National Environmental Research Program

TROPICAL ECOSYSTEMS hub

Interim Report

The Social and Economic Long Term Monitoring Program (SELTMP) 2013

Commercial Fishing in the Great Barrier Reef

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

GREAT BARRIER REEF foundation

Centre for Sustainable Tropical Fisheries & Aquaculture

Australian Government Department of the Environment

CSIRO

JAMES COOK UNIVERSITY AUSTRALIA

Australian Government Great Barrier Reef Marine Park Authority

Reef & Rainforest RESEARCH CENTRE

The Social and Economic Long Term Monitoring Program (SELTMP) 2013 Commercial Fishing in the Great Barrier Reef

Renae Tobin[1], Erin Bohensky[2], Matt Curnock[2], Jeremy Goldberg[2,3], Sarah Gillet[2], Margaret Gooch[4], Nadine Marshall[2], Bernadette Nicotra[1], Petina Pert[1,2], Lea Scherl[5] and Samantha Stone-Jovicich[2]

[1]School of Earth and Environmental Sciences, James Cook University;
[2]CSIRO Ecosystem Sciences / Wealth from Oceans Flagship;
[3]School of Business, James Cook University; [4]Great Barrier Reef Marine Park Authority;
[5]NQ Dry Tropics NRM

Australian Government

Department of the Environment

Supported by the Australian Government's National Environmental Research Program
Project 10.1: Social and Economic Long Term Monitoring Program (SELTMP)

This report should be cited as:
Tobin, R., Bohensky, E., Currnock, M., Goldberg, J., Gillet, S., Gooch, M., Marshall, N., Nicotra, B., Pert, P., Scherl, L., Stone-Jovicich, S., (2014) The Social and Economic Long Term Monitoring Program (SELTMP) 2013, Commercial Fishing in the Great Barrier Reef. Report to the National Environmental Research Program. Reef and Rainforest Research Centre Limited, Cairns (77pp.).

Published by the Reef and Rainforest Research Centre on behalf of the Australian Government's National Environmental Research Program (NERP) Tropical Ecosystems (TE) Hub.

The Tropical Ecosystems Hub is part of the Australian Government's National Environmental Research Program. The NERP TE Hub is administered in North Queensland by the Reef and Rainforest Research Centre Limited (RRRC). The NERP Tropical Ecosystems Hub addresses issues of concern for the management, conservation and sustainable use of the World Heritage listed Great Barrier Reef (GBR) and its catchments, tropical rainforests including the Wet Tropics World Heritage Area (WTWHA), and the terrestrial and marine assets underpinning resilient communities in the Torres Strait, through the generation and transfer of world-class research and shared knowledge.

This report is available for download from the NERP Tropical Ecosystems Hub website:
http://www.nerptropical.edu.au/research

2014

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

Contents

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

Introduction

People from all over the world, including those living in Queensland and Australia, enjoy eating quality fresh seafood from the Great Barrier Reef World Heritage Area. The seafood comes from one of the "best managed marine parks in the world", and with over 1750 licences that are allowed access to the GBR (>750 were active in the GBR 2012 (DAFF, unpubl. data, 2013a)), and a Gross Value of Production of $122.9 million in 20011/12 (DAE, 2013), the industry is particularly important for the region. The industry is managed by the Queensland government through Fisheries Queensland within the Department of Agriculture, Fisheries and Forestry (DAFF). The Great Barrier Reef Marine Park Authority (GBRMPA) is a federal agency that also contributes to fisheries management through restricting fishing activities by zoning within the Great Barrier Reef Marine Park (GBRMPA, 2009).

Generally, the commercial fishing industry is managed by constraints (or 'input controls') on the number of vessels (limited entry), time and place of fishing and/or the type and specification of both vessel and gear. There are also controls on what can be harvested ('output controls') such as the level of catch (e.g. total allowable commercial catch, TACC), spawning closures, restrictions on the length and the sex or maturity of stages that can be taken. Fisheries Queensland collect catch and effort data from each fishing operation through the use of compulsory logbooks, which commenced as a voluntary program in 1988. The data are used to assess the status of fisheries in Queensland as well as to assist in the management process. Commercial fishing is also restricted via marine park zoning legislated by the GBRMPA and the Department of Environment (DoE).

Fishing operations range in size from small, family operated businesses with a single licence and vessel, to larger, investment businesses with multiple licences and vessels, employing skippers and crew, with many sizes and configurations in between. There are a few overseas investors in fishing licences, but most are Australian owned and owner-operated. Some fishers operate by leasing licences and/or quota from licence owners, with an unknown number of lease arrangements made informally.

There are multiple commercial fisheries within the GBRWHA, broadly defined by the type of gear they use, the habitats they access and/or the species they harvest. Fisheries are generally managed as commercial fishing licences or commercial harvest licences. Within the SELTMP, commercial fisheries are grouped as trawl, line, pot, net and harvest fisheries. These fisheries access inshore, shoal, inter-reef, reef and pelagic waters. Many fishers hold a multiple endorsed licence (i.e. a licence with multiple 'symbols') which means that a line fisher, for instance, may also trawl or net.

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

Introduction

Trawl fisheries capture primarily prawns, bugs and scallops, but also cuttlefish, squid and octopus via Beam trawls (within the River and Inshore Beam Trawl Fishery, RIBTF) (DEEDI, 2011a) or Otter trawls (within the East Coast Otter Trawl Fishery) (Fisheries Qld, 2012a). The Beam Trawl fishery only makes up a small component of the trawl fisheries in the GBRWHA, however the Otter Trawl fishery is the largest Queensland fishery in terms of product volume and economic value. Data for the Beam Trawl fishery are combined with Otter Trawl in this report, collectively termed as “Trawl”.

Line fishers access multiple fin fish species by line, particularly species managed by quota allocations for which fishers require an additional Reef Quota (RQ) symbol for the Coral Reef Fin Fish Fishery (CRFFF) (Fisheries Qld, 2012b), or a Spanish Mackerel (SM) (Fisheries Qld, 2012c) symbol for the East Coast Spanish Mackerel Fishery. The CRFF uses single hook handlines on reef and shoal habitats to harvest bottom dwelling reef fish including coral trout (primarily sold live), red throat emperor, and other reef associated species. The SM fishery harvests Spanish mackerel trolling line fishing gear near offshore shoals and reefs. Both are combined here as “Line”.

Net fishers operate within the East Coast Inshore Fin Fish Fishery (ECIFFF) (DEEDI, 2011b), which is the largest fishery in terms of numbers of operators, and most diverse in terms of species harvested. Fishers primarily use set gillnets (some species in the ECIFF are taken by hook and line – these are included in the *line* fishery description from here) in inshore creeks, estuaries and bays, to harvest multiple inshore fin fish (such as barramundi, some mackerels and threadfin salmon) and shark species. Shark are also managed via a quota, for which fishers need a dedicated symbol (S).

Pot fishers utilise crab pots within the Mudcrab Fishery (Fisheries Qld, 2013a) – the main crab fishery in the GBRHWA – and the much smaller Blue Swimmer Crab Fishery (Fisheries Qld, 2013b). They harvest male crabs within inshore areas. Both fisheries are combined in this report as “Pot”.

Harvest fisheries, where species are harvested by hand, are commonly listed separately to the previous fisheries, although harvest fisheries are also diverse. Harvest fisheries include primarily the Crayfish and Rocklobster Fishery (Fisheries Qld, 2012d), the Marine Aquarium Fish Fishery (MAFF) (Fisheries Qld, 2013c), the East Coast Bêche-de-mer (BDM) Fishery (Fisheries Qld, 2012e), the Coral Fishery (DEEDI, 2012a), and the East Coast Pearl Fishery (DEEDI, 2012b). There is also an East Coast Trochus Fishery, however it has not recorded catch in recent years (DAFF, 2012a). There are fewer operators in the harvest fisheries, however some fisheries are of high value, with much of the product targeted to export market. All are combined here as “Harvest”.

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

2013 SELTMP Survey methods

GBR Commercial Fisher Survey

Primary data was collected via fisher surveys, to fill multiple gaps in the secondary data available. Surveys were designed with input from key end-users and industry representatives.

The commercial fisher surveys were conducted on the phone, with survey staff completing the survey on ipads during July and August 2013. Surveys were anticipated to take approximately 15 minutes, however many took over 30 minutes or even an hour due to fishers wanting to share experiences and opinions.

To contact the fishers we obtained the publicly available list of current (2013) commercial fishery and harvest licence holders from Fisheries Queensland – this list included licence holders' name and home address. Introductory letters were sent to all relevant licence holders – i.e. those holding symbols that allowed access to the GBR – 2 weeks prior to starting the surveys to alert fishers to the upcoming surveys. Phone numbers for these fishers were sourced from previous JCU and CSIRO research projects where fishers had given explicit permission to be re-contacted for future research. Remaining phone numbers were sourced from the electronic white pages, via snow-ball sampling from contacted fishers, and directly from fishers who contacted the project team after receiving the introductory letter.

A total of 303 licence holders were contacted. Of those, 26 claimed they did not fish in the GBR and hence did not continue the survey, and 67 fishers refused to participate. Some licence holders referred surveyors to their licence operator, where appropriate. A total of 210 fishers completed the survey, giving a response rate of 75% of relevant contacted fishers. Given an estimate of 759 active licences in the GBR, held by approximately 591 individuals / businesses (based on 'best guesses' of duplicates of names and/or addresses), the surveys sampled at least 35% of active GBR licence holders. Respondents were spread throughout the GBR catchment, included some licence holders residing outside of the catchment (but fishing in the GBR), and included fishers from all fishery types.

<u>Data presentation</u>
Most data are presented as **% of respondents**. Where 10-point scales were used to elicit agreement with statements (where 1 = strongly disagree, 10 = strongly agree), we display the **mean score** and the **% of respondents who agreed** with the statement (i.e. scored a 6 or above).

All survey related data are referenced as "SELTMP Survey 2013"

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

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

License Number

Held# vs Active* in GBR
Cape York : 39 vs 24
Wet Tropics : 295 vs 185
Burdekin : 141 vs 96
Mackay Whits : 101 vs 54
Fitzroy Basin : 193 vs 116
Burnett Mary : 283 vs 123
Total GBR based : 1052 vs 598

Intrastate : 595 vs 127
Interstate : 79 vs 21
International : 6 vs 2
Unknown : 0 vs 11

TOTAL **held** licences = 1732 with symbols that allow GBR access
(1438 fishing & 298 harvest)

TOTAL **active** in GBR =**759**
(673 fishing & 86 harvest)

Ref: DAFF, unpublished data (2013)*

ACTIVE License Holders#

Cape York : 23
Wet Tropics : 137
Burdekin : 83
Mackay-Whit : 47
Fitzroy Basin : 84
Burnett Mary : 99
Intrastate : 96
Interstate : 18
International : 2
TOTAL : **591**

Ref: DAFF, unpublished data (2013)*

of licenses per owner

Cape York : 1.1 (+/-0.06)
Wet Tropics : 1.4 (+/-0.09)
Burdekin : 1.2 (+/-0.04)
Mackay-Whit : 1.1 (+/-0.07)
Fitzroy Basin : 1.4 (+/-0.08)
Burnett Mary : 1.2 (+/-0.07)
Intrastate : 1.3 (+/-0.17)
Interstate : 1.2 (+/-0.09)
International : 1.0 (+/-0.00)
OVERALL : 1.3 (+/- 0.04

Ref: DAFF, unpublished data (2013)*

Formal Lessees**

Cape York : xx
Wet Tropics : xx
Burdekin : xx
Mackay-Whit : xx
Fitzroy Basin : xx
Burnett Mary : xx
TOTAL (GBR) : xx
TOTAL : 165
(148 fishing; 17 harvest)

Ref: DAFF, unpublished data (2011)

ACTIVE licenses in GBR

Marine regions:
fishing + harv(#)+harv(wt)^
Far Northern : 70 + 5 + 9
Northern : 95 + 9 + 4
Wet Tropics : 221 + 20 + 17
Burdekin : 169 + 4 + 3
Mackay-Whit : 154 + 13 + 12
Fitzroy : 276 + 17 + 15
Burnett-Mary : 135 + 1 + 1
Total GBR : 673 + 41 +45

Ref: DAFF, unpublished data (2013)*

Active Line licences

Marine regions
Far Northern : 23
Northern : 42
Wet Tropics : 109
Burdekin : 79
Mackay-Whit : 41
Fitzroy : 97
Burnett Mary : 32
TOTAL (GBR) : 273
(234 wi CRFF; 145 SM)

Ref: DAFF, unpublished data (2013)*

Active Trawl licences

Marine regions (otter + beam)
Far Northern : 42 + 0
Northern : 40 + 0
Wet Tropics : 54 + 0
Burdekin : 45 + 2
Mackay-Whit : 36 + 7
Fitzroy : 86 + 17
Burnett Mary : 73 + 1
TOTAL (GBR) : 176 + 25

Ref: DAFF, unpublished data (2013)*

#Licences with symbols that allow access to the GBR. Location based on <u>home address of licence owner</u> as at March 2013. *ACTIVE licence data for 2012 calendar year for GBR area only. ^Aquarium fish, beche-de-mer, pearl, worms and yabbies recorded as numbers; coral, rock lobster and FW eel recorded as weight. No overlap between harvest licence types **Also unknown number of informal lessees

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

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

Active Net licences

Marine regions

Far Northern	: 4
Northern	: 16
Wet Tropics	: 66
Burdekin	: 55
Mackay-Whit	: 60
Fitzroy	: 62
Burnett Mary	: 20
TOTAL (GBR)	: 218
(% licenses with S symbol on Qld EC	: 42%[2]

Ref: DAFF, unpublished data (2013)*; [2]Fisheries Qld, unpubl. data (2011)

Active Pot licences

Marine regions

Far Northern	: 4
Northern	: 10
Wet Tropics	: 48
Burdekin	: 37
Mackay-Whit	: 60
Fitzroy	: 86
Burnett Mary	: 25
TOTAL (GBR)	: 222

(205 mudcrab; 23 BS crab)

Ref: DAFF, unpublished data (2013)**

Active marine aquarium fish harvest licences

Marine regions

Far Northern	: 1
Northern	: 5
Wet Tropics	: 16
Burdekin	: 1
Mackay-Whit	: 9
Fitzroy	: 8
Burnett Mary	: 0
TOTAL (GBR)	: 28

Ref: DAFF, unpublished data (2013)*

Active Bêche-de-mer licences

Marine regions

Far Northern	: 3
Northern	: 4
Wet Tropics	: 4
Burdekin	: 3
Mackay-Whit	: 2
Fitzroy	: 4
Burnett Mary	: 0
TOTAL (GBR)	: 6

Ref: DAFF, unpublished data (2013)*

Active Lobster licences

Marine regions

Far Northern	: 8
Northern	: 1
Wet Tropics	: 0
Burdekin	: 0
Mackay-Whit	: 0
Fitzroy	: 0
Burnett Mary	: 0
TOTAL (GBR)	: 8

Ref: DAFF, unpublished data (2013)*

Active Coral licences

Marine regions

Far Northern	: 1
Northern	: 3
Wet Tropics	: 16
Burdekin	: 2
Mackay-Whit	: 10
Fitzroy	: 14
Burnett Mary	: 0
TOTAL (GBR)	: 31

Ref: DAFF, unpublished data (2013)*

Active Pearl licences

Marine regions

Far Northern	: 1
Northern	: 0
Wet Tropics	: 0
Burdekin	: 0
Mackay-Whit	: 0
Fitzroy	: 0
Burnett Mary	: 0
TOTAL (GBR)	: 1

Ref: DAFF, unpublished data (2013)*

Active worm and yabby licences

Marine regions

Far Northern	: 0
Northern	: 0
Wet Tropics	: 0
Burdekin	: 0
Mackay-Whit	: 2
Fitzroy	: 5
Burnett Mary	: 1
TOTAL (GBR)	: 6

Ref: DAFF, unpublished data (2013)*

*ACTIVE licence data for 2012 calendar year for GBR area only.

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 1. Activities – HOW are they doing it?

Vessel length

Average main vessel length

Cape York	: 10.18 m
Wet Tropics	: 11.48 m
Burdekin	: 10.65 m
Mackay Whits	: 9.18 m
Fitzroy Basin	: 8.86 m
Burnett Mary	: 12.43 m
Intrastate	: 11.52 m
Interstate	: 9.60 m
Overseas	: 7.5 m

Line fishers	: 9.94 m
Trawl	: 15.49 m
Net	: 7.59 m
Pot	: 7.40 m
Harvest	: xx m

GBR overall	: 10.85m

Ref: DAFF, unpublished data (2013)#

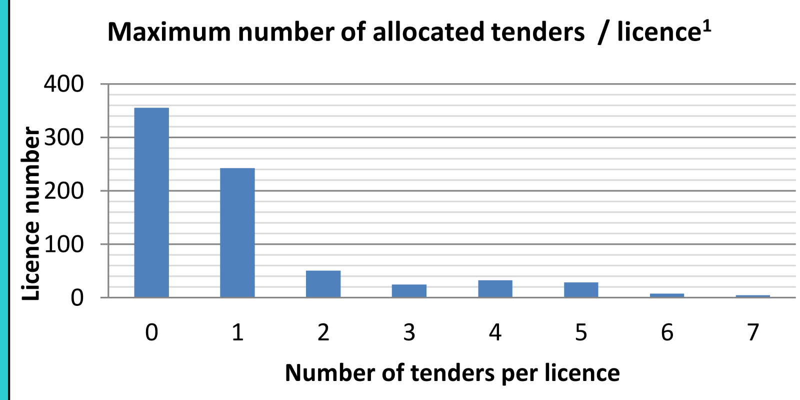
Number of tenders

Average # of tenders[1]

Cape York	: 1.5
Wet Tropics	: 1.4
Burdekin	: 1.1
Mackay Whits	: 1.5
Fitzroy Basin	: 0.9
Burnett Mary	: 0.6
Intrastate	: 0.8
Interstate	: 0.6
Overseas	: 2.5

Average # of tenders[1]

Line fishers	: 2.1
Trawl	: 0.2
Net	: 0.9
Pot	: 0.8
Harvest	: xx



Tidbit

1 main vessel allowed per licence

Many net / pot fishers operate with their "tender" as their "main vessel"[2]

Most large line boats (CRFF) typically use 5 tenders / "dories" from their main vessel[3]

Ref: [1]DAFF, unpublished data (2013)#; [2]Tobin R et al. (2010); [3]Tobin A et al (2010)

#Based on licences with symbols that allow access to the GBR. Location based on home address of licence owner. Data current March 2013.

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 1. Activities – HOW are they doing it?

Business planning

% with formal plan

Line fishers	: xx%
Trawl	: xx%
Net	: xx%
Pot	: xx%
Harvest	: xx%

GBR overall	: xx%
Qld overall	: xx%

Avg years since reviewed

Never	: xx% of businesses
1-2 years	: xx%
2-5 years	: xx%
>5 years	: xx%

Line fishers	: xx yrs
Trawl	: xx
Net	: xx
Pot	: xx
Harvest	: xx

GBR overall	: xx
Qld overall	: xx

Ref: xxx

Investment in training

% that provide training

Line fishers	: xx%
Trawl	: xx%
Net	: xx%
Pot	: xx%
Harvest	: xx%

GBR overall	: xx%
Qld overall	: xx%

Average amount spent on training per business

Line fishers	: $xx
Trawl	: $xx
Net	: $xx
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: xxx

Working condition policies

% that utilise OH&S policies

Line fishers	: xx%
Trawl	: xx%
Net	: xx%
Pot	: xx%
Harvest	: xx%

GBR overall	: xx%
Qld overall	: xx%

Ref: xxx

Technology

% added new technology in past year

Line fishers	: 49%
Trawl	: 57%
Net	: 38%
Pot	: 53%
Harvest	: 40%
GBR Overall	: 49%

Most common new technology added (% of those with new tech)

GPS	: 62%
Depth Sounder	: 21%
Radar	: 10%
Radio(2-way/VHF)	: 7%
Computer	: 4%
Auto-pilot	:3%
Sonar	:2%
AIS	:2%

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 1. Activities – HOW are they doing it?

of licences per owner[1]

Cape York	: 1.09
Wet Tropics	: 1.36
Burdekin	: 1.16
Mackay Whits	: 1.15
Fitzroy Basin	: 1.37
Burnett Mary	: 1.24
Intrastate	: 1.34
Interstate	: 1.17
Overseas	: 1.00 (n=2)

Line fishers	: 1.25
Trawl	: 1.19
Net	: 1.16
Pot	: 1.25
Harvest	: 1.75

GBR overall	: 1.27

Ref: [1]DAFF, unpublished data (2013)*

of fishery types* per licence

% licences in # of fishery types
DAFF[1] vs SELTMP[2]

1 fishery type	: 74%[1] ; 60%[2]
2 type	: 20%[1] ; 24%[2]
3 type	: 43%[1] ; 13%[2]
4 type	: 2%[1] ; 2%[2]
5 types	: 0%[1] ; 0%[2]

Average fishery type #
DAFF[1] vs SELTMP[2]^

Cape York	: 1.33[1] ; 1.38[2]
Wet Tropics	: 1.25[1] ; 1.63[2]
Burdekin	: 1.50[1] ; 1.82[2]
Mackay Whits	: 1.44[1] ; 1.38[2]
Fitzroy Basin	: 1.59[1] ; 1.62[2]
Burnett Mary	: 1.22[1] ; 1.57[2]
Intrastate	: 1.13[1] ; 1.38[2]
Interstate	: 1.14[1] ; -
Overseas	: 1.00[1] -

Line fishers	: xx ; 1.30[2]
Trawl	: xx ; 1.33[2]
Net	: xx ; 2.14[2]
Pot	: xx ; 2.26[2]
Harvest	: xx ; 1.15[2]

GBR overall	: 1.32[1] ; 1.57[2]

Ref: [1]DAFF, unpublished data (2013)*; [2]SELTMP Survey 2013

Operator types

% of each type surveyed

Owner-operator	: 92%
Owner-non-operator	: 4%
Lessee	: 3%
Other	: 5%

% owner-operators^

Cape York	: 100%
Wet Tropics	: 91%
Burdekin	: 97%
Mackay Whits	: 83%
Fitzroy Basin	: 92%
Burnett Mary	: 97%

Line fishers	: 90%
Trawl	: 91%
Net	: 100%
Pot	: 97%
Harvest	: 81%

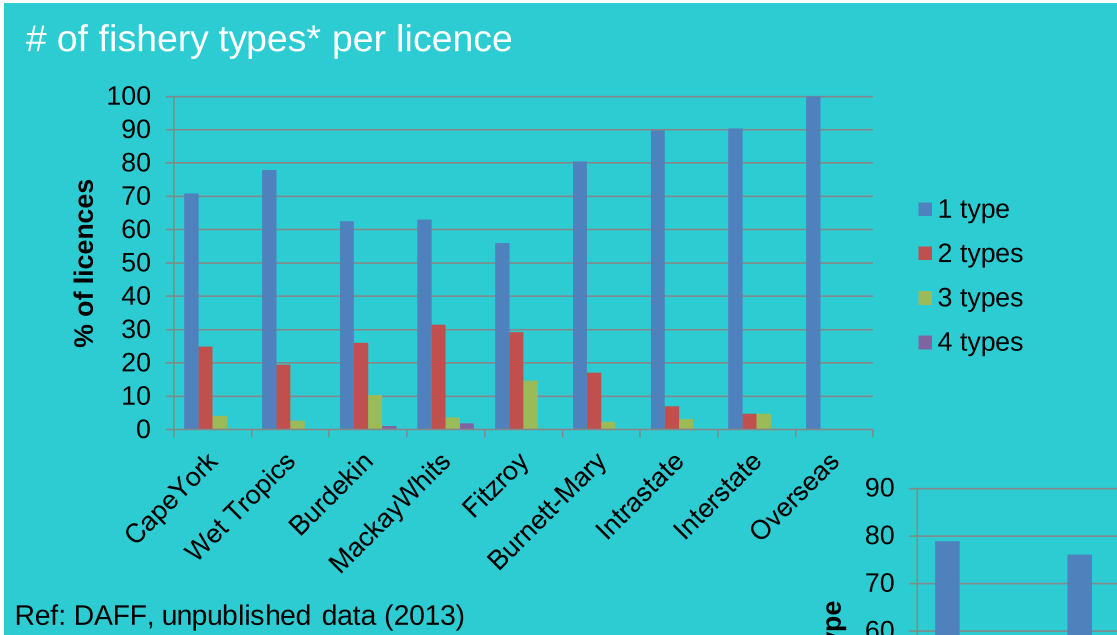
GBR overall	: 92%
Qld overall	: xx

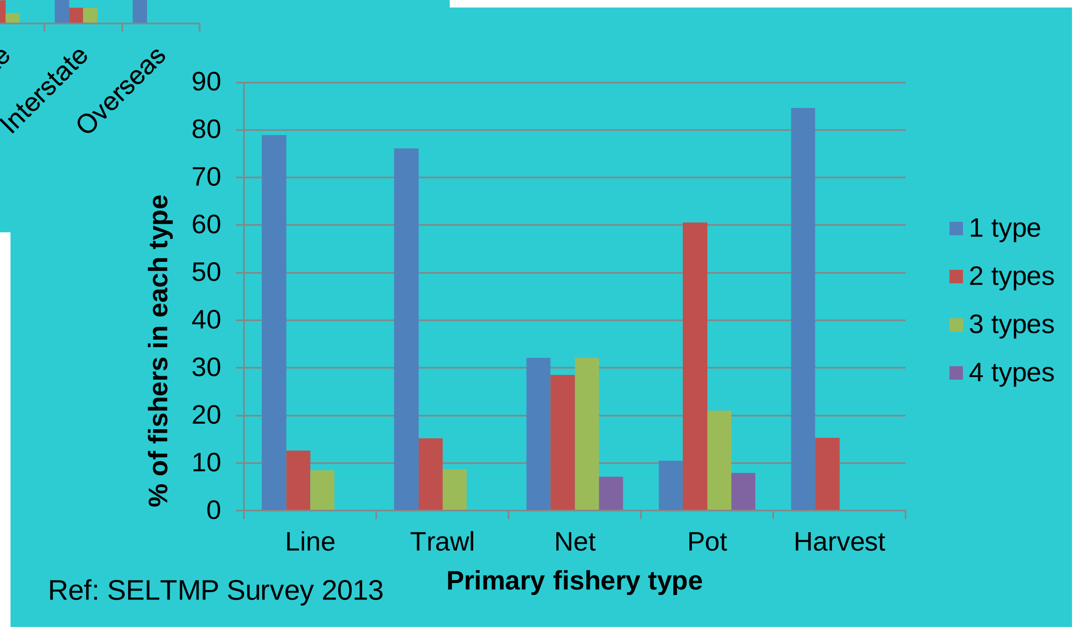
Ref: SELTMP Survey 2013

*These were active in 2012. NRM location based on correspondence address of licence owner as at 2013.*Fishery types defined as line, trawl, net, pot, harvest rather than specific symbol. ^Based on Home PORT NRM

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 1. Activities – HOW are they doing it?





*Fishery types defined as line, trawl, net, pot, harvest rather than specific symbol. NRM location based on correspondence address of licence owner

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 1. Activities – HOW are they doing it?

Product type*

Line[1]:

CRFFF:	Live	Whole	Gill/gutted	Fillet
CT	87%	8%	3%	2%
RTE	0	38%	1%	61%

Trawl[1]:

Raw	Processed	Cooked
xx	xx	xx

Net[1]:

Whole	Trunked	Gill/gutted	Fillet
69%	15%	11%	5%

Pot[1]:

Live	Dead
20%	80%

Harvest[2]:

Rocklobster	Whole	Tails
	88%	12%

Ref: [1]DAFF, unpublished data (2013); [2]Luke Bekker, Fisheries Qld Quota Monitoring Team, pers. comm. (2013)

Diversity of product

% of fishers who market >1 product type

Line fishers	: xx%
Trawl	: xx%
Net	: xx%
Pot	: xx%
Harvest	: xx%

Ref: xxx

*For CRFF and Rocklobster, data are from Catch Disposal Records so should be accurate reflection of 1st point of sale. For Crab and Net, product from as it is harvested, not necessarily how it is sold, due to limitations in current data recording (by catch logbook)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 1. Activities – HOW MUCH are they fishing?

Total effort days

Marine regions

	Fishing + Harvest
Far Northern	: 2,958 + 639
Northern	: 4,330 + 216
Wet Tropics	: 12,465 + 1,012
Burdekin	: 9,483 + 231
Mackay-Whit	: 10,204 + 226
Fitzroy	: 20,001 + 775
Burnett Mary	: 3,710 + 20
TOTAL (GBR)	: 63,104 + 3,118

Line fishers:	: 13,785
Trawl:	
Beam	: 576
Otter	: 16,420
Net:	: 9,657
Pot:	: 24,000
Harvest :	
Aquarium fish	: 630
Rocklobster	: 559
BDM	: 548
Coral	: 752
Pearl	: NR (<5 boats)
Worms and Yabbies	: 429

Ref: DAFF, unpublished data (2013)*

Average effort days / licence

Marine regions

	Fishing + Harvest
Far Northern	: 42 + 46
Northern	: 46 + 17
Wet Tropics	: 56 + 27
Burdekin	: 56 + 33
Mackay-Whit	: 66 + 9
Fitzroy	: 72 + 24
Burnett Mary	: 27 + 10
TOTAL (GBR)	: 94 + 36

Line fishers:	: 50
Trawl:	
Beam	: 23
Otter	: 93
Net:	: 44
Pot:	: 108
Harvest :	
Aquarium fish	: 23
Rocklobster	: 70
BDM	: 91
Coral	: 24
Pearl	: NR (<5 boats)
Worms and Yabbies	: 72

Ref: DAFF, unpublished data (2013)*

*ACTIVE licence data for 2012 calendar year for GBR area only

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

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

of harvest species

Line fishers:	
CRFF	: 3 sp grps**[1]
SM	: 1 sp[2]
Trawl:	
Beam	: 4 sp[3]
Otter	: 7 sp[4]
Net:	: 10 grps[5]
Pot:	: 2 sp[6,7]
Harvest:	
Rocklobster	: 1 sp[8]
MAFF	: 47 grps[9]
Bêche-de-mer	: 2 sp[10]
Other	: multiple

Ref: [1]DAFF (2012b); [2]DAFF (2012c); [3]DEEDI (2011a); [4]DAFF (2012a); [5]DEEDI (2011b); [6]DEEDI (2011c); [7]DEEDI (2011d); [8]DEEDI (2011e); [9]DEEDI (2010a); [10]DEEDI (2010b)

Harvest amount

Marine regions

	fishing +	**harvest (#s)**	**+ harv (wts)^**
Far Northern	: 685.26 t	64,603	148.15 t
Northern	: 736.55 t	794,178	0.82 t
Wet Tropics	: 1203.65 t	96,143	66.54 t
Burdekin	: 1007.76 t	232,622	3.43 t
Mackay-Whit	: 990.03 t	24,317	6.73 t
Fitzroy	: 2561.93 t	242,903	15.62 t
Burnett Mary	: 516.92 t	1,350	0.20 t
TOTAL (GBR)	: 7702.10 t	1,456,116	241.49 t

By method:

Line:	: 1729.25 t
CRFF	: 1,358.07 t
SM	: 248.02 t
Trawl:	
Beam	: 25.81 t
Otter	: 3309.69 t
Net:	: 1579.08 t
Pot:	: 1055.93 t
Mudcrab	: 842.95 t
Blueswimmer:	6.56 t
Harvest :	
Aquarium fish: 73,002 individ	
Bêche-de-mer	: 1,332,840 ind.
Rocklobster	: 147.82 t
Coral	: 89.14 t
Pearl	: NR (< 5 boats)
Worms and yabbies	: 50,165 ind.

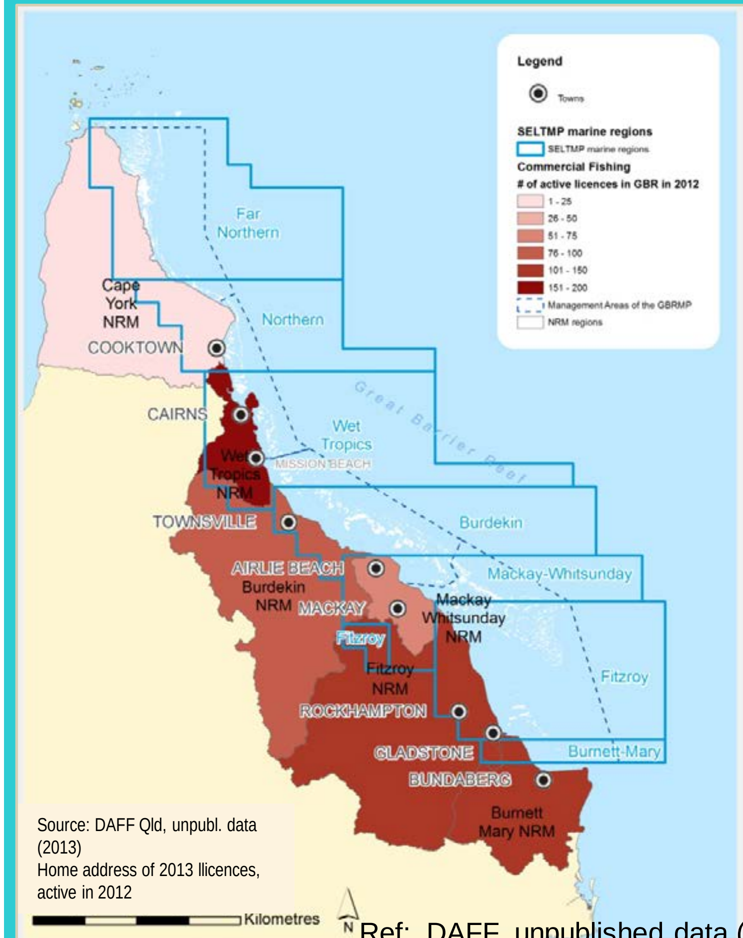
Ref: DAFF, unpublished data (2013)*

**Some fisheries are managed by species groups (e.g. 'other species' which includes multiple species), rather than individual species;
*GBR only, 2012 calendar year; ^ Weight unavailable for harvest fisheries monitored by number

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

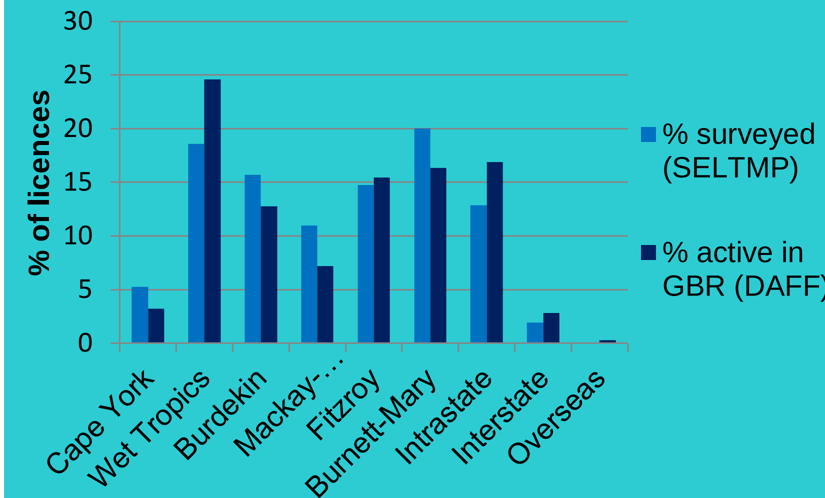
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they from?

Home NRM of licences active in the GBR



Ref: DAFF, unpublished data (2013)*

Distribution of home NRM of licences surveyed and those active in the GBR



Ref: SELTMP Survey 2013; DAFF, unpublished data (2013)*

*Based on 2013 licence holder home address for those licences active in the GBR for the 2012 calendar year

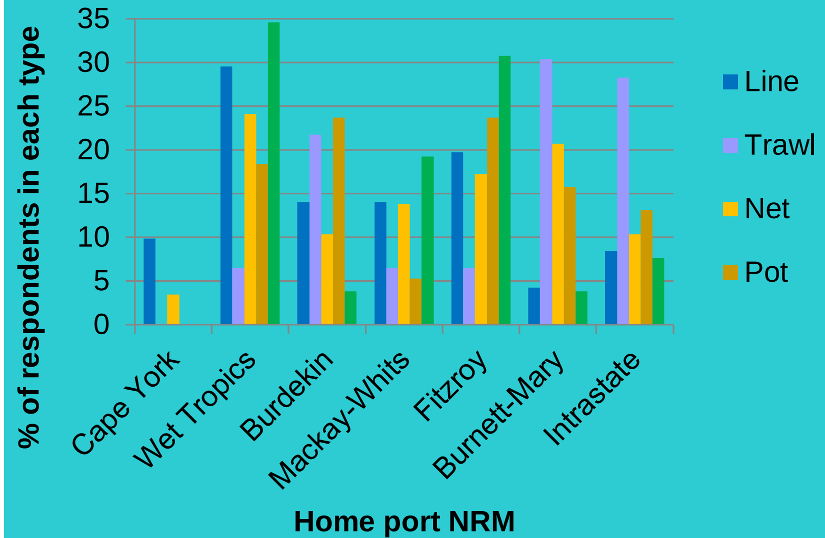
SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 2. Spatial patterns – WHERE are they accessing it?

Key home ports

Home Port NRMs : % of surveyed fishers who listed them

Cape York	: 4%
Wet Tropics	: 22%
Burdekin	: 16%
Mackay-Whits	: 11%
Fitzroy	: 19%
Burnett-Mary	: 14%
Intrastate	: 14%



Ref: SELTMP Survey 2013

Diversity of access points

% fishers using 1 port only*

Cape York	: 75%
Wet Tropics	: 55%
Burdekin	: 52%
Mackay Whits	: 71%
Fitzroy Basin	: 56%
Burnett Mary	: 50%
Intrastate	: 31%

Line fishers	: 55%
Trawl	: 43%
Net	: 48%
Pot	: 55%
Harvest	: 69%

GBR overall	: 53%
Qld overall	: xx%

Distance between multiple ports:

Range	: x-xx km
Average	: xx km
Median	: xx km

Ref: SELTMP Survey 2013

*Based on home PORT NRM listed in survey rather than home address of licence holder

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

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

Distance operating from home port

1-50 km	: 30% of operators[1]
51-100 km	: 29%[1]
101-200 km	: 18%[2]
201-500 km	: 21%[2]
501-1000 km	: 4%[2]
>1000 km	: 3%[2]

Average distance	
Cape York	: xxkm
Wet Tropics	: xxkm
Burdekin	: xxkm
Mackay Whits	: xxkm
Fitzroy Basin	: xxkm
Burnett Mary	: xxkm

Line fishers	: xxkm
Trawl	: xxkm
Net	: xxkm
Pot	: xxkm
Harvest	: xxkm

GBR overall : 216km +/- 29[2]

Ref: [1] SELTMP Survey 2013; [2]Marshall and Tobin (2012)*

Roamers vs locals

% operators who fish Home PORT NRM		Very local (<50km)	Close (50-100km)	Roamer (>100km)
Cape York	:	0%	38%	63%
Wet Tropics	:	40%	21%	38%
Burdekin	:	21%	36%	42%
Mackay-Whits	:	29%	33%	38%
Fitzroy	:	39%	21%	39%
Burnett Mary	:	27%	40%	33%
Intrastate	:	24%	24%	52%

Fishery type				
Line fishers	:	17%	35%	48%
Trawl	:	13%	27%	60%
Net	:	52%	21%	28%
Pot	:	55%	26%	18%
Harvest	:	35%	27%	38%

% operators who fish		Very local (<50km)	Close (50-100km)	Roamer (>100km)
GBR overall	:	30%	29%	41%

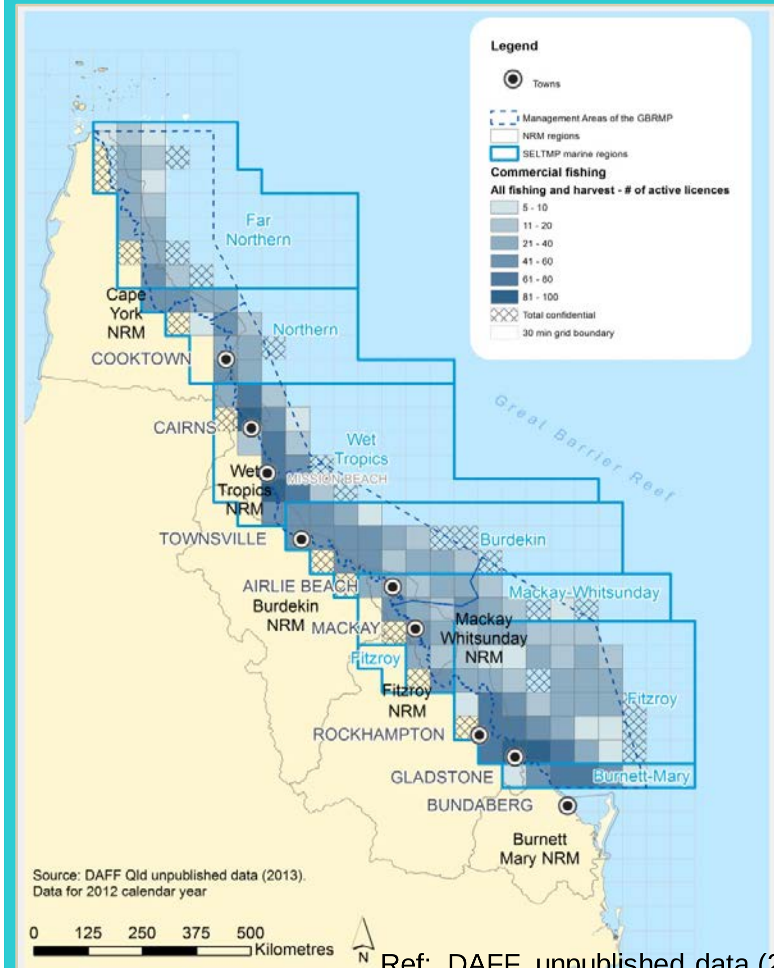
Ref: SELTMP Survey 2013

*Sample of 145 fishers, including multiple types. Sample sizes not large enough to warrant further analysis by region or type

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

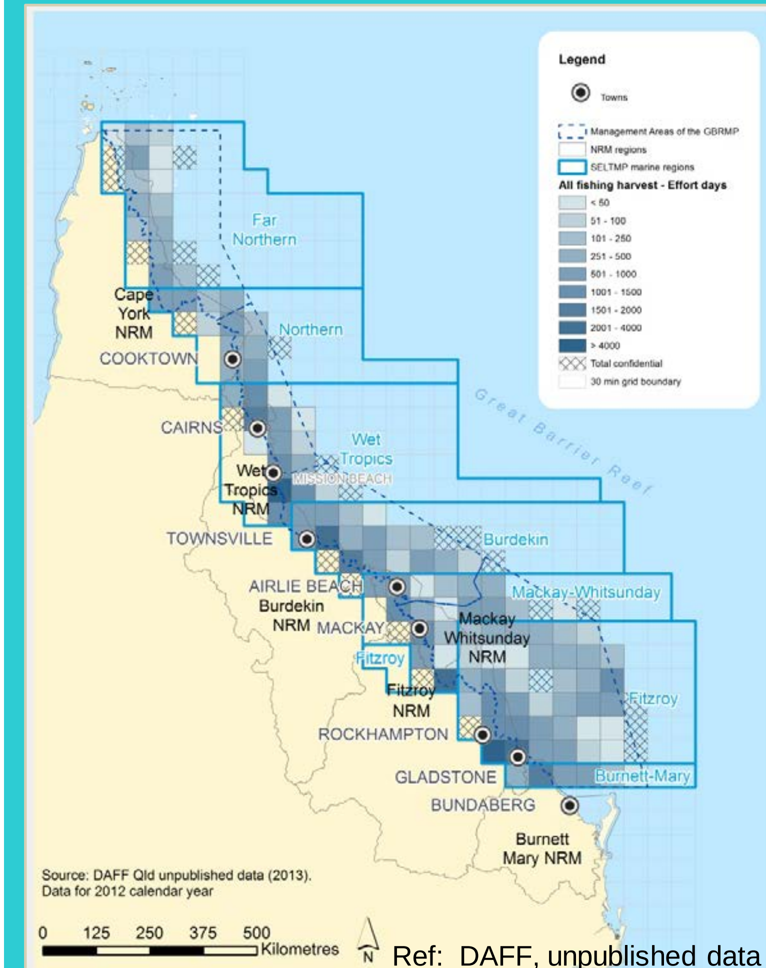
A) *Use of the Environment*: 1. Spatial patterns – WHERE are they going?

Number of licences – ALL Fisheries



Ref: DAFF, unpublished data (2013)

Number of Effort days – ALL Fisheries

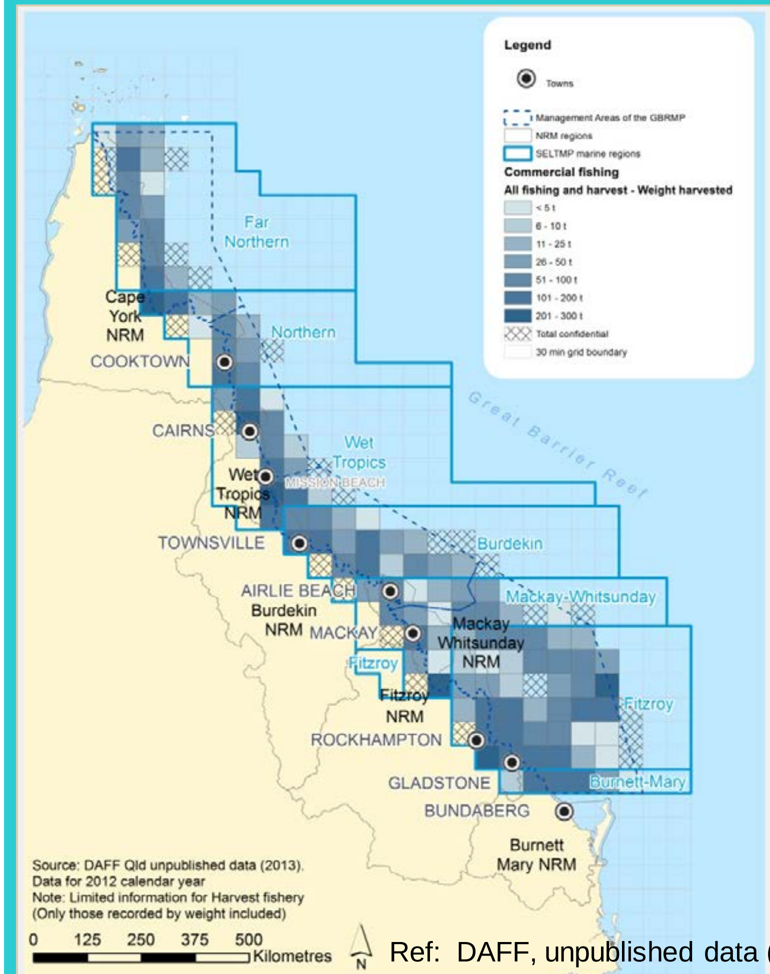


Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

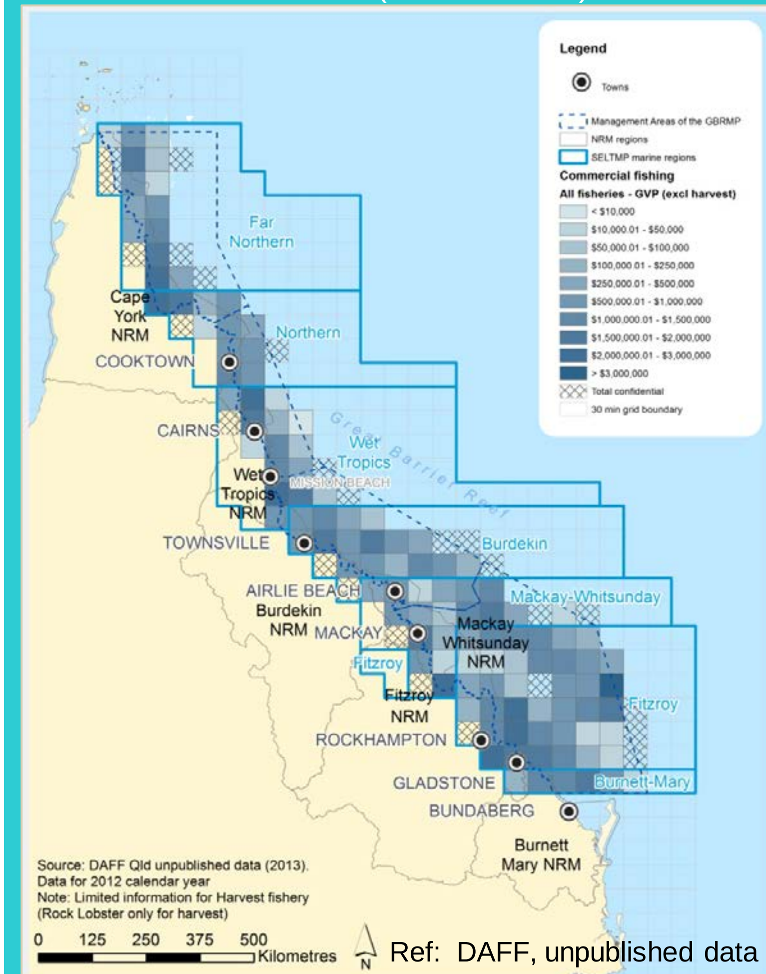
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they going?

Weight harvest – ALL Fisheries (excl. some harvest*)



Ref: DAFF, unpublished data (2013)

GVP – ALL Fisheries (excl. harvest*)



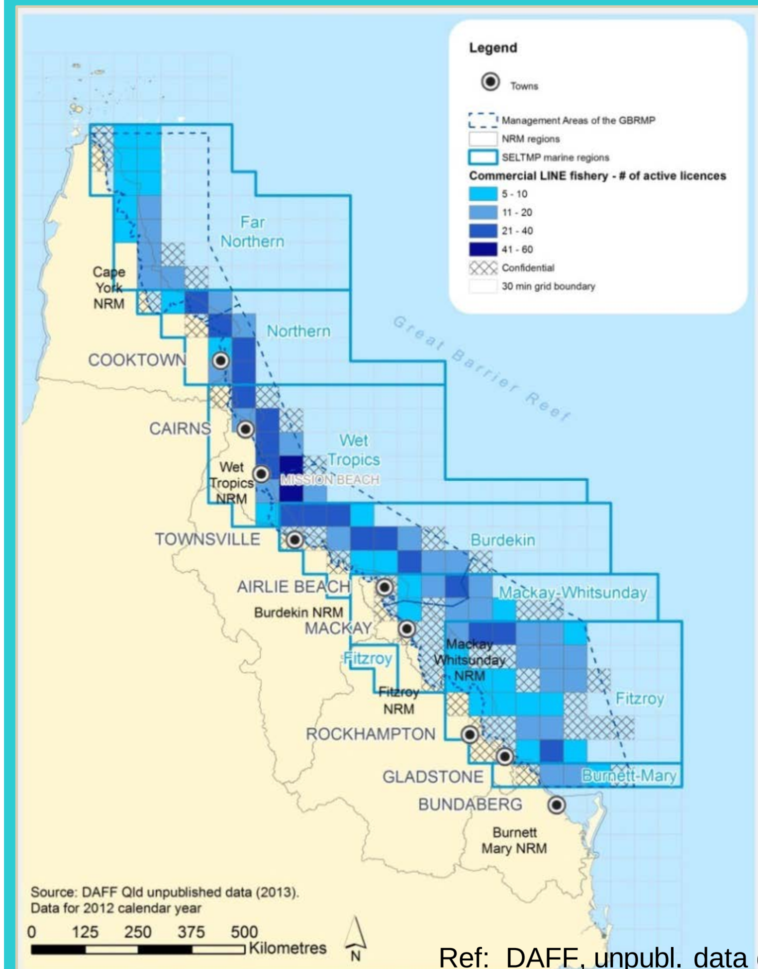
Ref: DAFF, unpublished data (2013)

*Weight unavailable for harvest fisheries monitored by number; GVP unavailable for harvest fisheries (except rocklobster)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

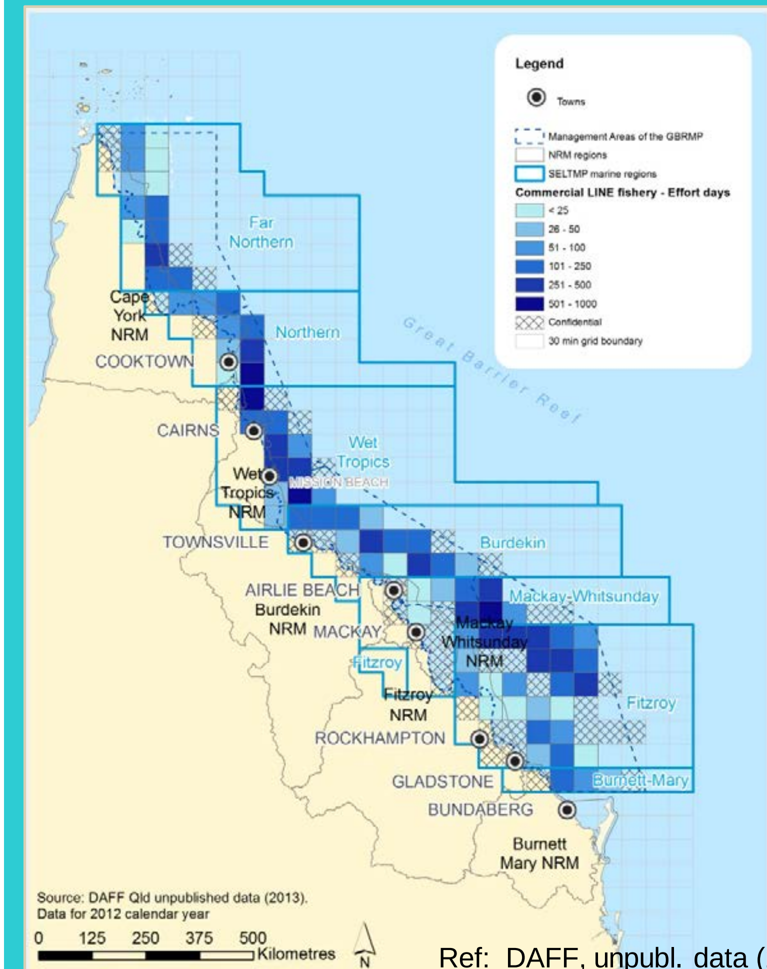
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they going?

Number of licences – LINE Fisheries



Ref: DAFF, unpubl. data (2013)

Number of Effort days – LINE Fisheries

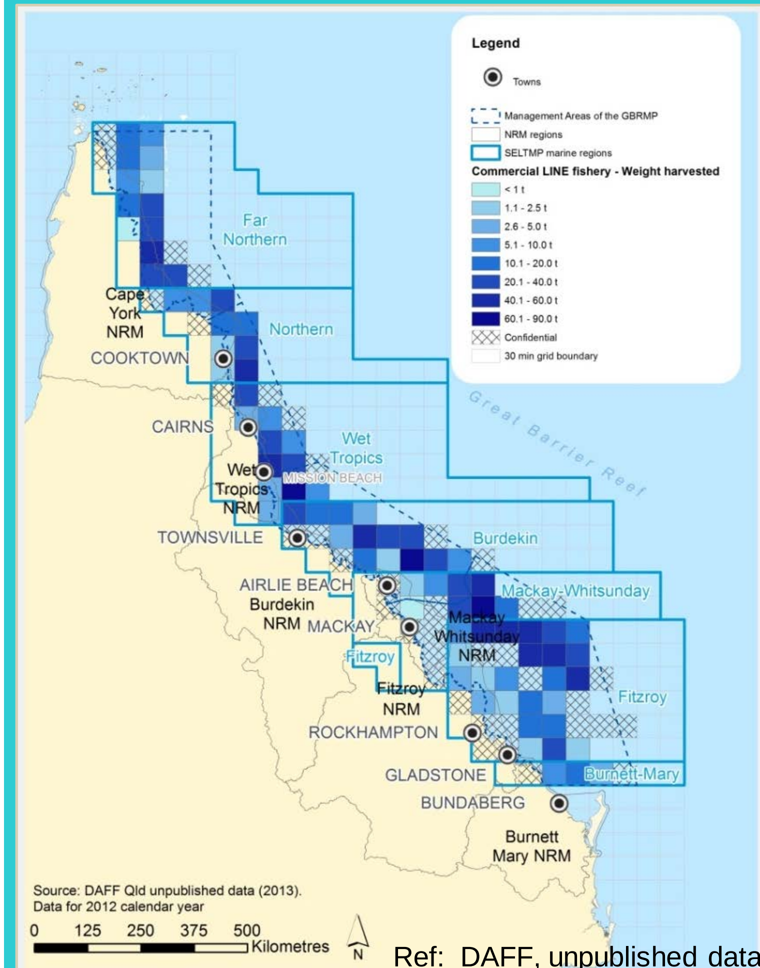


Ref: DAFF, unpubl. data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

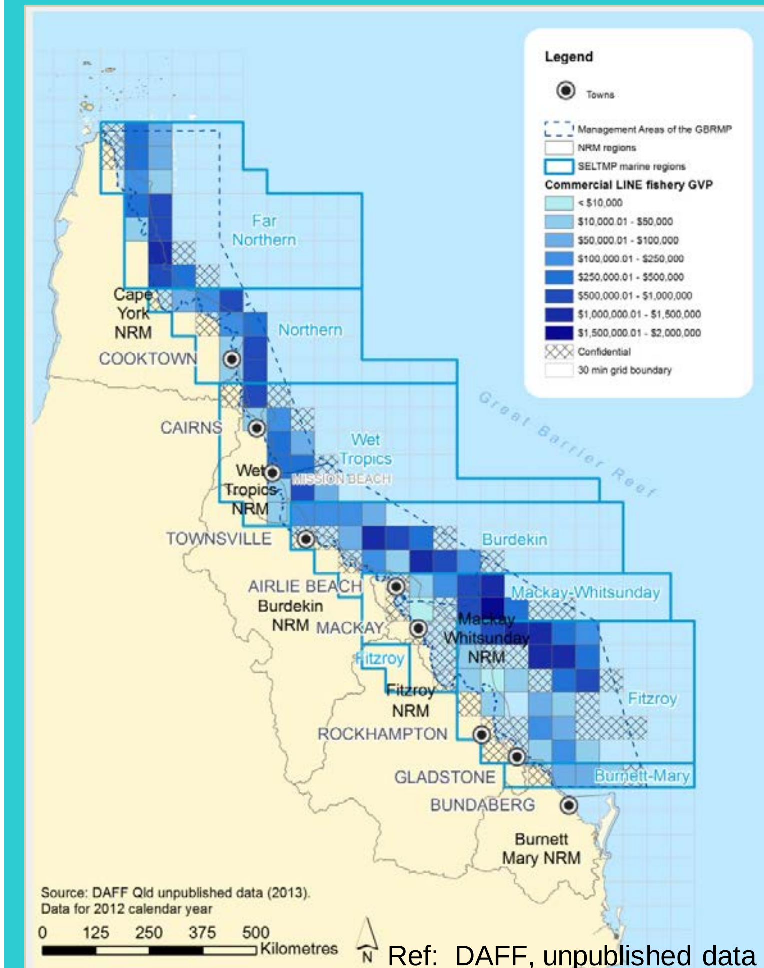
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they going?

Weight harvest – LINE Fisheries



Ref: DAFF, unpublished data (2013)

GVP – LINE Fisheries

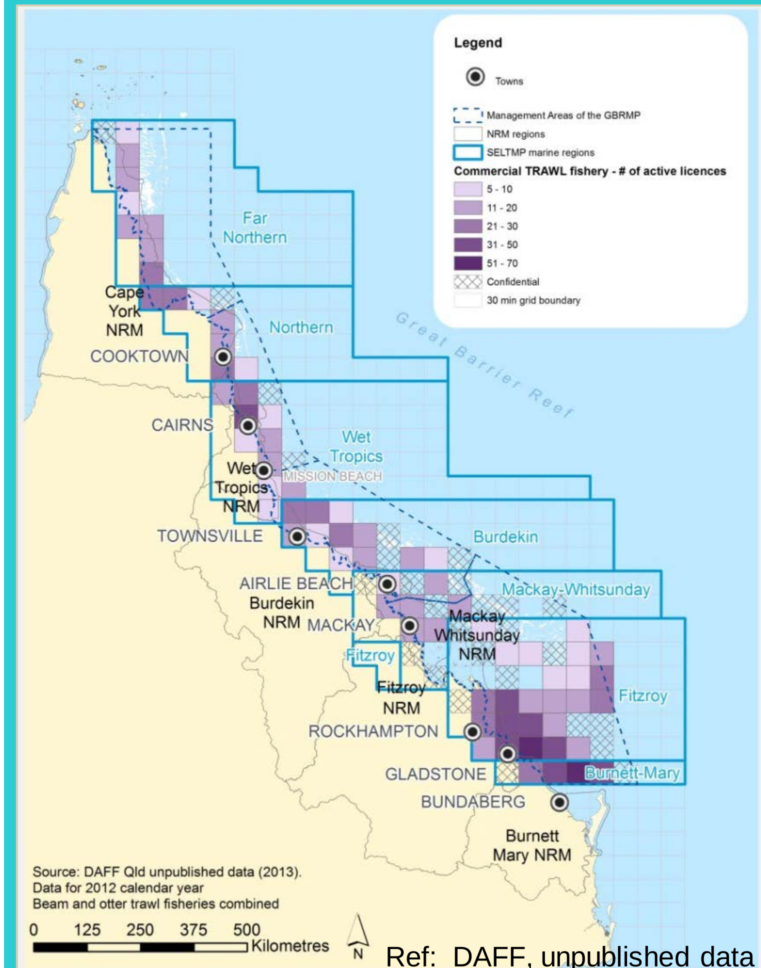


Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

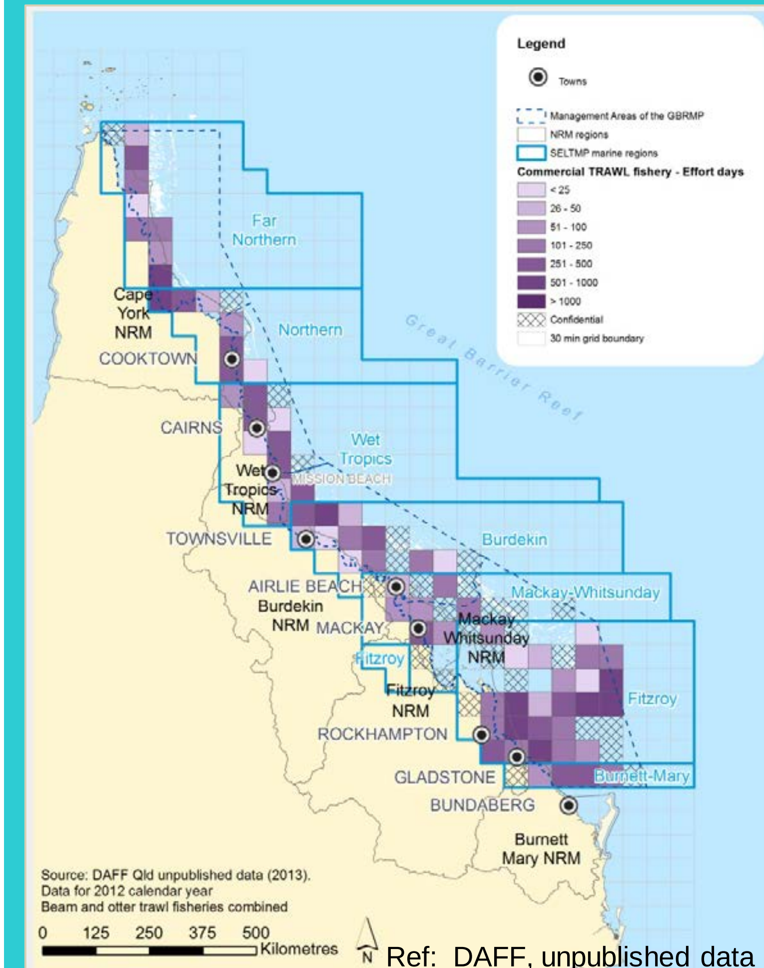
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they going?

Number of licences – TRAWL Fisheries



Ref: DAFF, unpublished data (2013)

Number of Effort days – TRAWL Fisheries

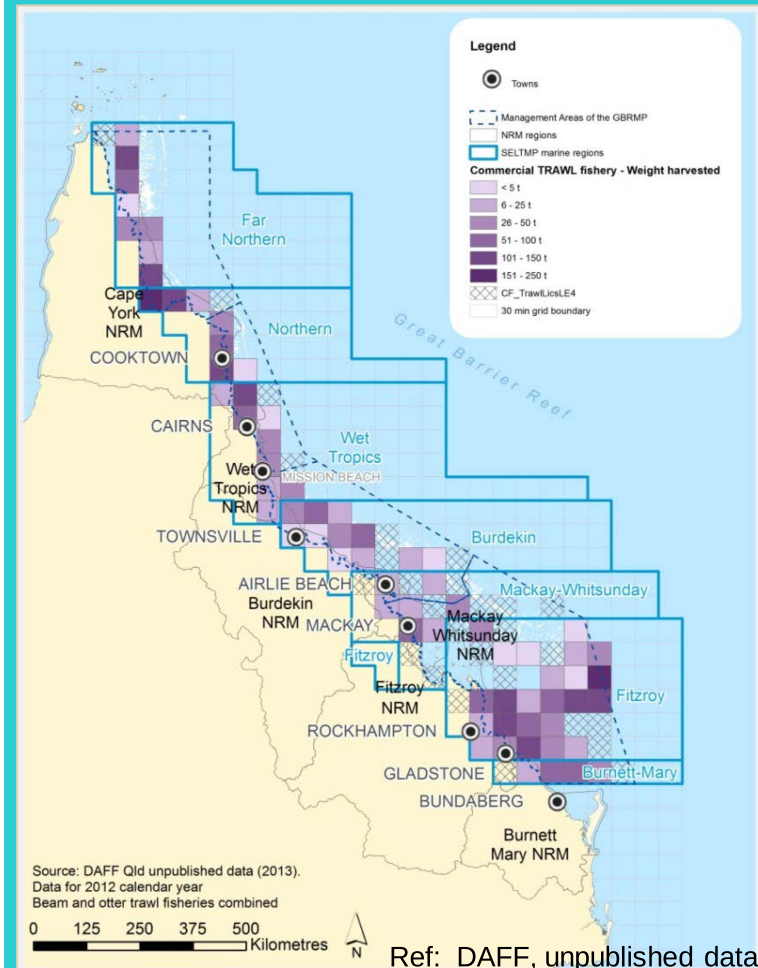


Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

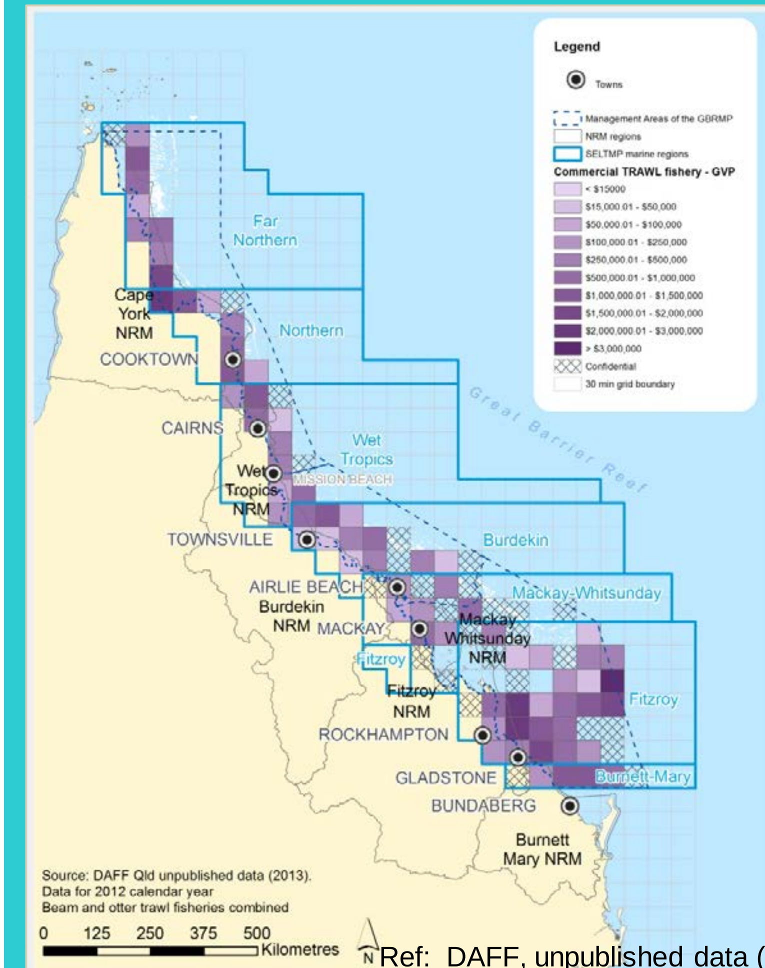
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they going?

Weight harvest – TRAWL Fisheries



Ref: DAFF, unpublished data (2013)

GVP – TRAWL Fisheries

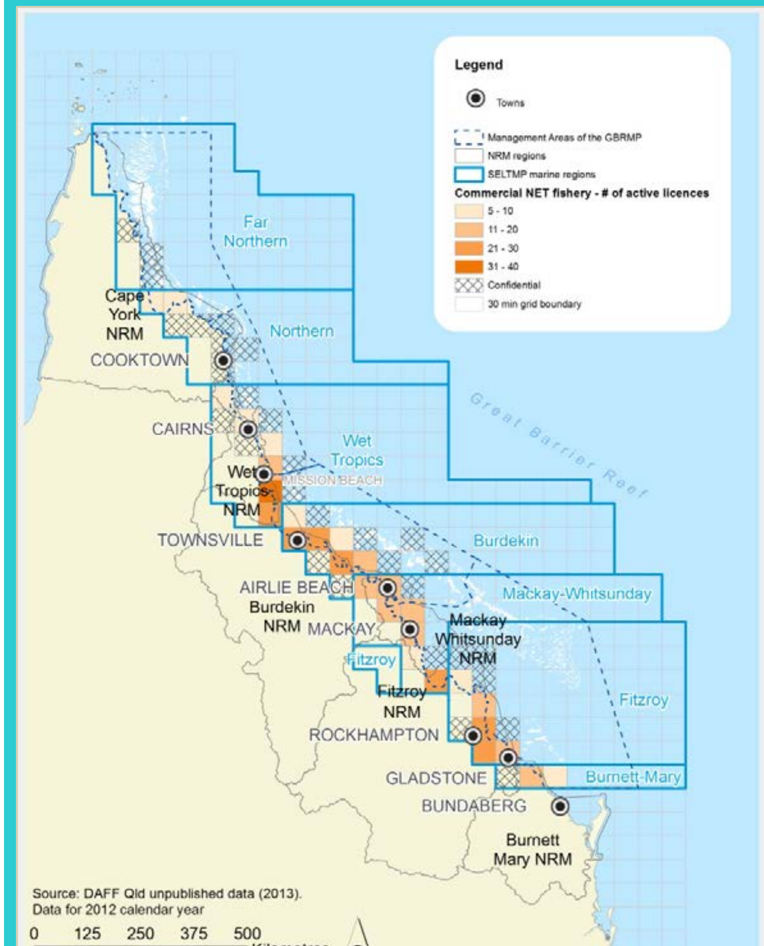


Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

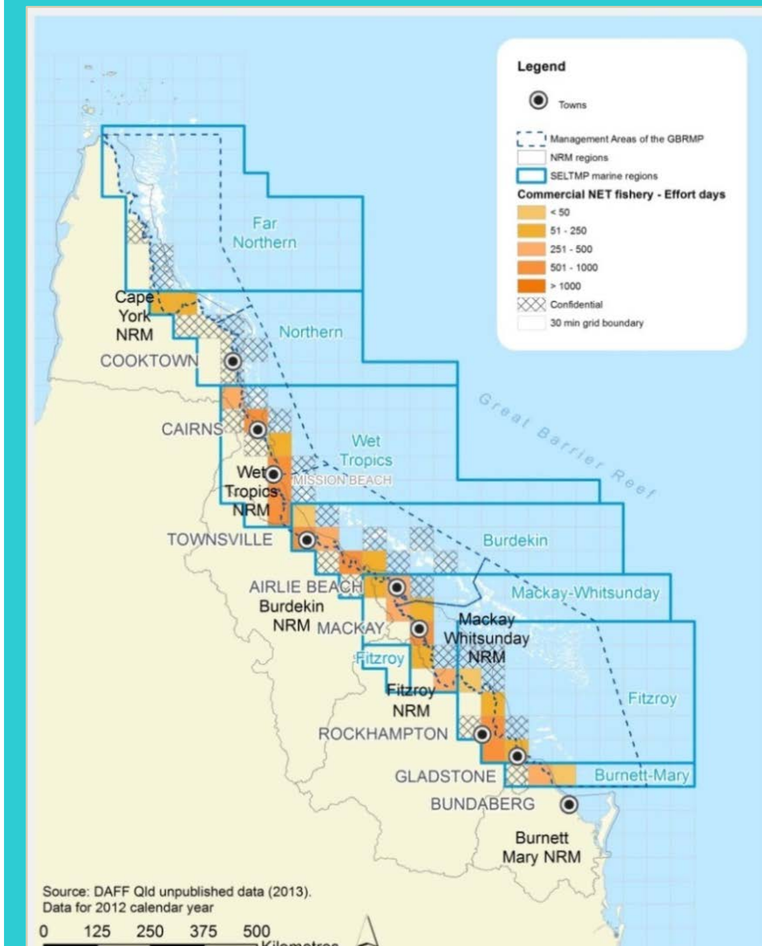
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they going?

Number of licences – NET Fisheries



Ref: DAFF, unpublished data (2013)

Number of Effort days – NET Fisheries

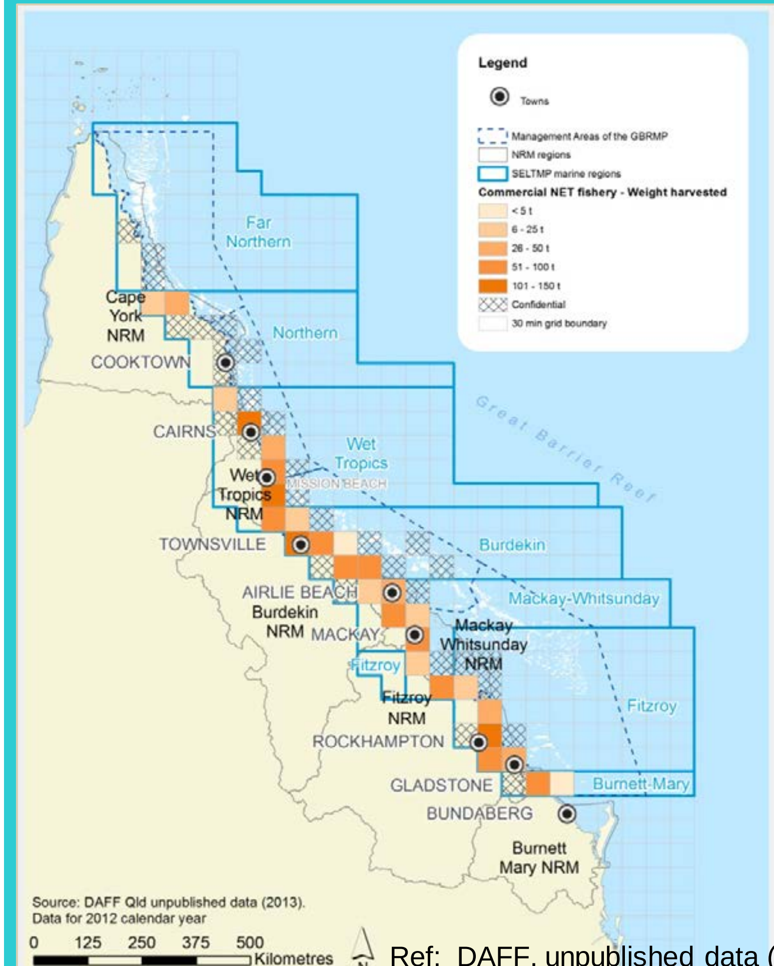


Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

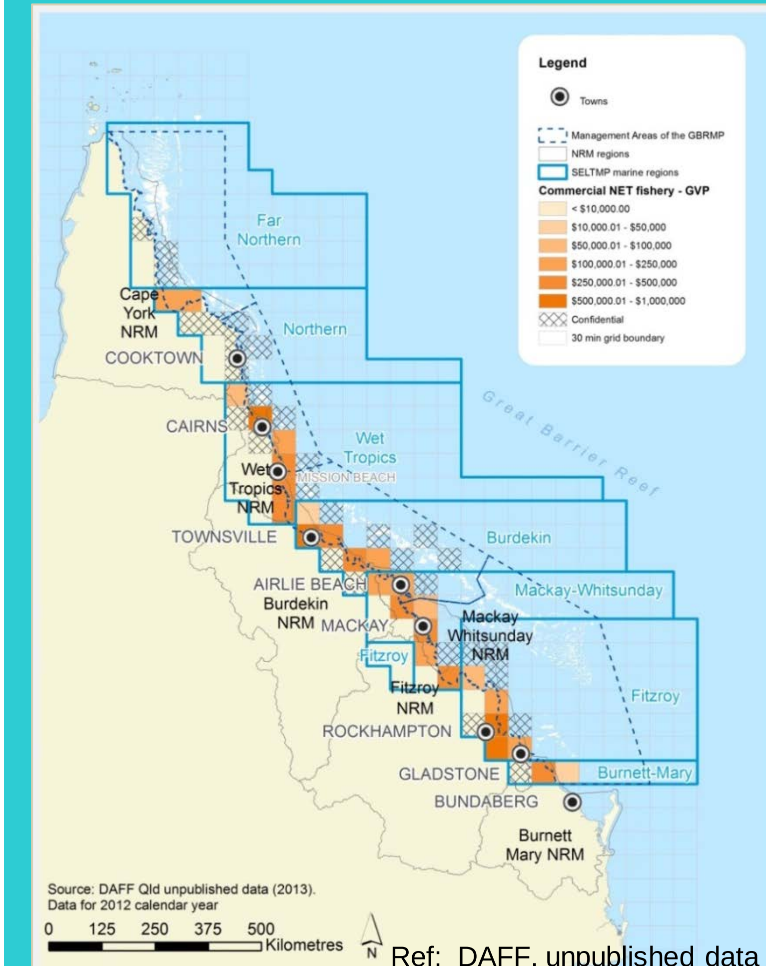
A) *Use of the Environment*: 1. Spatial patterns – WHERE are they going?

Weight harvest – NET Fisheries



Ref: DAFF, unpublished data (2013)

GVP – NET Fisheries

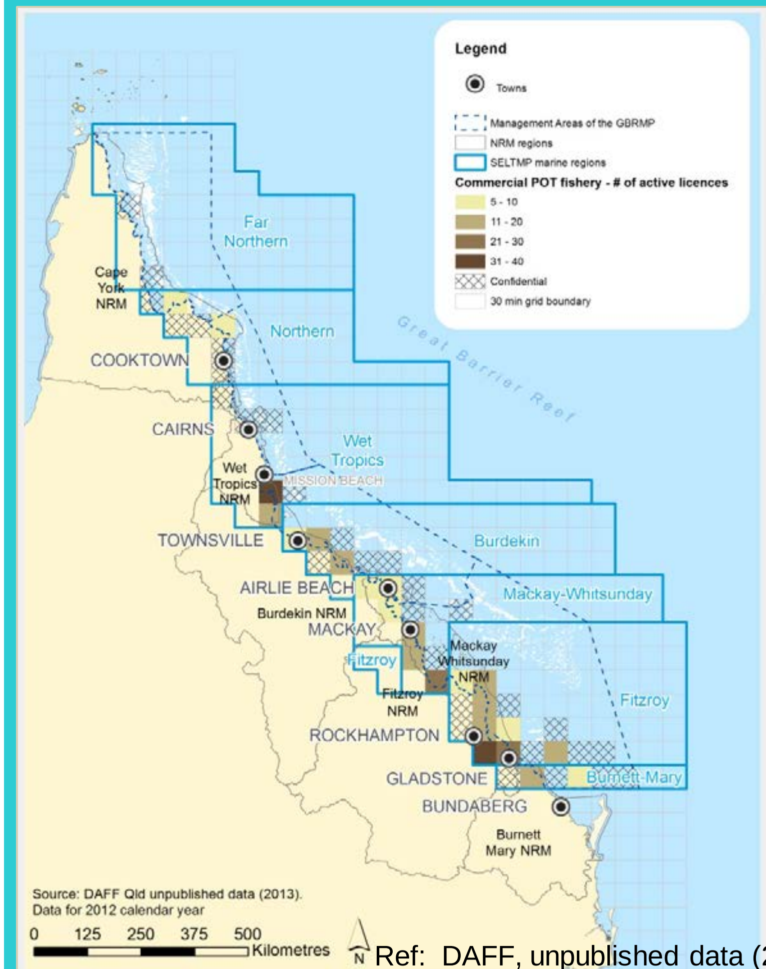


Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

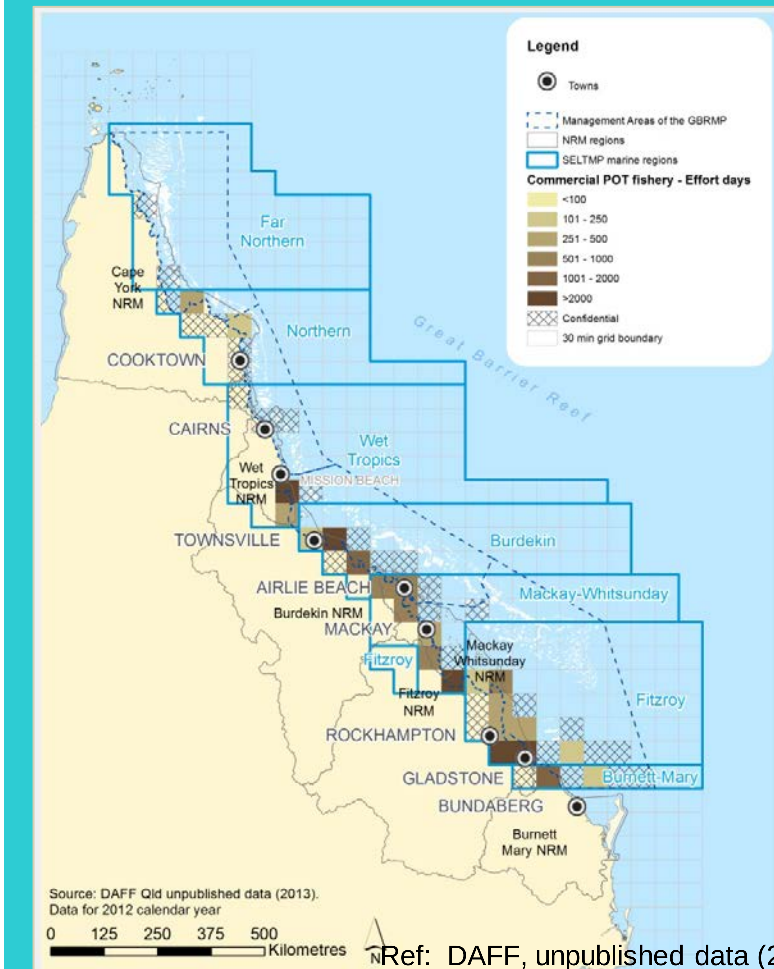
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they going?

Number of licences – POT Fisheries



Ref: DAFF, unpublished data (2013)

Number of Effort days – POT Fisheries

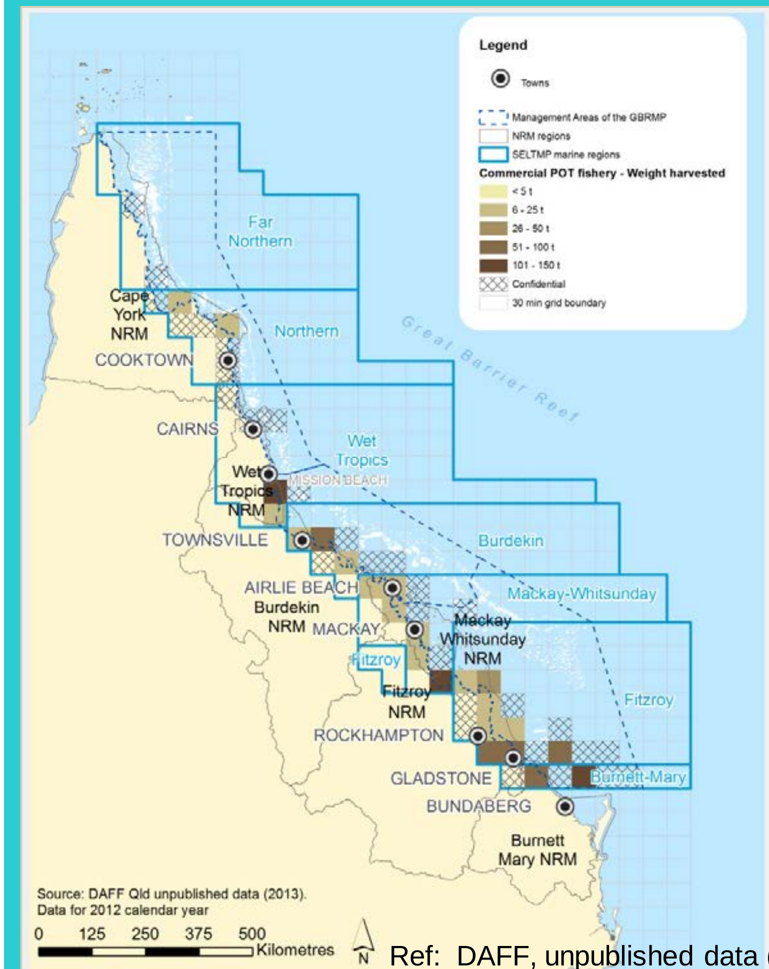


Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

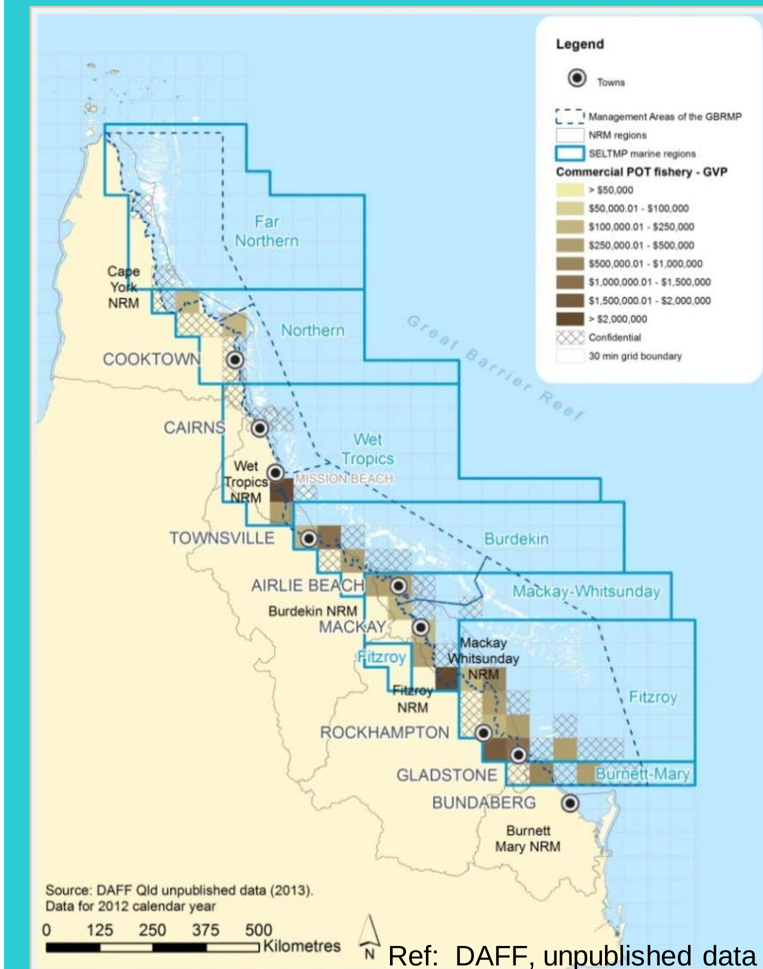
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they going?

Weight harvest – POT Fisheries



Ref: DAFF, unpublished data (2013)

GVP – POT Fisheries

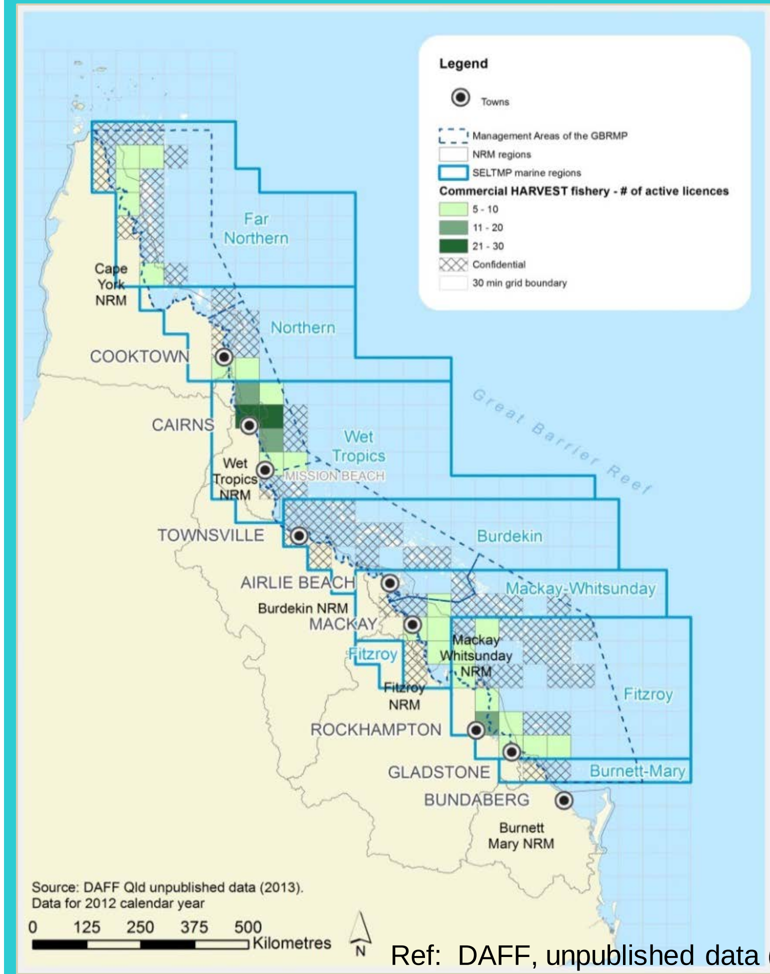


Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

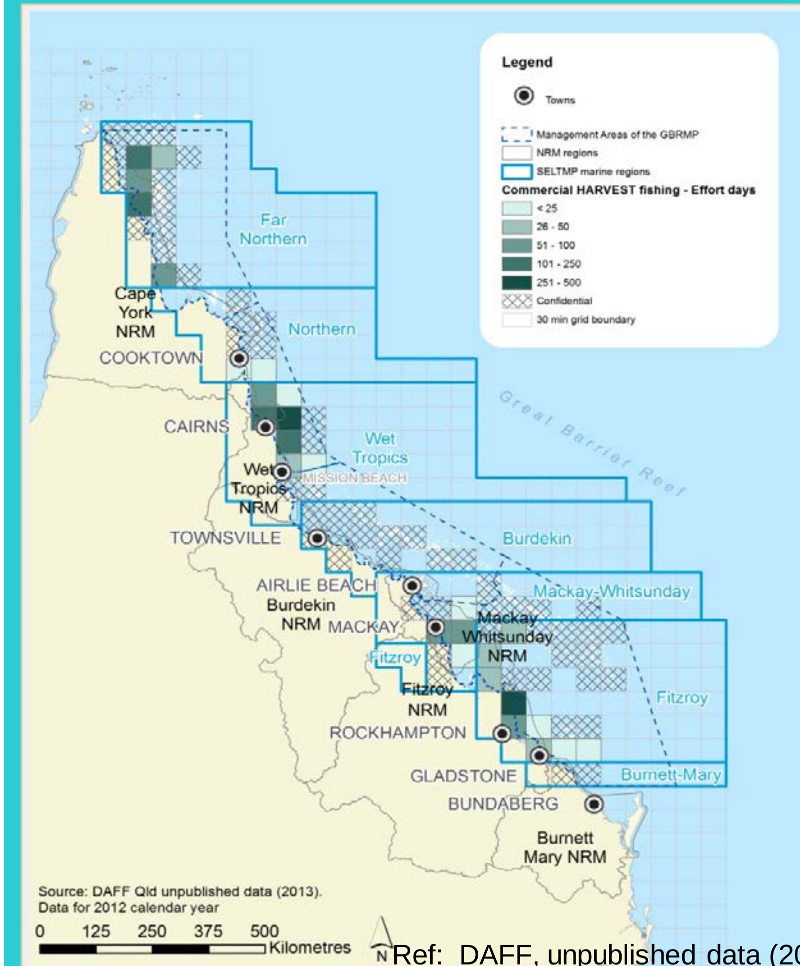
A) *Use of the Environment*: 2. Spatial patterns – WHERE are they going?

Number of licences – HARVEST Fisheries



Ref: DAFF, unpublished data (2013)

Number of Effort days – HARVEST Fisheries

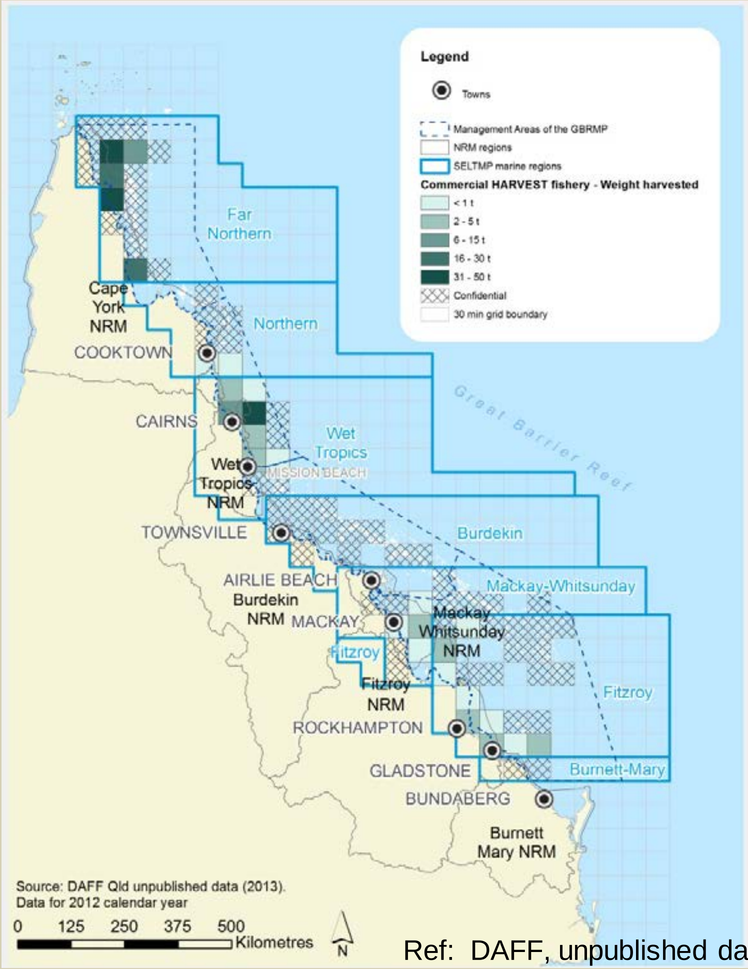


Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

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

Weight harvest – HARVEST Fisheries (excl those recorded b



Ref: DAFF, unpublished data (2013)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 2. Spatial patterns – WHERE are they selling?

Fisher utilised markets

Market type	: Avg% (median%) of product sold there; + % fishers who sell all there
Local market	: 30% (85%) ; 45% sell all here
Intrastate	: 13% (0%) ; 4% sell all here
Interstate	: 13% (0%) ; 3% sell all here
Overseas	: 13% (0%) ; 2% sell all here

Sell direct to…	
Wholesalers	: 81% (100%) ; 59% sell all here
Retailers	: 9% (0%) ; 4% sell all here
Restaurants	: 2% (0%) ; 1% sell all here
Public	: 7% (0%) ; 3% sell all here

Ref: SELTMP Survey 2013

Flow-on markets

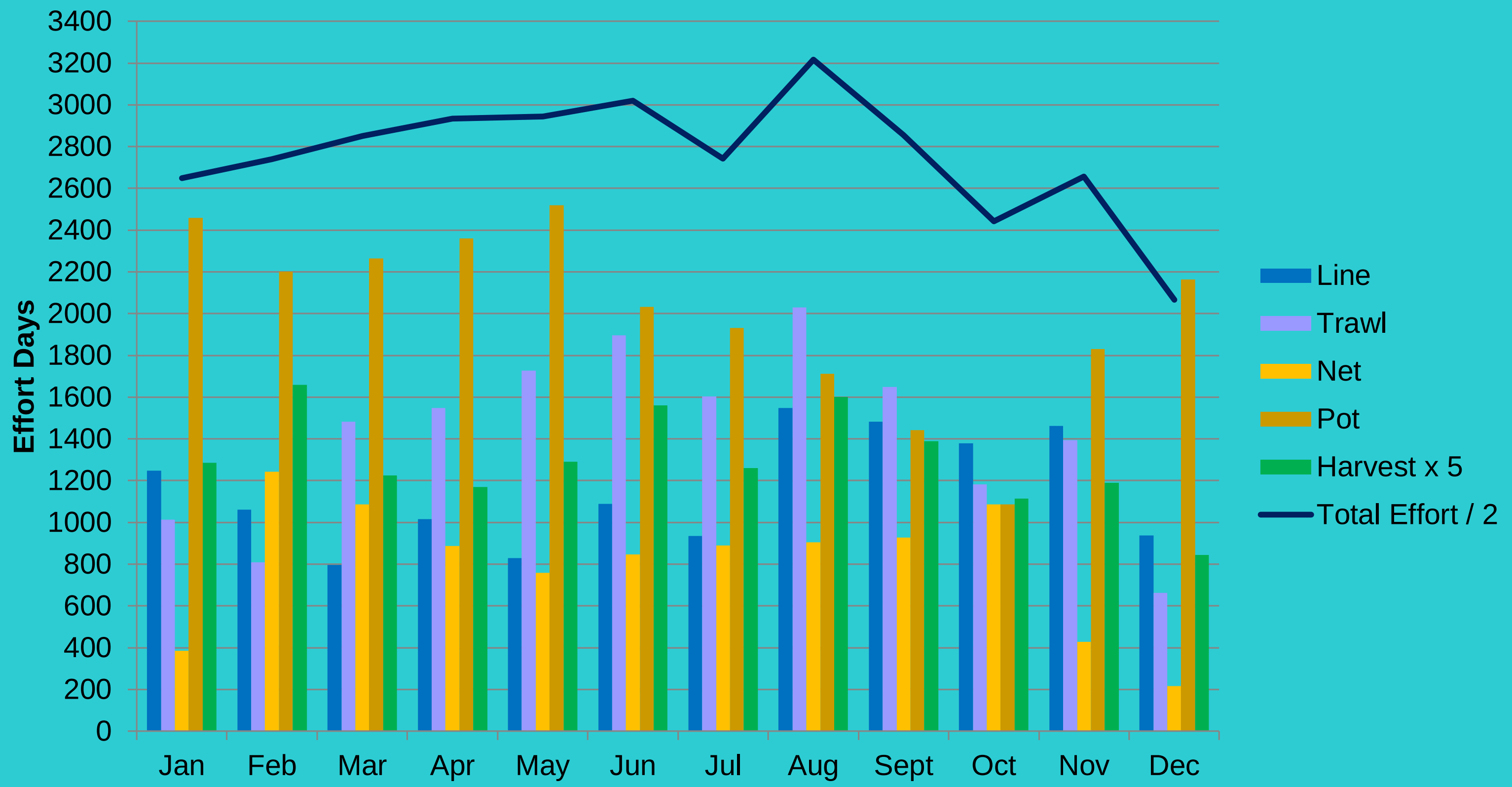
Line fishery:	
CRFFF	95%[1] CT Exported live. Most RTE and OS sold domestic whole / fillet[1]
SM	Exports negligible[2]
Trawl fisheries:	
Otter	Accredited to export to USA[3]
Beam	Exports negligible[4]
Net fisheries: (No	Export mullet roe, shark & small mackerel. estimate). Remainder domestic[5]
Pot fisheries:	Sold local + interstate[6,7]
Harvest fisheries:	
MAFF	58% Export[8]
Coral	xx
Rocklobster	sold as whole live animals or as frozen tails on export & domestic markets[9]
BDM	Exports primarily to China[10]

Ref: [1]DAFF (2012b); [2]DAFF (2012c); [3]DAFF (2012a); [4]DEEDI (2011a); [5]DEEDI (2011b); [6]DEEDI (2011c); [7]DEEDI (2011d); [8]DEEDI (2010a); [9]DEEDI (2011e); [10]DEEDI (2010b)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 2. Temporal patterns – WHEN are they fishing?

Effort distribution over the year – by fishery

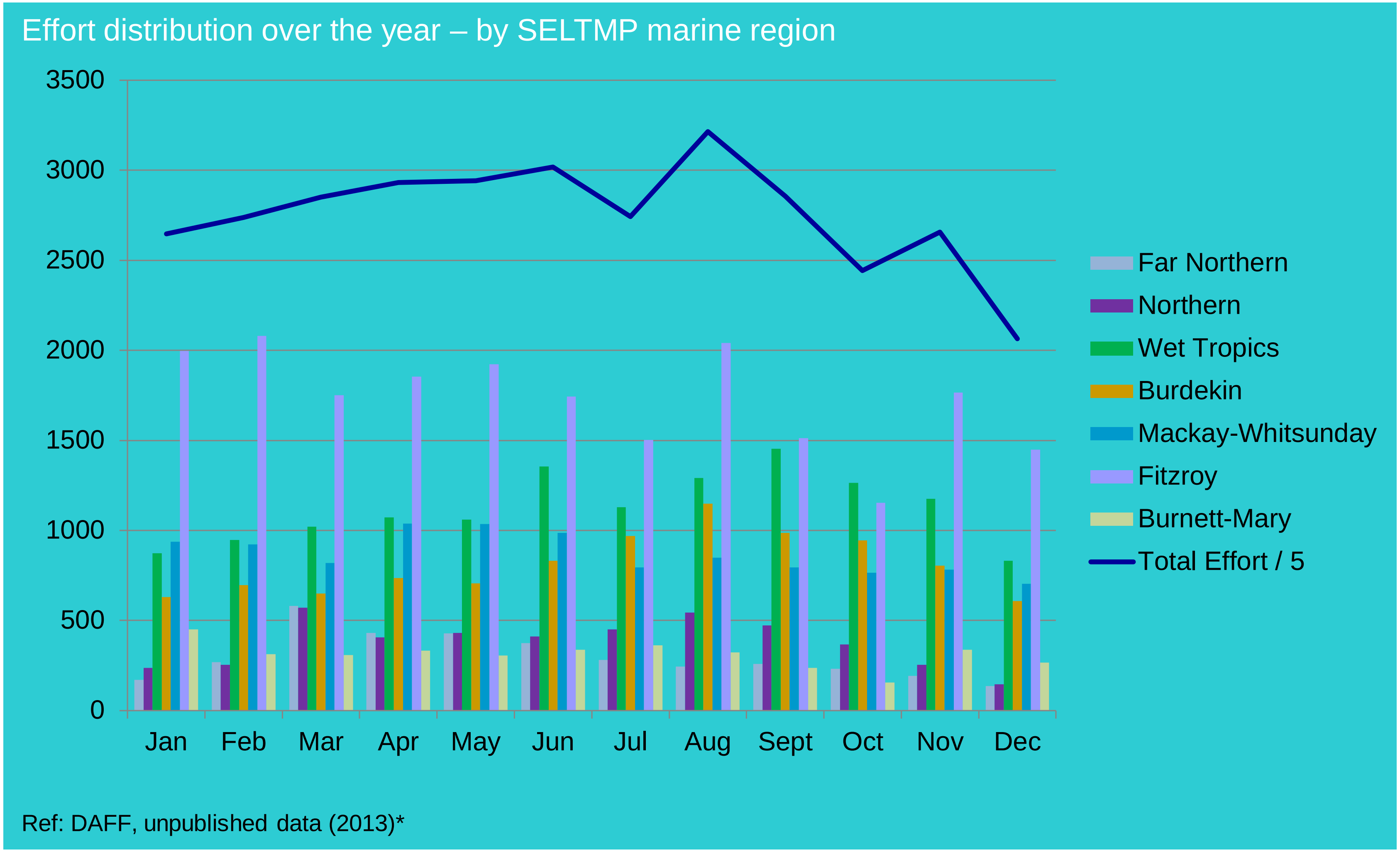


Ref: DAFF, unpublished data (2013)*

*ACTIVE licence data for 2012 calendar year for GBR area only

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Use of the Environment*: 2. Temporal patterns – WHEN are they fishing?



*ACTIVE licence data for 2012 calendar year for GBR area only

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Social relationship*: 3. Cultural, spiritual, intellectual connection

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

Fish	16%
Beautiful	15%
Coral	13%
Pristine	9%
Fishing	8%
Workplace	5%
Wonder-of-the-world	2%
Closures	2%
Overprotected	2%
Amazing	2%

17% mentioned 'negative' words. The majority had to do with issues related to the management of the Reef, bureaucracy, lack of access, and the condition of the Reef

# of commercial fishers surveyed= 210
Total # of words/phrases listed = 329
Total # of distinct words/phrases = 138

Ref: SELTMP Survey 2013

SELTMP 2013: Commercial Fishing in the Great Barrier Reef

A) *Social relationship*: 3. Connection in terms of 'place'

Mean length of residence in GBR

Home NRM	
Cape York	: 45 years
Wet Tropics	: 37
Burdekin	: 38
Mackay-Whit	: 44
Fitzroy Basin	: 39
Burnett Mary	: 36

Line fishers	: 33
Trawl	: 32
Net	: 40
Pot	: 37
Harvest	: 34

GBR overall	: 36 (median 36)

Ref: SELTMP Survey 2013

Years fishing commercially in GBR

0-1 year	: 1% [1] of fishers
2-5 years	: 5%[1]
6-10 years	: 12%[1]
10-20 years	: 34%[1]
>20 years	: 47%[1]

Average # of yrs (median) **Home PORT NRM**	
Cape York	: xx (xx)
Wet Tropics	: xx (xx)
Burdekin	: xx (xx)
Mackay-Whit	: xx (xx)
Fitzroy Basin	: xx (xx)
Burnett Mary	: xx (xx)

Line fishers	: xx (xx)
Trawl	: xx (xx)
Net	: xx (xx)
Pot	: xx (xx)
Harvest	: xx (xx)

GBR overall	: 23 $^{+}/_{-}$ 1.0[2]*

Ref: [1]Marshall and Tobin, unpubl. data (2012); [2]Marshall and Tobin (2012)

The GBR is part of my identity

Mean score (% agree)[1] **Home NRM**	
Cape York	: 8.4 (91%)
Wet Tropics	: 6.8 (72%)
Burdekin	: 7.4 (76%)
Mackay-Whit	: 7.5 (73%)
Fitzroy Basin	: 7.0 (65%)
Burnett Mary	: 6.8 (74%)

Line fishers	: 8.1 (86%)[1]
Trawl	: 5.9 (59%)[1]
Net	: 7.3 (76%)[1]
Pot	: 5.9 (51%)[1]
Harvest	: 6.8 (72%)[1]

GBR overall	: 7.0 (71%)[1]
Aus residents	: 7.4 (79%)[2]

Ref: [1]SELTMP Survey 2013; [2]Goldberg et al. (in press)

Proud that the GBR is a WHA

Mean score (% agree)[1] **Home NRM**	
Cape York	: 8.7 (64%)
Wet Tropics	: 5.6 (45%)
Burdekin	: 7.2 (70%)
Mackay Whits	: 6.8 (70%)
Fitzroy Basin	: 7.6 (71%)
Burnett Mary	: 7.0 (73%)

Line fishers	: 7.2 (70%)[1]
Trawl	: 6.3 (64%)[1]
Net	: 6.7 (68%)[1]
Pot	: 6.8 (57%)[1]
Harvest	: 8.6 (81%)[1]

GBR overall	: 7.0 (68%)[1]
Aus residents	: 8.2 (87%)[2]

Ref: [1]SELTMP Survey 2013; [2]Goldberg et al. (in press)

*Sample of 145 fishers of various types

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Social relationship*: 3. Connection in terms of 'place'

GBR is the best place for the fishing I do

Mean score (% agree)
Home NRM

Cape York	: 7.9 (82%)
Wet Tropics	: 8.1 (79%)
Burdekin	: 8.4 (84%)
Mackay Whits	: 9.3 (100%)
Fitzroy Basin	: 8.2 (80%)
Burnett Mary	: 8.3 (83%)

Line fishers	: 8.5 (85%)
Trawl	: 7.9 (77%)
Net	: 8.1 (89%)
Pot	: 8.2 (84%)
Harvest	: 8.5 (92%)

GBR overall	: 8.3 (85%)

Ref: SELTMP Survey 2013

Live in the region because of the GBR

Mean score (% agree)
Home NRM

Cape York	: 8.7 (100%)
Wet Tropics	: 6.9 (64%)
Burdekin	: 7.4 (75%)
Mackay Whits	: 7.4 (70%)
Fitzroy Basin	: 7.3 (80%)
Burnett Mary	: 4.9 (40%)

Line fishers	: 7.7 (80%)
Trawl	: 5.1 (45%)
Net	: 6.7 (67%)
Pot	: 6.0 (53%)
Harvest	: 6.7 (73%)

GBR overall	: 6.6 (65%)

Ref: SELTMP Survey 2013

Plan to remain in current town for next 5 years

Mean score (% agree)
Home NRM

Cape York	: 9.8 (100%)
Wet Tropics	: 9.8(100%)
Burdekin	: 9.6 (100%)
Mackay Whits	: 9.6 (100%)
Fitzroy Basin	: 9.0 (93%)
Burnett Mary	: 9.0 (92%)

Line fishers	: 9.8 (100%)
Trawl	: 9.0 (93%)
Net	: 9.4 (96%)
Pot	: 9.5 (100%)
Harvest	: 9.4 (96%)

GBR overall	: 9.4 (97%)

Ref: SELTMP Survey 2013

Plan to remain despite more frequent extreme events

Mean score (% agree)
Home NRM

Cape York	: 9.4 (100%)
Wet Tropics	: 9.7 (97%)
Burdekin	: 9.3 (94%)
Mackay Whits	: 8.7 (90%)
Fitzroy Basin	: 9.2 (94%)
Burnett Mary	: 8.6 (93%)

Line fishers	: 8.7 (91%)
Trawl	: 9.5 (100%)
Net	: 9.0 (93%)
Pot	: 9.4 (97%)
Harvest	: 8.8 (96%)

GBR overall	: 9.1 (94%)

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Social relationship*: 3. Connection in terms of 'identity'

Years in fishing industry

Average # of years (median)

Home NRM	
Cape York	: 31 (30)
Wet Tropics	: 29 (26)
Burdekin	: 27 (30)
Mackay-Whit	: 31 (31)
Fitzroy Basin	: 24 (22)
Burnett Mary	: 32 (30)
Intrastate	: 30 (xx)
Interstate	: 29 (xx)

Line fishers	: 29 (27)
Trawl	: 34 (35)
Net	: 29 (30)
Pot	: 34 (30)
Harvest	: 24 (20)

GBR overall	: 29 (30)

Ref: SELTMP Survey 2013

Industry of choice

Mean score (% agree) that they wouldn't want to be anything else…

Home NRM	
Cape York	: 7.7 (64%)
Wet Tropics	: 6.6 (59%)
Burdekin	: 7.2 (51%)
Mackay Whits	: 6.7 (36%)
Fitzroy Basin	: 8.1 (74%)
Burnett Mary	: 6.9 (67%)

Line fishers	: 7.1 (67%)
Trawl	: 7.1 (63%)
Net	: 7.8 (72%)
Pot	: 7.1 (61%)
Harvest	: 6.9 (67%)

GBR overall	: 7.2 (66%)

Ref: SELTMP Survey 2013

Industry as lifestyle

Mean score (% agree) that fishing industry is a lifestyle, not just a job

Home NRM	
Cape York	: 9.4 (100%)
Wet Tropics	: 8.6 (87%)
Burdekin	: 8.7 (94%)
Mackay Whits	: 7.9 (83%)
Fitzroy Basin	: 8.7 (90%)
Burnett Mary	: 8.8 (98%)

Line fishers	: 8.9 (96%)
Trawl	: 8.7 (93%)
Net	: 8.3 (86%)
Pot	: 8.3 (84%)
Harvest	: 8.1 (84%)

GBR overall	: 8.6 (90%)

Ref: SELTMP Survey 2013

Plan to remain in industry in 5 years

Mean score (% agree)

Home NRM	
Cape York	: 9.4 (91%)
Wet Tropics	: 8.0 (82%)
Burdekin	: 8.1 (79%)
Mackay Whits	: 6.4 (57%)
Fitzroy Basin	: 8.1 (84%)
Burnett Mary	: 8.5 (84%)

Line fishers	: 8.2 (83%)
Trawl	: 8.0 (78%)
Net	: 8.7 (90%)
Pot	: 8.1 (84%)
Harvest	: 7.7 (77%)

GBR overall	: 8.1 (82%)

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Social relationship*: 3. Connection in terms of 'identity'

Family involvement

% with family members who are also commercial fishers

Home NRM	
Cape York	: 64%
Wet Tropics	: 59%
Burdekin	: 18%
Mackay Whits	: 30%
Fitzroy Basin	: 42%
Burnett Mary	: 55%
Intrastate	: 37%
Interstate	: 75%

Line fishers	: 48%
Trawl	: 48%
Net	: 28%
Pot	: 34%
Harvest	: 58%

GBR overall	: 44%

Ref: SELTMP Survey 2013

New entrants (0-5 yrs)

% respondents with 0-5 yrs experience

Home Port NRM	
Cape York	: 0
Wet Tropics	: 2.1
Burdekin	: 9.1
Mackay Whits	: 0
Fitzroy Basin	: 10.3
Burnett Mary	: 0
Intrastate	: 0

Line fishers	: 5.6
Trawl	: 0
Net	: 3.4
Pot	: 0
Harvest	: 11.5

GBR overall	: 3.8
Aus overall	: xx

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Social relationship*: 3. Connection in terms of 'aesthetics' and 'values'

The aesthetic beauty of GBR is outstanding

Mean score (% agree)

Home Port NRM	
Cape York	: 8.4 (100%)
Wet Tropics	: 9.0 (91%)
Burdekin	: 9.2 (94%)
Mackay Whits	: 9.0 (96%)
Fitzroy Basin	: 8.9 (92%)
Burnett Mary	: 9.0 (97%)

Line fishers	: 9.1 (96%)
Trawl	: 8.7 (96%)
Net	: 9.4 (97%)
Pot	: 8.5 (87%)
Harvest	: 9.2 (96%)

GBR overall	: 9.0 (94%)

Ref: SELTMP survey 2013

Value the GBR for biological diversity

Mean score (% agree)

Line fishers	: 9.2 (100%)
Trawl	: 9.2 (100%)
Net	: 9.0 (93%)
Pot	: 8.3 (84%)
Harvest	: 9.3 (100%)

GBR overall	: 9.0 (96%)

Ref: SELTMP Survey 2013

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

Mean score (% agree)

Line fishers	: 9.1 (100%)
Trawl	: 8.2 (91%)
Net	: 8.7 (93%)
Pot	: 8.2 (84%)
Harvest	: 9.0 (96%)

GBR overall	: 8.7 (94%)

Ref: SELTMP Survey 2013

Value the GBR for learning about the env through science

Mean score (% agree)

Line fishers	: 7.6 (80%)
Trawl	: 6.9 (73%)
Net	: 7.8 (82%)
Pot	: 6.6 (68%)
Harvest	: 7.8 (77%)

GBR overall	: 7.3 (76%)

Ref: SELTMP Survey 2013

Value the GBR for attracting people from all over the world

Mean score (% agree)

Line fishers	: 7.1 (69%)
Trawl	: 6.6 (70%)
Net	: 8.0 (82%)
Pot	: 5.5 (53%)
Harvest	: 6.8 (73%)

GBR overall	: 6.8 (68%)

Ref: SELTMP Survey 2013

Value the GBR for the economy of region

Mean score (% agree)

Line fishers	: 9.2 (96%)
Trawl	: 8.8 (96%)
Net	: 9.6 (100%)
Pot	: 8.2 (87%)
Harvest	: 9.0 (96%)

GBR overall	: 9.0 (95%)

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Social relationship*: 3. Satisfaction with GBR experiences

The habitats I fish are NOT in great condition

Mean score (% agree)
Home Port NRM

Cape York	: 2.0 (0%)
Wet Tropics	: 2.9 (15%)
Burdekin	: 3.9 (30%)
Mackay Whits	: 3.4 (30%)
Fitzroy Basin	: 3.2 (26%)
Burnett Mary	: 3.5 (23%)

Line fishers	: 3.6 (29%)
Trawl	: 2.4 (7%)
Net	: 3.1 (24%)
Pot	: 3.5 (24%)
Harvest	: 3.1 (19%)

GBR overall	: 3.2 (22%)

Ref: SELTMP survey 2013

Feel optimistic about the future of the GBR

Mean score (% agree)
Home Port NRM

Cape York	: 7.9 (88%)
Wet Tropics	: 7.3 (74%)
Burdekin	: 6.4 (64%)
Mackay Whits	: 8.0 (88%)
Fitzroy Basin	: 7.5 (74%)
Burnett Mary	: 6.2 (71%)

Line fishers	: 7.3 (79%)[1]
Trawl	: 6.8 (76%)[1]
Net	: 6.8 (67%)[1]
Pot	: 7.1 (67%)[1]
Harvest	: 7.9 (81%)[1]

GBR overall	: 7.1 (75%)[1]
Aus residents	: 5.9 (55%)[2]

Ref: [1]SELTMP survey 2013;
[2]Goldberg et al. (in press)

Optimistic about the future of my business

Mean score (% agree)
Home Port NRM

Cape York	: 4.6 (50%)
Wet Tropics	: 5.3 (45%)
Burdekin	: 4.5 (36%)
Mackay Whits	: 6.0 (52%)
Fitzroy Basin	: 5.5 (51%)
Burnett Mary	: 4.7 (41%)

Line fishers	: 5.1 (46%)
Trawl	: 5.0 (45%)
Net	: 5.3 (54%)
Pot	: 4.8 (35%)
Harvest	: 6.0 (54%)

GBR overall	: 5.2 (46%)

Ref: SELTMP survey 2013

Business has performed at least as well as previous year

Mean score (% agree)
Home Port NRM

Cape York	: 4.7 (38%)
Wet Tropics	: 5.2 (52%)
Burdekin	: 5.6 (58%)
Mackay Whits	: 6.8 (64%)
Fitzroy Basin	: 5.9 (59%)
Burnett Mary	: 5.7 (48%)

Line fishers	: 4.9 (56%)
Trawl	: 7.0 (67%)
Net	: 5.7 (48%)
Pot	: 5.2 (53%)
Harvest	: 5.8 (57%)

GBR overall	: 5.0 (56%)

Ref: SELTMP survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Economic relationship*: 4. Employment…

of direct staff in industry (FTE)

Cape York	: 125[1]
Wet Tropics	: 59[1]
Burdekin	: 139[1]
Mackay Whits	: 80[1]
Fitzroy Basin	: 98[1]
Burnett Mary	: 33[1]

Line fishers	: xx
Trawl	: xx
Net	: xx
Pot	: xx
Harvest	: xx

GBR overall	: 533[1]
Qld overall	: 1460[2]

Tidbit:
By State, Queensland employed the largest number of people in the wild-catch fisheries sector

Ref: [1]DAE (2013)*; [2]ABARES (2011)

indirect staff in industry (FTE)

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

Line fishers	: xx
Trawl	: xx
Net	: xx
Pot	: xx
Harvest	: xx

GBR overall : 171[1]
Rest of Qld (GBR related) : 29[1]
Rest of Aus (GBR related) : 242[1]
Qld overall : 1037[2]
wholesale; 273 processing

Ref: [1]DAE (2013)*; [2]ABARES (2011)

FTE staff per business

0 extra staff	: 48%
1 staff	: 20%
2-5 staff	: 20%
>5 staff	: 11%
Range	: 0-50 staff

Avg # (median) staff employed per business Home Port NRM

Cape York	: 1.6 (0.5)
Wet Tropics	: 3.8 (0.0)
Burdekin	: 1.3 (1.0)
Mackay Whits	: 3.1 (3.1)
Fitzroy Basin	: 1.4 (1.4)
Burnett Mary	: 1.4 (1.4)

Line fishers	: 2.1 (0.0)
Trawl	: 2.4 (1.0)
Net	: 0.8 (0.0)
Pot	: 0.7 (0.0
Harvest	: 6.0 (3.0)

GBR overall : 2.2 (1)

Ref: SELTMP Survey 2013

Staff turnover

Average staff employment duration (yrs)

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

Line fishers	: xx
Trawl	: xx
Net	: xx
Pot	: xx
Harvest	: xx

GBR overall	: xx
Qld overall	: xx

Reason for turnover:
…

Ref: xxx

*Includes aquaculture

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Economic relationship*: 4. Value…

Gross Value of Production*

Cape York : $31.8m[1]
Wet Tropics : $15.1m[1]
Burdekin : $15.6m[1]
Mackay Whits : $20.7m[1]
Fitzroy Basin : $35.0m[1]
Burnett Mary : $4.6m[1]

Line, Trawl, Pot, Net combined : $97.4m[1]
- Line fishery: $30,434,620[2]
- Trawl:
  - Beam : $207,454[2]
  - Otter : $44,694,590[2]
- Net: : $8,272,358[2]
- Pot: : $14,398,017[2]

Harvest combined: : $25.5m[1]
- Rocklobster: $5,654,259[2]
- MAFF : $10-12m[3]
- Bêche-de-mer: $5.4[4]
- Other : $xx

GBR overall : $122.9m[1]

Ref: [1]DAE (2013)^; [2]DAFF, unpublished data (2013); [3]Fisheries Qld (2013c); [4]Fisheries Qld (2012e)

Direct economic contribution (expenditure

Cape York : $45.0m
Wet Tropics : $21.3m
Burdekin : $50.3m
Mackay Whits : $27.8m
Fitzroy Basin : $35.3m
Burnett Mary : $11.8m

GBR overall : $192.5m

Ref: DAE (2013)*

Value added estimate

Cape York : $21.6m
Wet Tropics : $10.3m
Burdekin : $24.2m
Mackay Whits : $13.8m
Fitzroy Basin : $17.0m
Burnett Mary : $5.7m
- Indirect catchment: $30.3m
- Rest of Qld : $4.4m
- Rest of Aus : $33.2

GBR overall : $92.5m
Australia : $160.3m

Ref: DAE (2013)*

Prices for key species (per kg)

Average prices received

Line fishery:
- CT : $48 live
  - : $28.75 fillet
  - : $16 whole
- SM : $8 whole
  - : $6 fillet

Trawl:
- Prawns : $11.50 (multiple sp and grades)

Net:
- Barramundi: $7 whole (no fillet price in Qld EC)
- Shark : $4.20 trunk

Pot:
- Mudcrab : $17 green
- Blueswimmer: $xx

Harvest:
- Rocklobster : $49 live
  - : $38 fr. tails
- MAFF : $xx
- Bêche-de-mer : $xx

Ref: Martin Perkins, QSMA, unpubl. data (2011)

*Includes aquaculture; ^Aquaculture removed from these estimates of GVP

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Economic relationship*: 4. Value...

Licence sale values

Average per licence

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

Average per symbol

Line fishery:	
L2	: $xx
L3	: $xx
RQ	: $xx
SM	: $xx
Trawl:	
T1	: $xx
T2	: $xx
Net:	
N1	: $xx
N2	: $xx
N4	: $xx
Pot (C1):	: $xx
Harvest:	
Rocklobster	: $xx
MAFF	: $xx
BDM	: $xx

Ref: [1]xxx

Licence lease price

Average

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

Line fishers	: $xx
Trawl	: $xx
Net	: $ xx
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: [1]xxx

Quota sale values

Average per unit

Line fishery:	
RQ	: $xx
SM	: $xx
Trawl:	: $xx
Net (S):	: $xx
Pot:	: N/a
Harvest:	: ?

Ref: [1]xxx

Quota lease values

Average per unit

Line fishery:	
RQ	: $xx
SM	: $
Trawl:	: $xx
Net (S):	: $xx
Pot:	: N/a
Harvest:	: ?

Ref: [1]xxx

Management fees

New/returning fisher licence fee : $85.30

Licence registration fee : $257.50

Fishery access fees:

Line:	: $298.70
CT units	: $0.31 ea
RTE units	: $0.15 ea
OS units	: $0.15 ea
SM units	: $0.15 ea
Trawl: Beam	: $298.70 / symbol
Otter units	: $0.31 ea
Net: N1	: $298.70
N2	: $597.40
Pot:	: $298.70
Harvest : MAFF	: $298.70
Rocklobster units	: $0.31 ea
BDM units	: $10.30ea
Other	: various

http://www.daff.qld.gov.au/28_15468.htm

Ref: DAFF (2012b)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Economic relationship*: 4. Investment…

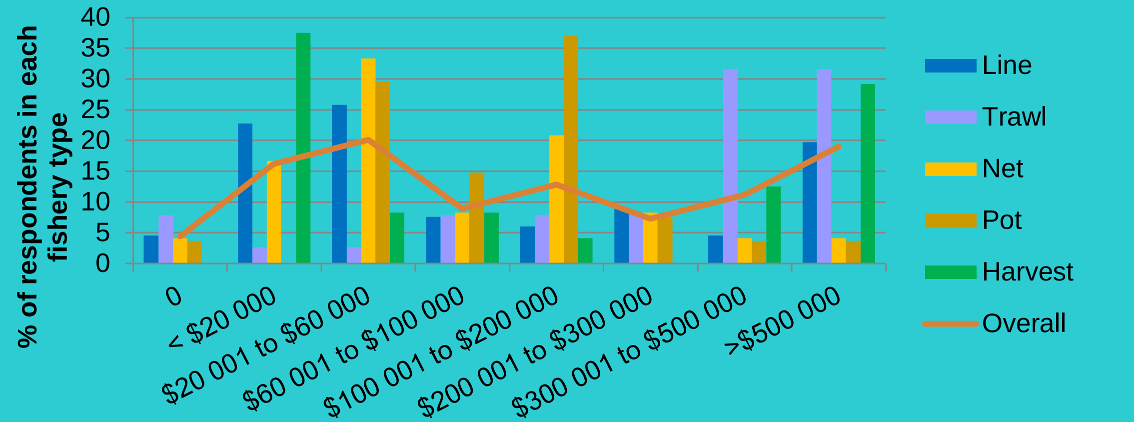
Revenue

Average revenue per vessel per year
Cape York : $xx
Wet Tropics : $xx
Burdekin : $xx
Mackay Whits : $xx
Fitzroy Basin : $xx
Burnett Mary : $xx

Line fishers : $80,600[1]
Trawl : $91,100[1]
Net : $87,750[2]
Pot : $xx
Harvest : $xx

GBR overall : $xx (most turnover $51-150K / yr)*[3]

Tidbit:
For CRFF, most northern fishers received <$50K, southern fishers received >$300K revenue[4]



Ref: [1]Sutton et al. (2010); [2]Tobin R et al. (2010); [3]Marshall and Tobin (2012); [4]Tobin A et al. (2010); Graph from SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Economic relationship*: 4. Investment…

Costs

Avg costs of production^	
Cape York	: $xx
Wet Tropics	: $xx
Burdekin	: $xx
Mackay Whits	: $xx
Fitzroy Basin	: $xx
Burnett Mary	: $xx

Line fishers	: $xx
Trawl	: $xx
Net	: $54,500[1]
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: [1]Tobin R et al. (2010)

Profit-Loss estimates

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

Line fishers	: $xx
Trawl	: $xx
Net	: $xx
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: [1]xxx

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Economic relationship*: 4. Investment…

Vessel value

Average per main vessel

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

Line fishers	: $xx
Trawl	: $xx
Net	: $xx
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: [1]xxx

Capital investment

Average per business

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

Line fishers	: $xx
Trawl	: $xx
Net	: $206K[1]
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: [1]Tobin R et al. (2010)

Shore based storage value

Average per business

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

Line fishers	: $xx
Trawl	: $xx
Net	: $xx
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: [1]xxx

Shore based equipment value

Average per business

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

Line fishers	: $xx
Trawl	: $xx
Net	: $xx
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: [1]xxx

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

A) *Economic relationship*: 4. Investment…

Age of vessel (years)

Average (and median)
Home Port NRM

Cape York	:16.4 (20)
Wet Tropics	:19.4 (20)
Burdekin	:22.1 (25)
Mackay Whits	:21.7 (20)
Fitzroy Basin	:18.9 (20)
Burnett Mary	:22.9 (10)

Line fishers	: 21 (20)
Trawl	: 28 (31)
Net	: 15 (15)
Pot	: 17 (13)
Harvest	: 15 (10)

GBR overall	: 20 (20)

Ref: SELTMP Survey 2013

Time since vessel purchase (years)

Average (and median)
Home Port NRM

Cape York	: 10.1 (8)
Wet Tropics	: 11.1 (13)
Burdekin	: 7.7 (4.5)
Mackay Whits	: 9.2 (8)
Fitzroy Basin	: 8.6 (7)
Burnett Mary	: 11.1 (10)

Line fishers	: 11 (11)
Trawl	: 12 (10)
Net	: 10 (10)
Pot	: 8 (7)
Harvest	: 9 (5)

GBR overall	: 10 (8)

Ref: SELTMP Survey 2013

Research and Development - industry

Amount invested this year

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

Line fishers	: $xx
Trawl	: $xx
Net	: $xx
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: xxx

R&D - FRDC

Amount invested this year

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

Line fishers	: $xx
Trawl	: $xx
Net	: $xx
Pot	: $xx
Harvest	: $xx

GBR overall	: $xx
Qld overall	: $xx

Ref: xxx

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

B) *Well-being*: 1. Human well-being

GBR contributes to quality of life and well-being

Mean score (% agree)
Home Port NRM

Cape York	: 8.8 (100%)
Wet Tropics	: 8.2 (85%)
Burdekin	: 8.6 (91%)
Mackay Whits	: 8.2 (87%)
Fitzroy Basin	: 8.9 (97%)
Burnett Mary	: 8.0 (90%)

Mean score (% agree)

Line fishers	: 8.8 (94%)
Trawl	: 7.6 (82%)
Net	: 7.7 (83%)
Pot	: 7.9 (81%)
Harvest	: 8.3 (96%)

GBR overall	: 8.2 (88%)

Ref: SELTMP Survey 2013

OH&S - accidents

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

Line fishers	: xx
Trawl	: xx
Net	: xx
Pot	: xx
Harvest	: xx

GBR overall	: 57
Qld overall	: xx
Qld-wide work related accidents	: xx

Ref: Tobin R et al. (2010)

OH&S - fatalities

Cape York	: xx
Wet Tropics	: xx
Burdekin	: xx
Mackay Whits	: xx
Fitzroy Basin	: xx
Burnett Mary	: 1*

Line fishers	: xx
Trawl	: xx
Net	: 1*
Pot	: xx
Harvest	: xx

GBR overall	: 1*
Qld overall	: xx
Qld-wide work related fatalities	: 17

Ref: WHSQ (2011)

*This is the one event, repeated here in different categories

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

B) *Well-being*: 1. Human well-being – 'Opportunities'

Opportunities Averages on a 10 point scale (10 = very strongly agree)	
The fishing industry to me is not just a job – it is my lifestyle	8.6
My business has performed as well this year as it did last year	5.0
I feel optimistic about the future of my business in the GBR	5.2
The GBR it is a valuable asset for the economy of this region	9.0
I value the GBR because it supports a desirable and active way of life	8.7

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

B) *Well-being*: 1. Human well-being – 'Empowerment'

Empowerment AVERAGES ON A 10 POINT SCALE (10 = VERY STRONGLY AGREE)	
I would like to do more to protect the GBR	6.7
I cannot make a personal difference in improving the health of the GBR	5.5
I regularly get involved in research and/or management activities for the GBR	5.2
I have the knowledge and skills to reduce any impact that I might have on the GBR	8.1
I value the GBR because we can learn about the environment through scientific discoveries	7.3

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

B) *Well-being*: 1. Human well-being – 'Security'

Security Averages on a 10 point scale (10 = very strongly agree)	
I value the GBR because it contributes to my quality of life and well-being	8.2
I value the GBR because it supports a variety of life such as fish and corals	9.0
I feel confident that the GBR is well managed	5.0
I support the current rules and regulations that affect access and use of the GBR	4.7
The habitats that I fish the most are in great condition	6.8
I am optimistic about the future of the GBR	7.1

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

B) *Well-being*: 2. Adaptive Capacity

Diversity of income - household

Average% (median%) HH income from fishing
Home Port NRM

Cape York	:77.5% (100%)
Wet Tropics	: 61.2% (70%)
Burdekin	: 58.8% (66%)
Mackay Whits	: 66.8% (85%)
Fitzroy Basin	: 63.1% (80%)
Burnett Mary	: 78.9% (80%)

Line fishers	:57.3% (70%)
Trawl	:75.3% (100%)
Net	:65.2% (75%)
Pot	:60.3% (80%)
Harvest	:87.2% (100%)

GBR overall : 65% (80%)
(41% wi 100% dependence)
Qld overall : xx

Ref: SELTMP Survey 2013

Financial buffer

% with planned financial buffer or income protection

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

Line fishers	: xx%
Trawl	: xx%
Net	: xx%
Pot	: xx%
Harvest	: xx%

GBR overall : xx%

Ref: xxx

Income protection insurance

Home Port NRM

Cape York	: 0% yes
Wet Tropics	: 17.8%
Burdekin	: 18.2%
Mackay Whits	: 12.5%
Fitzroy Basin	: 10.3%
Burnett Mary	: 13.3%

Line fishers	: 9%
Trawl	: 9%
Net	: 17%
Pot	: 24%
Harvest	: 16%

GBR overall : 14% yes
Qld population : xx%

Average value : \$xx +/- xx

Ref: SELTMP Survey 2013

Vessel insurance

Home Port NRM

Cape York	: 62.5% yes
Wet Tropics	: 52.2%
Burdekin	: 57.6%
Mackay Whits	: 56.5%
Fitzroy Basin	: 61.5%
Burnett Mary	: 65.5%

Line fishers	: 60%
Trawl	: 77%
Net	: 31%
Pot	: 50%
Harvest	:72%

GBR overall : 59% yes
Qld overall : xx%

Average value of insured for : \$xx +/- xx

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

B) *Well-being*: 2. Adaptive Capacity

Attitude towards risk

Confident things will turn out well regardless of events / change…
Mean score (% agree)

Home Port NRM	
Cape York	: 5.5 (50%)
Wet Tropics	: 5.4 (47%)
Burdekin	: 4.4 (30%)
Mackay Whits	: 5.5 (46%)
Fitzroy Basin	: 5.4 (41%)
Burnett Mary	: 5.6 (57%)

Harvest	: 5.7 (50%)
Line fishers	: 5.0 (38%)
Net	: 5.5 (48%)
Pot	: 5.6 (49%)
Trawl	: 5.4 (51%)

GBR overall	: 5.4 (46%)

Certain of how to plan for changes in the GBR that may affect me…
Mean score (% agree)

Home Port NRM	
Cape York	: 3.5 (13%)
Wet Tropics	: 4.5 (31%)
Burdekin	: 4.4 (31%)
Mackay Whits	: 5.8 (55%)
Fitzroy Basin	: 5.1 (45%)
Burnett Mary	: 4.4 (24%)

Harvest	: 5.8 (46%)
Line fishers	: 4.3 (72%)
Net	: 4.8 (56%)
Pot	: 5.4 (51%)
Trawl	: 4.4 (76%)

GBR overall	: 4.8 (37%)

Combined score : xx (+/-xx)

Ref: SELTMP Survey 2013

Ability to plan, learn and re-organise

Good at developing scenarios of the future and planning for them…
Mean score (% agree)

Home Port NRM	
Cape York	: 6.3 (63%)
Wet Tropics	: 6.8 (63%)
Burdekin	: 6.6 (71%)
Mackay Whits	: 6.7 (64%)
Fitzroy Basin	: 7.3 (72%)
Burnett Mary	: 5.9 (67%)

Harvest	: 7.0 (69%)
Line fishers	: 6.1 (58%)
Net	: 7.1 (75%)
Pot	: 6.8 (67%)
Trawl	: 7.0 (77%)

GBR overall	: 6.7 (68%)

Discuss new ways of solving problems associated with my business with others…
Mean score (% agree)

Home Port NRM	
Cape York	: 8.8 (100%)
Wet Tropics	: 6.8 (71%)
Burdekin	: 7.5 (76%)
Mackay Whits	: 7.2 (71%)
Fitzroy Basin	: 7.1 (67%)
Burnett Mary	: 6.4 (64%)

Harvest	: 6.6 (64%)
Line fishers	: 7.1 (74%)
Net	: 6.9 (78%)
Pot	: 7.4 (76%)
Trawl	: 7.2 (72%)

GBR overall	: 7.1 (73%)

Combined score : xx (+/-xx)

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

B) *Well-being*: 2. Adaptive Capacity

Psychological and financial buffers

More likely to adapt to changes compared to other coastal residents I know…
Mean score (% agree)
Home Port NRM

Cape York	: 6.1 (50%)
Wet Tropics	: 7.8 (88%)
Burdekin	: 7.7 (84%)
Mackay Whits	: 7.8 (82%)
Fitzroy Basin	: 7.7 (79%)
Burnett Mary	: 6.9 (72%)

Harvest	: 8.1 (91%)
Line fishers	: 6.7 (67%)
Net	: 8.2 (88%)
Pot	: 7.3 (72%)
Trawl	: 7.8 (89%)

GBR overall : 7.4 (78%)

Have planned for my financial security…
Mean score (% agree)
Home Port NRM

Cape York	: 6.9 (%)
Wet Tropics	: 6.2 (%)
Burdekin	: 6.9 (%)
Mackay Whits	: 6.9 (%)
Fitzroy Basin	: 6.9 (%)
Burnett Mary	: 6.9 (%)

Harvest	: 7.2 (76%)
Line fishers	: 6.4 (67%)
Net	: 6.0 (61%)
Pot	: 7.2 (71%)
Trawl	: 6.8 (73%)

GBR overall : 6.7 (69%)

Combined score : xx (+/-xx)

Ref: SELTMP Survey 2013

Interest in adapting to change

Interested in learning how to better prepare by business for significant events…
Mean score (% agree)
Home Port NRM

Cape York	: 6.9 (63%)
Wet Tropics	: 6.4 (65%)
Burdekin	: 6.6 (69%)
Mackay Whits	: 7.3 (79%)
Fitzroy Basin	: 7.5 (75%)
Burnett Mary	: 6.7 (75%)

Harvest	: 7.0 (80%)
Line fishers	: 7.2 (73%)
Net	: 6.4 (65%)
Pot	: 5.6 (50%)
Trawl	: 7.1 (78%)

GBR overall : 6.7 (70%)

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers:* 1. Employability

Age

Average (median) years
Home Port NRM

Cape York	: 58 (60)
Wet Tropics	: 57 (58)
Burdekin	: 51 (51)
Mackay Whits	: 56 (57)
Fitzroy Basin	: 52 (52)
Burnett Mary	: 55 (54.5)

Line fishers	: 55 (xx)
Trawl	: 57 (xx)
Net	: 55 (xx)
Pot	: 55 (xx)
Harvest	: 51 (xx)

GBR overall	: 55 (55)
GBR Residents	: 44 (43)[2]
Aus residents	: xx +/- xx

Ref: SELTMP Survey 2013

Partners

% with partners
Home Port NRM

Cape York	: 80.0%
Wet Tropics	: 85.1%
Burdekin	: 81.8%
Mackay-Whit	: 95.8%
Fitzroy Basin	: 82.1%
Burnett Mary	: 80.0%

Line fishers	: 82%
Trawl	: 91%
Net	: 83%
Crab	: 84%
Harvest	: 85%

GBR overall	: 85%
Aus residents	: xx

Ref: SELTMP Survey 2013

Dependents

% with dependents
Home Port NRM

Cape York	: 62.5%
Wet Tropics	: 31.9%
Burdekin	: 57.6%
Mackay-Whit	: 41.7%
Fitzroy Basin	: 51.3%
Burnett Mary	: 50.0%

Line fishers	: 46%
Trawl	: 50%
Net	: 45%
Crab	: 42%
Harvest	: 42%

GBR overall	: 46%
Aus residents	: xx

Ref: SELTMP Survey 2013

Education

% with > high school educ'n
Home Port NRM

Cape York	: 50.0%
Wet Tropics	: 39.1%
Burdekin	: 51.5%
Mackay Whits	: 33.3%
Fitzroy Basin	: 46.2%
Burnett Mary	: 51.5%

Line fishers	: 45%
Trawl	: 30%
Net	: 41%
Crab	: 45%
Harvest	: 60%

GBR overall	: 44%
Aus residents	: xx

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 1. Employability

Employment options

% with other training / experience

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

Line fishers	: xx%
Trawl	: xx%
Net	: xx%
Pot	: xx%
Harvest	: xx%

GBR overall	: xx%
Aus residents	: xx%

Ref: [1]xxx

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

Confident the GBR is well managed

Mean score (% agree) [1]
Home Port NRM

Cape York	: 2.8 (13%)
Wet Tropics	: 5.2 (57%)
Burdekin	: 5.2 (48%)
Mackay Whits	: 4.7 (42%)
Fitzroy Basin	: 5.0 (37%)
Burnett Mary	: 5.1 (55%)

Line fishers	: 4.5 (40%)[1]
Trawl	: 5.4 (53%)[1]
Net	: 4.7 (45%)[1]
Pot	: 4.8 (35%)[1]
Harvest	: 6.4 (65%)[1]

GBR overall	: 5.0 (46%)[1]
Aus residents	: 5.9 (53%)[2]

Ref: [1]SELTMP survey 2013; [2]Goldberg et al. (in press)

Support current rules and regulations

Mean score (% agree)
Home Port NRM

Cape York	: 4.5 (38%)
Wet Tropics	: 4.9 (45%)
Burdekin	: 4.7 (33%)
Mackay Whits	: 3.6 (27%)
Fitzroy Basin	: 5.6 (49%)
Burnett Mary	: 4.0 (33%)

Line fishers	: 4.7 (41%)
Trawl	: 4.2 (31%)
Net	: 4.9 (36%)
Pot	: 4.0 (24%)
Harvest	: 6.4 (72%)

GBR overall	: 4.7 (39%)

Ref: SELTMP survey 2013

Rules and regulations are burden on my time

Mean score (% agree)
Home Port NRM

Cape York	: 7.8 (75%)
Wet Tropics	: 7.0 (64%)
Burdekin	: 7.1 (61%)
Mackay Whits	: 7.6 (78%)
Fitzroy Basin	: 6.1 (62%)
Burnett Mary	: 7.4 (73%)

Line fishers	: 7.7 (79%)
Trawl	: 7.6 (73%)
Net	: 7.4 (72%)
Pot	: 6.3 (55%)
Harvest	: 6.0 (64%)

GBR overall	: 7.2 (71%)

Ref: SELTMP survey 2013

Perceptions of fair access compared to others

Mean score (% agree)
Home Port NRM

Cape York	: 7.0 (88%)
Wet Tropics	: 4.4 (67%)
Burdekin	: 5.5(63%)
Mackay Whits	: 5.0 (41%)
Fitzroy Basin	: 6.1 (62%)
Burnett Mary	: 5.5 (57%)

Line fishers	: 6.5 (61%)
Trawl	: 5.7 (53%)
Net	: 5.5 (48%)
Pot	: 6.1 (65%)
Harvest	: 6.5 (64%)

GBR overall	: 5.8 (59%)

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

New fisheries regulations for report year

2013: Non listed.

Recent:
2010-2012: Statutory review of the Trawl Plan.[1]

2011: Several fishers provided with financial incentives for surrendering their fishing entitlements impacted by riverine development. The Brisbane River Beam Trawl Strategy outlines a process for offsetting the cost of foreshore and instream development to beam trawl fishers.[2]

2010-11: Reduction of white teatfish quota and reallocation to other species administered on all licences.
Licence conditions amended to better describe a holder's quota entitlement, tender distances from primary vessels and reporting requirements.[3]

2009: new and amended bag and size limits, new netting arrangements and improvements to the management of shark resources. New 'S' symbol to allow commercial fishers to target sharks and rays using line or net apparatus.[4]

Ref: [1]Fisheries Queensland (2012a); [2]DEEDI (2011a) [3]Fisheries Queensland (2012e); [4]DEEDI (2011b);

Sustainability status

Line fishers:	
CRFF	: Range:-to be assessed sustainable[1]
SM	: Sustainable[2]
Trawl:	
Beam	: Range:-undefined-sustainable[3]
Otter	: Range:-not fully utilised-sustainable[4]
Net:	: Range:-uncertain-sustainable[5]
Pot:	
Mudcrab	: East Coast- uncertain[6]
Blueswimmer	: Uncertain[7]
Harvest:	
Rocklobster	: Sustainable[8]
MAFF	: Not assessed[9] (assessed via risk, and accredited under EPBC)
Bêche-de-mer	: Undefined[10]
Coral	: Sustainable[11]

Ref: [1]Fisheries Queensland (2012b); [2]Fisheries Queensland (2012c); [3]DEEDI (2011a); [4]Fisheries Queensland (2012a); [5]DEEDI (2011b); [6]Fisheries Queensland (2013a); [7]Fisheries Queensland (2013b); [8]Fisheries Queensland (2012d); [9]Fisheries Queensland (2013c); [10]Fisheries Queensland (2012e); [11]DEEDI (2012)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

Biosecurity issues

Issues arising this year:
Nil

% fishers concerned:

Line fishers	: xx%
Trawl	: xx%
Net	: xx%
Pot	: xx%
Harvest	: xx%

Tidbit
Renewed commitment to biosecurity by Australian Government.[1]
Biosecurity reform commenced in 2011.[2]

Ref: [1]DAFF (2011a); [2]DAFF (2011b)

Export certification

Approval expiry date

Line fishers:
- CRFF : 06/05/16
- SM : 14/07/17

Trawl:
- Beam : 10/04/15
- Otter : 26/11/16

Net: : 27/02/15

Pot:
- Mudcrab : 20/02/16
- Blueswimmer: 14/10/15

Harvest:
- Rocklobster: 17/12/15
- MAFF : 21/11/14
- Bêche-de-mer: 17/07/14
- Other : multiple

Ref: Department of Environment (n.d.): http://www.environment.gov.au/topics/marine/fisheries/qld-managed-fisheries

Bycatch reduction

Line fishers: Nil
Trawl: BRDs and TEDs (introduced pre-2011)
Net: SOCI escape hatches being tested through FRDC funded research[1] + Burdekin Sustainable Seafood Alliance (BSFA) introduced region-specific net design limitations to reduce dugong interactions[2]
Pot: Dillie pots for blue swimmer crabs removed to reduce turtle bycatch (2010)[3]
Harvest: …

Ref: [1]D.Welch, pers. comm. (2011); [2]BSFA pers. comm (2011); [3]Fisheries Qld (2013b)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

Compliance rates

% compliance	
Cape York	: xx%
Wet Tropics	: xx%
Burdekin	: xx%
Mackay Whits	: xx%
Fitzroy Basin	: xx%
Burnett Mary	: xx%
GBR overall	: xx%

# of offences[11]	
Far Northern	: 14
Cairns/Cook town	: 28
Tsv/Whitsundays	: 23
Mackay/Capricorn	: 19
Other	: 10
Total	: **94**

Line fishers:	
CRFF	: 91.3%[1]
SM	: 98%[2]
Trawl:	
Beam	: 94%[3]
Otter	: 85%[4]
Net:	: 89%[5]
Pot:	
Mudcrab	: 97%[6]
Blueswimmer	: 96%[7]
Harvest:	
Rocklobster	: 100%[8]
MAFF	: 95%[9]
Bêche-de-mer	: 91%[10]
Other	: multiple

Ref: [1]Fisheries Queensland (2012b); [2]Fisheries Queensland (2012c); [3]DEEDI (2011a); [4]Fisheries Queensland (2012a); [5]DEEDI (2011b); [6]Fisheries Queensland (2013a); [7]Fisheries Queensland (2013b); [8]Fisheries Queensland (2012d); [9]Fisheries Queensland (2013c); [10]Fisheries Queensland (2012e); [11]GBRMPA unpubl. data (2012)*

* Data from GBRMPA for all Commonwealth and State offences recorded in 2012. Grouped by GBRMPA regions

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

Non-compliance

Activity		Far Northern	Cairns/ Cooktown	Townsville/ Whitsunday	Mackay/ Capricorn	Other	Total
Breach of Permit		3	0	0	0	0	3
Fishing	Bait Netting	0	0	2	0	0	2
	Crabbing	1	2	11	0	0	14
	Line Fishing	1	5	1	6	0	13
	Netting	6	10	6	7	0	29
	Trawling	0	2	0	2	0	4
Maritime Incident	Groundings	0	0	1	0	0	1
Unattached Dory	Collecting	0	3	0	0	0	3
	Line Fishing	0	5	0	2	0	7
Unpermitted Activity	Restricted Access Areas	0	0	1	2	0	3
	Unlawful Take	1	0	0	0	9	10
	Other	0	0	0	0	1	1
Wildlife	Bycatch	2	0	0	0	0	2
	Interaction with Cetacean	0	0	0	0	0	0
	Mass mortality	0	0	0	0	0	0
	Non Reporting of Incidental Take	0	0	0	0	0	0
Other		0	1	1	0	0	2

Ref: GBRMPA unpubl. data (2012)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

I would like to do more to protect the GBR

Mean score (% agree)
Home Port NRM

Cape York	: 6.5 (63%)
Wet Tropics	: 6.5 (67%)
Burdekin	: 7.0 (67%)
Mackay Whits	: 7.3 (67%)
Fitzroy Basin	: 7.2 (74%)
Burnett Mary	: 6.4 (71%)

Line fishers	: 7.5 (81%)
Trawl	: 6.0 (57%)
Net	: 6.8 (68%)
Pot	: 5.6 (50%)
Harvest	: 7.6 (80%)

GBR overall	: 6.7 (68%)

Ref: SELTMP Survey 2013

Would be personally affected if health if GBR declined

Mean score (% agree)
Home Port NRM

Cape York	: 9.2 (100%)
Wet Tropics	: 9.1 (96%)
Burdekin	: 8.7 (91%)
Mackay Whits	: 9.3 (100%)
Fitzroy Basin	: 8.9 (92%)
Burnett Mary	: 8.9 (97%)

Line fishers	: 9.2 (97%)[1]
Trawl	: 8.9 (98%)[1]
Net	: 8.4 (86%)[1]
Pot	: 8.4 (87%)[1]
Harvest	: 9.1 (96%)[1]

GBR overall	: 8.9 (94%)[1]
Aus residents	: 6.2 (92%)[2]

Ref: [1]SELTMP Survey 2013; [2]Goldberg et al. (in press)

Regularly participate in research and management

Mean score (% agree)
Home Port NRM

Cape York	: 6.5 (63%)
Wet Tropics	: 5.8 (60%)
Burdekin	: 5.8 (42%)
Mackay Whits	: 4.7 (43%)
Fitzroy Basin	: 5.4 (51%)
Burnett Mary	: 3.7 (33%)

Line fishers	: 5.4 (57%)
Trawl	: 4.7 (42%)
Net	: 6.8 (69%)
Pot	: 4.1 (34%)
Harvest	: 5.6 (56)%

GBR overall	: 5.2 (51%)

Ref: SELTMP Survey 2013

Green labelling

% of fishers utilising 'green' labels

Line fishery	: 0
Trawl	: 0
Net	: 0
Pot	: 0
Harvest	: 0

Tidbit
There is no official "green" labelling in use. However the QSIA is promoting the "Queensland Catch" brand to encourage consumers to buy local.[1]
Trawlers are also accredited with the USA through the approved use of TEDs.[2]

Ref: [1]Tobin R et al. (2010); [2]Fisheries Qld (2012a)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

MOUs and Codes of Conduct

MOU # that exist:		COC # that exist:		% fishers who claim participation	
				Home Port NRM	
Cape York	: xx	Cape York	: xx	Cape York	: 88%
Wet Tropics	: xx	Wet Tropics	: xx	Wet Tropics	: 85%
Burdekin	: xx	Burdekin	: xx	Burdekin	: 75%
Mackay Whits	: xx	Mackay Whits	: xx	Mackay Whits	: 77%
Fitzroy Basin	: xx	Fitzroy Basin	: xx	Fitzroy Basin	: 76%
Burnett Mary	: xx	Burnett Mary	: xx	Burnett Mary	: 83%
Line fishers	: xx	Line fishers	: xx	Line fishers	: 76%
Trawl	: xx	Trawl	: xx	Trawl	: 91%
Net	: xx	Net	: xx	Net	: 86%
Pot	: xx	Pot	: xx	Pot	: 68%
Harvest	: xx	Harvest	: xx	Harvest	: 95%
GBR overall	: xx%	GBR overall	: xx%	GBR overall	: 81%

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

Personal motivation / strength of belief in action

I can make a personal difference in improving GBR health

Mean score (% agree)

Line fishers	: 6.2 (71%)
Trawl	: 6.7 (68%)
Net	: 7.3 (79%)
Pot	: 5.3 (51%)
Harvest	: 6.2 (62%)
GBR overall	: 6.5 (67%)

I try to encourage others to reduce impacts on the GBR

Mean score (% agree)

Line fishers	: 7.4 (77%)
Trawl	: 6.5 (64%)
Net	: 6.9 (69%)
Pot	: 5.9 (51%)
Harvest	: 7.3 (85%)
GBR overall	: 6.9 (69%)

Ref: SELTMP Survey 2013

Social norms

It is my responsibility to protect the GBR

Mean score (% agree)

Line fishers	: 9.1 (96%)[1]
Trawl	: 7.8 (80%)[1]
Net	: 9.6 (100%)[1]
Pot	: 8.0 (82%)[1]
Harvest	: 8.9 (92%)[1]
GBR overall	: 8.7 (90%)[1]
Aus residents	: 6.5 (68%)[2]

Commercial fishers should take steps to reduce their impacts...

Mean score (% agree)

Line fishers	: 5.7 (56%)[1]
Trawl	: 5.4 (62%)[1]
Net	: 6.2 (65%)[1]
Pot	: 5.2 (56%)[1]
Harvest	: 6.0 (58%)[1]
GBR overall	: 5.6 (57%)1

Industry expects fishers to reduce their impacts …

Mean score (% agree)

Line fishers	: 5.5 (53%)[1]
Trawl	: 4.9 (50%)[1]
Net	: 6.3 (62%)[1]
Pot	: 4.8 (35%)[1]
Harvest	: 6.6 (75%)[1]
GBR overall	: 5.5 (xx%)[1]

Other fishers think I should reduce my impacts...

Mean score (% agree)

Line fishers	: 2.7 (13%)[1]
Trawl	: 2.4 (10%)[1]
Net	: 3.6 (28%)[1]
Pot	: 2.2 (9%)[1]
Harvest	: 3.4 (26%)[1]
GBR overall	: 2.7 (15%)[1]

It is the responsibility of all Australians to protect the GBR

Mean score (% agree)

Line fishers	: 8.5 (88%)[1]
Trawl	: 7.9 (84%)[1]
Net	: 9.0 (93%)[1]
Pot	: 8.3 (84%)[1]
Harvest	: 7.5 (77%)[1]
GBR overall	: 8.3 (86%)[1]
Aus residents	: 7.7 (80%)[2]

Ref: [1]SELTMP Survey 2013; [2]Goldberg et al. (in press)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

Barriers to action to reduce impacts on the GBR

I have the knowledge and skills…

Mean score (% agree)	
Line fishers	: 8.1 (84%)
Trawl	: 7.4 (74%)
Net	: 8.8 (97%)
Pot	: 8.7 (89%)
Harvest	: 7.8 (88%)
GBR overall	: 8.1 (85%)

It is not too expensive…

Mean score (% agree)	
Line fishers	: 6.4 (65%)
Trawl	: 6.4 (58%)
Net	: 7.4 (77%)
Pot	: 6.5 (59%)
Harvest	: 7.0 (65%)
GBR overall	: 6.6 (64%)

I have the time and opportunity…

Mean score (% agree)	
Line fishers	: 7.7 (80%)
Trawl	: 8.0 (80%)
Net	: 8.0 (85%)
Pot	: 6.8 (64%)
Harvest	: 7.6 (80%)
GBR overall	: 7.7 (78%)

Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

Use of environmentally friendly technology / behaviours (% Yes responses)

Fuel efficient engines

Line fishers	: 89%
Trawl	: 84%
Net	: 93%
Pot	: 100%
Harvest	: 80%
GBR overall	: 89%

Emissions calculator

Line fishers	: 16%
Trawl	: 14%
Net	: 3%
Pot	: 16%
Harvest	: 8%
GBR overall	: 13%

Carbon offsets

Line fishers	: 7%
Trawl	: 7%
Net	: 3%
Pot	: 3%
Harvest	: 0 %
GBR overall	: 5%

Green energy (e.g. solar panels) on vessel

Line fishers	: 27%
Trawl	: 16%
Net	: 34%
Pot	: 32%
Harvest	: 17%
GBR overall	: 25%

Alternative fuels (e.g. biodiesel, ethanol)

Line fishers	: 6%
Trawl	: 7%
Net	: 7%
Pot	: 5%
Harvest	: 9%
GBR overall	: 6%

Participate in GBRMPA Reef Guardian fisher program

Line fishers	: 19%
Trawl	: 26%
Net	: 29%
Pot	: 27%
Harvest	: 45%
GBR overall	: 26%

Ref: SELTMP Survey 2013

Reef Guardian fishers

 # listed formally

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

Line fishers	: xx
Trawl	: xx
Net	: xx
Pot	: xx
Harvest	: xx
GBR overall	: 7[1]

% claim to be involved

Line fishers	: 19%[2]
Trawl	: 26%[2]
Net	: 29%[2]
Pot	: 27%[2]
Harvest	: 45%[2]
GBR overall	: 26%[2]

Ref: [1]GBRMPA unpubl. data (2012); [2]SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 2. Environmental Stewardship

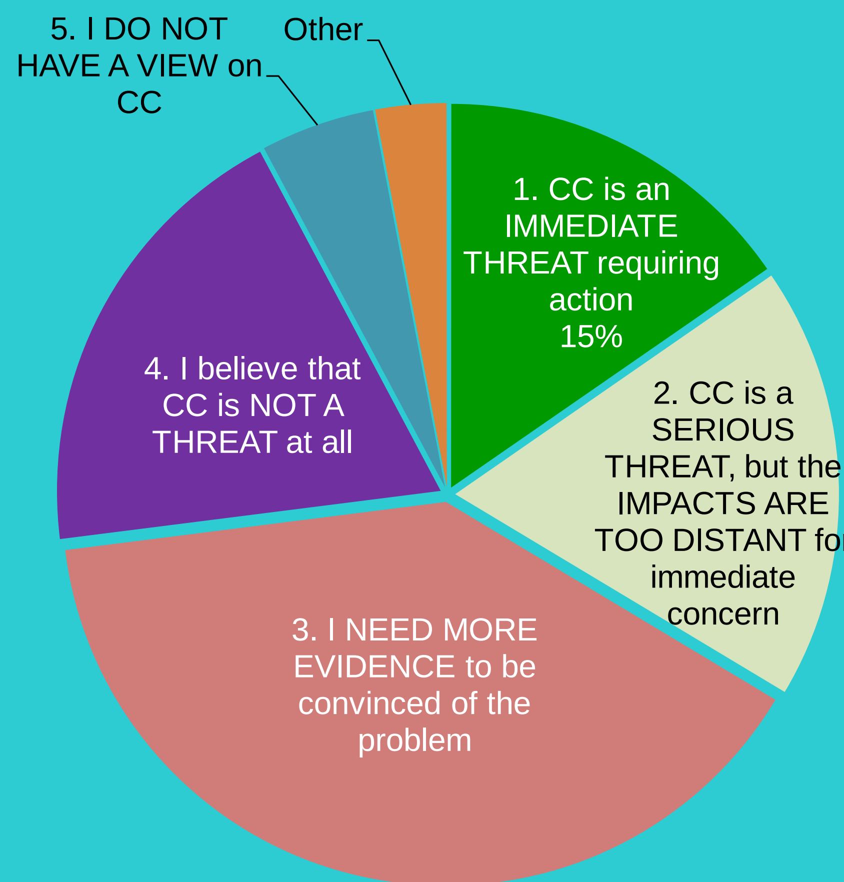
Perceptions about climate change (CC)

% who agree with statement:

	1	**2**	**3**	**4**	**5**	**Other**
Cape York:	38	13	25	25	0	0
Wet Tropics:	11	20	35	22	6	7
Burdekin:	21	18	36	15	9	0
Mackay Whits:	21	17	38	21	4	0
Fitzroy:	15	21	38	26	0	0
Burnett Mary:	7	27	47	10	7	3

	1	**2**	**3**	**4**	**5**	**Other**
Line fishers:	20	23	3	20	7	0
Trawl:	9	22	40	18	7	4
Net:	17	14	45	17	0	6
Pot:	8	13	47	26	3	3
Harvest:	24	12	44	12	4	4

GBR overall:	15	18	39	19	5	3



Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

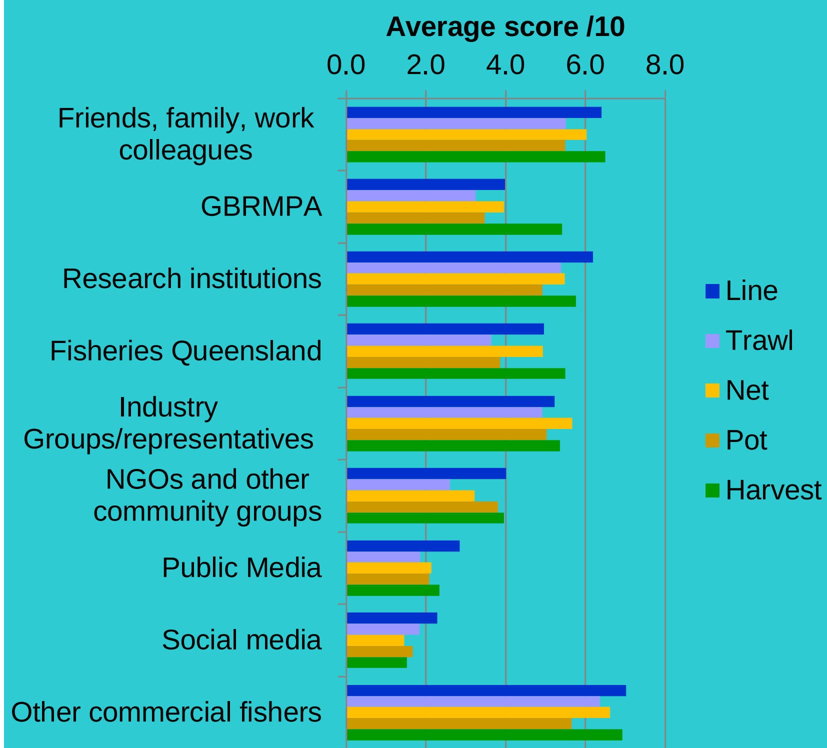
C) *Indirect Drivers*: 3. Information and Networks

Trusted information sources for information received about the GBR

Information source: mean score (% who trust them)	
Friends, family and colleagues	: 6.0 (55%)
GBRMPA	: 3.9 (29%)
Fisheries Qld	: 4.5 (35%)
Research institutions	: 5.6 (50%)
Industry groups / representatives	: 5.2 (45%)
NGOs / community groups	: 3.6 (16%)
Media (TV, radio, newspapers)	: 2.3 (6%)
Social media (facebook, twitter)	: 1.9 (1%)
Other commercial fishers	: 6.6 (69%)

Ref: SELTMP Survey 2013

Trusted information sources by fishery type



Ref: SELTMP Survey 2013

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 3. Information and Networks

Informal Networks

% who actively network with other fishers

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

Line fishers	: xx
Trawl	: xx
Net	: xx
Pot	: xx
Harvest	: xx

GBR overall	: 20%*
Qld overall	: xx

Ref: Marshall and Tobin (2012)

Formal Networks

% who actively network with management agencies / representative bodies

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

Line fishers	: 60%
Trawl	: xx
Net	: xx
Pot	: xx
Harvest	: xx

GBR overall	: xx
Qld overall	: xx

Ref: Tobin A et al. (2010)

QSIA membership

% members

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

Line fishers	: xx
Trawl	: xx
Net	: xx
Pot	: xx
Harvest	: xx

GBR overall	: xx
Qld overall	: 201 financial members[1]

Dominant information source = QSIA representatives[2]

Ref: [1]QSIA (2013); [2]Tobin R et al. (2010)

Other organisation membership

# of members of …

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

Line fishers	: xx in …
Trawl	: xx in …
Net	: xx in …
Pot	: xx in …
Harvest	: xx in …

GBR overall	: xx in …
	: xx in …
	: xx in …

Ref: xxx

*Sample of 145 fishers, including multiple types

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

C) *Indirect Drivers*: 4. Sector specific drivers

Economic drivers

Changes to international market price

Key changes:
- Lower price for coral trout exports (anecdotal)

Fisheries impacted:
- Line

Key impacts:
- No data

Tidbit:

"The changing value of the Australian dollar against our major trading currencies has been the largest single factor influencing the value of Australian fisheries in the last decade."[1]

Changes to domestic market price

Key changes:
- Decrease in domestic price due to increased imported product driving price down (anecdotal)

Fisheries impacted:
- Line, net, trawl

Key impacts:
- No data

Ref: [1]Ridge Partners (2010)

Public perception

Negative image of Australian seafood industry

Key information:
-73% GBR consumers concerned about long-term sustainability of commercial fisheries[1]
- 26% Australians believe Australia's commercial fishing industry was not sustainable; 37% not sure[2]

Key impacts: / concerns:
- Potential impact on local seafood demand
- Potential for public to drive management change through political arena
- challenge to better inform, educate and influence community perceptions about the long-term sustainability of the fishing industry[2]

Consumer demand

Key information:
- Despite concerns about sustainability, 91% of GBR coastal consumers prefer to buy Qld caught seafood[1]
- 70% of consumers in Melbourne, Sydney and Perth prefer Australian seafood to imported seafood products[3]
- But 64% of GBR consumers believe it is not labelled clearly enough for them to recognise local product[1]
- and 61% believe it is too expensive to buy as often as they would like[1]

Key impacts:
- Actual demand affected by price in market dominated by cheap imports
- Labelling important

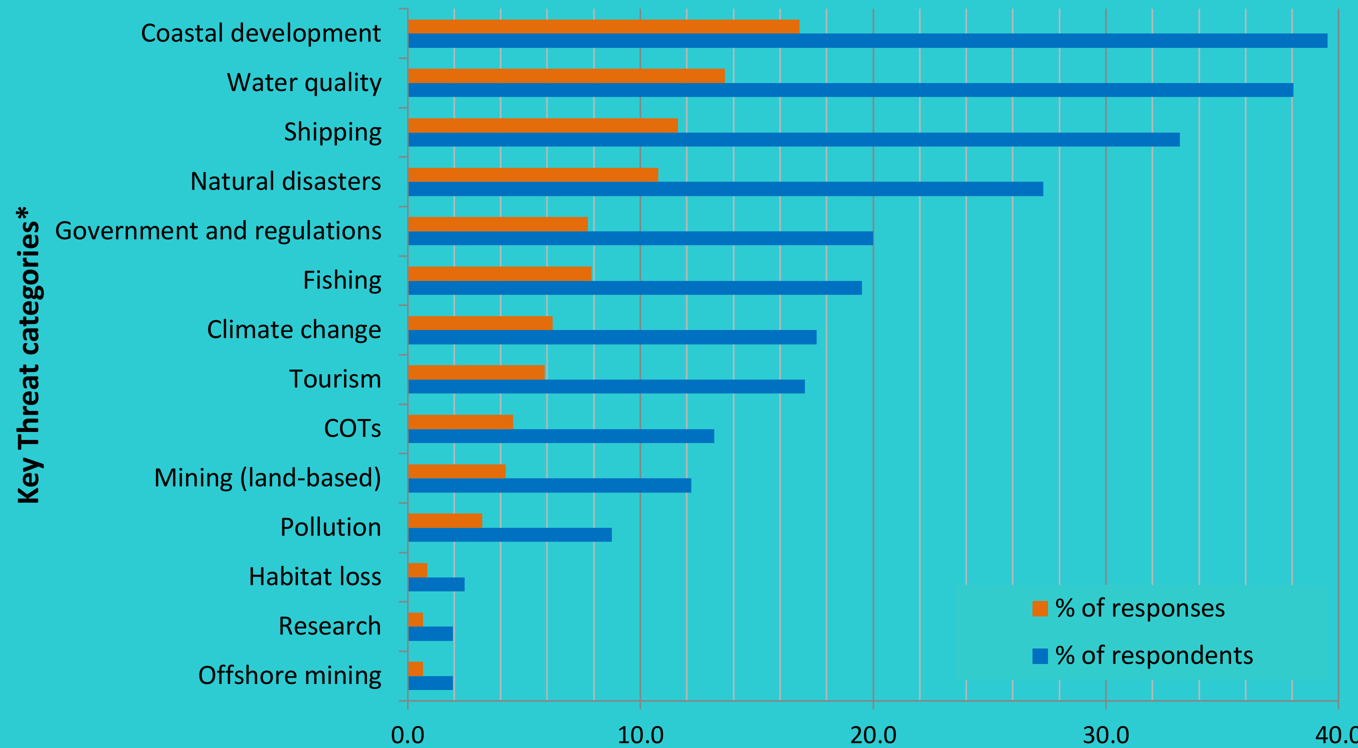
Ref: [1]Tobin et al. (2010b); [2]Sparks (2011); [3]Ridge Partners (2010)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

D) *Direct Drivers*: 4. Sector-specific drivers – Threats to the GBR

Perceived threats to the GBR

"What do you think are the THREE most serious threats to the GBR?"



Ref: SELTMP Survey 2013 – see table next page for detail of what is included in these threat categories

*Grouped responses – See table on next page for detail of what is included in these key threat categories

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

D) *Direct Drivers*: 4. Sector-specific drivers – Threats to the GBR

Perceived threats to the GBR*

Level 1: Key threat group	Level 2: Threats within group	% of respondents	% of responses
Coastal development	**GROUPED**	**39.5**	**16.8**
	Coastal development (general)	13.2	4.5
	New ports and expansions	30.7	10.6
	Dredging	3.4	1.2
	Overpopulation	1.5	0.5
Water quality	**GROUPED**	**38.0**	**13.6**
	Water quality	6.8	2.4
	All/General run-off	2.4	0.8
	Agricultural run-off	32.7	11.3
	Urban run-off (incl. sewage & stormwater)	4.4	1.5
	Mining run-off	1.5	0.5
Shipping	**GROUPED**	**33.2**	**11.6**
	Shipping	30.2	10.4
	Oil spills	2.9	1.0
Natural disasters	**GROUPED**	**27.3**	**10.8**
	Natural disasters (unspecified)	2.0	0.7
	Cyclones	20.5	7.1
	Floods	7.3	2.5
	Earthquakes	1.0	0.3
	Storm damage	0.5	0.2
Government and regulations	**GROUPED**	**20.0**	**7.7**
	Government / departments	2.4	0.8
	Mis-/poor-/over-management	7.3	2.5
	Green zones (incl. effort concentration)	6.3	2.2
	Beauracracy / politics	3.4	1.2
	Enforcement / policing	0.5	0.2
	Conservationists	2.9	1.0
	Other (could not categorise)	0.5	0.2

Level 1: Key threat group	Level 2: Threats within group	% of respondents	% of responses
Fishing	**GROUPED**	**19.5**	**7.9**
	Recreational fishing	16.1	5.6
	Commercial fishing	3.9	1.3
	Unspecified / all fishing	1.5	0.5
	Illegal (including foreign) fishing	1.5	0.5
Climate change	**GROUPED**	**17.6**	**6.2**
	Climate Change	10.2	3.5
	Global Warming	7.3	2.5
	Rising water temperature	0.5	0.2
Tourism	**Tourism (unspecified)**	**17.1**	**5.9**
Crown of Thorns	**COTs (general)**	**13.2**	**4.5**
Mining (land-based)	**Mining (land-based)**	**12.2**	**4.2**
Pollution	**GROUPED**	**8.8**	**3.2**
	Pollution (general / unspecified)	4.4	1.5
	Marine debris / beach littering	4.9	1.7
Habitat loss	**GROUPED**	**2.4**	**0.8**
	Loss of trees / mangroves	1.0	0.3
	Damming of rivers	1.5	0.5
Others (uncategorised)	Offshore mining	2.0	0.7
	Research	2.0	0.7

Ref: SELTMP Survey 2013

*Only those listed by 2% or more respondents are included here.

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

D) *Direct Drivers*: 4. Sector-specific drivers

Government change

2012 saw the election of the Newman Liberal Qld Government, which resulted in a number of changes of relevance to this sector:

1. A newly appointed Minister for Agriculture, Fisheries and Forestry, John McVeigh, commenced from the 3 April 2012[1].

2. The new government ceased funding to representative bodies.

3. The Qld government did not invest in research via the FRDC in 2012, for the 2013/14 research funding round[2]. (The usual contribution was $600K, matched by the Federal Government). FRDC carried some of the debt from this omission, contributing $400K (matched by Federal). This will affect the next 3 years of R&D funding.

4. The State Budget released on 11 September, 2012 outlined budget savings of $31.7 million for DAFF, and a workforce reduction of 496 positions, which includes vacant positions[2]. Fisheries Qld's contribution to the budget savings was $4.3 million, with a reduction of ~60 positions. This resulted in a significant change in structure within Fisheries Qld, removal of some programs (including the Fisheries Observer and the Industry Development Programs)[2] and the loss of key staff who held significant knowledge of, and networks within, commercial fisheries. Many of these staff were active contributors to SELTMP.

5. As an election promise, the Qld Government began a process to buy back 50% of all net licences.

6. Various new projects proposed , such as management reviews for the crab, east coast trawl and freshwater fisheries[3].

Ref: [1]Queensland Parliament (2011); [2]Maria Mohr, pers. comm. (2012); [3]State of Queensland (2013)

Licence buy back

Queensland East Coast Commercial Net Fishing Reduction Scheme

The net buy back process began in 2012 as a $9m election promise. The first round of offers in March 2013 resulted in the purchase of 35 licence packages, including 113 symbols for different types of fishing.[1]

Further symbols are being sought via a prescribed offer of up to $60k per symbol, with the process to close by end of November, 2013.[2]

Ref: [1]McVeigh (2013); [2]QRAA (2013): http://www.qraa.qld.gov.au/current-programs/queensland-east-coast-commercial-net-fishing-reduction-scheme-no-2

Investment warnings

Current warnings?

Line fishery	: No
Trawl	: No
Net	: Yes[2]
Pot: Yes (mud and swimmer)[1,2]	
Harvest	: No

Ref: [1]DAFF (2012c); DAFF (2013b)

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

D) *Direct Drivers*: 4. Sector-specific drivers

Resource access

Gladstone Port development

NRMs impacted:
Fitzroy and Burnett-Mary

Fisheries impacted:
Primarily net. Also line and pot

Key impacts:
- Physical loss of access to net and pot fishing areas surrounding construction and dredging area
- Water quality issues potentially affecting fish health
- Water turbidity affecting ability of live coral trout vessels to ulitise water close to port
- Anecdotal evidence of influence on fishing effort and harvest

Ref: anecdotal / media based. No published reports

Perceptions of fair access compared to others

Mean score (% agree)	
Cape York	: xx (xx%)
Wet Tropics	: xx (xx%)
Burdekin	: xx (xx%)
Mackay Whits	: xx (xx%)
Fitzroy Basin	: xx (xx%)
Burnett Mary	: xx (xx%)

Line fishers	: 6.5 (61%)
Trawl	: 5.7 (53%)
Net	: 5.5 (48%)
Pot	: 6.1 (65%)
Harvest	: 6.5 (64%)

GBR overall	: 5.8 (59%)

Ref: SELTMP Survey 2013

References

ABARES (2011). *Australian Fisheries Statistics 2010*, Canberra.

Australian Bureau of Statistics (2012). *2011 Census QuickStats*. Queensland. http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/quickstat/3

Burdekin Sustainable Fisheries Alliance (BSFA), pers. comm. November 2011.

Deloitte Access Economics (2013). *Economic Contribution of the Great Barrier Reef. Great Barrier Reef Maine Park Authority, Townsville.*

Department of Agriculture, Forestry and Fisheries (2011a). *Biosecurity Bulletin - Winter 2011*. http://www.daff.gov.au/aqis/about/reports-pubs/biosecurity-bulletin/2011/biosecurity-bulletin-winter-2011

Department of Agriculture Forestry and Fisheries (2011b). *Annual Report 2010-11,* Australian Government. Department of Agriculture, Forestry and Fisheries.

Department of Agriculture, Fisheries and Forestry (2012a). *Harvest Fisheries*. http://www.daff.qld.gov.au/28_16072.htm

Department of Agriculture, Fisheries and Forestry (2012b). *Fees payable under Fisheries Regulation 2008*. http://www.daff.qld.gov.au/28_15468.htm

Department of Agriculture, Fisheries and Forestry (2012c). *Investment and increased fishing effort warnings - as at 10 August 2011*. http://www.daff.qld.gov.au/28_15690.htm

Department of Agriculture, Fisheries and Forestry (2013a). Unpublished licence, harvest and GVP data for GBR marine regions.

Department of Agriculture, Fisheries and Forestry (2013b). *Investment and increased fishing effort warnings.* http://www.business.qld.gov.au/industry/fisheries/commercial-fishing/commercial-fisheries-profiles/investment-increased-fishing-warnings

Department of Employment, Economic Development and Innovation (2011a). *Annual Status Report 2011. River and Inshore Beam Trawl*. State of Queensland, Department of Employment, Economic Development and Innovation

Department of Employment, Economic Development and Innovation (2011b). *Annual status report 2010: East Coast Inshore Fin Fish Fishery.* State of Queensland, Department of Employment, Economic Development and Innovation.

Department of Employment, Economic Development and Innovation (2012a). *Annual status report 2011: Queensland Coral Fishery.* State of Queensland, Department of Employment, Economic Development and Innovation.

Department of Employment, Economic Development and Innovation (2012b). *Annual status report 2011: East Coast Pearl Fishery.* State of Queensland, Department of Employment, Economic Development and Innovation.

Department of Environment (n.d.) Queensland Managed Fisheries. *Fishery assessments under the EPBC Act.* Commonwealth of Australia. http://www.environment.gov.au/topics/marine/fisheries/qld-managed-fisheries

References

Fenton, DM and Marshall, NA (2001). *A Guide to the Fishers of Queensland. Part A: TRC-Analysis and Social Profiles of Queensland's Commercial Fishing Industry.* CRC Reef Research Centre Technical Report No. 36, CRC Reef Research Centre, Townsville.

Fernandes, L, Day, J, Lewis, A, Slegers, S, Kerrigan, B, Breen, D, Cameron, D, Jago, B, Hall, J, Lowe, D, Innes, J, Tanzer, J, Chadwick, V, Thompson, L, Gorman, K, Simmons, M, Barnett, B, Sampson, K, De'ath, G, Mapstone, B, Marsh, H, Possingham, H, Ball, I, Ward, T, Dobbs, K, Aumend, J, Slater, D and Stapleton, K (2005). Establishing Representative No-Take Areas in the Great Barrier Reef: Large-Scale Implementation of Theory on Marine Protected Areas. *Conservation Biology*. **19**(6): 1733-1744.

Fisheries Queensland, Queensland Department of Agriculture, Fisheries and Forestry, Unpublished data provided 2011 and 2012.

Fisheries Queensland (2012a). Annual status report 2011: East Coast Otter Trawl Fishery. The State of Queensland, Department of Employment, Economic Development and Innovation

Fisheries Queensland (2012b). Annual status report 2011: Coral Reef Fin Fish Fishery. The State of Queensland.

Fisheries Queensland (2012c). Annual status report 2011: East Coast Spanish Mackerel Fishery. The State of Queensland, Department of Employment, Economic Development and Innovation

Fisheries Queensland (2012d). Commercial Crayfish and Rocklobster Fishery: 2011 fishing year report. The State of Queensland.

Fisheries Queensland (2012e). East Coast Bêche-de-mer Fishery: 2010-11 fishing year report. The State of Queensland.

Fisheries Queensland (2013a). Mud Crab Fishery -2011 fishing year report. The State of Queensland, Department of Agriculture, Fisheries and Forestry

Fisheries Queensland (2013b). Blue Swimmer Crab Fishery: Annual fishery report 2011. The State of Queensland.

Fisheries Queensland (2013c). Marine Aquarium Fish Fishery -2012 fishing year report. The State of Queensland, Department of Agriculture, Fisheries and Forestry

Goldberg, J, Bohensky, E, Curnock, M, Gooch, M, Marshall, N, Parry-Husbands, H, Pert, P, Stone-Jovicich, S, Tobin, RC, Villani, C. (in press). *SELTMP 2013: The Great Barrier Reef National Survey*.

Great Barrier Reef Marine Park Authority (2009). *Great Barrier Reef Outlook Report 2009.* Great Barrier Reef Marine Park Authority, Townsville, Qld, Australia.

Gooch, M, Vella, K, Marshall, N, Tobin, R and Pears, R (2012). A rapid assessment of the effects of extreme weather on two Great Barrier Reef industries. *Australian Planner*. iFirst: 1-18.

Great Barrier Reef Marine Park Authority, unpublished data, March 2012.

References

Lédée, EJI, Sutton, SG, Tobin, RC and De Freitas, DM (2012). Responses and adaptation strategies of commercial and charter fishers to zoning changes in the Great Barrier Reef Marine Park. *Marine Policy*. 36(1): 226-234.

McVeigh, J. (2013). *Net buyback opened up to more fishers.* Media Statement. Minister for Agriculture, Fisheries and Forestry

Marshall, NA and Tobin, RC (2012). "*More Than What Meets the Eye": The Social and Economic Impacts of Recent Natural Disasters on Marine Resource Dependent Industries of the Great Barrier Reef Region*. A Report for the Great Barrier Reef Marine Park Authority.

Marshall and Tobin unpublished data (2011). Cyclone Yasi and Qld flood survey raw data.

Office of Economic and Statistical Research (2011). *Data Tables: Average weekly earnings (a)(b), Queensland and Australia, 1981–82 to 2010–11*. http://www.oesr.qld.gov.au/products/tables/average-weekly-earnings-qld-aus/index.php

Perkins, M. Queensland Seafood Marketers Association, unpublished data 2011.

Queensland Rural Adjustment Authority (2013). *Queensland East Coast Commercial Net Fishing Reduction Scheme (No 2).* http://www.qraa.qld.gov.au/current-programs/queensland-east-coast-commercial-net-fishing-reduction-scheme-no-2

Queensland Parliament. (2011). Hon Dr John McVeigh. http://www.parliament.qld.gov.au/members/current/list/bio?member=McVeigh+John

Queensland Seafood Industry Association (2013). *Annual Report 2012-13*.

Ridge Partners (2010). *Overview of the Australian Fishing and Aquaculture Industry: Present and Future*. A report supporting the development of Working Together: The National Fishing and Aquaculture RD&E Strategy, Fisheries Research and Development Corporation and Ridge Partners.

Sparks, M (2011). *Community perceptions of the sustainability of the fishing industry in Australia.* Report Prepared for the Fisheries Research and Development Corporation, Intuitive Solutions.

Slater, D and Stapleton, K (2005). Establishing Representative No-Take Areas in the Great Barrier Reef: Large-Scale Implementation of Theory on Marine Protected Areas. *Conservation Biology.* **19**(6): 1733-1744.

State of Queensland. (2013). New Manager for Queensland Fisheries. http://statements.qld.gov.au/Statement/2013/2/14/new-manager-for-queensland-fisheries

Sutton, SG, Lédée EJ, Tobin, RC, de Freitas, D. (2010). *Impacts of the 2004 Rezoning of the Great Barrier Reef Marine Park on Commercial Line, Trawl, and Charter Fishers*. MTSRF Project 4.8.5. Draft Report. Fishing and Fisheries Research Centre, James Cook University.

References

Tobin, A, Schlaff, A, Tobin, R, Penny, A, Ayling, T, Ayling, A, Krause, B, Welch, D, Sutton, S, Sawynok, B, Marshall, N, Marshall, P and Maynard, J (2010). *Adapting to Change: Minimising Uncertainty about the Effects of Rapidly-Changing Environmental Conditions on the Queensland Coral Reef Fin Fish Fishery*. Final Report to the Fisheries Research & Development Corporation, Project 2008/103. Fishing and Fisheries Research Centre Technical Report No. 11, James Cook University, Townsville, Australia.

Tobin, RC, Sutton, SG, Penny, A, Williams, L, Maroske, J and Nilsson, J (2010). *Baseline Socio-Economic Data for Queensland East-Coast Inshore and Rocky Reef Fishery Stakeholders. Part A: Commercial Fishers.* Technical Report No. 5. FRDC Project No. 2007/048, Fishing and Fisheries Research Centre, Townsville, Australia.

Tobin, RC, Beggs, K, Sutton, SG and Penny, A (2010b). Baseline Socio-Economic Data for Queensland East-Coast Inshore and Rocky Reef Fishery Stakeholders. Part D: Seafood Consumers. Technical Report No. 8. FRDC Project No. 2007/048, Fishing and Fisheries Research Centre, Townsville, Australia.

Welch, D. pers. comm. November 2011.

Workplace Health and Safety Queensland (2011) Notified fatalities. January-June 2011. http://www.deir.qld.gov.au/workplace/resources/pdfs/notified-fatalities-report.pdf

SELTMP 2013:
Commercial Fishing in the Great Barrier Reef

National Environmental Research Program

CONTACT
Name: Dr Renae Tobin
Organisation: James Cook University
Phone: 4781 5196
Email: renae.tobin@jcu.edu.au