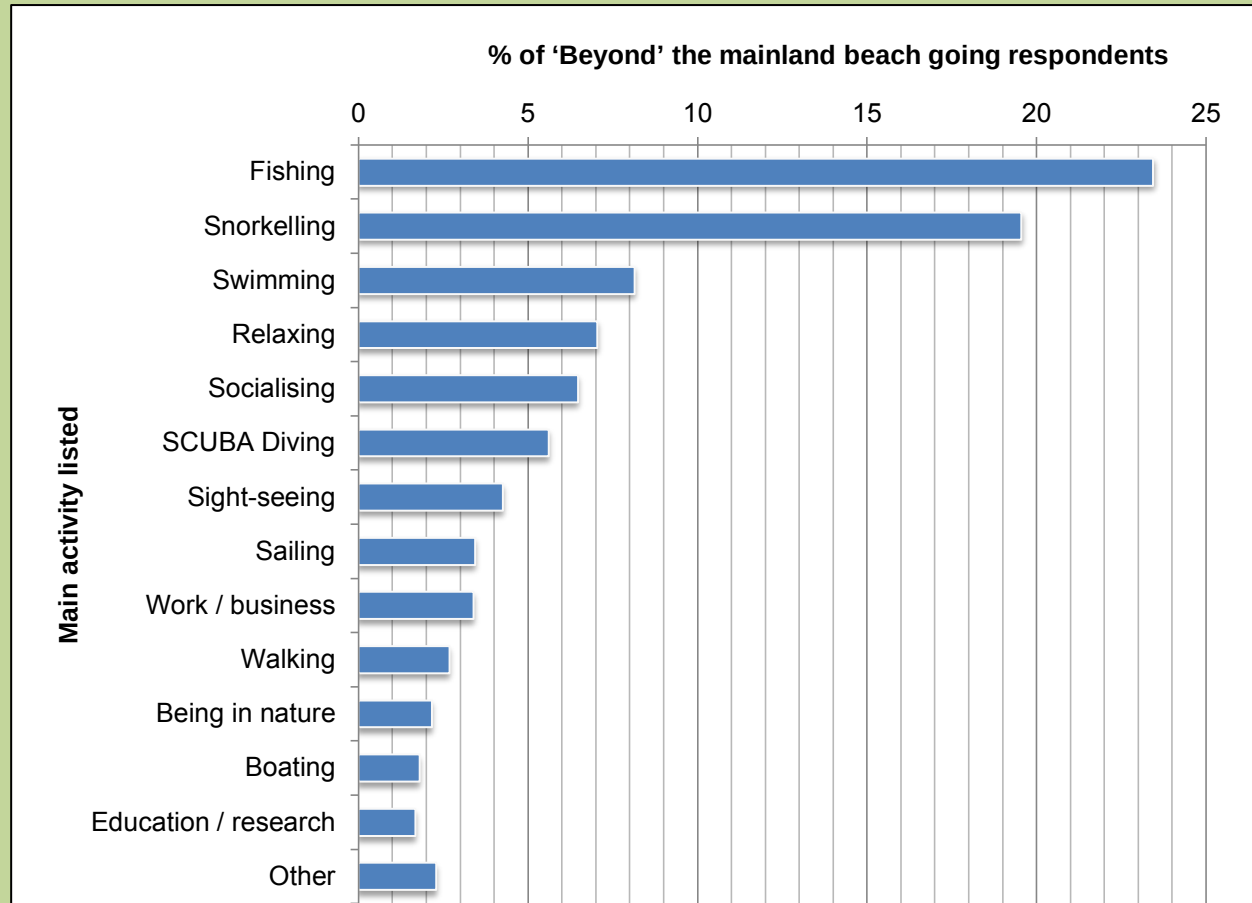
*For the most recent trip to a mainland beach. Number of activities was not exhaustive – indicative only. Primary activity is the 'main' activity they listed, 'secondary' is any 'other' activity. ^% of trips = the % of those trips where the main activity is listed (n provided for each trip type). The top 2 secondary activities are included. More detail can be provided on request to lead author. **Where "none listed" is stated, this means these were specific trips where no secondary activities were listed with the main activity.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – WHAT are people doing?

‘Beyond’ the Mainland Beach

Main activity for trips ‘beyond’ the mainland beach



Ref: SELTMP Survey 2013

Main activity

Most popular activity by region*

Cape York +
Wet Tropics : Snorkelling
Burdekin : Fishing
Mackay-Whits : Fishing
Fitzroy Basin : Fishing
Burnett-Mary : Fishing

GBR overall : Fishing

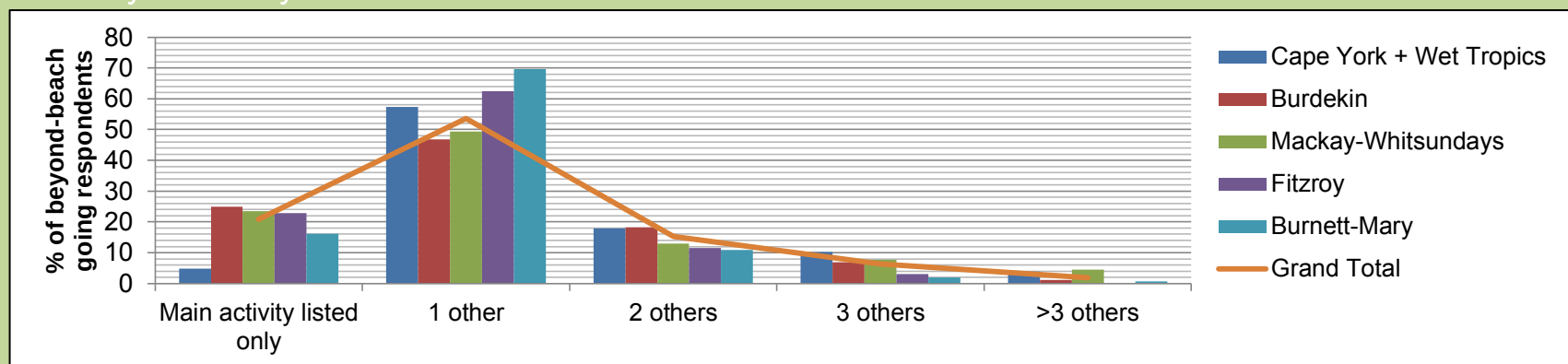
Ref: SELTMP Survey 2013

*For most recent trip OR additional non-beach trip for those who listed a beach but had also gone beyond the mainland beach. Activities listed by >1% of respondents shown in the graph.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – WHAT are people doing?

Diversity of activity*



Ref: SELTMP Survey 2013

Linked activities*

Most common associations*

1 ^o (n trips)	2 ^o (% of trips)^
Motorboating (31)	+ Fishing (24%), then None listed** (21%)
Sailing (60)	+ Snorkeling (28%), Socialising (25%)
Fishing (409)	+ None listed (33%), Boating (19%)
Snork/Diving (440)	+ Swimming (28%), None listed (17%)
Camping (18)	+ Fishing (83%), Swimming (43%)
Hiking (11)	+ Swimming (36%), Camping (27%)
Swimming (142)	+ Walking (29%), Socialising (21%)

Ref: SELTMP Survey 2013

Tidbit:

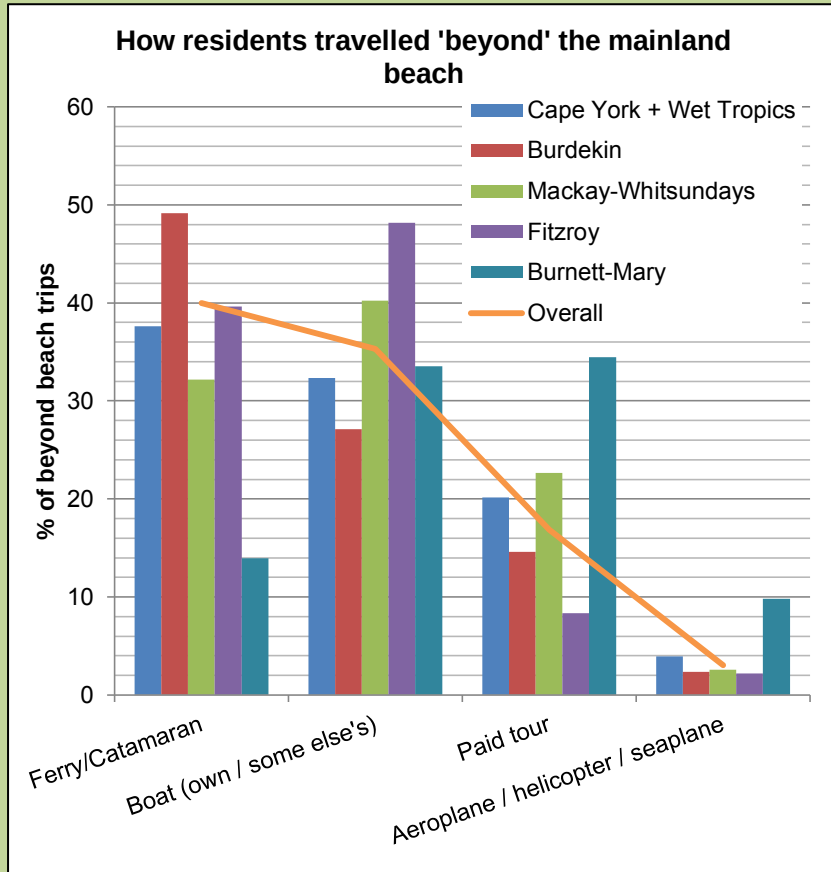
The number of times respondents to a household survey in Townsville went fishing (on average) was greater than the number of times they went boat-fishing, meaning there is substantial demand for land-based fishing (Farr et al., 2014).

*For the most recent trip beyond a mainland beach. Number of activities was not exhaustive – indicative only. Primary activity is the ‘main’ activity they listed, ‘secondary’ is any ‘other’ activity. ^% of trips = the % of those trips where the main activity is listed (n provided for each trip type). The top 2 secondary activities are included. More detail can be provided on request to lead author. **Where “none listed” is stated, this means these were specific trips where no secondary activities were listed with the main activity.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

How did people get 'beyond' the beach



Ref: SELTMP Survey 2013

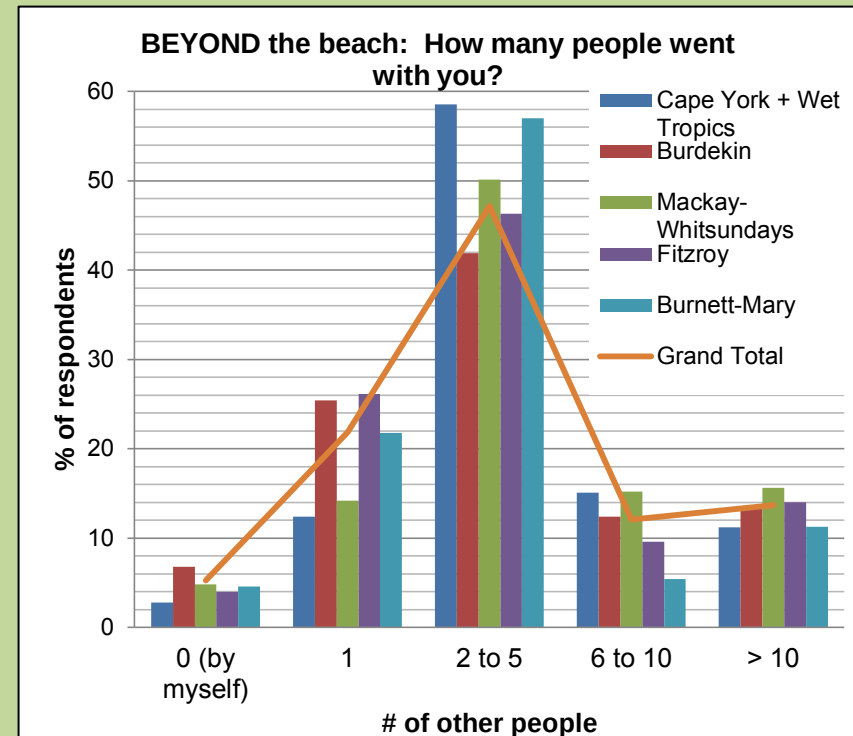
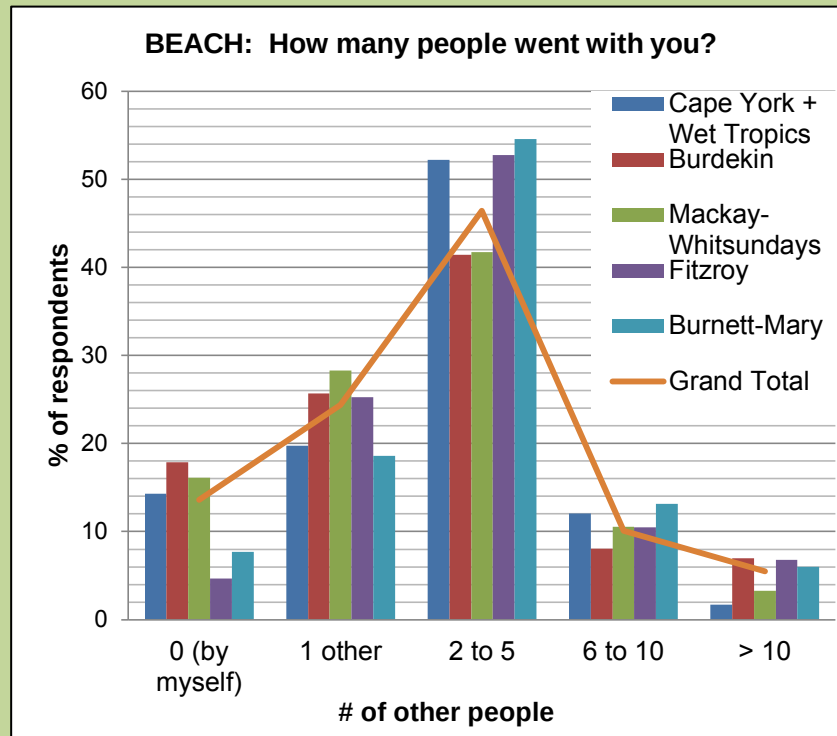


Image by Matt Curnock

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

Party size: How many people went with you on your most recent trip?



Recreational visitors primarily visited the GBR with other people. Larger groups were more common beyond the beach than at the mainland beach.

Ref: SELTMP Survey 2013

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

Party size[#]

Most common number of people per trip to beach

Boaters [^]	: 2 to 5 other
Sailers	: 2 to 5
Jetskiers	: 2 to 5
Fishers	: 2 to 5
Snork/Divers	: 1 and 2 to 5
Campers	: 2 to 5
Hikers	: 2 to 5
Swimmers	: 2 to 5

Ref: SELTMP Survey 2013

Party size[#]

Most common number of people per trip beyond beach

Boaters [^]	: 2 to 5
Sailers	: 2 to 5
Jetskiers	: 1 and 2 to 5
Fishers	: 2 to 5
Snork/Divers	: 2 to 5
Campers	: 2 to 5
Hikers	: 1 other
Swimmers	: 2 to 5

Ref: SELTMP Survey 2013

Party make-up

% of trips with family only

Boaters	: 35.5% ¹
Sailers	: xx
Jetskiers	: xx
Fishers	: xx
Snork/Divers	: xx
Campers	: xx
Hiking	: xx
Swimmers	: xx

% of trips with friends only

Boaters	: 38.8% ¹
Sailers	: xx
Jetskiers	: xx
Fishers	: xx
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

Ref: ¹OESR (2008)

% of trips with family + friends

Boaters	: xx
Sailers	: xx
Jetskiers	: xx
Fishers	: xx
Snork/Divers	: xx
Campers	: xx
Hiking	: xx
Swimmers	: xx

% of trips with other groups (e.g. school)

Boaters	: xx
Sailers	: xx
Jetskiers	: xx
Fishers	: xx
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

[#]Party size categorised as how many 'other' people accompanied the respondent. See previous page for categories; [^]Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

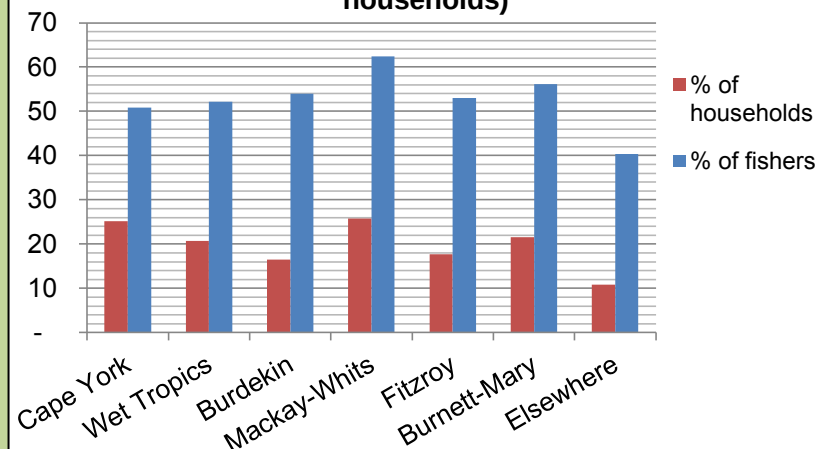
Boat ownership

% of residents who own a boat

Motor boat : 23% of coastal households¹
 Sailboat : 5% of coastal households¹
 Jet ski : 3% of coastal households¹

All boats : 13% of all Qld resident households²
 : 20% of GBR households³
 : 45% of Qld fishing households²;
 : 55% of GBR fishing households³

% of households who own a boat (all vs fishing households)



Ref: ¹SELTMP Survey 2013; ²Taylor et al. (2012); ³DAFF, unpublished data (2013) – graph also*

Registered vessels

Number of Qld registered vessels¹

NRM	Sailboats	Motorboats	Speedboats	PWC (e.g. jetskis)
Cape York	61	232	2418	41
Wet Tropics	598	1645	18397	840
Burdekin	433	1279	18478	847
Mackay-Whitsundays	563	1205	15823	662
Fitzroy Basin	439	2067	20043	1203
Burnett-Mary	765	3677	26795	1172
Total GBR	2859	10105	101954	4765
International	0	0	0	0
Interstate	19	16	172	20
Intrastate	4162	16713	113865	15211
Torres Strait	0	0	4	1
Unknown	0	0	0	0
Grand Total	7040	26834	215995	19997

Tidbit:

those who own a boat are more likely to have taken a boating or fishing trip in the last 12 months²

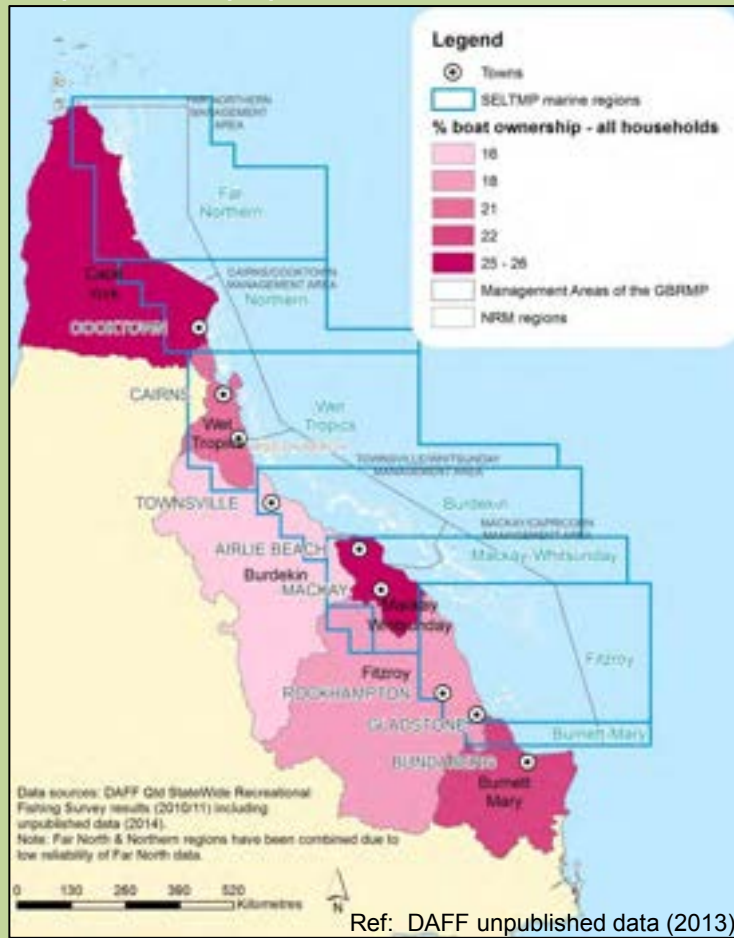
Ref: ¹DTMR unpublished data (2014)*; ²Farr et al. (2014)

*DAFF data from 2010 SWRFS survey, rejigged within NRM regions. Included in graph. Definition of a 'boat' includes kayaks; [#]2013 calendar year data, for where vessels are 'stored'. This differs very slightly from the home address of the licence owner, which should be considered when comparing to SELTMP 2013.

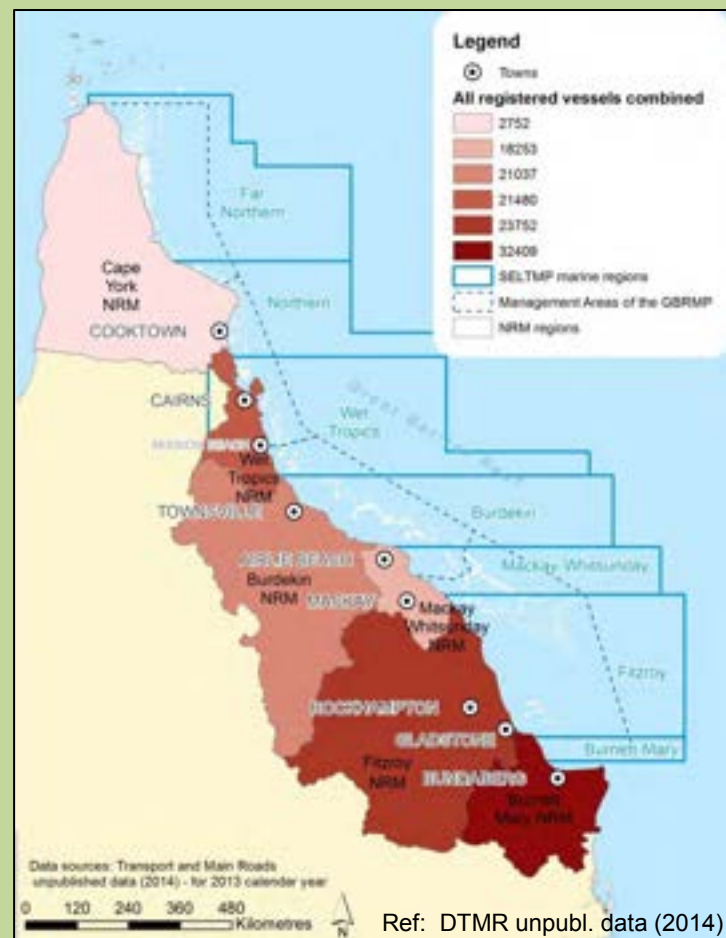
SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

Proportion of population who own a vessel



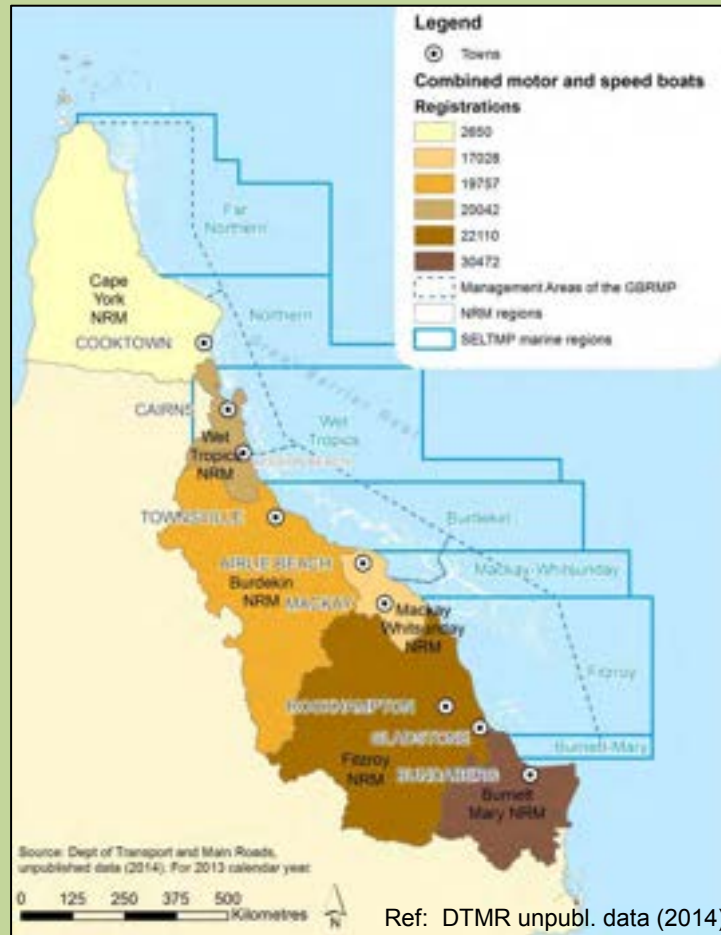
Number of registered vessels by NRM storage



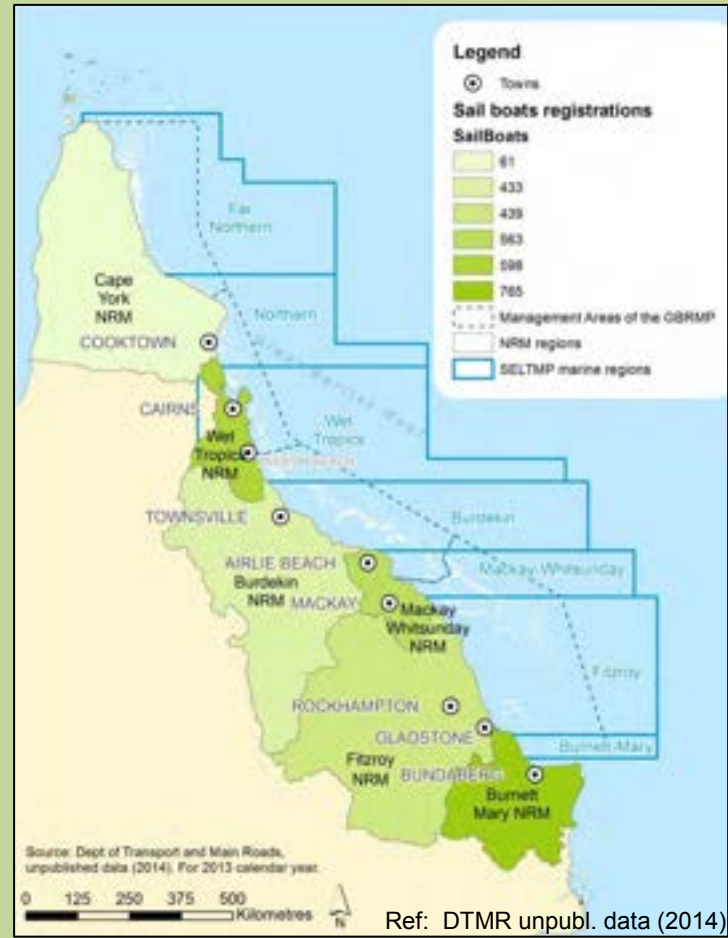
SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

Combined motor + speed boats stored within NRMs



Sail boats stored within GBR NRMs



SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

PWC stored within GBR NRM

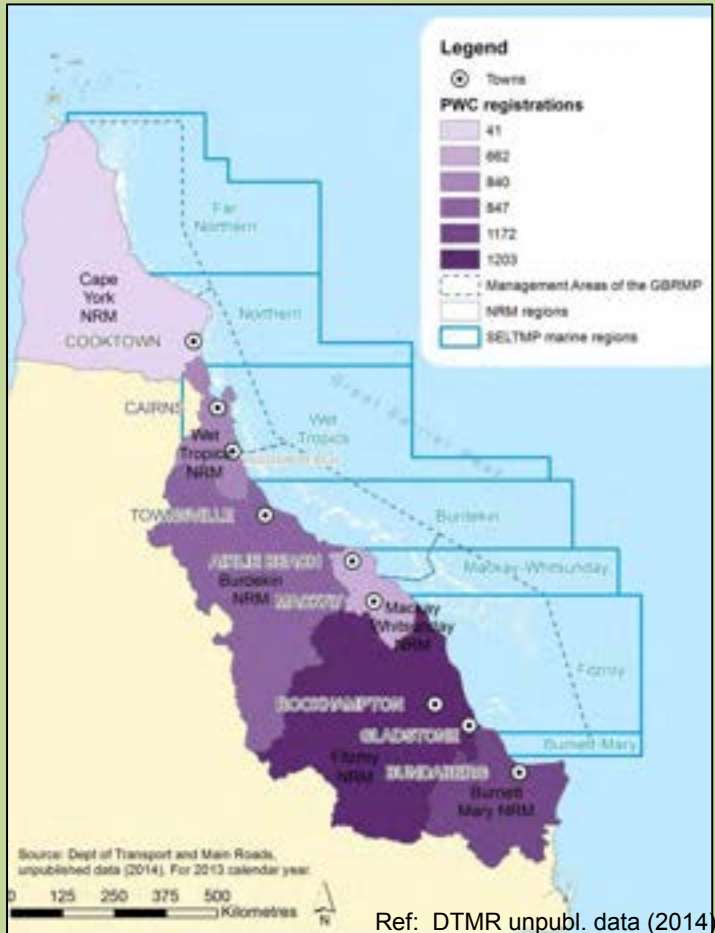
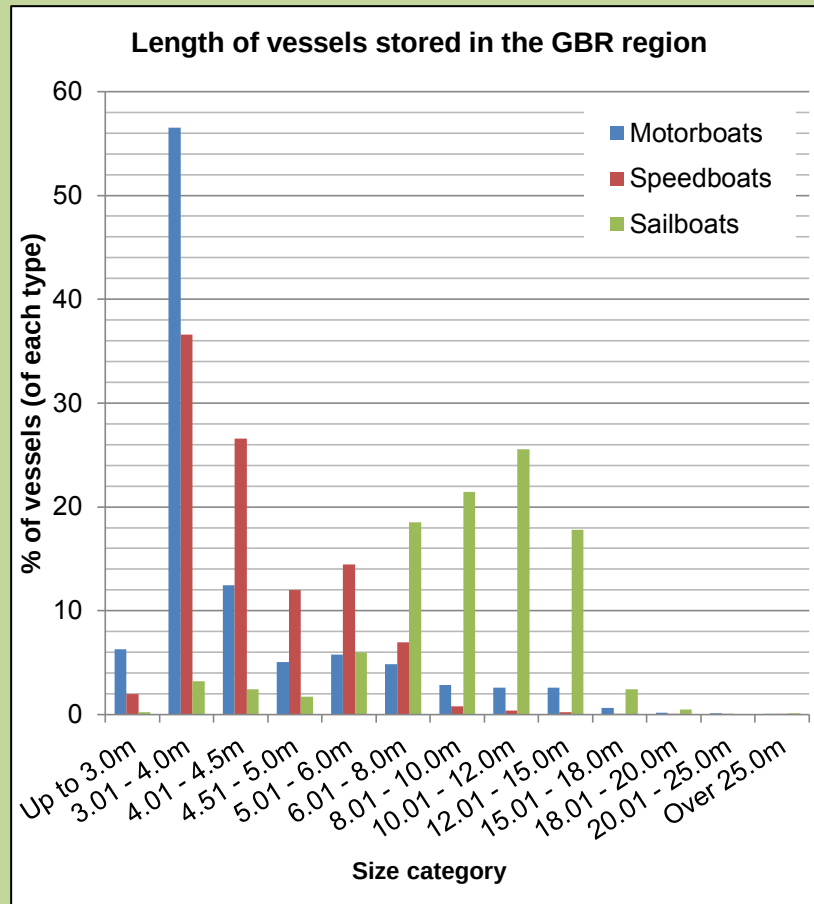


Image by Matt Curnock

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

Vessel sizes



Ref: DTMR, unpubl. data (2014)* and SELTMP Survey 2013

*2013 calendar year data, for all Qld vessels

The vast majority of motorised vessels are small (<10m), while sailing boats are primarily >8m.



Image by Matt Curnock

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

Trailer vs berth vessels

% vessels 'trailerable'

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx

% vessels kept in marina

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx

Boaters	: xx
Sailers	: xx
Jetskiiers	: n/a
Fishers	: xx
Snork/Divers	: xx
Campers	: n/a
Hikers	: n/a
Swimmers	: n/a

Boaters	: xx
Sailers	: xx
Jetskiiers	: n/a
Fishers	: xx
Snork/Divers	: xx
Campers	: n/a
Hikers	: n/a
Swimmers	: n/a

GBR overall : xx

GBR overall : xx

Ref: xxx

*Opportunistically included due to data availability

Motor power

Average hp of motor/speed boats

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx

GBR overall : xx

Motor size of Qld registered vessels*

1-50 hp	: 55% ¹
51- 100 hp	: 20% ¹
101-150 hp	: 12% ¹
151+ hp	: 10% ¹
Non-response	: 3% ¹

Ref: ¹MSQ (2007)

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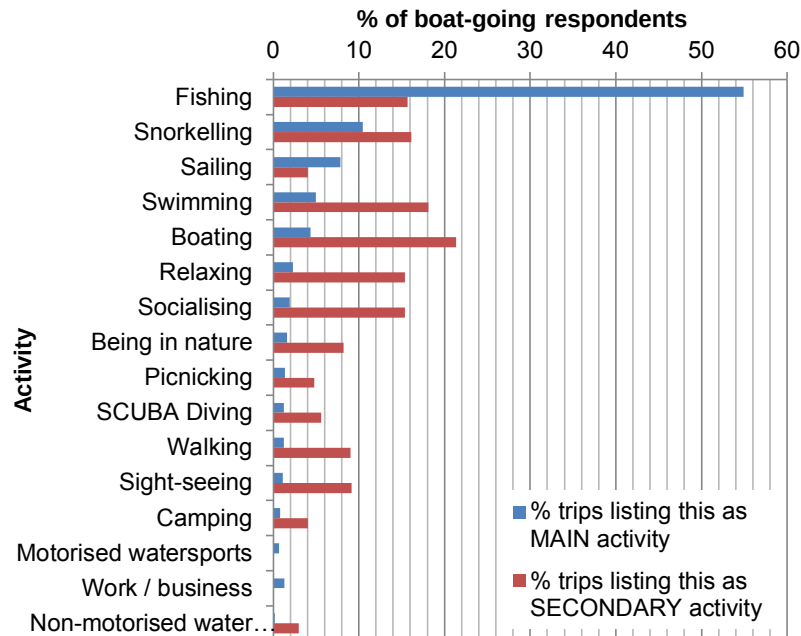
i) Use of the Environment: 1. Activities – HOW are people doing it?

What are people doing when they go by boat?*

Beyond trips by boat:

Number of SELTMP survey trips by boat : 606
% of trips which gave travel details : 35%

Main and econdary activities listed for boat based trips



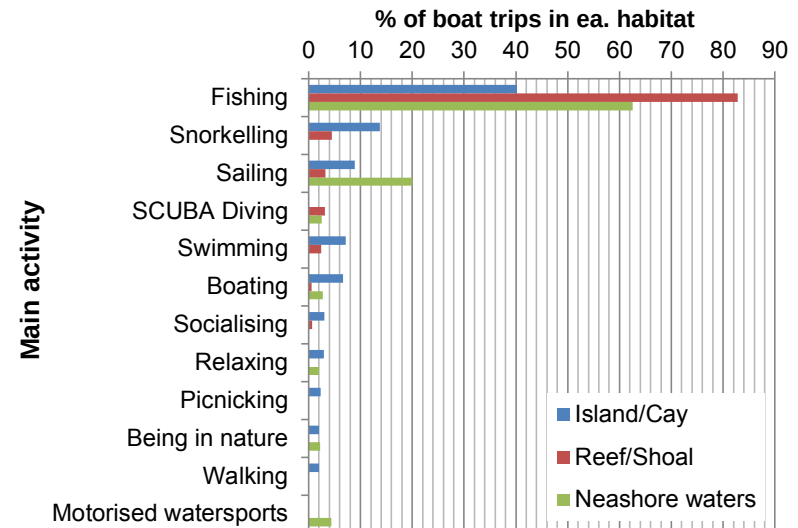
Ref: SELTMP Survey 2013

What are boat-goers doing by habitat type?*

Where did they go?:

Island / Cay : 67%
Reef / shoal / wreck : 20%
Nearshore waters : 9%
Non-GBR areas : 3%
GBR coastal area : 2%

Main activity listed for boat trips to different habitat types



Ref: SELTMP Survey 2013

*This includes all trips beyond the mainland beach where people stated they got there via their own or someone else's boat, including motorboat, jetski and sailboat (not ferry).

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

% of residents who fished in previous 12 months

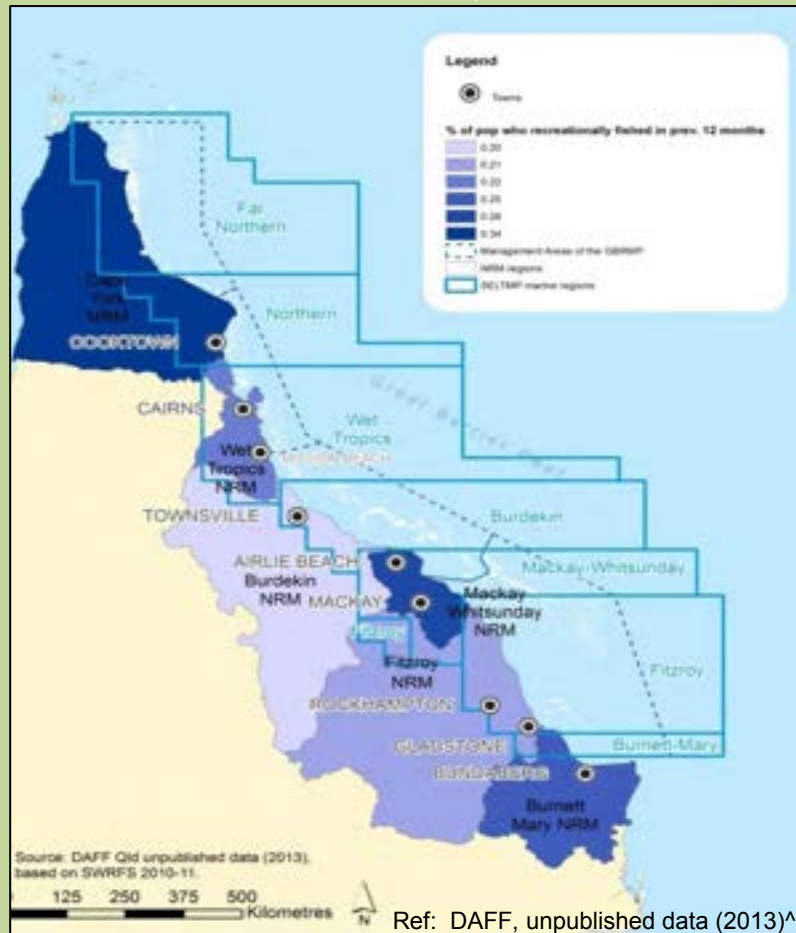


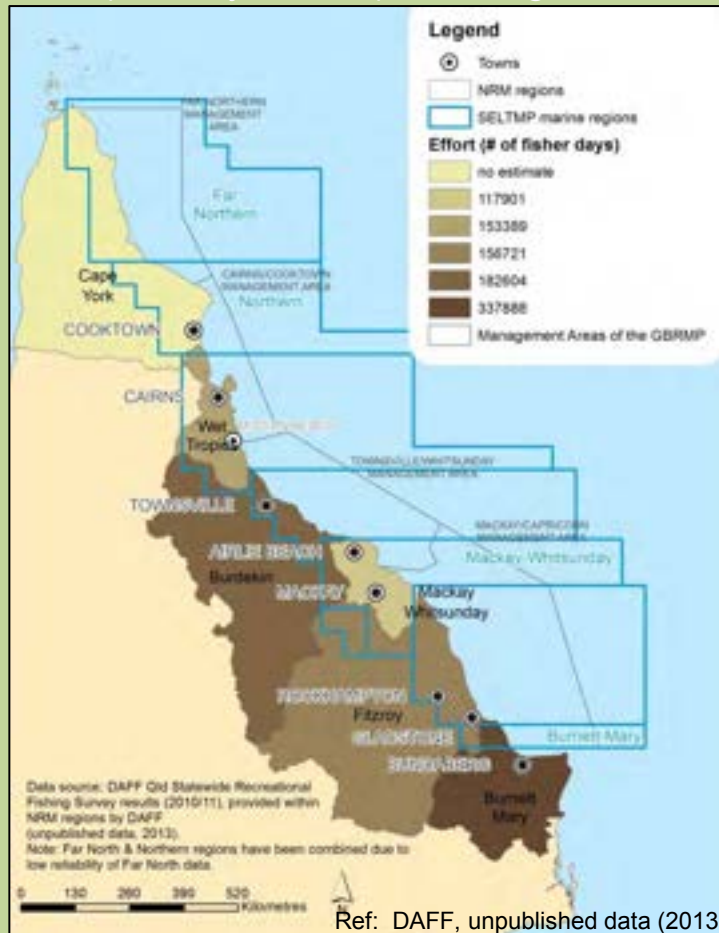
Image by A. Tobin

[^]DAFF data from 2010 SWRFS survey, provided at scale of NRM regions on request. Estimate for Cape York not considered reliable due to low sample sizes;

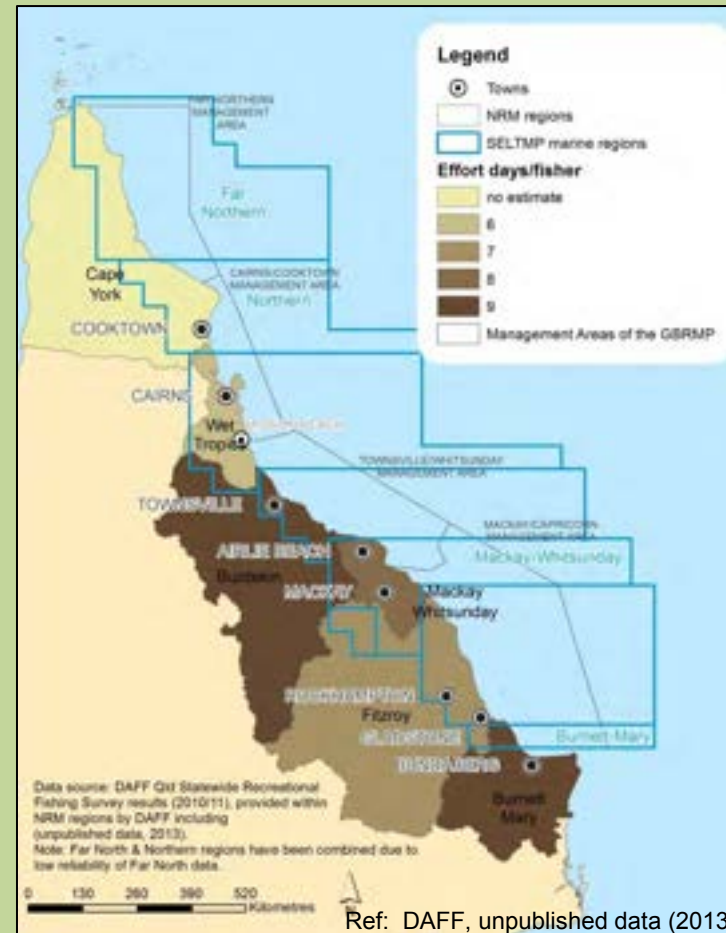
SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW are people doing it?

Effort (# of days fished) of fishing households



Effort distribution (# of days fished per fisher)



DAFF data from 2010 SWRFS survey, provided at scale of NRM regions on request.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW MUCH are people doing it?

Number of trips

Total estimated trip number per year

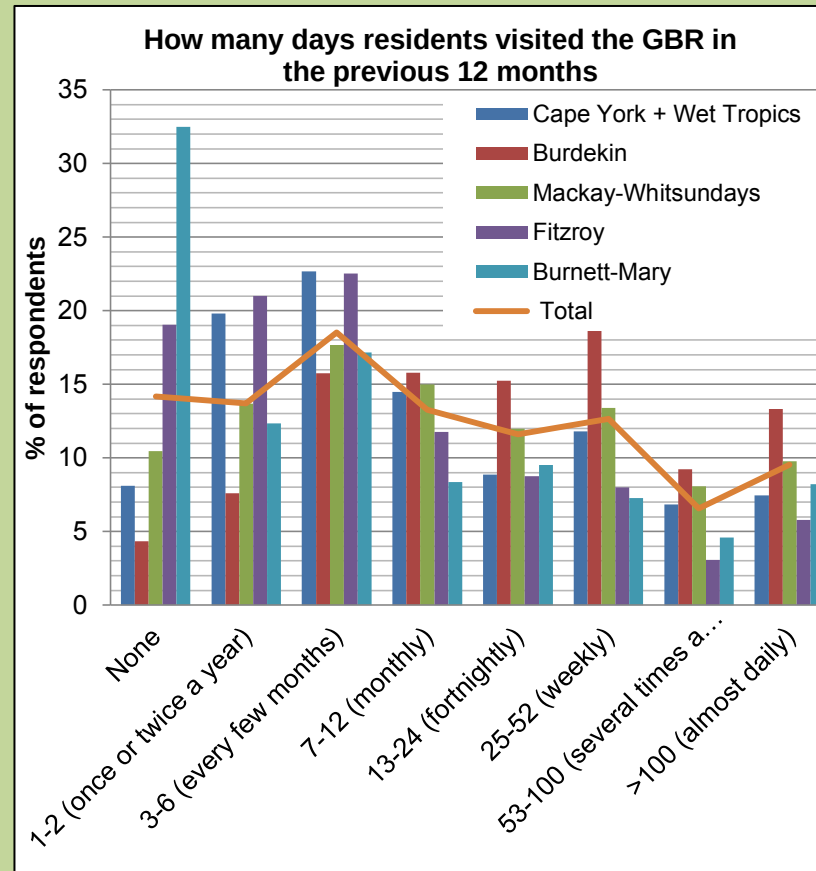
Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx

Boaters	: xx
Sailers	: xx
Jetskiers	: xx
Fishers	: Avg 4.5
trips per person (min 1, max 78) ²	: 3.4m trips in 2012 ³
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

GBR overall : 348,505 people*, with 14.6 million visits in 2008¹

Ref: ¹Lawrence et al. (2010); ²DAFF unpublished data (2013)[#]; ³Deloitte Access Economics (2013)

Days residents visited the GBR for recreation



Ref: SELTMP Survey 2013

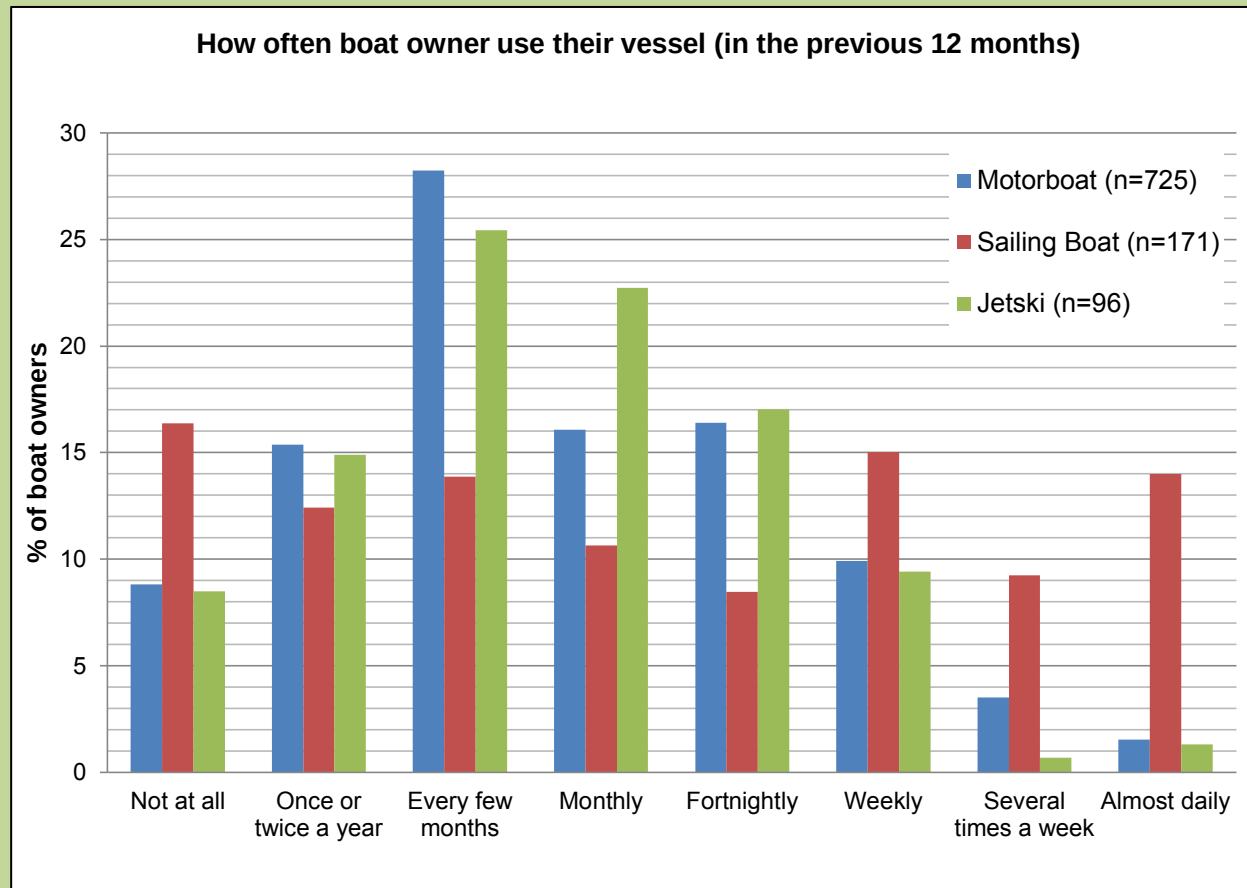
Larson et al. (2014a) found only 30% and 12.5% of GBR residents had been on a GBR island or on a paid boat trip more than once a year, respectively

*i.e. 2011 catchment population (total 732,154, ABS (2011) x participation rate (based on a sample of 1139 residents within 50km of GBRMP coast). [#]2010 SWRFS data provided for GBR region only

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW MUCH are people doing it?

Frequency of vessel use (previous 12 months)



Ref: SELTMP Survey 2013

Motorboats primarily get used every few months, while jetskis are used some what more frequently.

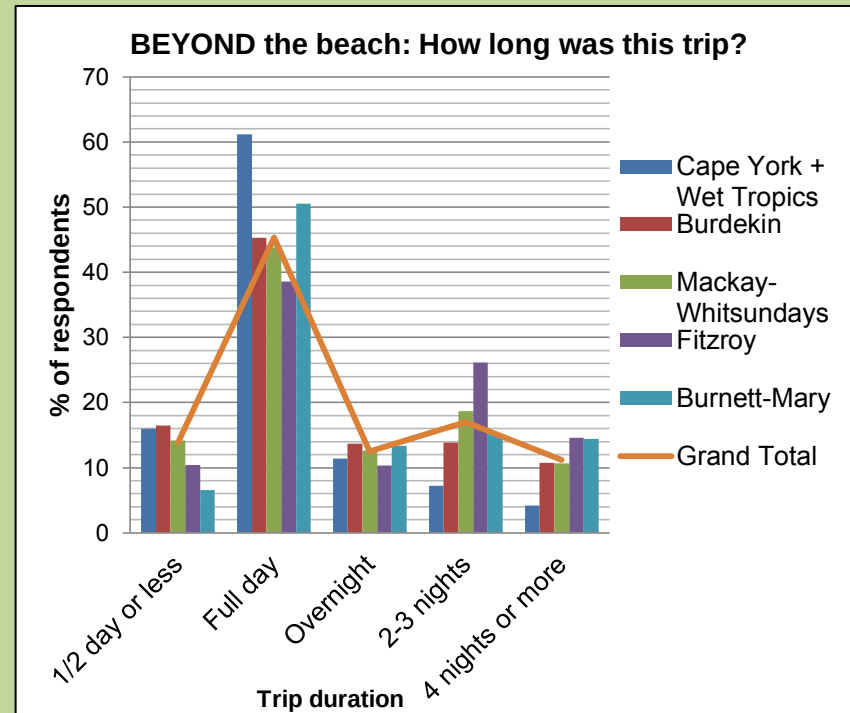
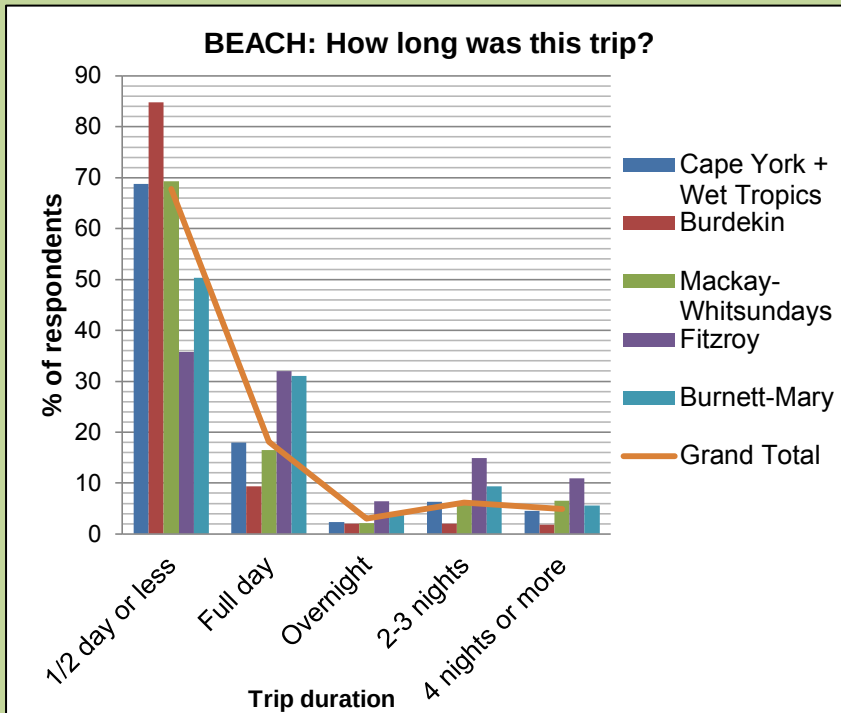
Sailing boat use is highly variable, but 38% use their vessel weekly or more often.

Larson et al. (2014a) found 37% of GBR residents had never been boating. But those that do, go frequently: 31% go boating more than once a year. Sailing was the least undertaken activity in the region (of those activities tested), with 55% having never been sailing, and only 13% going frequently.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW MUCH are people doing it?

Trip duration



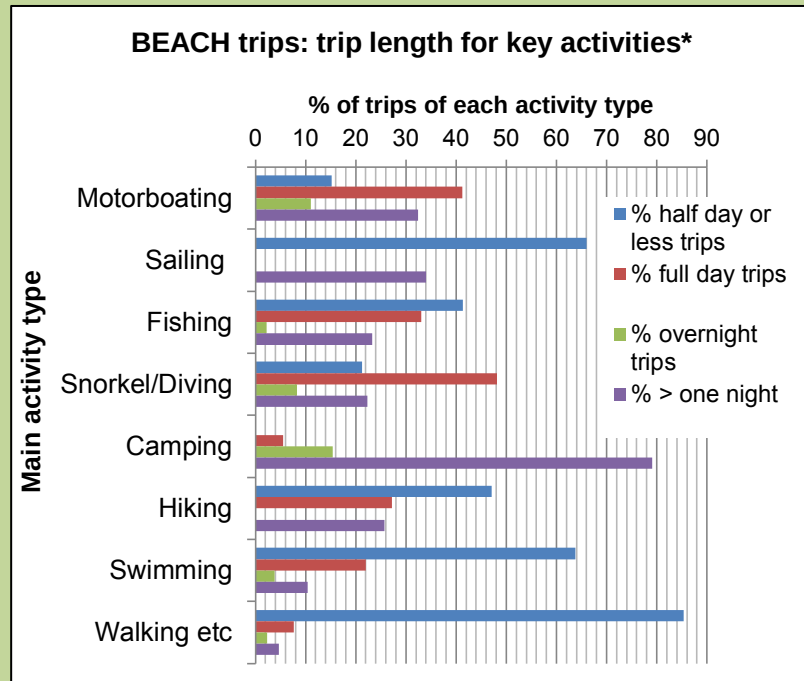
Most beach based trips are less than a day, whereas most trips beyond the mainland beach are at least a full-day: In the Fitzroy region, 50% of trips were over at least one night.

Ref: SELTMP Survey 2013

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 1. Activities – HOW MUCH are people doing it?

Trip duration by activity type: Beach trips

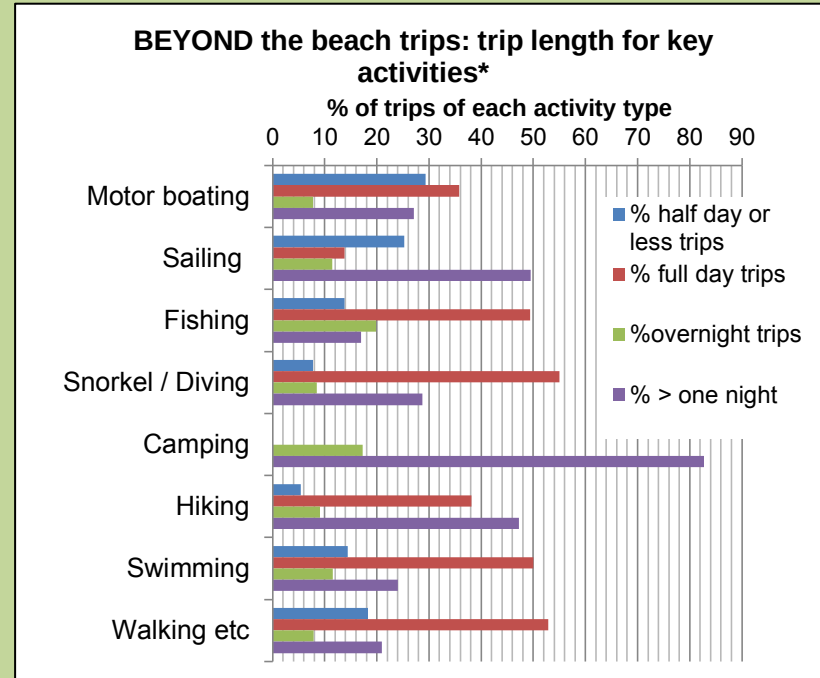


Beach trips for any activity were dominated by 1/2 and full day trips, except for camping, where most trips were for more than one night.

Ref: SELTMP Survey 2013

*Only for key activities where >10 trips available

Trip duration by activity type: Beyond the Beach



Most sailers, campers and hikers spent more than one night on their trip beyond the mainland beach

Ref: SELTMP Survey 2013

SELTMP 2014: Recreation in the Great Barrier Reef

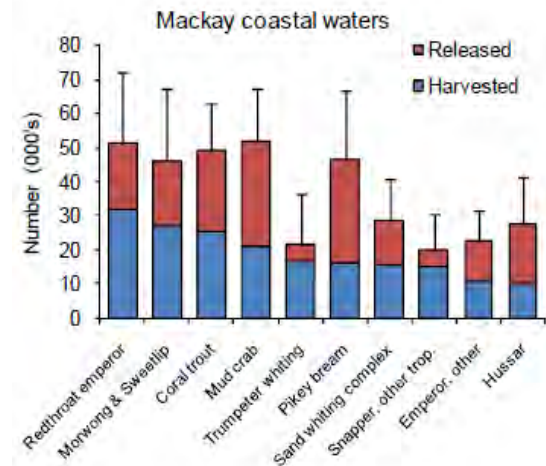
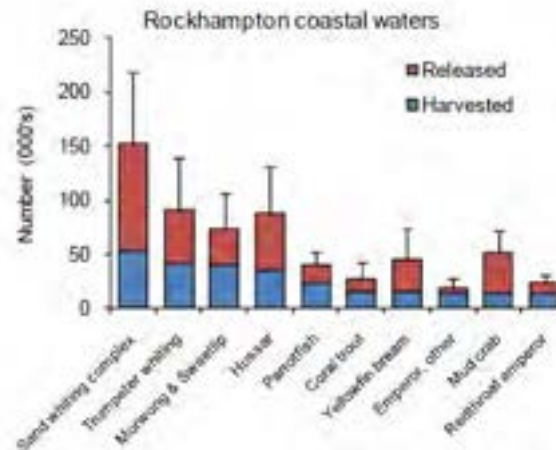
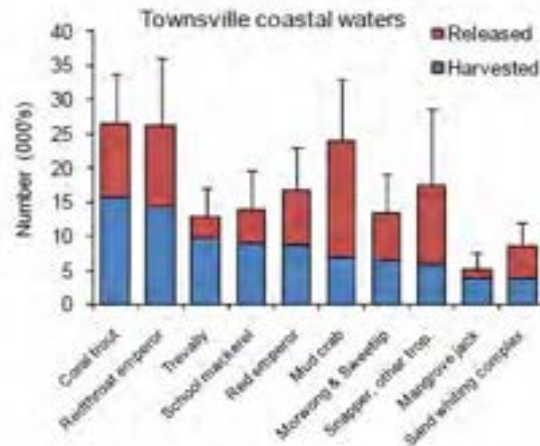
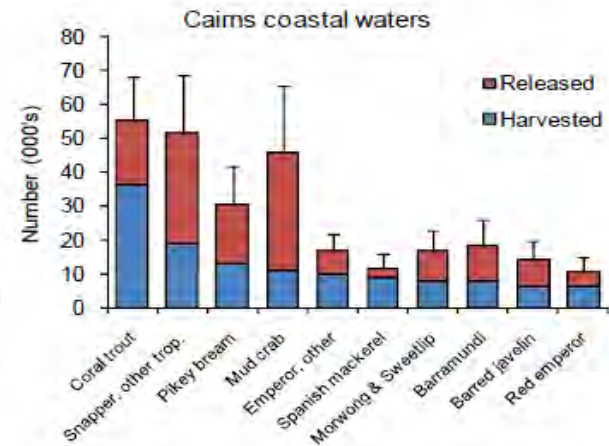
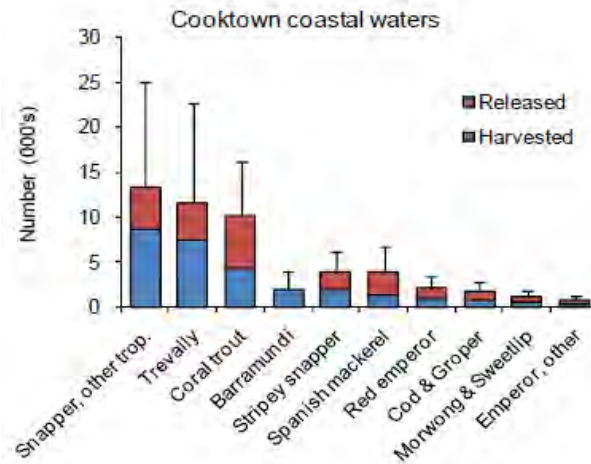
i) Use of the Environment: 1. Activities – HOW MUCH are they harvesting?

Harvest levels - fishing

Overall harvest (t) by Marine Region

Far northern	: xx
Northern	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx

Ref: 1xxx



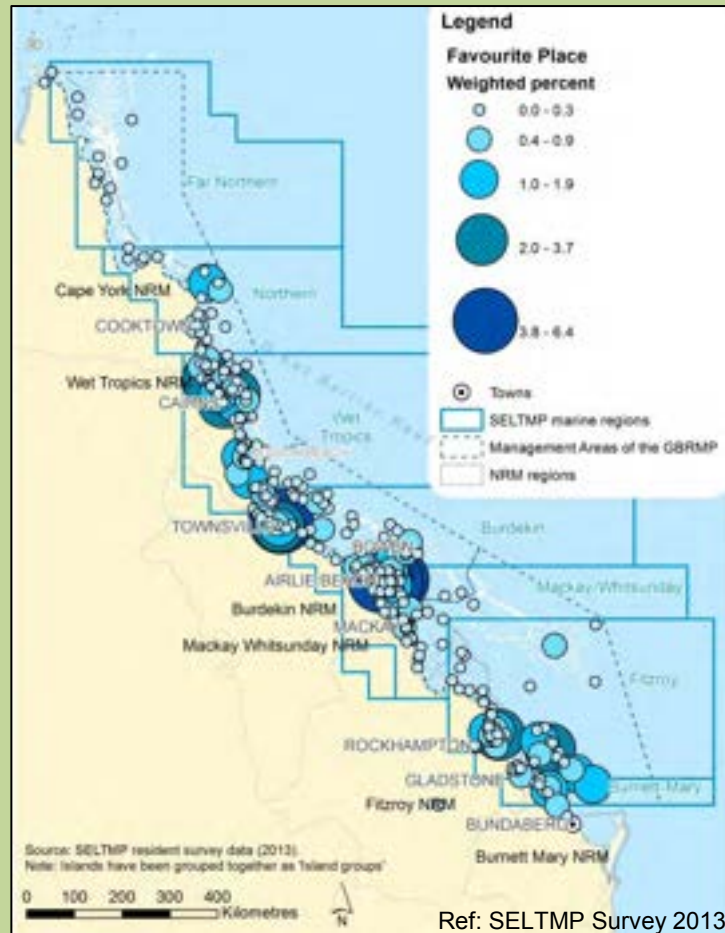
Ref: Taylor et al. (2012)*

*2010 SWRFS graphs based on SWRFS coastal water regions

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Favourite locations*



Favourite place Grouped up to Island (where appropriate)^	Weighted % of respondents (for locations listed by >1% respondents)
Whitsunday Island	6.4
Magnetic Island	5.7
Whitsundays	5.0
Airlie Beach	4.7
Cairns	3.7
Heron Island	3.3
Green Island	3.0
The Strand	2.3
Great Keppel Island	2.2
Port Douglas	2.1
Hamilton Island	1.9
Fitzroy Island	1.8
Keppel Islands	1.7
Townsville	1.6
Palm Cove	1.5
Yeppoon	1.5
Hayman Island	1.4
Lizard Island	1.4
Mission Beach	1.2
North West Island	1.2
Hinchinbrook Island	1.2
Daydream Island	1.1
Lady Musgrave Island	1.1
Lady Elliot Island	1.1

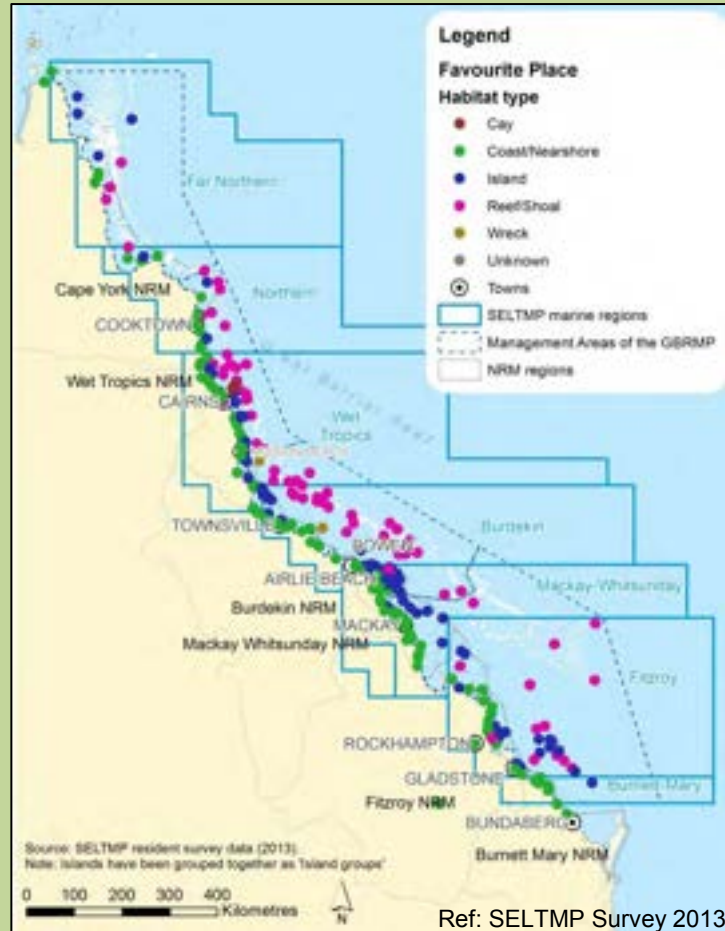
Ref: SELTMP Survey 2013

*This is residents' 'favourite' location, not necessarily where they go the most. ^Locations are grouped up to 'Islands'. e.g. where a beach on Magnetic Island is listed, it is grouped up to 'Magnetic Island'. Some locations cover multiple islands, however (e.g. "Whitsundays"). Future maps will aim to group these up further.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Favourite locations* by habitat type



Residents' favourite places to go on the GBR were spread all the way along the coast, and included multiple habitat types, from the coast, to islands and the reef.



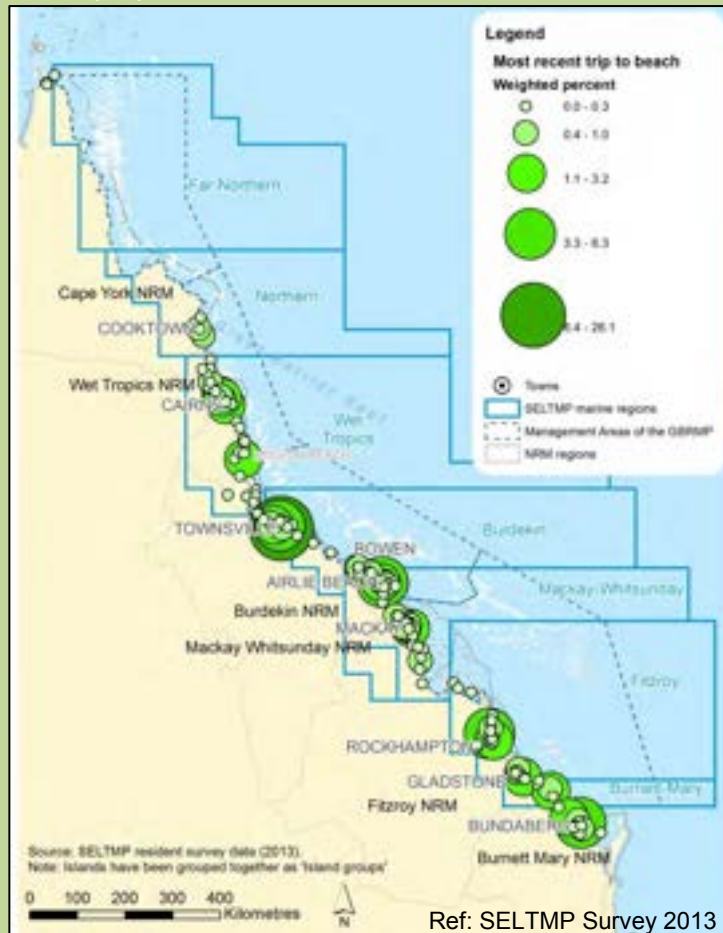
Image by Matt Curnock

*This is residents' 'favourite' location, not necessarily where they go the most

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Most popular locations – Mainland beach



Mainland Beach location	Weighted % of respondents who visited a beach (for locations listed by >1% respondents)
The Strand	26.1
Bargara	6.3
Airlie Beach	5.4
Pallarenda	5.3
Yeppoon	4.6
Tannum Sands	3.2
Agnes Water	2.0
Cairns	2.0
Palm Cove	1.8
Moore Park Beach	1.5
Trinity Beach	1.5
Emu Park	1.4
Mission Beach	1.3
Mackay	1.3
Bushland Beach	1.3
Cannonvale	1.2
Bowen	1.0
Gladstone / Gladstone Harbour	1.0

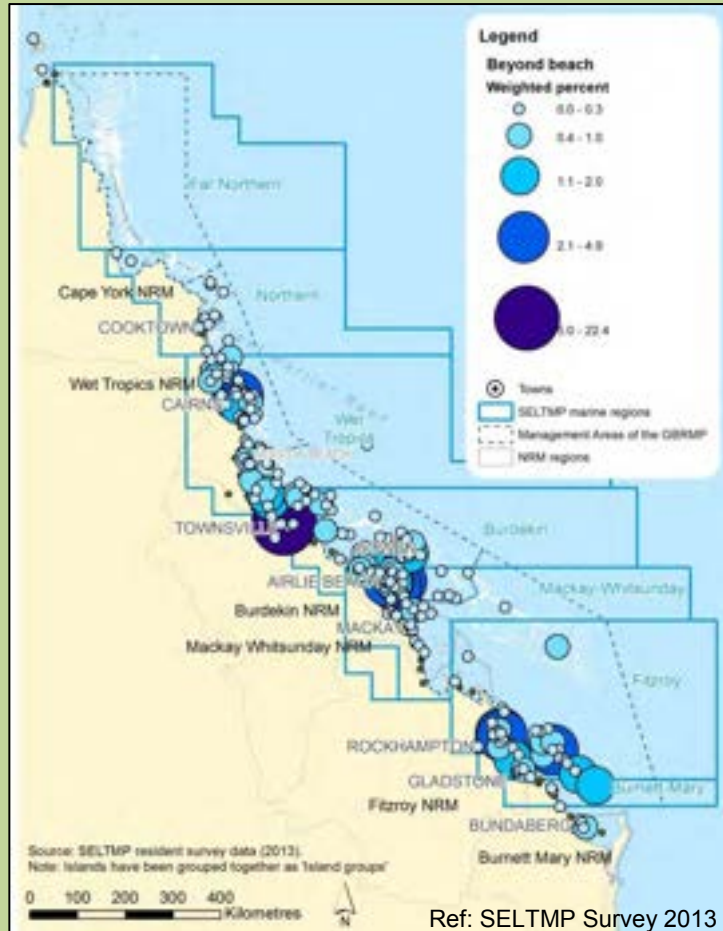
Ref: SELTMP Survey 2013

^aLocations are grouped up to 'Islands'. e.g. where a beach on Magnetic Island is listed, it is grouped up to 'Magnetic Island'. Some locations cover multiple islands, however (e.g. "Whitsundays"). Future maps will aim to group these up further.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Most popular locations – Beyond the beach



Beyond the mainland location Grouped up to Island (where appropriate)^	Weighted % of respondents who went beyond the beach (for locations listed by >1% respondents)
Magnetic Island	22.1
Heron Island	4.8
Green Island	4.7
Whitsunday Island	4.5
Hamilton Island	4.3
Keppel Islands	3.9
Great Keppel Island	3.8
Daydream Island	3.0
Fitzroy Island	2.0
Lady Musgrave Island	1.9
Whitsundays	1.9
Lady Elliot Island	1.7
Palm Island	1.7
Gloucester Island	1.2
Curtis Island	1.1
Orpheus Island	1.1
Hardy Reef	1.1
North Keppel Island	1.0

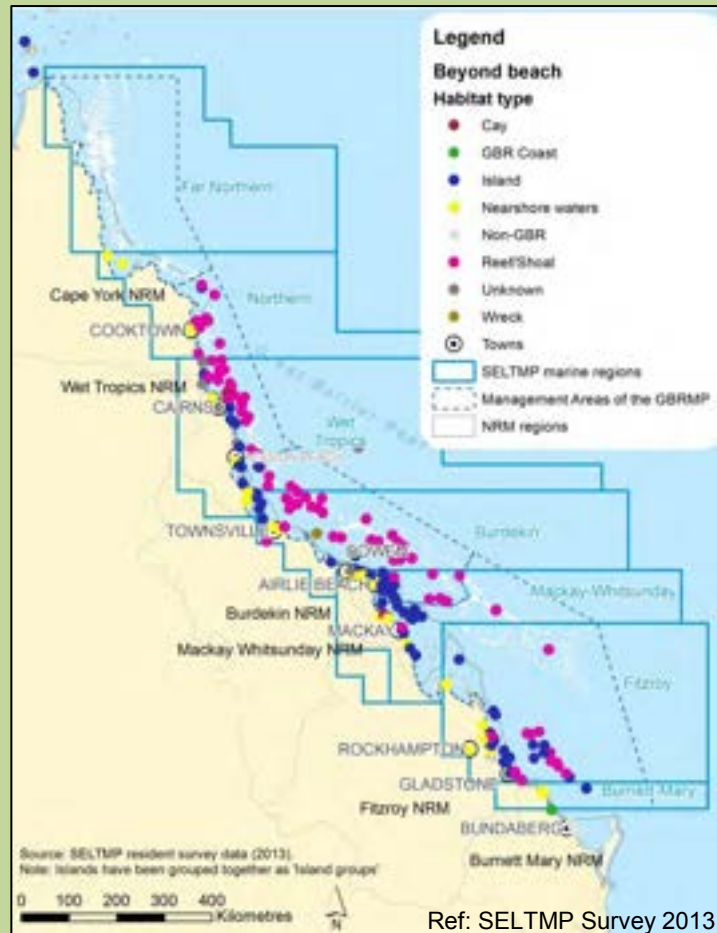
Ref: SELTMP Survey 2013

^Locations are grouped up to 'Islands'. e.g. where a beach on Magnetic Island is listed, it is grouped up to 'Magnetic Island'. Some locations cover multiple islands, however (e.g. "Whitsundays"). Future maps will aim to group these up further.

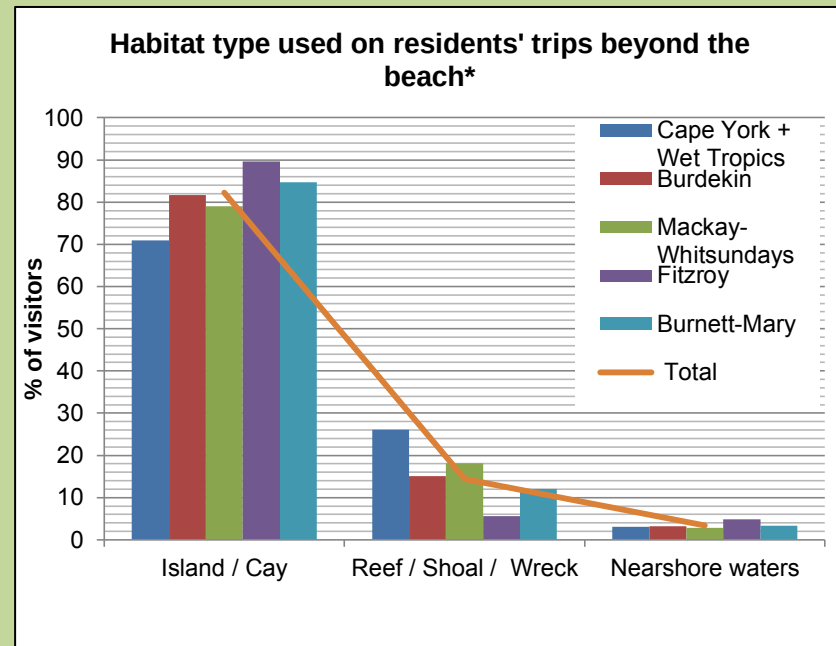
SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Most popular locations – Beyond the beach



% activity by habitat type – Beyond the beach



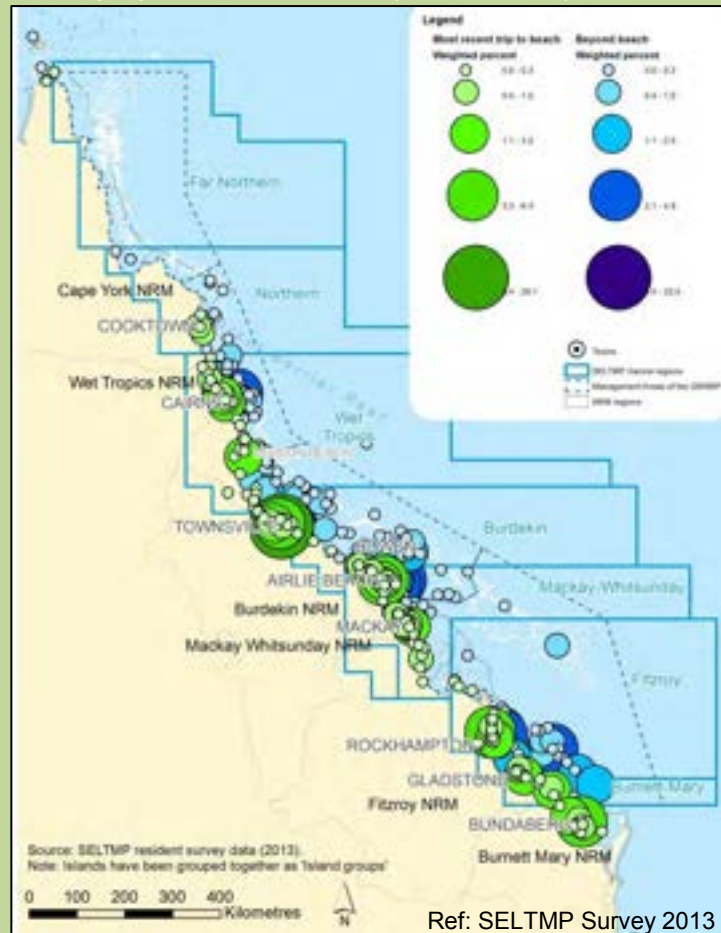
Most 'beyond' the beach activity was to islands, particularly Magnetic Island and various islands in the Whitsundays

Ref: SELTMP Survey 2013

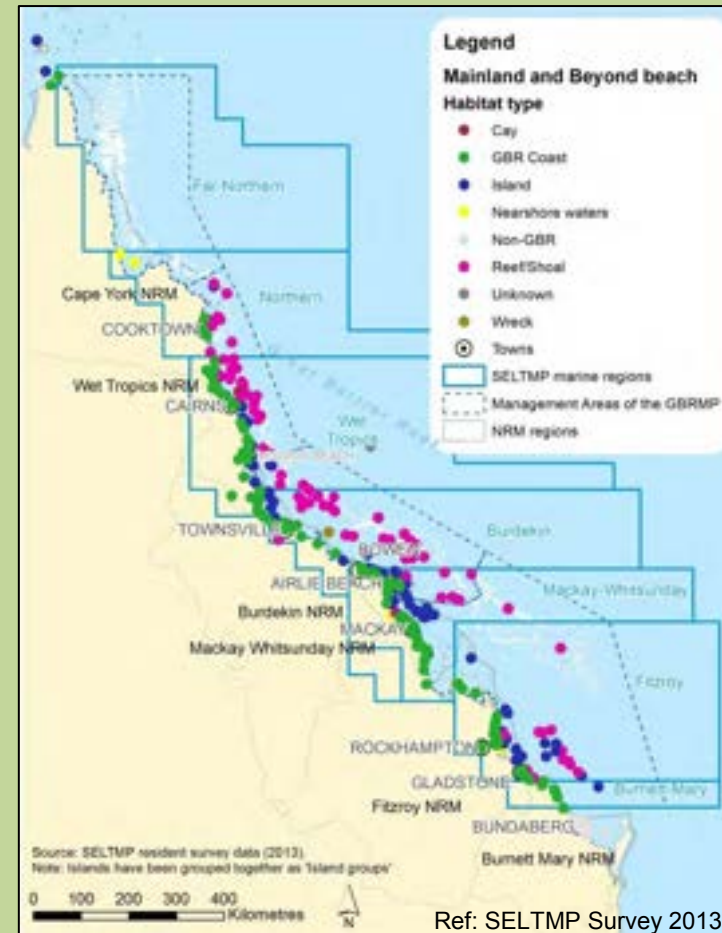
SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Most popular locations (combined)



Most popular locations (by habitat type)

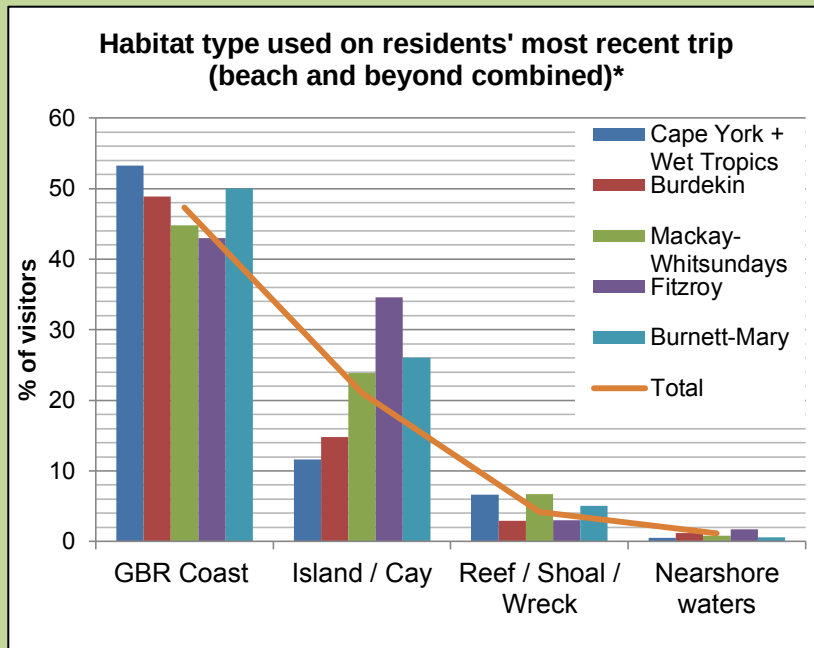


^Locations are grouped up to 'Islands'. e.g. where a beach on Magnetic Island is listed, it is grouped up to 'Magnetic Island'. Some locations cover multiple islands, however (e.g. "Whitsundays"). Future maps will aim to group these up further.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

% activity in each habitat type



*When all trips are combined,
coastal habitats dominate*

Ref: SELTMP Survey 2013



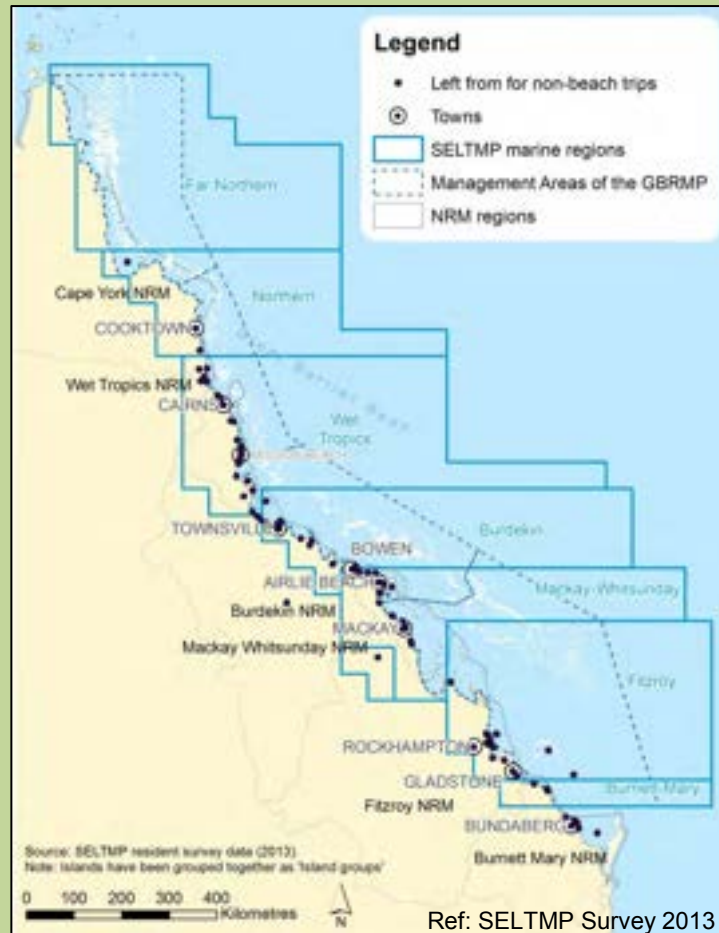
Image by Matt Curnock

*Includes 'most recent' trips, as well as additional 'beyond the beach' trips provided by respondents who had most recently been to the beach, but had also been beyond in the past year.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Common departure points



Access points – boat ramps



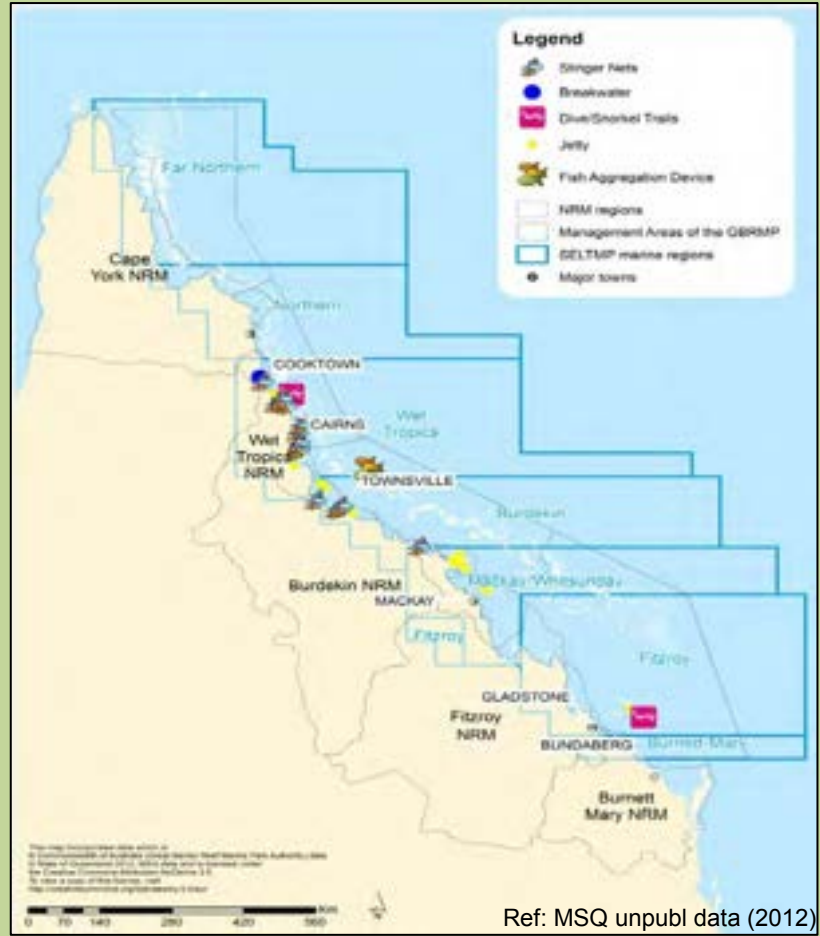
SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Access points - Marinas



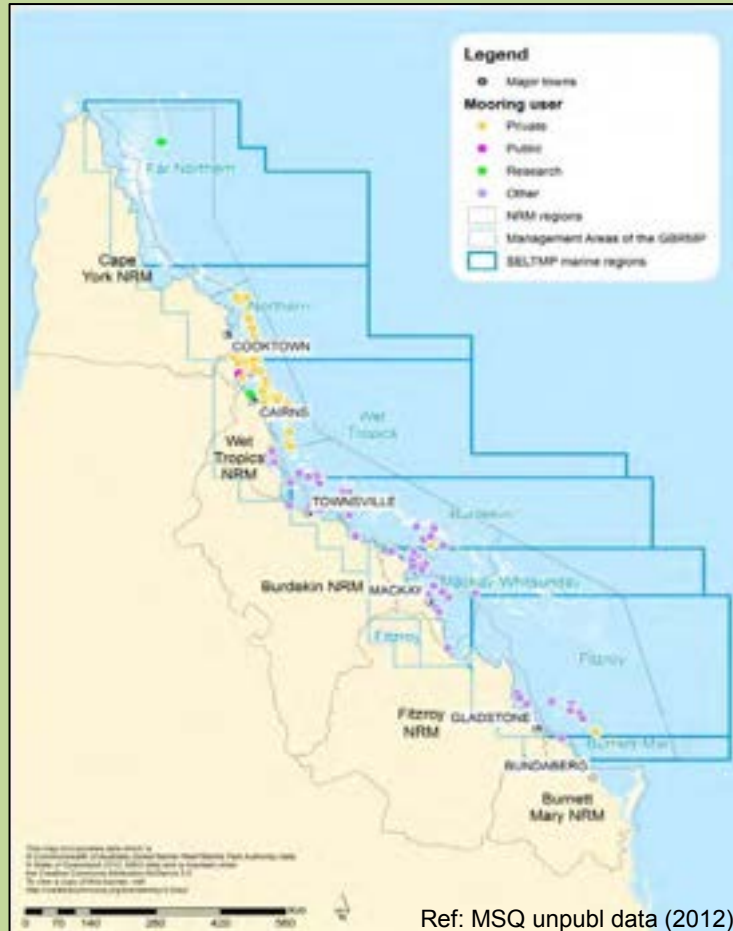
Location of recreational infrastructure



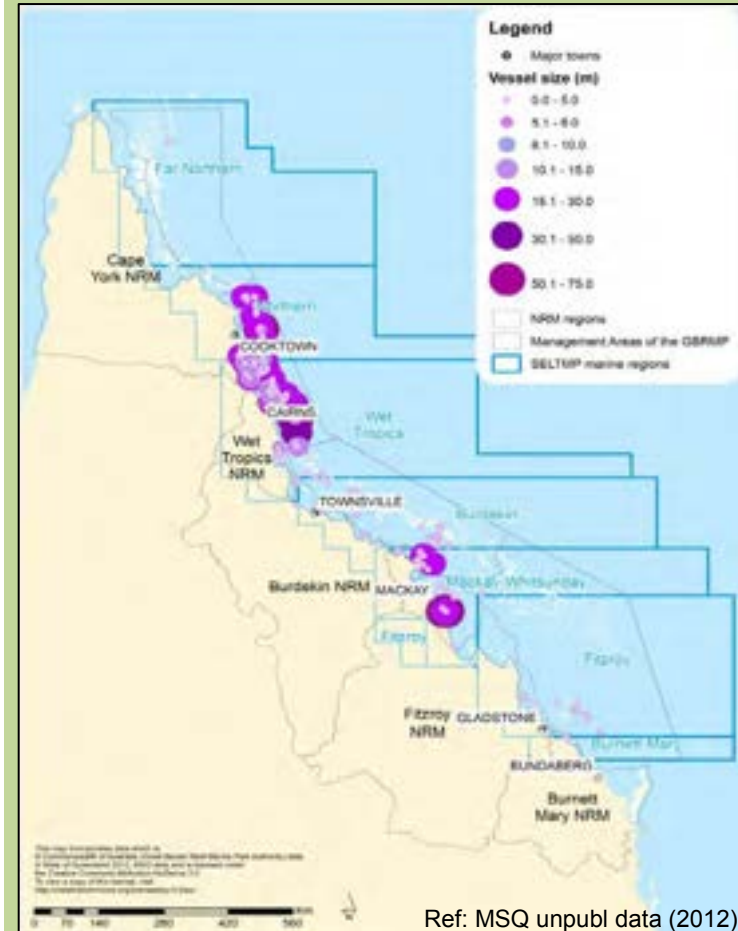
SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Moorings by type



Moorings by vessel size



SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Distance from home (Beach trip)

Average distance from place of residence (km)

Cape York +
Wet Tropics : xx
Burdekin : xx
Mackay-Whits : xx
Fitzroy Basin : xx
Burnett-Mary : xx

Boaters : xx
Sailers : xx
Jetskiiers : xx
Fishers : xx
Divers : xx
Campers : xx
Hiking : xx
Swimmers : xx

GBR overall : xx +/- xx

Ref: SELTMP Survey 2013

Distance from home (non-Beach trip)

Average distance from place of residence (km)

Cape York +
Wet Tropics : xx
Burdekin : xx
Mackay-Whits : xx
Fitzroy Basin : xx
Burnett-Mary : xx

Boaters : xx
Sailers : xx
Jetskiiers : xx
Fishers : xx
Divers : xx
Campers : xx
Hiking : xx
Swimmers : xx

GBR overall : xx +/- xx

Ref: SELTMP Survey 2013

Distance from port

Average distance travelled from launch site

Cape York : xx
Wet Tropics : xx
Burdekin : xx
Mackay-Whits : xx
Fitzroy Basin : xx
Burnett-Mary : xx

Boaters : Most (43%)
~10 km from launch¹
Sailers : xx
Jetskiiers : xx
Fishers : xx
Divers : xx
Campers : xx
Hiking : xx
Swimmers : n/a

GBR overall : xx +/- xx

Ref: ¹MSQ (2007)

Return vs through trips

% trips return to the access point they left from

Boaters : xx
Sailers : xx
Jetskiiers : xx
Fishers : xx
Divers : xx
Campers : xx
Hiking : xx
Swimmers : n/a

Ref: xxx

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Distribution of fishing effort by residents

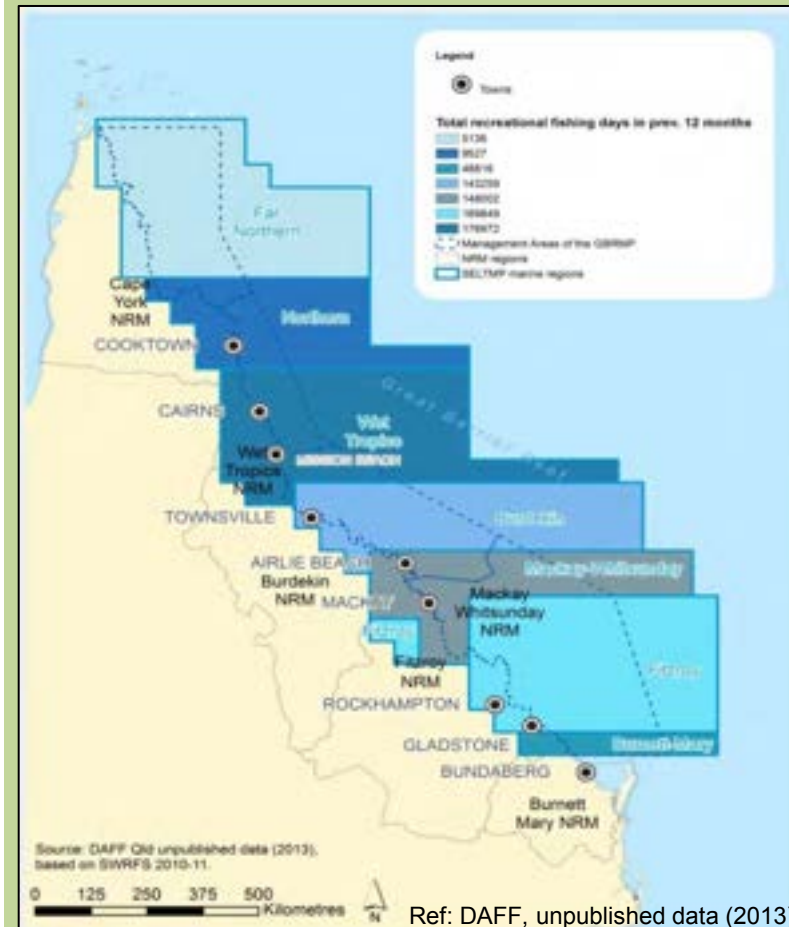
Effort days by SELTMP Marine Region²

Far north + Northern [^]	: 14,663	+/- 6,063
Wet Tropics	: 176,972	+/- 21,081
Burdekin	: 143,259	+/- 18,295
Mackay-Whits	: 148,002	+/- 19,056
Fitzroy Basin	: 169,849	+/- 22,802
Burnett-Mary	: 48,816	+/- 15,732

Ref: ²DAFF, unpublished data (2013)* - see map

Surveys of GBR region residents revealed 3% of respondents had never been fishing. But those that do go, do so frequently: 38% went more than once a year (Larson et al., 2014a)

Total fishing days by SELTMP Marine Region

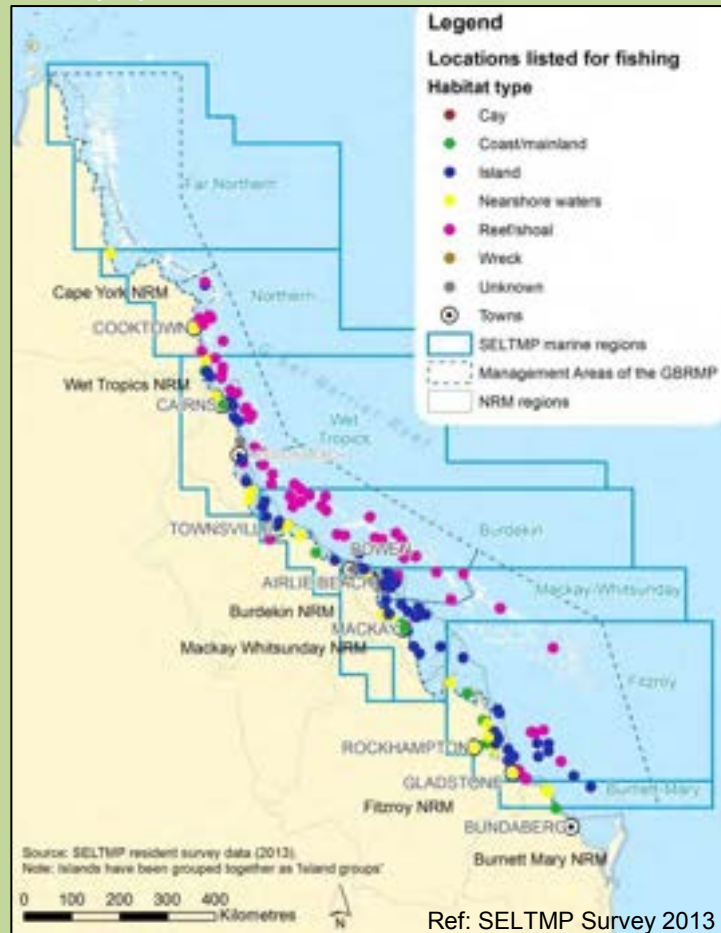


*DAFF data from 2010 SWRFS survey, provided at scale of NRM regions on request. [^]Far north and Northern regions combined due to low reliability of Far North estimates.

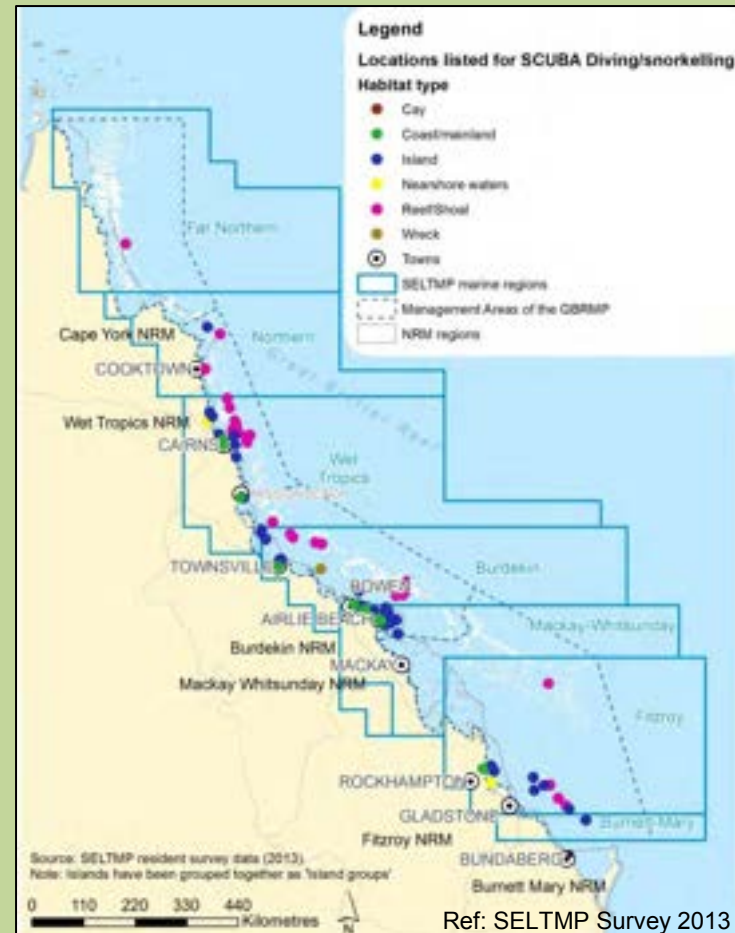
SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Most popular locations for FISHING*



Most popular locations for DIVING/Snorkelling*

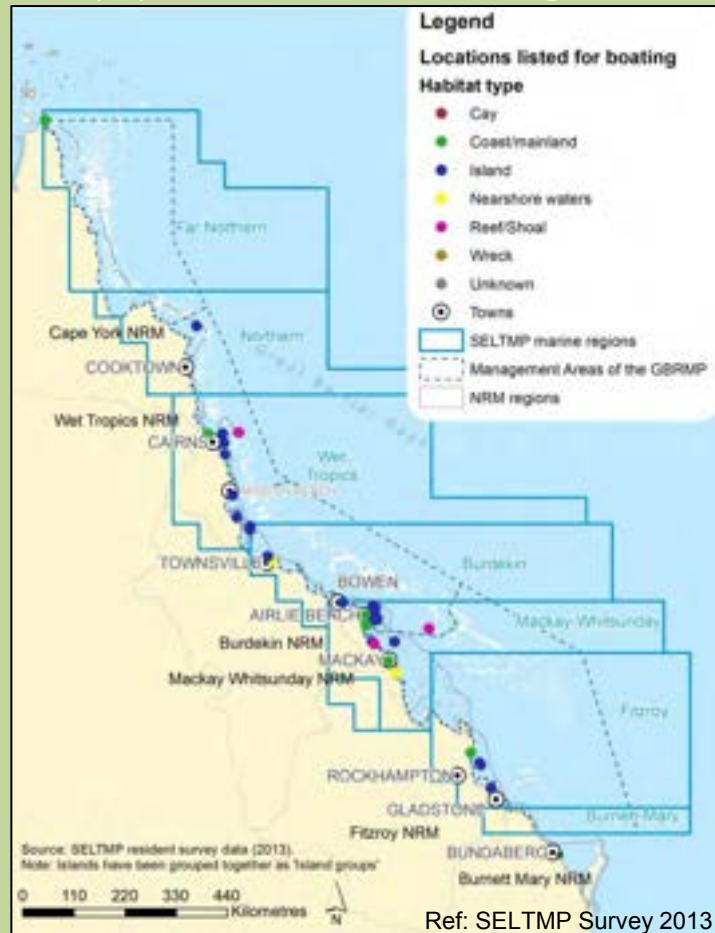


*These are the locations listed by respondents who listed these activities as their MAIN activity.

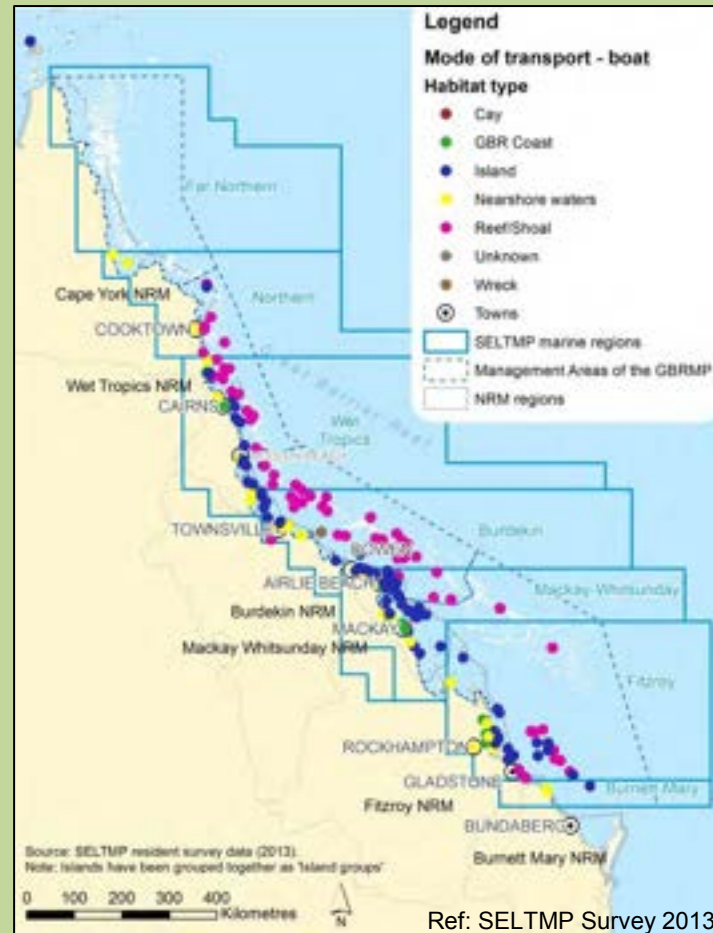
SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Spatial patterns – WHERE are they going?

Most popular locations for boating*



Most popular locations for getting to by boat^



*These are the locations listed by respondents who listed boating as their MAIN activity (map on the left), ^or used their own or someone else's boat as their mode of transport for a 'beyond the mainland beach' trip (map on the right).

SELTMP 2014: Recreation in the Great Barrier Reef

i) Use of the Environment: 2. Temporal patterns – WHEN are they going?

Seasonality of visitation

There are currently no region-wide data outlining seasonality of visitation, particularly by activity type.

This space is left as a place holder for when data become available

Ref: xxx

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHO is recreating in the GBR?

Age

Average (median) years of age¹

Cape York +	
Wet Tropics CT	: 42 (41)
Burdekin CT	: 40 (39)
Mackay-Whits CT	: 44 (43)
Fitzroy Basin CT	: 45 (46)
Burnett-Mary CT	: 52 (52)

All boaters [^]	: 33 yrs ¹
Motr/speed Boat:	45 ¹
Sailers	: 47 ¹
Jetskiers	: 33 ¹
Fishers\	: 42 ¹
Snork/Diver	: 37 ¹
Campers	: 39 ¹
Most caravanners:	25-44 ^{2~}
Hike	: 36 ¹
Swimmers	: 38 ¹

GBR overall : 44 (43)¹

Ref: ¹SELTMP Survey 2013[#];
²Carter (2002)*

Gender

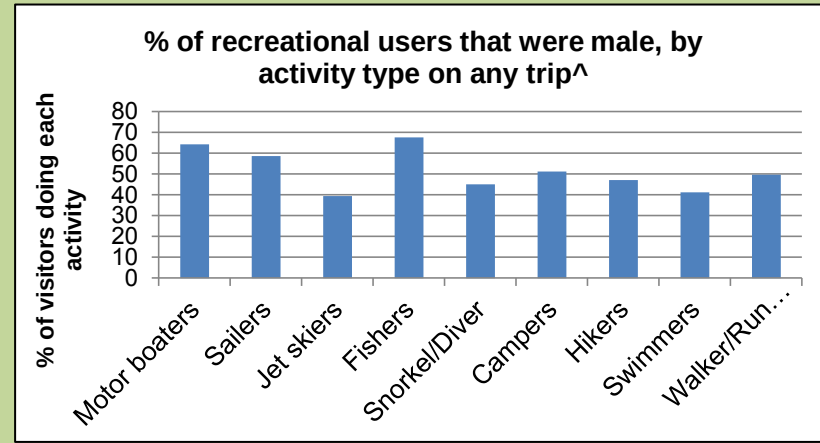
% of visitors who were males¹

Cape York +	
Wet Tropics	: 50
Burdekin	: 50
Mackay-Whits	: 49
Fitzroy Basin	: 51
Burnett-Mary	: 45

Boaters [^]	: 62% ¹
Sailers	: 56% ¹
Jetskiers	: 45% ¹
Fishers	: 67% ¹
Snork/Divers	: 45% ¹
Campers	: 54% ¹
Hikers	: 45% ¹
Swimmers	: 40% ¹

GBR CTs overall : 50¹
Qld population : 49.7²

Ref: ¹SELTMP Survey 2013; ²Qld
Treasury and Trade (2012a)



Ref: SELTMP Survey 2013

While recreational users were divided evenly by gender overall, this differed for some activities: The proportion of males was higher for motor boaters, sailers and fishers; but lower for jetskiers and swimmers.

Others surveys of GBR residents occurring at the same time as the SELTMP surveys (Larson et al. 2014a), found males are more likely to go fishing and motor-boating than females, and to go snorkeling and visiting reefs and islands frequently.

[#]Note the average age for the SELTMP survey data is for adults only – no children were surveyed. *Australia-wide data from National Visitor Survey. ~Categorical data only – showing most common age group. [^]Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHO is recreating in the GBR?

Occupation

Most common occupations (%)

Government, Health and Education	: 19%
Mining	: 12%
Trade	: 9%
Retail	: 6%
Agriculture and Forestry	: 5%
Accommodation & food services	: 5%
Construction	: 4%
Research	: 3%
Transport, postal and warehousing	: 3%

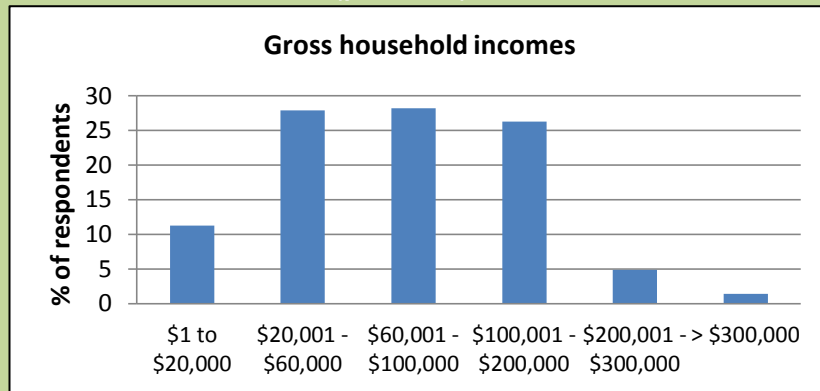
Ref: SELTMP Survey 2013

Survey respondents came from a range of occupation types and income levels.

Farr et al. (2014) found the probability of participating in a recent boat fishing trip is lower for those on high incomes than for those with household incomes below \$100K per annum.

Larson et al. (2014a) found residents on higher incomes were more likely to participate and do so frequently in all recreational activities they tested, except for paid boat trips.

Household Income (pre-tax)



Ref: SELTMP Survey 2013



Image by Petina Pert

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Connection in terms of 'place'

What are the first words that come to mind when GBR residents think about the GBR?*



Coral	19%
Beautiful	19%
Fish	16%
Fishing	6%
Diving	5%
Tourism	5%
Colourful	4%
Snorkelling	3%
Endangered	3%
Vast	3%

13% mentioned 'negative' words. The majority referred to the condition of the reef and included endangered, dying, damaged, pollution, crown-of-thorns, bleaching, climate change

of residents surveyed = 3181
Total # of words/phrases listed = 5708
Total # of distinct words/phrases = 603

Ref: SELTMP Survey 2013

*These data are raw, not weighted, and hence the % of respondents may differ slightly, but the trends will remain the same.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Connection in terms of 'place'

Residence longevity

Average (and median) years in GBR region

Cape York +	
Wet Tropics	: 17.3 (14)
Burdekin	: 18.0 (15)
Mackay-Whits	: 20.8 (35)
Fitzroy Basin	: 24.2 (21)
Burnett-Mary	: 23.2 (20)

GBR overall : 20.7 (18)

Ref: SELTMP Survey 2013

Region of origin

% originated in Australia¹

Cape York +	
Wet Tropics	: 76%
Burdekin	: 73%
Mackay-Whits	: 79%
Fitzroy Basin	: 81%
Burnett-Mary	: 80%

GBR overall : 77%¹
Qld population : 71%^{2,3}

Ref: ¹SELTMP Survey 2013; ²ABS (2013); ³Qld Treasury and Trade (2012b)

The GBR is part of my identity

Mean score (% agree)¹

Cape York +	
Wet Tropics	: 6.5 (64%)
Burdekin	: 6.5 (62%)
Mackay-Whit	: 6.6 (65%)
Fitzroy Basin	: 6.2 (62%)
Burnett-Mary	: 6.5 (66%)

Boaters^	: 7.0 (72%) ¹
Sailers	: 6.6 (68%) ¹
Jetskiiers	: 6.1 (59%) ¹
Fishers	: 7.1 (73%) ¹
Snork/Divers	: 6.7 (68%) ¹
Campers	: 6.6 (63%) ¹
Hikers	: 6.6 (62%) ¹
Swimmers	: 6.6 (65%) ¹

GBR overall :6.4 (63%)¹
National residents:7.4 (79%)²

Ref: ¹SELTMP Survey 2013;
²Goldberg et al. (2014)

Proud that the GBR is a WHA

Mean score (% agree)¹

Cape York +	
Wet Tropics	: 9.1 (92%)
Burdekin	: 9.0 (95%)
Mackay-Whit	: 9.0 (94%)
Fitzroy Basin	: 8.9 (94%)
Burnett-Mary	: 8.9 (95%)

Boaters^	: 8.9 (93%) ¹
Sailers	: 8.9 (91%) ¹
Jetskiiers	: 8.8 (97%) ¹
Fishers	: 9.0 (94%) ¹
Snork/Divers	: 9.2 (96%) ¹
Campers	: 8.9 (96%) ¹
Hikers	: 9.2 (96%) ¹
Swimmers	: 9.2 (97%) ¹

GBR overall :9.0 (95%)¹
National residents:8.2(86%)²

Ref: ¹SELTMP Survey 2013;
²Goldberg et al. (2014)

¹Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Connection in terms of 'place'

The GBR contributes to my income

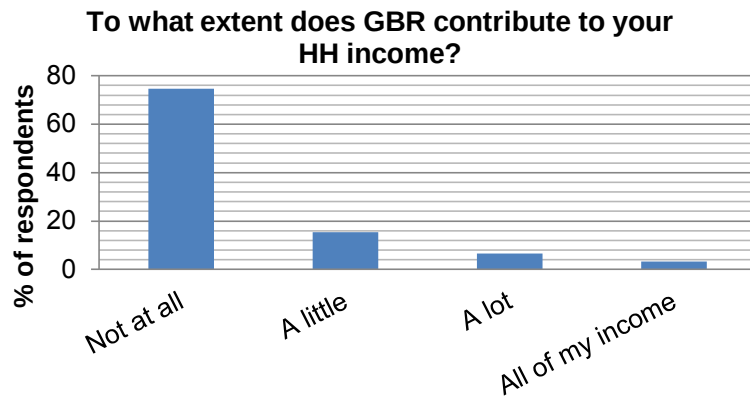
	% none;	a little;	a lot;	all
Cape York +				
Wet Tropics	: 69;	21;	6;	4%
Burdekin	: 74;	16;	7;	3%
Mackay-Whit	: 66;	14;	13;	7%
Fitzroy Basin	: 76;	17;	5;	2%
Burnett-Mary	: 85;	12;	2;	1%
GBR overall	: 75;	15;	7;	3%

Ref: SELTMP Survey 2013

The GBR contributes at least a little bit to the income of 25% of coastal residents.



Image by Matt Curnock



Ref: SELTMP Survey 2013

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Connection in terms of 'place'

GBR is the best place
for the recreational
activities I enjoy

Mean score (% agree)

Cape York +	
Wet Tropics	: 6.4 (62%)
Burdekin	: 6.6 (70%)
Mackay-Whit	: 6.4 (65%)
Fitzroy Basin	: 6.4 (68%)
Burnett-Mary	: 6.1 (61%)

Boaters^	: 6.9 (68%)
Sailers	: 6.5 (64%)
Jetskiiers	: 6.3 (84%)
Fishers	: 7.1 (76%)
Snork/Divers	: 6.7 (71%)
Campers	: 6.8 (69%)
Hikers	: 6.4 (73%)
Swimmers	: 6.6 (71%)

GBR CTs overall :6.4 (66%)

Ref: SELTMP Survey 2013

Live in the region
because of the GBR

Mean score (% agree)

Cape York +	
Wet Tropics	: 5.4 (45%)
Burdekin	: 4.9 (42%)
Mackay-Whit	: 4.9 (43%)
Fitzroy Basin	: 4.6 (35%)
Burnett-Mary	: 4.5 (34%)

Boaters^	: 6.1 (55%)
Sailers	: 5.5 (53%)
Jetskiiers	: 5.0 (33%)
Fishers	: 5.7 (51%)
Snork/Divers	: 5.6 (52%)
Campers	: 5.5 (51%)
Hikers	: 5.7 (52%)
Swimmers	: 5.1 (44%)

GBR overall : 4.8 (39%)

Ref: SELTMP Survey 2013

Plan to remain in
current town for next 5
years

Mean score (% agree)

Cape York +	
Wet Tropics	: 7.9 (78%)
Burdekin	: 7.7 (76%)
Mackay-Whit	: 7.8 (79%)
Fitzroy Basin	: 7.4 (75%)
Burnett-Mary	: 7.7 (80%)

Boaters^	: 7.9 (79%)
Sailers	: 8.1 (85%)
Jetskiiers	: 7.8 (65%)
Fishers	: 8.3 (83%)
Snork/Divers	: 7.5 (74%)
Campers	: 8.4 (86%)
Hikers	: 7.9 (75%)
Swimmers	: 7.7 (76%)

GBR overall : 7.7 (77%)

Ref: SELTMP Survey 2013

Plan to remain despite
more frequent extreme
events

Mean score (% agree)

Cape York +	
Wet Tropics	: 8.3 (79%)
Burdekin	: 8.5 (87%)
Mackay-Whit	: 8.5 (89%)
Fitzroy Basin	: 8.0 (83%)
Burnett-Mary	: 7.8 (82%)

Boaters^	: 8.8 (92%)
Sailers	: 8.4 (88%)
Jetskiiers	: 7.8 (91%)
Fishers	: 8.7 (88%)
Snork/Divers	: 8.1 (83%)
Campers	: 9.2 (97%)
Hikers	: 8.3 (84%)
Swimmers	: 8.3 (84%)

GBR overall : 8.3 (85%)

Ref: SELTMP Survey 2013

^Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Connection in terms of 'identity'

Identity	Longevity of activity	Proportion of first timers visitors	Likelihood of continuing
% who consider their 1⁰ activity as essential to their identity Cape York : xx Wet Tropics : xx Burdekin : xx Mackay-Whits : xx Fitzroy Basin : xx Burnett-Mary : xx	Average years individuals have been participating in their 1⁰ activity Cape York : xx Wet Tropics : xx Burdekin : xx Mackay-Whits : xx Fitzroy Basin : xx Burnett-Mary : xx	% first time doing primary activity: Cape York : xx Wet Tropics : xx Burdekin : xx Mackay-Whits : xx Fitzroy Basin : xx Burnett-Mary : xx	% who will continue 1⁰ activity over next 3 years Cape York : xx Wet Tropics : xx Burdekin : xx Mackay-Whits : xx Fitzroy Basin : xx Burnett-Mary : xx
Boaters : xx Sailers : xx Jetskiiers : xx Fishers : xx Snork/Divers : xx Campers : xx Hikers : xx Swimmers : xx	Boaters : xx Sailers : xx Jetskiiers : xx Fishers : xx Snork/Divers : xx Campers : xx Hikers : xx Swimmers : xx	Boaters : xx Sailers : xx Jetskiiers : xx Fishers : xx Snork/Divers : xx Campers : xx Hikers : xx Swimmers : xx	Boaters : xx Sailers : xx Jetskiiers : xx Fishers : 97% ¹ Divers : xx Campers : xx Hiking : xx Swimmers : xx
GBR overall : xx	GBR overall : xx	GBR overall : xx	GBR overall : xx
Tidbit Townsville residents preferred outdoor rather than indoor recreation, and indicated that camping could be a substitute for boating or fishing (Farr et al. 2014).			
Ref: xxx	Ref: xxx	Ref: ¹ xxx	Ref: ¹ Tobin et al. (2010)

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Connection in terms of 'identity'

Relative importance

% who consider WHA recreation their most important recreation

Boaters	: xx
Sailers	: xx
Jetskiiers	: xx
Fishers	: 38% ¹
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

Ref: ¹Tobin et al. (2010)

Drop outs

people who used to participate, but not in past 12 mths

Boaters	: xx
Sailers	: xx
Jetskiiers	: xx
Fishers	: 7.5%
decrease in population % 1996-2004 ¹	
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

Key reason for drop out

Boaters	: xx
Sailers	: xx
Jetskiiers	: xx
Fishers	: Lack of time / other commitments ²
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

Ref: ¹McInnes 2006; ²Sutton et al. (2009)

Constraints

Key constraints to frequency of participation

Boaters	: Work/business ¹
Sailers	: xx
Jetskiiers	: xx
Fishers	: Work/Business ²
Snork/Divers	: xx
Campers	: xx
Hiker	: xx
Swimmers	: Weather ³

Ref: ¹Taylor et al. (2012); ²McInnes et al. (2013); ³Rolfe et al. (2011)



Image by Matt Curnock

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Connection in terms of 'aesthetics' and 'values'

The aesthetic beauty of the GBR is outstanding

Mean score (% agree)

Cape York +	
Wet Tropics	: 9.0 (96%)
Burdekin	: 9.1 (97%)
Mackay-Whit	: 9.2 (98%)
Fitzroy Basin	: 9.0 (97%)
Burnett-Mary	: 9.1 (97%)

Boaters^	: 9.2 (98%)
Sailers	: 9.3 (100%)
Jetskiiers	: 8.3 (94%)
Fishers	: 9.1 (97%)
Snork/Divers	: 9.2 (99%)
Campers	: 9.0 (98%)
Hikers	: 9.2 (99%)
Swimmers	: 9.1 (97%)

GBR overall : 9.1 (97%)

Ref: SELTMP Survey 2013

Value the GBR for biological diversity

Mean score (% agree)

Cape York +	
Wet Tropics	: 9.0 (96%)
Burdekin	: 9.2 (97%)
Mackay-Whit	: 9.1 (96%)
Fitzroy Basin	: 8.9 (96%)
Burnett-Mary	: 9.1 (97%)

Boaters^	: 9.3 (96%)
Sailers	: 9.3 (99%)
Jetskiiers	: 8.7 (99%)
Fishers	: 9.2 (96%)
Snork/Divers	: 9.3 (98%)
Campers	: 9.0 (93%)
Hikers	: 9.2 (97%)
Swimmers	: 9.1 (98%)

GBR overall : 9.1 (97%)

Ref: SELTMP Survey 2013

Value the GBR for lifestyle (desirable and active way of life)

Mean score (% agree)

Cape York +	
Wet Tropics	: 8.4 (91%)
Burdekin	: 8.6 (95%)
Mackay-Whit	: 8.6 (93%)
Fitzroy Basin	: 8.3 (92%)
Burnett-Mary	: 8.2 (93%)

Boaters^	: 9.0 (97%)
Sailers	: 8.6 (98%)
Jetskiiers	: 8.4 (99%)
Fishers	: 8.9 (97%)
Snork/Divers	: 8.6 (96%)
Campers	: 8.8 (96%)
Hikers	: 8.5 (94%)
Swimmers	: 8.5 (94%)

GBR overall : 8.5 (93%)

Ref: SELTMP Survey 2013

Value the GBR for learning about the env through science

Mean score (% agree)

Cape York +	
Wet Tropics	: 8.3 (87%)
Burdekin	: 8.6 (94%)
Mackay-Whit	: 8.5 (92%)
Fitzroy Basin	: 8.4 (90%)
Burnett-Mary	: 8.4 (95%)

Boaters^	: 8.6 (95%)
Sailers	: 8.3 (86%)
Jetskiiers	: 8.4 (96%)
Fishers	: 8.4 (88%)
Snork/Divers	: 8.6 (94%)
Campers	: 8.6 (97%)
Hikers	: 8.7 (93%)
Swimmers	: 8.5 (93%)

GBR overall : 8.5 (92%)

Ref: SELTMP Survey 2013

^Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Connection in terms of 'aesthetics' and 'values'

Value the GBR for attracting people from all over the world

Mean score (% agree)

Cape York +	
Wet Tropics	: 8.1 (84%)
Burdekin	: 8.0 (85%)
Mackay-Whit	: 8.4 (88%)
Fitzroy Basin	: 7.8 (85%)
Burnett-Mary	: 8.1 (88%)

Boaters^	: 7.9 (84%)
Sailers	: 7.6 (76%)
Jetskiers	: 8.3 (93%)
Fishers	: 7.8 (83%)
Snork/Divers	: 8.0 (86%)
Campers	: 7.8 (88%)
Hikers	: 8.1 (91%)
Swimmers	: 8.1 (87%)

GBR overall : 8.0 (86%)

Ref: SELTMP Survey 2013

Value the GBR for the economy of region

Mean score (% agree)

Cape York +	
Wet Tropics	: 9.0 (95%)
Burdekin	: 9.0 (96%)
Mackay-Whit	: 9.0 (95%)
Fitzroy Basin	: 8.7 (95%)
Burnett-Mary	: 8.8 (95%)

Boaters^	: 8.9 (95%)
Sailers	: 8.8 (97%)
Jetskiers	: 8.7 (96%)
Fishers	: 8.9 (95%)
Snork/Divers	: 9.0 (97%)
Campers	: 8.7 (96%)
Hikers	: 8.9 (97%)
Swimmers	: 8.9 (95%)

GBR overall : 8.9 (95%)

Ref: SELTMP Survey 2013

Value the GBR for the fresh seafood it provides

Mean score (% agree)

Cape York +	
Wet Tropics	: 7.0 (71%)
Burdekin	: 7.2 (75%)
Mackay-Whit	: 7.5 (75%)
Fitzroy Basin	: 7.7 (82%)
Burnett-Mary	: 8.0 (86%)

Boaters^	: 8.1 (81%)
Sailers	: 7.3 (79%)
Jetskiers	: 6.8 (76%)
Fishers	: 8.5 (89%)
Snork/Divers	: 7.0 (71%)
Campers	: 8.0 (81%)
Hikers	: 6.9 (64%)
Swimmers	: 7.3 (74%)

GBR overall : 7.5 (78%)

Ref: SELTMP Survey 2013

Larson et al. (2014b) found that environmental non-use values of the GBRWHA were very important for the well-being of local residents.

They also discovered 'having beaches and islands without visible rubbish, followed by 'maintenance of healthy reef fish and healthy corals' were the most important values for residents.

Larson et al. (2014b) pointed out that they found positive relationships between frequency of participation and perceptions of the importance of some non-use values, such as health of coral reefs.

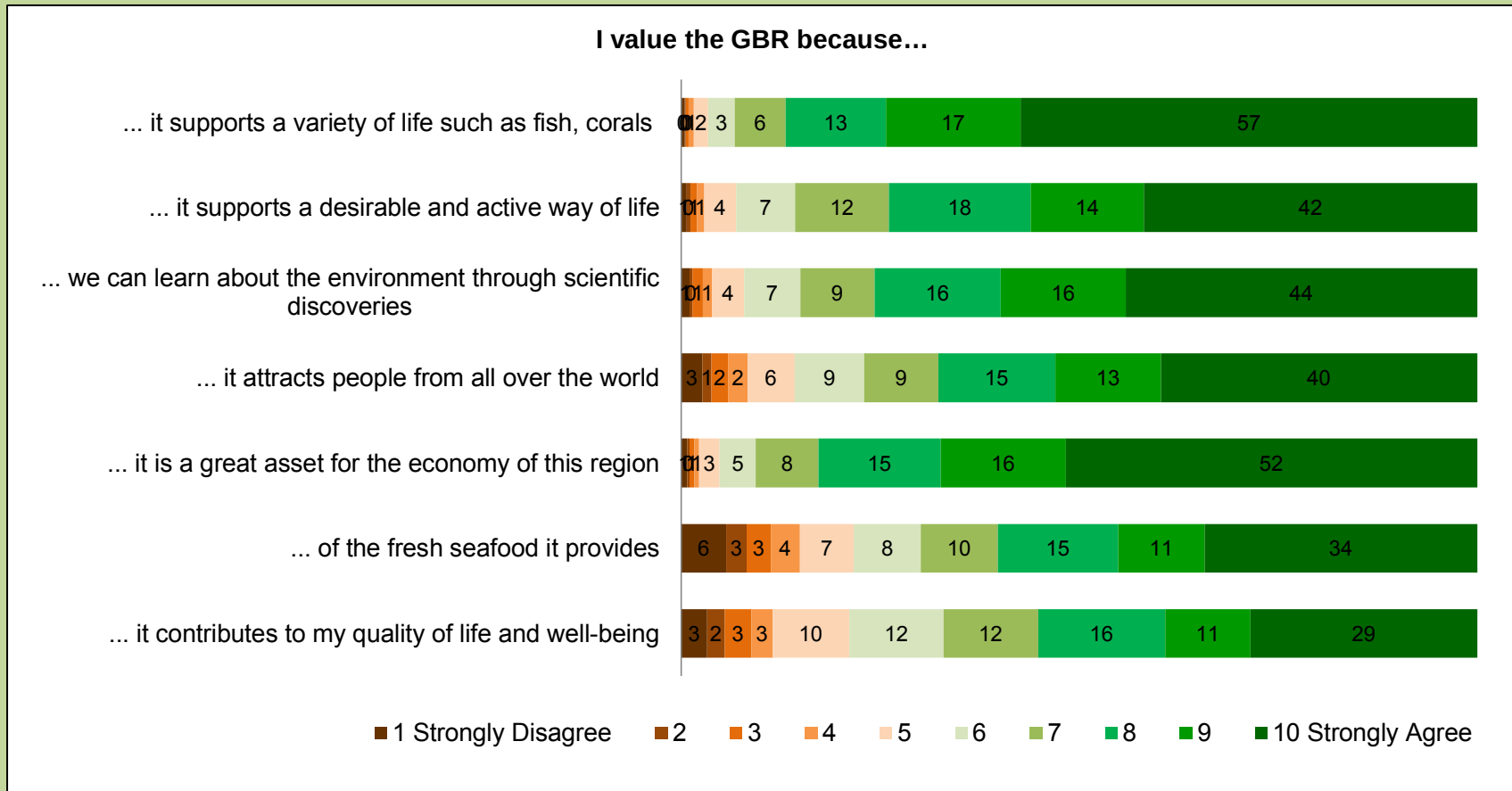
They found multiple correlations, including with activity types, which are well worth reading – see Larson et al. (2014a, b)

^Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Connection in terms of 'aesthetics' and 'values'

Values held for the GBR



Ref: SELTMP Survey 2013

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Satisfaction with GBR and experiences

Motivations

Key motive (listed by % of visitors)

Boaters	: xx (xx%)
Sailers	: xx (xx%)
Jetskiers	: xx (xx%)
Fishers	: Relax/unwind (70% cited as very important) ¹
Snork/Divers	: xx (xx%)
Campers	: social (22% caravanners, 36% campers) ²
Hikers	: xx (xx%)
Swimmers	: Relaxation + to be with family & friends (95%) ³

Ref: ¹McInnes et al. (2013); ²Carter (2002)*; ³Rolfe et al. (2011);

Expectations

Key expectation from a trip (listed by % of visitors)

Boaters	: xx (xx%)
Sailers	: xx (xx%)
Jetskiers	: xx (xx%)
Fishers	: xx (xx%)
Snork/Divers	: xx (xx%)
Campers	: xx (xx%)
Hikers	: xx (xx%)
Swimmers	: xx (xx%)

Ref: xxx

Satisfaction

Satisfied with most recent BEACH trip

Mean score (% satisfied)**¹

Cape York +	
Wet Tropics	: 8.6 (83%)
Burdekin	: 8.4 (75%)
Mackay-Whits	: 8.5 (83%)
Fitzroy Basin	: 7.9 (60%)
Burnett-Mary	: 8.1 (64%)

Satisfied with most recent trip 'beyond' the beach

Mean score (% satisfied)**¹

Cape York +	
Wet Tropics	: 8.5 (79%)
Burdekin	: 8.7 (83%)
Mackay-Whits	: 8.7 (84%)
Fitzroy Basin	: 8.5 (78%)
Burnett-Mary	: 8.4 (74%)

For main activity

Boaters [^]	: 8.1 (80%)
Sailers	: 8.8 (88%)
Jetskiers	: 8.2 (62%)
Fishers	: 8.0 (61%)
Snork/Divers	: 8.0 (59%)
Campers	: 8.2 (67%)
Hikers	: 8.9 (69%)
Swimmers	: 8.4 (72%)

GBR overall : 8.3 (73%)

For main activity

Boaters [^]	: 8.9 (98%)
Sailers	: 9.2 (93%)
Fishers	: 8.3 (72%)
Snork/Divers	: 8.8 (86%)
Campers	: 9.0 (79%)
Hikers	: 8.7 (90%)
Swimmers	: 8.6 (85%)

GBR overall : 8.6 (81%)

Ref: ¹SELTMP Survey 2013

*Australia wide data from National Visitor Survey; **Satisfaction scale differs to normal 10 point scale - >7 indicates satisfaction due to positivity bias (Pearce, 2006);

[^]Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Satisfaction with GBR and experiences

Influence on Satisfaction

Key influence on satisfaction with 'beyond the beach' trip

Cape York +	
Wet Tropics	: Habitat quality
Burdekin	: Visual quality
Mackay-Whits	: Weather
Fitzroy Basin	: Weather
Burnett-Mary	: Fish / fish number

Key influence by MAIN activity

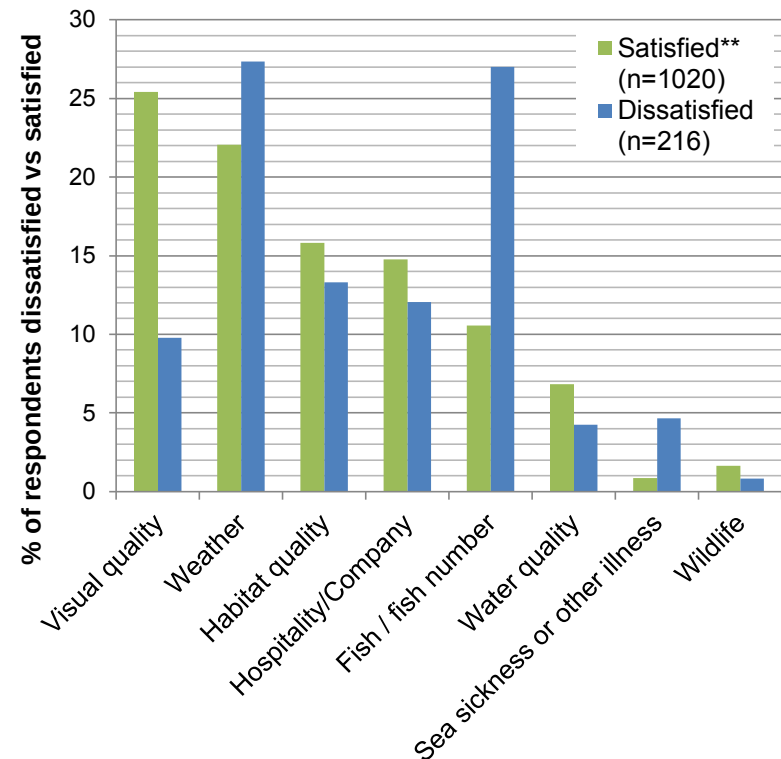
Motorboaters^	: Weather
Sailers	: Weather
Jetskiers	: N/A
Fishers	: Fish
Snorkel/Divers	: Habitat quality
Campers	: Hospitality/company
Hikers	: Habitat quality
Swimmers	: Weather

GBR overall	: Weather
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Ref: SELTMP Survey 2013

Influence on Satisfaction / Dissatisfaction

Main influence on satisfaction / dissatisfaction for trips beyond the mainland beach



Ref: SELTMP Survey 2013

^Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category. **Satisfaction scale differs to normal 10 point scale - >7 indicates satisfaction due to positivity bias (REF)

SELTMP 2014: Recreation in the Great Barrier Reef

i) Social relationship: 3. WHY: Satisfaction with GBR and experiences

The place that I most visited in the GBR is NOT in great condition

Mean score (% agree)

Cape York +	
Wet Tropics	: 4.0 (26%)
Burdekin	: 4.4 (34%)
Mackay-Whit	: 4.5 (38%)
Fitzroy Basin	: 4.6 (37%)
Burnett-Mary	: 4.7 (39%)

Boaters^	: 4.3 (38%)
Sailers	: 4.5 (36%)
Jet skiers	: 4.4 (30%)
Fishers	: 4.2 (35%)
Snork/Divers	: 4.8 (43%)
Campers	: 4.0 (31%)
Hikers	: 4.6 (40%)
Swimmers	: 4.4 (36%)

GBR overall : 4.5 (37%)

Ref: SELTMP Survey 2013

Feel optimistic about the future of the GBR

Mean score (% agree)¹

Cape York +	
Wet Tropics	: 6.4 (62%)
Burdekin	: 6.0 (58%)
Mackay-Whit	: 6.3 (60%)
Fitzroy Basin	: 6.1 (60%)
Burnett-Mary	: 6.5 (72%)

Boaters^	: 6.4 (69%) ¹
Sailers	: 5.9 (57%) ¹
Jet skiers	: 6.6 (70%) ¹
Fishers	: 6.4 (66%) ¹
Snork/Divers	: 5.7 (53%) ¹
Campers	: 6.0 (63%) ¹
Hikers	: 5.1 (45%) ¹
Swimmers	: 6.1 (60%) ¹

GBR overall : 6.2 (62%)¹
National residents : 5.9 (55%)²

Ref: ¹SELTMP Survey 2013;

²Goldberg et al. (2014)



Image by Matt Curnock

¹Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

i) Economic relationship: 4. Employment, value...

Direct employment

Cape York	: 22 ¹
Wet Tropics	: 417 ¹
Burdekin	: 385 ¹
Mackay-Whits	: 206 ¹
Fitzroy Basin	: 292 ¹
Burnett-Mary	: 436 ¹
Indirect catchment:	397 ¹
Indirect rest of Qld:	101 ¹
Indirect rest of Aus:	519 ¹
GBR overall	: 2,785
(1767 direct; 1118 indirect)	¹

Tidbit

Recreational fishing provides an economic benefit to a variety of businesses in Queensland such as tackle shops, camping and sporting goods stores and accommodation providers.²

Ref: ¹Deloitte Access Economics (2013); ²Mclnnes et al. (2013)

Estimated value

Direct value added:

Cape York	: \$1.6m ¹
Wet Tropics	: \$29.7m ¹
Burdekin	: \$27.4m ¹
Mackay-Whits	: \$14.7m ¹
Fitzroy Basin	: \$20.7m ¹
Burnett-Mary	: \$31.0m ¹

Boating	: xx
Sailing	: xx
Jetskiing	: xx
Fishing	: \$183 (per trip/pp for fishing, boating and sailing) ²
Diving	: xx
Camping	: \$5b (to Aus economy – includes caravanning and camping) ³
Hiking	: xx
Swimmers:	\$35 for beaches ¹

GBR overall: \$125.7m direct ; \$243.9m total value added¹

Ref: ¹Deloitte Access Economics (2013)*; ²Rolfe et al (2011)**; ³Fincham, (2011)

*Stoeckl et al. (2014) suggest the collective 'value' of the broad range of ecosystem services considered in their 2013 study exploring values held for the GBR by residents is likely to be in the range of **\$15–\$20 billion per annum** – perhaps substantially more.*

*Value-added estimate for GBR catchment area, not including Torres Strait in this value; **Based on sample of residents from Bundaberg to Cairns describing activity for past 2 years (from 2010). Utilises a primary valuation exercise, with travel cost method applied to assess consumer surplus values.

SELTMP 2014: Recreation in the Great Barrier Reef

i) Economic relationship: 4. Investment...

Cost recovery

Management fees

Boating	: \$19.30 from vessel registration to Fisheries Qld for enhancing recreational fishing ¹
Sailing	: xx
Jetskiing	: xx
Fishing	: xx
Snork/Diving	: xx
Camping	: xx
Hiking	: xx
Swimmers	: Nil

Ref: ¹MSQ (2014)

Research and Development

\$ invested in R&D in recreation in GBRWHA

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx

Boaters	: xx
Sailers	: xx
Jetskiers	: xx
Fishers	: xx
Divers	: xx
Campers	: xx
Hiking	: xx
Swimmers	: n/a

GBR overall : xx

Ref: xxx

Technology

% vessels using GPS

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx
GBR overall	: xx
Qld overall	: ~60%
fishing vessels ¹ ; 53% of Qld owned vessels ²	

% vessels using AIS

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx
GBR overall	: xx
Qld overall	: xx

Ref: ¹Taylor et al. (2012); ²MSQ (2007)

% vessels using Echo sounder

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx
GBR overall	: xx
Qld overall	: ~75%
fishing vessels ¹	

SELTMP 2014: Recreation in the Great Barrier Reef

i) Economic relationship: 4. Value, Investment...

Expenditure

Average expenditure per trip per person

Boaters	: \$129 ¹
Sailers	: \$139 ¹
Jetskiers	: xx
Fishers	: \$99 ¹
Divers	: xx
Campers	: \$90/night (campers); : \$83/night (caravanners) ²
Hiking	: xx
Swimmers	: xx

Median expenditure / trip / pp

Boaters	: \$80 ¹
Sailers	: \$75 ¹
Jetskiers	: xx
Fishers	: \$65 ¹
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

GBR overall	: \$330.7m ^{3#}
GBR median	: xx +/- xx

Total expenditure for the GBR catchment (\$m)³

NRM	Equipment	Fishing	Boating	Sailing	Visiting an island	Total (\$m)
Cape York	2.4	0.8	0.3	0.2	0.5	4.2
Wet Tropics	48.6	13	4.6	3.1	9.2	78.5
Burdekin	42.4	12.2	4.3	2.9	10.7	72.4
Mackay-Whitsundays	24.5	7.2	2.6	0.7	2.8	38.8
Fitzroy	34.8	10.1	3.6	2.4	4	54.8
Burnett-Mary	53.9	14.2	5	3.3	5.6	82
TOTAL	206.6	57.5	20.4	12.6	32.8	330.7

Tidbit

"A relatively large proportion of recreational expenditure (about 62%) consisted of purchases of recreational equipment such as the purchase, registration and insurance of boats, including parts and operations, fishing equipment, water sports equipment and repair."³

Investment in equipment

Average investment

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx

Boaters	: vessels \$8,000 median, \$16K mean ¹
Sailers	: vessels \$20K med, \$55K mean ¹
Jetskiers	: xx
Fishers	: xx
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

GBR overall	: xx +/- xx
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Ref: ¹Rolfe et al. (2011) ; ²Carter (2002)[^]; ³Deloitte Access Economics (2013)**

Ref: ¹Rolfe et al. (2011)

#Covers both trip-related expenditure for fishing, boating, sailing and visiting islands and household expenditure on recreational equipment; ^Australia wide from National Visitor Survey; **Value-added estimate for GBR catchment area, not including Torres Strait in this value

SELTMP 2014:

Recreation in the Great Barrier Reef

ii) Human and community well-being

The SELTMP program has developed a framework to assess human well-being in relation to the Great Barrier Reef (see Sherl et al., 2014), considering well-being in terms of the dimensions 'opportunity', 'empowerment', and 'security'; each of which are inter-linked, can affect each other and sometimes be overlapping.

Opportunity refers to the perceived range of options that are related to access to the natural environment for different purposes, the development and maintenance of reef-dependant industries, direct employment in these industries and GBR management, including the building of skills and capacity for management and sustainable use of marine resources.

Empowerment refers to perceptions that the needs of a range of different stakeholders are acknowledged and have been taken into account, avoiding exclusion and strengthening the ability of people to contribute to decision-making processes.

Security refers to perceptions of stability, sustainability and environmental quality that the GBR and its management provides to individuals and communities, which in turn contribute to reduce vulnerability, to health, to a sense of pride and identity and to social engagement, cohesion and cultural practices' opportunities surrounding the GBR and its management.

The indicators for each of these dimensions are in many cases replicated in other parts of this report, but are shown again here within the well-being framework (these are also included in the report "SELTMP 2013: Human and Community Well-being", Sherl et al. 2014).

SELTMP 2014: Recreation in the Great Barrier Reef

ii) Human and community well-being

The GBR contributes to my quality of life and well-being

Mean score (% agree)

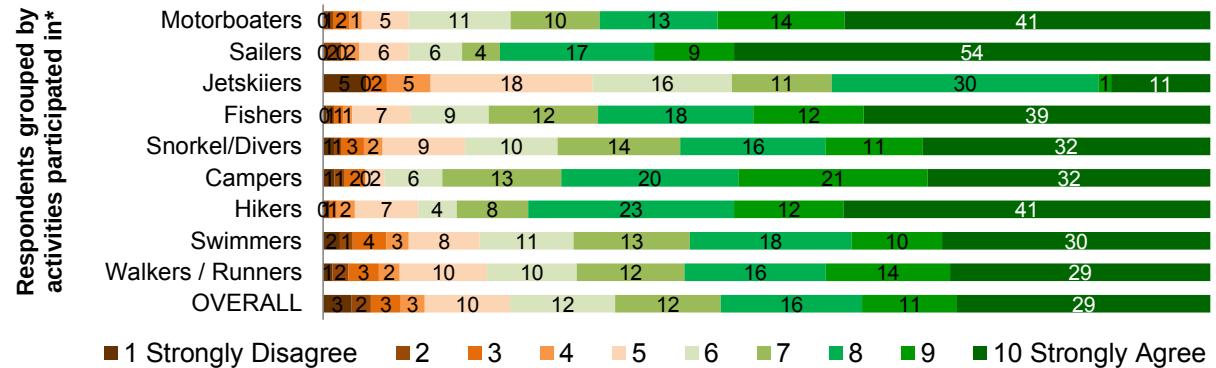
Cape York +	
Wet Tropics	: 7.5 (77%)
Burdekin	: 7.7 (83%)
Mackay-Whit	: 7.5 (79%)
Fitzroy Basin	: 7.2 (77%)
Burnett-Mary	: 7.2 (76%)

Motor boaters^	: 8.2 (90%)
Sailers	: 8.4 (90%)
Jetskiers	: 6.8 (70%)
Fishers	: 8.3 (90%)
Snork/Divers	: 7.8 (84%)
Campers	: 8.2 (93%)
Hikers	: 8.2 (89%)
Swimmers	: 7.7 (82%)
Walk/Runners	: 7.7 (81%)

GBR overall : 7.5 (79%)

Ref: SELTMP Survey 2013

The GBR contributes to my quality of life and well-being



Simply based on this one indicator alone, the GBR (including inshore areas out to the edge of the reef) contributes to the quality of life and well-being of most recreational users across all regions and activity types.

The following pages provide more complexity within the three well-being dimensions.

*Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

ii) Human and community well-being: Opportunity

INDICATOR*	AVERAGE SCORE	PERCENTAGE AGREE
There are [NOT] many other places that are better than the GBR for recreational activities I enjoy	6.4	66%
I live in this region because of the GBR	4.8	39%
The GBR contributes to my quality of life and well-being	7.5	79%
The GBR is a valuable asset for the economy of this region	8.9	95%
I value the GBR because It supports a desirable and active way of life	8.5	93%
The GBR contributes at least a little bit to my income	-	25%

Ref: SELTMP Survey 2013

*Negatively worded questions in the survey are reversed here, with changes indicated in red.

SELTMP 2014: Recreation in the Great Barrier Reef

ii) Human and community well-being: Empowerment

INDICATOR*	AVERAGE SCORE	PERCENTAGE AGREE
I do NOT have fair access to the GBR compared to other user groups	7.5	78%
I support the current rules and regulations that affect access and use of the GBR	7.3	78%
I would like to do more to protect the GBR	7.1	78%
I try to encourage other people to reduce their impacts on the GBR	6.9	70%
I would like to learn more about the condition of the GBR	7.0	74%
I value the GBR because we can learn about the environment through scientific discoveries	8.5	92%

Ref: SELTMP Survey 2013

*Negatively worded questions in the survey are reversed here, with changes indicated in red.

SELTMP 2014: Recreation in the Great Barrier Reef

ii) Human and community well-being: Empowerment contd.

INDICATOR*	AVERAGE SCORE	PERCENTAGE AGREE
I CAN NOT make a personal difference in improving the health of the GBR	7.1	74%
Coastal residents should take steps to reduce their impacts on the GBR	8.5	92%
I have the necessary knowledge and skills to reduce any impact that I might have on the GBR	6.4	63%
I do NOT have the time and opportunity required to reduce any impact that I might have on the GBR	6.8	69%
It is [NOT] too expensive for me to reduce any impact I might have on the GBR	7.6	82%
It is NOT my responsibility to protect the GBR	8.2	87%
It is the responsibility of all Australians to protect the GBR	8.9	95%

Ref: SELTMP Survey 2013

*Negatively worded questions in the survey are reversed here, with changes indicated in red.

SELTMP 2014: Recreation in the Great Barrier Reef

ii) Human and community well-being: Security

INDICATOR*	AVERAGE SCORE	PERCENTAGE AGREE
The GBR is part of my identity	6.4	63%
I would NOT be personally affected if the health of the GBR declined	7.8	81%
I value the GBR because it attracts people from all over the world	8.0	86%
I value the GBR for the fresh seafood it provides	7.5	78%
I value the GBR because it supports a variety of life such as fish and corals	9.1	97%
I feel proud that the GBR is a World Heritage Area	9.0	95%
The aesthetic beauty of the GBR is outstanding	9.1	97%

Ref: SELTMP Survey 2013

*Negatively worded questions in the survey are reversed here, with changes indicated in red.

SELTMP 2014: Recreation in the Great Barrier Reef

ii) Human and community well-being: Security contd.

INDICATOR*	AVERAGE SCORE	PERCENTAGE AGREE
The place that I most recently visited in the GBR is NOT in great condition	6.5	63%
I was satisfied overall with my experience of the GBR		
Beach trip	8.3	73% (score >7)
Beyond the mainland beach trip	8.6	81% (score >7)
I feel confident that the GBR is well managed	6.0	61%
I feel optimistic about the future of the GBR	6.2	62%

Ref: SELTMP Survey 2013

*Negatively worded questions in the survey are reversed here, with changes indicated in red.

SELTMP 2014: Recreation in the Great Barrier Reef

ii) Human and community well-being

Boating accidents*

	# of vessels^;	Hospitalisations;	Fatalities
Cairns	: 44	1	0
Townsville	: 13	0	0
Mackay	: 57	1	0
Gladstone	: 121	4	3
Brisbane	: 265	18	5

	# incidences (vessel #);	Hospitalisations;	Fatalities
Rec Motorboats	: 230 (257 vessels)	18	6
Sailboats	: 138 (154 vessels)	2	1
PWCs	: 22 (29 PWC)	6	1
Paddleboats	: 23 (no additional information)		
Houseboats	: 16 (no additional information)		

Qld Rec overall^:	397 (483 vessels)	24	8
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Ref: DTMR (2014)

Safety is also potentially an important aspect of well-being, and is therefore included here.

Statistics for boating accidents are available at a state-wide and broad regional scale via Maritime Safety Queensland. The areas include marine and freshwater habitats.

Incidences for recreational vessels were dominated by collisions with other vessels or groundings. 61% of recreational vessel incidents involved a single recreational vessel, 23% involved >1 recreational vessel while the remaining 16% also involved at least 1 commercial or hire and drive vessel (DTMR, 2014).

These incidents resulted fatalities of the masters of 6 vessels, a crew member and a tradesman repairing a recreational vessel. The masters of 9 vessels, 8 passengers, 3 crew members, 2 swimmers and 5 water skiers had injuries requiring hospital admission (DTMR, 2014).

*Data available at broad regional scales defined by Maritime Safety Queensland. Brisbane included for comparison, and to show proportional spread of incidences overall. Data are for the 2013 calendar year. ^Includes ALL recreational vessel incidences, including motor and sailboats, PWCs, paddleboats, and houseboats.

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 1. Employability

Age

Average age (years) (+/- SE)¹

Cape York +

Wet Tropics : 42 (+/- 0.96)

Burdekin : 40 (+/- 0.51)

Mackay-Whits: 44 (+/- 0.68)

Fitzroy Basin : 45 (+/- 0.61)

Burnett-Mary : 52 (+/- 0.70)

All boaters[^] : 43 (+/- 0.84)

Motorboaters: 42 (+/- 0.96)

Sailers : 47 (+/- 1.79)

Jetskiers : 33 (+/- 2.34)

Fishers : 42 (+/- 0.59)

Snorkel/Divers: 38 (+/- 0.57)

Campers : 39 (+/- 1.42)

Hikers : 37 (+/- 1.43)

Swimmers : 38 (+/- 0.54)

Walk / Runners: 44 (+/- 0.54)

GBR overall : 44⁷ (+/- 0.30);
Median 43 yrs

Qld population: In 2012,
Largest group: 25-29
yrs²; Median 36.2 years²

Ref: ¹SELTMP Survey 2013; ²Govt
statistician (2013)*

There are multiple potential indicators of employability (age, income, education, training, etc.), but only age was collected in the 2013 recreation surveys.

Employability may relate to dependency on the GBR when coupled with the proportion of income from the GBR.

Age can also influence recreational participation: Farr et al. (2014) found that participation in land-based fishing decreases with age (although for those that do go land-based fishing, they do it more frequently), and older people are less likely to have been boating in the past 2 years.



Image by Petina Pert

[^]Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category; *Qld populations data includes children, whereas the survey does not.

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 2. Environmental Stewardship

Confident the GBR is well managed

Mean score (% agree)¹

Cape York +	
Wet Tropics	: 6.0 (59%)
Burdekin	: 6.2 (64%)
Mackay-Whit	: 6.0 (61%)
Fitzroy Basin	: 5.8 (56%)
Burnett-Mary	: 6.0 (62%)

Boaters [^]	: 6.0 (57%) ¹
Sailers	: 5.9 (59%) ¹
Jetskiers	: 6.0 (77%) ¹
Fishers	: 5.9 (58%) ¹
Snork/Divers	: 6.0 (63%) ¹
Campers	: 5.9 (57%) ¹
Hikers	: 5.6 (53%) ¹
Swimmers	: 6.0 (61%) ¹

GBR overall	: 6.0 (61%) ¹
National residents	: 5.9 (53%) ²

Ref: ¹SELTMP Survey 2013;
²Goldberg et al. (2014)

Support current rules and regulations

Mean score (% agree)¹

Cape York +	
Wet Tropics	: 7.2 (75%)
Burdekin	: 7.5 (83%)
Mackay-Whit	: 7.4 (79%)
Fitzroy Basin	: 7.1 (77%)
Burnett-Mary	: 6.8 (71%)

Boaters [^]	: 7.1 (69%) ¹
Sailers	: 7.3 (79%) ¹
Jetskiers	: 8.0 (95%) ¹
Fishers	: 7.2 (75%) ¹
Snork/Divers	: 7.3 (79%) ¹
Campers	: 7.3 (78%) ¹
Hikers	: 7.1 (78%) ¹
Swimmers	: 7.4 (81%) ¹

GBR overall	: 7.3 (78%) ¹
-------------	--------------------------

Tidbit:

- the majority of recreational fishers (90%) comply with no-take zones in the GBRMP².

Ref: ¹SELTMP Survey 2013; ²Arias & Sutton (2013)

I have fair access to the GBR compared to other groups

Mean score (% agree)

Cape York +	
Wet Tropics	: 7.6 (80%)
Burdekin	: 7.9 (85%)
Mackay-Whit	: 7.6 (80%)
Fitzroy Basin	: 7.0 (76%)
Burnett-Mary	: 6.8 (66%)

Boaters [^]	: 7.5 (78%)
Sailers	: 8.4 (92%)
Jetskiers	: 7.8 (94%)
Fishers	: 7.4 (78%)
Snork/Divers	: 7.9 (84%)
Campers	: 7.6 (81%)
Hikers	: 7.8 (83%)
Swimmers	: 7.7 (81%)

GBR overall	: 7.5 (78%)
-------------	-------------

Ref: SELTMP Survey 2013

Participation in management

% participated / consulted

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay-Whits	: xx
Fitzroy Basin	: xx
Burnett-Mary	: xx

Boaters	: xx
Sailers	: xx
Jetskiers	: xx
Fishers	: 28% ¹
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: n/a

GBR overall	: xx
-------------	------

Ref: ¹Sutton (2006b)

[^]Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 2. Environmental Stewardship

Compliance rates

% compliance

SELTMP Marine regions

Far Northern	: 100%
Northern	: 96%
Wet Tropics	: 96%
Burdekin	: 94%
Mackay-Whit	: 98%
Fitzroy Basin	: 95%
Burnett-Mary	: 92%

GBR overall	: 96%
Qld overall	: 96%

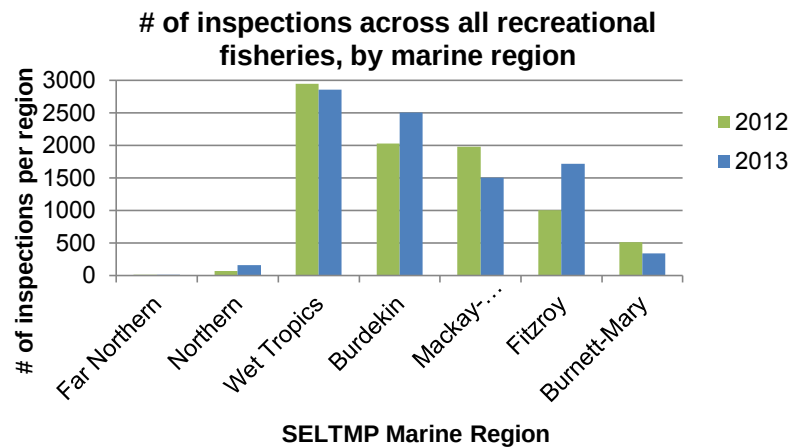
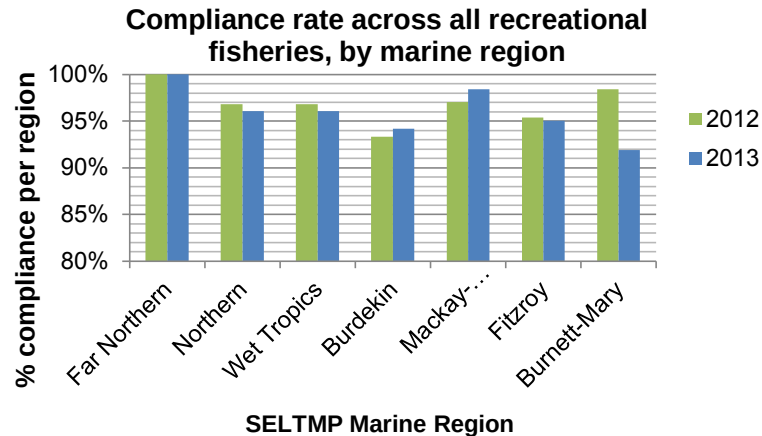
of inspections

SELTMP Marine regions

Far Northern	: 4
Northern	: 154
Wet Tropics	: 2850
Burdekin	: 2504
Mackay-Whit	: 1500
Fitzroy Basin	: 1714
Burnett-Mary	: 333

GBR overall	: 7,066
Qld overall	: 24,942

Ref: DAFF, unpublished data (2014)



Ref: DAFF, unpublished data (2014)

Compliance rate (based on DAFF data) increased or was fairly stable across most regions between 2012 and 2013, with the main exception being the Burnett-Mary region (although this should be treated with caution given the low number of inspections).

The number of inspections remained low in the northern regions.

For GBR Marine Park compliance, Sutton and Arias (2013) found 95% of recreational fishers were 'very' to 'moderately' knowledgeable of the location of no-take zones in the GBRMP. The most important driver of compliance in no-take zones was concern about receiving a penalty i.e. fines.

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 2. Environmental Stewardship

Compliance rates

% compliance

Fishery type

Line	: 97%
Reef	: 97%
SM	: 99%
Net (castnet)	: 97%
Crab	: 95%
BSwimmer	: 96%
Mudcrab	: 95%
Harvest	: 98%
Marine aq. fish	: 60%
Rocklobster	: 97%

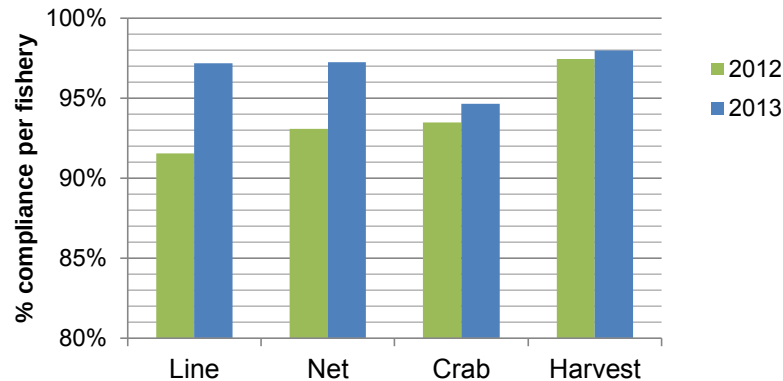
of inspections

Fishery type

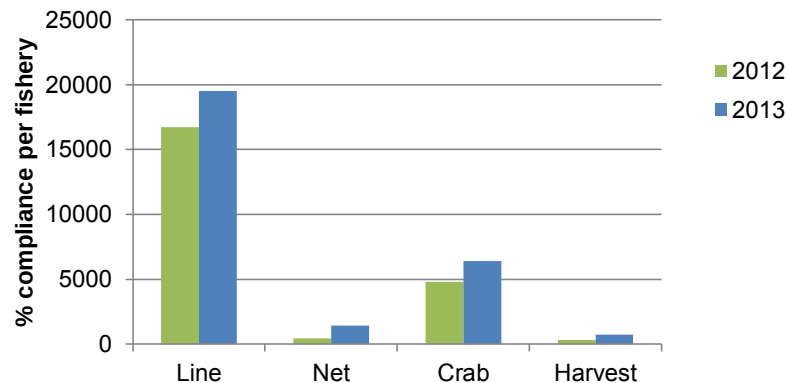
Line	: 19,523
Net	: 1,447
Crab	: 6,418
Harvest	: 748

Ref: DAFF, unpublished data (2014)

Compliance rate by fishery type



of inspections by fishery type



Ref: DAFF, unpublished data (2014)

Compliance rate (based on DAFF data) increased across all fishery types from 2012 to 2013, as did the number of inspections.

DAFF released the 2014/15 edition of the Queensland Recreational Boating and Fishing Guide. They also developed the new "Qld Fishing App", which features fishing rules in Queensland, including size and possession limits (DAFF, 2014a).

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 2. Environmental Stewardship

I would like to do more
to protect the GBR

Mean score (% agree)

Cape York +	
Wet Tropics	: 7.6 (80%)
Burdekin	: 7.2 (79%)
Mackay-Whit	: 7.3 (78%)
Fitzroy Basin	: 6.9 (77%)
Burnett-Mary	: 6.8 (76%)

Boaters^	: 7.4 (86%)
Sailers	: 7.5 (85%)
Jetskiers	: 6.9 (71%)
Fishers	: 7.4 (83%)
Snork/Divers	: 7.6 (83%)
Campers	: 7.5 (79%)
Hikers	: 7.8 (83%)
Swimmers	: 7.4 (80%)

GBR overall : 7.1 (78%)

Ref: SELTMP Survey 2013

Would be personally
affected if health if
GBR declined

Mean score (% agree)¹

Cape York +	
Wet Tropics	: 8.0 (80%)
Burdekin	: 8.2 (86%)
Mackay-Whit	: 8.0 (84%)
Fitzroy Basin	: 7.4 (77%)
Burnett-Mary	: 7.1 (73%)

Boaters^	: 8.5 (90%) ¹
Sailers	: 8.1 (85%) ¹
Jetskiers	: 7.5 (72%) ¹
Fishers	: 8.3 (88%) ¹
Snork/Divers	: 8.3 (86%) ¹
Campers	: 8.4 (89%) ¹
Hikers	: 8.6 (91%) ¹
Swimmers	: 8.1 (83%) ¹

GBR overall : 7.8 (81%)¹
National residents
: 5.2 (63%)²

Ref: ¹SELTMP Survey 2013;
²Goldberg et al. (2014)

Would like to learn
more about the
condition of the GBR

Mean score (% agree)

Cape York +	
Wet Tropics	: 7.1 (74%)
Burdekin	: 7.0 (77%)
Mackay-Whit	: 7.0 (72%)
Fitzroy Basin	: 6.9 (71%)
Burnett-Mary	: 6.9 (74%)

Boaters^	: 7.2 (79%)
Sailers	: 7.1 (78%)
Jetskiers	: 6.4 (69%)
Fishers	: 7.1 (74%)
Snork/Divers	: 7.4 (80%)
Campers	: 7.0 (72%)
Hikers	: 7.7 (88%)
Swimmers	: 7.1 (76%)

GBR overall : 7.0 (74%)

Ref: SELTMP Survey 2013

¹Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 2. Environmental Stewardship

Personal motivation / strength of belief in action

I can make a personal difference in improving GBR health

Mean score (% agree)

Cape York +	
Wet Tropics	: 7.1 (73%)
Burdekin	: 7.4 (78%)
Mackay-Whit	: 7.2 (75%)
Fitzroy Basin	: 7.0 (75%)
Burnett-Mary	: 6.4 (64%)

I try to encourage others to reduce impacts on GBR

Mean score (% agree)

Cape York +	
Wet Tropics	: 7.0 (72%)
Burdekin	: 6.8 (70%)
Mackay-Whit	: 7.1 (73%)
Fitzroy Basin	: 6.8 (69%)
Burnett-Mary	: 6.6 (68%)

Boaters^	: 6.6 (81%)
Sailers	: 6.6 (68%)
Jetskiiers	: 6.2 (72%)
Fishers	: 7.1 (78%)
Snork/Divers	: 6.7 (82%)
Campers	: 8.1 (79%)
Hikers	: 8.0 (86%)
Swimmers	: 7.1 (77%)

Boaters^	: 7.6 (82%)
Sailers	: 7.6 (77%)
Jetskiiers	: 6.1 (52%)
Fishers	: 7.5 (79%)
Snork/Divers	: 7.3 (79%)
Campers	: 7.4 (72%)
Hikers	: 7.5 (80%)
Swimmers	: 7.0 (73%)

GBR overall : 7.1 (74%)

GBR overall : 6.9 (70%)

Ref: SELTMP Survey 2013

Social norms

Mean score (% agree) it is the responsibility of ... to protect the GBR¹

	themselves	other residents	All Australians
Cape York +			
Wet Tropics	: 8.4 (91%)	8.5 (90%)	9.0 (94%)
Burdekin	: 8.5 (91%)	8.6 (94%)	8.9 (94%)
Mackay-Whits	: 8.4 (89%)	8.4 (92%)	9.0 (95%)
Fitzroy Basin	: 7.8 (85%)	8.3 (91%)	8.7 (94%)
Burnett-Mary	: 7.8 (81%)	8.4 (91%)	8.9 (96%)

Boaters^	: 8.1 (90%)	8.5 (92%)	8.9 (93%)
Sailers	: 8.8 (94%)	8.6 (88%)	9.2 (96%)
Jetskiiers	: 8.4 (89%)	8.3 (93%)	8.5 (84%)
Fishers	: 8.7 (94%)	8.3 (89%)	9.0 (95%)
Snork/Divers	: 8.6 (92%)	8.7 (95%)	9.0 (97%)
Campers	: 8.6 (97%)	8.2 (91%)	8.5 (91%)
Hikers	: 8.9 (97%)	8.6 (95%)	9.1 (94%)
Swimmers	: 8.5 (91%)	8.5 (93%)	9.0 (95%)

GBR overall ¹	: 8.2 (87%)	8.5 (92%)	8.9 (95%)
National residents ² :	5.5 (68%)	-	7.7 (80%)

Ref: ¹SELTMP Survey 2013; ²Goldberg et al. (2014)

[^]Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 2. Environmental Stewardship

Barriers to behaviours

Mean score (% agree) that their ability to reduce any impact they might have on the GBR is limited by:

	skills & knowledge	time & opportunity	money
Cape York +			
Wet Tropics	: 4.5 (36%)	4.2 (30%)	3.4 (21%)
Burdekin	: 4.4 (34%)	3.9 (27%)	3.1 (15%)
Mackay-Whits	: 4.7 (39%)	4.1 (27%)	3.2 (14%)
Fitzroy Basin	: 4.8 (37%)	4.6 (35%)	3.7 (20%)
Burnett-Mary	: 4.7 (39%)	4.8 (39%)	3.9 (23%)

	skills & knowledge	time & opportunity	money
Boaters^	: 3.9 (25%)	3.8 (22%)	3.0 (12%)
Sailers	: 4.0 (26%)	3.8 (22%)	2.6 (5%)
Jet skiers	: 4.8 (48%)	4.9 (45%)	3.9 (24%)
Fishers	: 4.0 (27%)	3.9 (25%)	3.1 (14%)
Snork/Divers	: 4.3 (31%)	3.9 (27%)	3.0 (12%)
Campers	: 4.0 (24%)	3.9 (23%)	3.0 (11%)
Hikers	: 4.4 (25%)	3.6 (22%)	2.7 (17%)
Swimmers	: 4.5 (35%)	4.0 (29%)	3.2 (16%)

GBR overall	: 4.6 (37%)	4.2 (32%)	3.4 (18%)
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Ref: SELTMP Survey 2013



Image by Andrew Tobin

^Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 2. Environmental Stewardship

Environmental behaviours*

% who Recycle:	Never	Sometimes	Often	Always
Cape York +				
Wet Tropics :	4	12	27	57
Burdekin :	4	10	28	58
Mackay-Whits :	9	13	21	57
Fitzroy :	1	9	27	62
Burnett-Mary :	1	6	19	74

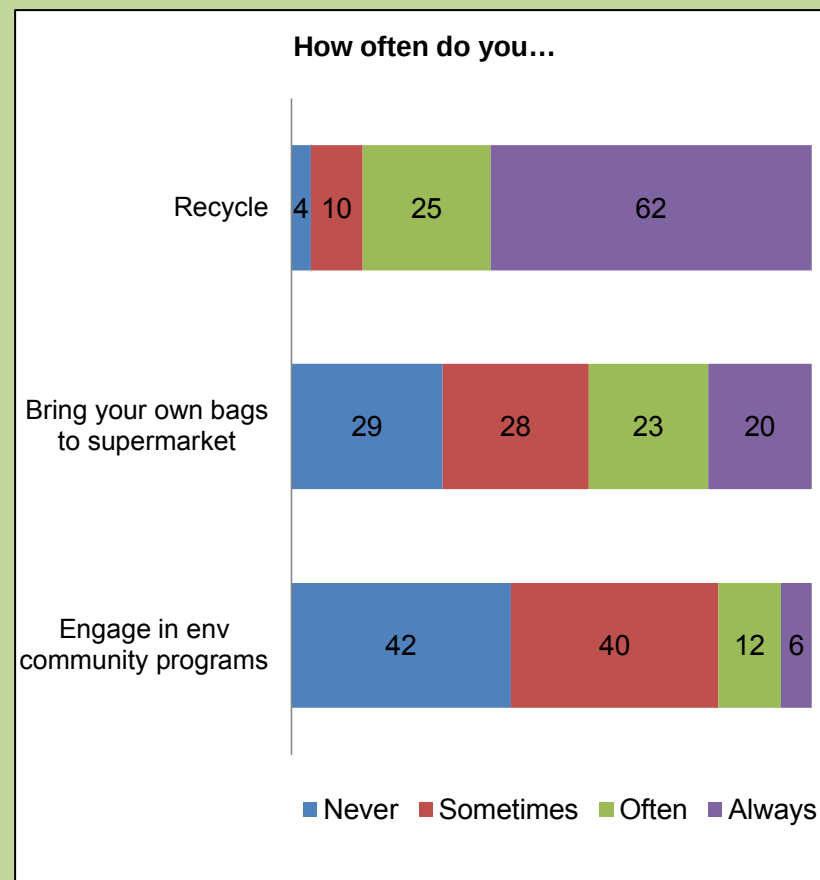
% who bring their own bags to the supermarket	Never	Sometimes	Often	Always
Cape York +				
Wet Tropics :	33	24	21	23
Burdekin :	31	25	23	21
Mackay-Whits :	31	28	17	24
Fitzroy :	31	29	25	15
Burnett-Mary :	22	30	27	22

% who engage in environmental community programs	Never	Sometimes	Often	Always
Cape York +				
Wet Tropics :	46	38	13	4
Burdekin :	43	40	10	7
Mackay-Whits :	44	41	10	6
Fitzroy :	36	43	15	7
Burnett-Mary :	43	39	12	5

Ref: SELTMP Survey 2013

*See figure for overall GBR result.

Environmental behaviours



Ref: SELTMP Survey 2013

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 2. Environmental Stewardship

Environmental behaviours

% who have solar power in their home

Cape York +	
Wet Tropics	: 24%
Burdekin	: 24%
Mackay-Whit	: 22 %
Fitzroy Basin	: 38%
Burnett-Mary	: 38%

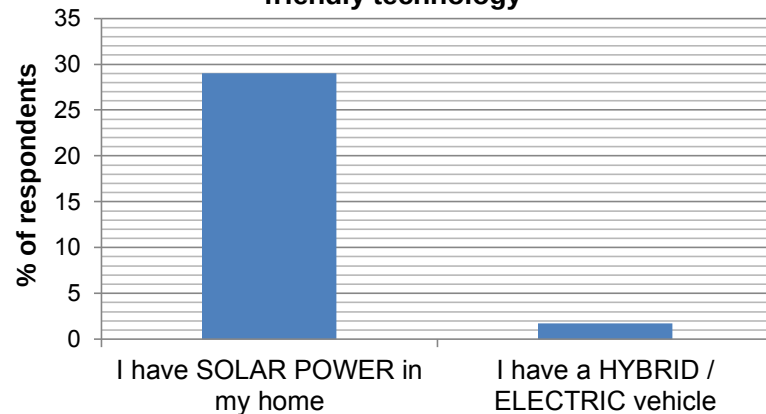
% who have a hybrid / electric vehicle

Cape York +	
Wet Tropics	: 2%
Burdekin	: 1%
Mackay-Whit	: 1%
Fitzroy Basin	: 3%
Burnett-Mary	: 2%

GBR overall : 29%

GBR overall : 2%

% of respondents who have environmentally friendly technology



Ref: SELTMP Survey 2013

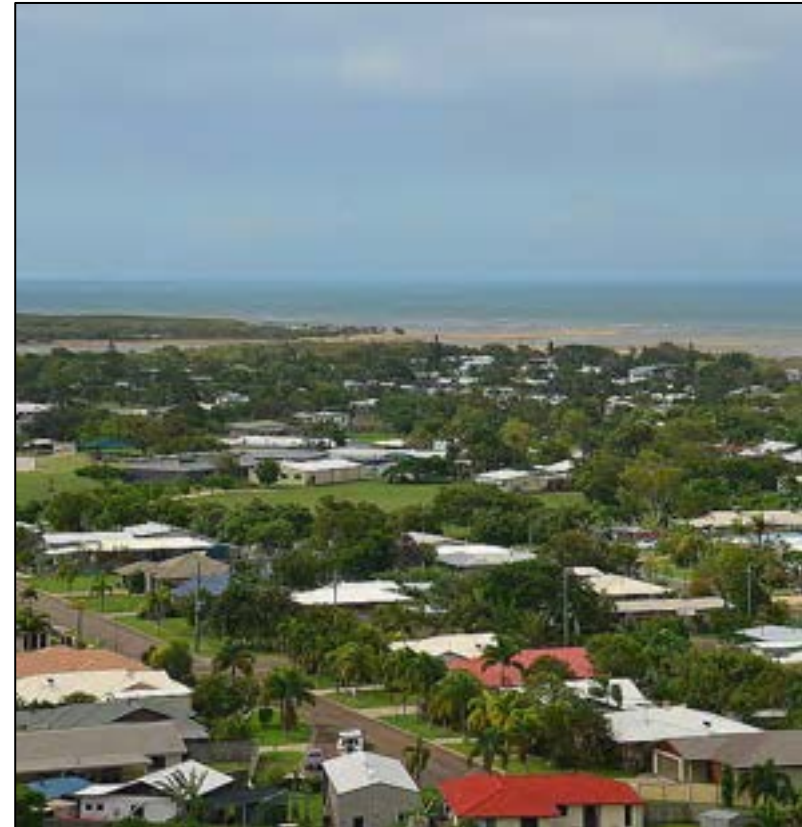


Image by Matt Curnock

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 2. Environmental Stewardship

Perceptions about climate change (CC)

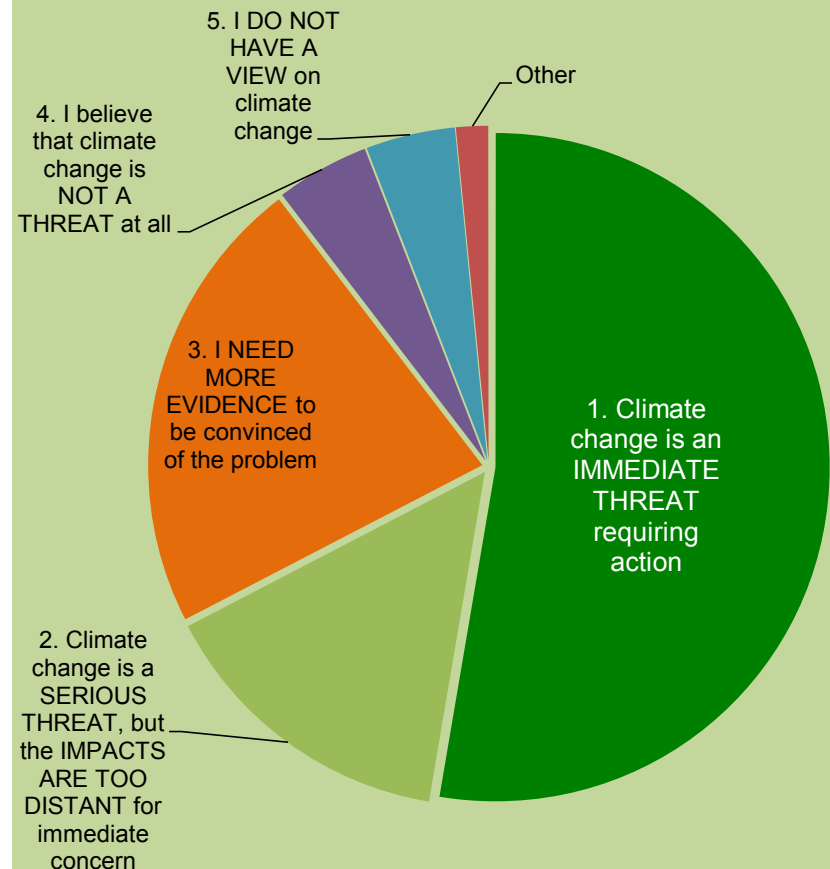
% who agree with statement*:

	1	2	3	4	5	Other
Cape York +						
Wet Tropics :	48	14	24	6	5	4
Burdekin :	58	13	21	3	3	1
Mackay-Whits :	49	15	25	4	5	2
Fitzroy :	50	17	21	5	6	1
Burnett-Mary :	53	14	22	5	4	1

	1	2	3	4	5	Other
Motorboaters^ :	52	10	26	5	4	3
Sailers :	52	11	26	5	4	3
Jetskiers :	40	15	30	0	13	4
Fishers :	48	15	28	4	4	1
Snork/Divers :	61	12	18	3	5	1
Campers :	62	9	22	4	4	1
Hikers :	66	11	19	1	3	1
Swimmers :	58	17	18	3	3	1
Walk/Runners :	59	12	20	4	4	1

GBR overall :	53	15	22	5	4	2
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Ref: SELTMP Survey 2013



Ref: SELTMP Survey 2013

*See figure for statements; ^Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category.

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 3. Information and networks

Information sources

Primary information source about the GBR WHA

Boaters	: xx
Sailers	: xx
Jetskiers	: xx
Fishers	: newspaper+ TV ¹ ; Govt internet and social media for fisheries info ²
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

Ref: ¹Sutton (2006); ²McInnes et al
(2013)

Formal networks

% who communicate regularly with managers

Boaters	: xx
Sailers	: xx
Jetskiers	: xx
Fishers	: xx
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

Ref: xxx

Informal networks

% consider themselves well networked

Boaters	: xx
Sailers	: xx
Jetskiers	: xx
Fishers	: xx
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

Ref: xxx

Memberships

% who are members of peak bodies

Boaters	: xx
Sailers	: xx
Jetskiers	: xx
Fishers	: 3% ¹
Snork/Divers	: xx
Campers	: xx
Hikers	: xx
Swimmers	: xx

Ref: ¹Taylor et al. (2012)



Michael Heiss © Creative Commons

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 3. Information and networks

Trusted information sources for information

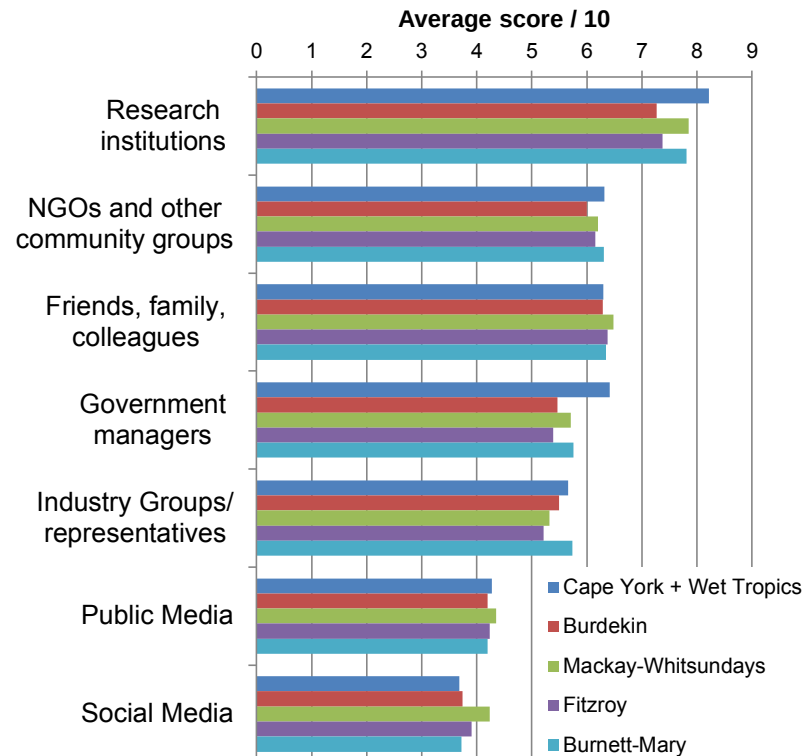
Information source: mean score (% who trust them)

Friends, family and colleagues	: 6.3 (60%)
Government managers	: 5.8 (57%)
Research institutions	: 7.8 (84%)
Industry groups / representatives	: 5.5 (49%)
NGOs / community groups	: 6.2 (63%)
Media (TV, radio, newspapers)	: 4.2 (28%)
Social media (facebook, twitter)	: 3.8 (23%)

Ref: SELTMP Survey 2013

Trusted information sources

Level of trust of various sources to receive information about the GBR



Ref: SELTMP Survey 2013

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 3. Information and networks

Perception of management agencies

% with positive opinion of GBRMPA

Cape York : xx
Wet Tropics : xx
Burdekin : xx
Mackay-Whits : xx
Fitzroy Basin : xx
Burnett-Mary : xx

Boaters : xx
Sailers : xx
Jetskiiers : xx
Fishers : ~56% ¹
(44% did not trust GBRMPA
to consider their needs)¹
Snork/Divers : xx
Campers : xx
Hikers : xx
Swimmers : n/a

GBR overall : xx

% with positive opinion of DAFF

Cape York : xx
Wet Tropics : xx
Burdekin : xx
Mackay-Whits : xx
Fitzroy Basin : xx
Burnett-Mary : xx

Boaters : xx
Sailers : xx
Jetskiiers : xx
Fishers : xx
Snork/Divers : xx
Campers : xx
Hikers : xx
Swimmers : n/a

GBR overall : xx

% with positive opinion of NPRSR

Cape York : xx
Wet Tropics : xx
Burdekin : xx
Mackay-Whits : xx
Fitzroy Basin : xx
Burnett-Mary : xx

Boaters : xx
Sailers : xx
Jetskiiers : xx
Fishers : xx
Snork/Divers : xx
Campers : xx
Hikers : xx
Swimmers : n/a

GBR overall : xx

Ref: ¹Sutton (2008)

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: 4. Sector specific drivers (indirect)

Population growth and change

Increasing coastal population

NRMs impacted:

All, (less so Cape York)

(see coastal communities chapter, Bohensky et al. 2014)

Key impacts/concerns:

- More people accessing the Marine Park¹
- More coastal marine facilities and access points¹
- Coastal marine facilities and access points in new areas¹
- Increasing vessel ownership^{1,2}
- Increased numbers of recreational fishers (despite similar proportions of the population fishing)³
- Increasing user conflict¹

Tidbit:

“Feedback from Local Marine Advisory Group members and the Reef Advisory Committees consistently identified increasing population and its flow-on effects as fundamental issues for future recreation management.”¹

Ref: ¹GBRMPA (2012); ²DTMR, unpubl data (2014); ³DAFF, unpubl data (2013, 2014);

Economic drivers

Fuel price

Key changes: Increased fuel price in recent years

Recreation affected: Boating, fishing

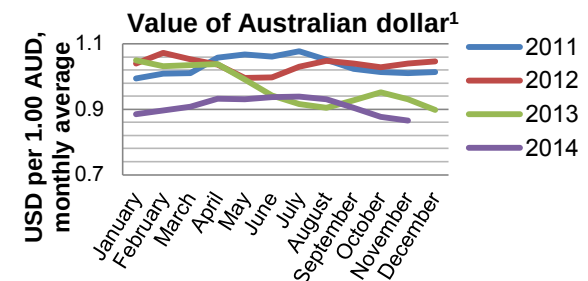
Key impacts: Potential impact on number of visits, distance travelled, and satisfaction with trip (anecdote only, no data)

Weakened Australian dollar (against US)¹

Key changes: Decreased prices of some consumer goods

Recreation affected: Any

Key impacts: Potential positive impact on spending for recreation equipment (anecdote only, no data)



Ref: ¹X-rates (2014)

SELTMP 2014:

Recreation in the Great Barrier Reef

iii) Drivers of change: 4. Sector specific drivers (direct)

Management changes

Queensland Fisheries Review

The Queensland Government is reviewing fisheries management across all fisheries to “deliver a better system”, aiming to reduce complexity, regulatory burden and cost, and improve consistency. An independent consultancy group (MRAG Asia Pacific) has been appointed to undertake the review, and a Fisheries Review Committee has been formed to guide it.¹ Consultation has included public meetings for recreational and commercial fishers along the coast, and invitations for written submissions.²

NRMs affected:

Applies to all of Queensland

Recreation affected:

Fishing

Key impacts:

None as yet, although attentive recreational fishers will be aware of the review and uncertain of the future outcomes. Port meetings were well attended by the recreational sector (anecdote)



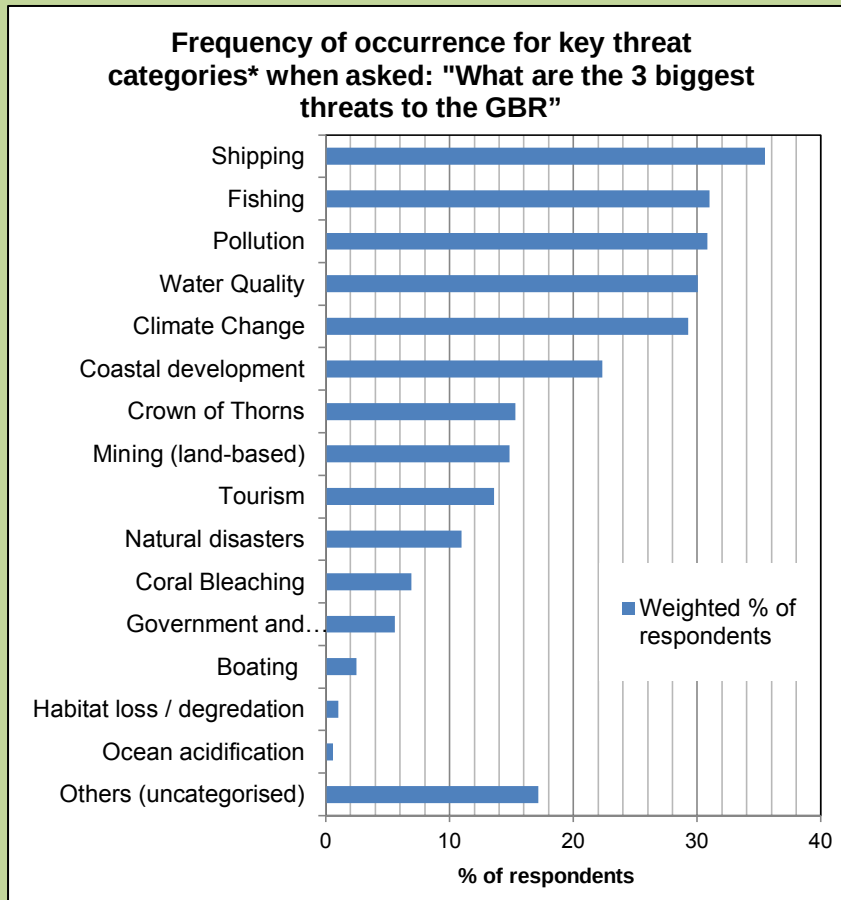
Image by Steve Sutton

Ref: ¹DAFF (2014b); ²MRAG Asia Pacific (2014);

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: Threats to the GBR (direct drivers)

Perceived threats to the GBR



Ref: SELTMP Survey 2013

Perceived threats to the GBR by region and activity type*

Most commonly listed threat

Cape York +	
Wet Tropics	: Climate Change
Burdekin	: Fishing
Mackay-Whits	: Shipping
Fitzroy Basin	: Shipping
Burnett-Mary	: Shipping

Motor boaters^	: Shipping
Sailers	: Water quality
Jetskiers	: Pollution
Fishers	: Shipping
Snork/Divers	: Climate change
Campers	: Fishing
Hikers	: Coastal development
Swimmers	: Fishing
Walk/runners	: Shipping

Ref: SELTMP Survey 2013

*See next page for what is included in categories; ^Respondents categorised according to main and secondary activity undertaken on any beach or beyond the beach trip listed. Individual respondents may fit in more than one activity category.

SELTMP 2014: Recreation in the Great Barrier Reef

iii) Drivers of change: Threats to the GBR (direct drivers)

Perceived threats to the GBR*

Level 1 category	Level 2	Weighted % of respondents
Shipping	GROUPED	35.5
	Shipping	26.9
	Oil spills	11.9
	Ballast / pollution from ships	0.1
Fishing	GROUPED	31.0
	Commercial fishing	19.8
	Recreational fishing	3.2
	Unspecified / all fishing	7.9
	Illegal fishing (incl foreign)	2.0
Pollution	GROUPED	30.8
	Pollution (multiple / undefined)	14.7
	Marine debris / litter	15.8
	Marine pollutants (chemicals)	1.0
Water Quality	GROUPED	30.0
	Water Quality (including sedimentation)	5.6
	Urban run-off (incl. sewerage)	4.5
	Agricultural run-off (including erosion)	20.9
	Mining run-off	0.1
	Run-off (not defined / all)	0.9
Climate Change	GROUPED	29.3
	Climate change	17.7
	Global warming	11.9
	Sea level rise	0.1
	Ocean warming	0.6
	Ozone layer / depletion	0.2

Level 1 category	Level 2	Weighted % of respondents
Coastal development	GROUPED	22.3
	Coastal development	7.6
	Dredging	3.0
	Industrial development	2.0
	New ports and port expansions	11.2
	Overpopulation	1.1
Crown of Thorns		15.3
Mining (land-based)		14.8
Tourism		13.6
Natural disasters	GROUPED	11.0
	Natural disasters	0.9
	Floods	1.8
	Cyclones	8.7
	Storms	0.1
	Earthquakes	0.1
	Tsunamis	0.1
Coral bleaching		6.9
Government & regs	GROUPED	5.6
	Government / departments	0.8
	Mis-/poor-management	0.6
	Zoning	0.4
	Beauracracy / politics	0.6
	Enforcement / policing	0.1
	Conservationists	0.5
Boating (incl too many, anchor damage, etc)		2.5
Habitat loss / degradation		1.0
Ocean acidification		0.6
Others (uncategorised) GROUPED		17.2

Ref: SELTMP Survey 2013

*Results of an open ended question asking respondents to list the 3 biggest threats to the GBR

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References

- Arias, A. and S. G. Sutton (2013). Understanding Recreational Fishers' Compliance with No-take Zones in the Great Barrier Reef Marine Park. *Ecology and Society*. 18(4): 18
- Australian Bureau of Statistics, Population by Age and Sex, Regions of Australia, 2011, cat. no. 3235.0
- Australian Bureau of Statistics (2013). *National Regional Profile: Queensland*. 23 May 2013.
<http://www.abs.gov.au/AUSSTATS/abs@nrf.nsf/Latestproducts/3Population/People12007-2011?opendocument&tabname=Summary&prodno=3&issue=2007-2011>
- Battaglia M, Izrael D, Hoaglin DC and M Frankel (2004). *Tips and Tricks for Raking Survey Data* (Aka Sample Balancing). American Association of Public Opinion Research.
- Bohensky, E., Marshall, N., Currnock, M., Gillet, S., Goldberg, J., Gooch, M., Pert, P., Scherl, L., Stone-Jovicich, S., Tobin, R. (2014) *The Social and Economic Long Term Monitoring Program (SELTMP) 2013, Coastal Communities in the Great Barrier Reef*. Report to the National Environmental Research Program. Reef and Rainforest Research Centre Limited, Cairns (35pp.).
- Carter, P (2002). *Domestic caravanning and camping: Results from the 2000 National Visitor Survey*. BTR Tourism Research Report. 4(2): 7-20
- Curnock, M., Marshall, N., Tobin, R., Stone-Jovicich, S., Bohensky, E., Pert, P., Goldberg, J., Gooch, M., Gillet, S., Scherl, L. (2014) *The Social and Economic Long Term Monitoring Program (SELTMP) 2013, Tourism in the Great Barrier Reef*. Report to the National Environmental Research Program. Reef and Rainforest Research Centre Limited, Cairns (55pp.).
- Deloitte Access Economics (2013). *Economic Contribution of the Great Barrier Reef*. Great Barrier Reef Marine Park Authority, Townsville.
- Department of Agriculture, Fisheries and Forestry. Unpublished data 2013, from the 2010/11 Statewide Recreational Fishing Survey
- Department of Agriculture, Fisheries and Forestry. Unpublished data 2014, from the 2013 Statewide and Regional Recreational Fishing Survey.
- Department of Agriculture, Fisheries and Forestry (2014a). *Recreational fishing rules and regulations for Queensland*. The Queensland Government. URL: <https://www.daff.qld.gov.au/fisheries/recreational/rules-regulations>

SELTMP 2014: Recreation in the Great Barrier Reef

References

- Department of Agriculture, Fisheries and Forestry (2014b). *Fisheries Management Review*. Queensland Government. Business and Industry Portal. URL: <http://www.daff.qld.gov.au/fisheries/consultations-and-legislation/reviews-surveys-and-consultations/fisheries-management-review>
- Department of Transport and Main Roads. Unpublished data 2014, for recreational vessel registration and storage location and details.
- Department of Transport and Main Roads (2014). *Marine Incidents in Queensland 2013*. Queensland Government. URL: <http://www.msq.qld.gov.au/~media/msqinternet/msqfiles/home/about%20us/marineincidentsinquensland2013.pdf>
- Farr, M, Stoeckl, N and Sutton, S (2014). Recreational fishing and boating: Are the determinants the same? *Marine Policy*. 47(0): 126-137. DOI: <http://dx.doi.org/10.1016/j.marpol.2014.02.014>. URL: <http://www.sciencedirect.com/science/article/pii/S0308597X14000529>
- Fincham, C (2011). *Come back caravanners, urges Queensland*. <http://www.caravancampingsales.com.au/news/2011/come-back-caravanners-urges-queensland-23560>
- Great Barrier Reef Marine Park Authority (2012). *Draft Recreation Management Strategy for the Great Barrier Reef Marine Park*. Great Barrier Reef Marine Park Authority, Townsville, Qld.
- Great Barrier Reef Marine Park Authority (2014). *Great Barrier Reef Outlook Report 2014*. Great Barrier Reef Marine Park Authority, Townsville, Qld, Australia.
- Goldberg, J, Bohensky, E, Curnock, M, Gooch, M, Marshall, N, Parry-Husbands, H, Pert, P, Stone-Jovicich, S, Tobin, RC, Villani, C. (2014). *SELTMP 2013: The Great Barrier Reef National Survey*. Report to the National Environmental Research Program. Reef and Rainforest Research Centre Limited, Cairns
- Government Statistician (2013). *Population Growth Highlights and Trends, Queensland 2013*. Government Statistician, Queensland Treasury and Trade.
- Larson, S, Farr, M, Stoeckl, N, Chacon, A and Esparon, M (2014). Does Participation in Outdoor Activities Determine Residents' Appreciation of Nature: A Case Study From the Great Barrier Reef, Australia. *Environment and Natural Resources Research*. 4(3): 211-226. DOI: 10.5539/enrr.v4n3p212
- Larson, S, Stoeckl, N, Farr, M and Esparon, M (2014b). The role the Great Barrier Reef plays in resident wellbeing and implications for its management. *Ambio*. DOI: 10.1007/s13280-014-0554-3

SELTMP 2014:

Recreation in the Great Barrier Reef

References

- Lawrence, K, van Putten, I and Fernbach, M (2010). *Profiles of Recreational Use of the Great Barrier Reef Marine Park*. Research Publication No. 101, Great Barrier Reef Marine Park Authority.
- Maritime Safety Queensland (2007). *2006 Recreational Boating Survey Report*. Maritime Safety Queensland.
- Maritime Safety Queensland (2014). *Our fees and charges*. Queensland Government. URL: <http://www.msq.qld.gov.au/About-us/Current-fees.aspx#recfees>
- McInnes, KL (2006). *2004 biennial recreational fishing telephone survey of Queensland residents*. Department of Primary Industries and Fisheries, Brisbane, Qld.
- McInnes, K, Taylor, S and Webley, J (2013). *Social, attitudinal and motivational recreational fishing survey*. State of Queensland, Department of Agriculture, Fisheries and Forestry.
- MRAG Asia Pacific (2014). *Queensland Fisheries Review*. URL: <http://www.mragasiapacific.com.au/Queensland-Fisheries-Review>
- Office of Economic and Statistical Research (2008). *Queensland Household Survey 2008*. Summary Report prepared for the Great Barrier Reef Marine Park Authority, Office of Economic and Statistical Research.
- Pearce, P.L. (2006). The value of a benchmarking approach for assessing service quality satisfaction in environmental tourism. In B. Prideaux, G. Moscardo & B. Laws (Eds.), *Managing tourism and hospitality services: Theory and international applications* (pp.282-299). London: CABI.
- Queensland Transport (2011). Unpublished data, accessed via http://www.gbrmpa.gov.au/corp_site/key_issues/tourism/management/gbr_visitation/rec_vessels/
- Queensland Treasury and Trade (2012a). *Population Age and Gender: Regional Queensland, 2011*. Australian Bureau of Statistics.
- Queensland Treasury and Trade (2012b). *Census 2011: Diversity in Queensland*. The State of Queensland. <http://www.oesr.qld.gov.au/products/bulletins/diversity-qld-c11/diversity-qld-c11.pdf>.
- Rolfe, J, Gregg, D and Tucker, G (2011). *Valuing local recreation in the Great Barrier Reef, Australia*. Environmental Economics Research Hub Research Report No. 102, Crawford School of Economics and Government, Australian National University, Canberra.

SELTMP 2014:

Recreation in the Great Barrier Reef

References

- Scherl, L, Bohensky, E, Curnock, M, Gillet, S, Goldberg, J, Gooch, M, Marshall, N, Pert, P, Stone-Jovicich, S, Tobin, R. (2014). *The Social and Economic Long Term Monitoring Program (SELTMP) 2013, Human and Community Well-being*. Report to the National Environmental Research Program. Reef and Rainforest Research Centre Limited, Cairns
- Stoeckl, N., Birtles, A., Valentine, P., Farr, M., Curnock, M., Mangott, A., & Sobotzick, S. (2010). *Understanding the social and economic values of key marine species in the Great Barrier Reef*. MTSRF Project 4.8.6(a) Final Report, June 2010 with a section focusing on marine turtles. Final Project Report to the Marine and Tropical Sciences Research Facility (MTSRF): James Cook University, Townsville (76pp.).
- Stoeckl, N., Farr, M., Larson, S., Adams, V. M., Kubiszewski, I., Esparon, M., & Costanza, R. (2014). A new approach to the problem of overlapping values: A case study in Australia's Great Barrier Reef. *Ecosystem Services*, 10(0), 61-78. doi: <http://dx.doi.org/10.1016/j.ecoser.2014.09.005>
- Sutton, SG (2006). *An Assessment of the Social Characteristics of Queensland's Recreational Fishers*. CRC Reef Research Centre Technical Report No. 65, CRC Reef Research Centre, Townsville.
- Sutton, SG (2006b). *Understanding Recreational Fishers' Participation in Public Consultation Programs*. Human Dimensions of Wildlife. 11(5): 329-341.
- Sutton, SG (2008). *Recreational fishers' perceptions about the costs and benefits of the 2004 Great Barrier Reef Marine Park Zoning Plan*. Report to the Marine and Tropical Sciences Research Facility, Reef and Rainforest Research Centre Limited, Cairns.
- Sutton, SG, Dew, K and Higgs, J (2009). Why do people drop out of recreational fishing? A study of lapsed fishers from Queensland, Australia. *Fisheries*. 34(9): 443-452
- Synergies Economic Consulting Pty Ltd (2012). *Measuring the contribution of the Outdoor Recreation Sector in Queensland*. A report prepared for the Queensland Outdoor Recreation Federation.
- Taylor, S, Webley, J and McInnes, K (2012). *2010 Statewide Recreational Fishing Survey*. State of Queensland, Department of Agriculture, Fisheries and Forestry, Brisbane.
- Tobin, RC, Beggs, K, Sutton, SG and Penny, A (2010). *Baseline Socio-Economic Data for Queensland East-Coast Inshore and Rocky Reef Fishery Stakeholders. Part C: Recreational Fishers*. Technical Report No. 7. FRDC Project No. 2007/048, Fishing and Fisheries Research Centre, Townsville, Australia.
- X-rates (2014). *Exchange Rate Average*. URL: <http://www.x-rates.com/average/?from=AUD&to=USD&amount=1.00&year=2014>

Appendix: SELTMP Resident survey, 2013

Resident Survey

Researcher use: _____ Date: _____
Location: _____

1. What are the first words that come to mind when you think of the Great Barrier Reef?

Please list as many words as you like:

Section A. In this section, we would like to know how you use the Great Barrier Reef. *When we refer to "the Great Barrier Reef", this includes all land and water from the beaches on the coast, the bays and creeks, the islands, the shoals and seafloor, the open waters, and of course the coral reefs.*

2. Have you ever visited the Great Barrier Reef? (Please tick one box): ☐ Yes ☐ No – if no, please go to Q.5.

3. In the previous 12 months, how many days did you visit the Great Barrier Reef for recreation?

(Please tick one box):

- | | |
|--|---|
| ☐ 0 days <i>(if 0, please go to Q.6)</i> | ☐ 1-2 days <i>(once or twice a year)</i> |
| ☐ 3-6 days <i>(every few months)</i> | ☐ 7-12 days <i>(approximately monthly)</i> |
| ☐ 13-24 days <i>(approximately fortnightly)</i> | ☐ 25-52 days <i>(approximately weekly)</i> |
| ☐ 53-100 days <i>(several times a week)</i> | ☐ more than 100 days <i>(almost daily)</i> |

4. On how many of those days did you pay to go on an organised tour to the GBR? _____ (days)

5. a) Do you own a jet ski/personal jet water craft? ☐ No ☐ Yes

If yes, how often did you use it in the last 12 months? (Please tick ONE)

- | | | | |
|---------------------------------------|---|---|--------------------------------------|
| ☐ Almost daily | ☐ Several times a week | ☐ Weekly | ☐ Fortnightly |
| ☐ Monthly | ☐ Every few months | ☐ Once or twice a year | ☐ Not at all |

b) Do you own a registered motor boat? ☐ No ☐ Yes

If yes, how often did you use it in the last 12 months? (Please circle ONE)

- | | | | |
|---------------------------------------|---|---|--------------------------------------|
| ☐ Almost daily | ☐ Several times a week | ☐ Weekly | ☐ Fortnightly |
| ☐ Monthly | ☐ Every few months | ☐ Once or twice a year | ☐ Not at all |

If yes, how long is this vessel? (in metres): _____

c) Do you own a sailing boat? ☐ No ☐ Yes

If yes, how often did you use it in the last 12 months? (Please tick one box)

- | | | | |
|---------------------------------------|---|---|--------------------------------------|
| ☐ Almost daily | ☐ Several times a week | ☐ Weekly | ☐ Fortnightly |
| ☐ Monthly | ☐ Every few months | ☐ Once or twice a year | ☐ Not at all |

If yes, how long is this vessel? (in metres): _____

Thinking about your most recent trip to the Great Barrier Reef (*remembering that it includes the beach, islands and inshore areas as well as the reef itself...*) ...

7. ... on this trip:

- a) Where did you visit? (Please mark on the map above (label with "recent"), and tell us the name of this place): _____
- b) What were your main activities that you did during this visit?

- c) Was this trip to a mainland beach? ☐ **Yes** (*please go to 7d*) ☐ **No** (*please go to 7f*)
- d) Have you been on any trips BEYOND the beach in the past 12 months? (E.g. to an island and/or coral reef) ☐ **Yes** (*please go to 7e*) ☐ **No** (*please go to Q8*)
- e) Where was your most recent trip beyond the beach? (Please mark on the map above (label with "recent"), and tell us the name of this place):

- f) How did you get there (*e.g. ferry, commercial tour, own boat*)? _____
- g) Where was your point of departure (*i.e. which township/city on the mainland*)?

- h) What were your main activities on this particular visit?

8. How long was this trip to the Great Barrier Reef?

- ☐ ½ day or less ☐ Full day ☐ Overnight ☐ 2 to 3 nights ☐ 4 nights or more

9. How many other people went with you in your group? (*Please tick one box*)

- ☐ 0 (travelled alone) ☐ 1 other person ☐ 2 to 5 others ☐ 6 to 10 ☐ more than 10

10. How satisfied were you overall with your experience? (*Please circle one number*)

Extremely
Dissatisfied 1 - - - - 2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7 - - - - 8 - - - - 9 - - - - 10 Extremely
Satisfied

11. What had the greatest influence on your satisfaction / dissatisfaction?

Section B. In the following section we would like to know a bit more about your relationship with the Great Barrier Reef region.

Please read through the following statements, and then rate your level of agreement or disagreement with each statement, by circling a number on the 10-point scale below.

(where 1 = Very Strongly Disagree, and 10 = Very Strongly Agree)

Statement: (GBR = Great Barrier Reef)	Very Strongly DISAGREE	Very Strongly AGREE
	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
12. There are many other places that are better than the GBR for the recreation activities I enjoy.....	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
13. I feel proud that the GBR is a World Heritage Area ..	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
14. The GBR is part of my identity	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
15. I live here because of the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
16. I do <u>not</u> plan to be a resident of this region in the next five years	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
17. I am <u>not</u> likely to remain living in this region if events such as cyclones and floods occur more frequently	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
18. I value the GBR because it supports a variety of life, such as fish and corals	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
19. I value the GBR because it supports a desirable and active way of life	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
20. I value the GBR because we can learn about the environment through scientific discoveries	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
21. I value the GBR because it attracts people from all over the world	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
22. The GBR is a great asset for the economy of this region	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
23. I value the GBR for the fresh seafood it provides	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
24. The GBR contributes to my quality of life and well-being	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
25. The aesthetic beauty of the GBR is outstanding	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
26. The place that I most recently visited in the GBR is <u>not</u> in great condition	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
27. I feel optimistic about the future of the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10

28. What do you think are the three (3) most serious threats to the Great Barrier Reef?

i. _____

ii. _____

iii. _____

Again, please read through the following statements, and then rate your level of agreement or disagreement with each statement, by circling a number on the 10-point scale below.

(where 1 = Very Strongly Disagree, and 10 = Very Strongly Agree)

Statement: (GBR = Great Barrier Reef)	Very Strongly <u>DISAGREE</u>	Very Strongly <u>AGREE</u>
	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
		
29. I feel confident that the GBR is well managed	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
30. I support the current rules and regulations that affect access and use of the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
31. I do <u>not</u> have fair access to the GBR compared to other user groups	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
32. I would like to do more to help protect the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
33. I would <u>not</u> be personally affected if the health of the GBR declined	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
34. I would like to learn more about the condition of the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
35. I <u>cannot</u> make a personal difference in improving the health of the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
36. I try to encourage other people to reduce their impacts on the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
37. It is <u>not</u> my responsibility to protect the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
38. Coastal residents should take steps to reduce their impacts on the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
39. It is the responsibility of all Australians to protect the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
40. I have the necessary knowledge and skills to reduce any impact that I might have on the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
41. I do not have the time and opportunity required to reduce any impact that I might have on the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10
42. It is too expensive for me to reduce any impact I might have on the GBR	1 --- 2 --- 3 --- 4 --- 5	6 --- 7 --- 8 --- 9 --- 10

43. a) In what year were you born? 19_____

b) In what country were you born? _____

c) What is your home postcode? _____

d) For how many years have you lived in the Great Barrier Reef region?
(i.e. all coastal areas between Cape York and Bundaberg)_____ (years)

e) Do you identify as an Indigenous Australian? ☐ No ☐ Yes

or a Torres Strait islander? ☐ No ☐ Yes

f) Are you a "Fly-In-Fly-Out" worker? ☐ No ☐ Yes

44. a) To what extent does the Great Barrier Reef contribute to your household income? (Please tick one)

☐ Not at all ☐ Contributes a little ☐ Contributes a lot ☐ Contributes to all of my income

b) From what industry do you obtain your main household income?

45. Could you please indicate (*approximately*) the total pre-tax income for your household?

(Please tick one box)

☐ \$1 to \$20,000

☐ \$60,001 to \$100,000

☐ \$200,001 to \$300,000

☐ \$20,001 to \$60,000

☐ \$100,001 to \$200,000

☐ more than \$300,000

46. What is your gender? (please tick one): ☐ Female ☐ Male

47. How often do you do the following? (Please tick one box for each item)

f) Recycle: ☐ Never ☐ Sometimes ☐ Often ☐ Always

g) Bring your own bags to the supermarket ☐ Never ☐ Sometimes ☐ Often ☐ Always

h) Engage in environmental community programs ... ☐ Never ☐ Sometimes ☐ Often ☐ Always

48. a) Do you have solar power in your home? ☐ No ☐ Yes ☐ N/A (e.g. don't own home)

b) Do you own a hybrid / electric vehicle? ☐ No ☐ Yes ☐ N/A (e.g. don't own car)

49. Which of the following statements best describes your beliefs about climate change?

(Please tick one box)

a. ☐ Climate change is an **immediate** threat requiring action.

b. ☐ Climate change is a **serious threat**, but the impacts are too distant for immediate concern.

c. ☐ I **need more evidence** to be convinced of the problem

d. ☐ I believe that climate change is **not a threat** at all

e. ☐ I **do not have a view** on climate change

50. On a scale of 1-10, how much do you trust the information you receive about the GBR from the following groups?	Do not trust at all	Trust Very strongly
a. Friends, and family, and/or work colleagues.....	1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10	
b. Government managers (e.g. GBRMPA, Fisheries Qld)	1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10	
c. Research institutions (e.g. CSIRO, Universities)	1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10	
d. Industry Groups/representatives (e.g. from tourism, fisheries)	1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10	
e. Non-Government Organisations/other community groups (e.g. NRM regional bodies)	1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10	
f. Media (i.e. radio, newspapers, TV)	1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10	
g. Social media (e.g. Facebook, Twitter)	1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10	

THANK YOU FOR YOUR HELP WITH THIS RESEARCH!

Any feedback welcome - please see survey staff

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