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The importance of recreational fishing expenditure to the economies of two coastal towns in northern and southern New South Wales: Port Macquarie and Narooma/Bermagui



A Report to NSW Recreational Fishing Saltwater Trust

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Title: The importance of recreational fishing expenditure to the economies of two coastal towns in northern and southern New South Wales: Port Macquarie and Narooma/Bermagui

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Cover Photo: Anglers on the breakwater at Port Macquarie – photo by Alistair McIlgorm.

Executive Summary

Recreational fishing by local and visiting fishers takes place in many coastal communities in NSW. This research examines the importance of recreational fishing to the economies of two towns on the New South Wales coast.

The aims of the project stated in the project proposal were to:

- estimate the total expenditure by recreational fishers in communities on the north coast and south coast of NSW;
- increase managers' understanding of the importance of recreational fishing contribution to local economies in rural coastal NSW; and
- estimate the importance and satisfaction ratings of recreational facilities and services in these areas.

The Port Macquarie 2444 postcode area has 38,783 population. Bermagui-Narooma (1,320 and 3,412 populations) on the South coast has a postcode area population of 8,375. These towns were selected as they are at a distance from the influence of Sydney and away from either the Victorian, or Queensland borders. The towns are popular tourist and retirement areas, with approximately a quarter of residents in both areas being 65 years or over.

Methods

Data on expenditure of anglers were collected by two survey methods, one using telephone interviews with Recreational Fishing Licence (RFL) holders who purchased their licence in the two towns and the second using face-to-face interviews with anglers in the two towns. Two similar questionnaires were designed for the telephone and face to face field work surveys asking fishers to recall the past 12 months. For the telephone results the past 12 months was 2003, but as the face to face survey extended into 2004, the samples were for slightly different base periods, but are comparable.

The results of the two survey methods were used to produce an estimate of the total activity and expenditure of licence holders and other fishers. The recreational fishing licence data base records the licences purchased in each town enabling expansions of results to be made through considering those interviewed as a fraction of the total number of licence sales. The face to face survey provided estimates of licences purchased locally, licences purchased outside the towns and of the number of exempt licence holders.

Results

From the 374,880 recreational fishing licence entries held by the Fisheries Department, there were 4,482 RFL purchased in Port Macquarie and 7,027 purchased in Bermagui-Narooma.

The telephone survey achieved a total of 408 successfully completed interviews (198 in Port Macquarie and 211 in Bermagui-Narooma) from a list of RFL holders who had purchased their licences from agents in the town areas in the previous year. The telephone survey fieldwork was

conducted in December 2003, prior to the main summer vacation period and respondents were asked about trips to Port Macquarie or Bermagui-Narooma area in the previous year.

The face-to-face survey achieved a total of 500 successful interviews, 269 in Port Macquarie and 211 in Bermagui-Narooma. Field interviews took place between December 2003 and late April 2004 and were conducted by interviewers in these communities on both week days and on the weekend. Recreational fishers were approached at a range of different locations (e.g. jetties, launching ramps, shoreline etc) and thus the sample from the face to face interviews included licence holders, and those exempted from the licence (for example: youths, pensioners, indigenous and other exempt persons).

The origin of fishers interviewed in Port Macquarie was 24% local residents, 23% from Sydney, 43% from elsewhere in NSW and 9% from other states. In contrast, the origin of interviewed fishers in Bermagui-Narooma was 18% local, 9% from Sydney, 34% from elsewhere in NSW, including ACT, 36% from Victoria and 3% from other states.

When RFL holders were asked their main reasons for coming to Port Macquarie, general holiday was ranked first, visiting friends and relatives second and fishing third. However in the Bermagui-Narooma area, fishing was the highest primary reason for visiting, followed by general holiday. In both towns, second and third reasons confirmed fishing's place as a key motivation to visit these areas. Survey responses indicated that visitors who fish in Port Macquarie also visit for a variety of other reasons, whereas fishing is the prime reason given by licence holders to visit Bermagui-Narooma.

Estuary and rock fishing was most popular in Port Macquarie, whereas Bermagui-Narooma fishers prioritized ocean fishing, with estuary and fishing from the rocks, or beach, also being important. Boat ownership and use were higher in Bermagui-Narooma with the majority of Port Macquarie anglers not having boat access and choosing to fish from shore.

Days fished in the last 12 months by anglers in Port Macquarie represented 56% of the total days fished by those anglers in that year, the average days fished in Port Macquarie being between 14 and 20 days per annum. Local anglers were found to fish between 33 and 55 days per annum in Port Macquarie, whereas visitors fished an average of between 7 and 9 days per annum.

In Bermagui-Narooma average days fished in the Bermagui-Narooma represented 50% to 65% of total days per annum, with 12 to 18 days per annum being fished in Bermagui-Narooma. Local anglers were found to fish between 30 and 60 days per annum in Bermagui-Narooma, whereas visitors fished an average of between 5 and 11.6 days per annum.

In Port Macquarie 50% of field-interviewed fishers were licenced, with half of the licences being bought locally, and half exempted from the licence. In Bermagui-Narooma 71% of fishers were licenced and 29% were exempt. Approximately 70% of licences were bought locally.

The total number of recreational fishers who fish in each town annually was estimated at approximately 13,500. In Port Macquarie 33% were local and 66% visitors, whereas in Bermagui-Narooma 15% were local and 85% visitors.

A total of 260,000 days were fished annually in Port Macquarie (locals fished 73% and 26% by visitors). In Bermagui-Narooma 185,000 days were fished annually (locals fished 43% and 57% by visitors).

The avidity pattern for anglers in the two towns were similar, local anglers being more avid. A third of all local anglers accounted for almost 80% of days fished averaging more than 40 days fishing per year. The next third of local anglers (10-40 days) fish between 15% and 20% of total days fished and the least active third of local anglers (<10 days) fish for 3% of total days fished.

In contrast approximately 80% of visiting anglers fish less than 10 days a year, contributing only 28% of days fished. Visiting anglers fishing 10-40 days are 11-24% by number and contribute 27-51% of total days fished. The most avid visiting fishers are 3-4% by number and fish 21-40% of visitor days.

Age profiles are similar in Port Macquarie and Bermagui-Narooma with 64% of anglers being between 18 and 55 years, 25% greater than 55 and 11% less than 18 years.

Visiting anglers undertake an estimated 1.85 trips per annum to Port Macquarie and 2.55 trips per annum to Bermagui-Narooma. Companions on fishing trips to Port Macquarie were mainly family whereas companions on trips to Bermagui-Narooma had less family and more groups of friends on fishing trips. Anglers in NSW are highly dependent on car travel with 50% of trips being greater than 50km travel one way (Dominion 2003). About 55% of all trips to Port Macquarie were between 200-500km one way. In contrast Bermagui-Narooma had 40% of trips between 200-500kms and 34% of 500-800km due to visitors, many from inter-state.

Trip expenditures by anglers are classified as being either directly attributable to fishing (tackle, bait/berley etc), indirectly attributed (accommodation, travel, boat fuel and hire), and other expenses (eating out, other entertainment, food and drinks etc). Direct and indirect expenditure are included in most fishing expenditure studies. Other expenditure is relevant here, as we are measuring the regional expenditure brought to the coastal towns by anglers.

The average expenditure for single day trip anglers was between \$42 per day (locals Port Macquarie) and \$52 per day (locals in Bermagui-Narooma). For visitors who stayed at least one night, expenditure was approximately \$210 per day (visitors Port Macquarie) and \$200 per day (visitors Bermagui-Narooma). These averages incorporated all angler expenditure including family accommodation and travel. No attempt was made to reduce expenditure to be attributable to recreational fishing as the purpose of this study is to examine the total expenditure associated with recreational fishing in these coastal towns.

The estimates of expenditure associated with anglers who fished in Port Macquarie was \$22.8m, with \$7.9m coming from locals (34.6%) and \$14.8m from visitors (65.4%). Regional economic modeling revealed an expenditure multiplier of 1.5, giving a total impact of \$34m. Direct employment is 180 persons with an additional flow on of 96 persons, a total of 276 in the Port Macquarie community. Of these, 103 (37%) were attributable to expenditure by locals and 173 (63%) to visitor expenditure.

In Bermagui-Narooma a total of \$25.0m of expenditure was associated with fishers, \$4.3m coming from locals (17%) and \$20.6m from visitors (83%). Regional economic modeling revealed an expenditure multiplier of 1.46, giving a total impact of \$36.5m. Direct employment is 169 persons with an additional flow on of 91 persons, a total of 260 persons in the Bermagui-Narooma community. Of these 51 jobs (20%) were attributable to expenditure by locals and 209 jobs (80%) attributable to visitor expenditure.

The data indicate that recreational fishing related employment as a percentage of full time and part time employment is 2.1% in Port Macquarie and 10.6% in the Bermagui-Narooma postcode area. Bermagui and Narooma areas are considerably more dependent on employment generated by recreational fishing expenditure than in the larger economy of Port Macquarie.

In response to the survey of anglers' expectations and satisfaction with amenities, in Port Macquarie information on tourist activities was considered adequate, and more information on family activities and on places to fish was needed. More facilities for kids fishing places, and places to clean fish had strong positive responses also. In Bermagui-Narooma the need for more information on tourist activities, family activities, places to fish and for kids to fish, were all needed. More facilities to clean fish and to launch boats received similar levels of agreement and disagreement. In both towns there was strong agreement on the need to catch one legal sized fish and to fish in a clean environment.

Fishers were given an opportunity to make comments about fishing in the towns via the survey. Across both towns most comments were about need for better facilities, particularly in Port Macquarie, with comments on impacts of commercial fishing ranking second, being more frequent in Bermagui-Narooma. Satisfied comments were slightly higher in Port Macquarie and a notable result was the satisfaction of visitors and the lack of satisfied comments among local anglers. Comments about fishing issues affecting children and youth were more common in Port Macquarie, while comments on the need for boat ramps were more common in Bermagui-Narooma. Comments on the need to maintain fish stocks, and the need for stricter policing of licences by inspectors, were consistent across both towns, locals and visitors. Comments on signs/education were more common in Port Macquarie, as were comments on fish wharfs, controlling other users and development issues. Many comments were made on the need for bag limits.

The study investigated the expenditure in rural coastal towns in NSW by recreational fishers and found this to exceed \$22m in Port Macquarie and \$25m in Bermagui-Narooma. Reference to the National Visitors Survey indicates that recreational fishing in these areas may be undertaken by between 13% and 19% of all tourists visiting the area.

The message from the survey of angler expenditure is that small coastal towns which are popular fishing sites can be highly dependent on the expenditure generated by visiting recreational fishers and in the case of the Bermagui-Narooma postcode area, approximately 10.6% of all employment is derived from recreational fishing based tourism. It is important that recreational fishery managers, policy makers and the tourism industry realise the role and significance of recreational fishing in these rural coastal economies. While the interface with tourism research presents opportunities for future study, investigating ways small coastal towns could gain from additional fishing tourism, would be beneficial.

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1. Introduction

The purpose of this project is to measure the total annual expenditures made by recreational fishers in Port Macquarie and Bermagui-Narooma areas and to indicate the importance of this contribution to local expenditure.

Recreational fishing is one of the most important activities in the coastal communities of NSW. Coastal communities are believed to be dependent on recreational fishing for a number of reasons. Apart from providing both recreation and food, recreational fishing makes a significant contribution to local economies by attracting tourists who might not otherwise visit those areas. Available general socio-economic information shows that coastal communities on the NSW coast are in areas where any tourist-generated income is a key form of community income (NVS, 2004). Currently there is not sufficient information to estimate the level of expenditure by local and visiting recreational fishers in such areas.

NSW Department of Primary Industry, Fisheries Division, has increased its emphasis on the management of recreational fishing. The implementation of the recreational fishing licence system in NSW has created a need for information to ensure the provision of quality recreational fishing for licence holders. Managers need adequate information on the needs and activities of recreational fishers to improve recreational fishing facilities and services and meet the expectations of recreational fishers both now and in the future, and to estimate and enhance the economic contribution to the local economies in New South Wales.

This project aimed to fill these gaps by collecting essential recreational fishing and expenditure information on social and economic aspects from recreational fishers in two representative coastal areas. As examples, we have selected two coastal towns in regional New South Wales (Port Macquarie in the north and Bermagui-Narooma in the south) and conducted face-to-face and telephone surveys. This information was used to:

- estimate the total fishing effort and expenditure by recreational fishers in Port Macquarie and Bermagui-Narooma areas;
- understand the importance of recreational fishing-related expenditure to the local economies of Port Macquarie and Bermagui-Narooma areas; and
- estimate the importance and satisfaction ratings of recreational facilities and services perceived by anglers in Port Macquarie and Bermagui-Narooma areas.

Recreational fishing in Port Macquarie and Bermagui-Narooma

Information on recreational fishing in both Port Macquarie and Bermagui/ Narooma are described in Boxes 1 and 2, derived from existing tourist literature as indicated.

Recreational fishing in Port Macquarie

Box 1: Fishing the Hastings River District¹

“Port Macquarie is about four and a half hours drive north of Sydney. The Hastings River has a full range of fishing opportunities from freshwater bass and catfish in the upper reaches to estuarine species such as bream, flathead, jewfish and luderick near the entrance. Those wanting blue water fishing can go into the expanse of rocky outcrops that hug the Port Macquarie coast line where reef and sand bottom can provide snapper, pearl perch, sand flathead and kingfish. Beach and rock fishers should visit the beaches that run from Town Beach South to Lighthouse Beach for drummer, whiting and tailor. Four wheel driving access is possible, under council permit, from Lighthouse Beach along long white sand beaches to Lake Cathie or from North Shore Beach to Point Plummer. Within the Hastings River, recreational fishers may catch a bream, luderick or flathead from the popular Port Macquarie break wall. For the keen fisher, an elusive mulloway may be caught off the south or north break walls after dark.

Limeburner’s Creek is a popular spot for small watercraft, with schools of bream and luderick hiding amongst the oyster leases. The Settlement Point picnic area, at the end of Settlement Point Road, is a safe spot to take small children fishing. You can expect to get bites from whiting, bream and flathead. Safe for children and the elderly, Lake Cathie with its parkland surroundings will entice you to do a spot of fishing day or night. Catches in Lake Cathie include bream, whiting and flathead. If you’re a night owl, why not try hand hauled pawning in Lake Cathie, one of the most popular pawning locations on the Holiday Coast.”

Recreational fishing in Narooma/Bermagui

Box 2: Fishing the Narooma District²

“Narooma has some of the best fishing waters in New South Wales. Nearby Montague Island is a fisher's paradise, its clear blue waters providing the most diverse fishing along the coast. You can catch marlin, shark, yellowfin tuna, kingfish, morwong and snapper. Wagonga Inlet is also one of the State's best estuaries for fishing, probably because it is closed to all forms of netting and trapping. Like Port Hacking and Brisbane Waters, Wagonga Inlet has been set aside for fishers. Nets are also banned in Whittakers Creek, just north of Narooma, and the bream fishing is brilliant. Since 1994 prawn scoop nets (for prawns only) and bait traps are the only exception to the net and trap closure in Wagonga Inlet. A fish attraction buoy has been installed at Narooma to improve fishing for recreational sport and game fishers”.

Summary

The study compares and contrasts recreational fishing visitation and expenditure in two popular recreational fishing towns in coastal NSW. The recreational fishing licence has afforded the opportunity to use a combination of survey techniques to estimate the expenditure by those locals fishing in the townships and by the many visitors coming to fish in these from the rest of NSW and interstate.

¹ Source: <http://www.fisheries.nsw.gov.au/rec/guides/Hastings.htm>

² Source: <http://www.fisheries.nsw.gov.au/rec/guides/Narooma.htm>

2. Survey Methods

The project commenced in November 2003 with a literature review and the selection of two study areas in northern and southern NSW. Port Macquarie was selected in the north and Bermagui-Narooma in the south by using information on the recreational fishing licence data-base.

2.1 Rationale for selecting towns

The project initially analysed recreational fishing licence sales data from the first two years of the licence records (2000-01 and 2001-02) to determine which coastal communities in the north and south of the state would be most strategically beneficial to study. It is desirable, now that the economic influence of Sydney anglers has been determined, (Dominion, 2003), to choose coastal communities in which the influence of anglers coming into New South Wales from Queensland (North) and Victoria & ACT (South) can also be identified.

Two towns, Port Macquarie in the north and Bermagui-Narooma in the south, were selected after analyzing the available licence sales data in the Recreational Fishing Licence (RFL) data base and current fishing licence agent information. The following criteria were applied to the selection of towns.

Results from the Sydney survey (Dominion, 2003) indicated that in the north, the influence of Sydney angler visits extends to Port Macquarie and then declines in the smaller coastal towns to the north, (with the exception of Coffs Harbour). Dominion (2003) identified that Newcastle, Nelsons Bay, Forster Tuncurry, Port Macquarie and Coffs Harbour are the most popular trip locations for Sydney fishers.

In the south, Nowra was heavily frequented by Sydney visitors, while towns such as Ulladulla and Bateman's Bay attracted fewer Sydney anglers with increasing distance traveled south (Dominion, 2003).

On further consideration we did not wish to select a town:

- south of Port Macquarie, or too close to the Queensland border in the north; or
- north of Ulladulla, or too close to the Victorian border in the South.

Selecting a town too close to the borders may give too great a weighting to interstate fishers. Selecting towns too close to Sydney may not represent the regional recreational activity in rural coastal centers in NSW, which is a main objective of the study. Port Macquarie in the north and Bermagui-Narooma in the south, were therefore considered ideal choices for this study.

Port Macquarie is situated at the mouth of the Hastings River. Port Macquarie, with just under 38,783 residents (ABS, 2001), is located 407 km north-east of Sydney and is a rapidly expanding centre. Tourism is central to the local economy, although commercial fishing, oyster farming, manufacturing and mineral processing are also important (Hastings, 2005). Analysis of the licence database indicated that approximately 15% of total recreational fishers holding licences for fishing in NSW reside in the Port Macquarie area. Port Macquarie offers good facilities to the recreational fishing population. Unemployment in the Port Macquarie area is 11.7% for males and 8.4% for

females (ABS, 2001). Port Macquarie is a popular retirement destination with 8,890 persons (23% of the population) being 65 years or over (ABS, 2001).

Narooma, a small coastal town with a population of approximately 3,412 persons (ABS, 2001), is located 360km south of Sydney, 220km from Canberra and 600km from Melbourne. Narooma is regarded as having some of the best fishing waters in NSW. Unemployment is high with 14.2% of males and 9.4% of females unemployed (ABS, 2001). Narooma is also a popular retirement destination with 956 persons (28% of the population) being over 65 years of age (ABS, 2001).

Bermagui is a small coastal town of 1,320 population (ABS, 2001) and has a harbour suited for all weather vessel access. Unemployment is high with 14.5% of males and 9.5% of females unemployed (ABS, 2001). Bermagui is a popular retirement destination with 364 (28%) of the population being over 65 years of age (ABS, 2001).

Both towns have very good recreational facilities such as safe harbours, excellent boat ramps and fish cleaning tables. Bermagui is 40 km south of Narooma and the two towns were therefore studied as a joint area. The combined population of Bermagui and Narooma was 4,732 person (ABS, 2001) with 1,320 persons (28%) over 65 years of age. The Bermagui-Narooma postcode has an area population of 8,375 persons.

2.2 Data collection

The project developed two similar questionnaires for telephone and face-to-face surveys.

Telephone surveys

In early December 2003, Roy Morgan Research, an independent market research agency, was contracted to conduct the telephone survey among licence holders who purchased their licences in either of the two towns. Dominion supplied contact details of licence holders obtained from NSW Fisheries for research purposes to the market research contractor for interviews. The interviews were conducted in late December 2003. The most complete list of all recreational licence sales was for the year 2001-02³. The survey used the 2001-02 records of licence purchases to ask anglers in late 2003 about their fishing activities in the previous year. This affected the response rate in the telephone survey and may also have introduced bias, as will be discussed later.

Face to face surveys

In early December 2003, Dominion recruited five interviewers based in the two towns (two in Port Macquarie and three in Bermagui-Narooma) to conduct face-to-face interviews with recreational fishers. Interviewers were trained, questionnaires were sent to each interviewer and the interviews were conducted from mid December 2003 to late April 2004. This period covered school holidays, Easter, and a number of fishing festivals and competitions in the regions. The interviews were conducted at a variety of recreational fishing locations in Port Macquarie and Bermagui-Narooma areas such as wharfs, boat ramps, caravan parks, beaches, rocky headlands, breakwalls, marinas, fishing clubs and in streets.

³ The licence data base in subsequent years only recorded annual and 3year licence sales for renewal reminders, shorter licence categories not having been entered into the data base.

Fishers were asked to respond to questions about the following:

- Whether they were locals or visitors;
- Visitors' postcode;
- Fishing activity (e.g. days fished, main type of fishing etc.) in Port Macquarie or Bermagui-Narooma area;
- Their fishing trip frequency and duration;
- Distance traveled to fishing location;
- Expenditure on their current fishing trip;
- Socio-economic characteristics of fishers; and
- What fishing features and facilities are important when visiting recreational fishing areas in Port Macquarie or Narooma/Bermagui.

The need for both telephone and face-to-face surveys

The recreational fishing population comprises licence holders, non-licence holders (non compliance), people who are exempt from holding licences (concession holders) e.g. youths (below 18 years old), elderly people and aboriginals. Any survey to estimate activities and expenditure of recreational fishers should collect data from all these sectors.

The telephone survey was restricted to licence holders only, while the face-to-face survey method was designed to cover the broad cross spectrum of the potential angling population. Because of logistics and costs, however, the face to face survey technique is necessarily restricted in sampling power in comparison to conducting telephone interviews of recreational licence holders. Therefore, we conducted both telephone and face-to-face interviews for robustness and completeness.

The telephone survey

The telephone survey targeted people who had purchased licences from agents in Port Macquarie and Bermagui-Narooma areas in the previous year. The NSW Fisheries RFL data base provided information on how many licences were bought in the two survey locations. As noted, the telephone survey did not cover unlicensed recreational fishers.

The RFL data base contained information on the fishing licence sales of agents in each area. Of a total of approximately 375,000 RFL records of all licence categories available for 2001-02 in all of NSW, the records of licence purchases in Port Macquarie and Bermagui-Narooma were identified and reported in Table 1.

Table 1: The total number of licences and their duration sold in Port Macquarie and Bermagui-Narooma in the year 2001-02.

Town	3D	1M	1Y	3Y	Total
Port Macquarie	910	526	2,621	425	4,482
%	20%	12%	58%	9%	100%
Bermagui/Narooma	2,043	1,988	2,600	396	7,027
%	29%	28%	37%	6%	100%

Table 1 shows that Port Macquarie has a significantly higher rate of purchase of annual and 3 year licences than does Bermagui-Narooma. In contrast Bermagui-Narooma has higher 3 day and 1 month licence sales, possibly reflecting more visitors than residents as is investigated in Table 2.

The home address of licence holders was recorded on the RFL and this enabled an estimate of the relative numbers of local and visiting anglers to be made (Table 2). Locals are defined as persons living in the same postcode as Port Macquarie (2444), or Bermagui and Narooma, which both have the same postcode (2546).

Table 2: The origin of RFL holders who purchased licences in Port Macquarie and Bermagui-Narooma (Source: RFL database).

Area	Port Macquarie	%	Bermagui/Narooma	%
Own Pcode - PM	1,985	44.3%		
Own Pcode - B/N			963	13.7%
Sydney	672	15.0%	1,008	14.3%
Canberra	95	2.1%	1,846	26.3%
Other NSW	1,408	31.4%	526	7.5%
VIC	133	3.0%	2,536	36.1%
QLD	122	2.7%	66	0.9%
SA	10	0.2%	36	0.5%
NT	2	0.0%	9	0.1%
TAS	5	0.1%	9	0.1%
WA	12	0.3%	14	0.2%
Other	38	0.8%	14	0.2%
Grand Total	4,482	100.0%	7,027	100.0%

In Table 2, 86% of licence sales are made by anglers outside of Bermagui-Narooma, possibly purchased before the fishing trip. In contrast 44% of licence sales are made by anglers living in Port Macquarie. While both study areas have similar levels of purchases by Sydney residents (~15%), Bermagui-Narooma is visited by far more Canberra residents (26%) and Victorians (36%) than Port Macquarie. On the other hand, Port Macquarie is visited by far more fishers from other parts of NSW (31% compared with 7.5% from Bermagui-Narooma).

A sample of RFL holders who had purchased their fishing licences from agents in the survey towns in the year prior to the survey was selected on a stratified random basis for the telephone survey. Because the licence data base was not up to date with only annual and three year licence holder details being included, the records from the previous year of the fishing licence (2001-2002) were used. This greatly increased the number of telephone contacts required to achieve successful interviews. The sample was stratified to reflect local and visiting anglers as per the total licences purchased in these areas.

Two separate questionnaires were developed to collect the information from visitors and locals. The questionnaire contained a total of 15 main questions with several follow on questions designed

to collect information on demographic details, fishing trips, expenditure, employment, and satisfaction with recreational facilities.

The telephone survey was undertaken by a recognised market research agency, to ensure timely execution of the survey and to ensure quality control in the fieldwork independent of the analysis of the survey results. Telephone interviews were conducted with a randomly chosen sample of visitors and locals in each town. The objective was to complete 200 successfully completed interviews in each town. In total, 409 people were successfully interviewed. Each interview lasted for between 6 and 10 minutes depending on the respondent.

Field work statistics

The telephone survey in December 2003 used the available recreational fishing licence data from the year 2001-02 as this included all fishers who purchased a licence, whereas subsequent data years did not. A sample of the contact details associated licences sold in Port Macquarie in 2001-02 were provided to the market research firm for fieldwork telephone calls. Given that the licence contact data was for a period 18 to 30 months prior to the time of the interviews, December 2003, it was expected the fieldwork company would have to make a considerable number of 'screening' calls to obtain the target sample of 400 completed interviews with fishers who had fished in either town in 2003. The results of the field work are reported in Table 3.

Table 3: The results of the telephone survey fieldwork (Source: Roy Morgan Research)

	No.	% of total contacts with household	% of total calls	
Complete Interviews	409	20%	12%	Number of interviews obtained
Appointments (Direct)	98	5%	3%	Made direct appointment with named respondent but did not undertake an interview
Appointments (General)	173	9%	5%	Made appointment with member of household but did not undertake interview with named respondent
Refusal	311	16%	9%	Made contact with named respondent but refused to participate in survey
Quota Fail	467	23%	14%	Named respondent had not fished in town in last 12 months
Sample respondent not at this number	434	22%	13%	Named respondent not at this phone number
Terminate	113	6%	3%	Contact made with named respondent but interview terminated
Respondent did not wish to continue	43	-	-	
Language problem	2	-	-	
Hearing difficulty	2	-	-	
Other *	66	-	-	
Total Contacts with Household	2005	1.00	-	
Engaged	33	-	1%	Phone engaged
No Reply	856	-	25%	Less than 3 calls made with no contact
Unobtainable	498	-	15%	Disconnected phone lines, businesses, mobile phone numbers
3+ Calls	17	-	0%	3 or more call attempts made
Fax / Modem	23	-	1%	Phone number to fax or modem
Total Calls	3432	-	1.00	
Average Interview Length (mins)	9.8	-	-	
Total No. of Interviewing hours	106	-	-	
Average No. of Interviews per hour	3.88	-	-	

* Majority of reasons here were "Respondent not available for duration of survey"

Of the 3,432 calls made, 42% had no reply or were unobtainable (disconnected, mobile phones, or a fax). Of the 2,005 contacts made with households, 14% were unused appointments, 23% were quota fail, the respondent not having fished in the towns in the last 12 months and 22% of respondents were not at that number.

There were 409 completed interviews. In addition, there were also 311 respondents who refused to participate in the survey, and 113 who terminated the interview for a variety of reasons (43, not wishing to continue, 4 language and hearing problems, and 66 respondents not available for the duration of the survey).

The face-to-face survey

Detailed face-to-face interviews were conducted with a total of 500 recreational fishers in Port Macquarie and Bermagui-Narooma in the December 2003 to April 2004 period. The questionnaire collected data on fishers' home area, recreational fishing activity, fishing expenditure, travel and trip expenditure behaviour, as well as their future perceived recreational needs. Questions consistent with those in the telephone survey were asked. The main difference between the two surveys was that the face-to-face survey sample contained three categories of fishers (below 18, 18-55 years and over 55, plus other concession holders). The telephone survey was confined to licence holders generally in the 18 to 55 years age group as many pensioner concessions commence at 55 years of age.

A target sample of 250 recreational fishers was to be randomly selected and interviewed in each of the northern and southern study areas by face to face interviews. These fishers may not necessarily be licence-holders as previously explained. The survey collected details about activities, expenditures and incomes of residents and visitors in the 12 months prior to interview. Other questions were included to obtain some basic information on social background (age, income etc) and fishers were asked about facilities and services in the local area that would attract fishers and also about their future expectations.

Background information on visitors (tourists) to Port Macquarie and Bermagui-Narooma was collected from local tourism offices and from ABS 2001 census statistics. An information sheet about the execution of the face to face survey was displayed in several tourist information areas and in NSW Fisheries offices to inform the public of this project.

2.3 Data analysis

The data collected from the sample included:

- estimated days fished (total and per trip);
- the number of fishing trips;
- attributes of fishing trip locations;
- fishers' expenditures on their fishing activity in the area;
- trip expenditure;
- and socio-economic features of respondents.

The analysis of the results sought to determine the:

- relative economic importance of the recreational fishing sector;
- size and nature of economic contribution of recreational fishing;
- link between tourism and the recreational fishing sector;
- level of local dependence on the recreational fishing sector; and
- levels of satisfaction of recreational fishers.

The study was designed to enable recommendations to be made to policy makers, the business community and recreational fishers.

Discussion

The survey method was developed to estimate angler expenditure. The recreational fishing licence data base in the year 2001-02 provided records of all licence holders and the location of licence purchase. This enabled a sample of licences purchased in a given town to be made and then expanded to estimate the licenced population in the town in question.

In contrast the face to face survey approached all anglers and was able to profile both licence holders as well as eligible fishers who did not hold licences, and exempted fishers. Licence holders who did not purchase their licences in either of the towns in the study were also identified. In this way estimates of the total fishing population in each town could be made. The survey was used to gather data on fishing frequency and expenditure and to estimate total expenditure on all fishing related activities.

As previously noted, the fieldwork had a telephone component and a face to face survey. The available RFL data was a minimum of 18 months out of date. However, the 2001-02 data set contained details of all licences statewide representing a known population of licence holders. The response rate to screening telephone calls was low. This was mainly due to 40% of numbers either being unavailable or ringing out. Of the 2005 households contacted, 409 completed questionnaires were obtained representing a response rate of 20%. However 23% of successful contacts were with fishers who had not fished in the towns in question in the previous 12 months and another 14% of contacts were booked for appointments, but were not contacted for the survey. Refusals were 16%.

Given the face to face fieldwork survey was in the period December 2003 to April 2004, recalling the last 12 months would have covered the 12 months prior to the date of each interview. Most of the replies were obtained in January 2004. We later compare the 12 months recalled for the telephone survey (Jan 2003 to Dec 2003) with the results of the face to face survey. *The comparisons of the results from the telephone survey are plotted and compared to the results of the face to face survey. As noted above, the 12 month sample periods are not strictly similar, but we contend they are comparable given that the deviation is 1 month for the majority of results. In the rest of the study we refer to the 12 month study sample period (Jan 2003 to Jan 2004).*

This may lead to some unknown amount of bias, as part of potential recall bias under both survey methods. If we assume that January is a holiday high season for trips to the coast, the results from the telephone survey may recall less of their previous trip expenses than those currently on a trip, interviewed in the face to face survey. In either case the recall of activities for the past year may be subject to recall bias (Dominion, 2003).

The samples are treated as being representative of the fishing population, but given the age of the data and the reduction in available persons to interview, there may be some form of bias in the responses to the telephone survey, such as a greater proportion of people who visit each town repeatedly. The study minimizes the risk of sample bias influencing final estimates by combining results from both the telephone and face to face surveys.

Both surveys relied on anglers to recall fishing activity and expenditure for a previous 12 month period, but complemented each other as the telephone survey enabled a wide cross section of visitors in each year to be contacted rather than those visiting in December to April, who were

interviewed in the face to face fieldwork. The study is aware of the potential shortcomings of this methodology and uses data from both survey sources for estimations to minimise bias.

3. Survey Results

3.1 The telephone and face to face surveys

The purpose of the survey was to obtain estimates of responses to a range of different issues. The report compares the survey responses received by each method for both Port Macquarie and Bermagui-Narooma.

3.1.1 Visitors and locals

In each town there were locals and visitors surveyed as reported in Table 4. Locals were identified as being resident within the town postcode (Port Macquarie 2444, Bermagui-Narooma 2546).

Table 4: The number of locals and visitors interviewed by telephone and face to face surveys in Port Macquarie and Bermagui-Narooma.

Port Macquarie	Locals	%	Visitors	%	Total
Telephone survey	45	23%	153	77%	198
Face to Face	66	25%	203	75%	269
Bermagui-Narooma					
Telephone survey	31	15%	180	85%	211
Face to Face	40	18%	186	82%	226

Both survey methods asked similar questions of locals and visitors, though locals were not asked about trip expenses associated with visiting the coastal town.

In the Port Macquarie area, the telephone survey achieved 198 successfully completed interviews. Of these, 153 (77%) were visitors and 45 (23%) were locals. The face to face survey had a similar ratio of locals to visitors, but achieved 71 more observations than the telephone survey.

In the Bermagui-Narooma area, a total of 211 successfully completed interviews was achieved, which consisted of 178 (84%) visitors and 33 (16%) locals. The face to face survey resulted in 18% locals and 82% visitors with a slightly larger sample size than the telephone survey.

Discussion

Those undertaking interviews in both the telephone and field work samples were aware of the ratio of licences purchased in the towns by locals and visitors and the survey samples reflected these percentages. The definition of local to be the exact postcode was not rigid, with some locals giving adjacent postcodes to those stated on the licence for example in Port Macquarie (2444), some local

telephone sample responses were from 2443. Visitors are a broad ranging category ranging from interstate visitors to fishers in adjacent postcodes. Visitor estimates include day trippers and visitors are not necessarily from a long distance away (see later details on distance travelled).

3.1.2 Reasons for visiting Port Macquarie or Bermagui-Narooma.

A fishing trip by a visitor may be as short as a few hours within a single day, or may involve one or more nights away from home, or be part of a longer holiday visit. This section examines visits by non-local recreational fishers to the Port Macquarie and Bermagui-Narooma areas. Fishers were asked their main, second and third reasons for visiting Port Macquarie in the telephone and face to face surveys. A list of possible responses was available for respondents (Holiday/short break, fishing, visiting friends and relatives, leisure and relaxation, business and other).

Port Macquarie

Figure 1a shows the main reason for visiting Port Macquarie as reported in the Telephone and face to face surveys. For 44% of fishing licence purchasers, the main reason for visiting the Port Macquarie area was as a general holiday, followed by other reasons (36%), such as visiting friends and family and recreational fishing (20%). Fishing accounted for 28% of the second reason and 23% of the third reason for visiting Port Macquarie. In the face to face survey 74% of respondents when asked their main reason indicated a general holiday, 17% other reasons and only 9% fishing. Fishing accounted for 13% of the second reason replies, but was 75% of the third preferences. Other reasons for visiting, such as fun and relation were highest in the second reasons at 74%.

Bermagui-Narooma

Figure 1b reports the main reason for visiting Bermagui-Narooma among fishing licence purchasers was fishing (40%) followed by general holiday (34%). Fishing accounted for 28% of the second reason, behind general holidays and 38% of the third reason replies in which other reasons accounted for 51% of replies. In the face to face survey, 50% of respondents indicated general holiday as their main reason for visiting followed by 36% who stated fishing as the main reason. Fishing accounted for 40% of the second reason replies and 19% of the third preferences.

Figure 1a: The frequency and percentage of different motivations (first, second and third reasons) among recreational fishers visiting Port Macquarie (Source: RM face to face survey).

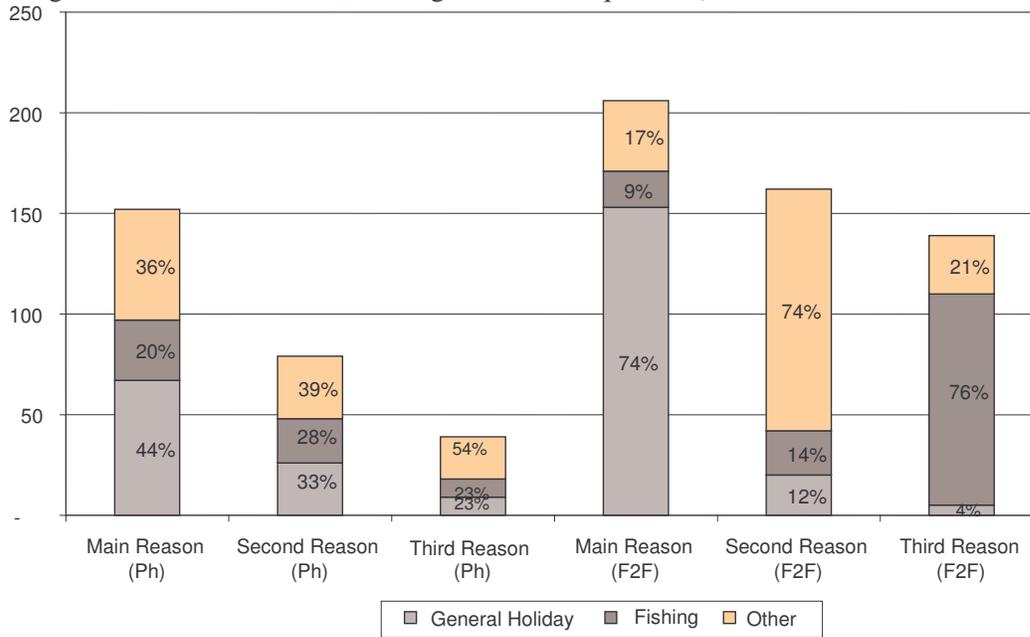
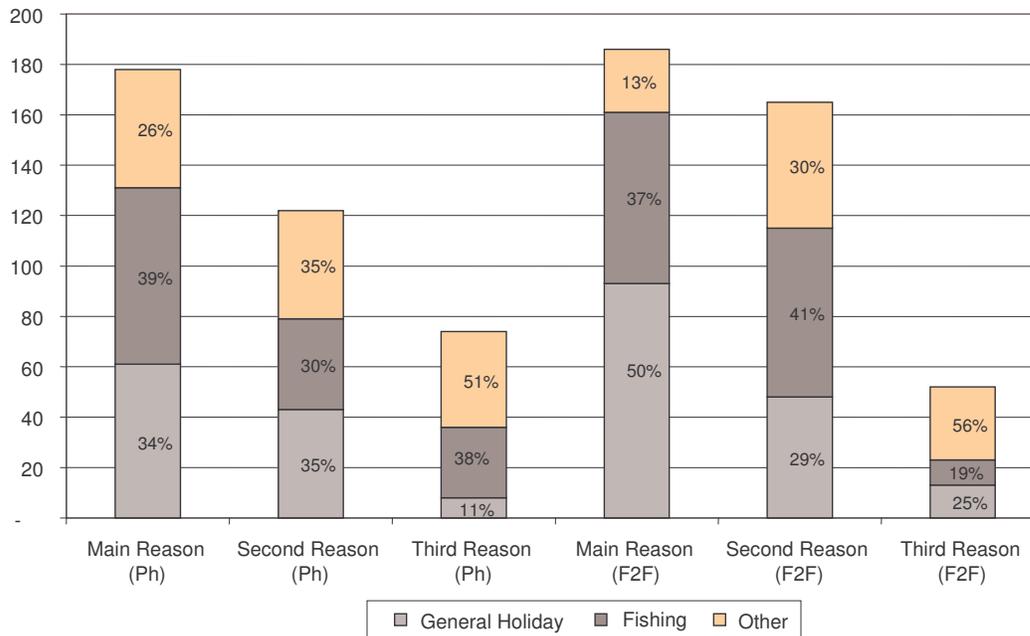


Figure 1b: The frequency and percentage of different motivations (first, second and third reasons) among recreational fishers to visit Bermagui-Narooma (Source: RM and face to face surveys).



Discussion

In this section, fishing licence holders and those interviewed face to face usually on a fishing trip were asked for “off top of the head” replies on their reasons for visiting the towns. The results show

that general holidays, of which approximately 20% were classed as short breaks, and recreational fishing, are the prime reasons expressed by fishers for coming to both of these areas.

The telephone and face to face results are different for each area due to the two different samples of fishers taken. The results also differ between areas reflecting the differing nature of the two areas. Fishing in Port Macquarie is one of a range of reasons to visit, but in Bermagui-Narooma, fishing is more of a prime reason for visiting the area with holidays second. Other reasons for visiting are fewer than in Port Macquarie, where other activities are more diverse than in the much smaller Bermagui-Narooma towns.

3.1.3 Type of recreational fishing

Respondents were asked about the type of fishing undertaken (Table 5a and b). In the telephone survey respondents had only one response recorded, whereas in the face to face survey respondents gave multiple answers which were recorded. This should be borne in mind in comparisons. We have included all answers for the face to face survey.

Table 5a: The percentage frequency of types of fishing undertaken in Port Macquarie (PM) and Bermagui-Narooma (BN - Source: RM and face to face surveys).

Type of Fishing	PM Phone	%	PM F2F	%	BN Phone	%	BN F2F	%
Beach Fishing	27	14%	44	12%	17	8%	34	12%
Estuary Fishing from boat	59	30%	51	13%	46	22%	43	15%
Estuary Fishing from shore	57	29%	168	44%	42	20%	34	12%
Fishing From rocks/wharf	24	12%	93	24%	18	9%	63	22%
Fresh water Fishing	2	1%	3	1%	2	1%	7	2%
Ocean Bottom Fishing	17	9%	21	5%	35	17%	64	22%
Ocean Game Fishing	4	2%	1	0%	49	23%	45	16%
Other	3	2%	1	0%				
Can't Say / blank	5	3%						
Grand Total	198	100%	382	100%	209	100%	290	100%

In Port Macquarie the results for freshwater fishing, and beach fishing are similar between surveys. The telephone survey had a strong response for estuary fishing from a boat (30%) and estuary fishing from shore (29%). On the other hand, the face to face results imply that estuary fishing from a boat was less popular among those interviewed (13%), with shore angling being the preferred method (44%). These differences may be related to the location of interviews in the face to face survey as indicated in Table 5b. However, given the telephone survey recorded only one response, we would propose the face to face survey results may have less bias.

In Bermagui-Narooma there appeared to be a wider discrepancy in types of fishing undertaken by respondents in each survey. The telephone survey had estuary fishing from a boat (22%) and estuary fishing from shore (20%) exceeding the face to face results which were 15% and 12% respectively. Ocean fishing was more popular in Bermagui-Narooma than in Port Macquarie, with the telephone survey indicating ocean bottom fishing (17%) and ocean game fishing (23%) were also popular in the face to face survey 22% and 16% respectively.

Table 5b: The locations of interviews undertaken in Port Macquarie and Bermagui-Narooma (Source: Face to face survey).

Location of interview	Port Macquarie	%	Bermagui/Narooma	%	Grand Total	%
Breakwall	96	36%	28	12%	124	25%
Wharf/Jetty	79	29%	26	12%	105	21%
Boat Ramps	13	5%	55	24%	68	14%
In Streets/shops	19	7%	21	9%	40	8%
Caravan Parks	10	4%	28	12%	38	8%
Riverside	28	10%		0%	28	6%
Beaches	8	3%	13	6%	21	4%
Marinas/fishing clubs	6	2%	15	7%	21	4%
Fish cleaning table		0%	15	7%	15	3%
Rocky Headlands	1	0%	13	6%	14	3%
Other	1	0%	11	5%	12	2%
Car park/driveway	8	3%	1	0%	9	2%
Grand Total	269	100%	226	100%	495	100%

The interviews in both towns covered sites at which both boat and shore based anglers were likely to be contacted. The interviews at wharf/jetty, boat ramps and marinas were 35% in Port Macquarie and 43% in Bermagui-Narooma.

Boat use

Boat use by recreational fishers in Port Macquarie and Bermagui-Narooma is reported in Table 6.

Table 6: Boat use in Port Macquarie and Bermagui-Narooma as reported in the Telephone and Face to face surveys.

Port Macquarie	Tel	%	F to F	%	Total	%
No Boat	106	54%	183	67%	289	61%
Own Boat	52	26%	28	10%	80	17%
Accessed boat	40	20%	57	21%	97	21%
Can't Say		0%	4	1%	4	1%
	198	100%	272	100%	470	100%

Bermagui/Narooma	Tel	%	F to F	%	Total	%
No Boat	67	32%	85	38%	152	35%
Own Boat	83	40%	91	40%	174	40%
Accessed boat	58	28%	49	22%	107	25%
Can't Say	1	0%		0%	1	0%
	209	100%	225	100%	434	100%

Discussion

In the Port Macquarie area both survey methods combined indicated that about 17% of fishers own their own boat, 21% gain access to a boat via friends or hire arrangements, and 61% of fishers do not have a boat. Further investigation, not reported here, indicated that local boat ownership is slightly higher than for visitors and that up to 70% of visitors do not own boats. In Table 6 we see more non-boat owners were interviewed in the face to face survey than in the telephone survey.

In the Bermagui/ Narooma area both survey methods indicated that about 40% of fishers own their own boat, 25% gain access to a boat via friends or hire arrangements and 35% of fishers do not

own a boat. Both survey methods gave very similar results, and further investigation not reported here, indicated that local and visitor boat ownership and boat use were not significantly different.

3.1.4 Number of days fished

The sampled fishers were asked about the total number of days they fished in all areas in the last 12 months and also the total number of days fished in just the Port Macquarie and Bermagui-Narooma areas in the last 12 months, and results are reported in Table 7. Days fished by locals and by visitors for each town are also presented later in the report (Table 9c).

Table 7: Average number of days fished by local and visiting licence holders in the past 12⁴ months.

Port Macquarie	Telephone survey	Face to Face
Total days fished	25.6	34.9
Days in Port Macquarie area	14.5	20.0
Days in Port Macquarie area as % of total	56.6%	57.3%
Bermagui-Narooma	Telephone survey	Face to Face
Total days fished	19.0	37.1
Days in Bermagui-Narooma area	12.3	18.4
Days in Bermagui/ Narooma as % of total	64.7%	49.7%

Overall, the number of days fished in the coastal town areas constituted between 50% and 65% of the total days fished annually in all locations for those interviewed. In both towns the face to face survey showed fishers with significantly higher total number of days fished than those in the telephone interview. Estimates of days fished in each town area were higher in the face to face survey also. The activity of those interviewed face to face was apparently higher than those fishers contacted in the telephone survey.

The ratio of days fished in the town area to the total days fished per annum was similar in Port Macquarie for both survey methods. The total days fished in Bermagui-Narooma constituted 50% of total days per annum, but in the telephone survey this figure was 65% of total days fished.

Total days fished per annum

An estimate of the total days fished by anglers in each town is required to estimate total expenditure. To determine total days fished the samples are expanded to reflect the total population. *The primary expansion factor is given by the relationship between the number of licences bought locally, relative to the total number of licences sold locally, which is recorded in the recreational licence data base.* This expansion factor can be used to expand the sample to the whole population with minimal bias. The face to face survey results included licence holders who purchased a licence and importantly, those who did not purchase their licence in the town in question, ie, both exempted and unlicensed fishers (Table 8).

⁴ The telephone survey asked fishers in December 2003 to recall the last 12 months, whereas the face to face survey took place from December to April 2004, with the majority of interviews being in January 2004.

Table 8: The number of licences purchased locally, in other towns and licence exemptions in Port Macquarie and Bermagui-Narooma (Source: Face to face survey)

Fisher category	Port Macquarie			Bermagui-Narooma		
	Locals	Visitors	Total	Locals	Visitors	Total
Bought Licence Locally	35%	28%	33%	35%	68%	50%
Bought Licence Elsewhere	10%	35%	17%	22%	19%	21%
Exempted from licence	55%	38%	49%	43%	13%	29%
Total	100%	100%	100%	100%	100%	100%

Table 8 indicates that 33% of licence holders who purchased their licences in Port Macquarie, while 17% of licence holders had purchased their licences elsewhere. The 49% exemptions were in excess of local licence purchases.

In Bermagui-Narooma it is seen that 50% of licences are purchased in Bermagui-Narooma, 21% are purchased elsewhere and 29% were exemptions.

Approximately 68% of fishers who visited Bermagui-Narooma purchased a licence in the area, whereas 19% bought them elsewhere and 13% of visitors were exempt. In Port Macquarie only 28% of licences were purchased locally, 35% were purchased elsewhere and 38% were exemptions. Unlicensed fishers and exemptions are discussed later in the study (see Table 13).

An expansion factor was able to be applied for the face to face survey results so as to estimate the total number of days fished in the towns. *The expansion assumed that the ratio of exemptions to licences purchased locally and the licence purchased elsewhere, were as derived from the face to face survey sample.* The expansions were applied and the following estimates of total recreational fisher numbers, days fished and average days are shown in Tables 9a, 9b and 9c.

Table 9a: Estimates of total numbers of recreational fishers in Port Macquarie and Bermagui-Narooma (Source: Face to face survey and the Recreational fishing licence database).

No. of fishers	Port Macquarie			Bermagui/Narooma		
	Locals	Visitors	Total	Locals	Visitors	Total
Bought Licence Locally	1,985	2,497	4,482	963	6,064	7,027
Bought Licence Elsewhere	342	3,505	3,847	304	3,626	3,930
Exempted from Licence	2,190	3,023	5,213	760	1,938	2,698
Total	4,518	9,024	13,542	2,027	11,628	13,655

Table 9b: Estimates of total days fished in Port Macquarie and Bermagui-Narooma (Source: the RM and Face to face survey and the Recreational fishing licence database).

Fisher category	Port Macquarie			Bermagui-Narooma		
	Locals	Visitors	Total	Locals	Visitors	Total
Bought Licence Locally	66,135	19,430	85,565	29,279	70,142	99,421
Bought Licence Elsewhere	18,896	24,422	43,318	18,147	19,754	37,901
Exempted from licence	103,927	26,790	130,717	35,379	13,002	48,381
Total	188,959	79,642	259,600	82,805	102,897	185,702

The estimates in Table 9b show that there are 260,000 fishing days expended per year in Port Macquarie, and about 185,000 in Bermagui-Narooma. In Port Macquarie the numbers of days fished by local fishers, exceed days fished by visitors by 2.4 times, whereas the days fished by visitors in Bermagui-Narooma exceed days fished by locals by 1.25 times.

Tables 9a and 9b enabled the average days fished by each category to be calculated as presented in Table 9c. In Port Macquarie locals have considerably higher average days fished (41.8 days per annum) than visitors to Port Macquarie (7.8 days per annum). Bermagui-Narooma shows an almost identical pattern (40.8 and 8.8 days per annum).

Table 9c: Average days fished in Port Macquarie and Bermagui-Narooma.

Fisher category	Port Macquarie			Bermagui/Narooma		
	Locals	Visitors	Total	Locals	Visitors	Total
Bought Licence Locally	33.3	7.8	19.1	30.4	11.6	14.1
Bought Licence Elsewhere	55.2	7.0	11.3	59.7	5.4	9.6
Exempted from licence	47.4	8.9	25.1	46.5	6.7	17.9
Total	41.8	7.8	19.2	40.8	8.8	13.6

In both Port Macquarie and Bermagui-Narooma average days fished by local licensed fishers were less than those fished by fishers licensed elsewhere and exempted fishers. The average days fished by exempted fishers in the sample included several percent of fishers who claimed to have fished 365 days a year. For a more realistic result, these were adjusted to 250 days, but nevertheless show the important role angling plays in providing retirement activity for many of those exempted from the licence, and an activity for children also. There were also some adjustments made to reduce total days fished by exempted anglers in Port Macquarie due to concerns that the sample may have over sampled avid elderly fishers with consequences for the expanded estimates (for example, it was statistically more likely to come into contact with the more avid fishers during face to face surveying, since they are out in the field more often).

In both towns average days fished by visitors was much less than locals, but the pattern is different between towns. In Port Macquarie visiting licence holders tended to fish less than visitors exempted from the licence. In Bermagui-Narooma fishers who visited and bought their licence, had higher average days fished than those visitors coming with a licence or those exempted. This confirms other results which suggest visits to Bermagui-Narooma are more likely to be specific fishing trips.

Frequency of days fished by anglers in Port Macquarie and Bermagui-Narooma

The previous estimates require an appraisal of the frequency and avidity of days fished by anglers in both towns. The frequencies of total days fished per year are shown in Figure 3a and 3b and Figures 4a,b,c,d. The frequency and duration of days fished in each town are reported in Table 9.

Figure 3a: The percentage frequency of total days fished in all locations per annum by recreational fishers who purchased a RFL in the Port Macquarie areas in the past 12 months (Source: RM and face to face surveys).

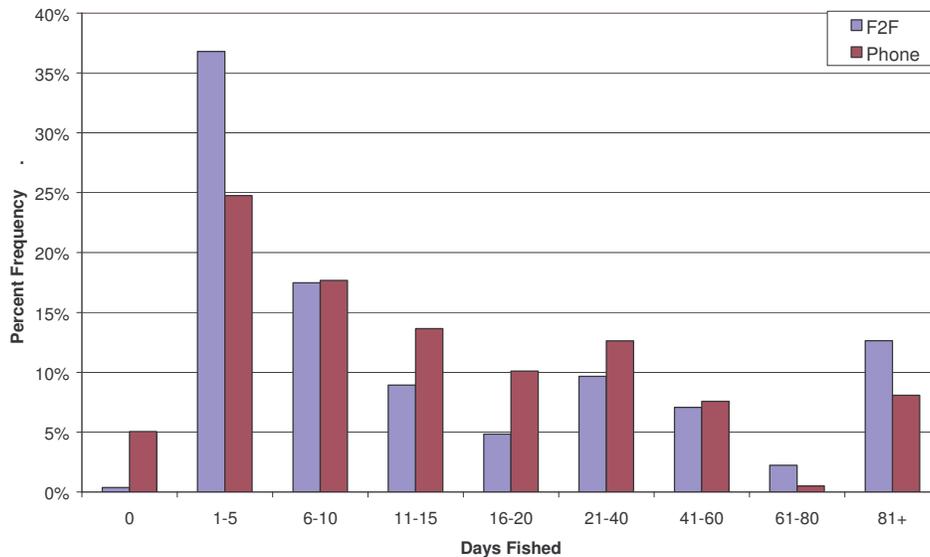
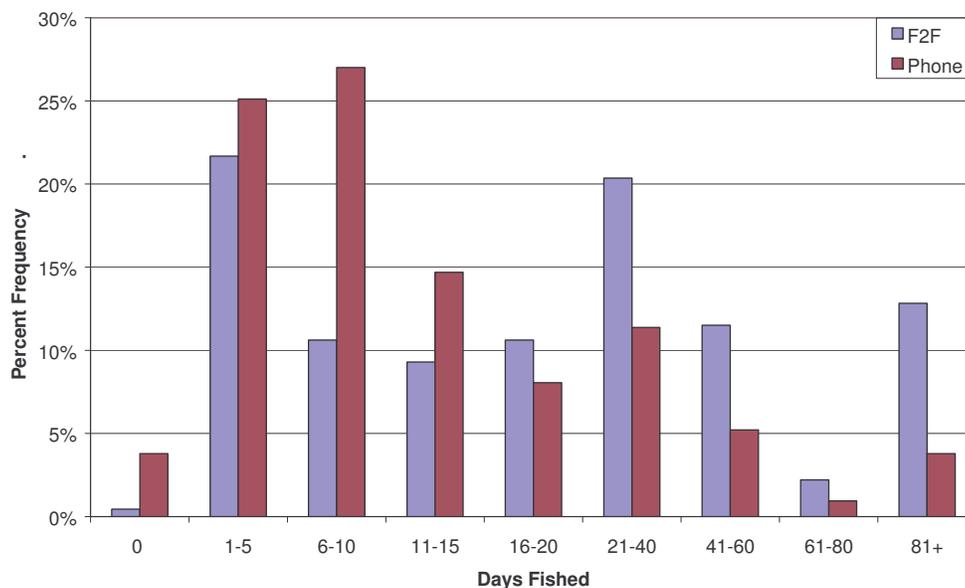


Figure 3b: The percentage frequency of total days fished per annum in all locations by recreational fishers who purchased RFL in the Bermagui-Narooma areas in the past 12 months (Source: RM and face to face surveys).



The frequency of days per year fished only within each town area are shown in Figure 4a and 4b.

Figure 4a: The percentage frequency of number of days fished in the Port Macquarie area in the past 12 months (Source: RM and face to face surveys).

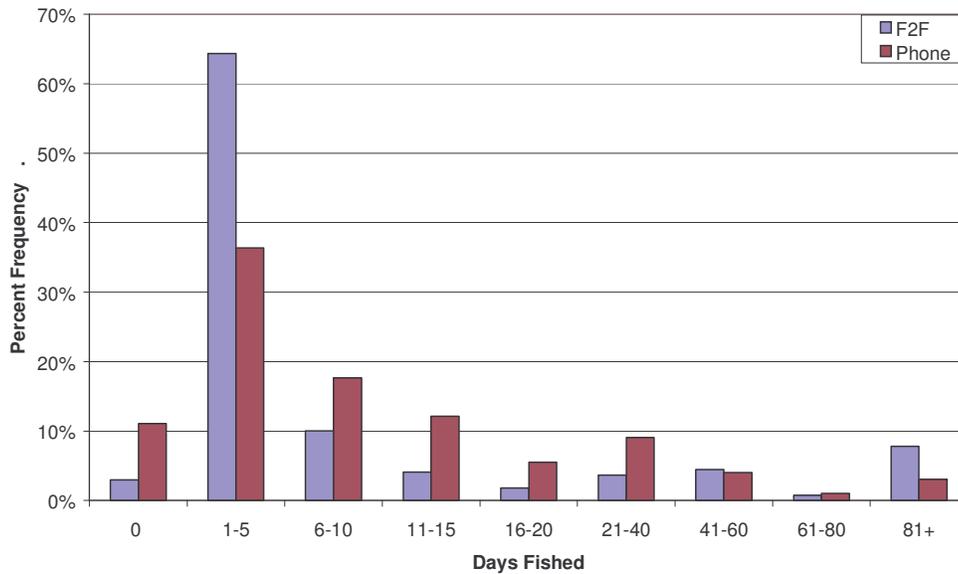
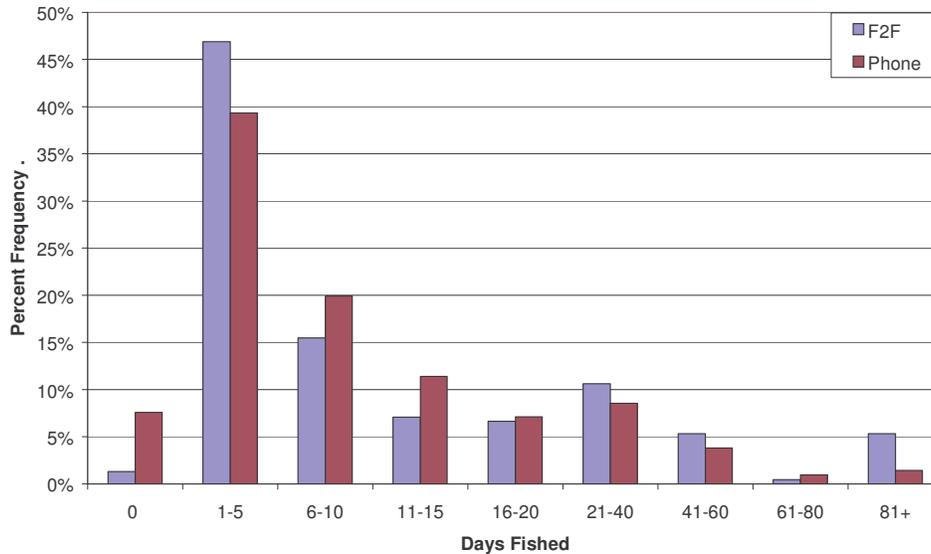


Figure 4b: The percentage frequency of number of days fished in the Bermagui-Narooma areas in the past 12 months (Source: RM and face to face surveys).



In Port Macquarie the majority of fishers (54%) fished less than 10 days which accounts for only 17% total days fished. A small number of fishers (3%) fished more than 80 days in the past 12 months, but this accounts for 25% of total days fished.

In Bermagui-Narooma the majority of fishers (59%) fished less than 10 days which accounts for only 22% of total days. A very small number (1%) of fishers fished more than 80 days which accounts for only about 12% of total days fished.

Avidity of anglers

In Table 10 the significant differences in the avidity of anglers are reported.

Table 10: The avidity of local and visiting fishers in Port Macquarie and Bermagui-Narooma (Source: RM and Face to face).

	Port Macquarie				Bermagui/Narooma			
	Local		Visitor		Local		Visitor	
	Fishers	Days F	Fishers	Days F	Fishers	Days F	Fishers	Days F
1-10 days	31%	3%	85%	34%	32%	5%	72%	28%
11-40 days	37%	17%	11%	27%	34%	18%	24%	51%
> 40 Days	32%	79%	4%	40%	34%	77%	3%	21%

The avidity pattern for local anglers in the two towns are similar, with about a third of anglers fishing 1-10 days, 11-40 days and 40 days + and the total percentage of days fished by less avid to most avid anglers being 3% -5%, 18% and 77%-79% respectively. Almost 80% of days fished in both areas were by avid local anglers, who each fished more than 40 days a year.

A high percentage of visiting anglers (77%-85%) fished less than 10 days a year and contributed 28%-34% of days fished. In the 11-40 day category 11% of visiting fishers in Port Macquarie contributed 27% of days fished, whereas in Bermagui-Narooma 24% of anglers were responsible for 51% of days fished. Bermagui-Narooma has a higher number of recreational fishers than Port Macquarie. The most avid visiting fishers constitute only 3%-4% by number, but contribute 21%-40% of total fishing days.

The majority (85%) of visiting anglers in Port Macquarie can be classified as short term, fishing on average for periods of less than 10 days. In contrast, visiting anglers to Bermagui-Narooma tend to stay for more than 10 days and fish a substantial number of days (24% fished for 11-40 days). In both townships, about a third of all locals and several percent of visitors would be classified as avid fishers.

3.1.5 Fisher age groups

Fishers of different age groups were sampled in both surveys. The percentage frequency of fishers of different age groups and the percentage frequency of days fished for Port Macquarie are reported in Figures 5a and 5b and for the Bermagui-Narooma in Figures 5c and 5d.

The telephone survey was of fishers holding licences and thus those under 18 years old were not included in the sample. The percentage of under 18s interviewed in the face to face survey was low in comparison to previous surveys (Mcilgorm and Pepperell,1999; Henry and Lyle, 2003) and may indicate some interviewer bias towards adults. An upper age limit of 55+ was chosen. It can be seen that in Port Macquarie the phone survey had 30% of respondents in the 55+ age group. In Port

Macquarie the percentage of days fished are similar to the frequency of numbers of fishers, with the exception of the face to face interviews of 55+ anglers, who apparently fished proportionately more than other age groups. This result is similar in Bermagui-Narooma also.

Figure 5a: The percentage frequency of recreational fisher numbers in the Port Macquarie area by different age group in the past 12 months (Source: RM and face to face survey).

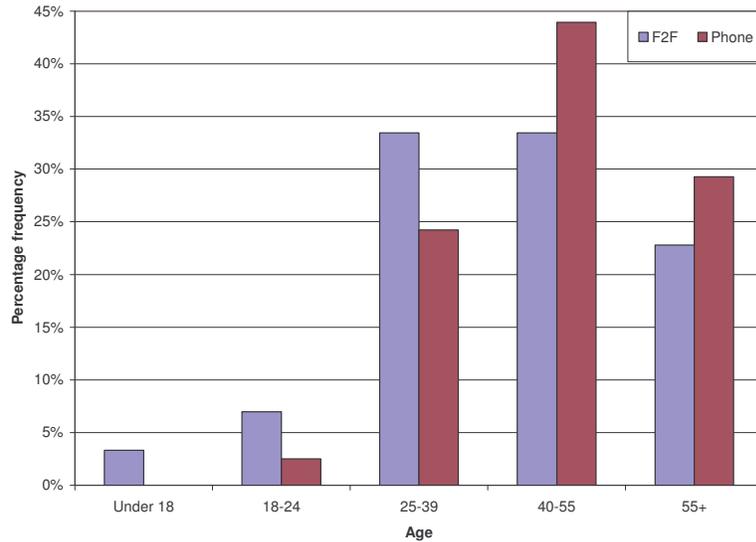


Figure 5b: Percentage of days fished in the Port Macquarie area by recreational fishers of different age groups in the past 12 months (Source: RM and face to face survey).

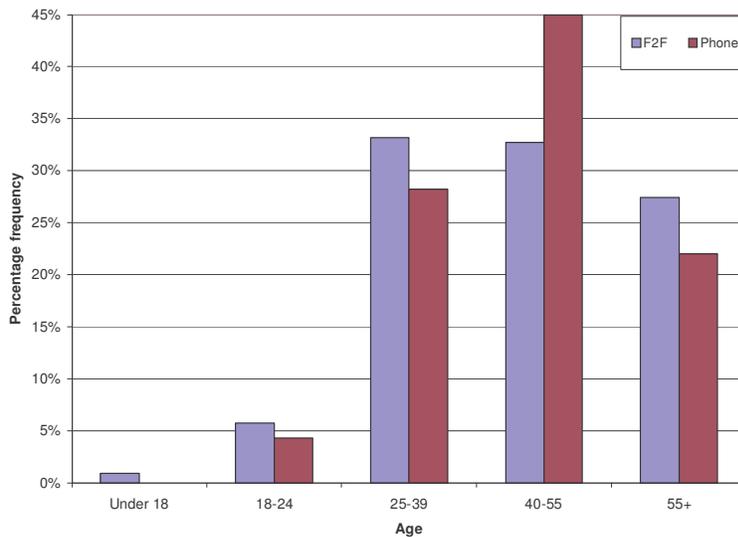


Figure 5c: The percentage frequency of recreational fisher numbers in the Bermagui-Narooma area by different age group in the past 12 months (Source: RM and face to face survey)

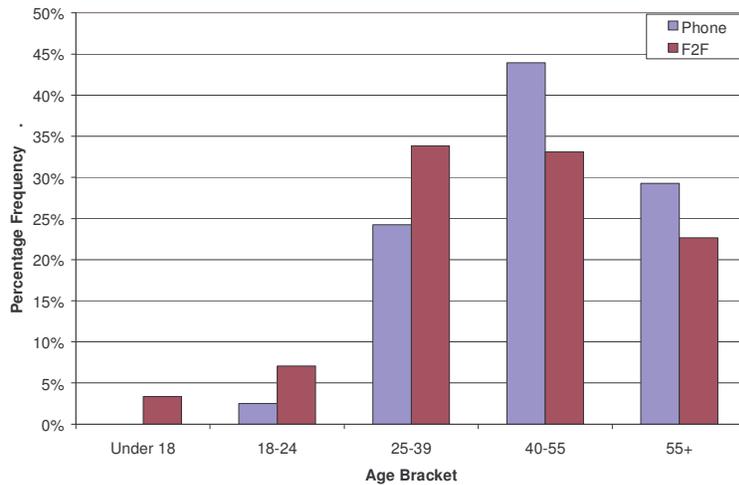
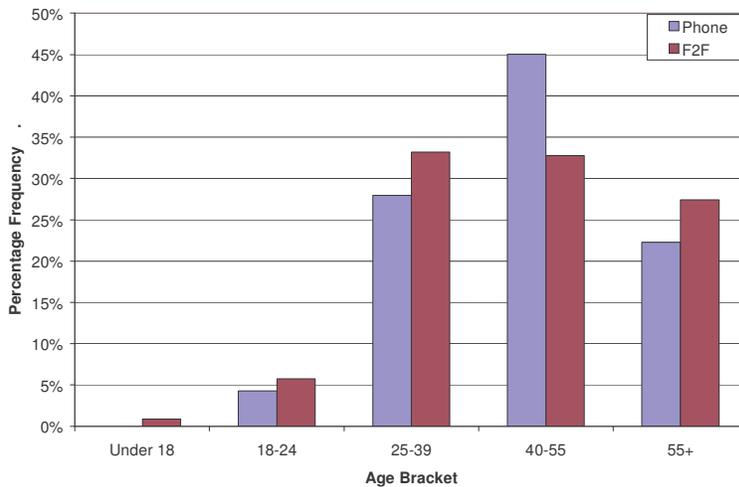


Figure 5d: Percentage of days fished in the Bermagui-Narooma area by recreational fishers of different age groups in the past 12 months (Source: RM and face to face survey)



Discussion- Activity estimates

The survey results have been used to estimate the days fished in Port Macquarie and Bermagui-Narooma. As there has been no previous work it is only possible to attempt to reconcile the estimates with other survey sources. The National Visitors Survey (NVS, 2004) is for the year 2003 and gives estimates of overnights spent by tourists in the Northern and Southern regions of NSW reported in Table 11.

Table 11: Estimates of the number of overnights and day trips in the National Visitors Survey with those who designated fishing as an activity included (NVS, 2004).

	Overnight		Day trips	
	North coast	South coast	North coast	South coast
Total	3,500,000	2,700,000	3,200,000	1,900,000
Fishing	458,000	514,000	58,000	100,000
%	13.1%	19.0%	1.8%	5.3%

The estimates of visitor overnights from the current study are 79,600 for Port Macquarie and 102,900 for Bermagui-Narooma in Table 9b. These are 17% and 20% of the regional estimates for total tourist overnights by the National Visitors Survey and show the significant contribution of recreational anglers to total tourism activity in both regions.

3.1.6 Travel and fishing trips

Mode of travel to fishing locations

Part of the fishing trip characteristics involves travel by car to various fishing locations. This is examined in some detail since vehicle travel will contribute a substantial amount to fisher expenditure and informs management of the importance of recreational fishing access to different groups in the community as implied by their preparedness to undertake long trips to the coast. Those interviewed were asked about their car use for their current or previous fishing trip as reported in Table 12a. Approximately 95% of visitors in Port Macquarie area and 90% in Bermagui-Narooma area had used their own cars to travel to fishing areas.

Table 12a: Percentage of use of own car by visitors to travel to town for fishing trip

Port Macquarie	Own Car	Own Car %	Other	Total
Telephone Survey	145	95%	8	153
Face to Face Survey	193	95%	13	206
Bermagui-Narooma	Own Car	Own Car %	Other	Total
Telephone Survey	165	92%	13	178
Face to Face Survey	163	88%	23	186

An angling trip may be as short as a few hours within a single day, or may involve longer trips of one, several or many nights away from home. This section examines the trip characteristics of fishers in Port Macquarie and Bermagui-Narooma areas. The distance from home to the fishing locations is examined in some detail since vehicle travel will contribute a substantial amount to fisher expenditure as addressed later in the study and informs management of the importance of recreational fishing access to different groups in the community as implied by their preparedness to undertake long trips to the coastal towns in question. Later in the study we do not count the travel expenditure made outside the town. The surveys asked for information regarding companions on trips and results are shown in Table 12b.

Table 12b: Percentages of traveling companions on trips to Port Macquarie and Bermagui-Narooma (Source: RM and Face to face survey).

Companions	Port Macquarie				Bermagui/ Narooma			
	F2F	Phone	Total	%	F2F	Phone	Total	%
Family	144	134	278	68.8%	115	106	221	55.9%
Friends	24	25	49	12.1%	38	65	103	26.1%
Friends/Family	23	17	40	9.9%	28	22	50	12.7%
Single – no one	15	21	36	8.9%	3	12	15	3.8%
Can't Say/Other		1	1	0.2%	2	4	6	1.5%
Grand Total	206	198	404	100%	186	209	395	100%

About 69% of recreational fishers who visited Port Macquarie area in 2003 were accompanied by their family members. Trips alone, were 9% and trips with friends 12%. Mixed family and friends on trips were 10%.

Trips to Bermagui-Narooma had family as 56% of companions with 26% of trips with friends. Only 4% fishers were not accompanied by anyone and 13% were mixed family and friends groups. Fishing trips with friends are more frequent for Bermagui-Narooma and family trips more frequent to Port Macquarie.

The traveling companion data indicates that Port Macquarie is more of a family holiday destination, whereas Bermagui-Narooma would appear to be much more of a fishing specific destination. Only 12.1% of anglers traveled to Port Macquarie with friends, while 26.1% traveled to Bermagui-Narooma with friends. This probably reflects a greater tendency for Bermagui-Narooma to attract serious fishing parties than does Port Macquarie, the latter being seen as more of a family oriented destination.

Distances traveled

The details of distances (one way) travelled from home postcode to fishing destinations in Port Macquarie and Bermagui-Narooma areas on the last recreational fishing trip are presented in Figures 6a and b. Given the question referred to the last recreational fishing trip, the timing of the face to face survey would likely obtain more annual holiday trips than the telephone survey.

Figure 6a: The frequency of distances (one way) travelled by visitors from home postcode to fishing destination in Port Macquarie area on the last recreational fishing trip (Source: RM and face to face surveys).

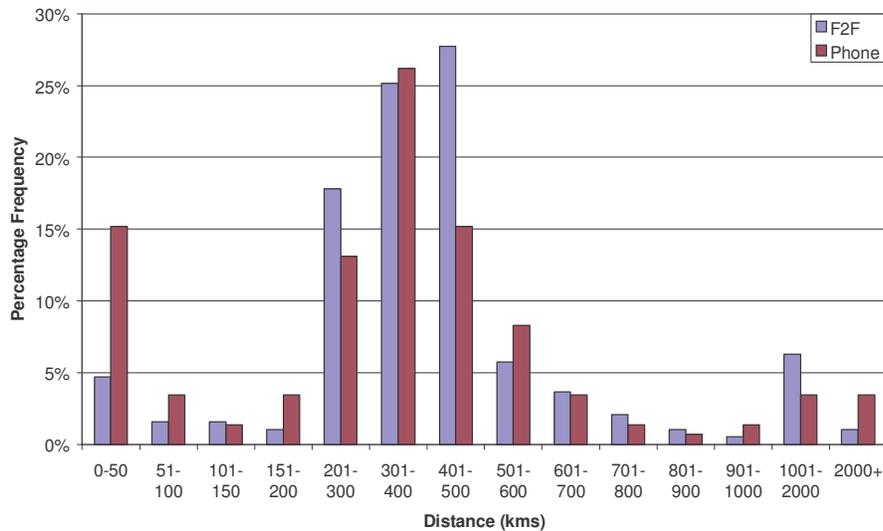
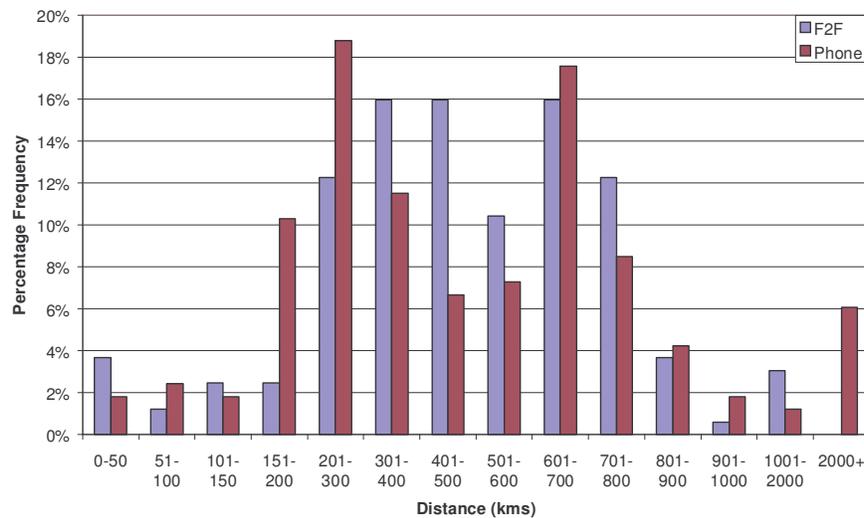


Figure 6b: The frequency of distances (one way) travelled by visitors from home postcode to fishing destination in Bermagui-Narooma area on the last recreational fishing trip (Source: RM and face to face surveys).



For visitors to Port Macquarie distances of 200-500km one way constituted 55% of all trips. Only for trips of 400-500km did the face to face result exceed the phone survey, the other results being similar. The origin of visitors sampled is reported in Table 11 and indicates that many of the visitors to Port Macquarie come from Country NSW (43%) and Sydney (23%).

Distance travelled to Bermagui-Narooma had two peaks with the 200-500km distance constituting 40% of travellers and 34% in the 500-800 km category. Table 11 indicates that while many of the visitors come from Country NSW (34% - particularly Canberra) and Sydney (9%), there are a very

significant number of Victorians coming to fish in Bermagui (36%) which would account for the second peak of distances travelled around 600 to 700km. Another major difference is the percentage of visitors coming from Sydney, about 21% for Port Macquarie, but only 9% for Bermagui-Narooma. This result is particularly noteworthy and has implications for managers and tourism.

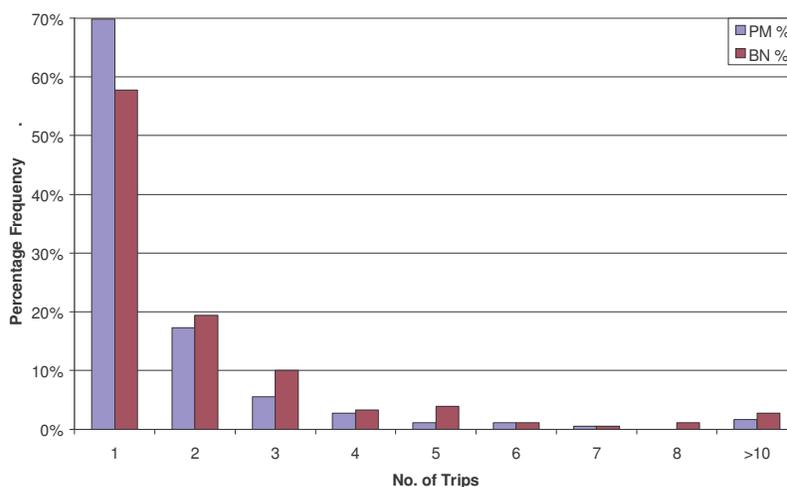
Table 11: Place of origin of recreational fishers that visited Port Macquarie and Bermagui-Narooma area on the last recreational fishing trip (Source: RM and face to face surveys).

Origin	Port Macquarie				Narooma/Bermagui			
	F2F	%	Phone	%	F2F	%	Phone	%
Own P'code	66	24%	15	8%	40	18%	28	13%
Sydney	62	23%	38	19%	21	9%	19	9%
Other NSW	117	43%	120	61%	77	34%	88	42%
Qld	9	3%	19	10%	2	1%	2	1%
SA	4	1%	1	1%		0%	1	0%
Vic	11	4%	5	3%	82	36%	71	34%
WA		0%		0%	1	0%		0%
Overseas	3	1%		0%	3	1%		0%
Grand Total	272	100%	198	100%	226	100%	209	100%

Trip frequency

The face to face survey asked respondents about the number of fishing trips to Port Macquarie and Bermagui-Narooma in the past year and results are reported in Table 12.

Figure 7: Number of fishing trips to Port Macquarie and Bermagui-Narooma in last year (Source: Face to face survey).



The average number of trips per annum by visiting anglers was 1.85 to Port Macquarie and 2.55 to Bermagui-Narooma.

Discussion of the section

Car transport is used by 95% of anglers in Port Macquarie and by approximately 90% in Bermagui-Narooma. Anglers undertake an estimated 1.85 trips per annum to Port Macquarie and 2.55 trips per annum to Bermagui-Narooma. Companions on fishing trips to Port Macquarie constituted family (69%), friends (12%) and trips alone (9%). Companions on trips to Bermagui-Narooma were more likely to be friends and there were few trips alone 3%.

Anglers in NSW are highly dependent on car travel with 50% of trips being greater than 50km travel one way (Dominion 2003). About 55% of all trips to Port Macquarie were between 200-500km one way. In contrast Bermagui-Narooma had 40% of trips between 200-500km and 34% of trips were between 500-800km.

The study has relied on the recreational fishing licence as a data base of fishers. In this study we used both the licence survey and face to face surveys in order to obtain some cross checks to be made by interviewers on licensing and reasons for exemptions to licences. These are reported in Table 13.

Table 13: The percentage of licenced fishers and exempted fishers among those interviewed in the face to face survey sample.

Category	Port Macquarie	%	Bermagui/Narooma	%
Licensed	171	63%	180	80%
Unlicensed Exempted	59	22%	34	15%
Unlicensed Un-exempted	11	4%	11	5%
Unlicensed Blank response	31	11%	1	0%
Total	272	100%	226	100%

n.b. It should be noted that all fishers in phone survey were licenced.

It was found that in both Port Macquarie and Bermagui-Narooma, approximately 4%-5% of those contacted for interview did not have a licence when required to do so. In Port Macquarie the questions about whether someone was exempted also led to 4% not having a licence when required to do so, and 11% who gave blank responses. It is reasonable to assume a large proportion of the 'blank' respondents were covering the fact they did not have a licence when required to do so, indicating a potential non-compliance rate in the Port Macquarie region of up to 15%.

The other important point to note is the 22% and 15% of surveyed anglers were legitimately exempted from having to have a licence. This vindicates the need for a face to face survey, since a significant proportion of the true angling population would be 'lost' in a survey of licensed anglers only.

3.2 Estimation of the expenditure by recreational fishers

Recreational fishers were asked about expenditure per day on their current (face to face survey) or most recent (telephone) fishing trips. All local and visiting fishers were asked about their fishing and trip related expenses. This involved recalling expenditure for a range of items (e.g. tackle, boat and other fishing equipment, bait, fishing clothes, hiring boats and fishing guides etc) spent within the last 12 months on trips to the study towns. As previously discussed there was slight difference in the 12 months recorded by each survey method.

In addition to fishing related expenditure, visitors were also asked about their other expenditure such as accommodation, eating out and entertainment. In the case of visitors, the information collected also included fishing-related expenditure on and by fishers' accompanying dependents. Trips may be for just one day, or for more than one day, and may include accommodation and living expenses for those accompanying the angler interviewed.

3.2.1 Daily expenditure by fishers

The daily average expenditure was calculated by both survey methods. The surveys revealed that expenditure per day by local anglers was significantly less than the daily expenditure of visitors, as would be expected. There were also differences among the local fishers sampled, with the estimated expenditure of local fishers sampled by phone, being significantly higher than the expenditure of locals interviewed in the face to face survey.

Several respondents in both surveys replied with high costs which may be associated with fishing events. The sample size of locals interviewed by phone was low and should be treated with caution. The expenditure estimates for locals and visitors in both surveys were used to generate a weighted average expenditure for locals and visitors to be used in developing expenditure estimates as reported in Table 14.

Discussion

The daily expenditure of visitors in towns was slightly higher for Port Macquarie than in Bermagui-Narooma. In Bermagui-Narooma the phone data was higher than \$200 per day, probably due to the travel costs incurred by Victorians visiting Bermagui-Narooma as discussed earlier⁵. Locals spent an average of \$42 per day in Port Macquarie and to \$52 per day in Bermagui-Narooma.

The expenditure results for visitors are similar to those of Dominion (2003) where daily expenditures by Sydney and Non-Sydney overnight trips were \$211.27 and \$202.62 respectively. The Sydney study also reported daily expenditure for day trips at \$124.79 per day. No previous expenditure estimates for local fishers exist.

⁵ Travel costs are related to the kilometres (km) of car travel. For each survey an imputed cost per km was applied at per Australian Tax Office rates. This was applied to the return distance for the trip. The total expense was then divided by 1/3 to represent the proportion of car travel expenses residing in the town being visited (Dominion, 2001 and 2003). Travel expenses while in the area were imputed at \$10 per day for those fishers with cars and \$5 per day for those without cars.

Table 14: The average daily expenditure (\$) for local and visiting fishers in Port Macquarie and for Bermagui-Narooma weighted between the telephone and Face to Face survey results.

Category	Port Macquarie				Bermagui/Narooma			
	Local	%	Visitors	%	Local	%	Visitors	%
Major Tackle	\$ 8.21	19%	\$ 3.58	2%	\$ 9.79	19%	\$ 6.53	3%
Other Tackle	\$ 3.32	8%	\$ 2.21	1%	\$ 6.83	13%	\$ 4.37	2%
Bait /Berley	\$ 3.71	9%	\$ 4.80	2%	\$ 6.08	12%	\$ 4.53	2%
Boat Hire	\$ 3.86	9%	\$ 1.76	1%	\$ 0.07	0%	\$ 3.37	2%
Boat Fuel	\$ 4.69	11%	\$ 3.94	2%	\$ 7.28	14%	\$ 18.30	9%
Other Boat Equipment	\$ 2.12	5%	\$ 5.73	3%	\$ 4.99	10%	\$ 2.11	1%
F Clothes	\$ 1.27	3%	\$ 1.15	1%	\$ 1.37	3%	\$ 1.41	1%
Other Equipment	\$ 2.18	5%	\$ 1.79	1%	\$ 2.73	5%	\$ 1.50	1%
F Guides /charters	\$ 4.61	11%	\$ 1.07	1%	\$ 3.50	7%	\$ 4.24	2%
Accommodation	\$ -	0%	\$ 55.62	26%	\$ -	0%	\$ 35.34	18%
Eating Out	\$ 0.84	2%	\$ 31.26	15%	\$ 1.95	4%	\$ 24.75	12%
Other food & drink	\$ 0.76	2%	\$ 24.67	12%	\$ 2.07	4%	\$ 21.04	10%
Entertainment	\$ 1.21	3%	\$ 20.52	10%	\$ 0.08	0%	\$ 12.43	6%
Car Transport	\$ -	0%	\$ 35.04	17%	\$ -	0%	\$ 43.22	22%
Car Transport - internal	\$ 5.18	12%	\$ 9.77	5%	\$ 5.22	10%	\$ 9.55	5%
Any other (\$)	\$ 0.15	0%	\$ 7.37	4%	\$ 0.51	1%	\$ 7.73	4%
Total	\$ 42.12	100%	\$ 210.27	100%	\$ 52.47	100%	\$ 200.42	100%

In Port Macquarie, average local daily angler expenditure is \$42.12 of which \$15.23 per day is spent on tackle and bait (36%), \$18.73 per day on boat fuel/hire and guides and other equipment (46%), \$5.18 per day on local transport (12%) and the (6%) balance on incidentals. In Bermagui-Narooma local average daily angler expenditure is \$52.47 of which \$22.70 per day is spent on tackle and bait (44%), \$20 per day on boat fuel, guides and other equipment (39%), \$5.22 per day on local transport (10%) and the (7%) balance on incidentals.

In Port Macquarie visitors' average daily expenditure is \$210.27 of which expenditure of \$129 per day is on accommodation⁶, eating out, other food and drink entertainment is (63%), with \$46.80 per day on travel⁷ (22%), \$10.60 per day on fishing tackle and bait (5%) and 7% on boat fuel and other expenditure. In Bermagui-Narooma visitors' average daily expenditure is \$200.40, of which \$93.60 per day is on accommodation, eating out, other food and drink entertainment is (46%), with \$52.77 per day on travel (27%), \$30.90 per day on boat fuel and equipment (11%), \$15.43 per day on tackle and bait (7%) and (9%) on other incidental expenditure.

3.2.2 Total expenditure in Port Macquarie and Bermagui-Narooma

The total expenditure estimates are derived by combining the days fished per year with the average expenditure per day. Table 15a displays the expenditure per day estimates from both surveys.

⁶ Accommodation is the average cost across all types of accommodation. Staying with friends would not contribute to this average.

⁷ Travel cost per day is 1/3 of the imputed total travel cost @50c/km, divided by the number of days of the trip. Local travel is assumed to be \$10 per day.

Table 15b reports the estimates of total expenditure and Table 15 c reports the total expenditure on each category of expenditure.

Table 15a: Daily expenditure associated with recreational fishing in Port Macquarie and Bermagui-Narooma areas (Source: RM and face to face survey).

Daily Expenditure	Port Macquarie		Bermagui/Narooma	
	Local	Visitor	Local	Visitor
Face to Face	\$ 35.32	\$ 201.79	\$ 33.19	\$ 159.36
Phone	\$ 52.09	\$ 221.68	\$ 67.40	\$ 242.84
Weighted Average Expenditure	\$ 42.12	\$ 210.34	\$ 52.47	\$ 200.42

Table 15b: Total estimated expenditure per annum associated with recreational fishing in Port Macquarie and Bermagui-Narooma areas (Source: RM and face to face survey).

Port Macquarie			Bermagui/Narooma		
Local	Visitors	Total	Local	Visitors	Total
\$ 7,958,000	\$ 14,858,000	\$ 22,816,000	\$ 4,344,000	\$ 20,622,000	\$ 24,966,000

Table 15c: Estimated annual expenditure on categories of expenditure associated with recreational fishing in Port Macquarie and Bermagui-Narooma (Source: RM and Face to face survey).

Category	Port Macquarie			Bermagui/Narooma		
	Local	Visitors	Total	Local	Visitors	Total
Major Tackle	\$ 1,550,443	\$ 253,124	\$ 1,803,567	\$ 810,384	\$ 672,362	\$ 1,482,746
Other Tackle	\$ 626,766	\$ 155,854	\$ 782,620	\$ 565,851	\$ 449,719	\$ 1,015,571
Bait /Berley	\$ 700,740	\$ 339,221	\$ 1,039,962	\$ 503,083	\$ 466,554	\$ 969,637
Boat Hire	\$ 729,166	\$ 124,544	\$ 853,709	\$ 5,884	\$ 346,579	\$ 352,463
Boat Fuel	\$ 885,887	\$ 278,239	\$ 1,164,126	\$ 603,072	\$ 1,882,883	\$ 2,485,955
Other Boat Equipment	\$ 401,376	\$ 404,832	\$ 806,208	\$ 412,870	\$ 216,666	\$ 629,536
F Clothes	\$ 240,621	\$ 81,238	\$ 321,859	\$ 113,641	\$ 145,086	\$ 258,727
Other Equipment	\$ 411,299	\$ 126,736	\$ 538,034	\$ 225,822	\$ 154,539	\$ 380,362
F Guides /charters	\$ 871,032	\$ 75,487	\$ 946,519	\$ 290,209	\$ 436,187	\$ 726,396
Accommodation	\$ -	\$ 3,930,093	\$ 3,930,093	\$ -	\$ 3,636,763	\$ 3,636,763
Eating Out	\$ 159,125	\$ 2,209,106	\$ 2,368,231	\$ 161,604	\$ 2,546,360	\$ 2,707,964
Other food & drink	\$ 144,383	\$ 1,743,011	\$ 1,887,393	\$ 171,356	\$ 2,165,337	\$ 2,336,693
Entertainment	\$ 229,578	\$ 1,450,116	\$ 1,679,694	\$ 6,269	\$ 1,278,622	\$ 1,284,891
Car Transport	\$ -	\$ 2,476,171	\$ 2,476,171	\$ -	\$ 4,447,168	\$ 4,447,168
Car Transport - internal	\$ 979,133	\$ 690,336	\$ 1,669,469	\$ 431,872	\$ 982,370	\$ 1,414,242
Any other (\$)	\$ 28,788	\$ 520,522	\$ 549,310	\$ 42,498	\$ 795,117	\$ 837,614
Total	\$ 7,958,336	\$14,858,630	\$22,816,967	\$ 4,344,415	\$20,622,312	\$24,966,728

Discussion

The amount of direct, indirect fishing and other expenditure associated with anglers who fished in Port Macquarie was \$22.8m, with \$7.9m coming from locals and \$14.8m from visitors. In Bermagui-Narooma a total of \$25.0m was estimated with \$4.3m from locals and \$20.6m from visitors. The expenditure is summarized in Table 15d below.

Table 15d: The summarized categories of expenditure (\$ million) and percentages of total expenditure for local, visiting and all fishers in Port Macquarie and Bermagui-Narooma (Source: RM and Face to face surveys).

(\$ in Millions)	Port Macquarie						Bermagui/Narooma					
	Local	%	Visitors	%	Total	%	Local	%	Visitors	%	Total	%
Major/minor tackle, bait/berley	2.9	36%	0.7	5%	3.6	16%	1.9	43%	1.6	8%	3.5	14%
Boat hire, Boat fuel, other boat equip	2.0	25%	0.8	5%	2.8	12%	1.0	24%	2.4	12%	3.5	14%
Fishing clothes equipment guides	1.5	19%	0.3	2%	1.8	8%	0.6	14%	0.7	4%	1.4	5%
Accommodation	-	0%	3.9	26%	3.9	0.0	-	0%	3.6	18%	3.6	15%
Eating out, food entertainment	0.5	7%	5.4	36%	5.9	26%	0.3	8%	6.0	29%	6.3	25%
Car travel -all	1.0	12%	3.2	21%	4.1	18%	0.4	10%	5.4	26%	5.9	23%
Other costs	0.0	0%	0.5	4%	0.5	2%	0.0	1%	0.8	4%	0.8	3%
Total	8.0	100%	14.9	100%	22.8	100%	4.3	100%	20.6	100%	25.0	100%

In Table 15d it is apparent that in Port Macquarie the expenditure of locals on tackle, bait, boat fuel and equipment of \$6.4m exceeds the expenditure of visitors on these items which is \$1.8m. However in Bermagui-Narooma visitor's expenditure on tackle and particularly on boat fuel and equipment is \$4.7m and exceeds local expenditure on these items of \$2.5m.

In both Port Macquarie the main expenditure by visitors is on accommodation \$3.9m (26%) and eating out \$5.4m (36%). In Bermagui-Narooma accommodation is \$3.6m (18%) and eating out \$6.0m (29%). Car travel by visitors in Port Macquarie is \$3.2m (21%) and is \$5.4m (26%) in Bermagui-Narooma.

3.2.3 The flow-on benefits of expenditure and their importance to the communities.

The estimated expenditure data were used in conjunction with regional input-output data to estimate the regional benefits from recreational fishing. This was undertaken by Centre Agricultural and Regional Economics (CARE Pty Ltd).

Table 16a and 16b report the economic impact of the estimated expenditure in Port Macquarie.

Table 16a: The estimates of indirect flow on effects from recreational fisher expenditure in Port Macquarie region (Source: CARE Pty Ltd).

ECONOMIC IMPACT OF FISHERS EXPENDITURE IN PORT MACQUARIE												
	Flow-on Effects				TOTAL IMPACT		Flow-on Effects				TOTAL IMPACT	Type II Ratio
	Direct Effect	Prod. Induced	Cons. Induced	Total			Direct Effect	Prod. Induced	Cons. Induced	Total		
IMPACTS					MULTIPLIERS							
Gross Output (\$m)					Gross Output (\$)							
Locals	7.958	2.248	1.856	4.105	12.063	Locals	1.000	0.283	0.233	0.516	1.516	1.516
Visitors	14.859	4.413	3.084	7.498	22.356	Visitors	1.000	0.297	0.208	0.505	1.505	1.505
Total	22.817	6.662	4.941	11.602	34.419	Total	1.000	0.292	0.217	0.509	1.509	1.509
Value Added (\$m)					Value Added (\$)							
Locals	1.919	0.991	1.032	2.023	3.942	Locals	0.241	0.125	0.130	0.254	0.495	2.054
Visitors	3.649	1.929	1.715	3.644	7.293	Visitors	0.246	0.130	0.115	0.245	0.491	1.999
Total	5.568	2.920	2.747	5.667	11.235	Total	0.244	0.128	0.120	0.248	0.492	2.018
Household Income (\$m)					Household Income (\$)							
Locals	1.356	0.460	0.411	0.871	2.228	Locals	0.170	0.058	0.052	0.110	0.280	1.643
Visitors	2.148	0.870	0.683	1.553	3.701	Visitors	0.145	0.059	0.046	0.105	0.249	1.723
Total	3.504	1.330	1.094	2.424	5.929	Total	0.154	0.058	0.048	0.106	0.260	1.692
Employment (no.)					Employment (no./\$m)							
Locals	69	17	17	34	103	Locals	8.673	2.181	2.146	4.326	12.999	1.499
Visitors	111	33	28	62	173	Visitors	7.464	2.245	1.910	4.155	11.618	1.557
Total	180	51	45	96	276	Total	7.886	2.223	1.992	4.214	12.100	1.534

In Table 16a for Port Macquarie the gross output of \$22.8m has a total flow on effect of \$11.6m making a total Impact of \$34.4m⁸. This gives a Type II ratio of 1.5 indicating that for each dollar spent directly there are 50c of additional flow on effects in the community. The flow-on effects are similar in proportion for expenditure by locals and visitors, though the scale of direct expenditure at \$14.8m leads to \$7.5m of additional flow-on impacts in the community.

From the direct expenditure there is a direct added value of \$5.57m which has a similar level of flow on impact, making a total of \$11.2m “value added in the community”. Household income indicated the impact of household wages with the direct \$3.5m in wages leading to a total of \$5.93m.

Direct employment due to recreational fishing is estimated to be 180 persons with an additional flow on of 96 persons, a total of 276 in the Port Macquarie community. Of these 103 (37%) were attributable to locals and 173 (63%) to visitor expenditure.

Table 16 b reports the economic impact of the estimated expenditure in Bermagui-Narooma.

⁸ Of the total direct expenditure of \$22.8m, \$13.95 is local expenditure, \$3.6m is taxes (mainly GST and excises) and \$5.22m is imports.

Table 16b: The estimates of indirect flow on effects from recreational fisher expenditure in Bermagui-Narooma region (Source: CARE Pty Ltd).**ECONOMIC IMPACT OF FISHERS EXPENDITURE IN BERMAGUI/NAROOMA**

IMPACTS	Flow-on Effects				TOTAL IMPACT	MULTIPLIERS	Type II Ratio
	Direct Effect	Prod. Induced	Cons. Induced	Total			
Gross Output (\$m)						Gross Output (\$)	
Locals	4.344	1.127	0.982	2.109	6.454	1.000	1.486
Visitors	20.622	5.371	4.057	9.427	30.050	1.000	1.457
Total	24.967	6.498	5.039	11.537	36.504	1.000	1.462
Value Added (\$m)						Value Added (\$)	
Locals	1.022	0.489	0.528	1.017	2.040	0.235	1.995
Visitors	4.360	2.284	2.181	4.465	8.825	0.211	2.024
Total	5.383	2.773	2.710	5.482	10.865	0.216	2.019
Household Income (\$m)						Household Income (\$)	
Locals	0.692	0.245	0.221	0.466	1.158	0.159	1.673
Visitors	2.710	1.164	0.911	2.075	4.784	0.131	1.766
Total	3.402	1.409	1.132	2.541	5.943	0.136	1.747
Employment (no.)						Employment (no./\$m)	
Locals	34	8	8	17	51	7.849	1.496
Visitors	135	39	35	74	209	6.559	1.547
Total	169	47	43	91	260	6.783	1.537

The direct gross output of \$24.9m has a total flow on effect of \$11.5m making a total Impact of \$36.5m⁹. This gives a Type II ratio of 1.46 indicating that for each dollar spent directly there are 46c of additional flow on effects in the community. The flow-on effects are similar in proportion for expenditure by locals and visitors, though the direct expenditure by visitors of \$20.6m leads to \$9.4m of additional flow-ons impacts in the community.

From the direct expenditure there is a direct added value of \$5.38m which has a similar level of flow on impact, making a total of \$10.8m “value added in the community”. Household income indicated the impact of household wages with the direct \$3.4m in wages leading to a total of \$5.94m.

Direct employment due to recreational fishing is estimated to be 169 persons with an additional flow on of 91 persons, a total of 260 in the Bermagui-Narooma community. Of these 51 (20%) were attributable to locals and 209 (80%) to visitor expenditure.

Discussion

The flow on effects in each town can be compared, provided the different size of towns is taken into consideration (larger towns have more goods and services and hence greater flow on effects). Of the flow on effects, production effects (those related to the use of inputs in production) were slightly higher than consumption (those related to the purchases of consumers). In both Port Macquarie and Bermagui-Narooma the flow-on effects, production induced effects (those coming

⁹ Of the total direct expenditure of \$24.6m, \$13.46 is local expenditure, \$4.36m is taxes (mainly GST and excises) and \$7.14m is imports.

from the goods and services purchased by recreationalists inducing production) were slightly higher than consumption induced effects (those related to local employees spending on consumer goods and services). The total economic activity in the economic regions are reported in Table 16c and employment in the towns surveyed are reported in Table 16d.

Table 16c: The economic activity in the Hastings Region and the South East Region of NSW.

	Hastings region (\$m)	South East region (\$m)
Gross Output/Turnover	2,248	7,735
Gross Regional Product	1,392	4,451
Household Income from Employment	582	1,973
Employment (numbers)	21,298	68,750

Table 16d: The recreational fishery related employment as a percentage of fulltime and part time employment in Port Macquarie and Bermagui- Narooma (Source: 2001 ABS data).

	Port Macquarie	Bermagui-Narooma
Estimated RF Fishery Employment	276	260
Employment FT and PT	13,442	2,457
RF employment as % of total jobs	2.1%	10.6%

Table 16c and 16d indicate the contribution of recreational fishers to the communities. In Table 16c the available data for the Hastings Region indicates the size of the economy in Port Macquarie and recreational fishing expenditure is of the order of 1% of gross annual expenditure. Comparisons cannot be made with Bermagui-Narooma since the ABS data are only available for the South east region generally.

The relative importance of recreational fishing expenditure can be seen in the comparisons in Table 16d. The employment estimates from this study are compared with fine scale census employment estimates for each of the community postcodes. The data indicate that recreational fishing expenditure related employment as a percentage of full time and part time employment in each postcode area is 2.1% in Port Macquarie and 10.6% in Bermagui-Narooma¹⁰. This indicates that the economies of the Bermagui and Narooma area are considerably more dependent on employment generated by recreational fishing expenditure than the economy of Port Macquarie.

3.3 The expectations of recreational fishers

The survey asked fishers to comment generally on their recreational fishing experience in each area. The eight questions covered the following elements:

- information on activities and facilities used;
- desire for more (less) facilities, such as places to clean fish and launch boats; and

¹⁰ Care should be taken in the use of these indicative percentages as they depend on how the towns are defined. i.e. Town versus surrounding communities with larger populations.

- the importance (or not) of catching a fish and of fishing in an unspoilt environment.

The results are presented in Figure 17a and 17b. In both locations there was a significant difference in the responses depending on the survey method (phone or face to face). The face to face survey appeared to produce less negative responses in comparison to the phone survey, particularly for Port Macquarie fishers.

In Port Macquarie, the need for more information on tourist activities was one of the few areas that more anglers disagreed than agreed with. More information on family activities and on places to fish met with agreement, particularly in the face to face survey. Similarly more facilities such as kids' fishing places and more places to clean fish had strong positive responses, with more places to launch boats receiving moderate support. Agreement with the propositions of catching a fish and a clean environment were very high (higher than all other categories), particularly so in the Face to face survey.

In Bermagui-Narooma more information on tourist activities met with agreement outweighing disagreement for both survey methods. More information on family activities and on places to fish had a positive response, in both surveys. More places for kids to fish met with agreement, but more facilities to clean fish and more places to launch boats received similar levels of agreement and disagreement. Agreement with the propositions of catching a fish and a clean environment were again very high, and particularly high in the Face to face survey. One intriguing result here is the very low disagreement with need for clean environment from the face to face survey compared with the telephone survey. This may indicate a difference between those sampled or reluctance among those interviewed face to face to appear to not be environmentally sensitive. Without further investigation, the explanation is unknown.

Figure 17a: The importance of the attributes of the fishing experience among recreational fishers in Port Macquarie area (Source: Phone survey).

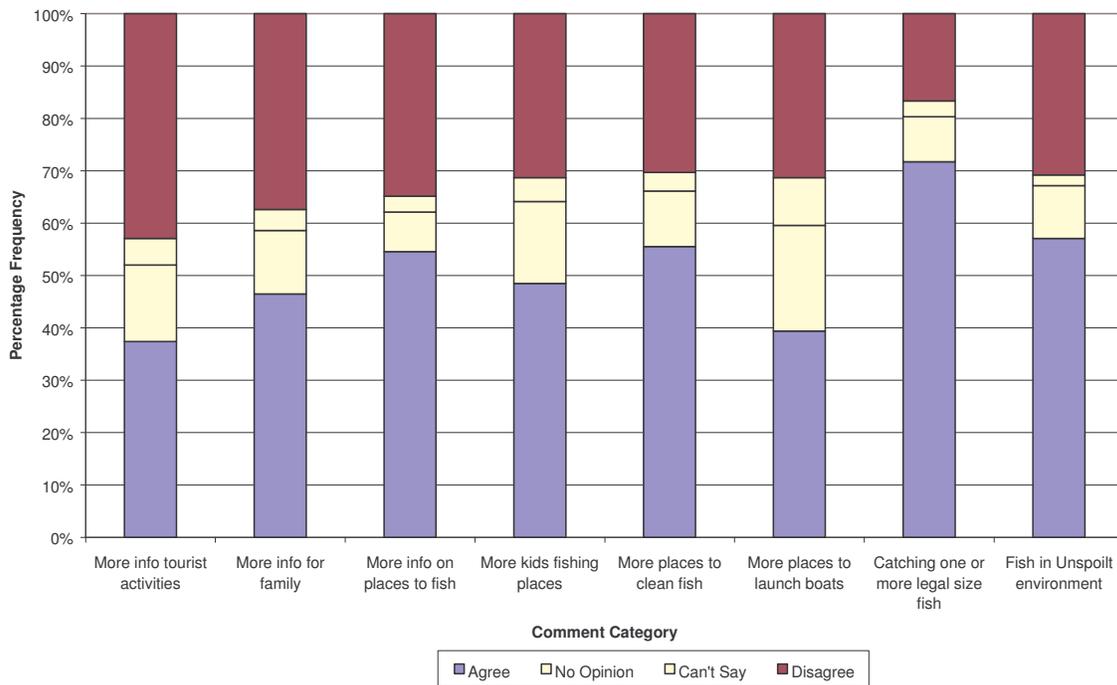


Figure 17b: The importance of the attributes of the fishing experience among recreational fishers in Port Macquarie area (Source: Face to Face survey).

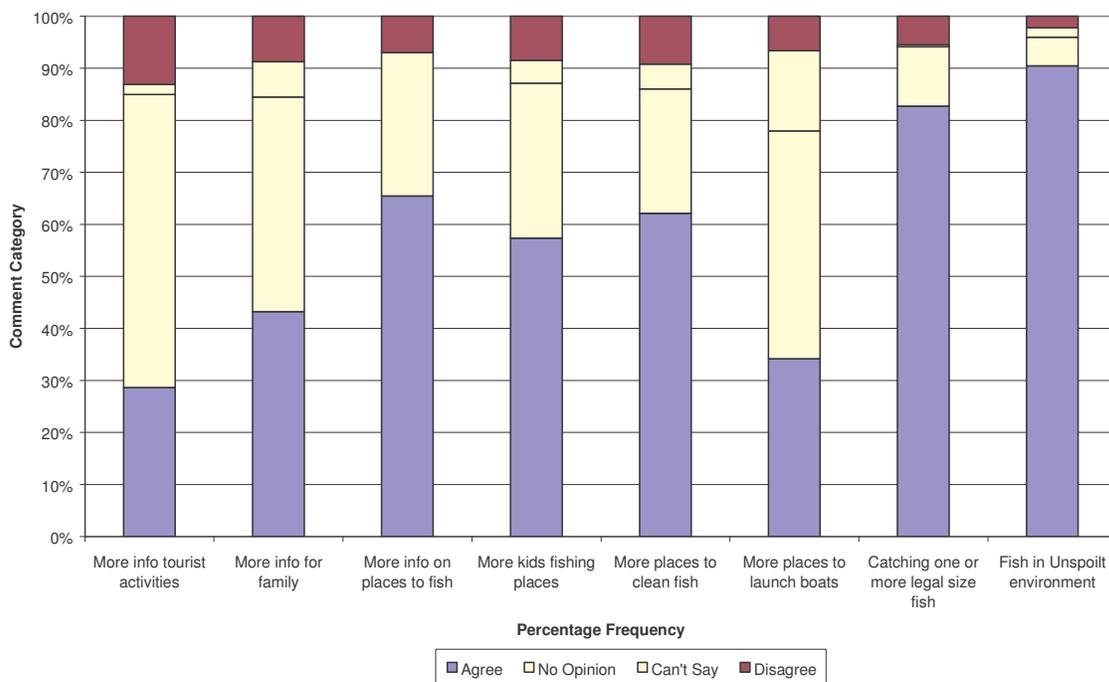


Figure 17c: The importance of the attributes of the fishing experience among recreational fishers in Bermagui-Narooma area (Source: Phone survey).

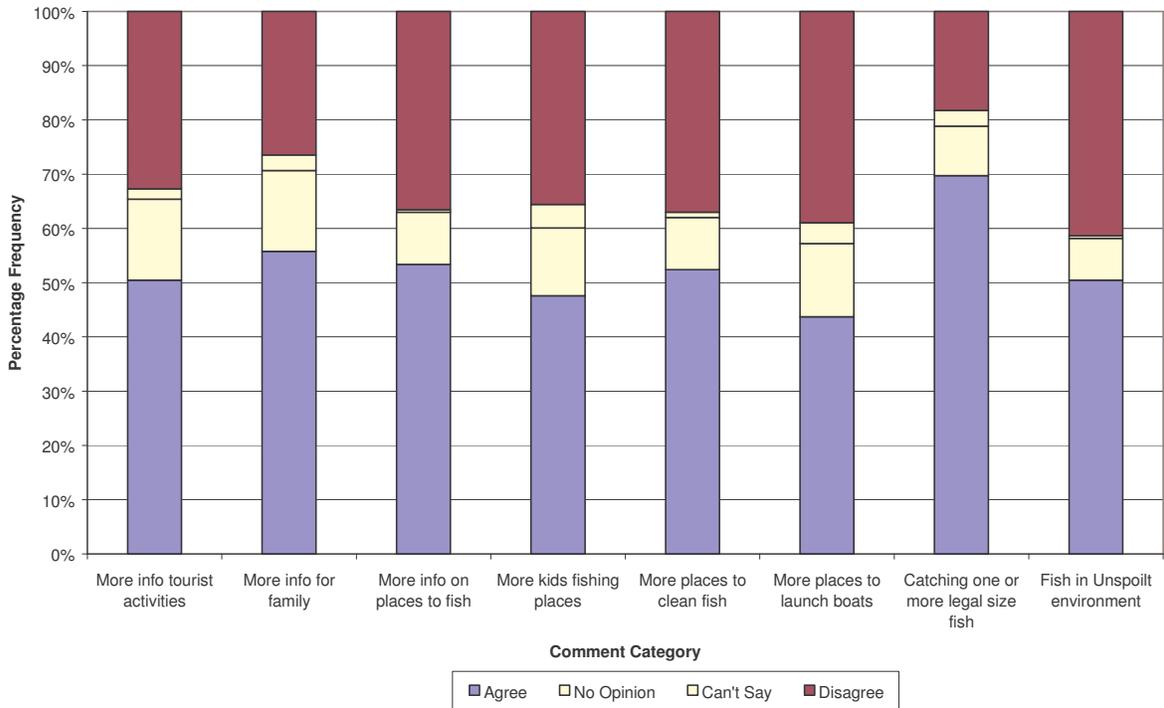
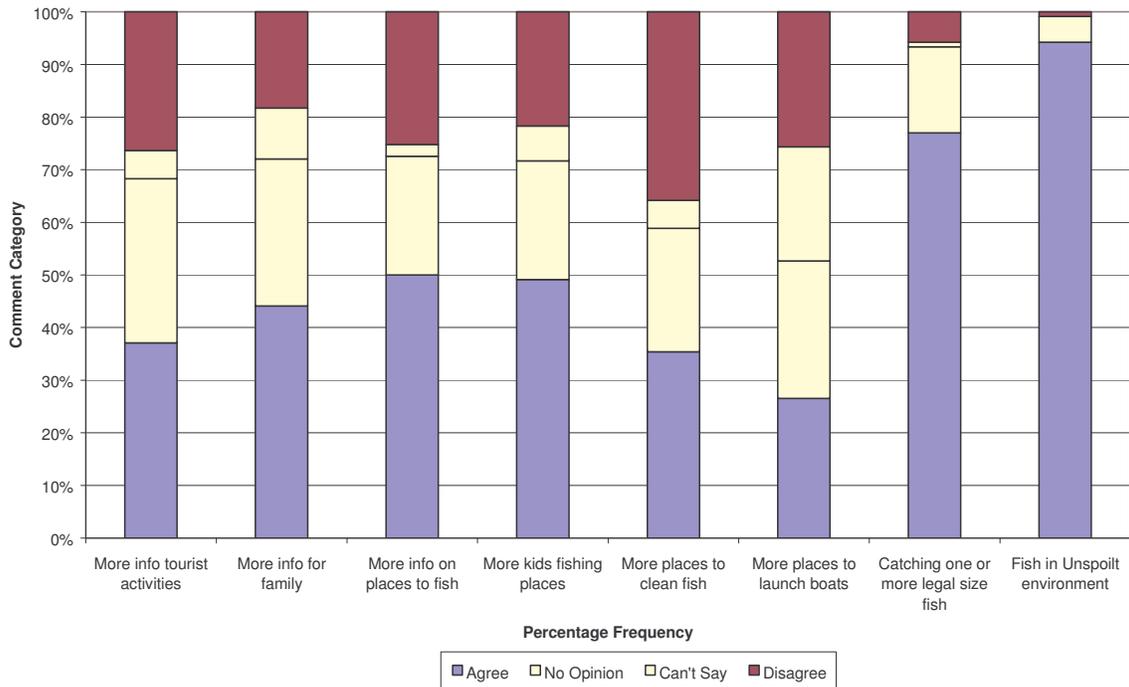


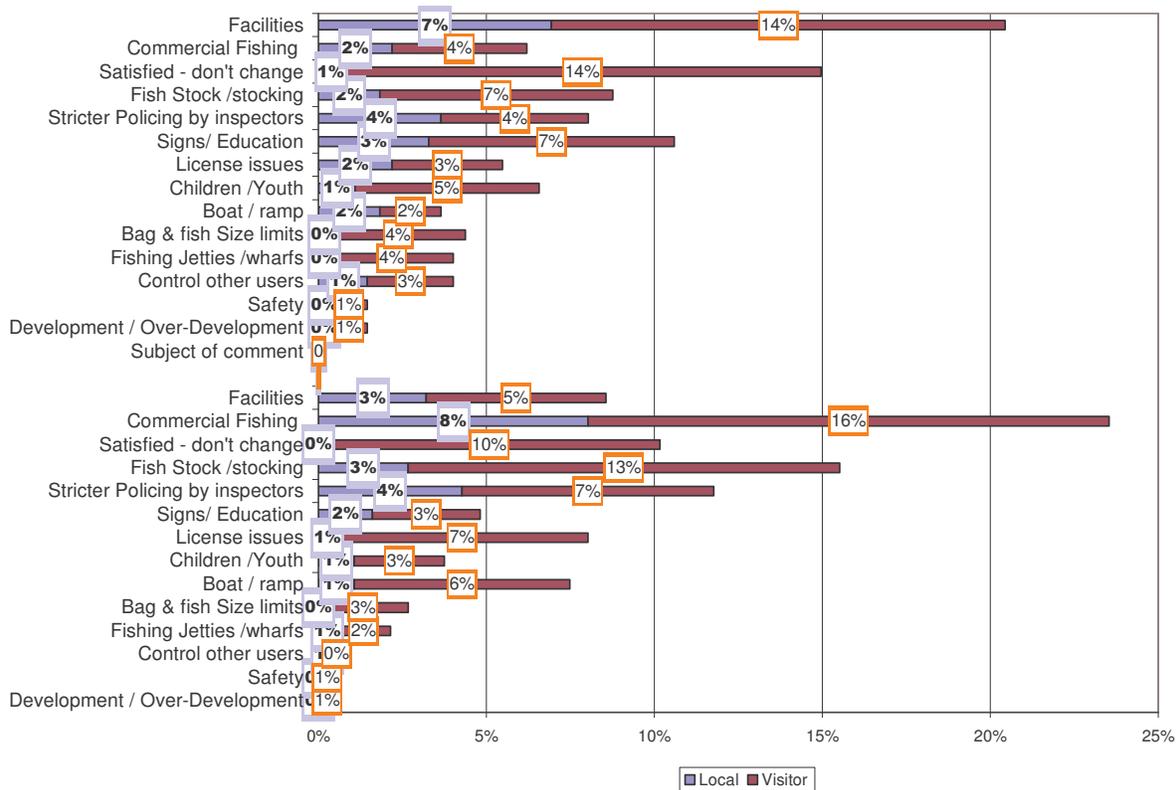
Figure 17d: The importance of the attributes of the fishing experience among recreational fishers in Bermagui-Narooma area (Source: Face to Face survey).



Comments from Anglers in the Face to face interviews

In addition to the preceding questions which were answered in both surveys, fishers in the face to face surveys were asked to comment on “how your recreational fishing experience could be enhanced?”. The intention was to pick up additional comments made after the preceding structured question (Figure 18) and to examine the differences between locals and visitors.

Table 18: The subject of comment for the enhancement of experience of visiting anglers’ made by local and visiting recreational anglers in Port Macquarie (Top) and Bermagui-Narooma (Source: Face to face survey).



There were proportionately more comments from anglers in Port Macquarie than in Bermagui-Narooma. Across both towns most comments were about fishing and recreation related facilities, particularly in Port Macquarie with comments regarding commercial fishing ranking second, being more frequent in Port Macquarie. Satisfied comments were slightly higher in Port Macquarie while a notable result was the satisfaction of visitors and the apparent lack of satisfied comments arising of local anglers (see below).

Comments on children and youth were more frequent in Port Macquarie, while comments on boat ramps were more frequent in Bermagui-Narooma. Comments on the need for bag limits, fish stocks/stocking, licences and stricter policing by inspectors were consistent across both towns, and for both locals and visitors. Comments on signs/education were more frequent in Port Macquarie, as were comments on fish wharfs, controlling other users and development issues.

4. Discussion of the survey results

The study has investigated the expenditure brought to rural coastal towns in NSW by recreational fishers.

4.1 Port Macquarie

Fishing in the Port Macquarie area has been investigated and it was found that of the 13,542 anglers who fish in the area per annum approximately 44% were local residents and 56% visitors. 'General holiday' and 'visiting friends' were the main motivations for visiting, with fishing being significant among second and third ranked reasons to visit. Estuary and rock fishing are the most popular forms of fishing.

On average, anglers fish between 14-22 days per annum in Port Macquarie, however locals fish 33-55 days while visitors fish a much shorter 7-9 days per annum. In Port Macquarie 50% of fishers are licensed, but only half of the licences were purchased in the town.

An estimated 260,000 days were fished by anglers in the area, but only 26% of these were by visitors and 74% by locals. This was due to the low number of days per annum fished by most visitors and the high avidity of local anglers, many of whom are older anglers exempt from the licence.

Visitors to Port Macquarie undertook an average 1.85 trips per annum and were mainly accompanied by their families. Approximately 55% of car trips were in the 200-500km range one way.

In Port Macquarie average expenditure by local anglers was \$42/day and \$201 per visitor overnight. Visitor expenditure included trip companions. The estimated annual expenditure by local anglers was \$7.9m and visiting anglers \$14.8m, totalling \$22.8m per annum. The flow-on effect of 1.5, means that total output is estimated at \$34m. From this expenditure an estimated 180 persons are directly employed and 96 indirectly, making a total of 276 persons. This represents approximately 2.1% of the total employment in Port Macquarie.

In Port Macquarie information on tourist activities was considered adequate, but more information on places to fish, including places for children and fish cleaning facilities were requested. There was satisfaction with fishing facilities among visitors, but not among locals. There were concerns about youths and children, education, controlling other users groups and development issues. Comments on the need for bag limits, fish stocks/stocking, licences and the need for stricter policing by inspectors were also frequent.

Port Macquarie is a sizeable town with a reasonably sound regional economy. When comparing fishing expenditure to economic activity in the town the town has a low economic dependence on recreational fishing. Nevertheless, it undoubtedly provides a key leisure activity for visitors and particularly for locals in the town.

The potential social contribution of recreational fishing is shown by the fact that 11.9% (4,518 of 37,982) local fishers participate, out of the town's population. Of these 2,190 are fishers exempted

from the licence, but contribute 103,900 days fished, 55% of the total days fished by locals. Community interest in fishing is shown in the many opinions held by fishers, many of whom are retirees, and comments about providing children and youths with fishing opportunities.

4.2. Bermagui-Narooma area

In the Bermagui-Narooma area, an estimated 13,655 anglers fish recreationally per annum with 85% of these being visitors to the area. An estimated 185,570 days are fished in total of which 55% are fished by visitors. Visitors tend to fish for more days on average in Bermagui-Narooma than in Port Macquarie possibly due to less alternative activities.

In Bermagui-Narooma expenditure by local and visiting anglers is estimated at \$24.96m, of which 82.5% is attributable to visitors. Local anglers are significantly more avid than visiting anglers, but because of their lower numbers, contribute less total expenditure than visitors to the area.

‘Fishing’ and ‘general holiday’ were the main motivations for visiting in this region, with fewer anglers citing ‘visiting relatives’ but more citing friends as companions on the trip’ than for Port Macquarie. Ocean fishing was the most popular form of fishing, but estuary and rock beach fishing were also important.

On average, anglers fish between 12-18 days per annum in Bermagui-Narooma, but locals fish 30-60 days and visitors 5-11.5 days per annum. In Bermagui-Narooma 71% of fishers are licensed, 24% are exempted and 5% were unlicensed. About 70% of licences were purchased in the town.

An estimated 185,000 days were fished by anglers in the area, but in contrast to Port Macquarie, only 57% of these were by visitors. Many visitors to Bermagui-Narooma are keen fishers on dedicated fishing trips.

Visitors to Bermagui-Narooma made 2.55 trips to the region per annum and friends were the main travelling companions, which is consistent with dedicated fishing trips. Approximately 40% of car trips were in the 200-500km range one way and 34% were much longer trips of 500-800km one way. Many of these were from Victoria where Bermagui-Narooma is renowned as a good fishing location.

In Bermagui-Narooma average expenditure by local anglers was \$52/day and \$210 per visitor overnight. Visiting angler expenditure included trip companions. The estimated annual expenditure by local anglers was \$4.3m (17%) and visiting anglers \$20.6m (82.4%), totalling \$25.0m per annum. The flow on effect of 1.46, means that total output is estimated at \$36.5m. From this expenditure an estimated 169 persons are directly employed and 91 indirectly, making a total of 260 persons. This is approximately 10.6% of the total employment in Bermagui-Narooma postcode area.

In Bermagui-Narooma more information on tourist activities, family activities and on places to fish was requested. About equal numbers of fishers agreed or disagreed with an increased need for places for children to fish and fish cleaning facilities. There were comments on facilities and on the need to control commercial fishing in the area and the need for additional boat ramps. Comments

on the need for bag limits, fish stocks/stocking, licences and the need for stricter policing by inspectors were also frequent.

Bermagui and Narooma are small towns in the south coast regional economy. When comparing fishing related expenditure to general economic activity there is a high economic dependence on recreational fishing. Approximately 10.6% of employment in the postcode area is related to recreational fishing tourism expenditure. Fishing provides a key leisure activity for visitors and is also enjoyed by a significant number of local residents.

The potential economic and social contribution of recreational fishing is shown by the fact that 85% (11,628 visitors as part of 13,655 fishers) of fishers are visitors from out of town. About 2,027 locals fish among a population of 8,375, approximately 24%. Visiting fishers contribute 102,897 days fished, (55% of the total days fished) and probably the same percentage of expenditure to the town. However 760 exempted local fishers, contribute 35,379 days fished, approaching 50 days per angler per year, indicate a likely important social role of fishing among young fishers and retirees in the community.

4.3 Overall Discussion

The results for the two towns contrast in the following ways:

- Port Macquarie has a larger population and more diverse economic base, but has the same number of recreational fishers (13,500) as Bermagui-Narooma. However, more days are fished in Port Macquarie (260,000) due to a greater proportion of local anglers than in Bermagui-Narooma (185,000 days fished);
- The main motivation to visit Port Macquarie by those identified as fishers is for general holidays and visiting relatives. Visitors fish 26% of total days fished in Port Macquarie, whereas visitors to Bermagui-Narooma give fishing and general holidays as key motivations and fish a much higher 57% of total days fished;
- Repeat fishing trips to Bermagui-Narooma are more frequent than to Port Macquarie, each trip averaging longer distances (500+ km one way). Companions on trips to Bermagui-Narooma are usually friends on fishing trips whereas the majority of companions on trips to Port Macquarie are family members;
- The expenditure per day and overnight by each angler is similar in the two towns, but the higher number of visitors and days fished by the overnighing visitors in Bermagui-Narooma, leads to an estimated total expenditure of \$25m compared with \$22.8m in Port Macquarie;
- Regional flow on effects are slightly lower in Bermagui-Narooma (1.46) than in Port Macquarie (1.5), but still indicate a considerable additional flow-on effect in both communities;
- The estimated employment attributable to the expenditure by recreational fishers on visiting the towns is 276 jobs (180 direct and 96 indirect) in Port Macquarie and 260 jobs (169 direct and 91 indirect) in Bermagui-Narooma. The jobs derived from this expenditure represent 2.1% of total jobs in Port Macquarie and 10.6% of total jobs in Bermagui-Narooma postcode area.

Along the NSW coast there are many other towns which resemble the contrasting features found in each of these study towns. The clear message is the potentially high level of dependence in coastal towns with lower population on the money brought into their regions by recreational fishing tourism. The National Visitors Survey of 2003 reports that between 13% and 19% of visitors to the North and South coasts of NSW have participated in fishing (see Table 11). This makes fishing one of the most popular recreational activities and should be a key consideration for those managing tourism in these coastal communities.

The expenditure calculated was an estimate of the total expenditure associated with the fishing trip, including meals and expenditures on other family members. This should make the estimates similar to tourist expenditures, though respondents were asked to recall more than individual expenditure, such as family accommodation¹¹.

How can the economic benefits to coastal region be increased?

As managers we wish to “add value” through the management of the fish resource and the surrounding leisure activity expenditure. Some ways in which expenditure might be raised include the following:

- Increase the number of anglers, both local and those deciding to make trips;
- Increase the number of trips made by anglers;
- Increase the number of days fished by anglers, whether local or visitors;
- Encourage anglers to bring families and to holiday in the region;
- Encourage groups of enthusiasts to make special fishing trips, including running tournaments and competitions;
- Increase the amount spent by fishers in fishing, accommodation and entertainment.

In considering increases in leisure expenditure, knowledge of other activities undertaken by anglers would be useful information. Many fishers may fish up to a point where they switch to another leisure activity, such as golf or bush walking. This suggests that it is important to know motivational factors for choosing angling and reasons for making trips to regional towns.

The study indicates that there is a close association between tourism and recreational fishing activity. Tourism in Australia is surveyed by the under the National Visitors Survey and can give indicative data for 2003 visiting rates to the North Coast and South Coast regions as reported in Table 18.

¹¹ Apportionment of the expenditures to be “attributable” to fishing was not undertaken, but as no capital expenses are included, the only apportioning would be on non fishing expenses in which the proportion not incurred in respect of the fishers own activity should be deducted.

Table 18: A comparison of the numbers and percentages of generic tourists to the South Coast region as recorded by the National Visitors Survey 2003, compared with the percentages of licence sales by area of origin (NVS, 2004 and Table 2 this study).

State	Overnight visits to South Coast (NVS)	% (NVS)	% of licence sales in Bermagui/Narooma (RFL)
NSW	1,800,000	67%	36%
Vic	348,000	13%	36%
ACT	357,000	13%	26%
Other	195,000	7%	2%
Total	2,700,000	100%	100%

In Table 11 the NVS estimates of total fishing related activity in the North and South regions of NSW are much larger than those for the towns we investigated. Fishing among over night visitors is 19% of total visitors to the southern region and 13.1% in the north. This supports the finding in the current study, that a greater percentage of visitors fished in Bermagui-Narooma, than among those visiting Port Macquarie.

In Table 18 the available information for the southern region in the NVS shows the origins of visitors to the South Coast region. When compared to the origins of fishing licence sales in Bermagui and Narooma, these towns gain a disproportionately high percentage of licence sales from ACT and Victoria, relative to the general percentage of overnight visitors from ACT and Victoria. We attribute this to the specific attraction of the coast but in particular, to perceived recreational fishing opportunities in the region.

The survey has provided information on the some of the key attributes of the recreational fishing experience and confirms previous surveys in concluding that anglers wish to be in a clean environment and to catch a fish of legal size (Dominion, 2003). These are the prime considerations for fishers in selecting their fishing location. Perceptions of fish availability are reinforced by other anglers and by informal communication based on previous angling trips and judgements about the apparent state of fish availability. These concerns are not easy to control and are dependent on good long term management to protect and build up the resource.

Information on places to fish, boat launching sites and the attractions of the local area, are also important and can be provided for visiting fishers by local councils. These can augment the fishing and holiday experience, but may well be best appreciated alongside the satisfaction of catching a fish of legal size.

The survey also raises some questions in relation to the impact of the fishing effort of anglers on the available fish resource. For example in Port Macquarie local anglers contribute 190,000 of 260,000 days fished, but we have no information on the level of catch these anglers take, or the

number of fish caught and returned to the water. Given that visiting anglers have higher average and total expenditure than local anglers, it is desirable to know if increasing the number of visits might require any restriction on local fishing effort. Put another way, does Port Macquarie have any additional, or surplus fishing opportunities to sell to visitors? This question could be asked in Bermagui-Narooma also, though the level of visiting effort is lower, at 100,000 out of a total of 180,000 days fished there. Local anglers in this region may wonder if having additional visitors may lead to a reduction in the quality of fishing for local anglers? We currently do not have enough information on the patterns of catch and effort among fishers in these small communities. Additional research would be required to address these important issues as part of the development of additional recreational fishing opportunities in coastal towns.

4.4 Conclusions

The study examined recreational fishing activity in two townships which contrasted in their size and in their drawing fishers from different regions. Port Macquarie attracts many fishers from Sydney and elsewhere in NSW and also has a large local population whereas Bermagui-Narooma has a smaller population of local fishers, fewer visitors from Sydney, but a large majority of visiting fishers coming from the ACT and Victoria.

Recreational fishers came to Port Macquarie for general holidays and visiting friends and relatives, using the visit to join local anglers in estuary and shore fishing. In Bermagui-Narooma, fishing was a much more important motivator, with visitors coming primarily to go fishing and for general holiday, with ocean fishing and all other fishing types being popular. About 50% of licensed anglers had bought their licence in Port Macquarie, whereas 70% of fishing licences held by Bermagui-Narooma anglers had been purchased in the area whilst on fishing trips.

Both communities had approximately 13,500 recreational fishers annually with fishers having similar age profiles, 11% being under 18 years and 25% being over 55 years. A third of those in Port Macquarie were keen local fishers, who fished 76% of the total annual days fished. In Bermagui-Narooma 85% of recreational fishers were visitors fishing 57% of days fished. Trips by anglers were more frequent to Bermagui-Narooma and were also from further distances away, particularly for a significant number of Victorians who also came to visit with friends and family.

The average daily expenditure by anglers in both towns was similar, but visitors contributed significantly to the total expenditure of \$25m per annum from the 185,000 days fished in Bermagui-Narooma. In Port Macquarie, fishers spent \$22.8m over the 260,000 days fished, reflecting the lower expenditure of the more avid local anglers. Total employment derived from expenditure was 276 and 260 persons, but when expressed as a percentage of workforce in the local postcode was 2.1% in Port Macquarie and 10.6% in Bermagui-Narooma. This illustrates that small coastal towns may be highly dependent on recreational fishing tourism.

The tourism research literature confirms that recreational fishing in coastal NSW is a significant part of coastal tourism. The links are worthy of further investigation across a range of smaller recreational fishing communities.

The development of recreational fishing benefits also requires a fuller understanding on the current levels of catch by anglers and the management implications of increasing fishing by visitors.

4.5 Recommendations

The study shows the need to:

- further investigate the contribution of recreational fishing tourists, especially to smaller communities along the NSW coast. Information derived from the recreational fishing licence data base can contribute to this end;
- have a greater understanding of the local and visitor fishing effort patterns, catches and capacity for further recreational fishing development;
- investigate recreational fishing tourism in relation to the National Visitors Survey;
- investigate the expenditure of interstate tourists keen on fishing and how small coastal communities in NSW can benefit from it;

General research topics arising from the research would include:

- Ensuring that the names and contact details of **all** licence holders be entered on the general database for all licence types bi-annually to assist research – the licence data base is a highly useful monitor of fishing across the state.

References

- ABS (2001). National Census for 2001. Results downloaded for towns of Bermagui, Narooma and Port Macquarie- Australian Bureau of Statistics, 2001. Census of Population and Housing, (www.abs.gov.au).
- Dominion, (2001). An Economic Survey of the Snowy Mountain Recreational Trout Fishery. a Report Produced for New South Wales Fisheries (NSWF) funded by the Recreational Fishing Trusts. Published by NSW Fisheries.
- Dominion (2003). Identifying the recreational fishing expenditure patterns of Sydney's recreational fishers and its economic and social importance in regional communities of NSW: A Report to the Recreational Trust Fund, NSW Fisheries.
- Hastings (2005). Hastings local government netsite. www.hastings.nsw.gov.au
- Henry, G.W and Lyle, J.M (Eds). (2003). *The National Recreational and Indigenous Fishing Survey*. FRDC Project No. 99/158. Australian Government Department of Agriculture, Fisheries and Forestry, Canberra.
- McIlgorm, A. and J. Pepperell (1999). A National Review of the Recreational Fishing Sector, A report by Dominion Consulting to Agriculture, Forestry and Fisheries, Australia.
- NVS (2004). The National Visitors Survey. Australian Bureau of Statistics 1130.0 (www.abs.gov.au)