A socio-economic study of recreational surfing
on the Gold Coast, Queensland

Report prepared as part of the Gold Coast City Council
Shoreline Management Plan

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In partnership with
Synopsis: The study estimates gross expenditure on recreational surfing within Gold Coast City Council boundaries as well as Duranbah Beach, which is in Tweed Shire Council. The study reports on a 2-year investigation in partnership with the Australian National University on the value of recreational surfing to the Gold Coast. This study reports on part 1 of Gold Coast City Council Minute No CD05.0808.006.

Keywords: Surfing, recreational surfing, market expenditure, surfing activity, surfbreaks, artificial reefs, coastal management.

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1 EXECUTIVE SUMMARY

- The study estimates gross expenditure on recreational surfing within Gold Coast City Council boundaries as well as Duranbah Beach, which is in Tweed Shire Council. The study reports on part 1 of Gold Coast City Council Minute No CD05.0808.006 – ‘That the Chief Executive officer report to Council on the recreational value of the multiple point surfing breaks on the southern Gold Coast’.

- The study combines research undertaken in partnership with the Australian National University and is based on the results of a study over a 2-year period to May 2008, which used a combination of online and face-to-face survey instruments to collect data. A total of 471 surfers were interviewed as part of this study. The study also relies on the use of available secondary data where primary data sources were not available.

- Three techniques were used to estimate the number of recreational surfers on the Gold Coast. A conservative estimate of the number of recreational surfers on the Gold Coast is 65,000, made up of 41,000 resident surfers and 24,000 visiting surfers. The upper estimate is approximately 120,000 surfers.

- It is estimated that there are between 6 - 15 million person visits or individual surf sessions per year on the Gold Coast.

- The total reported annual expenditure by recreational surfers on the Gold Coast was estimated to range from $256 - $474 million. A more conservative approach filtered the data in order to account for expenditure that was likely to take place outside of the Gold Coast. Using this method the total reported annual expenditure by recreational surfers on the Gold Coast was estimated to range from $126 – $233 million. These figures treat visitation and expenditure by local residents and visitors (day, short-stay, long-stay and semi-permanent) in the same manner, do not account for the value of surf schools, airline travel to the Gold Coast, accommodation taken up by visitors who surf or surf industry related values such as rent and the wages of those involved in the surf industry. Each of
these factors may substantially increase the total worth of surfing to the region.

- Expenditure per session for recreational surfing is estimated to range from $18.67 - $30.36, with a mid-point of approximately $24.50. This relatively low range smooths out significant differences in expenditure between surfers, especially between locals and visitors. When compared with similar studies, the estimations presented here appear to be at the lower end of reported market expenditure for the cost of a surf session. This is further emphasised when one considers that this study also includes the cost of equipment, which is generally not accounted for in other studies.

- The figures quoted in this report do not consider indirect and non-use values such as the social and community benefits or costs associated with surfing such as fitness, joy, mentoring, sharing, community spirit or the risk of injury or multipliers, which may substantially add to these amounts. Further investigation into these values is recommended.

- On a managed coastline like the Gold Coast, coastal planning and management programs such as dredging, sand pumping and beach nourishment must consider their impact on surf quality and how these programs might be better able to concurrently provide coastal protection services as well as maintain or improve surf quality. A key element in this regard is the need to determine a standard for measuring surf quality at surfbreaks that have been and continue to be affected by coastal protection programs. Where coastal security can be maintained, progress towards improving surf quality should be made.

- Based on the high expenditure and increasing participation in recreational surfing, it is worth considering the value to the City of constructing a number of purpose built offshore artificial surfing reefs as stand alone structures or / and continuing to incorporate surfing elements into the design of multipurpose offshore submerged coastal protection structures, as was done at Narrowneck.

- It is recommended that further investigation into the total economic value and importance of surfing and the surf industry to the region be undertaken.
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Cover photograph: Burleigh Heads, by Sean Scott
2 BACKGROUND TO THIS REPORT

This study responds to the first part of the following GCCC request:

Ex Council Minute No CD05.0808.006:
1) That the Chief Executive officer report to Council on the recreational value of the multiple point surfing breaks on the southern Gold Coast.
2) That the report identify options to improve the surfing banks and crowd conditions at the southern points by changing the effects of the Tweed Bypass sand pumping. This could include, but not be limited to, techniques such as repumping sand north from Kirra and dredging Coolangatta bay to allow the northward flow of sand during big swell conditions.
3) That during the investigations, Council officers consult with organisations such as Surfing Queensland, Surfing Australia, the Association of Surfing Professionals and local board riding clubs for their input.

Items 2 and 3 of the request were progressed through another project titled ‘Kirra Wave Study' that investigated options to improve surf quality on the southern Gold Coast (Lazarow & Castelle, 2007). The results of both of these projects have also been incorporated into the Gold Coast Shoreline Management Plan.

Gold Coast Shoreline Management Plan (GCSMP), which commenced in 2005, is a 3-year review of the social, environmental and economic processes that impact on the way we manage our sandy beaches.

The GCSMP focuses on the management of the sandy beach environments from Pt Danger to Jumpinpin, concentrating on the littoral zone, defined as the area from the rear dune fence or boulder wall alignment to the offshore zone where sand deposits for beach nourishment may be. This takes in the active zone of littoral transport but also those areas outside the active zone that may act as sediment sources. The key focus is on the sandy beach environment.
The purpose of the GCSMP is to:

• Ensure that beaches continue to contribute to coastal lifestyles and our tourism economy into the future;

• Set guidelines for the sustainable management of our sandy beach environment; and

• Develop coastal protection measures to deal with current erosion issues and forecasted effects as a result of both natural trends and climate change predictions.

Understanding the value of the beach to the community is vital to helping decision-makers build a complete picture of the importance of the Gold Coast’s beaches and how best to manage them. This report provides some important baseline knowledge in this regard.
3 INTRODUCTION

Coastal areas contain some of the world's most diverse and productive resources, including intensive areas of complex and specialised ecosystems such as mangroves, coral reefs and seagrasses, which are highly sensitive to human intervention (Underwood & Chapman, 1995). People all over the world have concentrated on the coastal margins of continents for a variety of reasons, some of which have changed over time:

- The seas provided a source of food;
- Rainfall is generally greater and more reliable on the coast than inland;
- Coastal lands are usually suitable for a wide range of uses;
- The coastal climate is milder than the extremes found in the interior of the continent;
- Transport was initially easier by sea than across land or in the skies;
- The demand for coastal real estate and ocean views has grown significantly in recent years;
- Changes to our lifestyles have given many people greater flexibility as to where they live and work; and
- Increased leisure time, resulting from greater affluence has changed working conditions and holidays by the sea have become attainable (Government of New South Wales, 1989; Harvey & Caton, 2003; OECD, 1991).

A lifestyle by the coast represents something more than the prospect of food, clothing and shelter – it has become synonymous with the modern dream in so many nations. Indeed, Dutton (1985, p. 13) writes, that

“the tradition of Australians at the beach, in its many ways, is of profound importance to the national character.”

Beaches are important to the Gold Coast for many reasons:

- The provide an important coastal protection buffer between the land, which is highly urbanised, and the high energy ocean;
- Gold Coast beaches, which are all publicly owned and accessible, provide an important focus for recreation for the city’s 500,000 residents;
- The beaches form the basis of the region’s tourism industry, which is of significant economic importance to the city; and
- Beaches and the nearshore zone provide valuable environmental habitat.
3.1 The study area

The Gold Coast is a coastal city of approximately 500,000 people, 75 kilometres southeast of Brisbane, which is the state capital of Queensland. The beaches of the Gold Coast have achieved iconic status both in Australia and internationally and the Gold Coast has been a popular domestic and international visitor destination for many years. A recent study estimated that Gold Coast residents made approximately 40 million visits to the beach and foreshore in 2007 and visitors made an additional 7 million trips in the same period (Raybould & Lazarow, 2008). This study focuses on the importance of the Gold Coast beaches for recreation, in particular for surfing.

In the 5-years to 2006, the GCCC population grew by approximately 3.3% per annum and is predicted to grow at an average of 2.4% per annum through to 2026, which is higher than the state average of 1.5% (Australian Bureau of Statistics, 2008). The Gold Coast is situated on the border of New South Wales and Queensland. Tweed Heads, a town of approximately 20,000 people borders the Gold Coast (Australian Bureau of Statistics, 2007). The Tweed Shire local government area is home to approximately 60,000 people (Australian Bureau of Statistics, 2007). Many Tweed Shire residents live only a short walk or drive from the surfbreaks of the southern Gold Coast.

The area under consideration in this investigation includes the surf beaches within the GCCC local government area as well as Duranbah Beach immediately to the south, which is within the Tweed Shire Council local government area (see Figure 1) – hereafter referred to as the Gold Coast. Surfing activity also takes place outside of the study area and a number of strategies were implemented in order to separate effort and expenditure in these locations from those in the study area. This is discussed in more detail further on in the report.
Figure 1: Gold Coast surfbreaks (Source: Google Earth)
3.1.1 Defining surfers

For the purposes of this analysis all respondents to the survey are treated as Gold Coast surfers whether they are permanent residents or short or long-stay visitors. There is strong anecdotal evidence to suggest that many visiting surfers take up temporary residence on the Gold Coast, seek and often find employment and even engage in further education.

A surfer is defined as an individual who rides the power of a wave using the forces of nature in a non-motorised craft. This broader definition includes: bodysurfers; all types of windsurfing such as kiteboarders and windsurfers; tow-in surfers (once up to speed the surfer is propelled by the force of the wave); seated craft riders such as surfskis and waveskis; prone boardriders such as boogeyboarders; and stand-up boardriders such as longboarders, shortboarders and stand-up paddle boarders. Based on the author’s personal experience and the field experience of researchers during this study, the reader should assume that for the purposes of this study, most surfers are stand-up boardriders. The terms ‘surfer’ and ‘boardrider’ are used interchangeably throughout this report.

3.2 Placing a value on the environment, the beach and surfing

Only in recent years we turned our attention to understanding the full value of coastal and marine resources. Costanza et al. (1997) in their assessment of the total economic value of the globe’s marine and terrestrial ecosystems stated that environmental goods and services have both market and non-market values.

Some uses are viewed in market terms, even though the market may only partially capture their total economic value. Similarly, some goods and services do not have a market value or have a value to society that cannot be adequately expressed in market terms. Some of these are crucial to the maintenance of a healthy society and its economy. For example, even where an individual does not surf, they may see the benefits to others and to future generations and society from doing so. These values may be termed non-use values and include option, bequest, existence and vicarious values. As can be seen in Figure 2, much of the value of surfing may be expressed outside of the market. Generally speaking, our knowledge of the non-use values of
beaches is poorly understood and considerably lacking in Australia (Blackwell, 2007) and is seldom used in the decision-making process.

Pendleton and Rooke (2006) write that market impacts are usually assessed by examining how much money people contribute to the economy through spending related to access, equipment and goods and services in a particular area. Commonly, the focus of market based studies is on gross expenditures. This study investigated market expenditures only and does not consider indirect and non-use values such as the social and community benefits or costs associated with surfing such as fitness, joy, mentoring, sharing, community spirit, the risk of injury or multipliers, which may add substantial value to surfing.

Figure 2: Total Economic Value of a surfbreak (Lazarow et al., 2007)
3.3 Origin and growth of surfing

Surfing has its origins in a number of Pacific cultures including Hawaii, Polynesia and Peru and recorded surfing events date back many hundreds of years (Young et al., 1994). Kampion (1997) writes that the history of modern surfing, however, can be traced to Hawaii at the start of the 1900’s where after being almost wiped out due to the strict rules of the Protestant missionaries, surfing found a renaissance thanks mainly due to it capturing the enthusiasm of a number of Haole (white people or foreigners). Kampion (1997) and Young et al. (1994) report that surfing was introduced to mainland USA (Redondo Beach, California) in 1907 and to Australia (Freshwater Beach, New South Wales) in 1915.

The period after World-War-Two and through to the early 1960’s saw an evolution in surfing. The development of lighter materials for board design, including the use of hollow boards, foam and fibreglass in the construction process as well as the refinement and affordability of both boards and wetsuits made surfing accessible to more people. At the same time, roads were being improved, freeways built and cars became cheaper, making travel to surf destinations both more affordable and easier. From the early 1960’s onwards, surfing was also popularised through Hollywood movies such as Gidget and the music of Dick Dale and others. The ‘fad’ of surfing had now become mainstream and ever since then crowds of people have flocked to the beach to watch and take part in surfing.

There are a number of studies that describe participation in and the importance of surf tourism in the Indo-Pacific and Central American regions (Buckley, 2002a, 2002b; Dolnicar & Fluker, 2003; Madrigal Calvo, 2006; Ponting et al., 2005), however, there has been very little academic investigation globally into the socio-economic value of surfing at major surf destinations based on the number of surfers. A possible reason for this is because surfing is typically viewed as a recreational pastime, one traditionally thought of outside of serious academic consideration. Nevertheless, there are many millions of surfers in mainland USA, Australia and Europe whose activities and lifestyles contribute significantly to the socio-economic well-being of the communities they live in and visit.
Over the past decade, a number of attempts have been made to estimate the total number of surfers globally. Estimates range from around 10 million (Buckley, 2002a) to 17 million (Atkins, 1997). Buckley indicates that participation is likely to be increasing at 12 - 16% per annum, which suggests that the global surfing population in 2008 is somewhere between 18 and 50 million people. In the USA it is estimated that over three-and-a-half million people participate in surfing each year (Leeeworthy et al., 2005).

3.4 The global value of the surf industry

As a standalone activity, Buckley (2002a) suggests that there are three techniques that could be used to ascertain the value of the surfing: the value of the surfwear industry; manufacture of equipment; and surf travel. While these categories are vital to understanding the value of surfing, for the purposes of coastal planning and management, it is necessary to capture a broader set of values – and this can be done using the Total Economic Value (TEV) framework, as described in Figure 2, which includes many non-market values such as ecosystem services (processes by which the environment produces resources that we rely on for human health such as clean air and water), existence value (e.g. getting a glow from knowing that a place simply exists), and bequest value.

As well as the established markets in the USA, Europe and Australia, there is strong anecdotal evidence to suggest that surfing is making headway into emerging or growing markets in Asia and also South America through the growth of surfwear and equipment sales. While there is no global dataset that provides an indication of the value of the surf industry, an estimate of the publicly available data on retail expenditure indicates that this component of the surf industry alone is valued at close to $US15.5 billion (Lazarow et al., 2008).
3.5 Overview of recreational surfing on the Gold Coast

Recreational surfing has been practised on the Gold Coast for over 50 years. Almost all Gold Coast beaches have been altered in some way through engineering and coastal protection works. This has impacted surf quality – both positively and negatively.

Recreational surfing is practised along the entire length of the Gold Coast and the Gold Coast is home to a number of world renowned surf breaks including Snapper Rocks, Kirra, Currumbin Alley, Burleigh Heads and South Stradbroke Island. A number of past and current world surfing champions including Wayne ‘Rabbit’ Bartholomew, Mark Occhilupo, Stephanie Gilmore and Mick Fanning choose to live on the Gold Coast and Billabong, publicly listed on the Australian Stock Exchange and the second largest surfing company in the world, is based at Burleigh Heads. There are also many medium and smaller scale surf industry operators who choose to call the Gold Coast home.

As well as an important region for professional surfers, the Gold Coast has 17 registered boardriding clubs that run regular surfing competitions at many of the City’s surf breaks. The Gold Coast continues to be a popular holiday destination for recreational surfers and many surfers choose to live in the city because of the lifestyle, ease of access to the beach and good surf that is on offer here.

Prior to the commencement of this study, there was little information about the value of and participation in recreational surfing on the Gold Coast. A 1992 report by the Australian Surfing Association identified that the expenditure of surf related air travel into Coolangatta was approximately $46 million per annum (Atkins, 1992). More recently, Gold Coast City Council (2002) reported that over 1,500 boardriders per day were using the Gold Coast’s most popular beaches, the majority of whom were concentrated on the southern end of the coast (over 700 boardriders per day at Rainbow Bay and Greenmount).
3.6 Project methodology

A survey was designed and piloted and data collection was undertaken using a mixed-mode survey strategy between February 2006 and May 2008. Mixed mode survey strategies, where combinations of techniques are used to collect information, has proven an effective strategy for collecting data from a diverse user group over time and across different locations (Dillman, 2007). The techniques used were face-to-face surveys and an internet based survey instrument. An initial survey was piloted in February 2006.

Surveys were undertaken at the following locations: Duranbah, Coolangatta Bay (Snapper Rocks – Kirra), Currumbin Alley, Palm Beach (Laceys Lane, 19th Ave, 24th Ave and Tallebudgera), Burleigh Heads, Miami - Broadbeach, Narrowneck and South Stradbroke Island (for the latter surfbreak, surveys were undertaken at the Seaway carpark). A total of 471 surveys were collected, of which 225 were face-to-face and 246 were internet based surveys. Table 1 provides summaries of the survey locations and the number of surveys collected at each location.

Initially the scope of the project was to focus only on the existing pointbreaks (Snapper Rocks, Greenmount, Currumbin, Burleigh Heads and South Stradbroke Island) and the web-based instruments reflect this, however, the face-to-face survey instruments attempted to pick up surfing effort at other locations across the whole of the Gold Coast.

Duranbah, although not within Gold Coast City boundaries, is an important part of the local surfing scene. In order to fully understand patterns of use and expenditure, it was important to include Duranbah in this analysis. Surfing activity also takes place in locations to the north (e.g. North Stradbroke Island, Sunshine Coast) and south of the study area (e.g. Tweed Shire, Byron Shire, Ballina Shire). Surfing activity in these areas was documented as part of this investigation, however, it is only discussed where the author believes it will assist with points of clarification in this report.
3.6.1 Web-based survey instrument

The web-based survey instrument was run on the www.goodfortheplanet.com website. This website was funded and run as part of a PhD research program at the Australian National University. The site was advertised via electronic media release, emails, through other websites (e.g. www.coastalwatch.com), word of mouth, through existing networks and through the distribution of advertising flyers at major events such as the Quiksilver Pro surfing competition. Data was collected between January 2007 and March 2008. The web-based instrument ran specific surveys for Duranbah, Coolangatta Bay, Currumbin, Palm Beach, Burleigh Heads and South Stradbroke Island. As well as questions that were common across each of the surveys, the site specific surveys also contained a set of coastal planning and management questions directly related to that location. These latter questions were not analysed as part of this report and will be presented at a later date.

Note:
- The process of ‘self-selection’, whereby individuals are made aware of and then choose to fill in an online survey may generate a result that is biased towards those individuals who participate in surfing more frequently. With approximately 50% of all surveys collected using the online survey instrument, there is a risk that these results may not present a balanced view of surfing activity on the Gold Coast (see comments in Section 3.7.1).

3.6.2 Face-to-face survey instrument

Face-to-face surveys were conducted between February 2006 and May 2008, with the majority of surveys being completed in the January - March 2008 period. Data collection for the face-to-face surveys was undertaken by a number of trained research assistants at pre-determined locations in order to achieve good coverage across Gold Coast beaches. A copy of the face-to-face survey instrument is provided in Appendix 1.
Table 1: Survey locations and frequency of data collection (south to north)

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duranbah</td>
<td>81</td>
</tr>
<tr>
<td>Coolangatta Bay (Snapper Rocks, Marley, Rainbow Bay, Greenmount,</td>
<td>78</td>
</tr>
<tr>
<td>Coolangatta, Kirra)</td>
<td></td>
</tr>
<tr>
<td>Currumbin (Currumbin Alley and Currumbin Beach)</td>
<td>55</td>
</tr>
<tr>
<td>Palm Beach (Laceys Lane - Tallebudgera)</td>
<td>29</td>
</tr>
<tr>
<td>Burleigh Heads</td>
<td>91</td>
</tr>
<tr>
<td>Miami – Nobby - Mermaid</td>
<td>29</td>
</tr>
<tr>
<td>Narrowneck</td>
<td>9</td>
</tr>
<tr>
<td>Spit</td>
<td>5</td>
</tr>
<tr>
<td>South Stradbroke Island</td>
<td>94</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>471</strong></td>
</tr>
</tbody>
</table>

### 3.6.3 Peer Review Group

As no previous work in this area had been undertaken on the Gold Coast, a strategy to review the project findings was developed in order to ensure the greatest level of confidence in the results. Drafts of the report were distributed to a number of academic researchers for comment. At the local level, a peer review process was created by presenting the draft findings to a select group of people, each of whom has some specific knowledge of surfing, the surfing industry and coastal planning and management on the Gold Coast. Where Peer Review Group comments differ from or add to the report, they have been included in this document.
3.7 A snapshot of recreational surfers on the Gold Coast

3.7.1 Demographic information

- Approximately 90% of surfers interviewed were male (Figure 3). The survey results suggest that Gold Coast surfers continue to surf as they get older, with 31% of respondents aged 18 - 30, 21% aged 31 - 40 and 20% aged 41 - 50 years (Figure 4). A Chi-square goodness of fit test to compare the survey sample with the general population indicated that there were significant differences between the sample population and the general population of the region. When compared with Gold Coast population estimates, the under 18 age group is significantly under-represented in the survey data (Australian Bureau of Statistics, 2006). Ethics Committee restrictions around this project required that anyone under 18 years of age needed to be interviewed with the consent of or in the presence of a legal guardian. This is the most likely explanation for this result and any interpretation of the results needs to be aware of this shortcoming in the data collection process. The survey sample, however, does bear some resemblance to the ABS data (Commonwealth of Australia, 2007b) on participation in sports and physical recreation (for surfsports) and more investigation into this relationship is recommended.

- At any one time, there are significant numbers of non-resident surfers on the Gold Coast (37%). These may be short-term or longer-term visitors (Figure 5). The under representation of those under 18 years of age in the survey sample (most of whom are likely to be residents) may have resulted in a lower estimation of the number of resident surfers compared to visitor surfers.

- Education - 38% of survey respondents have tertiary qualifications - with 25% of respondents holding bachelor degrees and 13% having attained postgraduate qualifications (Figure 6).

- Most survey respondents stated that they were employed (78%), with 29% employed part-time, 28% self-employed and 21% employed full-time (Figure 7). The high number of self-employed and part-time employed respondents in the survey sample may suggest that many surfers have made specific lifestyle choices that allow them to surf more frequently. It might also be indicative of students who work part-time, those who are underemployed or those who work in the construction and building industry.

- Household income amongst those surveyed varied considerably, with 33% of surfer households earning under $40,000 per year, 35% of surfer households earning between $41,000 - $60,000 per year and approximately 23% of surfer households earning over $80,000 per year (Figure 8).
Figure 3: Gender of survey respondents (N=464)

Figure 4: Age of survey respondents (N=415)

Figure 5: Number of resident surfers compared to visiting surfers (N=461)
Figure 6: Level of education of survey respondents (N=414)

Figure 7: Employment status of survey respondents (N=415)

Figure 8: Annual before tax household income for survey respondents (N=395)
3.7.2 Distance and mode of travel to go surfing

In a linear city like the Gold Coast with a number of high quality surfbreaks, it is not hard to imagine that most Gold Coast surfers live close to the beach and don’t travel very far to go surfing - and this is borne out in the findings from the survey.

- 13% of surfers travelled less than 1km to go surfing and 30% of surfers travel between 1 - 5 km to go surfing (Figure 9).

- 60% of surfers travelled 10kms or less on average to go surfing (one-way) and most respondents stated that the majority of their surfing effort takes place on the Gold Coast (80%). A number of surfers, however, travel more than 60kms to go surfing on the Gold Coast. This figure is most likely indicative of people who travel from Brisbane.

- Most Gold Coast surfers choose to drive to the beach when they go surfing (82%), although a sizeable minority of surfers walk to the beach (9%) (Figure 10).

Figure 9: Distance travelled (one-way) in order to go surfing on the Gold Coast (N=350)

Figure 10: Mode of transport to go surfing (N=412)
3.7.3 Level of experience and frequency of surfing

• On the whole, Gold Coast surfers rate their skill level highly, with 43% of respondents indicating that they were advanced and 46% of respondents rating themselves as of intermediate ability (Figure 11). This level of response is expected considering almost 60% of respondents have been surfing for over 10 years (Figure 12).

• As well as their high level of experience, Gold Coast surfers continue to surf frequently with over 50% of respondents to the survey saying that they surf 2-3 times per week or more (Figure 13). This is significantly higher than the national average of approximately once every 11 days (Surfing Australia, 2006).

• Gold Coast surfers surf for an average of 2 hours each session (Figure 14).

![Figure 11: (Self-rated) skill level of survey respondents (N=457)](image1)

![Figure 12: Number of years surfing for survey respondents (N=458)](image2)

![Figure 13: Frequency of surfing for survey respondents (N=424)](image3)

![Figure 14: Hours per surf session for survey respondents (N=335)](image4)
3.7.4 Rescues and motivation for surfing

With an estimated 47 million visits per year, the beach and foreshore areas of the Gold Coast are popular with a wide range of visitors and for many different uses. These include passive activities like relaxing, sunbathing and catching up with family and friends as well as more physical activities such as swimming, jogging, cycling, walking, surfing and surf lifesaving. Gold Coast City Council provides year-round lifeguarding services at many Gold Coast beaches and the volunteer-based surf lifesaving movement provide lifesaving services at beaches through the summer period.

- Most surfers enjoy surfing on the Gold Coast for a variety of reasons. The most important reasons given for surfing were ‘for relaxation’ (66%) and ‘to be outdoors’ (66%); with ‘fitness’ (52%); ‘bonding with nature’ (47%) and ‘for sport’ (45%) also ranking highly. Respondents understood there to be a clear difference between ‘sport’ and ‘competition’, which motivated approximately 10% of surfers (Figure 15).

- Over 50% of Gold Coast surfers who were interviewed have performed at least one rescue while surfing, with many respondents having performed multiple rescues over the years (Figure 16). This suggests surfers perform a valuable community service for both bathers and other surfers who might get into trouble whilst using the ocean outside of lifeguard and lifesaver hours or in the few locations where rescue services do not operate on the Gold Coast.

![Multiple answers were allowed so total percentage is greater than 100](image)

*Figure 15: Motivation for surfing for survey respondents (N=377)*
Environmental and social considerations affecting surfing activity

Respondents were asked to rank a number of issues in order of priority to see whether they would still go surfing under certain conditions. Three biophysical and three socio-cultural questions were asked. In response to the biophysical questions:

- When faced with the risk of contracting a skin rash, 35% of respondents indicated that they would still definitely go surfing and 20% of respondents indicated that after some hesitation they would still probably go. On the other hand, 21% of respondents indicated that there was no chance they would go surfing if there was a chance they would contract a skin rash and a further 13% indicated that they might think about it for a while but would most likely decide not to go surfing (Figure 17).

- When faced with the risk of contracting an ear infection, 31% of respondents indicated that they would still definitely go surfing and 20% of respondents indicated that after some hesitation they would still probably go. On the other hand, 20% of respondents indicated that there was no chance they would go surfing if there was a chance they would contract an ear infection and a further 15% indicated that they might think about it for a while but would most likely decide not to go surfing (Figure 17).

- When faced with the risk of contracting gastroenteritis, 28% of respondents indicated that they would still definitely go surfing and 15% of respondents indicated that after some hesitation they would still probably go. On the other hand, 21% of respondents indicated that there was no chance they would go surfing if there was a chance they would contract gastro and a further 23%
indicated that they might think about it for a while but would most likely decide not to go surfing (Figure 17).

In response to the socio-cultural questions:

- Even if they needed to walk a long way to get to the surf, 38% of respondents indicated that they would still definitely go surfing and 23% of respondents indicated that after some hesitation they would still probably go. On the other hand, 17% of respondents indicated that there was no chance they were going surfing if they had to walk a long way to get to the surf and a further 12% indicated that they might think about it for a while but would most likely decide not to go surfing (Figure 18).

- When faced with the risk of their car being vandalised, 30% of respondents indicated that they would still definitely go surfing and 21% of respondents indicated that after some hesitation they would still probably go. On the other hand, 20% of respondents indicated that there was no chance they would go surfing if there was a chance their car would be vandalised and a further 18% indicated that they might think about it for a while but would most likely decide not to go surfing (Figure 18).

- If there was likely to be aggression, surf rage or very crowded conditions in the lineup, 20% of respondents indicated that they would still definitely go surfing and 22% of respondents indicated that after some hesitation they would still probably go. On the other hand, 16% of respondents indicated that there was no chance they would go surfing if there was likely to be aggression, surf rage or very crowded conditions in the lineup and a further 27% indicated that they might think about it for a while but would most likely decide not to go surfing (Figure 18).
3.7.6 Where does surfing take place on the Gold Coast?

With good wave quality in a number of locations, surfing activity is spread widely over the coast. Respondents to this question were asked to rank their top three surfbreaks. In order to provide some level of weighting to the answers, the first listed surfbreak was given a multiplier of 3 and the second listed surfbreak was given a multiplier of 2. The third listed surfbreak was counted once. For example, if a person ranked ‘Burleigh’ as their first choice, ‘The Spit’ as their second choice and ‘Currumbin’ as their third choice then Burleigh received 3-points, The Spit received 2-points and Currumbin 1-point. In this way total scores were created. Figure 19 describes the results of this process and the spread of surfing activity across the
Gold Coast. In determining this score, a number of issues needed to be considered and are worth noting:

- Many Gold Coast surfers regularly surf outside of the Gold Coast (e.g. Tweed Coast and Far North Coast of NSW). As Figure 19 demonstrates, surfing effort on the Gold Coast is only marginally lower if surfing effort on the Tweed and NSW north coast is included in the analysis, which includes surfbreaks as far south as Ballina (about as far as one might travel on a day-trip).

- Numerous respondents indicated a range of surfbreaks as their first preference e.g. Snapper to Coolangatta or beach breaks between 13th Ave and Tallebudgera Creek (Palm Beach). Where multiple surfbreaks / beaches have been indicated, the first listed surfbreak has been counted.

- The responses for Snapper through to Kirra in particular need to be treated as a group. While a small majority of respondents indicated individual surfbreaks in this area, many respondents indicated that they regularly surfed across these surfbreaks in any given surf session. It is worth noting that with Duranbah included, the results show that this section of the coast accounts for approximately 30% of total surfing effort on the Gold Coast. At peer review, however, it was suggested that this figure was likely to be on the low side with many in the Peer Review Group indicating that the number of surfers at Snapper through to Coolangatta was regularly two or three times greater than at Burleigh Heads.

- At Burleigh, a combined value is given for both the Point and the Beach. This is similar to Currumbin, where the value includes both Currumbin Alley and Currumbin Beach. Nevertheless, the Peer Review Group also strongly indicated that there was more surfing activity at Duranbah than at Burleigh Heads or Currumbin.

- Predictably, both Currumbin Alley and Burleigh Heads (the point) were also rated as being very popular surfbreaks, however, it is worth noting the high (mostly local resident) surfing effort through Palm Beach and the Miami-Nobby-Mermaid stretches of coastline. South Stradbroke Island or ‘Straddie’ is commonly regarded as one of the most consistent surfbreaks on the Gold Coast and continues to remain very popular.
Figure 19: Where do we surf on the Gold Coast? (N=424)
3.8 Participation in recreational surfing on the Gold Coast

There is very little existing information on participation in surfing in Australia. At present, the Australian Bureau of Statistics (ABS) and the Sweeney Sports Report provide annual national figures for participation.

For the purposes of this study, it was important to determine both the absolute number of surfers as well as the number of surf sessions undertaken. A surf session is a surf by an individual that has a distinct start and end point. For example a single surfer might surf in the morning and then have a second surf after work or school. On a single day, this surfer would then be classed as having had two surfing sessions. While it is a relatively straightforward process to estimate the total number of surfers on the Gold Coast on any given day, it is costly and was outside of the means of this study. In the absence of a large budget, a number of innovative strategies were employed in order to attempt to calculate the number of surfers and the number of surf sessions per year on the Gold Coast.

3.8.1 How many surfers are there in Australia?

The ABS estimated the total number of Australians who participated in surf sports for the 2005 - 2006 year to be 269,700 (Commonwealth of Australia, 2007b). Surf sports include surfing and windsurfing but not surf-lifesaving, which is accounted for separately. Based on ABS population census data from June 2006, this equates to approximately 1.7% of the national population. This is a reduction in participation from 2.1% or 290,000 in 2000 (Commonwealth of Australia, 2000a, 2000b).

Compared to other activities of an aquatic nature in Australia, the ABS reports that participation in surfing is second only to swimming; slightly higher than fishing; and greater than ice and snow sports; waterskiing and power boating; sailing; canoeing and kayaking; scuba diving; and surf lifesaving, in that order. Interestingly, the ABS (Commonwealth of Australia, 2007b) reports that 27,000 surf-lifesavers participate in organised sports, compared to 8,300 out of approximately 270,000 who are
estimated to participate in surf sports. The high number of surfers participating in a non-organised manner is important in two respects: firstly, the predominantly unorganised and unregulated nature of surfing means that surfing issues have largely remained invisible in coastal planning and management; and secondly, it casts some doubt on the ability of the ABS survey to fully capture and verify participation in surfing. This is common to other non-organised outdoor recreational activities.

The participation rates reported by the ABS are significantly lower than those produced by the Sweeney Report (Surfing Australia, 2006), an independent market research study that specialises in data collection on participation in adventure sports in Australia. The Sweeney Report found that national levels of participation in surfing have ranged from 9% to 14% since 1988, when the organisation first started collecting data. In 2005 - 2006, national participation was estimated to be 12%, down from 14% the previous year (Surfing Australia, 2006). Based on the population census in June 2006 (Commonwealth of Australia, 2007a), this would equate to approximately 2.5 million surfers in Australia.

The Sweeney Report only collects data in capital cities and participation in surfing in regional Australian areas known to have significant surfing populations such as the Gold Coast, Sunshine Coast, Newcastle, Wollongong, Torquay and the Margaret River region is likely to be significantly higher than the national average. For example, the Sweeney Report states that on a national level, the average surfer ‘hit the waves’ 33 times per year or once every 11 days, however, 88% of those surveyed claimed to surf 36 times per year or more (Surfing Australia, 2006). This survey found that Gold Coast surfers ‘hit the waves’ an average of 2 - 3 times per week, with 81% of all respondents claiming to surf weekly or more frequently (see Figure 13), which suggests that surfing activity on the Gold Coast is much higher than the reported national average. This has much to do with the pleasant climatic conditions on the coast as well as the consistency of waves.
3.8.2 Total number of surfers and frequency of surfing on the Gold Coast

Three strategies were used to estimate the number of surfers on the Gold Coast. These estimates are then compared against the number of reported surfing sessions from both the Sweeney Report and this study in order to estimate the number of surfing sessions per year on the Gold Coast. The first strategy compares the Gold Coast population with estimates from the Sweeney Report in 2005 - 2006; the second strategy is based on GCCC lifeguard data from 2002; and the third strategy reports on findings from this study.

3.8.2.1 Strategy One - Using the Sweeney Report

In 2006, the Gold Coast residential population was estimated to be approximately 460,000 (Australian Bureau of Statistics, 2006). Assuming that most surfers are aged between 11 – 70 years (there is some congruence with this figure in the survey findings), if individuals younger than 11 and older than 70 are excluded from the total then the eligible sample population is reduced to approximately 340,000. In 2005, the Sweeney Report estimated that 12% of the population surfed and this equates to approximately 41,000 resident surfers on the Gold Coast. Given the limitations of the Sweeney Report, it is likely that this is a conservative estimate.

As well as resident surfers, the Gold Coast is also known to be a popular destination for intrastate, interstate and international surf visitors. This survey reported that over one-third (37%) of respondents were visitors. In fact surfing and the Gold Coast beaches have been a central feature of Gold Coast advertisements for some years. A number of strategies were employed in order to estimate the number of visiting surfers. In particular, it was difficult to account for surfing effort from surfers who lived in Brisbane (which does not have a direct open ocean coastline) and who regularly choose to surf on the Gold Coast. Based on a similar calculation that was used to determine the number of surfers on the Gold Coast, an estimate of the number of surfers in Brisbane is approximately 144,000. If half of these surfers choose to travel to the Sunshine Coast and half to the Gold Coast, then the potential number of visiting surfers from Brisbane alone could be close to 70,000.
With a lengthy data collection timeframe and a mixed-mode survey collection strategy, a high level of confidence can be attributed to the estimations of resident compared to visitor surfers. Using the adjusted Sweeney Report figures as the baseline for the number of resident surfers and the ratio of resident to visitor surfers that was reported in this survey (Figure 5), it is possible to estimate that there may be up to 23,965 individual surf visitors on the Gold Coast per annum and a resident surfing population of around 41,000, making a total surfing population of approximately 65,000. The figure for visitors is a collective figure and includes intrastate (e.g. Brisbane surfers), interstate and overseas visitors.

Note:
- As previously discussed, the Sweeney Report only covers capital cities and may significantly under report participation in surfing in regional locations such as the Gold Coast. This point was raised by some in the Peer Review Group who cast some doubt on the validity of the Sweeney Report to adequately reflect participation in surfing on the Gold Coast.
- Further to the point above, even if the national average was applied to the Gold Coast, it is unlikely that this would account for those surfers who live in Brisbane and choose to travel to the Gold Coast to surf. A number of survey respondents who rated South Stradbroke Island (the surfbreak closest to Brisbane) as their most favourite surfbreak travel 60km or more each way to go surfing (see Figure 9).

3.8.2.2 Strategy Two – Using Council Lifeguard Services beach user data

In 2002, Gold Coast City Council lifeguards estimated that the average number of boardriders per day at beaches where lifeguards operated was 1,535 (Gold Coast City Council, 2002). The lifeguard counts are generally made in the late morning. A lifeguard’s experience and understanding of weather conditions and beach use patterns is an important factor in their estimation of use prior to the daily lifeguard services commencing (in summer this can be a few hours) and also what the likely usage will be later in the day. A number of points need to be made about the quality of the lifeguard data. Firstly, surfing conditions are often best early in the day – prior
to the lifeguard service commencing. Although many of the lifeguards are likely to be early morning surfers and therefore have a good understanding of beach use, it is possible that early morning surfing activity is under-reported. Secondly, surfing activity takes place at some locations where there are no GCCC lifeguard services. For example, Duranbah (10% of estimated surfing activity on the Gold Coast), which is outside of GCCC boundaries and South Stradbroke Island (14.5% of estimated surfing activity on the Gold Coast) are two of the most consistent and popular surfbreaks on the Gold Coast and no estimations are made by GCCC as to surfing activity at these locations.

It is therefore not possible to estimate surfing activity based on GCCC lifeguard data alone. If a number of assumptions are made, it is possible to use GCCC lifeguard data as the basis for estimating the number of surfers on the Gold Coast. This study found that an average surf session lasts for approximately 2 hours and respondents to the survey surfed 2 - 3 times per week on average. On any given day, the number of surf sessions could vary based on prevailing weather conditions. On some days there could be no surf whereas on other days there could be as many as 5 or 6 sessions. If we assume that the lifeguard figure is spread across 3 sessions per day, then the average number of surfers per session would be 512. If we then divide this figure by the average number of individual surf sessions per week (2.5), we arrive at a revised figure of 205 individual surfers per day, which equates to approximately 74,700 surfers per year. This figure excludes surfing activity at Duranbah and South Stradbroke Island.

### 3.8.2.3 Strategy Three – Using the data from this study

As part of this study, survey respondents were asked to nominate how many other surfers they saw each time they went surfing at their most popular break. Based on the same formula used in Strategy Two, the daily count for surfers on the Gold Coast using this method is approximately 2,466. This equates to a surfing population of approximately 120,000.
Note:
- When asked to indicate how many other surfers they saw in the water each time they went surfing at their favourite surfbreak, respondents’ answers varied considerably and it was not possible to verify this data. Estimates that were significantly higher than the average were discounted.

Based on these three sets of data, estimates for the total number of surfers on the Gold Coast range from 65,000 to 120,000. The estimated number of surfing sessions per year has been determined by multiplying the number of surfers by the estimated number of surf sessions per surfer each year. This has been undertaken using the results from the Sweeney Report, GCCC lifeguard data as well as the findings from this study. The results are displayed in Table 2 and report a significant range. This is to be expected based on large variances in both the estimated number of surfers and estimated number of surf sessions per surfer each year.

Table 2: Estimated number of surfers and surf sessions on the Gold Coast

<table>
<thead>
<tr>
<th>Source</th>
<th>Total number of surfers</th>
<th>Estimated number of surfing sessions per year (method 1 = 11 sessions per year)</th>
<th>Estimated number of surfing sessions per year (method 2 = 130 sessions per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimation 1 (based on Sweeney Report)</td>
<td>64,770</td>
<td>712,470*</td>
<td>8,420,100*</td>
</tr>
<tr>
<td>Estimation 2 (based on GCCC collection data)</td>
<td>74,703</td>
<td>821,733*</td>
<td>9,711,390</td>
</tr>
<tr>
<td>Estimation 2 (based on GCCM collection data)</td>
<td>120,012</td>
<td>1,320,132*</td>
<td>15,601,560+</td>
</tr>
</tbody>
</table>

* Using the Sweeney Report estimated national level of participation = 11 sessions per surfer per year.
+ Using the results from this study = approximately 130 sessions per surfer per year.

3.8.3 Summary

- With approximately 47 million individual visits to Gold Coast beaches and foreshores each year (Raybould & Lazarow, 2008), surfing is likely to be a well represented component of this total. While it may appear that just about everyone on the Gold Coast surfs, it is in fact unlikely that surfers comprise almost one-third of all beach and foreshore visits, which is what the highest estimate in Table 2 suggests.
Surfing Queensland reports that each year over 50,000 individuals participate in surfing lessons with registered surf schools on the Gold Coast. Participation through surf schools alone is likely to account for the lowest estimation of the total number of surf sessions, which suggests that the lowest estimates are also unlikely to be accurate.

Many in the Peer Review Group believed that because of the limitations of the Sweeney Report for the Gold Coast situation, the lower estimate, which is based on Sweeney Report data, is likely to under-account for participation by both local surfers and surfers from Brisbane.

In terms of including surfers who are under 18 years of age in the count of surfers, Estimation 1 was achieved using Gold Coast population data for residents from 11 years of age and Estimations 2 and 3 are based on secondary data counts, by GCCC lifeguards in the first estimate and local surfers in the second estimate. While the age spread across the surveys may be biased against those under 18 years of age, this bias is eliminated in Estimates 2 and 3, which count the total number of surfers and do not discriminate by age.

While there are inherent risks and biases associated with attempting to apportion daily averages to an activity that relies on natural processes to such a large extent, historical records for the region indicate that there are favourable wind and swell conditions for much of the year - resulting in consistently good surfing conditions on the Gold Coast. For example, the Bureau of Meteorology reports that from 1950 – 2000, winds recorded in Brisbane (the closest wind station to the Gold Coast) blew from the southwest, south or southeast over 60% of the time (Bureau of Meteorology, 2008) and the offshore wave recording station for Brisbane reports that in 2003 – 04 (the latest year for which information was available), south and southeast wave direction accounted for over 50% of all wave action. Over the same time period the majority of the south and southeast waves were measured at 1m in size or greater. The Tweed Heads Wave Buoy reports that the long term average wave period for the region is approximately 10 seconds. (Environmental Protection Agency, 2005). There is no doubt that on some days conditions are totally unsuitable for surfing, whereas on other days consistent southerly swells and offshore conditions last throughout the day resulting in many thousands of surfers finding good waves to surf on the Gold Coast.
3.9 Estimated gross expenditure of recreational surfing to the Gold Coast

The data collection strategy used for this study asked recreational surfers to estimate their total expenditure over a 12-month period on a range of items related to surfing, including: board; wetsuit; leash and accessories; accommodation; camping; travel; clothing; fuel; and food. The results provide a series of gross per capita expenditures related to surfing. The survey attempted to explore the connection between surfing effort and place of expenditure by asking respondents to separately list their expenditure on the Gold Coast as well as their overall expenditure. The response rate for the question on expenditure on the Gold Coast was quite poor. An analysis of the responses to both questions indicates that most respondents chose to fill in the section of the question on overall expenditure but not on expenditure related to the Gold Coast. Based on the available data, an alternate strategy was then developed in order to estimate Gold Coast related expenditure. When asked how much of their surfing activity takes place on the Gold Coast, the median response by survey respondents was 80%. While this figure does not necessarily represent a direct relationship between expenditure and effort, for the purposes of this report, it is being used as a proxy measure. There are a number of considerations to take into account:

- An overseas or interstate trip may take up a significant portion of a surfer’s ‘travel’ budget despite only accounting for a small percentage of total annual surfing effort. Of those who responded to the question (N=154) the median number of trips greater than 500km by land, sea or air in the 12-months prior to completing the survey was 1.

- Based on the level of surfing effort demonstrated by surfers who participated in this study most equipment use and expenditure (board, wetsuit, leash and accessories) is likely to be related to local use because this is where most effort takes place.

Two methods were used to attempt to estimate per capita annual expenditure by surfers. For both methods, expenditure on equipment is considered to be constant - $983 (Table 3). This is because for the majority of survey respondents, their significant surfing activity took place on the Gold Coast and it is assumed that there
is a positive relationship between equipment use in relation to expenditure and activity (wear and tear).

In ‘method 1’, expenditure on sundries, which includes accommodation, travel, camping, fuel and food, was calculated to be approximately $3,000, bringing the total per capita annual expenditure for a Gold Coast surfer to just under $4,000 (see Table 3).

In ‘method 2’, an attempt is made to reflect only expenses that are likely to have been incurred on the Gold Coast. Categories of expenditure that are most likely to be related to a trip of over 500km are excluded from the sundries total. In this case expenses related to accommodation, travel and camping expenses have been excluded, leaving only fuel and food expenses as sundry items. At this stage the combined value of equipment and sundry expenses is approximately $2,400. Taking into consideration that approximately 80% of surfing effort takes places on the Gold Coast, this amount has then been reduced by a further 20%. Based on ‘method 2, the average per capita annual expenditure for a surfer on the Gold Coast is estimated to be approximately $1,950 (see Table 3).

**Table 3: Estimated annual per capita expenditure by surfers on the Gold Coast**

<table>
<thead>
<tr>
<th>Method</th>
<th>Number of surveys</th>
<th>Equipment*</th>
<th>Sundries*</th>
<th>Sundries+</th>
<th>Non Gold Coast activity</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method 1 (direct and indirect)</td>
<td>363</td>
<td>$983</td>
<td>-----</td>
<td>$2,965</td>
<td></td>
<td>$3,948</td>
</tr>
<tr>
<td>Method 2 (direct)</td>
<td>363</td>
<td>$983</td>
<td>$1,445</td>
<td>-----</td>
<td>- 20%</td>
<td>$1,942</td>
</tr>
</tbody>
</table>

* board, wetsuit, leash & accessories
* Fuel and food only
* Accommodation, camping, travel, fuel & food

To determine the total estimated annual expenditure by recreational surfers on the Gold Coast, the number of surfers is multiplied by the expenditure per surfer each year. Two value ranges are provided based on the estimations from Table 3. Column 3 of Table 4 provides an estimate of the total annual expenditure by recreational surfers on the Gold Coast based on total reported expenditure. Estimates range from $256 – $474 million. Column 4 of Table 4 provides an estimate of the reported total
annual expenditure by recreational surfers on the Gold Coast that is likely to be related to surfing on the Gold Coast. Estimates range from $125 – $233 million.

Table 4: Estimated annual expenditure by recreational surfers on the Gold Coast

<table>
<thead>
<tr>
<th>Data source</th>
<th>Estimated number of surfers (see Table 2)</th>
<th>Total estimated annual expenditure (based on method 1 from Table 3)</th>
<th>Total estimated annual expenditure on the Gold Coast (based on method 2 from Table 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on Sweeney Report</td>
<td>64,770</td>
<td>$255,711,960</td>
<td>$125,783,340</td>
</tr>
<tr>
<td>Based on GCCC lifeguard data</td>
<td>74,703</td>
<td>$294,927,444</td>
<td>$145,073,226</td>
</tr>
<tr>
<td>Based on GCCM survey data</td>
<td>120,012</td>
<td>$473,807,376</td>
<td>$233,063,304</td>
</tr>
</tbody>
</table>

It should be noted that these estimates treat local residents and visitors (day, short-stay, long-stay and semi-permanent) in the same manner. A recent report into the economic and social values of beach recreation on the Gold Coast (Raybould & Lazarow, 2008) estimated that the average cost involved in getting to the beach for non-residents on the Gold Coast was significantly higher than that for residents. Considering that slightly more than one-third of all surfing effort on the Gold Coast is estimated to be attributable to visitors, it is likely that the lower range of figures presented in Table 4 ($126 - $233 million) are conservative estimates, however, these differences may be smoothed out when visitation over a 12-month period is considered.

3.9.1 How much is a surf session worth?

Two strategies were used to estimate expenditure on a surfing session based on gross market expenditure. The first strategy involves deducing an answer based on each surfer's annual expenditure and their frequency of surfing. The second strategy involves the use of secondary data on the cost of a surfing session and applying this range of information to what is known about surfing effort on the Gold Coast.
3.9.1.1 Strategy One – Interrogating the survey data

In the first strategy, an amount for the estimated expenditure for an individual surf session has been determined by dividing the estimated number of surf sessions per surfer per year by a surfer's annual expenditure. Based on this strategy, estimates for the value of a surfing session range from $18.67 - $30.36, with a mid-range estimate of approximately $24.50 (Table 5).

Table 5: Estimation for the expenditure on a surf session on the Gold Coast

<table>
<thead>
<tr>
<th>Data source (see Table 3)</th>
<th>Annual expenditure per surfer (see Table 3)</th>
<th>Number of sessions per year</th>
<th>Expenditure per session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method 1 (all expenses)</td>
<td>$3,948</td>
<td>130*</td>
<td>$30.36</td>
</tr>
<tr>
<td>Method 2 (localised expenses only)</td>
<td>$1,942</td>
<td>104*</td>
<td>$18.67</td>
</tr>
</tbody>
</table>

\*Total number of sessions per year
\* Estimated number of sessions on the Gold Coast (80% of 130)

3.9.1.2 Strategy Two – Using secondary data sources

A number of studies have been undertaken that attempt to place a value on an individual surf session. These are summarised in Appendix 2 and consist of both market and non-market investigations that examine expenditure, willingness to pay and consumer surplus). The results from these studies range from $23 up to $124. The large range within the findings is indicative of the fact that prior to 2007, no consistent strategy had been used to evaluate expenditure by surfers across locations. For example, some studies include depreciation on a motor vehicle and others only running costs; some studies might include the cost of labour; and other studies include expenditure on equipment. The work by Nelsen et al. (2007) in California, probably the most reliable study to date, reported that the average expenditure range for surfers at Trestles beach was $24 – $41 per session, where the expenditure included items such as food (approximately $10), shopping (approximately $10), fuel (approximately $17), but not equipment.
A recent investigation into the value of beach going by residents and visitors on the Gold Coast estimated that Gold Coast residents spent between $0.50 and $2.30 per visit accessing the beach plus a further $5.26 on items such as food, supplies and parking fees (Raybould & Lazarow, 2008). For visitors, a likely range of costs for accessing Gold Coast beaches was estimated to range from $15 - $45 and did not include expenditure related to equipment, food or accommodation, which would increase the upper bound of this range. Chapman and Hanemann (2001) argued that surfers in a southern California study spend an average of 25% more per beach visit than regular beachgoers. If the amounts reported by Raybould and Lazarow (2008) were increased by 25% to account for the extra costs associated with going surfing, then it is possible to estimate that average visitor expenditure per visit to surf on the Gold Coast is in the range $18.75 - $56.25 compared to approximately $8.30 for local residents. For local residents, if the average cost associated with a beach visit ($8.30) is multiplied by the average number of surf sessions per year on the Gold Coast (104) and the value of surfing equipment expenditure ($983) is added to this amount, the total is $1,846. This figure is comparable to the lower bound ($1,942) for average annual expenditure per surfer that was described in Table 3.

3.9.2 Summary

- Two methods were used to determine the annual per capita expenditure by recreational surfers on the Gold Coast. Total average annual expenditure was estimated to be approximately $3,948 and average per capita expenditure related only to surfing effort on the Gold Coast was estimated to be approximately $1,942 per year.
- The total reported annual expenditure value of recreational surfing to the Gold Coast was estimated to range from $256 - $474 million. A more conservative approach filtered the data in an attempt to account for expenditure that was likely to take place outside of the Gold Coast. Using this method the total reported annual expenditure on recreational surfing to the Gold Coast was estimated to range from $126 – $233 million.
- Expenditure per session for recreational surfing has been estimated to range from $18.67 - $30.36, with a mid-range of $24.50. This relatively low range smooths
out significant differences in expenditure between surfers, especially between locals and visitors.

- When compared with similar studies, the estimations presented here appear to be at the lower end of reported market expenditure for the cost of a surf session, which range from $23 - $124. This point is emphasised when one considers that this study also includes the cost of equipment, which is generally not considered in other studies.

- The figures presented in Table 3 treat local residents and visitors (day, short-stay, long-stay and semi-permanent) in the same manner and may be overly conservative, however, these differences may be smoothed out when visitation over a 12-month period is considered.

- The figures presented in Table 3 report on the per capita average expenditure and smooth out large differences in expenditure between individual surfers which varied significantly on a per capita basis. For example, other than vehicle running costs, many surfers spend only a small amount on items such as wax and sunscreen each year whereas other surfers purchase a number of boards and a new wetsuit each year.

- These figures are based on a series of reported estimates only and do not consider non-market values (see Section 3.2), which may substantially increase these values.

### 3.10 How much are each of our surfbreaks worth?

The amounts presented in Table 6 present an estimate of the value of Gold Coast surfbreaks. It is worth noting the following points:

1. The values have been determined by describing expenditure that takes place on the Gold Coast and is related to effort on the Gold Coast. The amounts could be up to 50% higher if total annual expenditure by surfers was calculated;
2. The table considers local and visitor surfers equally;
3. The values exclude expenditure related to interstate and overseas surf travel;
4. The values exclude expenditure that takes place immediately outside of the Gold Coast;
5. The estimations do not attempt to value the contribution of the Quiksilver Pro; other very popular surfing events; or the value of surf schools to the Gold Coast’s economy;
6. The values present only reported market values and do not consider non-market values such as the social value of surfing to the community, which may substantially increase the total economic value of each surfbreak; and
7. No attempt has been made to calculate the multiplier effects of surfing dollars within the local economy.

Appendix 3 provides a summary of the previous estimations for the value of surfbreaks and of surfing to particular regions. The lack of consistency of data collection methods across surveys and the poor sample sizes reported in many of the studies means that valid comparisons between all the previous bodies of work are not possible. A more detailed discussion of these comparisons can be found in the paper by Lazarow et al. (2007).

Table 6: Estimated expenditure value of recreational surfing at various Gold Coast locations per year

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage of total (see Figure 19)</th>
<th>Expenditure value (to the nearest million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duranbah</td>
<td>10</td>
<td>$13 – 23</td>
</tr>
<tr>
<td>Snapper / Rainbow Bay / Greenmount / Coolangatta / Kirra</td>
<td>20</td>
<td>$26 – 46</td>
</tr>
<tr>
<td>Bilinga / Tugun / Flat Rock</td>
<td>2</td>
<td>$2.5 – 5</td>
</tr>
<tr>
<td>Currumbin / Currumbin Alley</td>
<td>12</td>
<td>$15 – 28</td>
</tr>
<tr>
<td>Palm Beach (Lacey's Lane to Tallebudgera Creek)</td>
<td>6</td>
<td>$8 – 14</td>
</tr>
<tr>
<td>Burleigh Heads and Burleigh Beach</td>
<td>14</td>
<td>$17 – 33</td>
</tr>
<tr>
<td>Miami / Nobby / Mermaid</td>
<td>7</td>
<td>$9 – 16</td>
</tr>
<tr>
<td>Broadbeach / Surfers Paradise</td>
<td>2</td>
<td>$3 – 6</td>
</tr>
<tr>
<td>Narrowneck</td>
<td>3</td>
<td>$3.5 – 7</td>
</tr>
<tr>
<td>Main Beach / Southport</td>
<td>3</td>
<td>$3.5 – 7</td>
</tr>
<tr>
<td>Spit</td>
<td>6.5</td>
<td>$7.5 – 15</td>
</tr>
<tr>
<td>South Stradbroke Island</td>
<td>14.5</td>
<td>$18 – 33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>$126 – 233 million</strong></td>
</tr>
</tbody>
</table>
This study attempted to use a number of innovative strategies to estimate the value of recreational surfing to the Gold Coast. This section outlines a number of recommendations as a result of this report.

1. It is widely acknowledged that the Gold Coast beaches are of significant social and economic value to both residents and visitors of the Gold Coast. Recent investigations have reported that approximately 47 million visits per year are made to Gold Coast beaches (Raybould & Lazarow, 2008). While the beaches perform an invaluable coastal protection role, they also serve as our most important playground. To date, little attention has been placed on beach character and the impact that ongoing coastal protection and modification can have on the natural and social character of a beach. As a result the following recommendations are made:

   a) Recreational amenity in general and recreational surfing amenity in particular must be clearly defined and a series of management goals created and worked towards for each beach. Coastal protection and management strategies need to be developed that incorporate strategies to improve surfing amenity whilst not compromising coastal security. A number of innovative strategies could be linked in with existing coastal protection programs on the southern Gold Coast, at Currumbin, Palm Beach and at Burleigh Heads. Based on the value and importance of recreational surfing to the Gold Coast, these issues warrant further attention.

   b) The use of offshore submerged control structures (artificial reefs built primarily for coastal protection purposes) is likely to remain on the coastal management agenda for the Gold Coast into the foreseeable future and the use of these structures to create high quality surfbreaks should continue to be discussed and where possible implemented. It is also worth noting that the development of private-public partnerships for the construction of artificial surfing reefs might be worth considering, especially if this can service the City’s coastal management agenda at the same time as providing a much needed expansion in the provision of recreational
amenity. A number of locations including Bilinga and The Spit (near the Sheraton) may provide the best possible locations for surfing specific offshore artificial reefs. Further research in this area is recommended.

2. A number of ancillary investigations are proposed that would improve the quality of our knowledge of the value of both surfing and the surfing industry on the Gold Coast.
   a) Little is known of the total value of the surfing industry (retail, distribution, education, surf schools, manufacturing etc). A project could be developed in conjunction with partners such as the Cooperative Research Centre for Sustainable Tourism (Tourism CRC), GCCC, Gold Coast Tourism, industry and others as required to prepare a report on the market and non-market value of the surf industry to the Gold Coast. Areas of investigation include, but are not limited to foreign students, retail industry (manufacture, distribution, sales), surf schools, travel, accommodation, gross market expenditure and of course the value of major surfing events.
   b) An opportunity exists to develop a project in conjunction with partners such as the Tourism CRC, GCCC, GC Tourism, Gold Coast and Brisbane Airports, industry and others as required to more accurately report on the number of surf related visits to the Gold Coast and the associated expenditure of this market sector.
   c) Little is known about the value of and participation in surfing compared to other sports and recreational activities that take place on the Gold Coast. While other sports and recreational pursuits regularly receive funding to increase both participation in activities and the construction and ongoing maintenance of facilities, to date, surfing has only received funding to assist with participation.
   d) A high number of respondents surf frequently and may have made specific lifestyle choices in order to do so. The author recommends an investigation into the concept and practice of ‘serious leisure’ (Stebbins, 1979) as an influence on community, recreation and coastal management.

3. A number of surfers indicated that they had performed rescues while surfing. An offer by the surf lifesaving movement, GCCC or Surfing Queensland to provide free or subsidised first aid training for surfers would greatly improve the capacity of surfers to be more effectively involved in rescues if and when the need arose.
Acknowledgements

Thanks to Lucile Guiter, Rocio Noriega, Liz Caddick, Lars Michaelsen, Marty Talcove and Seb Tiffeau for assistance with data collection. Thanks to Dr Boyd Blackwell and Dr Beth Clouston for comments on early drafts of this report. I am also grateful to those from the community, industry and government who participated in the Peer Review Group.

5 REFERENCES


Madrigal Calvo, L. (2006). No title. In Sr Carlos Enrique Brenes (Ed.) (Letter describing surf tourist demographic and spending information). San Jose,
Costa Rica: Instituto Costarricense de Turismo, Departamento de Planeamento Turistico.


Gold Coast Recreational Surfing Survey

Information about the survey

Researchers from The Australian National University and Griffith University are currently collecting information on the socio-economic value of recreational surfing. Information collected from this survey may be used for publication purposes. Summaries of the data will be made available to the general public.

Consent Form

I........................................................................................................... agree to be interviewed regarding my opinions, thoughts and observations about the role of surfers, surfing and coastal management.

I have read and understand the following information:

i. The interviews will contribute to research about the impacts of surfing on local environments (both natural and built), and the role of individual and especially organised surfers in shaping environmental perceptions, policy and management in specific locales.

ii. Participation in the project is entirely voluntary and interviewees can withdraw at any time without any negative consequences.

iii. The names of interviewees will be suppressed unless otherwise agreed.

iv. All raw data from the interviews, including transcripts will be securely stored and accessible in either hard copy or electronic form by project staff only, as far as the law allows, and will not be shown to anyone else.

v. Individuals who indicate in any way that they wish to withdraw from participating with the research will be told they have no obligation to continue – this will terminate their participation. All notes made relating to the interviews and discussions held with the participant will be returned to them or retained by myself (stored in a locked filing cabinet) for incorporation into the project report if they so wish.

If you have any queries or concerns about the research, you can contact Neil Lazarow or the Ethics Committee on the details provided:

The Secretary, Human Research Ethics Committee
Chancery 10B The Australian National University ACT 0200
T: + 61 2 6125 7945 F: + 61 2 6125 4807 E: Human.Ethics.Office@anu.edu.au

Neil Lazarow T: + 61 (0) 416 022 742 E: neil.lazarow@anu.edu.au

........................................................................................................... ........................................
Signature Date

THANK YOU FOR YOUR ASSISTANCE
**Part I: About You**

Name and email address (optional)

Where do you live? Home postcode  
Resident of the Gold Coast / Visitor

If a visitor to the Gold Coast, was the primary purpose of your trip for surfing? Yes / No

How do you rate yourself as a surfer? Beginner / Intermediate / Advanced

How many years have you been surfing?

**Part II: Surfing Effort**

How often do you currently surf? Daily / 3-4 times per week / Weekly / 2-3 times per month / Monthly

How many hours per session on average do you surf? .................

Over the course of a year, when do you surf most regularly? Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec All Year

Approximately how many days a year do you surf?

What is your most visited surf break?

What is your second most visited surf break?

What is your third most visited surf break?

What percentage of your surfing takes place within 20kms of where you live?

What percentage of your surfing takes place on the Gold Coast?

What percentage of your surfing takes place outside of the Gold Coast?

Where do you surf most often outside of the Gold Coast?

How do you normally get to your most visited surf break?

Car (right size), Motorbike, Bus, Train, Bicycle, Walk, Other (please specify)

Distance travelled to get to your most visited surf break (one way)  

Kms & mins

When you go surfing, how many people do you normally travel to the beach with?

On average how many other board riders do you see surfing each time you surf at your most visited surf break? Don’t know / Unsure

On average how many other board riders do you see surfing at [Durbanbah / Snapper Rocks – Greenmount / Currimbin / Palm Beach / Burleigh Heads] each time you surf? Don’t know / Unsure


How many times in the previous 12 months have you travelled (by land, sea or air) more than 500kms to go surfing? N/A / Unwilling to answer

**Do you surf more or less often now than in the past?**

Percentage change (up or down) in surfing effort in past 12 months

and reason for change.

(eg 20% more because I bought a car or 50% less because the surf is too crowded)

Percentage change (up or down) in surfing effort in past 5 years

and reason for change.
Have you ever rescued someone from the surf or participated in a rescue while surfing?  
Yes / No

If yes, how many times?  

---

**Part III: Expenditure**

In the past 12 months how much have you spent on surfing?

<table>
<thead>
<tr>
<th>Item</th>
<th>Overall</th>
<th>On the Gold Coast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetsuit, booties, hood, rash-vest etc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leash, wax, deck grip etc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accommodation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel e.g., airfare (excluding fuel)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How long has your expenditure been at its current level?  

---

**Do you spend more or less on surfing now than in the past?**

Percentage change (up or down) in surfing expenditure in past 12 months  

and reason for change.  

*(eg 20% more because I bought a car or 50% less because the surf is too crowded)*

Percentage change (up or down) in surfing expenditure in past 5 years  

and reason for change.  

---

Do you participate in other activities alongside surfing eg fishing, sailing, dining out etc  
Yes / No

If yes, provide details:

---

Would you still spend the same amount of money on these activities if you weren’t surfing?  
Yes / No

How much less (in a percentage amount) do you think you would spend?  

---

If, for one reason or another, the surf quality at your most visited surfbreak decreased, how much further would you have to travel to go surfing?  

---

What is the most likely place you would surf?  

---

How long do you think it would take you to get there?  

---
### Part IV: Motivation

What is your motivation for surfing and how important is it for you?

<table>
<thead>
<tr>
<th>Motivation</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relax and unwind</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>To be outdoors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>For solitude</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>To be with family/friends</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>For sport</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Competition</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>To keep fit</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>To bond with nature</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Other (list)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Other (list)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Which of the following may stop you from going surfing?

<table>
<thead>
<tr>
<th>Reason</th>
<th>No way I'm going surfing</th>
<th>I'll think about it but probably not</th>
<th>Neutral</th>
<th>I'll probably go for a surf</th>
<th>Definitely going surfing</th>
</tr>
</thead>
<tbody>
<tr>
<td>There's a chance I'll get an ear infection</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>There's a chance my car will be vandalised</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>There's a chance I'll contract a skin rash</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>There's likely to be aggro or surf rage in the line-up</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>There's a chance I'll get gastro (stomach ache)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I have to walk a long way to get to the surf</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

### Part VI: Personal Details:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male / Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>&lt;18 18-30 31-40 41-50 51-60 &gt;61</td>
</tr>
<tr>
<td>Highest level of education</td>
<td>&lt; High School High School Some College / Post Secondary Bachelor Degree Postgraduate Studies</td>
</tr>
<tr>
<td>What is your employment situation?</td>
<td>Self-employed Part-time student Full-time student Unemployed Homemaker Part-time employee Full-time employee Retired</td>
</tr>
<tr>
<td>Before tax household income per year?</td>
<td>&lt;$20,000 $21,000 - $40,000 $41,000 - $60,000 $61,000 - $80,000 $81,000 - $100,000 $101,000 - $150,000 &gt;$150,000 Unwilling to answer</td>
</tr>
</tbody>
</table>

Thank you!
## APPENDIX 2: VALUE OF A SURF SESSION

<table>
<thead>
<tr>
<th>Year/Location</th>
<th>Item</th>
<th>Value</th>
<th>Value descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market evaluations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006, Trestles Beach</td>
<td>Online survey instrument to determine existing user spend</td>
<td>$US40.20 spent locally during each surf season</td>
<td>Expenditures to local City during surf visit, including fuel and food. Does not include gear purchased outside of visit.</td>
</tr>
<tr>
<td>2007, Ron Jon Surfpark, Florida</td>
<td>Entrance fee</td>
<td>$30-60</td>
<td>Individual surf session = $60 for a 2 hour session Annual membership = $3,000, which gives the user up to 100 sessions. Does not include equipment or travel costs.</td>
</tr>
<tr>
<td>2004, Orewa Reef, New Zealand</td>
<td>Estimated new daily expenditure by surfers on goods and services</td>
<td>$31 approx*</td>
<td>Approximate daily expenditure by extra surfers drawn to region as a result of construction of reef. Does not include equipment or accommodation costs however, it is noted that surfers in that area are unlikely to use paid accommodation.</td>
</tr>
<tr>
<td>2004 Geraldton, Australia</td>
<td>Existing daily expenditure by visiting surfers</td>
<td>$118*</td>
<td>Survey to determine existing expenditure and possible future benefit from construction of artificial reef. Includes equipment hire and accommodation costs.</td>
</tr>
<tr>
<td>2006, Costa Rica</td>
<td>Estimated daily expenditure from visiting surfers</td>
<td>$122</td>
<td>Survey of total expenditure of surf related visitors. No information on expenditure provided.</td>
</tr>
<tr>
<td><strong>Non-market evaluations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997, Los Angeles &amp; Orange Counties, California, USA</td>
<td>Contingent valuation study (Travel cost)</td>
<td>$22*</td>
<td>Non-market evaluation - estimated consumer surplus for surf visitation per person per session (does not include equipment)</td>
</tr>
<tr>
<td>2001, Pleasure Point, California, USA</td>
<td>Contingent valuation study (Travel cost)</td>
<td>$122 approx*</td>
<td>Non-market evaluation - estimated consumer surplus for surf visitation per person per session (includes equipment)</td>
</tr>
</tbody>
</table>

Sources: (Chapman & Hanemann, 2001; Gough, 1999; Nelsen & Pendleton, 2006; New Zealand Tourism Research Institute, 2004; Rafanelli, 2004; Ron Jon Surfparks, 2007; Tilley, 2001).

* Amounts have been recalculated as 2007 dollars using the U.S. Department of Labor Inflation Calculator (http://www.bls.gov/cpi/)


# APPENDIX 3: ESTIMATES OF THE VALUE OF SURFING AT SPECIFIC LOCALES

<table>
<thead>
<tr>
<th>Year/Location</th>
<th>Type of study</th>
<th>Value</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973, Oahu, Hawaii, USA</td>
<td>Market</td>
<td>$13 million</td>
<td>Estimated expenditure on surfing equipment (includes medical expenses but excludes transportation)</td>
</tr>
<tr>
<td>1984-1998, El Segundo Reef, California, USA</td>
<td>Market</td>
<td>$300,000</td>
<td>Mitigation settlement for loss of nearby surf break (funds used to construct world’s first artificial surfing reef)</td>
</tr>
<tr>
<td>1990-1999, Los Angeles &amp; Orange Counties, California, USA</td>
<td>Non-market (Travel Cost)</td>
<td>$16 million (value of all recreational activities across location)</td>
<td>Final settlement for loss of all recreation opportunities for a period of up to 34 days due to ‘American Trader’ oil spill from Alamitos Bay in Los Angeles County to Crystal Cove State Beach in Orange County</td>
</tr>
<tr>
<td>1999, Mount Maunganui, New Zealand</td>
<td>Non-market (Willingness to Pay)</td>
<td>$NZ500,000 p/a</td>
<td>An estimated 50 surfers per surfable day was expected as a result of the construction of an artificial reef.</td>
</tr>
<tr>
<td>2001, Pleasure Point, California, USA</td>
<td>Non-market (Travel Cost)</td>
<td>$6.2 million consumer surplus ($8.3 million total)</td>
<td>Travel cost study conducted at Pleasure Point as part of university course</td>
</tr>
<tr>
<td>2001, Cornwall, UK</td>
<td>Market</td>
<td>£21 million p/a</td>
<td>User survey to estimate value of surfing to Cornwall region</td>
</tr>
<tr>
<td>2004, Geraldton, Western Australia, Australia</td>
<td>Market</td>
<td>$AUD1.3 million p/a</td>
<td>Estimated value of proposed artificial surf break to town</td>
</tr>
<tr>
<td>2006, Costa Rica</td>
<td>Market</td>
<td>$400 million p/a</td>
<td>Survey of total expenditure of surf related visitors</td>
</tr>
</tbody>
</table>