11. APPENDICES

11.1. Appendix 1 - Section 11 Statutory considerations

In forming the management options, MFish has also considered the statutory obligations described in section 11 of the FA96. These are summarised below.

Section 11(1)(a): Hector's dolphins have a close inshore distribution that results in an overlap with commercial and recreational set net fisheries, as well as inshore trawl fisheries. In considering whether to set or vary the sustainability measures proposed, the Minister must take into account any effects of fishing on the aquatic environment, in particular the presence of Hector's dolphins in these areas. These effects are outlined in detail for each Hector's dolphin population in the main body of this document.

Section 11(1)(b): There are a range of existing measures that apply to areas in order to mitigate the impacts of fishing on Hector's dolphins, such as the west coast North Island closure to commercial and amateur fishing and the Canterbury amateur set net prohibition. These measures are outlined in more detail in the main body of this docuemnt. Existing controls have been considered when making recommendations for setting or varying any sustainability measure for areas where Hector's dolphins are present. Total Allowable Catches may also restrict fishing effort for fish stocks where there is potential for interactions with Hector's dolphins.

Section 11(1)(c): MFish has no information to suggest that Hector's dolphins are prone to significant fluctuations in abundance. Hector's dolphins have low reproduction rates resulting in low potential for population growth.

Section 11(2)(a), (b) and (c): There are no known statements in any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991 that are relevant to the setting or varying of any sustainability measure for areas where Hector's dolphins are present. There are objectives and implementation activities in the conservation management strategies made under the Conservation Act 1987 that generally support the protection and conservation of marine mammals, including Hector's dolphins. None of the proposals apply to areas within the Hauraki Gulf, and therefore sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 are not relevant here.

Section 11(2A)(a and c): Relevant conservation services are planned observer coverage on inshore trawlers in FMAs 3, 5, and 7 (258 days) and planned observer coverage for set net vessels in FMAs 3, 5 and 7 over the 2007/08 fishing year (233 days). Information from observer programmes could support decisions relating to commercial trawl and set net fisheries in the future.

Section 11(2A)(b): The Minister approved a fisheries plan for SPO 7 under s 11A(1) of the FA96 on 4 May 2006. The Challenger Finfisheries Management Company is the owner of the plan and is responsible for administering the major components of the plan including the commercial fishing area closure, catch limits, supporting research, ongoing education, and the set net CoP.

11.2. Appendix 2 - Summary of regional discussions

MFish and DOC officials met with representatives of tangata whenua and relevant commercial, environment, local Government and recreational groups from April-June 2007 to discuss the management of threats to Hector's and Maui's dolphins. An overview of the key points raised by stakeholders at the meetings are outlined below

11.2.1. West Coast of the North Island

11.2.1.1. Dargaville, Kaipara Harbour, 29th May 2007, 7.00 pm

⇒Resolutions agreed at the meeting:

- This meeting requires the Minister of Fisheries to prohibit trawling in the 4 nautical miles already described in the existing set-net ban. (From Maunganui Bluff to Pariokariwa Point) and to require trawlers fishing adjacent to the exclusion zone to carry transponders and either independent observers or secure video surveillance systems. Approximately 110 people voted for and approximately 2 voted against.
- This meeting requires the Minister of Fisheries to create a commercial and recreational set – net exclusion zone between the existing coastal boundary of statistical area 044 and a line joining Pouto Point with the inshore boundary of South Head. Approximately 110 people voted for and approximately 2 voted against.

⇒A commercial fisher said that this was an emotive discussion and all the people voting were not fishers but members of the public who will not be affected by the ban. A further ban would affect commercial fishers in the harbour.

⇒Fishers said that there had been 3000-5000 trawl tows in the Maui's core area in the last year.

⇒Fishers said that they have seen trawlers at 500 m and 1 nm from the shore.

⇒Submissions have been made that 3 Maui's dolphins have been taken by trawlers.

11.2.1.2. Hellensville, Kaipara harbour, 29TH May 2007, 7.00 pm

⇒Resolution of the meeting – This meeting supports a set net closure of the entrance to the Kaipara Harbour, west of the line that runs from Pouto Point to South Head (excluding the lagoon), where Maui's dolphin have been seen. 20 people voted for and 10 voted against.

⇒70 – 100 families rely on set netting. Approximately 300 t of flounder and 250 t of mullet are caught annually by set net. This amounts to 2.5 million dollars income for fishers.

⇒Fishers (commercial and non-commercial) said that they had never seen a Maui's dolphin east of the line. Fishers said that there was a group of 3 dolphins that has increased to 5 recently west of the line.

⇒None of the commercial fishers work west of the line that goes from Pouto Point to South Head.

⇒Fishers were concerned about propaganda which did not reflect the truth about dolphins

⇒Fishers had anecdotal evidence of people catching dolphins in trawl nets.

⇒Fishers said that there was ample evidence of trawlers taking dolphins in the South Island and that trawling should be banned out to 4nm in the core area of Maui's dolphins, as set netting had been. Fishers asked for observers on all trawlers.

⇒Fishers asked why trawling had not been banned to the 4nm zone as set nets had.

⇒Questions were asked about what was being done about other threats such as boat strike, turbines of the proposed power station, and pollution in the Kaipara River.

11.2.1.3. Wellsford, Kaipara Harbour, 23 May 2007, 7.00 pm

⇒People present generally supported resolution of meeting: "This meeting does **not** agree with banning of set nets in the Kaipara Harbour east of a line from Pouto Point to South Head, as we do not consider that such a ban would help with the protection of Maui's dolphin."

⇒There are 30 commercial fishers who depend entirely on fishing in the Kaipara Harbour and who would lose a large part of their livelihood through a ban on set nets in the harbour.

⇒There are 34 marae on the Kaipara, all of whom have been setting nets for generations for mullet and flounder and have never caught a dolphin. Banning set nets in the harbour would mean there was no mullet and flounder for hui and tangi.

⇒A ban was only supported in areas with confirmed sightings of Maui's dolphin.

⇒Regulations requiring attendance of set nets at all times could be supported. However, if a dolphin only has two minutes to get out of a net before it drowns, even if a fisher is attending the net he might not be able to save the dolphin.

⇒Fishers said that trawlers were reported to heavily fish the area outside the harbour, which is where the dolphins are, and it is inconceivable that dolphins do not come into contact with trawlers, particularly as trawlers are now twice as powerful and fast as they used to be.

⇒Fishers suggested that trawling needs to be the *main* focus of the TMP and it was questioned why trawling was not the first thing to be banned to protect Maui's. Trawlers should be removed from the dolphin range but given the option of moving to other places.

⇒One fisher said that the only place he had seen dolphins in the harbour entrance was at the proposed turbine site.

⇒It was noted that drift netting is still legal and may be a threat and stalling of nets in the Kaipara could be a threat.

11.2.1.4. Titirangi, Manukau Harbour, 28th May, 7.00 pm

⇒Fishers unanimously said that they had never seen Maui's dolphins in the Manukau Harbour and that they had never caught Maui's dolphins in the Manukau Harbour.

⇒Fishers said that drift nets are worse than set nets because they drift out especially at Port Waikato.

⇒Fishers noted that they had no confidence in the consultation process because they had been through a similar process in 2003 and their views were not acted on.

11.2.1.5. Commercial stakeholders, Manukau Harbour, 1st June 2007, Ministry of Fisheries, Auckland, 10.00 am

⇒The research from Otago University has shown that there have been 21 acoustic events in the Manukau Harbour

- Definitely Maui's dolphin in the Manukau beyond the protected area.
- Not all dolphin visits have been detected
- The pod off Corn Wallis has detected more than the pod off Kauri Point

- Dolphins appear to use the north side of the harbour more than the south side
- Hector's routinely use shallow water indicating that Maui's probably do too
- We don't know how many dolphins visit the harbour
- We don't know what the inner limit of the dolphin's movement is
- We do know that dolphins are coming past Corn Wallis and Kauri Point.

⇒Fishers unanimously agreed that they had never seen Maui's dolphin in the Manukau harbour and that they had never caught Maui's dolphin in the Manukau Harbour.

⇒Fishers said that set netting was a cheap source of food.

⇒Fishers said that drift netting is a risk to dolphins.

⇒Fishers were concerned that the Government would make decisions because of politicking but they really should focus on what fishers who fish every day are saying.

⇒Fishers said that if boat strike is a threat then boats should be banned from the harbours too.

⇒Fishers asked what compensation would be given to fishers if set netting was banned. Fishers said they would definitely go to court if set netting was banned. They asked how a decision could be made based on no evidence.

⇒Fishers asked how the process relates to the Treaty of Waitangi.

⇒Fishers said there was not really any good way other than set netting to catch mullet and flounder. Fishers asked if they would be allowed to experiment with different fishing methods if set netting was banned.

11.2.1.6. Raglan Harbour, 9th May, 7.00pm

⇒Fishers said that they had never seen Maui's dolphin in Raglan harbour. They had seen Maui's dolphin outside the harbour but not inside the harbour.

⇒Two fishers said they have been fishing in all parts of the harbour for 19 years and 60 years each and had never seen a Maui's dolphin.

⇒One fisher said he had been in Raglan 50 years and never even seen any news media reports about dolphins in the harbour.

⇒Dolphins were not at all likely to be found in the upper harbour where people fish for flounder.

⇒Fishers said that as commercial fishers for flounder and mullet they never leave their nets unattended. They said that some other fishers do leave their nets unattended.

⇒All agreed that there were many more sightings but these were not getting through to DOC and MFish.

⇒Fishers suggested an education approach not just a regulation approach. There should be more education before legislation.

⇒One fisher flagged some inconsistencies with the threat classification in the Discussion Document and asked for more detailed information about sightings in the discussion document.

⇒Fishers asked if they would have some assurance that if there was no information on dolphins in the harbour then there would be no ban on set netting.

⇒DOC to inform fishers when they know the outcome of the acoustic research in Raglan harbour.

11.2.1.7. Kawhia harbour, 24th May, 7.00 pm

⇒Fishers said they had not seen dolphins in the harbour since 1950.

⇒A dolphin researcher noted she had never had a report of dolphins inside the entrance of Kawhia Harbour

⇒Fishers see dolphins outside the harbour often

⇒Fishers stated that fishing with nets was a large part of their livelihoods and they were worried about what would happen to them if set netting was banned.

⇒Fishers said they don't fish near the harbour mouth because the water is too swift to set nets there.

⇒Fishers asked for more notice next time there is a meeting. Many of the fishers at this meeting are Tangata Kaitiaki and are very aware of what is going on locally.

11.2.1.8. The Northern Fisheries Management Stakeholder Company Limited – Auckland, 25th May, 10.00 am

⇒Maui's dolphin occur in depths that coincide with the 80m contour line and shallower. Trawling and Maui's occurs in the same area. MFish has maps which grade the intensity of trawling.

⇒In the South Island there are accidental catches of Hector's dolphin in trawls.

⇒In the North Island it is not known if there have been accidental catches of Maui's dolphin by boats that do not have observer coverage. There has been an anecdote by a fisher on a trawl boat that said a Maui's dolphin was caught at Raglan. There have been similar anecdotes from the Kaipara area.

⇒Northern Fisheries requested that the data on distribution and dolphin deaths and causes be clearly presented and thought that more observer information would be useful.

⇒The meeting agreed that if a trawler caught a Maui's dolphin there would be strong incentive for the skipper not to report it.

⇒Northern Fisheries noted that it is not easy to see a Maui's dolphin from a boat and that there is less trawling in the winter than in summer.

⇒Northern Fisheries noted that the lack of information on distribution was a problem and that more effort needed to go into mapping the distribution of Hector's'/Maui's dolphin.

⇒Northern Fisheries asked how much a tagging study would cost and noted that industry would be interested in overcoming the cost.

⇒MFish noted that the last time this issue was discussed 7-8 years ago with Ngati Whatua there was a confrontation because Maori perceived that the ministries were against them.

⇒Northern Fisheries said that the regulations work well and if any unnecessary measures were taken beyond those regulations the industry would consider that 'against utilisation'.

⇒Northern Fisheries raised concerns that there would be no second consultation on the options which could have a high impact. This may mean that industry will have to go to court again.

⇒Northern Fisheries felt that it would be very useful to have the process slowed down so that fishers could be properly consulted. MFish said it would include this concern in the advice to the minister.

11.2.1.9. Waiuku, Southern Manukau Harbour, 13th june, 7.30 pm

⇒Dolphin researchers reported that acoustic pods had detected 21 Maui's dolphin signals up to 2km beyond the eastern line of the current set net ban. One of these detections was confirmed by a sighting.

⇒Most of the persons present had used set nets and none of them had caught a dolphin. All persons present had only seen dolphin's within the protected area, at the harbour mouth or out on the coast.

⇒One fisher had been fishing for 30 years in the Waikato River and had never seen dolphins there.

⇒It was suggested that we must know what the minimum sustainable population is. Dolphin researchers advised that this modelling work could be done but had not been done yet.

⇒It was questioned whether anyone knew for certain why the Maui's dolphin population has declined. A dolphin scientist advised that there were records of 16 strandings in 10 years around Taranaki, north of New Plymouth in the 1970s and early 1980s. At that time, the area north of New Plymouth was a main area for gill netting. Now there are very few Maui's dolphins in that area.

⇒Some fishers suggested that the nets causing the problem were illegally set nets and that there was inadequate enforcement to stop this happening.

⇒Fishers queried whether there would be compensation for anyone who lost their livelihood due to fishing restrictions to protect dolphins. MFish advised that no compensation had been paid when the previous ban was brought in.

⇒One fisher noted that the club had over 1000 boats per year going out on the harbour, some with only a low power. If they all had to go beyond the bar to fish, it would take a long time to get there and back again.

11.2.1.10. Statement by the Counties Sport Fishing Club (CSFC)

The meeting was included a statement from the Counties Sport Fishing Club (CSFC). This was supported unanimously by the meeting. Key points of the statement included:

⇒The club is completely opposed to any changes to the current set net ban or the introduction of more regulations.

⇒Since 1 January 2000 the CSFC radio had logged 5,484 boats crossing the Manukau Harbour and Waikato River bars. Approximately 50 of these reported seeing Maui's dolphin. All but one of these sightings were in the currently protected area. The one reported sighting that was further inside the harbour was from a non-club member who refused to give their name and was unsure of the type of dolphin.

⇒No club boat has ever struck a Maui's dolphin nor has the club ever heard of this happening in the Manukau.

⇒Speed restriction of 5 knots when within 300 metres of a Maui's dolphin is ridiculous and would be unsafe as this is too slow a speed to safely navigate the bars.

⇒The two Maui's dolphin that were caught in nets and washed up in our area were caught by nets that had broken free and become drift nets. There is no record of any Maui's dolphin becoming entangled in properly set and managed nets.

⇒If further measures are needed, MFish and DoC should look towards enforcing the laws that already exist; funding more fishery officers and fisheries protection vessels to police the existing laws. In particular, get fishery officers onto commercial vessels. Also, educate people about what the existing laws are.

⇒No Maui's dolphin have been caught in nets since the current ban was introduced. Therefore: Northing is broken, nothing needs fixing!

11.2.1.11. Taranaki Fisheries Liaison Committee, New Plymouth, 26th April, 7.30 pm

⇒All members present stated that Maui's dolphins are not seen within local waters. Several commercial fishers stated that they have fished in the local areas for many years and they have never seen a Maui dolphin.

⇒Recreational members present stated that they could not recall any of their respective club members reporting a sighting of a single Maui dolphin within local waters. Participants stated that very little recreational set netting occurs within Taranaki waters. Some limited set netting does occur within local rivers to catch yellow-eyed mullet.

⇒Periodically there are calls from the general public about possible sightings of Maui dolphins but most of these are dismissed as being unreliable.

⇒A commercial fisher sighted a Maui dolphin within the Sugar Loaf Marine Park about two years ago.

⇒Commercial fishers present stated that no additional management measures are needed given the absence of dolphins in the Taranaki region. Participants stated that commercial set net fishers are being unfairly blamed for any Maui dolphin death.

⇒Several commercial fishers stated that an extension of the southern boundary of the existing set net closed area will put all Taranaki set net fishers out of business. Presently, there are about seven commercial set net operators within the Taranaki region and all rely on fishing access to local inshore areas to catch fish.

⇒During winter, most set net fishers target warehou (winter fishery) very close to shore (< 4m of water depth). During summer, these same fishers target school shark and rig throughout the area. Extending the closed area further offshore will have significant implications for all local school shark and rig set netters.

11.2.2. East coast of the South Island (ECSI)

11.2.2.1. Ngai Tahu Runanga meetings

⇒Want recognition and ability to exercise customary rights

⇒Strong spiritual connection to mahinga kai

⇒No customary authorisations given out to use set nets off the open coast.

⇒Akaroa Taiapure has no resources but ready to help

⇒Not enough money to reduce threat

⇒Runanga has eyes and ears to help

⇒Need more compliance on ground to enforce regulations

⇒Koukourarata happy with current rules

⇒Dried shark was an important customary fish – usually caught in upper harbours in December-February

⇒Governors Bay sewage outlet prevents use of kaimoana in Lyttelton Harbour

⇒Sharks used to be caught on lines and nets in Akaroa, Wainui and Lucas Bay areas

⇒Boat would be useful for Taiapure Committee

⇒Little mahinga kai available in South Canterbury as eels and shellfish depleted.

⇒Could use Mataitai Reserves for Hector's conservation

⇒Education is needed on the issue fairness/equity between non-commercial and commercial is seen as a big issue at Kaikoura.

⇒Pingers – do they work? Are there any fishermen using them in this area?

⇒Impacts on tourism raised – swimming with the dolphins

⇒Last summer in north bay five dolphins seen once

⇒Pod in south is not often present

⇒In southerly weather 95% will see them off the bluff (Haumuri)

⇒Dolphins north of Kaikoura off the peninsula and Conway river

⇒Another threat is jet skis and more education needed

⇒Registration of nets an option

⇒June is humpback and cray rope time – shorter buoy line at this time - Kaikoura "Code of Set Net Practice".

11.2.2.2. Kaikoura Amateur Fishers 16 April 07

⇒Kaikoura Boating Club voluntarily has a beach area ban and the club has 400 members

⇒Dolphins can be seen on open beaches from Conway to the Clarence River

⇒Still see them (a couple) along the beaches during the winter months

⇒Older fishers with small boats net for greenbone (butterfish) and moki close inshore in the rock reefs

⇒Don't see Hector's dolphins in around the rock and reef areas

⇒Amateurs can not use a small boat if forced out further, they will need a bigger boat and can't justify cost

⇒Will affect the "old boys" because set netting is their one and only enjoyment in life

⇒Staying with net will result in most locals giving up set netting

⇒Fishers coming to Kaikoura just disregarded the new regulations

⇒Amateurs use nets to target butterfish - rig is not so targeted

⇒A ban will close the amateur butterfish fishery

⇒Closure will affect the Kaikoura "way of life"

⇒Forced to return to spear fishing, but this is not an option for old boys

⇒Pole netting is coming back, two or five of them that do it

⇒Suggested MFish identify some set net areas (butterfish) and close open beaches to set netting

⇒Only want to net close in to rock reefs because it gets deep very quickly and have to hand haul net

⇒Some capable and willing to spear fish

⇒Interest in a survey of numbers set netting

⇒One fisher had mitigation for cray pot entanglement by weighing down the pot buoy line

11.2.2.3. Canterbury Amateur Fishers 17 April 2007

⇒Some inaccuracies and mistakes within the Threat Management discussion document and concerns about inaccurate press releases

⇒Noted that prior to the establishment of the Banks Peninsula Marine Mammal Sanctuary there were 24 amateur dolphin incidents per year, now it is 0.8 incidents per year

⇒No 386 incident at Petite Carenge Bay only amateur set net since 2001 but 8 from commercial

⇒Supported real time cameras for commercial set netters

⇒Amateur fishers are concerned and must accept responsibilities

⇒There are five different regimes along the ECSI coast and this led to confusion.

⇒It is the rare Maui dolphin where abundance is the least where the threat is most high and in other areas where it is less abundant, not the areas of high population

⇒Supported restriction of staying with net all year with a three month (1 December to 28/29 February) summer seasonal closure along all ECSI coast

⇒Flounder set netting should be allowed until 1 April

⇒Rest of year no night netting and must stay within a defined distance of the net

⇒Suggested options for as follows:

Option 1: Status Quo (Canterbury set net area)

⇒Six month closure (four month for flounder area) and 30m nets

⇒Stay with net – marine mammal sanctuary and four month closure

⇒60 m nets elsewhere and flounder area

Costs

⇒Confusion – problems with compliance

⇒Some unnecessary mortality in areas outside sanctuary (not covered by its stricter rules).

Benefits

⇒Provided information (that other measures may be unnecessary to reduce threats)

⇒Gives protection within protected area

⇒Decline in reported incidents

Option 2: All East Coast South Island

⇒Stay with nets at all times whether set from shore or vessel

⇒No set netting – December, January, February east coast South Island (Slope Pt to Tory Channel) extend to March for flatfish set netting

⇒No night setting of nets except for flatfish areas

⇒Rules consistent across whole ECSI (eg, net length)

⇒Stay within a certain distance of the net

⇒Adherence to set net Code of Practice and don't set nets when dolphins are around

- Option – 30 m length across ECSI
- Option – one net per boat across ECSI
- Option - two nets provided two or more fishers.

Costs and Benefits

⇒Lost opportunities while staying with net – social costs and economic costs

⇒Less incentive to set net

⇒No set netting = no greenbone (butterfish) except spearing and few moki.

Closed Period

⇒Workers unable to have opportunity to set net over Christmas holiday period

⇒Reduce opportunity to catch rig (and other elasmobranches) but benefit because they breed at that time

⇒Effort will be shifted to another time of year – less concentration on timing when butterfish breeding

⇒Reduce risk significantly to dolphins based on results of similar restrictions already imposed

⇒Administration and compliance/enforcement simplified.

Option 3: Complete Closure 4nm (not including estuaries/rivers apart from the Avon-Heathcote Estuary)

Benefits

⇒Complete protection for Hector's dolphin – is this a significant improvement when recreational entanglements are very low?

⇒Increased abundance of target fish species for fishers and Hector's dolphin

⇒Public perception that problem under control.

Costs

⇒Amenity costs – ramp deterioration

⇒Canterbury – limited opportunities for other fishing methods, ie, by lining

⇒Other methods can't target set net target species

⇒Loss of butterfish and moki fishers – butterfish highly desired

⇒Increased non-compliance

⇒Loss of most flounder fishing – limitations with drag netting

⇒Loss of a traditional fishery reason for holiday homes, etc

⇒Effects on boat sales, etc, flow-on effects

⇒Moki/butterfish main catch in Banks Peninsula that is a substantial and favoured catch.

11.2.2.4. Timaru Amateur Set Netters – 17 May 2007

⇒Dolphins not in Timaru Reef Area but present east of Timaru Harbour to Smithfield Freezing Works chimney

⇒Reef is looked after by locals who generally fish for family sustenance

⇒Moki net used to catch all species

⇒Butterfish – moki – tarakihi in reef area very important to Timaru fishers.

⇒November best fishing month

⇒Net set for around an hour and fishers stay within 100 m of the net and line fish

⇒Staying with net is not an issue as butterfish healthy and only takes half an hour to get a feed

⇒Timaru reef area only local area easily available to locals

⇒No out of town fishers on reef as there are few occasions when the right conditions prevail and you need local knowledge to fish there.

⇒Low visibility most of the time, so no good for spear fishing.

⇒Long-lining only produces wormy red cod and spiny dogfish

⇒Need larger boat to access offshore south and north rocks that are 32 km off Waimate and 7 hours steaming from Timaru, Top Rocks (53 km offshore) and 5 km of Makikihi

⇒Commercial set netters fish these offshore areas and deplete them.

⇒Support status quo because it works

11.2.2.5. Otago Amateur set netters May 2007

⇒Decisions should not be made until current dolphin research such as the new survey information for Te Waewae Bay is available

⇒A blanket set net ban would effectively remove at least 5 species of fish from the recreational bag/catch (flounder, rig, moki, greenbone, mullet etc)

⇒Ban would be profoundly unfair on amateur fishers as they are once again being told to give up a significant method of putting a "feed on the table" for an , at present, indefinable result

⇒No dolphin incidents on the South Otago coast and they are being punished for the perceived and largely unproven sins of others

⇒Accept dolphin is worthy and requires protection, the issue is about how

⇒Until we have all the information a voluntary code of practice in areas of dolphin habitat with education and consensus be established

11.2.2.6. Commercial Quota Holders - South East Finfish Management Ltd (SEFML) - 8 May 2007

⇒No need for meeting with SEFML as they are still getting ideas together

⇒OK for MFish to later ground truth economic information with SEFML

⇒SEFML supports status quo and is looking at ways to strengthen code of practice by monitoring compliance

⇒Looking at plotting vessel positions by satellite coverage using an independent company to monitor

11.2.2.7. Kaikoura commercial set netters 16 April 07

⇒Hot Spot for Hector's dolphin – Hāpuku River to Kaikoura Railway Station

⇒Pod at the Clarence River Mouth

⇒There are more Hector's now then 10 years ago

⇒Three baby Hector's inside 7-gillers around Motunau

⇒Orca attack of a Hector's off Kaikoura recently

⇒Fishermen are the endangered species with only 7 set netters now compared to 30 plus ten years ago

⇒Available ACE for deepwater set netting for tarakihi, groper and ling going to trawling further south so fishing is changing method

⇒Six of 7 fishers are ACE fishers fishing Ngāi Tahu, Sealord's, and Talley's quotas

⇒Butterfish – 2 t from front of Kaikoura Peninsula

⇒Rig and school shark caught in 15-30 m water depth and trawl area 20-25 m avoided because of gear conflict

⇒Set net south to Gore Bay for rig and school shark with 10% of catch caught north of Victoria Rocks to the Clarence River

⇒Fishers set 6 nets that are 500m long

⇒Most fish caught September to March with most October to December (16 to 18 degrees C) and elephant fish come into breed

⇒Last two years has been real bad for rig and school shark because fish aren't there – TACC to high

⇒One fisher used to catch 80-90 t rig but now only catching 20t, similar situation for school shark

⇒At least 5 t of elephant fish and 130 t spiky dogfish also caught

⇒Increasing numbers of carpet and sand sharks as rig predator declines

⇒Amateur surf casters doing well on small sharks

⇒Commercial set netters don't set net inside 15m except for butterfish nor set net from Queen Victoria Rocks south to Kaikoura Peninsula hotspot and favour a voluntary ban in these areas

⇒Education seen as the best way forward

⇒Would seek compensation if set netting banned out to 50m

⇒Trawl area for flatfish is Haumuri Bluff to Waiau river

⇒Look at review time (5 years) for measures introduced as part of the TMP process.

11.2.2.8. Christchurch (17 April 2007) and Timaru Commercial Set Net and Trawl Fishers (16 May 2007)

⇒Any mitigation measures will impact on the value of SPO 3 quota

⇒Set net season is from October to February.

⇒Code of practice supported by 90% of fishers but code of practice has got no teeth

⇒Want to upgrade code of practice to ensure compliance.

⇒In February male rig come close inshore and this is the time when lots of rig are available – banning would have a significant impact at this time

⇒They support the protection of females by not fishing October to January inshore

⇒Concern about large trawlers fishing hard on one nautical mile line targeting elephant fish

⇒Pingers from Sullivan and Spillane in Timaru frighten dolphins away based on putting pingers over the side of the boat when dolphins present

⇒Lots of dolphins around and seem to be more than 1970

⇒Elephant fish a success story

⇒Flats and red cod - a real concern about these fisheries

⇒No set netting and trawling inside 1nm except in Pegasus Bay

⇒Some fishers favour compensation for SPO3 and other quota if fisher substantially affected.

11.2.2.9. Otago Commercial Set Netters 10 May 2007

⇒4 fathoms water depth is inside half nautical-mile. (Hampden to Moeraki)

⇒Dolphins located at freshwater interface with dirty water

⇒Very localised areas of dolphins -Waikouaiti Bay, Warrington Beach, Moeraki Boulders, Kakanui, and Oamaru – Upwards

⇒Dolphins occur in Molyneaux Bay, off most rivers, Campbells Reef and at Brighton

⇒Pollution → Algae in Bay → Hector's disappear

⇒Monarch has records that show no dolphins in Otago Harbour

⇒November to December set net for rig

⇒Two dolphins caught 2-3 miles out.

⇒Fishers don't use pingers in this area

⇒By-catch trade of SPO for SCH or BCO would push set netters further offshore.

⇒Not so keen on buy-back or compensation

⇒Greenbone 4 x 50 m nets for one hour and stay with them

⇒Fishers supported new set net rules in east Otago Taiapure area

11.2.2.10. South Otago Commercial Set Netters and Trawlers April 07

⇒Do not fish Slope Point to Waipapa Point

⇒Set net for rig and school shark south of Chaslands (3.5nm off) to Slope Point (1.5nm off and Molyneaux Bay).

⇒One trawler works from Waikawa Harbour trawling for flats and gurnard with a low head line net up to 1.5nm offshore

⇒No trawling or set netting in Porpoise and Curio Bays supported by fisher

⇒Dolphins in Porpoise Bay mainly and some in Sisters Bay

11.2.2.11. Conservation Group Meetings

⇒Dolphins inshore all year with more in summer

⇒Pods around Gore Bay, Oaro, Kaikoura Railway Station to Hāpuku R and at Kekerengu

⇒In Queen Charlotte Sound up to 30 in discrete areas over summer

⇒No dolphins at Peloris Sound

⇒Now fewer dolphins in the Warrington, Karitane, Moeraki and Oamaru.

⇒Very few dolphins in Blueskin Bay this year but up to six at other times.

⇒30-40 dolphins at Moeraki.

⇒Sometimes dolphins seen at Karitane.

⇒Monarch sees dolphins off Otago Harbour.

⇒Dolphin vulnerable to threats because of genetic crash 1960-1990s

⇒ Set netting biggest threat and should be banned

⇒ Bag limits set too high to control recreational set netting

⇒ Commercial set netting in the Kaikoura Canyon very selective and at depths (up to 600m) outside the dolphins range

⇒ Any legislation needs to be simple, clear and able to be policed

⇒ Prefer protection over whole dolphin range to prevent fragmentation

⇒ Favoured national measures to mitigate threats to dolphin with banning of set nets being the preferred option

⇒ Favoured marine mammal sanctuary around the whole of the South Island to 100m deep

⇒ Want a marine mammal sanctuary for Kaikoura Coast

⇒ A compromise was banning recreational set netting, observers on trawlers (50-80% coverage), and a commercial set net ban phased in over time to five nautical miles or 80m deep.

⇒ Network of marine reserves will reduce problem

⇒ Suggested use of surf patrols to get dolphin numbers

⇒ Hector's in Kaikoura should be dealt with in the same manner as Maui's dolphin because Kaikoura puts itself forward as the marine mammal capital of New Zealand

⇒ Value of dolphins and beach important to Warrington.

⇒ Important intangible value of the dolphin.

⇒ Tourism is likely to displace set netting

⇒ Tourism most important industry for Akaroa and is based on Hector's dolphins

11.2.2.12. Dunedin City Council (DCC) – 25 May 2007

⇒ DCC favours status quo in regards to shark nets

⇒ DCC supports information that would make the nets more dolphin friendly, eg, pingers

⇒ Unknown if any dolphins found off St Clair or Brighton – maybe a research project topic.

11.2.2.13. Te Korowai O Te Tai Marokura 17 April 07 and later submission

⇒ Te Korowai O Te Tai O Marokura is a group dedicated to management of the ocean environment in the Kaikoura region

⇒ Consensus agreement was achieved through a process of question and answer, with each participant having the opportunity to speak and the experience of being listened to and heard

⇒ The group was able to align on a commonly shared outcome by finding shared values and agreeing on certain facts.

⇒ Te Korowai unanimously agrees that the Hector's Dolphins are under threat from human activity to some degree

⇒ There was agreement that the status quo is not acceptable and that something needs to be done

⇒ There was agreement on commitment to the survival and recovery of our local pod of Hector's at Kaikoura

⇒Concern expressed at the meeting about the lack of baseline data and will seek better scientific information from Dr Liz Slooten and may resubmit later

⇒The group agreed that netting should take place but with certain conditions (Forest and Bird may disagree at national level)

⇒The group does not support total net ban (except Forest and Bird - national position a ban to the 100m depth contour)

⇒Amateur interests agreed to no netting on open coast and attendance on gear, and will submit on the detail of this separately

⇒Commercial volunteered to stay out of inshore areas, and will submit separately on the detail

⇒Te Korowai recommends the use of local knowledge/feedback as a part of this ongoing monitoring programme and can advise on how this feedback could be collected/recorded regularly

⇒Kaikoura locals could have a role in compliance (e.g. public awareness – which is working very well in relation to the Rahui), and there is a need for a locally resident full time Fishery Officer.

11.2.3. South coast of the South Island

11.2.3.1. Amateur Stakeholders - Tuatapere 26 April 07

⇒The population hasn't changed based on 16 years of fishing observations. Line transit survey method of 89-100 dolphins seems low

⇒Need recent survey results to assist with a comparable assessment of 89 survey and queried the need for action until all the information is available

⇒The fish are where the dolphins are

⇒Dolphins mostly west of Orepuki

⇒1 fathom to 15 fathom (28 m) is the main Hector's range

⇒Very few amateur set netters in Te Waewae Bay who are usually mature people not wanting to stress themselves

⇒Set netting very controlled by weather and impact of set netting is negligible

⇒Fishers mainly based at fishing cribs along the coast

⇒Significantly less set net effort in Te Waewae Bay than Canterbury

⇒Very little set netting in Te Waewae Bay but a lot around Monkey Island in summer and west of Rowellen Burn

⇒A query whether a change from mono to multi filament might assist?

⇒There are differences between fishers (areas fished and boats) that need to be taken into account

⇒Need to clarify in any paper the differences between fishers and their individual practices

⇒Need a commitment from Government to make pingers available

⇒There are 600m herring bone cow milking sheds down coast 2km apart

⇒Anecdotal evidence of 2 set net captures at Monkey Island

⇒Need for education about amateur code of practice

⇒Summer holiday cribs and tradition of freedom to camp with feed of fish at risk is set netting banned

⇒Concern about loss of recreational traditions if set netting affected.

11.2.3.2. Commercial set netters

⇒Most dolphins inside 1nm at Te Waewae Bay and 3 or 4 individuals at Oreti river mouth.

⇒Dolphins mainly occur on western side of Te Waewae Bay, "Fudder" to "Waik" dolphin hot spot in Te Waewae Bay

⇒Dolphins mainly in Te Waewae especially in the Futter (Port Craig to Sandhill Point) and Monkey Island. Tend to stay in close inshore unless weather blows them out

⇒More dolphins Slope Point to Waipapa Point

⇒West Te Waewae Bay from Stony Creek to Sandhill Point not fished

⇒BUT 5 mainly caught at Stewart Island and Ruapuke in winter using 30 x 60m nets with 4.25 inch mesh

⇒Set netting November to January in Te Waewae Bay for rig inside 1nm (little this year because of vessel replacement) and out to 3nm

⇒Set netting for rig 1.5nm off Oreti Beach and 4nm offshore at Mid Bay Reef at in Te Waewae Bay

⇒Set netting occurs in Foveaux Strait, Fortrose to Waipapa Point, and the east and west coasts of Stewart Island

⇒New fishers entering rig set net fishery because of the high SPO 3 TACC and fishery declining because females not bearing live young

⇒Fishers using up to 3000m net to target rig and school shark made up of 4 – 9 nets and set for 3 hrs

⇒Fishers have up to 3 crew who are locally based.

⇒Acoustic pingers should be available from Crown to ensure supply and consistent specifications

⇒One fisher has a pinger on his net every 100m and another uses them when netting in water under 25m

⇒Broadbill seven gills and carpet sharks increasing Fortrose to Sandhill Point

⇒One fisher had 30 days of observer coverage last summer from Foveaux Strait to Fortrose and no dolphins were caught

⇒How was the dolphin catch years ago when there were a lot more set net boats?

⇒One fisher noted that trawlers were able to catch rig

11.2.3.3. Bluff Trawlers 27April 07

⇒Don't catch dolphins because of flatfish trawl gear has low headline height and is heavy and noisy and frightens dolphins away

⇒Lots of sand dollars in western part of Te Waewae Bay

⇒Futter on west side and Monkey Island main anchorages in Te Waewae Bay

⇒FLA3 fished in Te Waewae Bay from late July to April.

⇒Trawling moves towards outer bay when there are lots of flatfish

⇒No trawling inside one nautical mile where dolphins are, based on five years of data

⇒More than 60% of Bluff trawlers fish in the bay

⇒Three main areas fished – Te Waewae Bay, Ruapuki and Cod Fish Island

⇒Catch distributed about one-third to each of these areas

⇒No boat strikes as they tow at 1.8 to 2.2 knots and don't chase dolphins

⇒Prefer voluntary measures to mitigate dolphin issues.

11.2.4. Top of the South Island

11.2.4.1. Tangata whenua – Te Tau Ihu Fisheries Forum 9th of July

⇒Te Tau Ihu did not want the protection of marine mammals to be an excuse to diminish their customary right to harvest fish using set nets.

⇒Te Tau Ihu opposed any restrictions on their customary rights to use set nets

⇒Te Tau Ihu noted that only .07% of Hector's were caught by set nets (not sure where that figure has been taken from), and that an even smaller percentage would be taken by customary set netters, and that number would be reduced even further when looking at individual iwi areas, and therefore, Maori should not have to give up their customary set netting practices for such a small percentage

11.2.4.2. SoundsFish – Nelson, 17th of May

⇒SoundsFish were represented by Queen Charlotte Sounds Residents Association, SoundsFish, Ngati Kuia, a commercial fisher and a recreational fisher.

⇒Participants believe the Marlborough Sounds should be a separate core abundance area.

⇒Participants suggested two types of commercial set netting in the area: (i) butterfish set netting over rocky / kelp bottoms; and (ii) other inshore set netting. In Cloudy and Clifford Bays set net fishers target rig, elephantfish, and school shark.

⇒Participants noted that customary set netting for butterfish also occurs.

⇒Participants believe that dolphins do not go over rough ground, so set netting for butter fish should be retained as a method, but there is a case to restrict other set netting over muddy substrate.

⇒Participants reported sighting Hector's in both the inner and outer Queen Charlotte Sound, Waikawa Bay, East Bay, Bay of Many Coves, around Blue Mine Island, Port Underwood, Chetwood Islands, around Hardings Point, Cloudy Bay - Clifford Bay, Admiralty Bay, Cape Campbell-Canterbury Gully.

⇒Participants believe there is a resident group of Hector's in Queen Charlotte Sound that increases in number over the summer.

⇒Participants reported never sighting Hector's in Pelorus Sound, around French Pass, Robertson Point – Pereno-Cape Kaumaru area. Participants suggested these latter areas were too tidal and dirty for dolphins.

⇒Participants believe one of the main threats to Hector's is an influx of summer visitors who crowd around the dolphins when they are seen, disturbing them. Participants believe harassment is a huge risk to the dolphins.

⇒Participants believe both MFish and DoC must raise public awareness about possible entanglements and the need to report any incidents.

⇒Participants believe that more research is required to investigate protective measures including the impacts of dredging on dolphin habitat, and non-fishing threats.

⇒Participants suggested that a long term monitoring strategy is required to ensure that measures are effective.

11.2.4.3. Recreational - Nelson, 22nd of May

⇒The Top of the South Recreational Forum (ToSRF) were represented by Mapua Boat Club, TASFISH, Pelorus Boat Club, Dawnbreakers Fishing Club, Tarakohe Sea Anglers, Tennyson Inlet Boat Club, Marlborough Sounds Recreational Fishers Association, and the Nelson Underwater Club. Discussion focussed around Tasman and Golden Bays and Marlborough Sounds.

⇒ToSRF stated that a group of Hector's are resident in Golden Bay; Hector's are not seen in Pelorus Sound

⇒ToSRF stated that there is a lot of recreational set netting in Tasman Bay for rig and snapper, particularly off Rabbit Island, Motueka and D'Urville Island. Most recreational set netting in the Marlborough Sounds is for flounder using nine-mesh-high nets. Most recreational set netting in Queen Charlotte Sounds is for butterfish or moki over reefs.

⇒ToSRF stated that the public need to be made more aware of where Hector's are found and the need to report incidents.

⇒ToSRF stated that the requirement to stay with set nets is not practical, although some fishers would support a ban on set nets. Participants noted that set netting for flounder using nets that are only nine meshes high does not pose a threat to Hector's dolphin.

11.2.4.4. NGOs, Environmental Interest Groups – Renwick 11th of May

⇒The NGOs were represented by Forest & Bird, Friends of Nelson Haven and Tasman Bay, and Marlborough Environment Centre.

⇒NGOs reported seeing Hector's in Queen Charlotte Sound, Marlborough Sound, eastern Golden BayMarbells beach-Mussel Point,

⇒NGOs sated that Hector's are not seen in Tasman Bay or around Seddon

⇒NGOs do not support the core abundance approach, but prefer stronger protection for ToS Hector's population.

⇒ToS participants believed that recreational set netting in Golden Bay is much less frequent now than it was in the 1970s and 1980s. ToS participants noted some set netting occurs in Grove arm (Makuta Bay) by visitors over the summer, and Marbells Beach –Mussel Point area.

⇒ToS participants would prefer a set netting ban. Alternatively, a range of restrictions were proposed including the requirement that fishers remain with their set nets, prohibit set netting in waters less than 100m, a ban over summer, and stringent penalties for breaches.

11.2.4.5. Commercial – Nelson 16th of May

⇒Commercial were represented by Challenger Finfish Management Company, SeaFIC, Area 2 Management Company, Port Nelson Fishermen's Association, and several commercial fishermen.

⇒Commercial participants stated that commercial fishing within the Challenger area does not catch Hector's dolphins

⇒Commercial participants strongly believed that interactions with Hector's dolphins are caused by recreational set nets

⇒Commercial participants recommended that recreational set netting be banned.

⇒Commercial participants oppose any method restrictions for commercial fishers because they currently use a wide variety of fishing gear types.

⇒Commercial participants expressed concern that status quo management of Hector's dolphins is not an option, given their belief that status quo is a viable option in some areas.

⇒Commercial participants expressed concern that there is little up to date scientific data to base decisions upon, such as current population sizes.

⇒Commercial participants believe that the Hector's population is the same or even greater than in the past. Commercial believe it is important to emphasise the fact that Hector's also die of natural causes: mortalities not solely due to human interactions

⇒Commercial participants suggest that MFish and DoC need to make more effort to ensure the public is aware of the hazards posed by recreational set netting, rather than commercial set netting.

⇒Commercial participants stated that commercial set net fishers remain with their nets because they are unable to return to port.

⇒Commercial stated that the methods they normally use do not pose a threat to Hector's: low headline (1.5m) 'sole' nets for targeting sole, flatfish and gurnard, towed at low speed (2.8 – 3.5 knots); inshore trawling using low headline, no wing doors, smaller sweep area; and developing the use of pingers to deter dolphins.

⇒Commercial stated that three dolphin captures in the Cloudy / Clifford bay area was the result of using gear not normally used in inshore waters – wing trawl with high headline, and fishing in shallow waters.

⇒Commercial stated that the number of commercial set netters is very small – three operate from the West Coast, and four from the ToS, and fishers fishing rig quota have moved from set netting to trawl bycatch.

11.2.5. West coast of the South Island

11.2.5.1. Tangata whenua – Te Runanga o Makaawhio (Hokitika to Jacksons Bay rohe) 7th of May

⇒Discussions with Te Runanga o Makaawhio focussed around Bruce Bay, where the Makaawhio marae is based. Te Runanga o Makaawhio note that Hector's dolphins are seen clustering in local areas, including Bruce Bay.

⇒Te Runanga o Makaawhio state that local currents and tides cause accumulation of beach cast debris around Bruce Bay; this may be why there is a concentration of dolphin carcasses cast ashore.

⇒Te Runanga o Makaawhio note that very little customary set netting occurs at this time, nor is there much recreational set netting. Set netting that does occur generally happens around river mouths to target flounder, but the method is uncommon.

⇒Te Runanga o Makaawhio suggest there is a need for more publicity about set netting issues and the recreational code of practice for set netting. This could be accomplished by more posters in the

area.

11.2.5.2. Tangata whenua – Ngati Waewae (Hokitika to Kahurangi Point rohe) 15th of May

⇒Ngati Waewae note there is no customary set netting occurs at this time, however Ngati Waewae may wish to adopt this method in the future. Ngati Waewae are conscious that any new management measures may impact upon customary development rights.

⇒Ngati Waewae suggested that increased public awareness and more compliance resources are needed for the West Coast to ensure that any new management measures are effective.

⇒Ngati Waewae state there is a need to address protocol issues with regard to dead dolphins that are sent to Massey University for autopsy.

⇒Ngati Waewae are concerned about the impact of land-based activities on Hector's dolphins and the marine environment. Therefore, the Hector's dolphin TMP needs to advocate appropriate land management practices, and should be incorporated into the West Coast Coastal Management Plan.

11.2.5.3. NGOs, Environmental Interest Groups – Westport 8th of May

⇒The NGOs were represented by Hector for Hector's and Forest & Bird (West Coast branch).

⇒NGOs suggest the numbers of Hector's dolphins appears to have been constant for several years in some areas, and the level of dolphin bycatch appears to have decreased (Hector for Hector's). However the number of reported dolphin mortalities may be an underestimate of the true number of dolphins killed.

⇒NGOs believe that amateur set netting is the major threat to hector's dolphins, not commercial set netting. NGOs believe set netting is an undesirable practice and poses an unacceptable risk to Hector's dolphins. Consequently, these groups favour prohibiting amateur set nets throughout the west coast over the summer.

⇒NGOs note the prevailing sea conditions along the coast causes recreational fishers in some areas (particularly in Buller Bay) to illegally set their nets such as staking one end of their net directly into the beach and stranding of the net at low tide.

⇒NGOs note the use of these nets poses a very significant risk to dolphin entanglement as the nets are set 90^{o} from shore within the surf zone and this is an area where dolphins are frequently observed during the summer months.

⇒NGOs believe that it should be mandatory for fishers to remain with their set nets, and that overnight fishing should be prohibited.

⇒NGOs believe better education, publicity and strict enforcement of the amateur set net fishing regulations is necessary to stop the use of these nets.

11.2.5.4. Recreational – Hokitika 9th of May

⇒Recreational fishers were represented by the Greymouth Fishing Club, South Westland Marine Consultative Group and the Hokitika Angling Club.

⇒According to recreational fishers, the Hector's dolphin problem is due to recreational set nets. This problem would be largely addressed with a summer ban on all recreational set nets and compulsory attendance with nets at all other times of the year, in the core abundance area. The set netting ban should not include lagoons/rivers.

⇒Recreational fishers note that although Hector's dolphins are seen throughout the year in the Greymouth, Hokitika, and Haast areas, they are more typically seen in summer than winter. Some participants believed that hector's dolphin population was either stable or was greater than in the past with some large pods (>20 animals) spotted, but this may be because the participants are more observant

⇒Recreational fishers note that not a lot of recreational set netting occurs on the West Coast (especially the Greymouth and Hokitika areas) compared to other regions – due to the nature of the surf and/or weather conditions (often rough, large surf).

⇒Recreational fishers note that recreational set netting mostly done by non-local fishers during the summer period. Set netting outside summer is negligible. There has been an increase in recreational set netting in the Jacksons Bay / Haast area as the area is becoming more popular with visitors.

⇒According to recreational fishers, visitors come to the region and either fish intensively or find a set net at the bach and take the opportunity to use it. The problem with recreational set nets is due to non-local fishers being unfamiliar with local conditions ie, set nets in unsuitable areas or unable to retrieve a net because the sea turns rough.

⇒Recreational fishers state that limited set netting done by local fishers (considered to be negligible in some areas). There is some evidence of illegal set netting practices along the coast (Buller Bay)– nets are staked using railway sleepers buried into the sand, and nets are stranded at low tide. These nets are continuously fished over many days (including overnight). The likelihood of getting caught are perceived to be consideration should be given to banning overnight setting of nets.

⇒Recreational fishers suggest the core abundance area may need to extend further south, to include Knight's Point and Ships Creek, and also include Jacksons Bay.

⇒According to recreational fishers, there is a strong need to increase public awareness (particularly school children) about dangers of set nets on Hector's dolphins and the need to report any fishing-related incidents.

11.2.5.5. Commercial – Greymouth 15th of May

⇒Commercial fishers were represented by Challenger Finfish Management Company, SeaFIC and several set net and trawl fishers.

⇒Commercial fishers report there has been a large decrease in commercial set netting activity along the west coast in recent years and that their activities do not pose a threat to the WCSI sub-population.

⇒Commercial fishers note they operate in a way that prevents dolphin entanglement including the use of various fishing practices under a voluntary set net code of practice.

⇒All commercial fishers spoken to state that regularly encounter Hector's dolphins on a daily basis when fishing and that they have not caught dolphins.

⇒Commercial trawl fishers state the type of trawl net used when fishing to close (ie, low headline, no wing doors, small sweep area, and slow two speed) does not pose a threat to Hector's dolphins. Furthermore, Hector's dolphins are aware of trawl fishing gear and avoid it.

⇒Commercial fishers state that most dolphins are found in 10 -20 metres, 2-3 nm from shore. It is rare to see Hector's dolphins >6 nm from shore.

⇒Most commercial fishers suggest that Hector's dolphin abundance has remained the same, if not increased, compared to previous years, and that the 2001 population estimate is too low.

⇒Commercial fishers state that not many Hector's dolphins are seen between Heaphy and Kaurangi. Therefore, they suggest the core abundance area should not extend this far north. However some are seen partially up some rivers, and in Fiordland.

11.3. Appendix 3 – Potential Biological Removal

The Potential Biological Removal (PBR) level is the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.[168] The PBR is calculated by the following formula:

- $PBR = N_{MIN} \frac{1}{2} R_{MAX} F_R$

Where:

- N_{MIN} = the minimum population estimate of the stock;
- $\frac{1}{2} R_{MAX}$ = one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size; and
- F_R = a recovery factor between 0.1 and 1.0[169]

The term Optimum Sustainable Population means, with respect to any population stock, the number of animals that will result in the maximum productivity (Maximum Net Productivity Level – MNPL) of the species, population, subpopulation or stock in question, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent part. For marine mammals, this level is thought to be between 50% and 85% of carrying capacity (K) and is more likely to be at the lower end of that range.[170]

The minimum population estimate of the stock (N_{MIN}) is defined as the 20th percentile of a log-normal distribution based on an estimate of the number of animals in the stock. This is equivalent to the lower limit of a 60% 2-tailed confidence interval.[171]

The default maximum theoretical productivity rate is 0.04 for cetaceans. This value is used as a default in the absence of species specific information. When data are available on the productivity rate, they should be used.

The recovery factor is intended to compensate for uncertainty and possible unknown estimation errors. A recovery factor of 0.1 often is the default used for endangered stocks of marine mammals.[3] A recovery factor of 0.5 has been suggested for stocks of indeterminate status.[172]

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[168] The PBR is a technique that was developed by the US National Marine Fisheries Service in response to the US Marine Mammal Protection Act. The PBR was never intended to be used to close a fishery; rather, it provides a trigger value, after which a Take Reduction Team was convened to identify ways to reduce the number of human-caused marine mammal mortalities to a level below the calculated PBR value.

[169] Wade, P.R. 1998. Calculating limits to the allowable human-caused mortality of cetaceans and pinnipeds. Marine Mammal Science 14(1): 1-37.

[170] Taylor, B.L. and D.P. DeMaster. 1993. Implications of non-linear density dependence. Marine Mammal Science 9: 360-371.

[171] Barlow, J., S.L. Swartz, T.C. Eagle and P. Wade. 1995. U.S. marine mammal stock assessments: Guidelines for preparation, background, and a summary of the 1995 assessments. NOAA Technical Memorandum NMFS-OPR-95-6. September 1995.

[172] Wade, Paul R. and Robyn P. Angliss. 1997. Report of the GAMMS workshop: April 3-5, 1996, Seattle, Washington, NOAA Technical Memorandum NMFS-OPR-12.

The MNPL goal of the PBR approach was developed to achieve the goals given in the US Marine Mammal Protection Act, *i.e.,* to maintain the population above its maximum net productivity level. This level will be at 50% – 85% of carrying capacity.

The Recovery-Rate goal allows a population known to be at a low level relative to its pre-exploitation level to recover at a rate close to its maximum as possible. In this case, a recovery factor (F_R) of 0.15 will achieve the goal of not delaying the time to recovery by more than 10% with 95% probability.

Earlier studies suggested an R_{MAX} of about 1.8. The Hector's dolphin Technical Working Group meeting of 31 August 2006 suggested that an R_{MAX} of 3.4% is appropriate based on the modelling work of Davies and Gilbert (2003).[173] MFish and DOC propose to have the Hector's dolphin PBR analysis independently reviewed to resolve the issue around which R_{MAX} is most appropriate for Hector's dolphins[174].

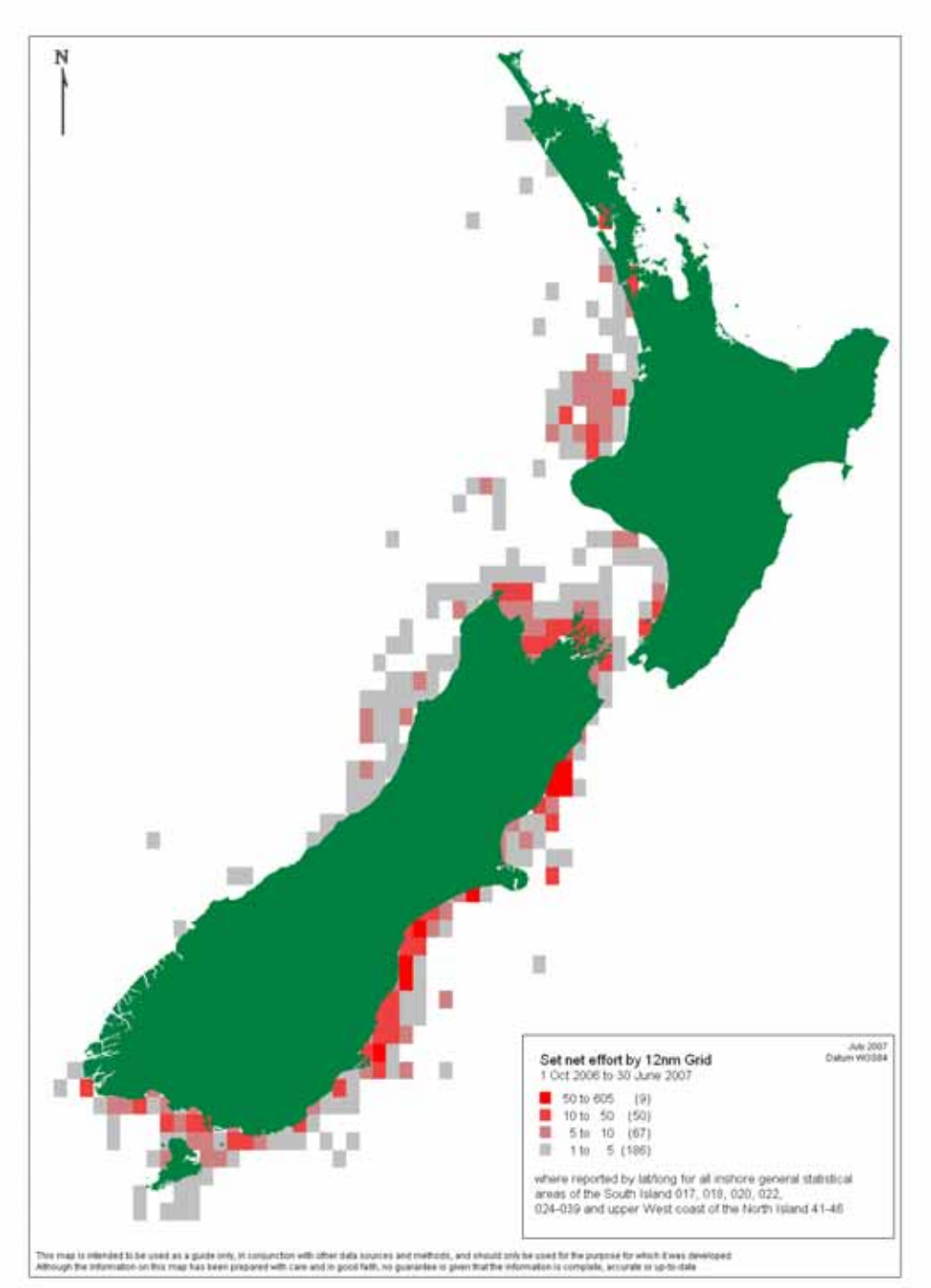
As applied here, values calculated by the PBR approach should be seen as indicative only and should not be taken as absolute values of maximum allowable Hector's dolphin human caused mortality.

[173] Davies, N.M. and D.J. Gilbert. 2003. A risk analysis of an endangered dolphin subspecies using a temporal-spatial age-structured model. Final report for MFish Research Project MOF2002/03D, Objectives 1, 2, & 3 (revised). November 2003.

[174] As part of this review, it is proposed that the recovery factor chosen for all of the Hector's dolphin populations is also reviewed for appropriateness.

11.4. Appendix 4 – Fisheries characterisation (general)

The location of commercial set net effort at a finer spatial scale than statistical area has not been available from the Fisheries Information System until 1 October 2006 (when a new reporting requirement was introduced). This more detailed information is helpful in assessing how set net effort is distributed, both along shore and offshore. A map illustrating set net effort from 1 October 2006 to 30 June 2007 is below. It should be noted that this map is not representative of year round fishing effort because data on set net effort from 1 July to 1 October is excluded from the data set.



Map 26 Commercial set net effort (number of events) around New Zealand's coastline (12nm grid)

11.4.1. East coast of the South Island

11.4.1.1. Characterisation of the amateur set net fishery

Set netting is an important amateur fishing practice within the area where the ECSI Hector's dolphin population is found. After blue cod, flatfish and butterfish are the most sought after finfish species by amateurs along the ECSI. During the 2000-01 national marine recreational fishing survey diarists harvesting blue cod numbered 162, those harvesting flatfish numbered 50 and those harvesting butterfish numbered 38. Set netting is the main fishing method used by amateur fishers to catch small sharks, flatfish and butterfish.

Amateur set netters fish for small sharks (elephant fish, rig, school shark and spiny dogfish) close inshore in open beach areas during summer. Butterfish (greenbone) is set netted all year in kelp/reef areas close inshore. Set netting for flatfish occurs in inner harbours and bays. There is set netting for moki on open mud and sandy substrates adjacent to submerged rocks and cliff faces.

Amateur fishers generally favour set netting in the warmer summer months, particularly fishers who recreationally fish away from where they live (for example, holiday makers). Set netting at any time of the year is favoured by local sustenance fishers who have retired to, or have holiday houses, near the areas they fish. For these fishers being able to set net is an important part of their way of life and for maintaining relationships with family and friends by sharing experiences and catch.

11.4.1.2. Characterisation of the commercial set net fishery

Fishers use nets up to 800 m long to fish for elephant fish and rig mainly in waters less than 450m (1-20 nm offshore) deep. Spiny dogfish and school shark are mainly caught between 10 m water depth (~1 nm) to 100m water depth (~5-20 nm except the Kaikoura Canyon). Butterfish (greenbone), moki and trumpeter are targeted by commercial fishers with short (up to 60 m) nets in kelp/reef areas close inshore. Commercial set netting generally takes place during summer months from October to March.

Significant targeting of small shark stocks of rig (SPO 3 and part of SPO 7) and school shark (SCH 3 and part of SPO 7) takes place by commercial set netters in the area associated with the ECSI Hector's dolphin population. Commercial set netters also target smaller amounts of elephant fish (ELE 3), spiny dogfish (SPD 3) and butterfish (BUT 3).

Most SPO 3 and SPO 7 catches are taken by the method of set netting (ie, 75%) and the remainder of catch is mostly taken by bottom trawling. In the last fishing year (2005-06) about around 220t of SPO 3 was caught by commercial set netters, with Timaru set netters catching around half of the catch. About 80 tonnes of SPO 7 and 20 tonnes of SCH 7 was caught by set netters during the last fishing year (2005-06) mainly in Tasman and Golden Bays.

About 45% of SCH 3 catches are taken by set nets (with bottom trawl accounting for a similar level of catches). The set net catch of SCH 3 is around 170 tonnes and the catch is spread along the coast. SCH 3 is mainly caught as bycatch of the SPO 3 set net fishery. A small set net fishery for SPD 3 follows the migration of the fish up the ECSI. The catch from the set net fishery for ELE 3 is usually less than 50 tonnes. Moki and trumpeter are caught as bycatch of the target butterfish fishery, but are also targeted.

11.4.1.3. Characterisation of the trawl fishery

Trawl fishers mainly target flatfish, red cod and tarakihi off the ECSI. Flatfish is mainly targeted in water depths less than 30 m using a low headline height net. Red cod is mainly targeted in water depths between 20 and 50 m and tarakihi between 50 and 100 m.

11.4.2. South coast of the South Island

11.4.2.1. Characterisation of the amateur set net fishery

Amateur set netting is practiced in Te Waewae Bay. Amateur set netting in the bay is confined to within 500 m off the shore for small sharks (such as elephant fish and rig) during summer and reef fish (such as butterfish and trumpeter). Fishing mainly takes place over summer and is primarily confined to a limited number of local people who fish on the weekends. There is a campground at Monkey Island, which is located on the eastern side of Te Waewae Bay. Visitors from outside the local area stay at the campground, particularly over the Christmas/New Year holiday, which leads to increased fishing effort (including set netting).

At the eastern end from Monkey Island to Pahia Point the rocky area is fished for reef fish. At the western end near the Waikoau River mouth and back along the beach to the eastern end set netters target small sharks. Some amateur fishers set their nets at low tide and retrieve them 13 hours later at low tide again. There is a considerable amount of recreational set netting/dragnetting for flounder in the lagoon of the Waiau River that flows into Te Waewae Bay.

11.4.2.2. Characterisation of the commercial set net fishery

In the Hector's dolphin population area on the SCSI, there are around 9 commercial set netters who use nets up to 800 m long to fish for elephant fish and rig mainly in waters less than 50 m (1-20 nm offshore) deep. Spiny dogfish and school shark are mainly caught between 10 m (~1nm) to 100 m (~ 5-20 nm) water depth. Butterfish (greenbone), moki and trumpeter are targeted by commercial fishers with short (up to 60 m) nets in kelp/reef areas close inshore. Commercial set netting generally takes place during summer months from October to March except for butterfish that generally occurs in the winter months in Foveaux Strait and around Stewart Island.

Significant targeting of small shark stocks of rig (SPO 3) and school shark (SCH 5) takes place by commercial set netters in the area associated with the SCSI Hector's dolphin population. Commercial set netters also target smaller amounts of elephant fish (ELE 5), spiny dogfish (SPD 5) and butterfish (BUT 5).

Most SPO 3 catch is taken by the method of set netting (ie, 75%) and the remainder of catch is mostly taken by bottom trawling. In the last fishing year (2005-06) about around 70 tonnes of SPO 3 was caught by commercial set netters.

About 90% of SCH 5 catches are taken by set nets (with bottom trawl accounting for 10% of catches). The set net catch of SCH 3 is around 650 tonnes and the catch is spread along the south coast and Stewart Island. A small set net fishery for SPD 3 follows the migration of the fish up the ECSI. The catch from the set net fishery for ELE 3 is usually less than 5 tonnes. The BUT catch by commercial set netters is around 40 tonnes and mostly taken by set netting. Moki and trumpeter are also caught as bycatch of the targeting butterfish, but are also targeted.

11.4.2.3. Characterisation of the commercial trawl fishery

Trawl fishers mainly target flatfish and stargazer off the SCSI. Flatfish is mainly targeted in water depths less than 30m using a low headline height net. Stargazer is generally targeted in deeper water outside 50m.

11.4.3. West coast of the South Island

11.4.3.1. Characterisation of the amateur set net fishery

Limited amateur set netting occurs along the WCSI due to the exposed nature of the inshore environment. Often seas are rough for long periods of time that generally precludes fishers from using set nets. There are occasional long periods of calm weather, particular during the summer, when fishers are able to use set nets to catch fish. Main target species are elephantfish, tarakihi, and rig. Most set netting occurs in close proximity to towns and settlements.

MFish understands that most amateur set netting along the WCSI is undertaken by visitors to the area during the summer months. The WCSI is becoming an increasingly popular holiday destination and the number of visitors to the coast to fish has increased (particularly in areas around Jacksons Bay, Granity, Hector). These visitors will often take advantage of the calm weather during the summer and set their nets of a regular basis during their stay. Local fishers report that many of the problems with amateur set nets is due to visitors being unfamiliar with local conditions, and this can lead to loss of nets or longer than anticipated soak times as fishers are unable to retrieve their nets when seas become rough. Most set nets are generally set directly from shore with few nets set from boats due to the exposed nature of the coast.

There is anecdotal information to suggest that some fishers illegally set nets due to either local sea conditions or perceive the risk of being caught is low. These nets are staked into the ground (often using railways sleepers permanently buried into the sand) and/or stranded at low tide. Often these nets are continuously fished over many days (including overnight).

11.4.3.2. Characterisation of the commercial set net fishery

Significant target set net fisheries exist for rig (SPO 7) and school shark (SCH 7) within inshore waters along the West Coast and top of the South Island.

Most rig catches are taken by the method of set netting (ie, 75%), with most of these caught as a target species (about 95%). The remainder of catches is taken by bottom trawling. In the last fishing year (2005-06) about 135 tonnes of rig were caught within the target set net fishery. The set net method mainly targets larger rig, particularly females (the bottom trawl fishery takes smaller rig that are primarily males).

About 40% of all school shark catches are taken by set nets (with bottom trawl accounting for similar level of catches). In the last fishing year (2005-06) about 65 tonnes of school shark were caught within the target set net fishery.

The majority of rig catches (about 60%) within the target set net fishery are taken from Golden and Tasman Bays, with most of the remaining catches being taken in the southern Cape Foulwind and Awarua Point region (ie, 033 to 034).

The majority of school shark catches (about 75%) within the target set net fishery is taken in the northern Cape Foulwind and Cape Farewell area (ie, 035 and 036). The remaining catches are mainly taken from Golden and Tasman Bays (038).

Currently, there are about 10-12 commercial set net fishers that target either rig or school shark, or both, within FMA 7; 4-5 of these fishers reside on the west coast and restrict their fishing activities to their local areas, while the remaining fishers predominantly fish in Golden and Tasman Bays. Information the size of rig and school shark catches is shown in Figure 5 below.

Most set netting for rig occurs within relatively shallow inshore waters, with catches mainly taken during

spring and summer, and tapering off between March and August. School shark catches are usually taken in deeper waters, although some catches are taken close to shore in some areas. There appears to be little seasonality in target school shark set net catches although catches tend to be higher between January and April.

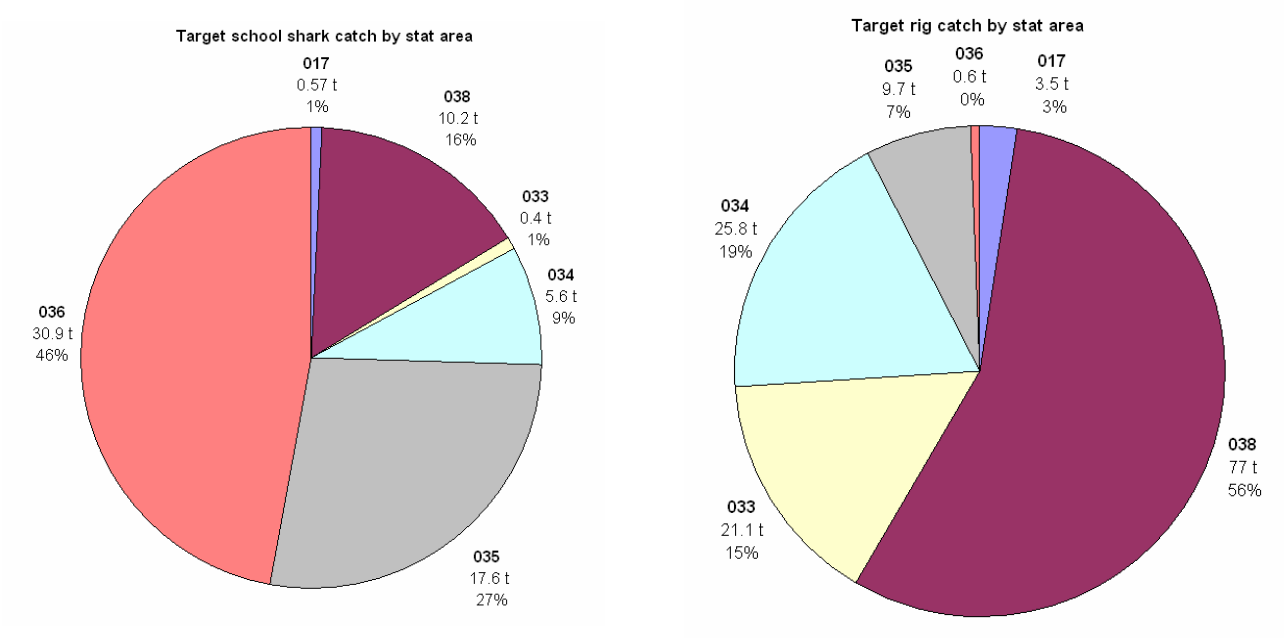


Figure 5: Commercial target rig and school catches (t) by set net in Fisheries Statistical Areas 017, 032-036, 038 for the 2005-06 fishing year

11.4.3.3. Characterisation of the inshore trawl fishery

The WCSI inshore trawl fisheries are managed within the wider Quota Management Area (QMA) 7 and includes the top of the South Island. All QMA 7 quota owners are entitled to fish in all areas of the QMA (including the WCSI) subject to specified area closures and restrictions.

Commercial trawling generally occurs throughout the WCSI, but the location of individual trawling activity within the particular area cannot be accurately determined from existing MFish data. Some fisheries are concentrated in one or two statistical areas, while others are fairly evenly distributed throughout the wider management area.

The majority of inshore trawlers use bottom trawl gear to target a wide range of species. The main WCSI trawl fisheries within inshore areas where Hector's dolphins are found (ie, 4-6 nm from shore) are flatfish, red cod, tarakihi, and elephantfish. Commercial trawling occurs throughout the WCSI but most fishing effort is concentrated between Westport and Hokitika (034 and 035).

Trawling can occur relatively close to shore dependent on species targeted and water depth relative to shore. For example, flatfish is mainly targeted in water depths less than 30 m using a low headline height net. Red cod is mainly targeted in water depths between 20 and 50 m and tarakihi between 50 and 100 m.

11.4.4. Analysis of selected commercial set net and trawl fisheries potentially affected by the measures proposed

Data was sourced from the Fisheries Information System (FIS). This data relates to commercial fishing

only. Data from the past 3 fishing years (2003/2004, 2004/2005 and 2005/2006) was analysed so that any trends in set netting effort could be identified.

The following information from FIS was examined:

⇒Data by fishing method in selected statistical areas by selected species

⇒Data on the number of Catch Effort Landing Return (CELR) records and forms by statistical area for selected species

⇒Data on the fishers (clients) fishing in a certain statistical area using a specific fishing method targeting specific species

⇒Vessel data for the fishers (clients) identified in c)

There are some limitations with this approach:

⇒Details of catch quantities recorded on CELR forms are an estimate only. This means it is not possible to say how much "actual catch" from each QMA came from particular statistical areas.

⇒It is difficult to match estimated quantities recorded on CELR forms with actual quantities on Monthly Harvest Return (MHR) forms as MHR report at a stock level not a statistical area level

Port prices for the relevant fish stock and fishing year are used to estimate the value of the estimated catch on the CELR forms. Port prices are calculated by surveying Licensed Fish Receivers (LFRs) to see what they are paying for each species. The following limitations are known about port prices:

⇒Survey replies may be skewed because industry know they are used to set cost recovery levies

⇒Does not differentiate harvest method – fish caught by one method over another may command a price premium

⇒Ownership structure can influence port price

⇒Port price does not reflect price differential for different grades of fish

11.4.4.1. Analysis of the Kaipara Harbour set net fishery using MFish internal data

This section sets out the relevant internal data that relates to set netting in the Kaipara Harbour which could be used to inform management advice on options proposed in the draft Hector's dolphin TMP.

Analysis

The analysis examines commercial set netting in the Kaipara Harbour to provide an assessment of the extent of this type of activity and the value associated with it.

Note that the indirect and socio-economic impacts of the options proposed in the draft Hector's dolphin TMP and their relevance to the Kaipara Harbour will be examined by an external research provider

Data used

The Kaipara Harbour is statistical area 044 and this analysis focuses on the CELR form data that is attributed to this area.

Port prices for the relevant fish stock and fishing year are used to estimate the value of the estimated catch on the CELR forms.

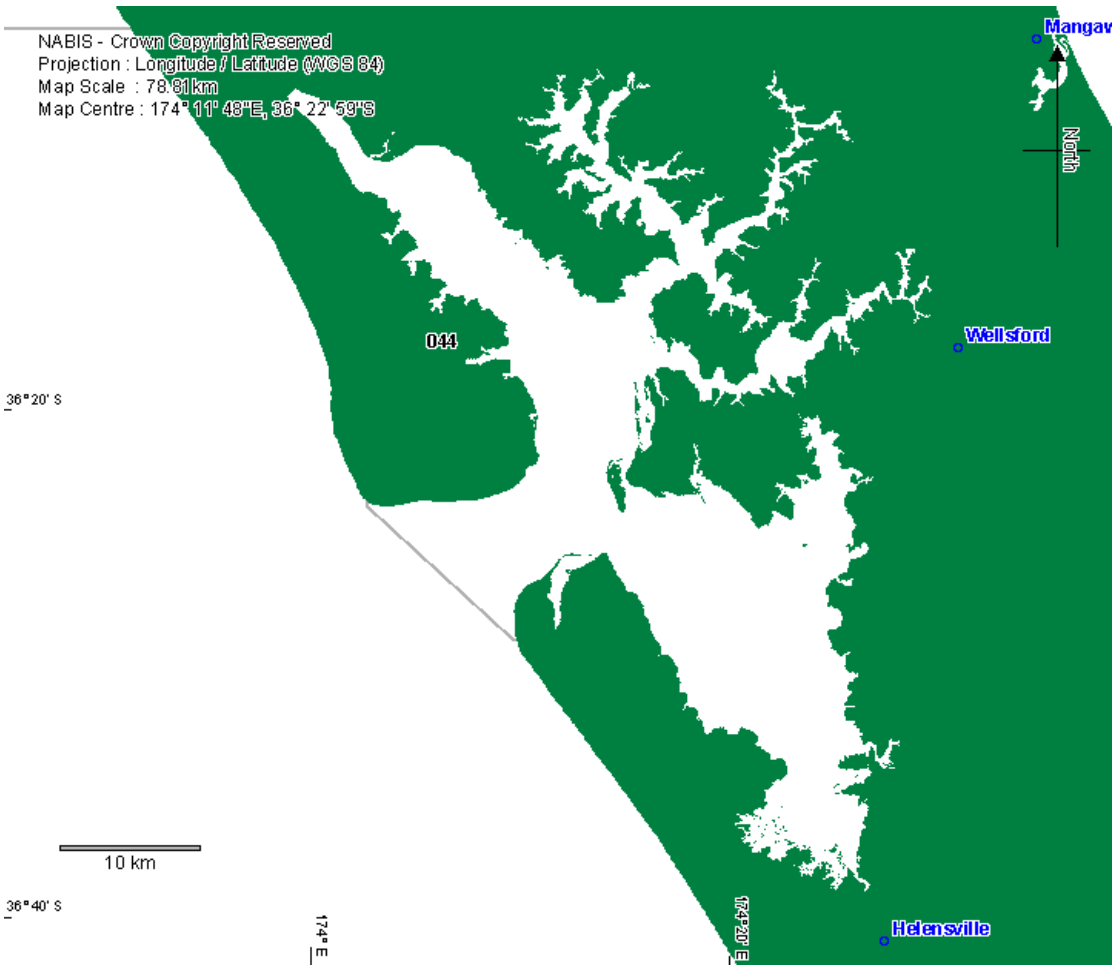
Table 1: Port prices for the species being targeted by set netters in statistical area 044 over the past 3 fishing years

Species	2003/2004 Port Price ($/kg)	2004/2005 Port Price ($/kg)	2005/2006 Port Price ($/kg)
Flatfish (FLA)*	4.7500	5.2609	3.3500
Grey mullet (GMU)	2.6741	2.4114	2.2300
Kahawai (KAH)	0.4321	0.8125	0.4300
Spiny dogfish (SPD)	0.4980	0.4351	0.4700
Rig (SPO)	0.8886	3.5790	3.0000
Trevally (TRE)	0.8886	0.6700	0.8600
Yellow-eyed mullet (YEM)	2.1672	2.2505	2.4600

*Includes yellow-belly flounder (YBF)

Commercial Fishery

Danish seining and trawling are banned in the Kaipara Harbour so set netting is the main commercial fishing activity.



Map 27

The majority of Kaipara set netting vessels are based in the Kaipara Harbour and surrounding area with a few vessels operating out of Auckland, Thames and Whangarei. This would suggest that most of the vessels carrying out set netting in the Kaipara Harbour are local to the area.

Therefore, any ban or limitations placed on set netting may have a higher impact on local fishers than those based outside of the Kaipara Harbour.

The data from the CELR forms details the extent of set netting in Kaipara Harbour including the key target species of set netters (Table 2).

Table 2: Species being targeted by set netters in statistical area 044 over the past 3 fishing years

Target Species	Number of Fishers	% of Total Catch
Flatfish (FLA)*	40	23.50%
Grey mullet (GMU)	26	27.00%
Kahawai (KAH)	3	5.00%
Spiny dogfish (SPD)	2	0.12%
Rig (SPO)	22	15.00%
Trevally (TRE)	5	2.80%
Yellow-belly flounder (YBF)	6	26.50%
Yellow-eyed mullet (YEM)	2	0.08%

*could also include YBF

It is important to note that not all fishers report the species they are targeting as they are set netting for a mix of species rather than one specific target.

Using the data for the 8 target species above, the total extent of the set net fishery in the Kaipara Harbour (statistical area 044) can be estimated.

Table 3: Data on the use of set nets by commerical fishers in statistical area 044 for all target species over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)
2003/04	367,142	$1,283,296	4,572,695
2004/05	396,852	$1,449,222	4,584,642
2005/06	257,419	$720,343	3,808,812
Total	**1,021,413**	**$3,452,861**	**12,966,149**

Table 3 shows that the estimated catch over the past 3 fishing years by set netters in the Kaipara Harbour has been 1021 tonnes of fish worth an estimated $3.45 million.

There has been a significant decrease in the estimated catch between 2004/2005 and 2005/2006. The reasons for this decrease need to be investigated further to see what has caused the fishers/vessels to leave the fishery.

Species specific information follows:

Flatfish (FLA) and Yellow-belly flounder (YBF)

Flatfish (FLA) consists of eight species including yellow-belly flounder (YBF). Although for Quota Management System (QMS) purposes yellow-belly flounder is included in the flatfish stock code, given its importance to fishers in the Kaipara Harbour it is often recorded as a target species in its own right (Tables 4 & 5).

Table 4: Data on the use of set nets by commerical fishers in statistical area 044 targeting flatfish (FLA) over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Port Price ($ per kg)	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)	Total Number of Records	Number of Clients	Number of Vessels
2003/04	4.7500	103,773	$492,922	1325833.5	1,740	45	48
2004/05	5.2609	83,650	$440,074	1069110	1,480	44	47
2005/06	3.3500	54,144	$181,382	843527	1,153	38	40
	Total	**241,567**	**$1,114,378**	**3,238,471**			

Table 5: Data on the use of set nets by commerical fishers in statistical area 044 targeting yellow-belly founder (YBF) over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Port Price ($ per kg)	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)	Total Number of Records	Number of Clients	Number of Vessels
2003/04	4.7500	105,876	$502,911	1921002	2,153	14	18
2004/05	5.2609	90,537	$476,306	1700892	2,000	13	16
2005/06	3.3500	74,211	$248,607	1829511	2,107	14	16
	Total	**270,624**	**$1,227,824**	**5,451,405**			

Flatfish and yellow-belly flounder together account for 512 tonnes or 50% of the total estimated catch by set netters in the Kaipara Harbour over the past three fishing years. The estimated catch has an estimated value of $2.34 million. This makes it the largest set net fishery in the Kaipara Harbour.

The estimated catch of both flatfish and yellow-belly flounder has decreased over the past three fishing years. Fishing effort has decreased for flatfish and this may explain the decrease in estimated catch. In the yellow-belly flounder fishery, fishing effort has remained constant but catch has decreased.

Grey mullet (GMU)

Commercial fishing for grey mullet occurs predominantly in the Auckland Fisheries Management Area (GMU1) which includes the Kaipara Harbour.

Table 6: Data on the use of set nets by commerical fishers in statistical area 044 targeting grey mullet (GMU) over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Port Price ($ per kg)	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)	Total Number of Records	Number of Clients	Number of Vessels
2003/04	2.6741	85,508	$228,657	306337	556	36	39
2004/05	2.4114	109,901	$265,015	441890	866	36	41
2005/06	2.2300	80,593	$179,722	300424	616	27	30
	Total	**276,002**	**$673,395**	**1,048,651**			

The estimated catch of grey mullet was 276 tonnes. This is 27% of the total estimated catch for the Kaipara Harbour (statistical area 044) over the past three fishing years. The estimated catch has an estimated value of $673,395.

There was an increase in fishing effort during the 2004/2005 fishing year causing an increase in catch. Fishing effort and catch levels were at a similar level in both the 2003/2004 and 2005/2006 fishing years.

Rig (SPO)

Rig are caught in coastal waters throughout New Zealand. Most of the catch is taken from water less than 50 m deep during spring and summer, when rig aggregate inshore. The most important bottom set net fisheries are at 90-Mile Beach, Kaipara Harbour, Manukau Harbour, South Taranaki Bight, Tasman/Golden Bay, Canterbury Bight, Kaikoura and Hauraki Gulf.

Table 7: Data on the use of set nets by commerical fishers in statistical area 044 targeting kahawai (KAH) over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Port Price	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)	Total Number of Records	Number of Clients	Number of Vessels
2003/04	0.4321	11,302	$4,884	319590	458	29	31
2004/05	0.8125	29,772	$24,190	419390	655	34	39
2005/06	0.4300	9,106	$3,916	249940	381	23	27
	Total	**50,180**	**$32,989**	**988,920**			

The estimated catch of grey mullet was 153 tonnes. This is 15% of the total estimated catch for the Kaipara Harbour (statistical area 044) over the past three fishing years. The estimated catch has an estimated value of $380,750.

Combined flatfish (including yellow-belly flounder), grey mullet and rig accounted for 941 tonnes or 92% of the estimated catch for commercial set netters in the Kaipara Harbour over the past three fishing years.

Kahawai (KAH), Spiny Dogfish (SPD), Trevally (TRE) and Yellow-Eyed Mullet (YEM)

Commercial set netters have also targeted kahawai (KAH), spiny dogfish (SPD), trevally (TRE) and yellow-eyed mullet (YEM) in the Kaipara Harbour over the past 3 fishing years.

Table 8: Data on the use of set nets by commerical fishers in statistical area 044 targeting kahawai (KAH), spiny dogfish (SPD), trevally (TRE) and yellow-eyed mullet (YEM) over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)	Total Number of Records	Number of Clients	Number of Vessels
2003/04	17,132	$10,064	439421	634	53	57
2004/05	48,126	$36,487	660920	1015	66	74
2005/06	14,915	$9,963	407860	608	48	55
Total	**80,173**	**$56,514**	**1,508,201**			

These fisheries are low value fisheries and the estimated catch combined was only 80 tonnes. This is 8% of the total estimated catch for the Kaipara Harbour (statistical area 044) over the past three fishing years. The estimated catch has an estimated value of $56,514.

There was no catch report for spiny dogfish and yellow-eyed mullet in the Kaipara Harbour (statistical area 044) during the 2003/2004 and 2004/2005 fishing years by commercial set netters.

11.4.4.2. Analysis of Manukau Harbour internal data for the Dolphin TMP

Introduction

This paper sets out the relevant internal data that relates to set netting in the Manukau Harbour which could be used to inform management advice in support of the Dolphin TMP.

This data relates to commercial fishing only.

Analysis

Data was sourced from the Fisheries Information System (FIS). Data from the past 3 fishing years (2003/2004, 2004/2005 and 2005/2006) was analysed so that any trends in set netting effort could be identified.

The analysis examines commercial set netting in the Manukau Harbour to provide an assessment of the extent of this type of activity and the value associated with it.

Note that the indirect and socio-economic impacts of the options proposed in the Dolphin TMP and their relevance to the Manukau Harbour will be examined by an external research provider.

Data used

The Manukau Harbour is statistical area 043 and this analysis focuses on the Catch Effort Landing Return (CELR) form data that is attributed to this area.

There are some limitations with this approach:

⇒Details of catch quantities recorded on CELR forms are an estimate only. This means it is not possible to say how much "actual catch" from FMA1 came from statistical area 043.

⇒It is difficult to match estimated quantities recorded on CELR forms with actual quantities on Monthly Harvest Return (MHR) forms as MHR report at a stock level not a statistical area level

Port prices for the relevant fish stock and fishing year are used to estimate the value of the estimated catch on the CELR forms.

Table 1: Port prices for the species being targeted by set netters in statistical area 043 over the past 3 fishing years

Species	2003/2004 Port Price ($/kg)	2004/2005 Port Price ($/kg)	2005/2006 Port Price ($/kg)
Flatfish (FLA)	4.7500	5.2609	3.3500
Grey mullet (GMU)	2.6741	2.4114	2.2300
Kahawai (KAH)	0.4321	0.8125	0.4300
Rig (SPO)	0.8886	3.5790	3.0000
Trevally (TRE)	0.8886	0.6700	0.8600
Yellow-eyed mullet (YEM)	2.1672	2.2505	2.4600

Port prices are calculated by surveying Licensed Fish Receivers (LFRs) to see what they are paying for each species. The following limitations are known about port prices:

⇒Survey replies may be skewed because industry know they are used to set cost recovery levies

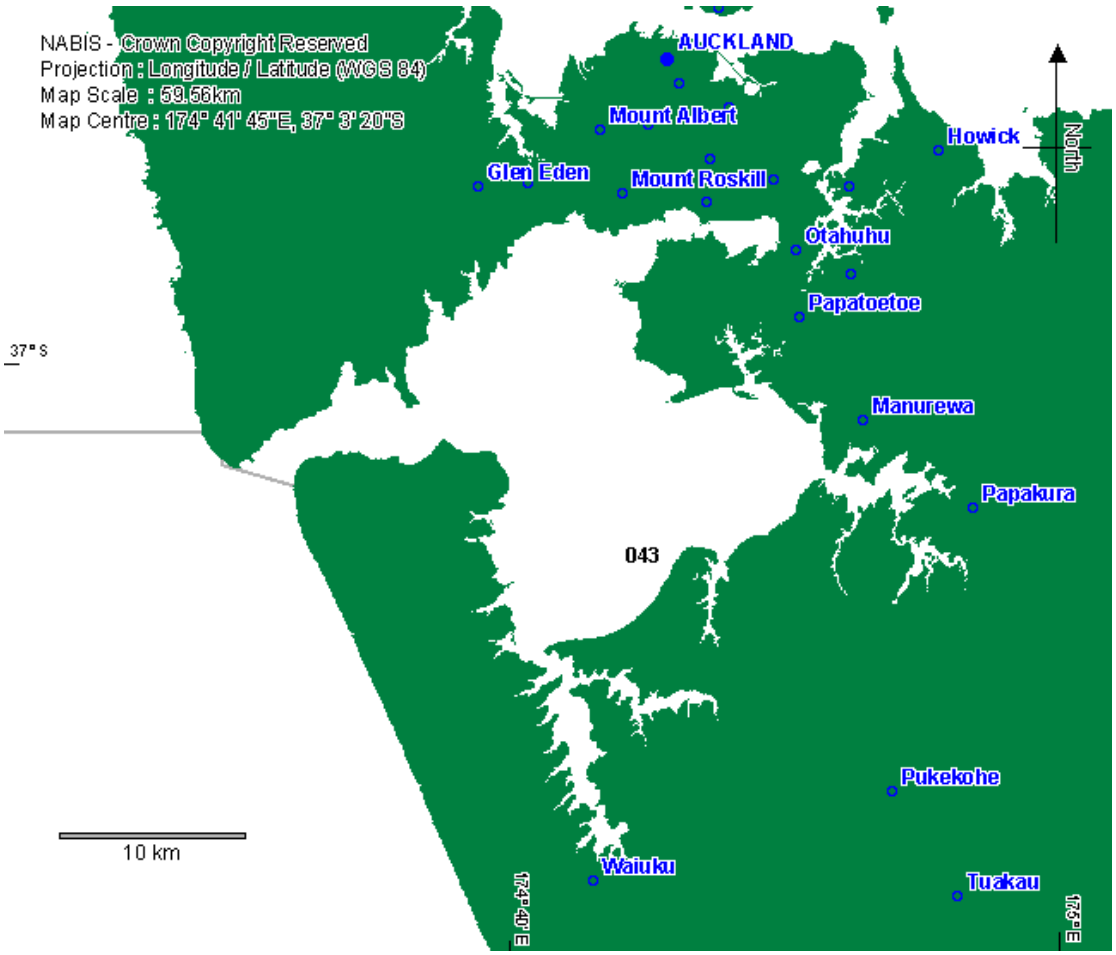
⇒Does not differentiate harvest method – fish caught by one method over another may command a price premium

⇒Ownership structure can influence port price

⇒Does not reflect price differential for different grades of fish

Commercial Fishery

Danish seining and trawling are banned in the Manukau Harbour so set netting is the main commercial fishing activity.



Map 28

The majority of Manukau set net vessels are based in the Manukau Harbour and Auckland with a few vessels operating out of the Kaipara Harbour, Raglan and Whangarei. This would suggest that most of the vessels carrying out set netting in the Manukau Harbour are local to the area.

Therefore, any ban or limitations placed on set netting may have a higher impact on local fishers than those based outside of the Manukau Harbour.

The data from the CELR forms details the extent of set netting in Manukau Harbour including the key target species of set netters (Table 2).

Table 2: Species being targeted by set netters in statistical area 043 over the past 3 fishing years

Target Species	Number of Fishers	% of Total Catch
Flatfish (FLA)	37	36.14%
Grey mullet (GMU)	24	36.24%
Kahawai (KAH)	32	5.24%
Rig (SPO)	29	16.66%
Trevally (TRE)	29	4.88%
Yellow-eyed mullet (YEM)	15	0.84%

It is important to note that not all fishers report the species they are targeting as they are set netting for a mix of species rather than one specific target.

Using the data for the 6 target species above, the total extent of the set net fishery in the Manukau Harbour (statistical area 043) can be estimated.

Table 3: Data on the use of set nets by commerical fishers in statistical area 043 for all target species over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)
2003/04	194,002	$552,070	3,010,271
2004/05	215,904	$754,719	2,535,432
2005/06	170,525	$438,140	2,426,737
Total	**580,431**	**$1,744,930**	**7,972,440**

Table 3 shows that the estimated catch over the past 3 fishing years by set netters in the Manukau Harbour has been 580 tonnes of fish worth an estimated $1.74 million.

There has been a significant decrease in the estimated catch between 2004/2005 and 2005/2006. The reasons for this decrease need to be investigated further to see what has caused the fishers/vessels to leave the fishery.

Species specific information follows:

Flatfish (FLA)

Flatfish (FLA) consists of eight species of flatfish. Yellow-belly flounder (YBF) is one of these eight species in the flatfish stock code and the Manukau Harbour is regarded as an area where YBF are easily caught.

Table 4: Data on the use of set nets by commerical fishers in statistical area 043 targeting flatfish (FLA) over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Port Price ($ per kg)	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)	Total Number of Records	Number of Clients	Number of Vessels
2003/04	4.7500	69,844	$331,759	1,300,930	1,950	37	45
2004/05	5.2609	75,176	$395,493	1,144,767	1,774	29	36
2005/06	3.3500	64,751	$216,916	989,355	1,514	28	34
	Total	**209,771**	**$944,168**	**3,435,052**			

Flatfish account for 210 tonnes or 36% of the total estimated catch by set netters in the Manukau Harbour over the past three fishing years. The estimated catch has an estimated value of $944,000. This makes it the highest value set net fishery in the Manukau Harbour.

The estimated catch of flatfish has decreased from the 2004/2005 fishing year to the 2005/2006 fishing year. Fishing effort has decreased for flatfish and this may explain the decrease in estimated catch.

Grey mullet (GMU)

Commercial fishing for grey mullet occurs predominantly in the Auckland Fisheries Management Area (GMU1) which includes the Manukau Harbour.

Table 5: Data on the use of set nets by commerical fishers in statistical area 043 targeting grey mullet (GMU) over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Port Price ($ per kg)	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)	Total Number of Records	Number of Clients	Number of Vessels
2003/04	2.6741	63,597	$170,065	379,129	580	24	28
2004/05	2.4114	87,087	$210,002	330,900	589	20	22
2005/06	2.2300	59,663	$133,048	369,000	686	19	23
	Total	**210,347**	**$513,115**	**1,079,029**			

The estimated catch of grey mullet was 210 tonnes. This is 36% of the total estimated catch for the Manukau Harbour (statistical area 043) over the past three fishing years. The estimated catch has an estimated value of $513,000.

There was an increase in catch during the 2004/2005 fishing year while fishing effort decreased. Fishing effort and catch levels were at a similar level in both the 2003/2004 and 2005/2006 fishing years.

Rig (SPO)

Rig are caught in coastal waters throughout New Zealand. Most of the catch is taken from water less than 50 m deep during spring and summer, when rig aggregate inshore. The most important bottom set net fisheries are at 90-Mile Beach, Kaipara Harbour, Manukau Harbour, South Taranaki Bight, Tasman/Golden Bay, Canterbury Bight, Kaikoura and Hauraki Gulf.

Table 6: Data on the use of set nets by commerical fishers in statistical area 043 targeting rig (SPO) over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Port Price	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)	Total Number of Records	Number of Clients	Number of Vessels
2003/04	0.8886	35,153	$31,237	448,843	577	29	36
2004/05	3.5790	37,760	$135,143	362,695	475	22	25
2005/06	3.0000	23,774	$71,322	328,195	456	25	26
	Total	**96,687**	**$237,702**	**1,139,733**			

The estimated catch of grey mullet was 96.6 tonnes. This is 16.7% of the total estimated catch for the Manukau Harbour (statistical area 043) over the past three fishing years. The estimated catch has an estimated value of $238,000.

Combined flatfish, grey mullet and rig accounted for 517 tonnes or 89% of the estimated catch for commercial set netters in the Manukau Harbour over the past three fishing years.

Kahawai (KAH), Trevally (TRE) and Yellow-Eyed Mullet (YEM)

Commercial set netters have also targeted kahawai (KAH), trevally (TRE) and yellow-eyed mullet (YEM) in the Manukau Harbour over the past 3 fishing years.

Table 7: Data on the use of set nets by commerical fishers in statistical area 043 targeting kahawai (KAH), spiny dogfish (SPD), trevally (TRE) and yellow-eyed mullet (YEM) over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)	Total Number of Records	Number of Clients	Number of Vessels
2003/04	25,408	$19,010	881,369	1218	74	90
2004/05	15,881	$14,081	697,070	1034	67	77
2005/06	22,337	$16,854	740,187	1181	67	75
Total	**63,626**	**$49,945**	**2,318,626**			

These fisheries are low value fisheries and the estimated catch combined was only 63.6 tonnes. This is 11% of the total estimated catch for the Manukau Harbour (statistical area 043) over the past three fishing years. The estimated catch has an estimated value of $50,000.

11.4.4.3. Analysis of set netting for Butterfish (BUT) in statistical areas 017, 018, 025 & 027 using internal MFish data

This section sets out the relevant internal data that relates to set netting for butterfish in the statistical areas 017, 018, 025 & 027.

Analysis

The analysis examines targeted (not bycatch) commercial set netting for butterfish in the statistical areas 017, 018, 025 & 027 to provide an assessment of the extent of this type of activity and the value

associated with it.

Note that the indirect and socio-economic impacts of the options proposed in the draft Hector's dolphin TMP and their relevance to the statistical areas 018 & 027 will be examined by an external research provider.

Data used

This paper originally set out to investigate the extent and value of set netting in BUT3. The analysis of the data from BUT3 showed that the majority of set netting was occurring in statistical areas 018 & 027. This caused problems as statistical area 018 is split by BUT2, BUT3 and BUT7 while statistical area 027 was split by BUT3 and BUT5. Further analysis of CELR data showed significant catch was coming out of statistical areas 017 & 025. These have been included so the whole of the south island is covered by this paper.

It is not possible from the data available to know what percentage of catch in both statistical areas in coming from what QMA. This is why this analysis looks at the statistical areas and not a discrete QMA.

The analysis of statistical areas 017, 018, 025 & 027 will focus on the CELR form data that is attributed to these statistical areas. The CELR data is used to identify commercial fishers who are targeting BUT using set nets and trawlers. The CELR data for these fishers is then aggregated to calculate the amount of BUT caught during each fishing year.

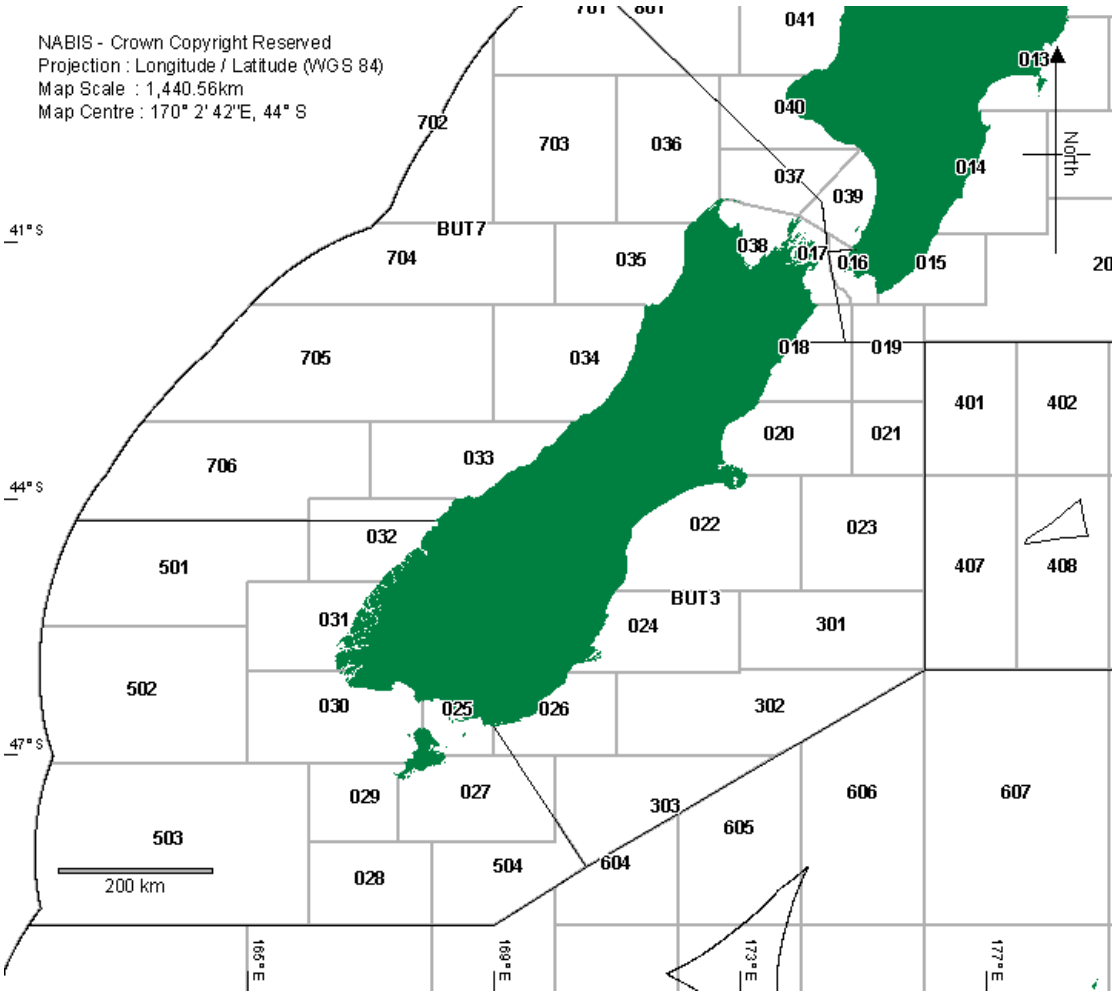
Port prices for the relevant fish stock and fishing year are used to estimate the value of the estimated catch on the CELR forms.

Table 1: Port prices for BUT in statistical areas 017, 018, 025 & 027 over the past 3 fishing years

Quota Management Area	2003/2004 Port Price ($/kg)	2004/2005 Port Price ($/kg)	2005/2006 Port Price ($/kg)
BUT1	$1.8818	$3.3167	$1.5800
BUT2	$3.0043	$3.4414	$3.8400
BUT3	$3.5431	$3.1584	$3.8400
BUT5	$2.2991	$3.3167	$3.8400
BUT7	$2.9949	$3.4737	$3.3000

Commercial Fishery

There is no commercial trawling for butterfish in statistical areas 017, 018, 025 & 027 so set netting is the main commercial fishing method to catch butterfish in these statistical areas.



Map 29

Analysis of the FIS data shows that 18 fishers have deployed set nets targeting butterfish in statistical area 017 over the past 3 fishing years using 25 vessels and employing a total of 71 crew members.

Analysis of the FIS data shows that 6 fishers have deployed set nets targeting butterfish in statistical area 018 over the past 3 fishing years using 12 vessels and employing a total of 27 crew members.

Analysis of the FIS data shows that 6 fishers have deployed set nets targeting butterfish in statistical area 025 over the past 3 fishing years using 11 vessels and employing a total of 33 crew members.

Analysis of the FIS data shows that 6 fishers have deployed set nets targeting butterfish in statistical area 027 over the past 3 fishing years using 11 vessels and employing a total of 33 crew members.

The majority of these vessels are based in statistical areas 017, 018, 025 and 027 with a few vessels operating out of Wellington, Gisborne and Flat Point. This would suggest that most of the vessels carrying out the set netting for butterfish are local to the area.

Therefore, any ban or limitations placed on set netting may have a higher impact on local fishers than those based outside of statistical areas 017, 018, 025 and 027.

By averaging the port prices for the QMAs that split each statistical area and multiplying this by the estimated catch in that statistical area, the value of butterfish caught can be estimated.

Table 2: Data on the use of set nets by commerical fishers in statistical area 017 targeting BUT over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Average Port Price ($/kg)	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)
2003/04	$2.6270	16,074	$42,226	6,015
2004/05	$3.4106	19,466	$66,391	10,390
2005/06	$2.9067	17,115	$49,748	5,640
	Total	**52,655**	**$158,365**	**22,045**

Table 2 shows that the estimated catch over the past 3 fishing years by set netters targeting butterfish in statistical area 017 has been 52.6 tonnes of fish worth an estimated $158,365.

There has been some fluctuation in catch over the past three years but this fluctuation has been in line with fishing effort (total length of nets hauled).

Table 3: Data on the use of set nets by commerical fishers in statistical area 018 targeting BUT over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Average Port Price ($/kg)	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)
2003/04	$3.1808	1,896	$6,031	6,015
2004/05	$3.3578	3,110	$10,443	10,390
2005/06	$3.6600	1,726	$6,317	5,640
	Total	**6,732**	**$22,791**	**22,045**

Table 3 shows that the estimated catch over the past 3 fishing years by set netters targeting butterfish in statistical area 018 has been 6.7 tonnes of fish worth an estimated $22,791.

There has been some fluctuation in catch over the past three years but this fluctuation has been in line with fishing effort (total length of nets hauled).

Table 4: Data on the use of set nets by commerical fishers in statistical area 025 targeting BUT over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Average Port Price ($/kg)	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)
2003/04	$2.9211	29,360	$85,763	6,015
2004/05	$3.2376	15,030	$48,660	10,390
2005/06	$3.8400	13,880	$53,299	5,640
	Total	**58,270**	**$187,723**	**22,045**

Table 4 shows that the estimated catch over the past 3 fishing years by set netters targeting butterfish in statistical area 025 has been 58.2 tonnes of fish worth an estimated $187,723.

In 2003/2004 there was a large catch from minimal fishing effort (total length of nets hauled) but in the following fishing years more or the same amount of have been put into the fishery for much low returns.

Table 5: Data on the use of set nets by commerical fishers in statistical area 027 targeting BUT over the past 3 fishing years from Catch Effort Landing Returns (CELRs)

Fishing Year	Average Port Price ($/kg)	Total Estimated Catch of Species Caught (kg)	Estimated Value of Catch	Total Length of Nets Hauled (m)
2003/04	$2.9211	8,078	$23,597	28,080
2004/05	$3.2376	9,055	$29,316	60,220
2005/06	$3.8400	5,180	$19,891	22,440
	Total	**22,313**	**$72,804**	**110,740**

Table 5 shows that the estimated catch over the past 3 fishing years by set netters targeting butterfish in statistical area 027 has been 22.3 tonnes of fish worth an estimated $72,804.

In 2004/2005 there was a doubling of fishing effort (total length of nets hauled) but this resulted in one

tonne of additional catch only.

11.4.4.4. Analysis of the FLA3 fishery using internal MFish data

This section sets out the relevant internal data that relates to set netting and trawling in FLA3.

Analysis

The analysis examines targeted (not bycatch) commercial set netting and trawling for FLA3 to provide an assessment of the extent of these types of activities and the value associated with it.

Note that the indirect and socio-economic impacts of the options proposed in the draft Hector's dolphin TMP and their relevance to FLA3 will be examined by an external research provider.

Data Used

FLA3 covers the lower east and west coast of the South Island and this analysis focuses on the CELR form data that is attributed to the statistical areas that make up FLA3. The CELR data is used to identify commercial fishers who are targeting FLA3 using set nets and trawlers. The MHR data for these fishers is then aggregated to calculate the amount of FLA3 caught during each fishing year.

Port prices for the relevant fish stock and fishing year are used to estimate the value of the estimated catch form the MHR form data.

Table 1: Port prices for FLA3 over the past 3 fishing years

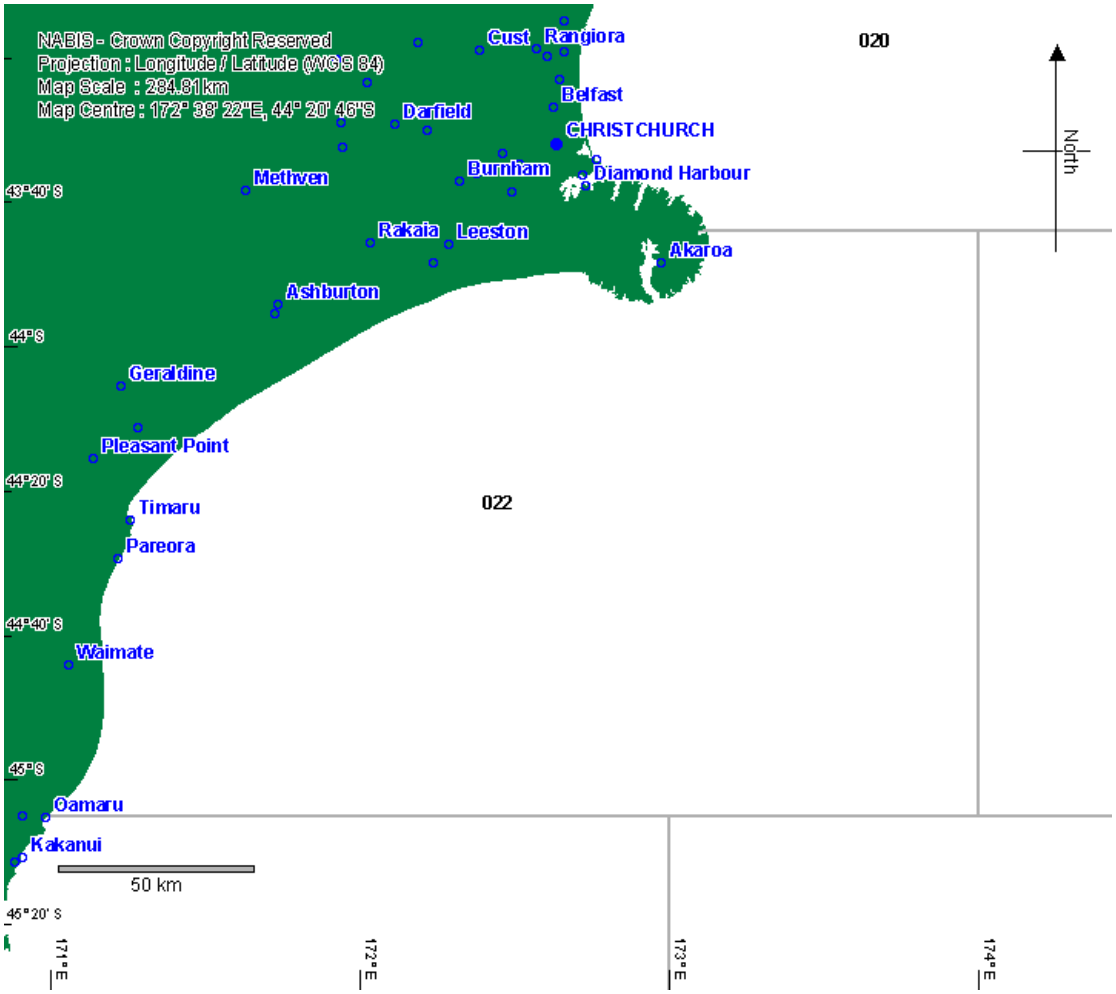
Species	2003/2004 Port Price ($/kg)	2004/2005 Port Price ($/kg)	2005/2006 Port Price ($/kg)
Flatfish (FLA)	3.2693	3.1700	2.9600

Commercial Set Net Fishery

Table 2 below outlines where in FLA3 the majority of commercial set netting is taking place. It shows that almost all the set netting in FLA3 is occurring in statistical area 022:

Table 2: The statistical area identified in the CELR forms and records submitted for FLA3 over the past 3 years by commercial set netters

Statistical Area	Number of Forms	Number of Records
018	1	1
021	1	1
022	1159	1162
023	1	1
024	5	5
025	2	4
027	1	1
049	14	14
603	1	1
607	1	1
607	1	2
610	1	1
622	1	1



Map 30

Further examination of the catch in statistical area 022 shows that the 6 fishers are carrying out the majority of the set netting.

Only two of the fishers are quota holders. The impact of measures on property rights only apply to quota holders. The extent of the impact will depend on if any other regulations are placed on other fishing method in FLA3 (trawling regulations).

Of the four remaining set net fishers 3 are ACE fishers and could move their fishing into different fisheries assuming their vessels can be converted to carry out a different fishing method but this would add in additional costs to the operation of the vessel. This means the crew would have to learn how to carry out the fishing method and find new fishing ground where they could carry out this new fishing method.

One fisher has left the fishery after the 2003/2004 fishing year and no longer holds quota or ACE.

Analysis of the FIS data shows that all the vessels used in statistical area 022 are all based in statistical area 022. This means that the vessels used to carry out the set netting are based in the area they predominately fish. There is little travel involved to reach the fishing ground where they deploy their set nets.

MHR returns from the six fishers were used to estimate the total catch of FLA3 by set netters in statistical area 022. The total catch figure from the MHR forms can be multiplied by the port price to estimate the value of the FLA3 caught by set netters over the past three fishing years.

Table 2: Estimated value of FLA3 caught by set nets over the past 3 fishing years (based on MHR figures)

Fishing Year	Port Price ($/kg)	MHR catch figure (kg)	Value of MHR catch ($)
2003/2004	3.2693	70,402	230,165
2004/2005	3.1700	95,133	301,572
2005/2006	2.9600	36,668	108,537
	Total	**202,203**	**640,274**

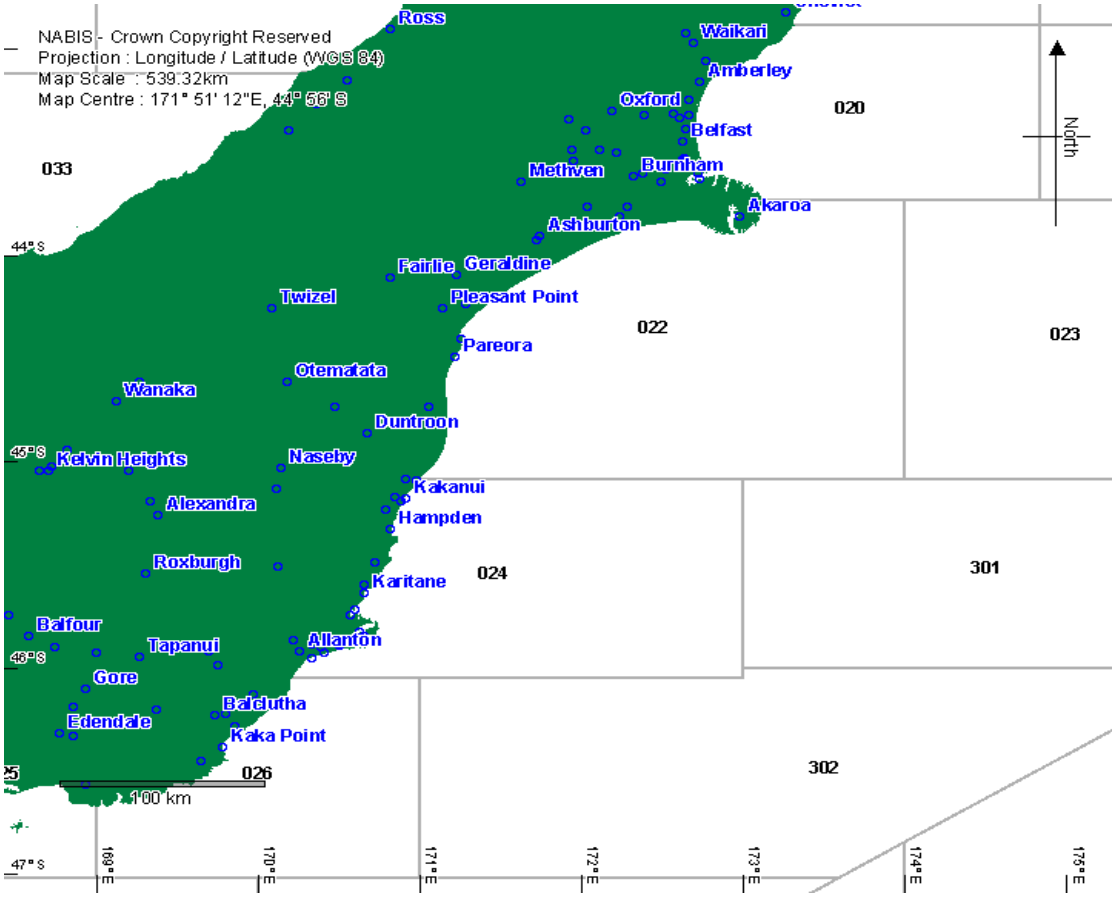
Table 2 shows that the value of the set net fishery in FLA3 is $640,274 over the past 3 years. This means the average value of the catch in the FLA3 set net fishery is $213,425 per year.

Commercial Trawl Fishery

Table 3 below outlines where in FLA3 the majority of commercial trawling is taking place. It shows that the majority of the commercial trawling for FLA3 is occurring in statistical areas 020, 022, 024 & 026:

Table 3: The statistical area identified in the CELR forms and records submitted for FLA3 over the past 3 years by commercial trawlers

Statistical Area	Number of Forms	Number of Records
018	180	194
019	1	1
020	2390	2708
021	11	11
022	2176	2644
023	2	2
024	2825	3090
025	498	763
026	2147	3651
027	8	12
028	5	5
030	295	737
032	2	2
620	1	1



Map 31

Due to large amount of commercial trawlers operating in FLA3, the analysis will concentrate on fishers who fish have recorded catching FLA3 in two or more of statistical areas 020, 022, 024 & 026.

Further analysis shows that 41 fishers have recorded catching FLA3 in two or more of statistical areas 020, 022, 024 & 026 over the past three fishing years.

23 of the fishers are ACE fishers while only 12 own quota for FLA3. The remaining 6 fishers have left the fishery (they stopped holding ACE or quota).

Anlysis of the FIS data shows that the majority of vessels used in statistical areas 020, 022, 024 & 026 are all based in statistical areas 020, 022, 024 & 026. This means that the vessels used to carry out the commercial trawling are based in the area they predominately fish. There is little travel involved to reach the fishing ground where they trawl.

MHR returns from the 41 fishers were used to estimate the total catch of FLA3 by set netters who fish have recorded catching FLA3 in two or more of statistical areas 020, 022, 024 & 026. The figures for total catch from the MHR forms can be multiplied by the port price to estimate the value of the FLA3 caught by trawlers over the past three fishing years.

Table 4: Estimated value of FLA3 caught by trawlers over the past 3 fishing years (based on MHR figures)

Fishing Year	Port Price ($/kg)	MHR catch figure (kg)	Value of MHR catch ($)
2003/2004	3.2693	658,131	2,151,628
2004/2005	3.1700	620,100	1,965,717
2005/2006	2.9600	652,778	1,932,223
	Total	**1,931,009**	**6,049,568**

Table 4 shows that the value of the trawl fishery in FLA3 is just over $6.0 million over the past 3 years. The MHR figure only covers fishers who fished in two or more of statistical areas 020, 022, 024 & 026. This means the average value of the catch in the FLA3 trawl fishery is $2.0 million per year.

The significance of the MHR value figure can be determined by comparing the total catch by fishers who fished in two or more of statistical areas 020, 022, 024 & 026 using trawlers to the total catch for FLA3 (regardless of fishing method).

Table 5: Comparison of MHR figures to total catch in FLA3

	2003/2004 catch (t)	2004/2005 catch (t)	2005/2006 catch (t)
Commercial Trawlers MHR figures	658	620	653
Total catch in FLA3	1286	1353	1177
MHR figures as % of total catch	**51.17%**	**45.82%**	**55.48%**

Table 5 shows that by looking at the fishers who have fished in 2 or more of statistical areas 020, 022, 024 & 026 we have managed to capture 41 fishers that account for between 45%-55% of the total catch in FLA3.

ACE and quota information for FLA3

Table 6 below shows the transfer price of quota and ACE for FLA3 over the past 3 years.

Table 5: FLA3 quota and ACE transfer prices per tonne over the last 3 fishing years

Fishing Year	Average quota transfer price per tonne (number of valid trasfers)	Average ACE transfer price per tonne (number of valid trasfers)
2003/04	N/A	$542.90 (316)
2004/05	$3,621.19* (41)	$435.40 (329)
2005/06	$3,561.60* (47)	$632.70 (293)

*average price of all trades since October 2001

The ACE transfer price is the price fishers are willing to pay for the right to catch a tonne of FLA3 in one fishing year. Placing any limitations on set netting or trawling will likely reduce the ACE price. This is because due to the limitations on fishing methods it is unlikely that the TACC for FLA3 will be caught and this will lead to an abundance of ACE being available (supply will exceed demand).

The quota transfer price is the price fishers or quota holders are willing to pay to for rights to catch a tonne of FLA3 in perpetuity. Placing limitations on set netting or trawling may affect quota transfer prices. In the short term the price may drop as ACE prices will likely fall reducing the revenue quota holder can earn from selling their ACE. In the long term if the limitations mean the FLA3 stock has the ability to recover the quota transfer price may rise as the TACC could be increased generating additional ACE from the quota held.

The asset value of the FLA fishery can be estimated from the Fish Monetary Stock Account 1996-2006 produced by Statistics New Zealand.

The Monetary Stock Account estimates the asset value of each species as a whole fishery (all of New Zealand). The problem with this approach is that the individual QMA asset values are not calculated.

The whole FLA fishery is estimated to have an asset value of 16.7 million in 2006.

11.4.4.5. Analysis of the SPO3 fishery using internal MFish data

This section sets out the relevant internal data that relates to set netting and trawling in SPO3.

Analysis

The analysis examines targeted (not bycatch) commercial set netting and trawling for SPO3 to provide an assessment of the extent of these types of activities and the value associated with it.

Note that the indirect and socio-economic impacts of the options proposed in the draft Hector's dolphin TMP and their relevance to SPO3 will be examined by an external research provider.

Data Used

SPO3 covers the lower east and west coast of the South Island and this analysis focuses on the CELR form data that is attributed to the statistical areas that make up SPO3. The CELR data is used to identify commercial fishers who are targeting SPO3 using set nets and trawlers. The MHR data for these fishers is then aggregated to calculate the amount of SPO3 caught during each fishing year.

Port prices for the relevant fish stock and fishing year are used to estimate the value of the estimated catch from the MHR form data.

Table 1: Port prices for SPO3 over the past 3 fishing years

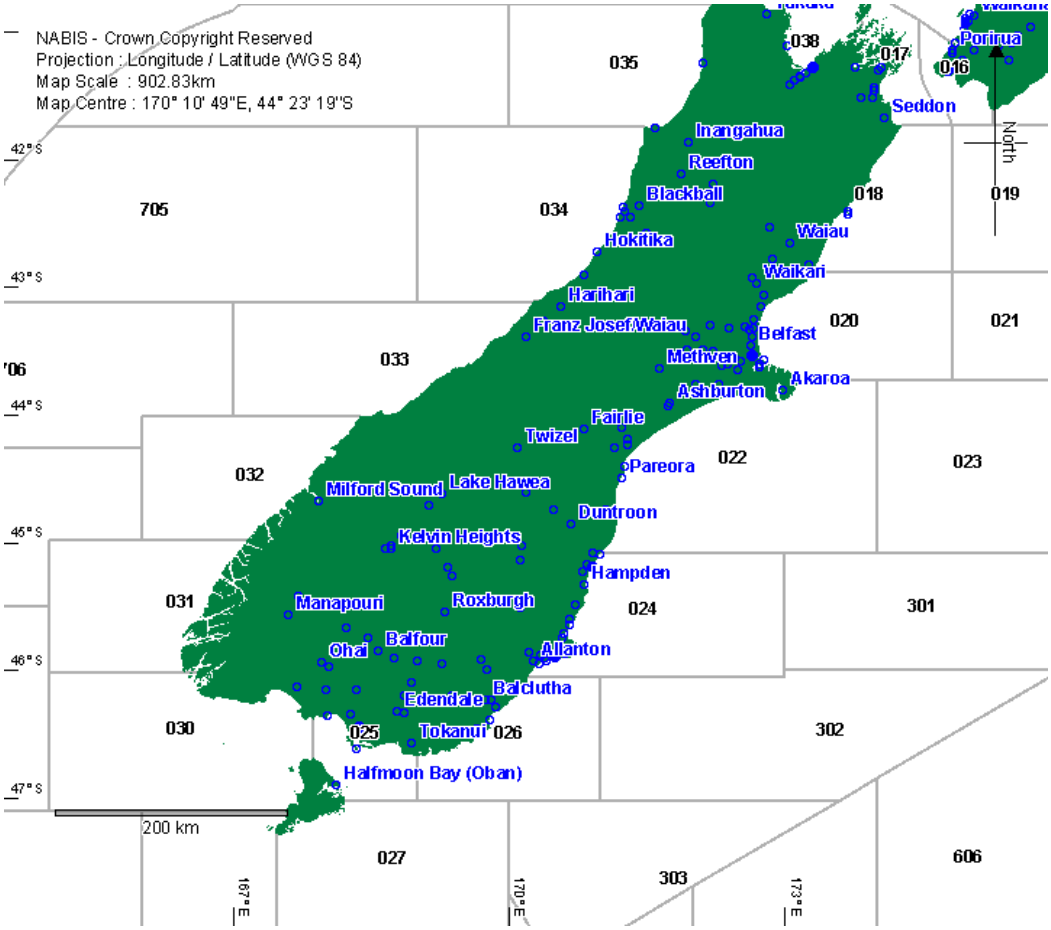
Species	2003/2004 Port Price ($/kg)	2004/2005 Port Price ($/kg)	2005/2006 Port Price ($/kg)
Rig (SPO)	3.2438	3.5673	3.0200

Commercial Set Net Fishery

Table 2 below outlines where in SPO3 the majority of commercial set netting is taking place. It shows that almost all the set netting in SPO3 is occurring in statistical areas 018, 020, 022, 024, 025 & 030:

Table 2: The statistical area identified in the CELR forms and records submitted for SPO3 over the past 3 years by commercial set netters

Statistical Area	Number of Forms	Number of Records
018	625	659
020	102	113
021	1	1
022	668	803
023	1	1
024	474	490
025	195	242
026	2	5
027	2	2
029	1	1
030	68	169
031	3	5
032	11	23



Map 32

Examination of the catch in statistical areas 018, 020, 022, 024, 025 & 030 shows that 47 fishers are using set nets in these areas.

Analysis of the FIS data shows that fifteen of the fishers are quota holders who are active fishers. Of the remaining set net fishers twenty three are ACE fishers.

If there were any regulations introduced to ban set netting on the East Coast South Island all fishers will be affected. They all could move their fishing effort into other fisheries assuming their vessels could be converted to carry out a different fishing method but this would add in additional costs to the operation of the vessel. This means the crew would have to learn how to carry out the fishing method and find new fishing ground where they could carry out this new fishing method.

Nine fishers have left the fishery and no longer hold quota or ACE.

The majority of vessels used in statistical areas 018, 020, 022, 024, 025 & 030 are all based in those statistical areas. 2 vessels are operating out of Tauranga. This shows that the vessels used to carry out the set netting are based in the area they predominately fish. This means that there is little travel involved to reach the fishing ground where they deploy their set nets.

The figures from the MHRs give an accurate picture of how much commercial set netters are taking from SPO3.

The figures for total catch from the MHR form data can be multiplied by the port price to estimate the value of the SPO3 caught by set netters over the past three fishing years.

Table 2: Estimated value of SPO3 caught by set nets over the past 3 fishing years (based on MHR figures)

Fishing Year	Port Price ($/kg)	MHR catch figure (kg)	Value of MHR catch ($)
2003/2004	3.2438	296,324	961,216
2004/2005	3.5673	284,746	1,015,774
2005/2006	3.0200	307,178	927,678
	Total	**888,248**	**2,904,668**

Table 2 shows that the value of the set net fishery in SPO3 is around $2.9 million over the past 3 years.

The significance of the MHR value figure can be determined by comparing the total catch by fishers who fish in statistical areas 018, 020, 022, 024, 025 & 030 using set nets to the total catch for SPO3 (regardless of fishing method).

Table 3: Comparison of MHR figures to total catch in SPO3

	2003/2004 catch (t)	2004/2005 catch (t)	2005/2006 catch (t)
Commercial set netter MHR figures	296	285	307
Total catch in SPO3	354	366	389
MHR figures as % of total catch	**83.62%**	**77.87%**	**78.92%**

Table 3 shows that by looking at the fishers who have fished in statistical areas 018, 022 & 024 we have managed to capture 47 fishers account for between 78%-84% of the total catch in SPO3.

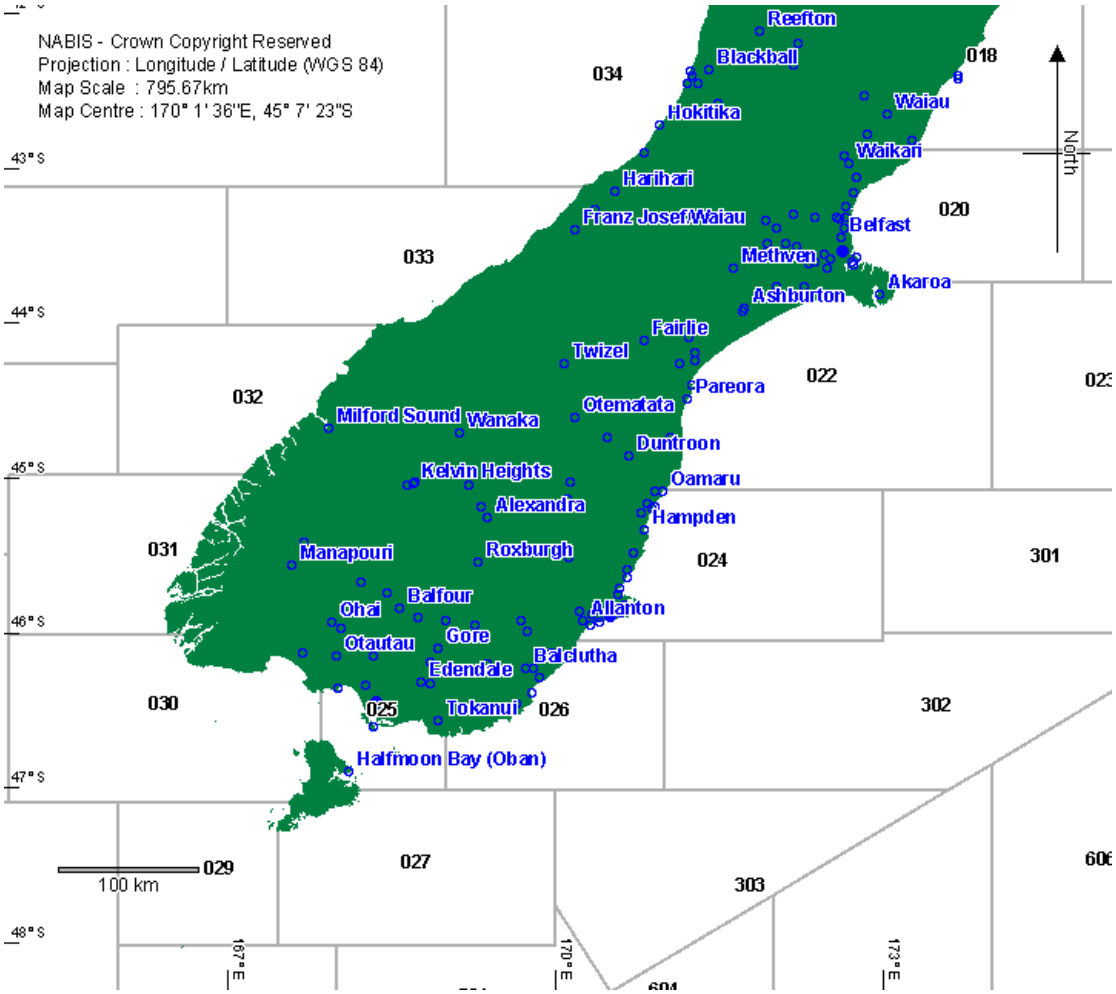
This is a significant amount of catch and shows that 80% of the SPO3 catch is worth roughly $1 million per year. This means that the total catch of the SPO3 fishery could be estimated to be worth around $1.25 million per year.

Commercial Trawl Fishery

Table 4 below outlines where in SPO3 the majority of commercial trawling is taking place. It shows that the commercial target trawling for SPO3 is occurring in statistical areas 020, 022, 025 & 030:

Table 4: The statistical area identified in the CELR forms and records submitted for SPO3 over the past 3 years by commercial trawlers

Statistical Area	Number of Forms	Number of Records
020	1	1
022	3	5
025	6	7
030	5	6



Map 33

Analysis of the FIS data shows that 7 fishers have recorded catching SPO3 through target trawling over the past three fishing years.

2 of the fishers are ACE fishers while the remaining 5 own quota for SPO3.

All the vessels that trawl in SPO3 are based in the region. This shows that the vessels used to carry out the commercial trawling are based in the area they predominately fish. This means that there is little travel involved to reach the fishing ground where they trawl.

The figures from the MHRs give an accurate picture of how much commercial rig trawlers are taking from SPO3.

The figures for total catch from the MHR forms can be multiplied by the port price to estimate the value

of the SPO3 caught by commercial trawler over the past three fishing years.

Table 5: Estimated value of SPO3 caught by trawlers over the past 3 fishing years (based on MHR figures)

Fishing Year	Port Price ($/kg)	MHR catch figure (kg)	Value of MHR catch ($)
2003/2004	3.2438	20,687	67,104
2004/2005	3.5673	24,392	87,014
2005/2006	3.0200	39,378	118,922
	Total	**84,457**	**273,040**

Table 5 shows that the value of the trawl fishery in SPO3 is $273,040 over the past 3 years. The MHR figure only covers fishers who targeted SPO3 and doesn't cover any SPO3 caught as a bycatch of trawling for other species.

ACE and quota information for SPO3

Table 13 below shows the transfer price of quota and ACE for SPO3 over the past 3 years.

Table 6: SPO3 quota and ACE transfer prices per tonne over the last 3 fishing years

Fishing Year	Average quota transfer price per tonne (number of valid trasfers)	Average ACE transfer price per tonne (number of valid trasfers)
2003/04	N/A	$732.00 (293)
2004/05	$14,446.50* (35)	$796.10 (319)
2005/06	$14,569.70* (37)	$768.30 (309)

*average price of all trades since October 2001

The ACE transfer price is the price fishers are willing to pay for the right to catch a tonne of SPO3 in one fishing year. Placing any limitations on set netting or trawling will likely reduce the ACE price. This is because due to the limitations on fishing methods it is unlikely that the TACC for SPO3 will be caught and this will lead to an abundance of ACE being available (supply will exceed demand).

The quota transfer price is the price fishers or quota holders are willing to pay to for rights to catch a tonne of SPO3 in perpetuity. Placing limitations on set netting or trawling may affect quota transfer prices. In the short term the price may drop as ACE prices will likely fall reducing the revenue quota holder can earn from selling their ACE. In the long term if the limitations mean the SPO3 stock has the ability to recover the quota transfer price may rise as the TACC could be increased generating additional ACE from the quota held.

The asset value of the SPO fishery can be estimated from the Fish Monetary Stock Account 1996-2006 produced by Statistics New Zealand.

The Monetary Stock Account estimates the asset value of each species as a whole fishery (all of New Zealand). The problem with this approach is that the individual QMA asset values are not calculated.

The whole SPO fishery is estimated to have an asset value of 13.9 million in 2006.

11.4.4.6. Analysis of the SPO7 fishery using internal MFish data

This section sets out the relevant internal data that relates to set netting and trawling in SPO7.

Analysis

The analysis examines targeted (not bycatch) commercial set netting and trawling in SPO7 to provide an assessment of the extent of these types of activities and the value associated with it.

Note that the indirect and socio-economic impacts of the options proposed in the draft Hector's dolphin TMP and their relevance to SPO7 will be examined by an external research provider.

Data Used

SPO7 covers the west coast and north coast of the South Island and this analysis focuses on the CELR form data that is attributed to the statistical areas that make up SPO7. The CELR data is used to identify commercial fishers who are targeting SPO7 using set nets and trawlers. The MHR data for these fishers is then aggregated to calculate the amount of SPO7 caught during each fishing year.

Port prices for the relevant fish stock and fishing year are used to estimate the value of the estimated catch from the MHR form data.

Table 1: Port prices for SPO7 over the past 3 fishing years

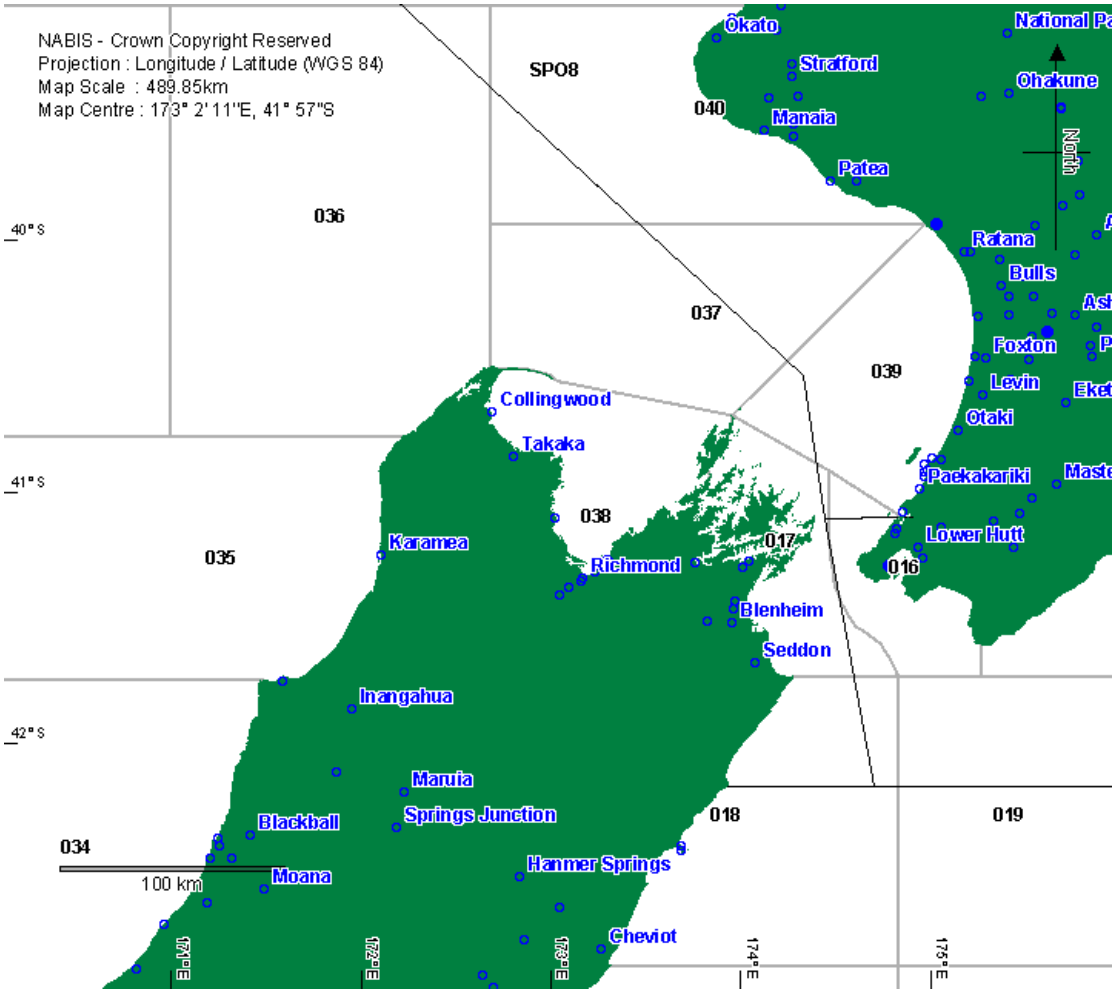
Species	2003/2004 Port Price ($/kg)	2004/2005 Port Price ($/kg)	2005/2006 Port Price ($/kg)
Rig (SPO)	2.9600	2.4948	2.6200

Commercial Set Net Fishery

Table 2 below outlines where in SPO7 the majority of commercial set netting is taking place. It shows that almost all the set netting in SPO7 is occurring in statistical areas 018, 037, 038, 039 & 040:

Table 2: The statistical area identified in the CELR forms and records submitted for SPO7 over the past 3 years by commercial set netters

Statistical Area	Number of Forms	Number of Records
017	51	106
018	624	658
032	11	23
033	53	114
034	54	122
035	29	56
036	10	18
037	101	172
038	314	898
039	228	339
040	341	476



Map 34

The map above shows that statistical areas 018, 037, 039 & 040 are split between two or more QMAs. Statistical area 018 is split by SPO2, SPO3 and SPO7. The analysis for SPO3 has included statistical area 018. Statistical areas 037, 039 and 040 are split by SPO7 and SPO8.

Analysis of the FIS data shows that in statistical areas 018, 037, 038, 039 & 040, SPO is targeted by 46 fishers using set nets. Out of these 46 fishers only seven own quota for SPO7 and seventeen hold ACE for SPO7.

The 29 fishers who don't hold ACE or quota will be excluded from further analysis.

If there were any regulations introduced to ban set netting in SPO7 all fishers will be affected. They all could move their fishing effort into other fisheries assuming their vessels could be converted to carry out a different fishing method but this would add in additional costs to the operation of the vessel. This means the crew would have to learn how to carry out the fishing method and find new fishing ground where they could carry out this new fishing method.

The majority of vessels used in SPO7 are all based in those statistical areas. One vessel is operating out of Leigh. This shows that the vessels used to carry out the set netting are based in the area they predominately fish. This means that there is little travel involved to reach the fishing ground where they deploy their set nets.

MHR returns from the selected seventeen fishers were used to estimate the total catch of SPO by set netters in SPO7. The figures for total catch from the MHR form data can be multiplied by the port price to estimate the value of the SPO7 caught by set netters over the past three fishing years.

Table 3: Estimated value of SPO7 caught by set nets over the past 3 fishing years (based on MHR figures)

Fishing Year	Port Price ($/kg)	MHR catch figure (kg)	Value of MHR catch ($)
2003/2004	2.9600	145,178	$429,727
2004/2005	2.4948	137,128	$342,107
2005/2006	2.6200	154,640	$405,157
	Total	**436,946**	**$1,176,991**

Table 3 shows that the value of the set net fishery in SPO7 is around $1.17 million over the past 3 years.

The significance of the MHR value figure can be determined by comparing the total catch by the seventeen selected fishers using set nets to the total catch for SPO7 (regardless of fishing method).

Table 4: Comparison of MHR figures to total catch in SPO7

	2003/2004 catch (t)	2004/2005 catch (t)	2005/2006 catch (t)
Commercial set netter MHR figures	145	137	155
Total catch in SPO7	293	266	287
MHR figures as % of total catch	**49.49%**	**51.50%**	**54.01%**

Table 4 shows that by looking at the fishers who have fished in SPO7 using set nets we have managed to capture seventeen fishers that account for between 49%-54% of the total catch in SPO7.

This is a significant amount of catch and shows that 50% of the SPO7 catch is worth roughly $390,000 per year. This means that the total catch of the SPO3 fishery could be estimated to be worth around $780,000 per year.

Commercial Trawl Fishery

Table 5 below outlines where in SPO7 the majority of commercial trawling is taking place. It shows that the commercial target trawling for SPO7 is occurring in statistical areas 017, 035, 038 & 039:

Table 5: The statistical area identified in the CELR forms and records submitted for SPO7 over the past 3 years by commercial trawlers

Statistical Area	Number of Forms	Number of Records
017	1	1
035	1	2
038	5	5
039	1	1

Analysis of the FIS data shows that 4 fishers have recorded catching SPO7 through target trawling over the past three fishing years.

One of the fishers is an ACE fishers while two fishers own quota for SPO7. The other fisher has left the fishery.

The majority of vessels that trawl in SPO7 are based in the region. One vessel operates out of Auckland and another out of Napier. This shows that the vessels used to carry out the commercial trawling are based in the area they predominately fish. This means that there is little travel involved to reach the

fishing ground where they trawl.

The figures from the MHRs give an accurate picture of how much commercial rig trawlers are taking from SPO7.

The figures for total catch from the MHR forms can be multiplied by the port price to estimate the value of the SPO7 caught by commercial trawlers over the past three fishing years.

Table 6: Estimated value of SPO7 caught by trawlers over the past 3 fishing years (based on MHR figures)

Fishing Year	Port Price ($/kg)	MHR catch figure (kg)	Value of MHR catch ($)
2003/2004	2.9600	19,814	58,649
2004/2005	2.4948	30,441	75,944
2005/2006	2.6200	14,565	38,160
	Total	**64,820**	**$172,754**

Table 6 shows that the value of the trawl fishery in SPO7 is $172,754 over the past 3 years. The MHR figure only covers fishers who targeted SPO7 and doesn't cover any SPO7 caught as a bycatch of trawling for other species.

ACE and quota information for SPO7

Table 7 below shows the transfer price of quota and ACE for SPO7 over the past 3 years.

Table 7: SPO7 quota and ACE transfer prices per tonne over the last 3 fishing years

Fishing Year	Average quota transfer price per tonne (number of valid trasfers)	Average ACE transfer price per tonne (number of valid trasfers)
2003/2004	N/A	$879.10 (299)
2004/2005	$14,332.00* (20)	$898.20 (152)
2005/2006	$10,930.10* (26)	$934.30 (117)

*average price of all trades since October 2001

The ACE transfer price is the price fishers are willing to pay for the right to catch a tonne of SPO7 in one fishing year. Placing any limitations on set netting or trawling will likely reduce the ACE price. This is because due to the limitations on fishing methods it is unlikely that the TACC for SPO7 will be caught and this will lead to an abundance of ACE being available (supply will exceed demand).

The quota transfer price is the price fishers or quota holders are willing to pay to for rights to catch a tonne of SPO7 in perpetuity. Placing limitations on set netting or trawling may affect quota transfer prices. In the short term the price may drop as ACE prices will likely fall reducing the revenue quota holder can earn from selling their ACE. In the long term if the limitations mean the SPO7 stock has the ability to recover the quota transfer price may rise as the TACC could be increased generating additional ACE from the quota held.

The asset value of the SPO fishery can be estimated from the Fish Monetary Stock Account 1996-2006 produced by Statistics New Zealand.

The Monetary Stock Account estimates the asset value of each species as a whole fishery (all of New Zealand). The problem with this approach is that the individual QMA asset values are not calculated.

The whole SPO fishery is estimated to have an asset value of 13.9 million in 2006.

11.5. Appendix 5 - Relevant Conservation Legislation

Marine Mammals Protection Act 1978

The purpose of the Act is to make provision for the protection, conservation, and management of marine mammals within New Zealand and within New Zealand fisheries waters.

Section 2 provides by declaration in the Gazette, for any species of marine mammal to be designated a threatened species for the purposes of the Marine Mammals Protection Act 1978.

Section 3 provides for the Department of Conservation to administer and manage marine mammals and marine mammal sanctuaries in accordance with general policies developed under section 3B of the Act and any relevant conservation management strategy or conservation management plan. Section 3C provides for the establishment of conservation management strategies and objectives for the integrated management of marine mammals under this Act. Section 3D provides for the development of conservation management plans to develop objectives for the management of marine mammal sanctuaries.

Section 4 prohibits the holding of any marine mammal in captivity or the taking of any marine mammal (dead or alive) without first obtaining a permit to do so from the Minister of Conservation.

Section 16 requires that the holder of any permit or licence issued under the Fisheries Act who accidentally kills or injures a marine mammal to report the incident to the Director-General or an officer appointed under section 11 of the Act. The written report must include the following information:

(i) The location of the area where the accident took place;
(ii) The species (if known), or a general description of the marine mammal killed or injured, and,
(iii) A description of the conditions and circumstances of the accident.

Section 26(4) provides, where a person is charged with killing or injuring a marine mammal, for a defence if the defendant can prove the marine mammal death or injury was accidental and the reporting requirements of section 16 were complied with.

Section 28 (2) provides for the promulgation of regulations thought necessary or expedient for the protection, conservation, or management of any marine mammal

Marine Mammal Sanctuaries

Section 22 provides for the establishment of marine mammal sanctuaries. A sanctuary for Hector's dolphins was established in 1988 in the area around Banks Peninsula, and in 1993, the territorial sea (the body of water out to 12 nautical miles) around the Auckland Islands was declared a marine mammal sanctuary to prohibit commercial fishermen from taking any fish or aquatic life, or being in possession of any fish or aquatic life taken, within the marine mammal sanctuary. The underlying aim was to protect the New Zealand sea lion.

Summary of S22:

(1) Subject to this section, the Minister may, by notice of the Gazette, define any place and declare it to be a marine mammal sanctuary,…

(2) Where any other Minister of the Crown has the control of any Crown-owned land, foreshore, seabed, or waters of the sea which is declared to be a marine mammal sanctuary or which forms part of one, the consent of that Minister to the declaration shall be notified concurrently with the notice…

(3) When defining and declaring a [marine mammal] sanctuary…the Minister may specify the activities that may or may not be engaged in within the sanctuary, and may impose restrictions…

(4) No marine mammal sanctuary shall be declared in any Maritime or National Park, in any reserve…or in any marine reserve…

Population Management Plans

Legislation regarding establishment of population management plans is contained in the Marine Mammals Protection Act 1978.

Section 3E states:

(1) The Minister may from time to time approve a population management plan in respect of one or more species, being threatened species or other species of marine mammal, containing all or any of the following matters in respect of each species:

(a) An assessment of the biology and status of the species;

(b) An assessment of any known fisheries interaction with the species;

(c) An assessment of the degree of risk caused by fishing-related mortality and other human-induced sources of mortality to the species, whether within New Zealand fisheries waters or elsewhere within the range of the species;

(d) An estimate of the range of human induced mortality for the species which would allow the criteria in section 3F of this Act to be met;

(e) An estimate of the range of fishing-related mortality for the species which would allow the criteria specified in section 3F of this Act to be met;

(f) The maximum allowable level of fishing-related mortality for the species, in New Zealand fisheries waters, which would allow the criteria specified in section 3F of this Act to be met;

(g) Subject to section 3G of this Act, if a level has been set under paragraph (f) of this subsection, the maximum allowable level of fishing-related mortality for the species in specified areas within New Zealand fisheries waters;

(h) Recommendations to the Minister of Fisheries on measures to mitigate the fishing-related mortality of the species;

(i) Recommendations to the Minister of Fisheries on the standard of information to be collected on fishing-related mortality.

(2) In the case of any marine mammals ranging outside New Zealand fisheries waters, the maximum allowable level of fishing-related mortality set under paragraph (f) or paragraph (g) of subsection (1) of this section shall be based on a fair and equitable consideration of the proportion that the estimated fishing-related mortality of marine mammals within those waters bears to the total estimated mortality of marine mammals in all waters (including waters outside New Zealand fisheries waters).

Section 3F states:

In determining the maximum allowable level of fishing-related mortality for threatened species or any other marine mammals under section 3E (1)(f) of this Act, the Minister,-

(a) In the case of any threatened species, shall determine a level of fishing related mortality which should allow the species to achieve non-threatened status as soon as reasonably practicable, and in any event within a period not exceeding 20 years.

(b) In the case of any other marine mammal, shall determine a level of fishing-related mortality which should neither cause a net reduction in the size of the population nor seriously threaten the reproductive capacity of the species.

Section 3G states:

(1) Area based limits set under section 3E(1)(g) of this Act shall be set only-

(a) For populations of threatened species that are geographically or genetically discrete; and

(b) For areas corresponding to areas having effect under the Fisheries Act 1996 as fisheries management areas or quota management areas.

(2) In setting any area-based limit for a threatened species under section 3E(1)(g) of this Act, the Minister shall determine a level of fishing-related mortality for a discrete population referred to in subsection (1) of this section which should neither cause a net reduction in the size of the population nor seriously threaten the reproductive capacity of that population.

The Marine Mammals Protection Act 1978 as amended by the Fisheries Act 1996 includes several definitions relevant to the Population Management Plan:

'Aquatic life' means any species of plant or animal life which, at any time in the life history of the species, must inhabit water; and includes seabirds (whether or not in an aquatic environment):

'Fishing'-
(a) means the catching, taking, or harvesting of fish, aquatic life, or seaweed; and
(b) includes -

(i) Any activity that may reasonably be expected to result in the catching, taking, or harvesting of fish, aquatic life, or seaweed; and

(ii) Any operation in support of or in preparation for any activities described in this definition:

'Fishing-related mortality' means the accidental death or incidental death of any marine mammal in the course of fishing:

'Human-induced mortality' means the death of any marine mammal that can be attributed directly or indirectly to any human activity:

'Population management plan' means a plan approved under section 3E of this Act:

'Threatened species' means any marine mammal that is for the time being declared by notice under subsection (3) of this section to be a threatened species:

Subsection (3) states:

(3) The Minister after having regard to any relevant international standards and any relevant standards within New Zealand, may from time to time, by notice in the Gazette, declare any species of marine mammal to be a threatened species for the purpose of this Act.

The Marine Mammals Protection Act 1978 sets out the planning process in **section 3H**. Procedure for preparation and approval of population management plans -

(1) Population management plans shall be prepared and approved as follows:

(a) The Director-General shall prepare every population management plan in consultation with every Conservation Board and with such persons as the Director-General considers are representative of those classes of persons interested in the plan, including such persons or organisations as the Director-General considers are representative of Maori, environmental interests, commercial interests, and recreational interests:

(b) The Director-General shall then publish a notice of the draft plan at least once in each of the daily newspapers published in Auckland, Wellington, Christchurch, and Dunedin, respectively:

(c) Every notice under paragraph (b) of this subsection shall -

(i) State that the draft plan is available for inspection at the places and times specified in the notice; and

(ii) Call upon persons or organisations interested to lodge with the Director-General submissions on the draft before the date specified for the purpose in the notice, being a date not less than 40 working days after the date of publication of the notice; and

(iii) Require any person who wishes to be heard in support of the person's submission to so advise the Director-General:

(d) Any person or organisation may make written submissions to the Director-General on any draft plan, at the place and before the date specified for the purpose in the notice:

(e) From the time of publication of a draft plan until public opinion on it has been made known to the Director-General, he or she shall make the draft available for public inspection during normal office hours, in such places and quantities as are likely to encourage public participation in the development of the proposal:

(f) The Director-General shall give every person or organisation who or which, in making submissions on the draft, asked to be heard in support of his or her or its comments a reasonable opportunity of appearing before the Director-General or the Director-General's representative or representatives;

(g) The Director-General, or his or her representative or representatives; may hear submissions from any other person or organisation consulted on the draft:

(h) The Director-General shall prepare a summary of the submissions received on the draft and public opinion made known on the draft:

(i) After considering such submissions and public opinion, the Director-General may revise the draft:

(j) The Director-General shall send to the Minister of Fisheries and to the New Zealand Conservation Authority a copy of the summary prepared under paragraph (h) of this subsection together with a copy of the draft plan:

(k) The New Zealand Conservation Authority shall consider the summary of submissions and the draft plan and send to the Minister and the Director-General any comments on the draft:

(l) The Director-General after having regard to any comments received under paragraph (k) of this subsection, -

(i) May amend the draft:

(ii) Shall send to the Minister the summary prepared under paragraph (h) of this subsection together with a copy of the draft plan;

(m) After having regard to-

(i) The provisions of sections 3E, 3F, and 3G of this Act; and

(ii) All submissions made on the draft plan; and

(iii) Such other matters as the Minister considers relevant,- the Minister may approve the plan subject to the concurrence of the Minister of Fisheries refer it to that Minister for concurrence.

(n) The Minister of Fisheries may concur with the draft plan after having regard to the impacts of implementing the maximum allowable level of fishing-related mortality on commercial fishing and such other matters as that Minister considers relevant:

(p) The approved plan shall be available for public inspection at the head office of the Department of Conservation at such times as may be specified in the notice given in respect of the plan under subsection (2) of this section.

(2) The Director-General shall, by notice in the Gazette, specify-

(a) The species to which the approved plan relates; and

(b) The maximum allowable level of fishing-related mortality specified in the approved plan; and

(c) The times at which the approved plan is available for public inspection at the head office of the Department of Conservation.

(1) Any approved plan may be amended, and paragraph (a) and paragraph (l) to (p) of subsection (1) and subsection (2) of this section shall apply to every such amendment with any necessary modifications

Marine Mammal Protection Regulations 1992

Under the Marine Mammal Protection Regulations 1992 any person who engages in commercial viewing of marine mammals must comply with the purpose of those regulations, being:

Regulation 4 (Purpose):
To make provisions for the protection, conservation and management of marine mammals and, in particular, -

(a) To regulate human contact or behaviour with marine mammals either by commercial operators or other persons, in order to prevent adverse effects on and interference with marine mammals.

(b) To prescribe appropriate behaviour by commercial operators and other persons seeking to come in contact with marine mammals.

In permitting an operation, the Director-General has to be satisfied that the application substantially complies with criteria in the regulations. These are listed under **regulation 6, Criteria for issuing permits**. In brief these include:

• The commercial operations should not be contrary to Marine Mammal Protection Act 1978, General policy statements, or Conservation Management Strategies/Plans approved under the Act.

• The commercial operations should not have any significant adverse effect on the behavioural patterns of the marine mammals (having regard to the number and effect of existing commercial operations).

• That it should be in the interests of the conservation, management or protection of the marine mammals that the permit is issued.

• That commercial operators and staff who may come into contact with marine mammals should have sufficient experience of marine mammals, and sufficient knowledge of the local area and sea and weather conditions.

• That commercial operators and staff who may come into contact with marine mammals should have no convictions for offences involving mistreatment of animals.

• That the commercial operation should have sufficient educational value to participants or the public.

In applying for a permit, the onus to provide information relating to the proposed commercial vessel operation lies with the applicant. The regulatory requirements are outlined under **regulation 7 - Requirements to be satisfied before permit for commercial vessel operation is issued**. Subsections (a)(ii) and (e) in particular specify the need for applicants to provide "any known information relating to the noise level of each vessel both above and below the sea" and to submit details of any educational material to be provided or educational aspects of the proposed operation".

Regulation 12(3)(a) (Permits) provides that the Director-General shall not issue a permit unless she or he is satisfied that the proposal will not have or be likely to have "any adverse effect on the conservation, protection and management of marine mammals".
The Director-General may also suspend, revoke, amend or restrict in whole or in part any permit under regulation 13(2), where she or he believes on reasonable grounds that it is necessary for the protection, conservation, or management of any marine mammal or class of marine mammals.

Furthermore, the Director-General (regulation 15) may decline to grant permits during a specified period where he or she "believes on reasonable grounds that it is necessary for the protection, conservation or management of any marine mammal or marine mammals of any class", in considering whether or not to decline to grant permits he must have regard to:

(a) the number and effect of existing operations; and

(b) whether or not it is in the interests of the conservation, protection, or management of marine mammals to grant further permits.

Part 3 (regulation 18) stipulates the speed and distance vessels must adhere to when viewing all marine mammals:

(f) Where a vessel stops to enable the passengers to watch any marine mammal, the engines shall be either placed in neutral or be switched off within a minute of the vessel stopping.

(k) No person, vehicle, or vessel shall cut off the path of a marine mammal or prevent a marine mammal from leaving the vicinity of any person, vehicle, or vessel

(l) Subject to paragraph (m) of this regulation, the master of any vessel less than 300 metres from any marine mammal shall use his or her best endeavours to move the vessel at a constant slow speed no faster than the slowest marine mammal in the vicinity, or at idle or "no wake" speed

(m) Vessels departing from the vicinity of any marine mammal shall proceed slowly at idle or "no wake" speed until the vessel is at least 300 metres from the nearest marine mammal, except that, in the case of dolphins, vessels may exceed idle or "no wake" speed in order to outdistance the dolphins but must increase speed gradually, and shall not exceed 10 knots within 300 metres of any dolphin

Furthermore, Part 3, regulation 20 stipulates:

(f) Where 2 or more vessels or aircraft approach an unaccompanied dolphin or seal, the masters concerned shall co-ordinate their approach and manoeuvres, and the pilots concerned shall co-ordinate their approach and manoeuvres

(g) A vessel shall approach a dolphin from a direction that is parallel to the dolphin and slightly to the rear of the dolphin

Resource Management (Marine Pollution) Regulations and Marine Protection Rules

Under the Resource Management (Marine Pollution) Regulations and the Marine Protection Rules, oil discharge from ships and boats is regulated as follows:

• Within the 12 nautical mile limit oil may only be discharged if it does not come from ships cargo, the ship is proceeding on route, and the oil contents of the discharge before dilution does not exceed 15 parts per million. This applies to platform drainage of offshore installations.

• Beyond the 12 nautical mile limit the same restrictions apply to discharges of oil from all ships and offshore installations. Additional requirements apply to discharges of oil cargo residue from tankers.

• Under the Marine Protection Rules, ships of 400 tons gross or more (whether operating within or beyond the 12 nautical mile limit) must have oil filtering equipment, sludge tanks, implement an oil spillage contingency plan, restrict carriage of ballast water in fuel oil, tanks (ships of 4000 tons gross or more), report non-permitted discharges of oil, keep a record of operations involving oil, and hold an International Oil Pollution Prevention Certificate.

• Ships less than 400 tons gross (whether operating within or beyond the 12 nautical mile limit) must report non-permitted discharges and, where reasonable and practicable, have holding tanks for oily wastes.

Under the Resource Management (Marine Pollution) Regulations and the Marine Protection Rules, garbage discharge with regard to plastics is regulated as follows:

• Within the 12 nautical mile limit, disposal of plastics, dunnage, lining and packing materials is prohibited. Other garbage, including food wastes, paper, rags, metal, bottles, and crockery may be discharged provided that it is further than 3 nautical miles from the shore or 500 m from any offshore

installation and ground to a particle size of less than 25mm. Discharge of garbage from offshore installations is prohibited.

• Beyond the 12 nautical mile limit, disposal of plastics is prohibited. Dunnage, lining and packing material may be discharged no closer than 25 nautical miles from shore. Other garbage, including food wastes, paper, rags, glass, metal, bottles and crockery not ground to a particle size of less than 25mm may be discharged. Discharge of garbage from offshore installations, and from ships within 500 m of offshore installations, is limited to food wastes ground to a particle size of less than 25mm. Garbage does not include fresh fish and parts thereof both inside and outside the 12 nautical mile limit.

• Under Marine Protection Rules, all ships of 12 m or over are required to carry a notice alerting passengers and crew to garbage disposal requirements.

• Ships of 400 tons gross or more carrying 15 or more persons must implement a garbage management plan. A record of on-board garbage management is also required in some cases.

Marine Mammal Action Plan

The Marine Mammal Action Plan is an internal DOC document that "serves to underpin the legislation and policy mentioned above and provides specific outputs with regard to the conservation of marine mammals that the department can systematically work to achieve."

Its objective for species protection is:

- To actively protect marine mammal species and populations, and allow the recovery of those that are threatened with extinction or that have been depleted or otherwise adversely affected by human activities or unusual natural events.

The Marine Mammal Action Plan defines Hector's and Maui's dolphins as "Priority 1 species" and recreational and commercial fishing, and coastal development (especially marine farming) as "Priority 1 issues".

The Key Objectives for Hector's dolphins in the MMAP are:

1. Ecology. To better understand the population ecology, key habitat requirements and threats of the species.

2. Human impacts. To effectively protect Hector's and Maui's dolphins against any recreational and commercial fisheries-related mortality and other avoidable adverse effects of tourism and other coastal use and development.

3. Species recovery. To facilitate the recovery of the species and ensure that the local and national population dynamics (including the genetic diversity) of the species are maintained and restored to a viable self-sustaining state within its natural range.

Resource Management Act

The Purpose of the Resource Management Act 1991 (RMA) is to promote the sustainable management of natural and physical resources. Particularly relevant sections of the RMA include:

Section 5(2)(b) and (c) relate to "Safeguarding the life-supporting capacity of air, water, soil and ecosystems" and "Avoiding, remedying, or mitigating any adverse effects of activities on the environment".

Section 6(c) requires recognition and provision for "the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna."

Section 6(e) requires recognition and provision for the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga, and 7(a) requires particular regard to be had to Kaitiakitanga.

Sections 7(d) and 7(f) identify the intrinsic values of ecosystems and the maintenance and enhancement of the quality of the environment as matters to which particular regard must be had.

Section 8 requires the Treaty of Waitangi to be taken into account

New Zealand Coastal Policy Statement (NZCPS)

The New Zealand Coastal Policy Statement (NZCPS) provides policy direction for the management of the coastal environment. Two principles of the NZCPS that are of particular relevance to the management of Hector's dolphins are:

- The protection of habitats of living marine resources contributes to wellbeing (principle 6).

- The importance of protecting significant natural ecosystems and maintaining indigenous coastal diversity (principle 11)

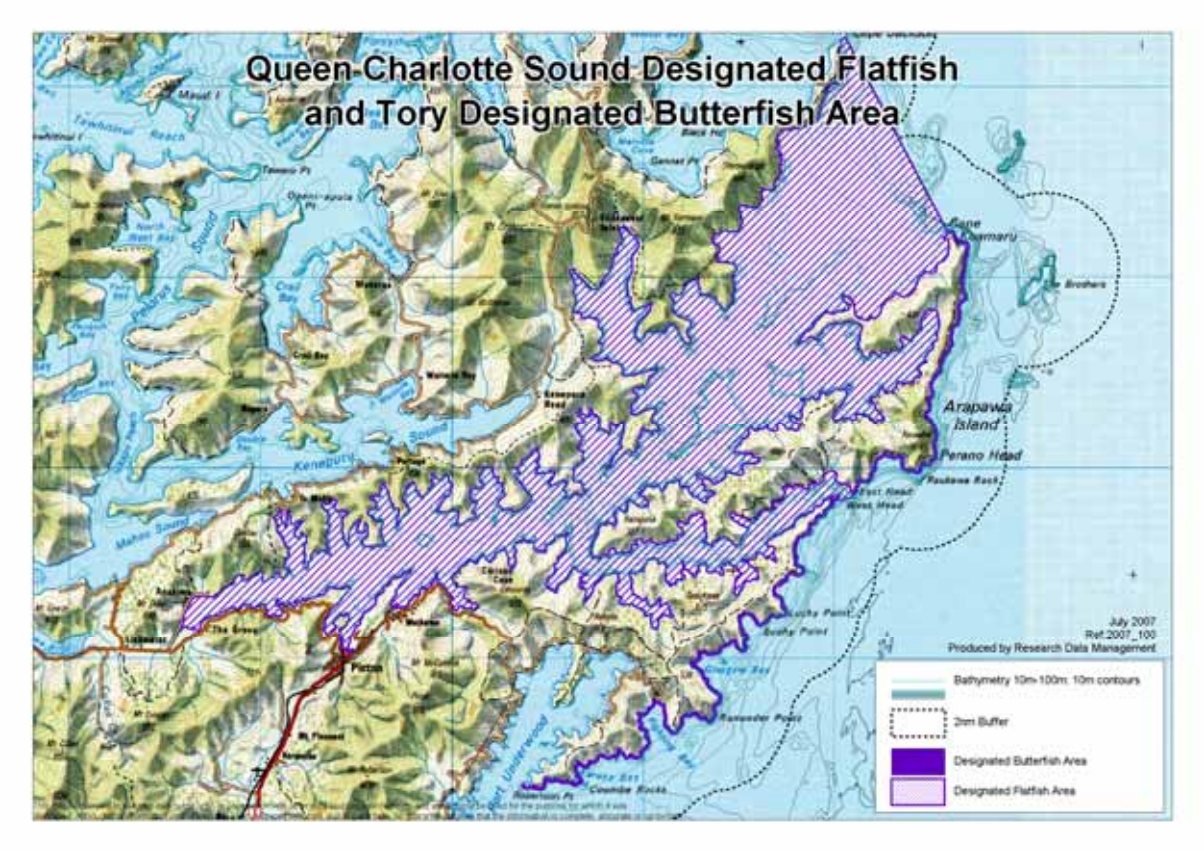
Two national priorities in the NZCPS which are of particular relevance to the assessment of effects on Hector's dolphin:

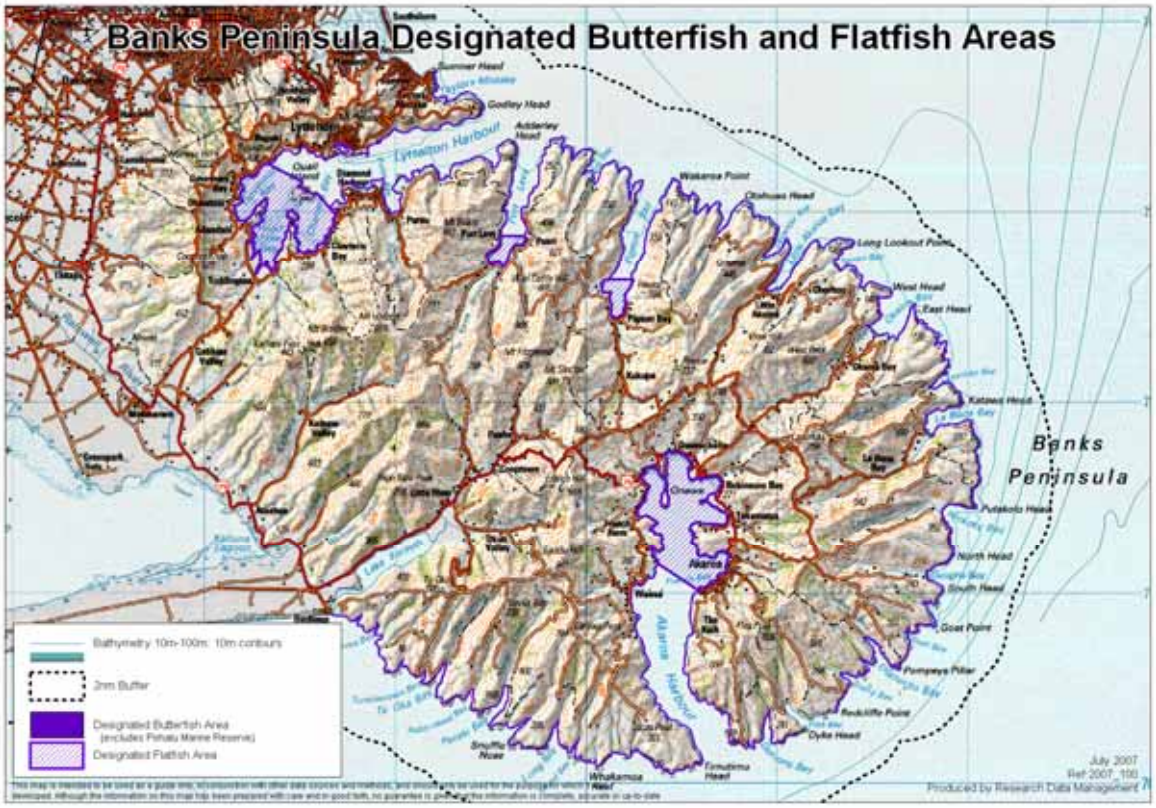
- Policy 1.1.2 states that: "It is a national priority for the preservation of natural character of the coastal environment to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna in that environment by:
  (a) avoiding any actual or potential adverse effects of activities on the following areas or habitats:
  (i) areas and habitats important to the continued survival of any indigenous species;"

- Policy 1.1.4 states that: "It is a national priority for the preservation of natural character of the coastal environment to protect the integrity, functioning, and resilience of the coastal environment in terms of:
  (b) natural movement of biota;...
  (e) natural biodiversity, productivity and biotic patterns, and
  (f) intrinsic values of ecosystems."

11.6. Appendix 6 – Designated butterfish and flatfish areas

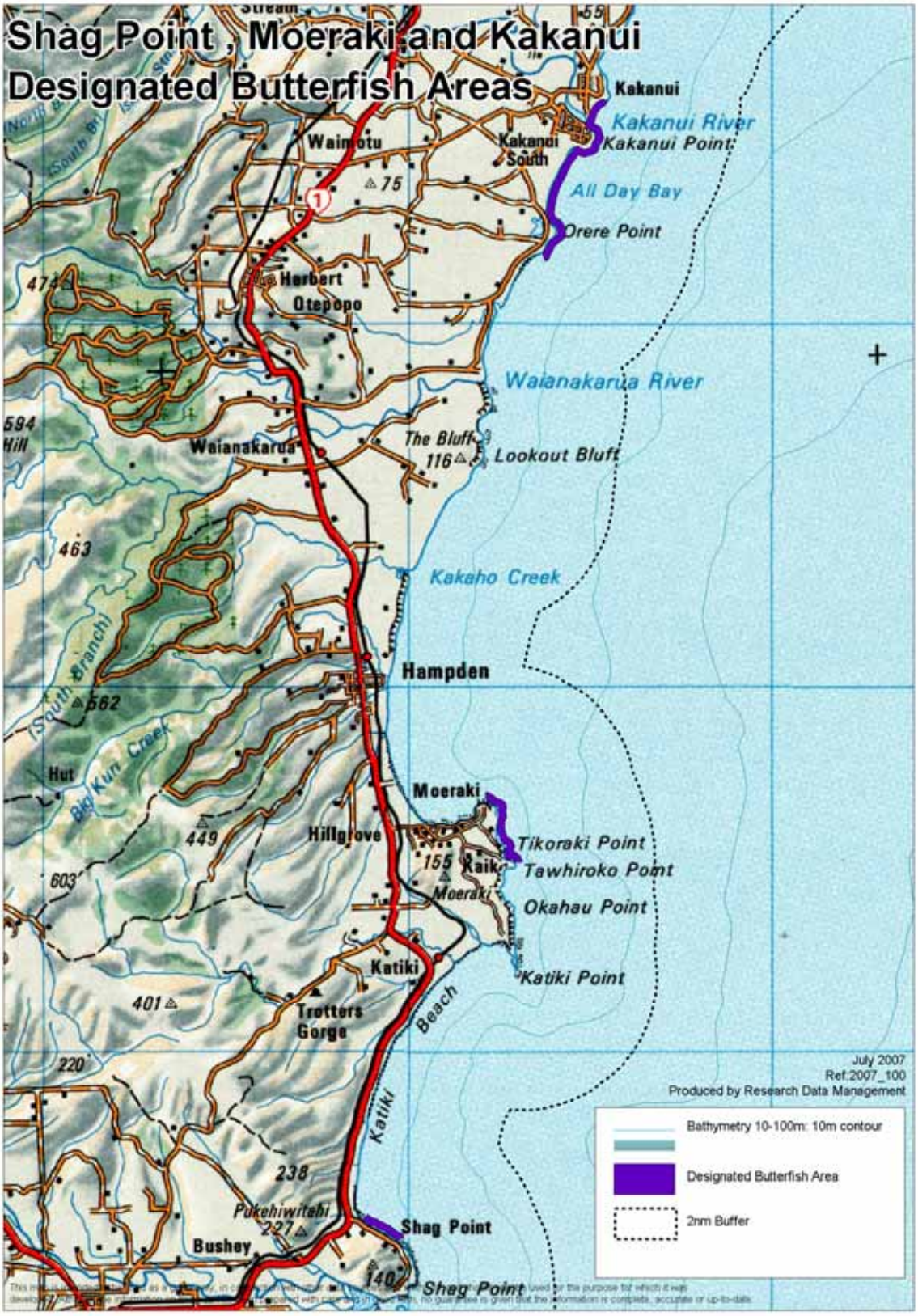
11.6.1. ECSI designated flatfish and/or butterfish set net areas



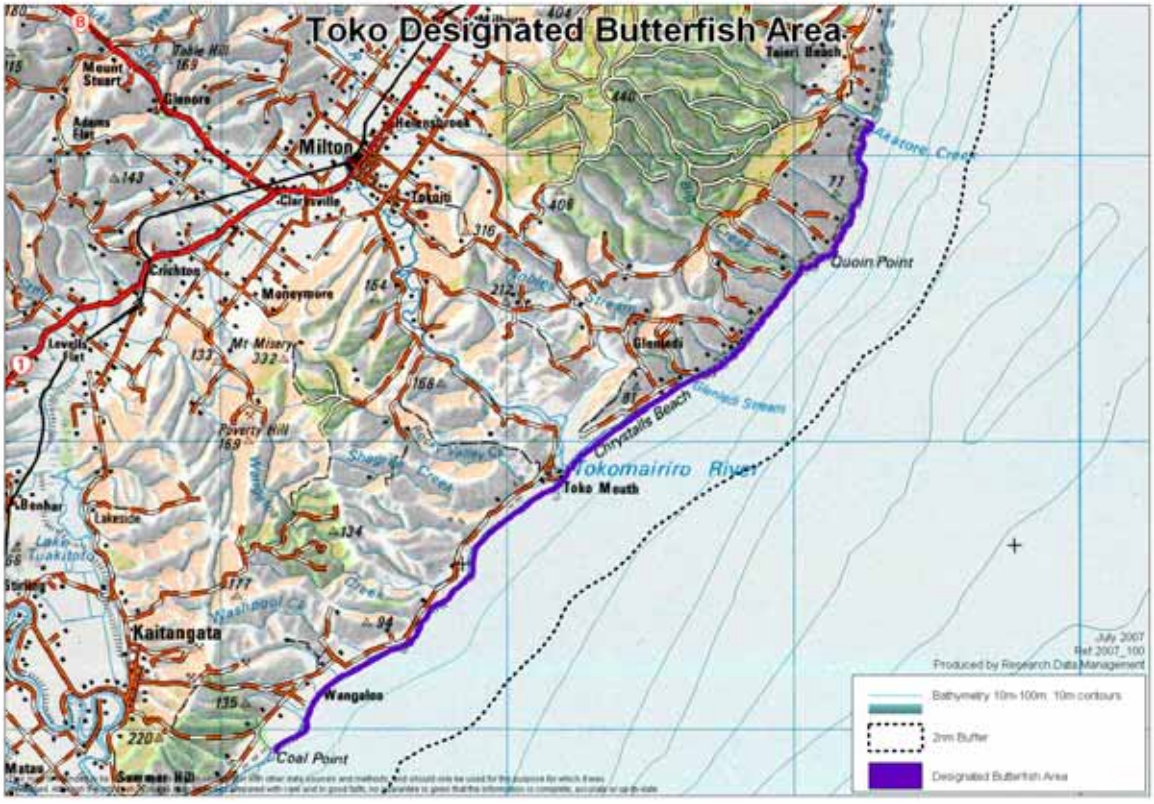

Banks Peninsula Designated Butterfish and Flatfish Areas
Banks Peninsula
Bathymetry 10m-100m: 10m contours
2nm Buffer
Designated Butterfish Area
(excludes Pohatu Marine Reserve)
Designated Flatfish Area
July 2007
Ref 2007_100
Produced by Research Data Management


Northern Kaikoura, Kaikoura Peninsula and Southern Kaikoura Designated Butterfish Areas
KAIKOURA
Kaikoura
Kaikoura Peninsula
Paparoa Point
Ohau Point
Half Moon Bay
Mangamaunu
Hapuku
Point Kean
South Bay
East Head
Pinnacle Rock
July 2007
Ref 2007_100
Produced by Research Data Management
Bathymetry 10m-100m: 10m contours
2nm Buffer
Designated Butterfish Area


Timaru Designated Butterfish Area
Orari River
Browns Beach
Waiapi
Arowhenua
Pleasant Point
Kerrytown
Waitawa
Opihi River
Waipopo
Seadown
Levels Valley
Levels
Rosewill Stream
Seaforth
Rosewill
Washdyke
Washdyke Lagoon
Punuka
Hadlow
Smithfield
Caroline Bay
Claremont
Gleniti
TIMARU
Fairview
Adair
Redruth
Pareora West
Salisbury
Otipua
Tuhawaiki Point
Normanby
Pig Hunting Creek
Kingsdown
Pareora
Springbrook
Lyalldale
Pareora River
St Andrews
Otaio River
Otaio
Kohika Stm
July 2007
Ref:2007_100
Produced by Research Data Management
Bathymetry 10m-100m: 10m contours
2nm Buffer
Designated Butterfish Area

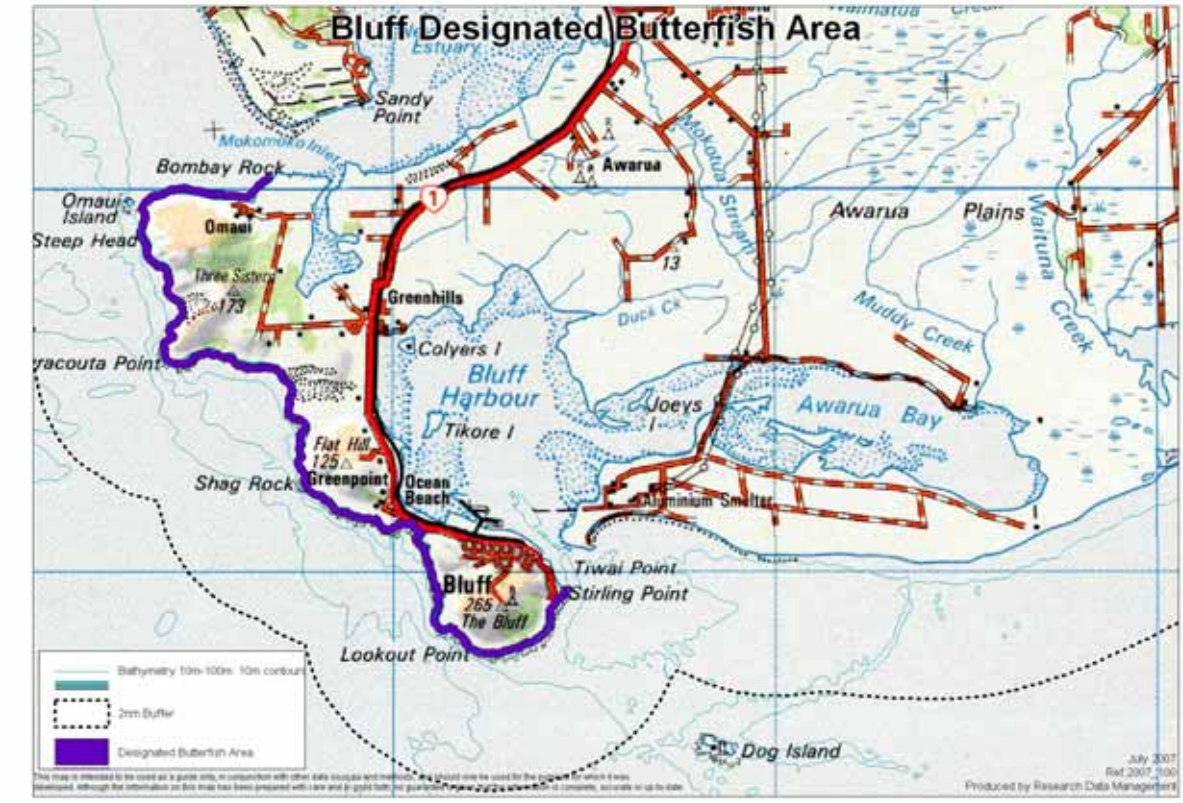

Shag Point , Moeraki and Kakanui
Designated Butterfish Areas
Kakanui
Kakanui River
Kakanui Point
Kakanui South
Waimotu
All Day Bay
Orere Point
Herbert
Otepopo
Waianakarua River
Waianakarua
The Bluff
Lookout Bluff
Kakaho Creek
Hampden
South Branch
Big Kuri Creek
Hut
Moeraki
Hillgrove
Tikoraki Point
Tawhiroko Point
Okahau Point
Katiki
Katiki Point
Trotters Gorge
Katiki Beach
Pukehiwitahi
Shag Point
Bushey
July 2007
Ref:2007_100
Produced by Research Data Management
Bathymetry 10-100m: 10m contour
Designated Butterfish Area
2nm Buffer

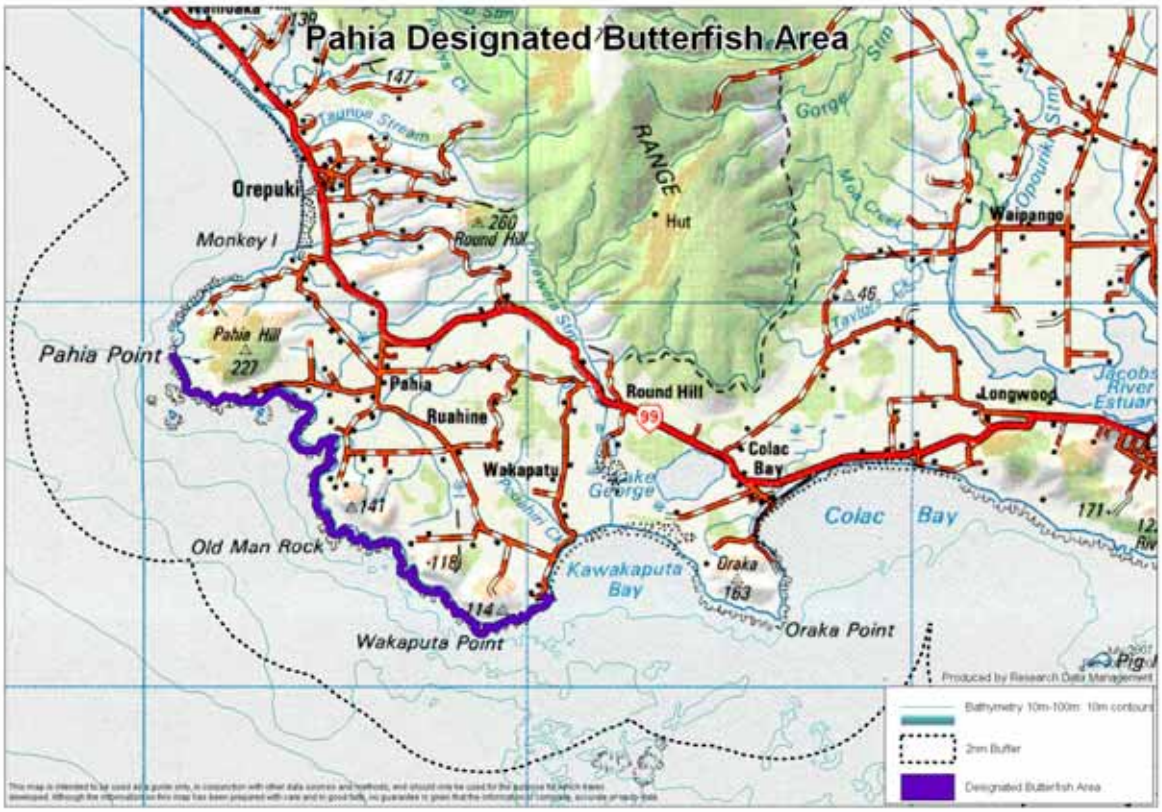

Seacliff and Waikouaiti Butterfish Areas
Poley Creek
Mt Scott
880
Mt Watkin
816
Hawksbury Bush
Tumai
Pleasant River
Derzac Hill
443
North Branch
Waikouaiti
Mt Paul
545
Tommy Flat Ck
Cornish Head
Merton
Waikouaiti River
Karitane
Pukeraki
Green Point
Brinns Point
Seacliff
Evansdale
Warrington
Waikouaiti Bay
Purakanui Bay
Potato Point
Purakanui
Waitati
Osbirne
Heyward Point
Taiaroa Head
Mihiwaka
Arramoana
31
32
33
34
Bathymetry 10m-100m 10m contours
2nm Buffer
Designated Butterfish Area
July 2007
Ref 2007_100
Produced by Research Data Management


Toko Designated Butterfish Area
Mount Stuart
Table Hill
Glenore
Adams Flat
Milton
Clarksville
Tokoiti
Taieri Beach
Matore Creek
Quoin Point
Crichton
Moneymore
Levelis Flat
Mt Misery
Glenledi
Poverty Hill
Onyxtalis Beach
Tokomairiro River
Toko Mouth
Lakeside
Lake Tuakitoto
Kaitangata
Washpool Ck
Wangaloa
Coal Point
Matau
Summer Hill
July 2007
Ref 2007_100
Produced by Research Data Management
Bathymetry 10m-100m 10m contours
2nm Buffer
Designated Butterfish Area


Kaka Designated Butterfish Area
Puerua
Paretai
Matau Branch
Clutha River
Koau Branch
Puerua R.
Glenomaru
363
Romahapa
Port Molyneux
Molyneux Bay
Stream
Kaka Point
Glenomaru
225
Willsher Bay
Ahuriri Flat
280
Pollocks Hill
Kargoro Ck
185
Fishermans Hill
Campbell Point
Nugget Stream
Hays Gap
Otekura
Tirohanga
319
Kaimataitai
133
Sandy Bay
Nugget Point
198
Newhaven
Bathymetry 10m-100m: 10m contours
2nm Buffer
Designated Butterfish Area

11.6.2. SCSI designated butterfish areas





11.7. Appendix 7 - Acronyms

ACE	Annual Catch Entitlement
CELR	Catch Effort Landing Return
CFMC	Challenger Fisheries Management Company
CoP	Code of Practice
DOC	Department of Conservation
ECSI	East Coast South Island
FA96	Fisheries Act 1996
FMA	Fisheries Management Area
FRML	Fishing Related Mortality Limit
IPP	Initial Position Paper
ITQ	Individual Transferable Quota
LFR's	Licensed Fish Receivers
MFish	Ministry of Fisheries
MHR	Monthly Harvest Return
MHW	Mean High Water
MMS	Marine Mammal Sanctuary
MPA	Marine Protected Area
PBR	Potential Biological Removal
PMP	Population Management Plan
PoDs	Porpoise Detection Devices
RIS	Regulatory Impact Statement
RMA	Resource Management Act
SCSI	South Coast South Island
SEFMC	South East Fisheries Management Company
TMP	Threat Management Plan
WCNI	West Coast North Island
WCSI	West Coast South Island