Section 1: The Current Situation

33 This section presents the best available (at this stage, government) information[4] on the current situation in the CIFF. The information is organised under the three high-level outcomes (ie, desired outcomes) set by Government:

- Health of the aquatic environment is protected
- Best value is able to be realised
- Credible fisheries management.

34 These outcomes (or desired results) are described in MFish's Statement of Intent (SOI). The SOI also describes a fourth outcome, which is to deliver on the Crown's obligations to Maori. This fourth outcome is seen as fundamental to MFish's work, and therefore to inform all activities undertaken by MFish. For this reason, delivering on the Crown obligations to Maori is incorporated into each of the other three contributing outcomes.

PROTECTING THE HEALTH (HAUORA) OF THE AQUATIC ENVIRONMENT

35 The aquatic environment must remain healthy if the CIFF is to produce value for current and future generations. Key focuses are managing the impacts of fishing on the aquatic environment and specifying limits on fishing activity. Identifying opportunities to work with other entities to develop better ways of managing the impacts of all human activities affecting the environment is also important however, as CIFF managers and participants cannot directly control non-fishing activities that affect the aquatic environment.

General features of the CIFF Aquatic Environment

36 The dominant oceanographic feature influencing the aquatic environment of the CIFF is onshore flow of a warm, nutrient-poor body of water from the Tasman Sea. Flow of the water body is deflected by the South Island - it flows north along the west coast of the South Island (called the 'Westland current') then turns to flow through the Cook Strait (the 'D'Urville current').

37 Inshore currents along the South Island west coast are more variable, flowing both north and south. Upwellings and eddies enhance ocean productivity, resulting in abundant phyto- and zoo-plankton stocks at times. Through the Cook Strait the tidal currents are fast flowing, and a combination of strong wind and tidal flow produce physical and biological variability in the region. Throughout this region high levels of freshwater input influence the inshore waters. In the Marlborough Sounds deep cold inshore waters persist, with low levels of phytoplankton.[5]

38 Below are two maps, the first (Figure 2) which shows the depth range in the CIFF, and the second (Figure 3) maps out the bottom sediment types in the different areas of the CIFF.

[4] Section 10 of the Fisheries Act 1996 requires the best available information to be used for fisheries management.
[5] Bradford-Grieve, J., Probert, K., Lewis, K., Sutton, P., Zeldus, J., Orpin, A. and Jillett, J. in press. Chapter 31. New Zealand shelf region.

Figure 2: Depth range of the Challenger area (FMA 7)

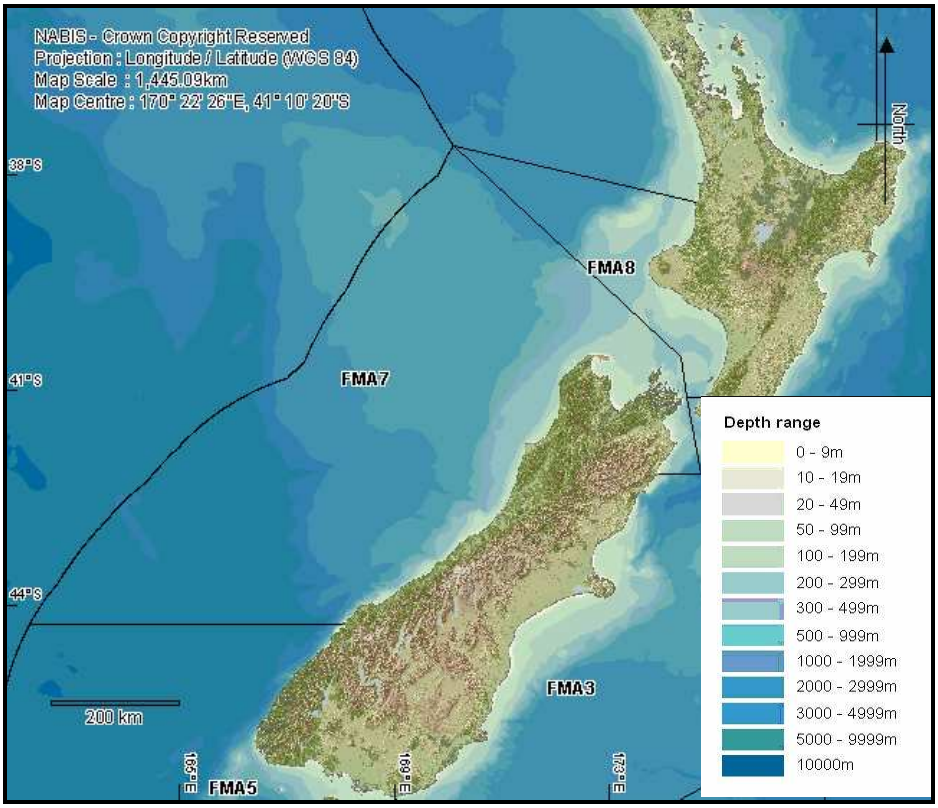
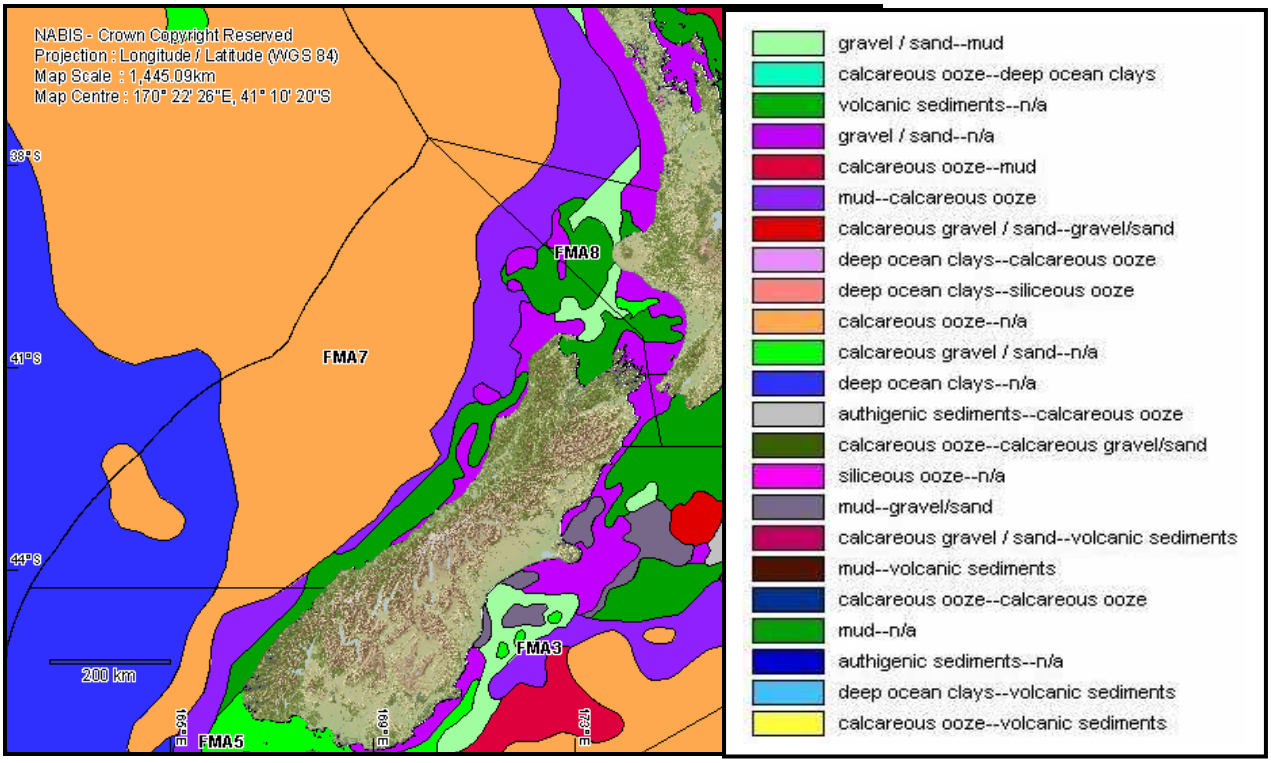


Figure 3: Bottom sediment types in the Challenger area



Managing the Effects of Fishing

39 The activity of fishing can impact the aquatic environment in a variety of ways. For example, fishing methods that have an impact on the seafloor (eg, trawling and dredging) can alter the structure of the seafloor and affect associated plants and animals. Fishing nets or lines can inadvertently capture or injure marine mammals or seabirds. The Fisheries Act 1996 outlines several environmental principles that must be considered when making decisions relating to the use or sustainability of fisheries resources like the CIFF. These include:

- Maintaining biological diversity (biodiversity) of the aquatic environment
- Protecting habitats of particular significance for fisheries management.
- Maintaining associated or dependant species above a level that ensures their long-term viability

40 In addition, in 2005 the Government launched its Strategy for Managing the Environmental Effects of Fishing (SMEEF) The SMEEF proposed the development of a set of standards for defining acceptable limits of effects of fishing on the aquatic environment. The development of these performance standards is now underway. The following sections examine the CIFF in relation to the environmental principles and linked performance standards. Fishing impacts on the seafloor (benthic impacts) are discussed as a separate topic, as these impacts span both biodiversity and habitats of particular significance to fisheries management.

Biological diversity

Performance standard: Draft standard is to identify and maintain biodiversity in the aquatic environment.

41 The Government's overall commitment to maintaining New Zealand's biodiversity is set out in the New Zealand Biodiversity Strategy. One aim of the Strategy is to protect a full range of marine habitats and ecosystems representative of New Zealand's marine biodiversity. Recently, the Government developed the Marine Protected Areas (MPA) Policy, which will guide the development of a comprehensive and representative network of MPAs. The MPA network will be the primary tool used to identify and maintain marine biodiversity.

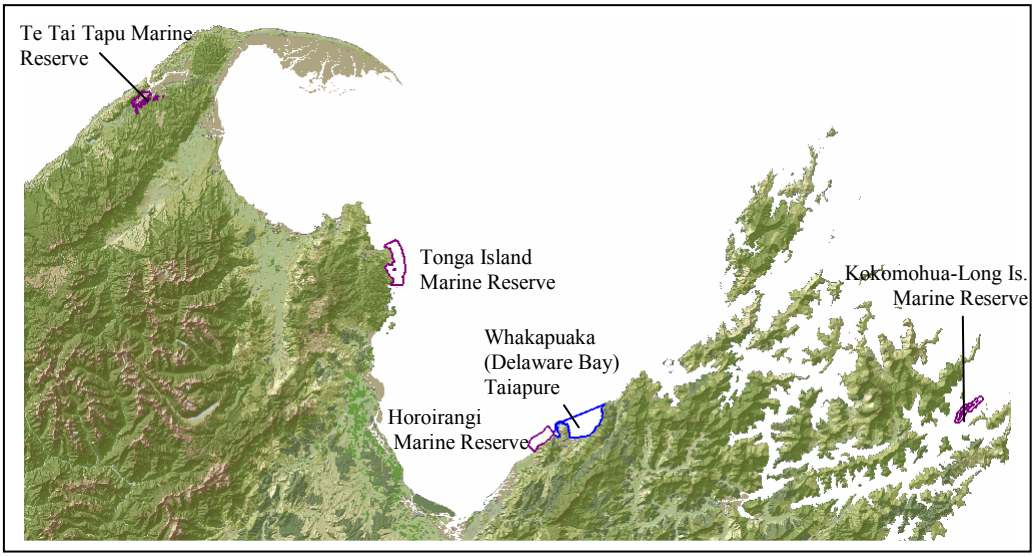
42 Key documents supporting implementation of the MPA Policy – the Habitat Classification System and the Protection Standard – were released in February 2008 by Ministers. FMA 7 has been formed into two biogeographic regions. The West Coast of the South Island from Awarua Point up to Kahurangi Point makes up one region. The second region is called the South Cook Strait Coastal Biogeographic region, which extends from Kahurangi Point in the West Coast, around the Marlborough Sounds to Cape Campbell on the east coast of the South Island.

43 It is yet to be determined what existing management tools in FMA 7 would contribute to an MPA network and what representative habitats and ecosystems still need protection. On the West Coast a Marine Protected Areas forum has been established. An inventory of existing closures will be developed to determine what existing closures will contribute to the MPA network; however there are not many Fisheries Act closures in place within the West Coast region. An inventory for the South Cook Strait biogeographic region will be completed in the future by MFish and DOC.

44 Figure 4 shows the location of the marine reserves and the taiapure-local fishery area within

FMA 7. Method restrictions and other area-based fisheries management tools in the inshore area of FMA 7, many of which contribute to the biodiversity of the CIFF, are listed in the table of regulations on page 87.

Figure 4: Marine Reserves and Taiapure-local fishery area in FMA 7.



45 MFish Research projects conducted within the CIFF area relating to areas of high biodiversity include:

- Survey of Separation Point Bryozoan (2000)
- Crustose coralline algae of New Zealand (including Challenger) (2001)
- Survey of Intertidal Benthos of Farewell Spit, Golden Bay (2002).

Habitats of particular significance to fisheries management

Performance standard: Draft standard is to identify and protect habitats of particular significance for fisheries management.

46 Habitats of particular significance to fisheries management include fish spawning and nursery areas, areas of high biodiversity, and areas of habitat important to particular life-cycle phases or the food-web of harvested fish species.

47 No research intended to identify habitats of significance to fisheries management has been undertaken in the CIFF area. Habitats of particular significance to fisheries management currently identified in the region are:

- A rig pupping area around Farewell Spit
- A Department of Conservation (DOC) Nature Reserve at Farwell Spit
- Snapper spawning areas in Kenepuru Sound, Tasman Bay and Golden Bay
- A high-biodiversity bryozoan bed around Separation Point
- Rhodolith beds

Rig Pupping Area

48 Rig appear to have preferential pupping (or birthing) grounds around Farewell Spit, which results in concentrations of female rig ready to pup in the area. Female rig have low fecundity and young rig are unlikely to survive if released prematurely when processing harvested adult females. Consequently, removing pupping females from the population immediately prior to when they give birth reduces the productivity of the SPO 7 fish stock.

49 The Challenger Finfisheries Management Company Limited (CFMC), which represents SPO 7 quota holders, has implemented an area closure around Farewell Spit to protect the pupping females (see appendix 2).[6] The voluntary closure prohibits all commercial set net and trawl fishing for rig in waters shallower than 10 m, in the area extending from Cape Farewell to Pakawau Bridge. The CFMC has also encouraged recreational fishers to abide by the provisions of the commercial closure and received widespread support.

DOC Nature Reserve at Farewell Spit

50 The area surrounding and including Farewell Spit is also a Department of Conservation (DOC) Nature Reserve. The following restrictions apply to nature reserves:

- Liberating any animal, planting any plant;
- Willfully damaging or removing any or any part of a plant, stone, mineral or anything on the reserve;
- Taking, destroying or willfully injuring or disturbing any animal or bird or the nest of any bird on the reserve;
- Damaging the natural features, flora and fauna; and
- The taking of any fish or shellfish, unless authorised by the Minister of Conservation.

People are unable to enter a nature reserve, or moor or anchor in a reserve, unless they have a permit.

Snapper spawning areas

51 In the Marlborough Sounds region of SNA 7, snapper are generally dispersed throughout the region but congregate to spawn in summer months when water temperatures are warm (between October and February). Kenepuru Sound is thought to be one of the main congregation and spawning areas in the Sounds. Snapper are also thought to congregate and spawn in inner Golden Bay and Tasman Bay. Intensive fishing of congregations of snapper could lead to temporary, localised depletion and could affect spawning success.

52 To protect the snapper in Keneperu Sound during spawning, commercial set netting has been banned by regulation in Kenepuru Sound between 1 October and 31 March. Restrictions on the size and use of recreational set nets also apply during this period. In inner Golden Bay, commercial trawling is prohibited from1 November – 30 April each year. There are also two voluntary closures to commercial and recreational trawling; an all year closure in very inner Golden Bay and a partial year closure (1 November – 30 April) in inner Tasman Bay.

Separation Point High-Biodiversity Bryozoan Bed

[6] CFMC implemented the closure as part of its stakeholder Fisheries Plan for SPO7. The Minister of Fisheries approved the SPO7 fisheries plan under section 11A of the Fisheries Act 1996 in 2006.

53 A bryozoan bed occurs around Separation Point (the point between Golden Bay and Tasman Bay). Bryozoan beds are usually associated with high biodiversity and may function as important nursery areas for various fish species. Bottom impacting methods can alter, damage or destroy bryozoan communities. The use of commercial bottom impacting methods including trawl nets, danish seine nets and dredges is prohibited around Separation Point (see appendix 2).

54 The Separation Point bryozoan bed covers an area of around 40 nm^2 (146 km^2) at depths of 10-35 m. The coralline growths are not true corals but are the homes of generations of colonial animals called bryozoans. The growths are comprised of one of two easily distinguishable bryozoan species; *Celleporaria agglutinans* (known as 'hard coral'[7]) occurs in massive heavy mounds attaining over 50% cover and 50cm in height, and *Hippomenella vellicata* (known as 'cornflakes coral') that is less robust and more sparse, forming honeycombs of up to 30cm across and 15cm in height.[8]

55 The habitats created by bryozoans are considered to be ecologically important because they can enhance biodiversity through habitat complexity.[9] The crevices and interstices in the clumps and honeycombs provide a vast surface area for a large number of other calcareous frame-building organisms: Bradstock & Gordon (1980) found 92 other species of encrusting and branching bryozoans, serpulid tubes and sponges. These accumulations in turn provide microhabitats that support a diverse fauna of hydroids, ascidians, bivalve molluscs and polychaete worms. Some of these species form important parts of the diet of snapper and tarakihi, in particular the juveniles, and leatherjacket, blue cod, red mullet and sea perch. The destruction of these beds by trawling prior to closure and the subsequent loss of shelter and food availability saw a reduction in numbers of juvenile snapper and tarakihi by 1980 (Bradstock & Gordon 1980).

56 The Separation Point bryozoan beds are unusual in that they are growing on older bryozoan mounds located on soft mud and silt. Other beds around New Zealand are formed on biogenic or carbonate sediments. This makes the Separation Point beds vulnerable to sedimentation from land runoff, tidal currents and storms and trawling disturbance. Grange et al (2003) note that the lack of recovery of the Torrent Bay bryozoan beds suggest that once mounds resident on mud and silt substrate are broken up, they cannot recover.

57 By the late 1970s local fishers expressed concern about the practice of trawling over the bryozoan beds, and the take of large numbers of juveniles. They supported the idea of closing the Separation Point beds by legislation. Fishers helped to delineate the area known to contain the bryozoan beds (Saxton 1980, cited in Grange et al 2003), and the Separation Point area was closed to all trawling, danish seining and dredging from December 12 1980 with "… full support of local fishermen's associations, who recognise the value of the coral beds to the fish stocks in the Bay."[10]

Rhodolith beds

58 Rhodolith beds have recently been identified as possible habitats of significance, however research [HAB2008/01 Distribution and biodiversity of rhodolith beds] identifying these has not yet begun. The information documenting biodiversity of rhodolith beds will be included here as and when new data comes to light.

[7] Gordon et al (1994)

[8] Bradstock, M; & Gordon, D. (1983) Coral-like bryozoan growths in Tasman Bay, and their protection to conserve commercial fish stocks. New Zealand Journal of Marine and Freshwater Research 17 159-163

[9] Grange, K; Tovey, A; & Hill, A. (2003) The Spatial Extent and Nature of the Bryozoan Communities at Separation Point, Tasman Bay. Marine Biodiversity Biosecurity Report No. 4

[10] Mace, J. (1981) Separation Point closed. Catch 81 (July) 15-16.

Associated or dependent species

Performance standard: Draft standard is to identify and maintain associated and dependent above a level that ensures their long-term viability

59 The Fisheries Act 1996 defines associated or dependent species as any non-harvested species taken or otherwise affected by the taking of any harvested species.

Protected species

60 Some species are protected by New Zealand law (in particular, the Wildlife Act 1958 and the Marine Mammals Protection Act 1978) or obligations arising from international agreements (eg, the Food and Agricultural Organisation's (FAO) International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries). In some instances, the Government has developed, or is in the process of developing, specific strategies to address the impacts of fishing on some protected species (eg, the Draft Seabird Standard and the Seabird National Plan of Action).

Marine mammals

61 Under the Marine Mammals Protection Act 1978 fishers are required to report the accidental killing or injuring of marine mammals[11]. An inventory of such interactions is being developed for the CIFF fishery. At this time, information on incidental catch is not collected in a uniform way (although there is currently a voluntary reporting form, there is no existing legal requirement to use the form to meet these obligations). Nor is there any significant observer programmes operating on small vessels (<18 m) within the CIFF fishery to verify interactions with marine mammals.

62 The marine mammal considered at greatest risk from the effects of fishing in the CIFF is the Hector's dolphin (*Cephalorhynchus hectori*/tūpoupou). Hector's dolphins are one of the world's least abundant marine mammals, and are classed as "endangered" by the World Conservation Union (IUCN). Hector's dolphins are also classified as a "threatened species" under the Marine Mammals Protection Act 1978.

Hector's Dolphin/Tūpoupou

63 The South Island west coast region hosts New Zealand's largest population of Hector's dolphins - the estimated population size is around 5388 individuals (with a 95 % confidence interval of 3613 - 8034 individuals). Surveys carried out on the west coast of the South Island suggest that the dolphins mostly reside within two nautical miles of the shore, with sightings of dolphins outside of six nautical miles very rare.

64 Best available information (based on Potential Biological Removal analysis) suggest that seven to 12 dolphins (and potentially as high as 38 dolphins if a Recovery Factor default value of 0.5 is applied) can be removed from the West Coast South Island population each year (excluding natural mortalities), without the population decreasing in size. The estimated acceptable population maintenance limits can be affected when mortalities (natural and human-induced) are concentrated over a relatively small area. Information from DOC suggests that currently about five to six Hector's dolphins (minimum) are found dead each year and most are found in Buller Bay and around Hokitika. Since 1988, there have been 17 known fishing-related mortalities. Thirteen of these have been attributed to net entanglement (with nine

[11] Marine mammals are defined as any mammal which is morphologically adapted to, or which primarily inhabits, any marine environment; and all species of seal (*Pinnipedia*), whale, dolphin, and porpoise (*Cetacea*), and dugong and manatee (*Sirenia*).

deaths a result of recreational fishing, including four deaths in a single set netting incident) and four attributed to trawling.

65 Commercial set netting can occur throughout the South Island's west coast but most set netting effort is concentrated between Westport and Hokitika. Commercial set netters target primarily school shark and rig, and set netting can occur relatively close to shore dependent on water depth. Recreational set netting on the west coast is concentrated mainly around towns and settlements. The main species targeted by recreational set netters are flatfish, elephant fish and various shark species.

66 Past commercial trawling activity has also resulted in Hector's dolphin deaths. There are two known separate trawling incidents on the South Island west coast that resulted in dolphin deaths. Both occurred in 1988 and each resulted in the death of two Hector's dolphins. Commercial trawling can occur throughout the South Island west coast but most fishing effort concentrated between Westport and Hokitika. The trawlers use mostly bottom trawl gear and target a wide range of species including red cod, hoki, tarakihi, elephant fish, stargazer, and ling. Trawling can occur relatively close to shore dependent on the species being targeted and water depth.

67 There are no legislative or regulatory management measures in place along the west coast South Island to address fishing interactions with Hector's dolphins. However, there are two voluntary set netting Codes of Practice (COPs) in place. A voluntary commercial set net COP applies throughout FMA 7. This Code was implemented by, and is managed by, the Challenger Finfisheries Management Company Limited and applies to all commercial set net fishers operating under the Company's jurisdiction. The COP's purpose is to avoid and mitigate the incidental capture of Hector's dolphins in commercial set nets throughout FMA 7. The COP encourages commercial set net fishers to implement of specific measures to minimise interactions with Hector's dolphins. MFish also actively promotes a voluntary non-commercial set net COP in FMA 7. The COP encourages non-commercial fishers to implement specific measures to minimise accidental and incidental catch of non-target species including Hector's dolphins.

New Zealand Fur Seals/Kekeno

68 Breeding sites for fur seals (*arctocephalus forsteri)* in the northern part of the South Island include Stephens Island in the outer Marlborough Sounds (established about 1970), Archway Islands (established around 1980) and Pillar Point (established around 1988) near Cape Farewell, and Tonga Island in Tasman Bay (established around 1988).[12] There are numerous haulouts in the area, centered around Cape Farewell, Separation Point, D'Urville Island, and outer Queen Charlotte Sound.

69 On the West Coast, there are breeding colonies at Taumaka Island (Open Bay Islands) near Haast; Charleston, Cape Foulwind and Black Reef near Westport; and Kongahu Point to the south of, and Wekakura Point to the north of Karamea. New Zealand fur seals have a fluctuating population on the West Coast, which was estimated to be around 12,500 mature animals in the late 1990s[13].

70 Female New Zealand fur seals start breeding at an average age of 5 years, with a range of 4-8 years (McKenzie 2006, for an expanding population in South Australia), and the prime age breeders are 8-13 years old. Currently, and over the next few years on the West Coast South Island study rookeries, breeders from the more abundant pup years of January 1992-1998 are being replaced by breeders from the less abundant pup years since January 1999. The prime age breeders producing the January 2008

[12] Taylor, R; Barton, K; Wilson, P; Thomas, B; & Karl, B. (1995) Population Status and Breeding of New Zealand Fur Seals (*Arctocephalus forsteri*) in the Nelson-Northern Marlborough Region. New Zealand Journal of Marine & Freshwater Research 29 223-234

[13] Best (1998), cited in Neall et al (1997) *The West Coast Marine and Coastal Environment: An Initial Report for the West Coast Marine Protection Forum*.

estimates were from the January 2000-1995 pup-years, respectively. In four years time (January 2012) the prime age breeders will be from the January 2004-1999 pup years.

Other marine mammals

71 Analysis (initial or otherwise) of acceptable levels of fishing-related mortality has not been undertaken for any other marine mammal species that interact with the CIFF fishery. In addition to Hector's dolphin and New Zealand fur seals, other marine mammals known to occur off the west coast of the South Island include southern elephant seal/ihupuku (*Mirounga leonine*), and a number of cetaceans (whales)[14]. Whales have been grouped into five classes by DOC when investigating strandings (see table 3).

Table 3: Whales known to occur of the west coast of the South Island

Inshore delphinids		
Bottlenose dolphin	*Tursiops truncatus*	Aihe
Common dolphin	*Delphinus delphis*	Aihe
Dusky dolphin	*Lagenorhynchus obscurus*	Aihe
Orca	*Orcinus orca*	
Beaked whales		
Andrew's beaked whale	*Mesoplodon bowdoini*	Hakura
Goose-beaked whale	*Ziphius cavirostris*	Hakura
Gray's beaked whale	*Mesoplodon grayi*	Hakura
Shepherd's beaked whale	*Tasmacetus shepherdi*	Hakura
Baleen whales		
Blue whale	*Balaenoptera musculus*	
Humpback whale	*Megaptera novaeangliae*	Paikea
Minke whale	*Balaenoptera acutorostrata*	
Southern right whale	*Eubalaena australis*	Tohora
Sperm whale	*Physeter macrocephalus*	Parāoa
Offshore delphinids		
Long-finned pilot whale	*Globicephala melas*	
Southern pilot whale	*Globicephala malaena edwardi*	
Pygmy Sperm whales		
Pygmy sperm whale	*Kogia breviceps*	

72 Marine mammals known to occur in Tasman and Golden Bays, Cook Strait and the top of the East Coast include New Zealand fur seals, southern pilot whale, bottlenose dolphin, common dolphin and dusky dolphin.

73 Mass whale stranding is relatively common in Golden Bay, most likely due to its gently sloping

[14] Neall et al (1997) *The West Coast Marine & Coastal Environment: An Initial Report for the West Coast Marine Protection Forum.* Webb, B. (1973) Cetaceans Sighted off the West Coast of the South Island, New Zealand, Summer 1970 (Note). New Zealand Journal of Marine & Freshwater Research 7 179-182.

sandy beaches in conjunction with adjacent protruding section of coastline (ie Farewell Spit). Brabyn & McLean (1992)[15] note that on the western side of Farewell Spit the beach slopes between 1 and 3º, and on the eastern side tidal mudflats extend around 8km into Golden Bay. Mass strandings of pilot whales and southern right whales occur on the eastern base of Farewell Spit when the surface flow is toward the head of the bay during northerly winds (October to March). Mass strandings are not known to occur on side of Farewell Spit, although single strandings occur. DOC began systematically recording whale stranding events with the implementation of the marine mammals Protection Act (1978). According to DOC, inshore delphinids have a higher likelihood of survival following refloatation than the other groups of whales; this may reflect the social structure of the stranded group since social whales such as long-finned pilot whales have a refloat success rate following mass strandings than other animals[16].

Seabirds

74 New Zealand waters host the greatest variety of albatross and petrel species in the world, and are an important breeding ground for around eighty of these. Fishing is one of the greatest threats to these species' survival. Albatrosses and petrels are attracted to the fish, offal and discards they often find around fishing vessels. In longline fisheries, they risk getting caught on hooks and drowning as they try to eat bait from the lines. In trawl fisheries, the birds risk getting run over by heavy trawl cables as they chase offal and discards behind a trawler; or risk drowning in the net as they try to take fish from it.

75 The Wildlife Act 1958 requires fishers to report the accidental killing or injuring of marine wildlife including seabirds. An inventory of such interactions is being developed for the CIFF fishery. As with marine mammal reporting, information on the accidental or incidental catch of seabirds is not yet collected in a uniform way (although there is currently a voluntary reporting form, there is no existing legal requirement to use the form to meet these obligations). Nor is there any observer programmes currently operating on small vessels (<18 m) within the CIFF fishery to verify interactions with seabirds. Analysis (initial or otherwise) of acceptable levels of fishing-related mortality has yet to be undertaken for any seabird species' that interact with the CIFF fishery.

76 New Zealand also has a number of international obligations around seabirds and fishing. These include the Convention on Migratory Species (CMS); the Agreement for the Conservation of Albatrosses and Petrels (ACAP); and FAO International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (IPOA).

77 In response to the IPOA, New Zealand developed a National Plan of Action to Reduce the Incidental Catch of Seabirds in New Zealand Fisheries (NPOA) in 2004. The goals of the NPOA are:

- To ensure the long-term viability of protected seabird species is not threatened by fishing operations in New Zealand waters or by New Zealand flagged vessels in the high seas; and
- To further reduce the effects of fishing on these species as far as practicable.

The NPOA allowed fishers to manage their seabird by-catch through voluntary Codes of Practice. But it said that if voluntary measures did not work, the government would introduce regulations. The government is now setting up regulations and/or processes to achieve its NPOA goals across all of New Zealand's fisheries. This will involve: setting clear seabird by-catch limits in New Zealand fisheries; assessing whether a fishery will meet these limits without intervention; if intervention is needed,

[15] Brabyn, M; & McLean, I. (1992) Oceanography and Coastal Topography of Herd-Stranding Sites for Whales in New Zealand. Journal of Mammalogy 73 (3) 469-476.
[16] Department of Conservation (2003) Refloatation Rates Recorded in the New Zealand Whale Stranding database 1978-2002. DOC Science Poster no 61.

assessing whether a voluntary approach will be enough to meet the by-catch limits, or whether regulations are required; and a transparent process for monitoring the fishery's performance against its seabird by-catch limits.

78 A revised NPOA Seabirds management framework is currently out for consultation, along with the Draft Seabird Standard, until March 2008. The revised NPOA provides an allocation framework between fisheries for the limit set by the seabird standard and offers a risk assessment process to determine what measures are necessary in each fishery to ensure as far as possible that this is not exceeded.

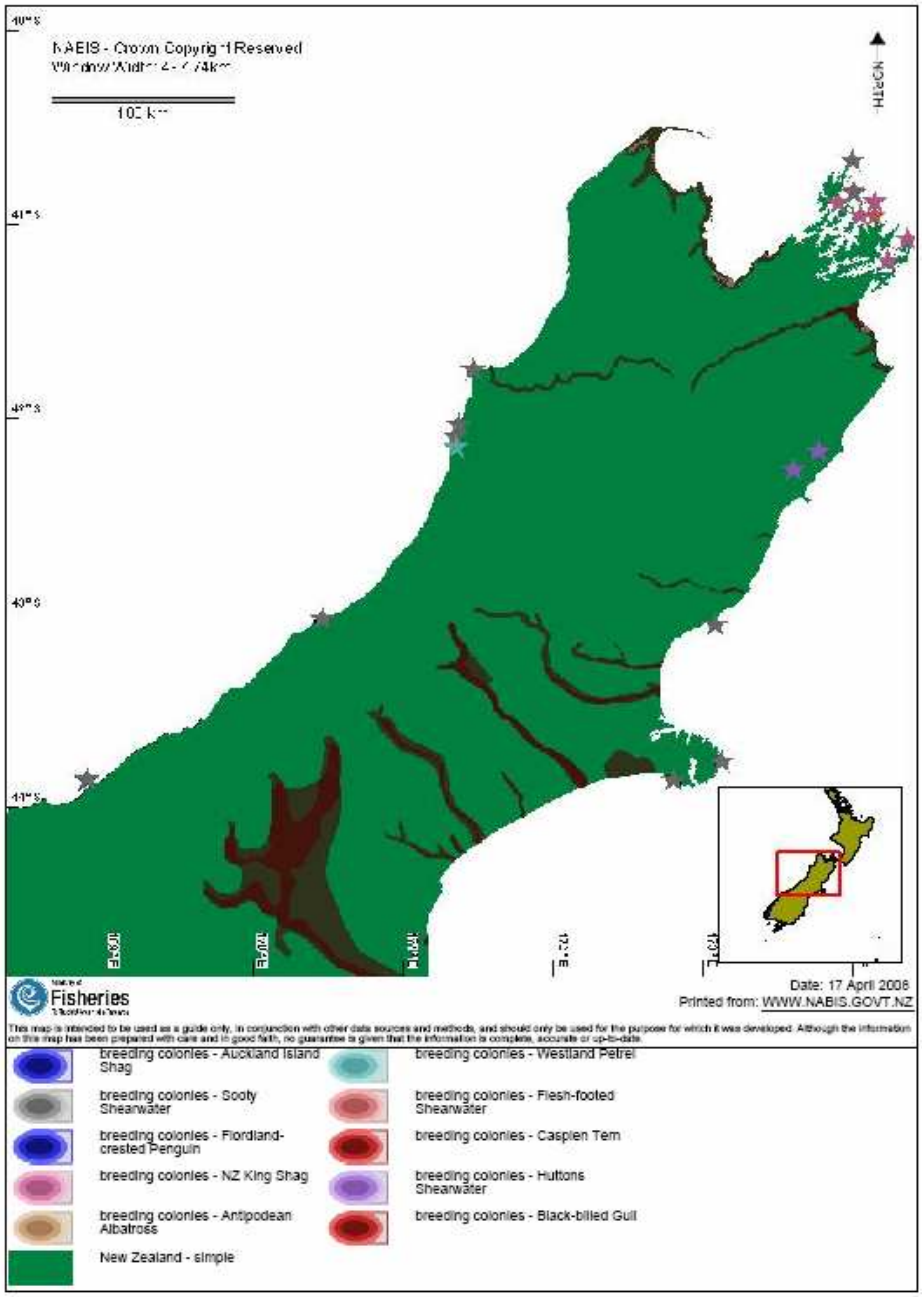
79 The principal role of the Draft Seabird Standard is to set out more explicitly the point at which the Minister considers it necessary to take steps to avoid, remedy or mitigate the effects of fishing-related mortality on seabirds. The seabird standard will set by-catch limits for fisheries, and the procedures for monitoring these. The standard does not contain automatic sanctions and penalties such as the closure of a fishery. However, it will provide greater certainty about the level of performance that the Minister will expect and when additional management measures may be required.

80 Seabirds known to occur in the Challenger area include:

Antipodean albatross
Australasian gannets/takapu
Black petrel
Black-backed gull/karoro
Black-fronted tern
Black shag/kawau
Blue penguin
Broad-billed prion
Buller's albatross
Buller's shearwater
Campbell albatross
Caspian tern/taranui
Chatham albatross
Codfish Island diving petrel
Common diving petrel
Cook's petrel
Cormorant
Eastern rockhopper penguin
Fairy prion/titi-wainui
Fiordland crested penguin/tawaki
Flesh-footed shearwater
Fluttering shearwater
Grey petrel
Grey-faced petrel
Grey-headed albatross
Hutton's shearwater
Kermadec petrel
Kermadec white-faced storm petrel
King shag
Light-mantled albatross
Little shag
Masked booby
Mottled petrel
New Zealand king shag
Northern giant petrel
Northern Royal albatross
Pied shag
Reef heron/matuku moana
Royal spoonbill/kotuku ngutu-papa
Salvin's albatross
Sooty shearwater/titi
Southern Royal albatross
South Georgian diving petrel
Spotted shag/parekareka
Variable oystercatcher/torea
Westland petrel/taiko
White-fronted tern/tara

81 Figure 5 shows breeding colonies of different seabirds in the Challenger area.

Figure 5: Breeding Sites for Seabirds in the Challenger Area



Sharks

82 Great white sharks and basking sharks are species threatened by trade under the Trade in Endangered Species Act 1989. Great white sharks are (since 2006) protected under the Wildlife Act 1958. Basking shark cannot be targeted by commercial fishers but can be landed as bycatch. In general, low productivity in shark species means they can be vulnerable to the effects of fishing and overfishing.

83 New Zealand has developed a draft National Plan of Action for the Conservation and Management of Sharks (NPOA – Sharks), in response to the Food and Agricultural Organisation of the United Nations (FAO) International Plan of Action for the Conservation and Management of Sharks (IPOA – Sharks). The NPOA, which is likely to be finalised in early 2008, describes New Zealand's fisheries management system as it applies to shark species. The approach New Zealand has taken in managing sharks focuses

on ensuring that sustainable catch limits are set for major target and bycatch shark stocks under the QMS, and that catch is accurately recorded to ensure that fishers adhere to these catch limits.

84 Accurate reporting is also important for identifying sustainability concerns for less well known bycatch shark species that are managed outside the QMS. To assist accurate reporting, a field identification guide will be developed, and the use of specific reporting codes will be promoted. Further, the draft NPOA proposes:

- Participation in regional fisheries management organisations (RFMOs);
- Development of a prohibited utilisation process standard;
- Protection of basking sharks; and
- Strengthening of measures to eliminate live shark finning.

85 MFish has no information on interactions between the CIFF fishery and great white sharks or basking sharks.

Other associated or dependent species

86 At this time, no other associated or dependent species have been identified as requiring species-specific discussion in relation to the effects of fishing. However, the effects of fishing on groups or communities containing associated or dependent species are discussed in the sections on biodiversity, habitats of importance to fisheries management and benthic impacts.

Benthic Impacts

Draft standard will define the permissible level of impact of fishing methods on each habitat identified.

87 Benthic impacts are impacts on the animals and plants living on, or attached to, the bottom of the sea or lake from the high water mark down to the deepest levels (ie, the benthos).

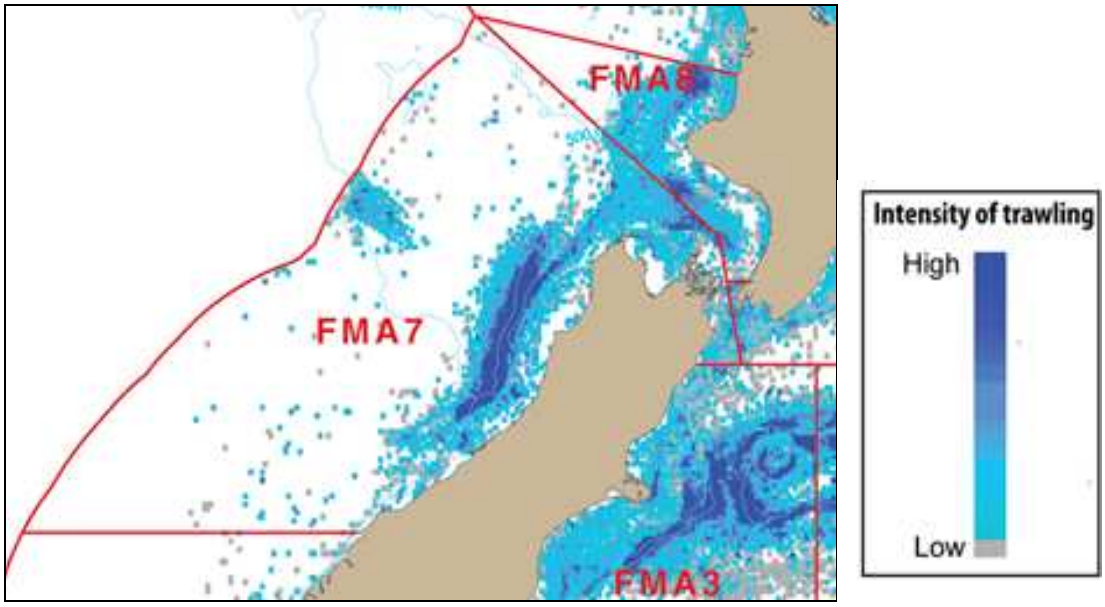
88 Habitats within the CIFF area considered highly vulnerable to benthic impacts include:

- The sunken forests of Hokitika Canyon – these forests of fossilised terrestrial trees are considered a habitat of special significance by the Department of Conservation.
- Slow growing Bryozoan beds and black coral are protected benthos types with high associated biodiversity and may function as important nursery areas for various species. Black corals are found offshore but occur closer inshore in the southern areas of FMA 7. Bryozoan beds are scattered throughout the region but hot spots exist in Tasman Bay and off Cape Jackson. Both black coral and bryozoan beds are considered to be highly susceptible to damage by bottom trawl gear and together with their extremely low growth, once damage has occurred their regeneration will be slow.

89 Trawling impacts on the benthos as the trawl gear contacts the sea floor and canyon walls during fishing. Rock hopper trawl gear, which allows the net to bounce over rocks, has extended fishing into areas that have small amounts of foul ground. Along the west coast of South Island trawl vessels larger than 46m are prohibited from fishing shoreward of 25nm from the coast (see Appendix 2). The Cook Strait is closed to fishing vessels over 46m in length, and most of those operating in that area use mid-

water gear. These restrictions will provide some benthic protection but smaller vessels can legally operate in the inshore areas so the benthos is nevertheless vulnerable to fishing gear which can interact with the sea-bed. Figure 6 shows the distribution of bottom trawling fishing effort in Challenger, between 1989/90 to 1998/99.

Figure 6: The distribution of bottom trawling fishing effort in FMA 7, 1989/90 – 1998/99.



90 According to reports on Trawl Catch Effort and Processing Returns (TCEPRs), bottom trawling is relatively common in FMA 7 and extends out to several hundred metres depth (Figure 6). This data suggests that a relatively high proportion of most of the unconsolidated sedimentary habitats shallower than about 600 m in FMA 7 are impacted by bottom trawling, especially in the north of the FMA. The exceptions are areas where the contour is very steep or where there are areas of "foul" ground or other obstructions to trawling.

91 Set netting and longlining have little direct impact on the benthos other than localised physical impact of anchors at each end of the net. Scallop dredging in the area may have an impact on the sea-bed but this issue will be addressed in the Challenger Scallops and Oysters Fish Plan.

Specifying Limits on Fishing Activity

92 One of the ways to ensure the CIFF produces value for current and future generations is to specify limits on fishing activity. Designing harvest strategies for stocks and setting total allowable catches are the key methods of specifying limits on fishing activity. Among other things, harvest strategies and total allowable catches take into account the information status of a fishstock and productivity of species. Sustainability indicators and research are also used to inform harvest strategies and changes to total allowable catches.

Harvest Strategies

Draft harvest strategy standard (s 13)

93 It is expected the Harvest Strategy Standard, still in draft form, will eventually guide how the total

allowable catch (TAC) is set and adjusted (in accordance with the obligations set out in s 13 of the Act). The Harvest Strategy Standard requires that target and limit biological reference points be set for all QMS fishstocks but is flexible about the means by which this is achieved. The draft Harvest Strategy Standard consists of three core components:

- A specified target about which a fishery or stock should fluctuate;
- A soft limit that triggers a requirement for a formal, time-constrained rebuilding plan; and
- A hard limit below which fisheries should be considered for closure.

94 The intention is to make best use of available information for each individual stock. In general, fishery and stock targets and limits should be set more conservatively for stocks with lower levels of information or higher levels of uncertainty, due to the higher risks associated with managing such fisheries on a long-term basis to provide for utilisation while ensuring sustainability.

Information status

95 The CIFF stocks are grouped into information rich, limited and deficient categories below. The classification given to each species applies only to the fishstock in the CIFF region, not nationwide. In the CIFF the following stocks are:

• *Information rich*: red cod, snapper and stargazer;

• *Information limited*: blue cod, elephant fish, red gurnard, rig, rough skate, school shark, spiny dogfish, barracouta, hāpuka, sea perch and tarakihi; and

• *Information deficient*: blue moki, butterfish, all flat fish, garfish, john dory, trumpeter, smooth skate, kahawai, kingfish and leatherjacket.

96 Information used for harvest strategies, including biological characteristics and indices of abundance follows.

Productivity

Table 4: Key biological characteristics of CIFF stocks. For the maturity column F and M refer to Female and Male data respectively.

Species	Natural mortality rate (M)*	Fecundity [17]	Maturity length and age	Max age	Growth rate	Nursery areas	Main depth distribution
Barracouta	0.30 (all areas)	Probably high	60-60cm/2-3yr	10	Moderate	?	30-300m
Black flounder	?	?	?	?	?	?	?
Blue cod	0.26	Moderate	21-26cm/3-6yr	18	Moderate	Shallow reefs	<150m
Brill	0.2	Low	?	21	Slow	?	<100m?
Butterfish	0.3-0.45	?	?	15	Moderate	Shallow weed beds	<40m

[17] 'Fecundity' means the potential reproductive capacity of an organism or population.

Species	Natural mortality rate (M)*	Fecundity [17]	Maturity length and age	Max age	Growth rate	Nursery areas	Main depth distribution
Elephant fish	0.35	Low	M: 50cm/3yr F: 70cm/4-5yr	13	Moderate	Shallow inshore waters	<200m
Garfish	0.46[18]	?	22cm/2-3yr?	<10?	?	?	Shallow waters
Greenback flounder	?	?	?	?	?	?	?
Hapuka	0.10	Probably high	80-90cm/10-13yr	60	Slow	?	100-500m
John dory	0.38	High	M: 23-29cm F: 29-35cm	12	Moderate	?	<50
Kahawai	0.18	Probably high	39-40cm/4yr	26	Fast	Shallow waters and Estuaries	<100m
Kingfish	0.2	High	83cm (M), 97cm (F)	23	Probably fast	0-200m	<200m
Leatherjacket	?	Probably low	19-22cm	7	Fast	Shallow weed beds	40-60m
Lemon sole	0.62-0.96	High	25cm/2yr	6	Fast	Estuaries, mud and sand flats	<100m
New Zealand sole	?	High	50cm/2yr	6	Fast	Estuaries, mud and sand flats	<200m
Red cod	0.76 (RCO3)	High	52 cm/2-3yr	6	Fast	>300m	<200m
Red gurnard	0.31	Moderate	23cm/2yr	16	Moderate	Shallow inshore waters	<100m
Rig	0.2-0.30	Low	M: 87cm/5-9y F:100cm/7-8yr	20	Slow	Shallow inshore waters	<50m
Rough skate	0.25-0.35	Low	M: 52cm/4yr F: 59cm/6yr	9	Moderate	??	>100m
Sand flounder	1.1-1.3 (FLA3)	High	25cm/2yr	6	Fast	Estuaries, mud and sand flats	<100m
School shark	0.1 (In Australia)	Low	M: 12-17 yr F:110-130cm/13-15yr	50	Slow	Shallow inshore waters	<200m
Sea perch	0.10-0.13 0.07-0.09	Low	19-25cm / 5-7 yr (M), 15-20 cm / 5 yr (F)	32-43	Slow	?	150-500m
Smooth skate	0.12-0.15	Low	93cm / 8yr (M), 112cm / 13 yr (F)	28	Slow?	?	<500m
Snapper	0.075	High	20-28cm/3-4yr	60	Slow	Shallow inshore waters	15-60m
Spiny dogfish	0.2	Low	73cm/10yr	26	Slow	Shallow inshore waters	50-150m
Stargazer	0.23	Low	M: 40-55cm/5-7yr F: 55cm/7yr	25	Slow	<200m	50-300m
Tarakihi	0.1	Low	25-35cm/4-6yr	40+	Slow	Shallow inshore waters	<250m
Trumpeter	?	Probably high	?	43+	Slow?	Shallow inshore reefs	<200m
Turbot	0.26	Moderate	?	16	Moderate	Estuaries, mud and sand flats	<100m
Yellow–belly flounder	?	High	25cm/2yr	6	Fast	Estuaries, mud and sand flats	<100m

[18] Estimated from equation M = $\log_e$ 100 / maximum age, where maximum age is taken as 10.

* Natural mortality rate (*M)* is that part of the total mortality rate applying to a fish population that is caused by predation and other natural events. The lower the value, the lower the natural mortality rate is for that species and the higher the risk of overfishing.

97 The size of CIFF stocks can vary each fishing year. The higher the natural mortality rate of a stock, the more it is likely to fluctuate annually. Factors affecting mortality rate include environmental conditions, predators, human activities and fishing levels.

98 Red cod and flatfish (apart from turbot and brill) are highly fecund, fast growing and short lived. Consequently, these stocks can vary considerably in size from year to year and are likely to be less vulnerable to fishing. As a consequence of this variability the TAC's may not always be achieved.

99 Red gurnard, elephant fish, john dory, butterfish, blue cod, turbot and rough skate have biological characteristics that give them stable inter-annual populations but leave them vulnerable to overfishing. These characteristics include late maturity, slow growth, low fecundity or sex change. Rig, blue moki, brill, stargazer, tarakihi and school shark are all vulnerable to overfishing because they are longer-lived with a low fecundity.

100 There is little information on predator/prey relationships in the CIFF. It is likely that there are strong predator/prey relationships for those stocks that are more variable from year to year, such as red cod and some flatfish species. Flatfish have a life-history bottleneck which can potentially lead to vulnerabilities as they use estuaries as nursery areas. These systems are strongly influenced by the catchment and therefore affected by many forms of land use.

101 The risk of overfishing is increased by taking immature fish (fish below the length at maturity). This risk is further increased if fishing takes place in nursery areas. The nursery areas for most species considered here occur in shallow inshore areas but there is little information on their exact locations.

Sustainability Indicators

102 Inshore fishstocks are monitored in various ways, depending on the biological characteristics of the species, and the size of the fishery. Wherever possible, fishstocks are managed using standardised catch per unit effort (CPUE) or fishery independent surveys (such as trawl surveys) to provide an index of abundance.

103 Catch per unit effort is often calculated as the catch weight per measure of the fishing effort required to catch the fish (for example, per metre of net used; per number of hooks for longline fisheries; or per length of time the net is in the water). A declining catch per unit effort may mean that more effort – e.g. metres of net set and/or length of soak time – is required to catch a given volume of fish. This in turn may indicate that a fish stock has declined (although other factors can also influence rates of catch per unit effort, particularly for species that have patchy or clumped distributions).

104 The indices of abundance are generally updated on a 2-3 year cycle. If the abundance index demonstrates a declining trend, further stock assessment may occur (generally through the development of a stock assessment model with a range of inputs, including biological characteristics, fishing patterns, and catch history).

105 Estimates of the age structure of populations can also be used to monitor fishstocks, particularly where catch per unit effort is not successful. The age structure of a population will vary depending on how heavily fished the population is. Populations that are heavily fished tend to have less size classes, and a large proportion of young fish. Sampling of commercial processing sheds can be used to gain additional information to monitor fisheries in some situations.

106 For smaller fisheries where catches are low, stocks may be monitored by comparing annual landings with the commercial catch limit. In some situations, e.g. leatherjacket, annual landings are far below the catch limit because the fishery has not yet developed to its full capacity. However, in situations where the disparity between TACC and annual catch inexplicably increases with time, a fishery characterisation and CPUE analysis may be necessary to determine whether the stock in question may have been overfished.

107 Indices of abundance for some CIFF stocks are determined from CPUE information from the West Coast South Island trawl survey (trawl survey). March/April trawl surveys were introduced to collect relative abundance data. These surveys collect information on red gurnard, red cod, tarakihi stargazer, spiny dogfish, elephantfish and rough skates. Blue cod have been surveyed using potting surveys since 1995/1996. Flatfish and rough skate are monitored by comparing annual commercial landings with the TACC along with the assessment of some biological information. Indices of abundance for other CIFF stocks, such as leatherjacket, are carried out by analysis of trends in commercial CPUE and landings.

108 For some fishstocks, such as school shark and stargazer, biological and fishery data are collected under adaptive management programmes (AMPs) or research services programmes. AMPs were introduced in 1991 for stocks with limited stock assessment information to see if increased commercial catch levels are sustainable. Under these programmes, catch limits are increased while industry monitors CPUE and gathers biological data to improve stock assessments information over a 5 year period. AMP information is usually reviewed by the AMP working group at the middle and end of the 5 year programme.

109 In September 2006, MFish sent a letter to AMP proponents updating them of MFish's perspective on the future of AMPs. Developing fisheries plans is a high priority for MFish over the next few years, and this focus on fisheries plans has longer term implications for AMPs. There is the potential for fisheries plans to significantly change or even replace AMPs in the longer term. It is too early to make calls on the future relationship between fisheries plans and AMPs, but in the interim MFish is unlikely to extend any of the AMPs that come up for review, or will only do so for one or two years.

110 The table below summarises information on how these stocks are assessed, including the timing and type of assessment.

Table 5: Monitoring and stock assessment of CIFF stocks

Stock	How stock is assessed/monitored	Last assessment	Outcome of last assessment	Next scheduled
Barracouta (BAR) 7	Comparison of annual landings with TACC Relative abundance indices from the WCSI trawl survey (non target species)	2007 West Coast South Island trawl survey.	The West coast South Island trawl survey is probably estimating biomass for this species relatively accurately for both adults and juveniles, with current levels estimated to be 2763 t (c.v. 13).	No research identified for 2007/08 2009 West Coast South Island trawl survey
Blue cod (BCO) 7	- Fishery independent potting surveys are generally carried out in the Marlborough Sounds every 3 years. The relative abundance estimates and age frequency distributions of blue cod are extracted from these surveys. - Comparison of annual landings with TACC. - Recreational harvest estimates. - BCO2005/04 is investigating the use of the age structure of survey catch to monitor blue cod in Marlborough Sounds, off Kaikoura, Banks Peninsula and between Oamaru and Shag Point.	- Potting surveys for all of the Marlborough Sounds were completed in 2004 and September 2007. - Recreational catch was estimated in 2006 (REC2005/02).	Potting catch rates have further declined in Queen Charlotte Sound and D'Urville Island, and increased in the most outer Pelorus Sound Stratum. However, catch rates were generally similar to those obtained in 2001 and remained much lower than those obtained during the 1995 and 1996 surveys. The relative biomass of pre-recruit (under 30 cm) blue cod generally followed similar trends to recruited blue cod between 1995/96 and 2004. The relative biomass of juveniles (17−27 cm) followed a similar, but more variable pattern.	The next potting survey is expected to be carried out in September 2009.
Butterfish (BUT) 7	- Comparison of annual landings with TACC.	-	-	-
Elephant fish (ELE) 7	- Relative abundance indices from West coast South Island trawl survey (although estimates are highly variable). - Comparison of annual landings with TACC.	2007 West Coast South Island trawl survey.	In the West coast South Island trawl survey cannot accurately estimate the ELE 7 biomass.	2009 West Coast South Island trawl survey.
Flatfish (FLA) 7	- Comparison of annual landings with TACC. - The Monitoring Workshop concluded that the WCSI survey	-	In the 2007 West coast South Island trawl survey biomass was not accurately estimated for New Zealand sole, lemon sole or sand flounder.	-

Stock	How stock is assessed/monitored	Last assessment	Outcome of last assessment	Next scheduled
	may track abundance of lemon sole and sand flounder but needs investigation.			
Garfish (GAR) 7	Comparison of annual landings with TACC	-	-	No research identified for 2007/08
Hapuka & Bass (HPB) 7	Comparison of annual landings with TACC	-	-	No research identified for 2007/08
John dory (JDO) 7	- Relative abundance indices from West coast South Island trawl survey - Comparison of annual landings with TACC.	2007 West Coast South Island trawl survey.	The west coast South Island trawl survey may be able to get a biomass estimate for pre-recruits to the fishery.	2009 West Coast South Island trawl survey.
Kahawai (KAH) 3	Comparison of annual landings with TACC	-	-	No research identified for 2007/08
Kingfish (KIN) 7	Comparison of annual landings with TACC	-	-	No research identified for 2007/08
Leatherjacket (LEA) 2	- Comparison of annual landings with TACC.	-	In the West coast South Island trawl survey cannot accurately estimate the LEA 7 biomass.	-
Red cod (RCO) 7	- Relative abundance indices from West coast South Island trawl survey. - Comparison of annual landings with TACC.	2007 West Coast South Island trawl survey.	In the 2007 West coast South Island trawl survey RCO 7 biomass was estimated at 1638 t (c.v. 19).	2009 West Coast South Island trawl survey.
Red gurnard (GUR) 7	- Relative abundance indices and age structure from West coast South Island trawl survey - Comparison of annual landings with TACC	2007 West Coast South Island trawl survey.	In the 2007 West coast South Island trawl survey GUR 7 biomass was estimated at 553 t (c.v. 17).	2009 West Coast South Island trawl survey.
Rig (SPO) 7	- Biological and fishery data has in the past been collected under the AMP. - The stock is monitored using	A preliminary stock assessment was provided by industry in 2006.	The stock assessment concluded that current catches and the TAC were not sustainable. The SPO 7 TAC was decreased to 270 tonnes and removed from the AMP.	An updated stock assessment is planned for 2008 or 2009.

Stock	How stock is assessed/monitored	Last assessment	Outcome of last assessment	Next scheduled
	standardized CPUE (set net) and size structure of the catch (by sex). - WCSI trawl survey provides an index of males and young females. - Comparison of annual landings with TACC.			
Rough skate (RSK) 7	- Relative abundance indices from West coast South Island trawl survey - Comparison of annual landings with TACC.	2007 West Coast South Island trawl survey.	At present it is uncertain as to the effectiveness of the West coast South Island trawl survey's ability to measure biomass for this species.	2009 West Coast South Island trawl survey.
School shark (SCH) 7	- Biological and fishery data is collected under the AMP. - The stock is monitored using standardized CPUE from the target set net fishery and unstandardized CPUE from the trawl bycatch fishery (largely targeting barracouta) - Size structure of both the trawl and setnet catches (by sex) are recorded by means of logbook programmes. - Comparison of annual landings with TACC.	Two year review of SCH 7 AMP in 2007.	The Working Group accepted the SCH 7 CPUE analysis as being representative of the fishery. The SCH catch percentage is fairly consistent despite fluctuations in targeting, catch rate, reporting rate and declining percentage of zero catches.	AMP reviews due 2007 and 2009. The Working Group recommended that consideration be given to performing a joint analysis for SCH7 and SCH 8 for the full term AMP review so that more trips can be included in the analysis.
Sea perch (SPE) 7	Comparison of annual landings with TACC Relative abundance indices from the WCSI trawl survey (non target species)	2007 West Coast South Island trawl survey.	-	2009 West Coast South Island trawl survey.
Smooth skate (SSK) 7	Comparison of annual landings with TACC Relative abundance indices from the WCSI trawl survey (non target species)	2007 West Coast South Island trawl survey.	-	No research identified for 2007/08 2009 West Coast South Island trawl survey.

Stock	How stock is assessed/monitored	Last assessment	Outcome of last assessment	Next scheduled
Snapper (SNA) 7	- An age-structured model with gear specific selectivity at age for the Tasman Bay/Golden Bay fishery - Assessment based on age composition of catch and total annual catch (CASAL) - Age composition of trawl & longline catch (Shed sampling) - Comparison of annual landings with TACC - Recreational catch estimate in Tasman/Golden Bays - Recreational catch estimate in Marlborough Sounds	- An assessment was completed in 2002, based on the age-structured model. - A CASAL assessment was carried out in 2001. - Age composition of trawl & longline catch (Shed sampling) was carried out in 2003/04. - Recreational catch estimates were carried out in 2005/06.	Model results indicated that the stock should have rebuilt substantially since the low levels of the early 1980s. However, there are no current indices of abundance for this stock to verify the results from the assessment model; only catch at age data is available for recent years. Standardized CPUE provides an unreliable index of abundance. The current assessment approach has not produced realistic results and current biomass appears to be largely over-estimated. The assessment approach was independently reviewed in 2006. The SNA RPG agreed in August 2005 that further stock assessment should not be attempted until a more reliable estimate of recreational harvest was available for the Tasman/Golden Bay stock.	Age composition of trawl & longline catch (Shed sampling) will be carried out again in 2006/07.
Spiny Dogfish (SPD) 7	- Relative abundance indices from West coast South Island trawl survey. Spiny dogfish were included as a key species in the 2007 survey. - Comparison of annual landings with TACC.	2007 West Coast South Island trawl survey.	In the 2007 West coast South Island trawl survey SPD 7 biomass was estimated at 6291 t (c.v. 14).	2009 West Coast South Island trawl survey.
Stargazer (STA) 7	- Relative abundance indices, and size/age structure by sex, from the West coast South Island trawl survey. - Biological and fishery data is collected under the AMP. - Shed sampling will be conducted every survey year to determine selectivity of commercial gear. - Comparison of annual landings with TACC.	- In 2007 the AMP FAWG reviewed the performance of the AMP after 5 years. - 2007 West Coast South Island trawl survey. - Shed sampling carried out in 2005.	The Working Group noted that the rapid doubling and halving of catch rates in the standardised CPUE indices cannot reflect proportional changes in abundance, and was rather an indication of very strong changes in fleet behaviour and targeting practices. This makes it difficult to decide what confidence to place in the indices. In overview, the overlay of the trawl fishery indices seems to suggest fluctuations, possibly related to targeting, around a fairly flat trend across the series. The 2000 and 2003 trawl survey estimates had suggested a substantial decline in STA abundance, prompting concern the stock was declining. However, estimates for 2005 and 2007 are again at	2009 West Coast South Island trawl survey. Updated stock assessment in 2007/08.

Stock	How stock is assessed/monitored	Last assessment	Outcome of last assessment	Next scheduled
			or above the average of the 1992 and 1997 historic estimates. An initial stock assessment was completed for STA 7 in May 2006 (STA 2004/01). This indicated that the stock was at or above Bmsy. The Inshore FAWG agreed that the assessment should be repeated in 2008 with data from the 2007 WCSI trawl survey.	
Tarakihi (TAR) 7	- CPUE and relative abundance indices from West coast South Island trawl survey. - Comparison of annual landings with TACC. - TAR 7 commercial CPUE up to 1997/98 rejected by WG as a reliable estimate of abundance.	2007 West Coast South Island trawl survey.	In the 2007 West coast South Island trawl survey TAR 7 biomass was estimated at 1189 t (c.v. 21)	- 2009 West Coast South Island trawl survey. - Owing to substantial decline in biomass estimated during the 2000 and 2003 surveys, a stock assessment, based on the survey indices of relative abundance as well as the age structure of survey and commercial catches, is underway (TAR 2004/01). Final results will be presented to the WG in 2008.
Trumpeter (TRU) 7	Comparison of annual landings with TACC	-	-	Growth, longevity and size/age-at-maturity will be determined in the 2007/08 research round.

Fisheries plan for the management of rig – information needs

111 The 'Fisheries Plan for the Management of Rig in Quota Management Area 7 (SPO 7)',[19] developed by the Challenger Finfisheries Management Company (CFMC) includes a number of undertakings to monitor rig abundance. It is stated on page 20 of the SPO 7 fisheries plan that "The key performance measure of the plan will be evidence of increasing catch per unit effort which is interpreted as an increase in stock abundance, monitored on an annual basis. Information will be collected that is consistent with and will improve on the information collected under the SPO 7 Adaptive Management Programme."

112 CFMC, as part of the SPO 7 fisheries plan, take responsibility for data storage, collation and reporting for non-regulatory fishing data.[20] Data analysis, by an approved service provider, is to be presented to CFMC and the fisheries assessment working group, based on:

- Annual industry closed area (Farewell Spit) set net survey data, and
- CFMC and MFish fine-scale logbook data.

Research

113 Research is conducted to support stock assessment and impacts of fishing. Stocks in the CIFF are included in the 'Inshore Finfish Fisheries – Medium term research requirements 2007-08' strategy document. The document outlines the monitoring and research needs for each stock.

Cost recovery principles

114 Under the Fisheries Act 1996 (the Act), the Crown recovers a proportion of its costs from the commercial fishing industry. Section 262 of the Act outlines five cost recovery principles:

- If a conservation service or fisheries service is provided at the request of an identifiable person, that person must pay a fee for the service;
- Costs of conservation services or fisheries services provided in the general public interest, rather than in the interest of an identifiable person or class of person, may not be recovered;
- Costs of conservation services or fisheries services provided to manage or administer the harvesting or farming of fisheries resources must, so far as practicable, be attributed to the persons who benefit from harvesting or farming the resources;
- Costs of conservation services or fisheries services provided to avoid, remedy, or mitigate a risk to, or an adverse effect on, the

[19] CFMC's SPO 7 Fisheries Plan was approved by the Minister of Fisheries the under section 11A of the Fisheries Act 1996 in 2006.
[20] Page 20 of the SPO 7 Fisheries Plan, as developed by CFMC.

aquatic environment or the biological diversity of the aquatic environment must, so far as practicable, be attributed to the persons who caused the risk or adverse effect; and

- The Crown may not recover the costs of services provided by an approved service delivery organisation that delivers devolved services (these are charged directly to the industry).

115 Completed research projects include:

Table 6: Completed research projects in the CIFF fishery

Year	Research Project
1959-1965	DMAN* Ikatere trawl survey data (main species SNA)
1960-1972	DMAN trawl survey data (main species FLA, RCO and TAR)
1967-1978	DMAN biological data on TAR
1972-1979	DMAN trawl survey data (main species FLA, RCO and TAR)
1974-1978	DMAN SNA and TAR market sampling data
1979-1987	DMAN trawl survey data (main species SPD, SPO and SNA)
1983-1987	DMAN trawl survey data (main species SPO, SCH, SNA and TAR)
1986	DMAN SNA tagging data
1987	DMAN trawl survey data for SNA
1989-1990	Estimating relative abundance of groper and school shark
1990	West Coast South Island trawl survey (estimation of inshore fish abundance) – main species STA, GUR, RCO and TAR
1990	DMAN boat ramp data from Nelson
1992	West Coast South Island trawl survey (estimation of inshore fish abundance) – main species STA, GUR, RCO and TAR
1992-1993	DMAN length weight data on SPD, SPO and SCH
1992-1993	DMAN SNA 7 length weight data
1992-1993	DMAN kahawai market sampling
1993-1995	DMAN SPO age and growth data
1994	West Coast South Island trawl survey (estimation of inshore fish abundance) – main species STA, GUR, RCO and TAR
1995	West Coast South Island trawl survey (estimation of inshore fish abundance) – main species STA, GUR, RCO and TAR
1995	Tasman Bay and Golden Bay trawl survey – main species SNA
1995	DMAN BCO catch and biological data
1995	BCO abundance potting survey in the Marlborough Sounds
1996	DMAN SNA biomass estimates for 1986
1996	Tasman Bay and Golden Bay trawl survey – main species SNA
1996	BCO abundance potting survey in the Marlborough Sounds
1997	West Coast South Island trawl survey (estimation of inshore fish abundance) – main species STA, GUR,

Year	Research Project
	RCO and TAR
1997	BCO stock assessment, and extent of BCO habitat in Marlborough Sounds
1997	Model of effect of changing bag limits and MLS on recreational harvest of BCO 7
1998	Marlborough Sounds recreational fishing survey
1998	Determination of age and growth of blue cod in BCO 7
1998	Determination of age, growth and mortality of BUT
1998	RCO stock assessment
1998	Estimation of snapper year class strength in SNA 7 (and SNA 2)
1999	SCH stock assessment
1999	Estimation of snapper year class strength in SNA 7 (and SNA 2)
1999	TAR stock assessment
1999-2001	CPUE for BAR for longline and trawl methods (All NZ)
1999-2001	Characterisation of the groper industry
Pre 2000	DMAN SeaFIC age data for GUR and STA
2000	Aquatic environment research on spatial extent, nature and impact of mobile bottom fishing methods in New Zealand EEZ (Challenger area)
2000	Aquatic environment research reviewing dredge fishing technologies and practice for application in New Zealand (Nelson)
2000	Aquatic environment research on the impacts of marine farms on wild fish populations (Marlborough Sounds)
2000	Biodiversity research: Separation Point Bryozoan Survey (Tasman Bay)
2000	West Coast South Island trawl survey (estimation of inshore fish abundance) – main species STA, GUR, RCO and TAR
2000	Estimation of SNA year class strength in SNA 7 (and SNA 2)
2000	Biosecurity research: Surveillance for exotic marine organisms in New Zealand (Port Nelson)
2000	Age, Otolith samples
2001	Aquatic environment research of the effects of mobile bottom fishing gear on bentho-pelagic coupling (Challenger)
2001	Biodiversity research on crustose coralline algae of New Zealand (Challenger)
2001	BCO abundance potting survey in the Marlborough Sounds
2001	FLA characterisation
2001	GUR stock assessment
2002	Biodiversity research: Quantitative Survey of Intertidal Benthos of Farewell Spit, Golden Bay
2002	Estimation of relative abundance of HPB and SCH
2002	Characterisation of SPD fishery
2002	Age and growth of STA 7
2002	Relative abundance of TAR
2002	Management of data from the gamefish tag recapture programme – KIN.
2002-2003	Estimating relative abundance of groper and school shark
2003	Aquaculture and enhancement research on the effects of aquaculture and enhancement stock sources on

Year	Research Project
	wild fisheries resources and the marine environment (Challenger area)
2003	West Coast South Island trawl survey (from Farewell Spit to the Haast River Mouth, and within Tasman Bay and Golden Bay) – main species STA, GUR, RCO and TAR
2003	Age and growth of STA 7 from the West Coast of the South Island
2003	Abundance of BCO in the Marlborough Sounds
2003	Productivity of the NZ Sole (FLA)
2003	Verification of the identification of skates
2003	Estimation of snapper year class strength in SNA 7
2003	Biosecurity research to assess the spread and potential impact of the introduced bryozoan Biflustra savartii (West Coast and Golden Bay)
2003	Possible origins and genetic diversity of New Zealand populations of Undaria pinnatifida (Challenger)
2004	BCO abundance potting survey in the Marlborough Sounds
2004	Identification of skates
2004	Developing kingfish stock monitoring and assessment.
2004-2006	Aerial sightings data for KAH
2005	West Coast South Island trawl survey (estimation of inshore fish abundance) – main species STA, GUR, RCO and TAR
2005	Marlborough Sounds recreational fishing survey
2005-2006	Length, Age, Otolith samples of KAH
2007	West Coast South Island trawl survey (estimation of inshore fish abundance) – main species STA, GUR, RCO, TAR and SPD.

** DMAN refers to Data Management contracts to archive raw data that was still on paper forms to electronic databases. Some raw data on paper forms remains, and has yet been archived to electronic databases.*

116 Current and future MFish research projects are listed in the services section of this plan.

Total Allowable Catch

117 An important aspect of ensuring the CIFF produces best value for current and future generations is to specify limits on fishing activity by setting sustainable harvest levels for fishstocks. The Fisheries Act 1996 (the 1996 Act) contains a number of provisions to ensure a stock is managed sustainably. A key measure is the Government setting of a total allowable catch (TAC) for each stock to set a limit on take from the fisheries management area (FMA).

118 When setting a TAC, a number of specific and generic provisions of the Fisheries Act 1996 are taken into account. In particular, these include:

- The maximum sustainable yield (MSY) of the stock;
- The level of the stock's long term viability;

• Interdependence of stocks;

• Social, cultural and economic factors;

• Environmental principles;

• Information principles;

• International obligations;

• The Treaty of Waitangi (Fisheries Claims) Settlement Act 1992;

• Effects on the aquatic environment;

• Relevant services; and

• Other Crown statutory plans, policy statements, and management strategies.

119 Most of the CIFF stocks were introduced into the QMS in 1986; the exceptions are BUT 7 (which was introduced in the 2002-03 fishing year), LEA 2 and RSK 7 (which were introduced in 2003-04) and SPD (which was introduced in 2004-05). Table 7 outlines how the TACs were set for the CIFF stocks.

120 Section 13 of the Act requires stocks in the QMS to be maintained at a level that is at or above the level that can produce the MSY. The current state of the biomass of CIFF stocks in relation to MSY is also described in Table 7.

Table 7: The current management regime for CIFF stocks, TAC reviews, and the state of CIFF stocks in relation to the MSY (from the 2006 Plenary)

Fishstock	Date into QMS (original TAC/C)	Basis for setting original TAC/C	Current management regime	Date TAC reviewed*	Outcome of TAC review	Current TAC (tonnes)	Where stock is in relation to MSY	Current status or projection
Barracouta (BAR) 7	1986 (11173t)		s.13	-	-	11,173**	Unknown	It is unknown if recent catches will allow the stock to move towards a size that will support the MSY.
Blue cod (BCO) 7	1986 (136t)		s.13	1993 / 1995 /	The BCO 7 TACC was reduced to 95 tonnes in 1993 and to 70 tonnes in 1995.	343	Unknown	It is not known if the combined recreational and

Fishstock	Date into QMS (original TAC/C)	Basis for setting original TAC/C	Current management regime	Date TAC reviewed*	Outcome of TAC review	Current TAC (tonnes)	Where stock is in relation to MSY	Current status or projection
				2003	In 2003, a TAC of 343 tonnes was set. The TACC was retained at 70 tonnes.			commercial catches are sustainable or if they are at levels that will allow the stock to move towards a size that will support the MSY.
Butterfish (BUT) 7	2002 (69)	A precautionary TAC was set, in the absence of a framework for fine scale reporting or better information to support a higher TAC, and because butterfish is a reef species, so may not be able to sustain large scale commercial fishing.	s.13	-	-	69	Unknown	Landings have been reasonably stable for past 15 years and appear to be sustainable. Butterfish populations are almost certainly susceptible to localised depletion.
Elephant fish (ELE) 7	1986 (102t)		s.13	-	-	102**	Unknown where stock is in relation to MSY, but catches have been above the MCY and below the TAC	Unknown
Flatfish (FLA) 7	1986 (2066t)	The TACC was set at a high level, as there have been large fluctuations in flatfish abundance and landings, and a high TACC provides the fishing industry with the flexibility to capitalise on years when the stock is plentiful.	s.13, Second Schedule available	-	-	2066**	Unknown	The FLA 7 TACC has never been reached since it flatfish were introduced into the QMS. Adult flatfish populations generally consist of only one or two year classes at any time. The sizes of the populations depend heavily on the strength of the recruiting year classes and are therefore highly variable. For this reason a constant catch at the

Fishstock	Date into QMS (original TAC/C)	Basis for setting original TAC/C	Current management regime	Date TAC reviewed*	Outcome of TAC review	Current TAC (tonnes)	Where stock is in relation to MSY	Current status or projection
		The inclusion of flatfish in the QMS was based partly on the assumption that a TACC would act to decrease competition for catch in years of poor abundance.						level of the current TACCs is unlikely to be attainable or sustainable, nor would it be likely to be allow the stock to move towards a size that will support the MSY. It is unknown if recent catches will allow the stock to move towards a size that will support the MSY.
Garfish (GAR) 7	2002 (23t)		s.13	-	-	23	Unknown	A fishery has existed for several decades, but it is not known how heavily this has exploited the stock. It is not possible to determine if recent catch levels will allow the stock to move towards a size that would support an MSY.
Hapuka & Bass (HPB) 7	1986 (236t)		s.13	-	-	236**	Unknown	It is unknown if recent catches will allow the stock to move towards a size that will support the MSY.
John dory (JDO) 7	1986 (91)		s.13	2004	John dory are primarily taken as a bycatch in the barracouta and flatfish trawl fisheries. Catches in excess of the TACC from 2000 to 2003 led to a number of deemed value penalties for fishers with insufficient ACE. As a result, the TACC was increased in 2004 to 114 tonnes (and the TAC set at 120 tonnes) under the low knowledge bycatch framework.	120	Unknown	Unknown
Kahawai (KAH) 3	2004 (1035t)		s.13	-	-	935	Unknown	It is not known if the current catches, allowances or TACC are sustainable, or at a level that will allow the stock to move towards a size that will support the MSY.

Fishstock	Date into QMS (original TAC/C)	Basis for setting original TAC/C	Current management regime	Date TAC reviewed*	Outcome of TAC review	Current TAC (tonnes)	Where stock is in relation to MSY	Current status or projection
Kingfish (KIN) 7	2003 (21t)		s.13	-	-	21	Unknown	Catches of kingfish have shown very little trend over the last 20 years and there is no direct evidence to suggest that the current catch levels are unsustainable. It is not known if catch levels are sustainable or at levels that will allow the stocks to move towards a size that will support the MSY.
Leatherjacket (LEA) 2	2003 (1196)	The TAC and TACC were mainly based on the largest commercial landings. There are no known sustainability concerns about LEA 2, and it was important that established commercial target fisheries for other species (of which leatherjacket is a bycatch) were not unnecessarily constrained by the leatherjacket TAC and TACC.	s.13	-	-	1,196	Unknown	Unknown
Red Cod (RCO) 7	1986 (3126)	The TACC was set at a high level, as there have been large fluctuations in red cod abundance and landings, and a high TACC provides the fishing industry with the flexibility to capitalise on years	s.13, Second Schedule available	-	-	3126**	Current biomass appears to be greater than the stock size that will support B_{MSY}.	In the fishing years 1998-99 to 2001-02, RCO 7 landings were low compared to the previous five years. This suggests that although the abundance of red cod increased in the mid 1990s relative to the late 1980s, it may be declining again. For RCO 7 a constant catch

Fishstock	Date into QMS (original TAC/C)	Basis for setting original TAC/C	Current management regime	Date TAC reviewed*	Outcome of TAC review	Current TAC (tonnes)	Where stock is in relation to MSY	Current status or projection
		when the stock is plentiful.						at the level of the current TACC is unlikely to be attainable or sustainable in most years.
Red Gurnard (GUR) 7	1986 (678t)	Based on the 1983 landings for GUR 7.	s.13	1991 / 1997 / 2001	In 1991, the TACC was increased under an AMP to 815 tonnes. In 1997, the TACC was reduced back down to the original TACC of 678 (and the TAC set at 758 tonnes) after landings had steadily declined. An increase in landings up to 2002-03 saw a proposal to increase the TACC to 848 tonnes under the AMP. However, this was declined due to the FMA 7 trawl survey index suggesting a 60% decline in relative abundance since 2000.	725	Unknown	Trawl surveys have indicated relative biomass has declined from 1992-2003, but increased substantially in 2005. The lack of juveniles (20-30cm) during the 2003 survey was cause for concern. Recent catches of GUR7 are probably sustainable, at least in the short term. It is unknown if the TAC is sustainable.
Rig (SPO) 7	1986 (294t)		s.13	1991 / 2000 / 2006	In 1991 the TACC was increased to 350 tonnes under the AMP. In 2000, the TAC was set at 403 tonnes, with the TACC remaining at 350. The SPO 7 AMP stock assessment criteria, decision rules and monitoring programme were revised in 2000 and 2001. A full term review of the SPO 7 AMP occurred in 2006, after 12 years at the higher 350 tonne TACC. The stock assessment concluded that current catches and the TAC were not sustainable, so the SPO 7 TAC was decreased to 270 tonnes and removed from the AMP.	270	Stock almost certainly below B_{MSY}.	Current catches and the previous 350 t TACC are not sustainable. The TAC and TACC has since been reduced (in time for the 06-07 fishing year).
Rough skate (RSK) 7	2003 (205t)	The RSK 7 TAC was based on the average reported landings over the three fishing years 2000–01 to 2002–03, as	s.13	-	-	205	Unknown	Trawl surveys have revealed relative biomass has declined in recent years.

Fishstock	Date into QMS (original TAC/C)	Basis for setting original TAC/C	Current management regime	Date TAC reviewed*	Outcome of TAC review	Current TAC (tonnes)	Where stock is in relation to MSY	Current status or projection
		reported catch was more likely to be accurate during those years.						
School shark (SCH) 7	1986 (470t)		s.13	2004	SCH 7 was included in a five year AMP programme in October 2004, at which time the TAC was set at 789 tonnes, and the TACC increased from 534 to 641 tonnes. The TACC increase, under the AMP, was based on increased abundance of school shark.	789	Unknown	Catches and actual TACCs have steadily increased since 1986-87. There are no indications that current catches are not sustainable in the short-term. However, it is not known whether recent catch levels or the current TACC is sustainable in the long-term, or if it is at a level that will allow the stock to move towards a size that will support the MSY.
Sea perch (SPE) 7	1998 (98t)		s.13	-	-	98	Unknown	It is not known if recent catch levels are sustainable or at levels that will allow the stock to move towards a size that will support the MSY.
Smooth skate (SSK) 7	2003 (217t)		s.13	-	-	217	Unknown	Relative biomass estimates from trawl surveys revealed a decline of smooth skate in recent years. It is not known if recent catch levels or the TACC are sustainable or at levels that will allow the stock to move towards a size that will support the MSY.
Snapper (SNA) 7	1986 (374t)	Catches of snapper had declined by the mid 1980s, and some stocks showed signs of overfishing, so the	s.13	1990 / 1997	In 1990 the TACC was reduced by around 60% from 374 to 160 tonnes, after SNA 7 landings had continued to fall below the TAC while other snapper stocks' landings	306	Thought to be rebuilding.	Likely to continue to increase in abundance, even if future catches are substantially larger than current catches.

Fishstock	Date into QMS (original TAC/C)	Basis for setting original TAC/C	Current management regime	Date TAC reviewed*	Outcome of TAC review	Current TAC (tonnes)	Where stock is in relation to MSY	Current status or projection
		SNA 7 TACC was set at a level that intended to allow for some stock rebuilding.			had increased. The TACC was increased to 200 tonnes (and a TAC set at 306 tonnes) in 1997, after landings had increased and the stock showed signs of rebuilding.			
Spiny dogfish (SPD) 7	2004 (1983t)	The TAC was based on the average catch over the last ten fishing years.	s.13	-	-	1983	Unknown	Trawl surveys indicated there was a general increase in abundance, particularly around the South Island, in the mid 1990's. It is unknown whether current catch limits are sustainable or whether they are at levels that would allow the stock to move towards a size that will support the MSY.
Stargazer (STA) 7	1986 (528 t)		s.13	1991 / 2002	In 1991, the STA 7 TACC was increased to 702 tonnes under the AMP. The 702 tonne TACC was overcaught in nearly every fishing year up to 2002-03, at which point the TACC was further increased under the AMP to 997 tonnes. The TAC was set at 1000 tonnes at the same time. The STA 7 AMP has been retained for a third five year term until the end of the 2006-07 fishing year.	1000	The results of a preliminary stock assessment suggest the stock is at or above a level that will support MSY.	The overall trawl survey series indicates that the stock has remained stable at a fairly consistent level, which seems to support indications in the trawl CPUE indices of a stable long-term trend. The results of a preliminary stock assessment suggest that STA 7 is at or above the level that will support MSY.
Tarakihi (TAR) 7	1986 (1087)		s.13	-	-	1088**	Unknown	The current catch level and TACC are thought to be sustainable.
Trumpeter (TRU) 7	1998 (11t)		s.13	-	-	11	Unknown	It is not known if recent catch levels are sustainable or at levels that will allow the stock to move towards a size that will support the MSY.

* Excludes changes due to quota appeal authority decisions, or changes under section 362 of the Fisheries Act (allocation of quota for bait).

** This is the TACC, as no TAC has yet been set for this stock. The requirement to set a TAC has only existed since 2001, so if a stock has not been reviewed since then it is without a TAC.

121 Both FLA 7 and RCO 7 are listed on the Second Schedule of the Act (stocks whose abundance is highly variable) which enables their TACs to be increased during a fishing year under a CAY strategy. At the close of the fishing year where a TAC increase has been made, the TAC reverts back to the TAC that applied to the stock at the beginning of the fishing year. The ability to make TAC increases during a fishing year has not been used to date for either stock.

122 The TACCs for FLA 7 and RCO 7 were set to provide the fishing industry with the flexibility to capitalise on years when the stock is plentiful. However, this approach has come with problems. The inclusion of flatfish in the QMS was based partly on the assumption that a TACC would act to decrease competition for catch in years of poor abundance, but this is not occurring. A number of fishers have entered the fishery through purchase of flatfish quota with no, or minimal by-catch species quota. This increases competition for flatfish in poor years, accentuating bycatch problems. The large fluctuation in red cod abundance and landings has also caused problems for the fishers who rely on red cod, and creates additional pressure on the bycatch trade-off system (ACE trading).

123 In regards to john dory, the deemed value penalties had reportedly caused some vessels to move away from productive grounds for their target species to avoid catching john dory. The low knowledge bycatch framework imposed a low risk to sustainability, while enabling fishers to balance unavoidable bycatch during periods of abundance against ACE. The risk to overfishing under the current TAC is low as environmental factors primarily drive stock levels rather than the effects of fishing. Overfishing is further mitigated as fishers are generally unable to target john dory when biomass is high, as john dory rarely gather together in sufficient numbers to be able to harvest them efficiently.

Other Resource Users

124 CIFF managers and participants cannot directly control non-fishing activities that affect the aquatic environment, as other entities also use or carry out activities that affect the aquatic environment. Identifying opportunities to work with other entities to develop better ways of managing the impacts of all human activities affecting the environment is important.

125 Regional/unitary councils manage the impacts of land based activities on the aquatic environment. The two primary land based impacts on the aquatic environment of the CIFF are sediment from land erosion and pollutants associated with storm-water and sewage discharges. Little information is available on the nature and extent of these effects. It is likely that changes to inland riparian vegetation and the coastal environment (especially adjacent to estuaries and coastal lagoons) caused by poor land management and urbanisation are likely to be having negative impacts on stocks whose nursery areas occur in these areas. Identification of this impact is beyond the scope of this document, but is nevertheless important.

126 Runoff from land, such as sediment and nutrients carried down through rivers from farmland, forestry and other land development, may have substantial effects on the coastal environment, and possible flow on effects to CIFF stocks.

127 Regional/unitary councils also manage pollution and waste disposal from marine vessels, which have the potential to affect the health of CIFF stocks. Dumping of wastes or other matter from marine vessels now requires a consent from the council and cannot be permitted by a general rule in a regional coastal plan.

128 The impacts of fish farms on the aquatic environment are managed by regional/unitary councils. Tasman Bay, Golden Bay and the Marlborough Sounds are major aquaculture areas in New Zealand,

particularly for mussels, scallops, spat catching, cockles, king salmon, pacific oysters, dredge oysters and paua. There is little information on the effect of marine farming in this region on specific CIFF stocks. However, fish farms have the potential to restrict access to CIFF stocks, and this forms part of the assessment criteria of marine farm permit applications. Recent fish farm permit applications for large areas in Tasman Bay and Golden Bay will be assessed carefully within this context. The area covered by marine farms and/or spat catching in the Challenger area is as follows:

- Marlborough Sounds – 3016 ha;
- Tasman and Golden Bays – 5608 ha (most of this space is seasonal and rotational spat catching); and
- Jackson Bay – 46 ha (currently only spat catching).

129 The Ministry of Transport administers the Submarine Cables and Pipelines Protection Act 1996 (the Cables Protection Act). The Cables Protection Act ensures submarine cables and pipelines are protected through the creation of protected areas. It is an offence for a ship to conduct fishing operations in, or to anchor in, a protected area. Fishing or anchoring is only allowed for ships being used for research by or for MFish, as long as the research is done without attaching any ship to the seabed. One such protected area exists in the CIFF. The protected area is in Cook Straight, and crosses through the boundary of FMA 7 and FMA 2 (see appendix 2).

130 Maritime New Zealand (MNZ) is a Crown entity formed to ensure the marine environment is safe, secure and clean. MNZ is responsible for developing marine safety and environment protection rules, licensing seafarers and registering ships, and preparing for and responding to marine oil pollution incidents in New Zealand waters.

131 Biosecurity New Zealand is a division of the Ministry of Agriculture and Forestry (MAF) charged with leadership of the New Zealand biosecurity system. Responsibilities include rules around the arrival of commercial shipping vessels into the country, and the importation of sea containers and cargo. Biosecurity New Zealand is also responsible for preventing the importation of unwanted pests and diseases, and for controlling, managing or eradicating them should they arrive in the country. They are focused on eight specific unwanted marine organisms, which have been registered as unwanted and notifiable under the Biosecurity Act 1993.

132 The Crown Minerals Group, under the Ministry of Economic Development manages the allocation of rights to prospect, explore or mine in-ground petroleum or minerals that are owned by the Crown. There is currently one prospecting permit for minerals (gold) in the CIFF area. Seafield Resources Limited has been granted the prospecting permit for two years (October 2006 – October 2008) on the Westland Continental Shelf between Karamea and Jacksons Head, off the West Coast of the South Island. Activities include seabed surveys to map and image the unconsolidated surface sediments in water depths up to 125 m.

133 Tourism operators (such as those that rent kayaks, do diving trips or operate marine mammal watching businesses) also use the aquatic environment. Commercial marine mammal watching businesses must hold a permit to carry out their business, under the Marine Mammals Protection Regulations 1992. The regulations also prescribe appropriate behaviours for commercial operators and other people who come into contact with marine mammals.

134 There are no Defence Force closures in the CIFF.