

# **SUBMISSION BY THE AKAROA HARBOUR RECREATIONAL FISHING CLUB ON THE HECTOR'S DOLPHIN THREAT MANAGEMENT PLAN**

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## 1. THE ROLE OF THE AKAROA HARBOUR RECREATIONAL FISHING CLUB IN THE CONSERVATION OF HECTOR'S DOLPHINS

The Akaroa Harbour Recreational Fishing Club (AHRFC) was incorporated in November 1993. Membership has fluctuated between the current 124 and 500 persons. A prime area of endeavour has been to mitigate risk to the Hector's dolphin, primarily in Akaroa Harbour but also in Canterbury waters generally, and to develop and publicise fishing practices that will further reduce the casualty rate of these animals from amateur set netting practices. Reference to figures contained elsewhere in this submission establishes that we, together with other organisations, have been extremely successful in reducing the casualty rate and will continue to do so in the future.

Our AHRFC has the benefit of having a membership that has fished with set netting restrictions longer than any other organized group in New Zealand and we consider that our experience and knowledge puts us in an advantageous position to impart a balanced view of the effect of past measures that will still allow amateur fishers to set nets in such a manner that risk to dolphins is almost, if not entirely, eliminated.

To this end we have initiated or participated in various forums where measures to achieve protection of the dolphins has been discussed. These include the Department of Conservation (DOC), Ministry of Fisheries (MFish), commercial fishers, other fishing clubs, South East Regional Fishers forums at Dunedin to name but a few, plus a number of public meetings we have organized to discuss appropriate measures to achieve our objects. We have on a fairly regular basis, particularly when the date for the commencement of a restricted netting period is imminent, caused publicity either by way of a news item, letters to the editor or an advertisement to be placed in local news papers. Since inception the AHRFC has circulated regular newsletters to members to keep membership informed of club activities and items of interest. Many of these newsletters have contained references to the safe use of set nets for the protection of Hector's dolphins (18 in the last 6 years).

The AHRFC has also sought and obtained the cooperation of the DOC in progressively being supplied with details of dolphin casualties and associated autopsy reports as they occur with a view to building up an informed and useful data base of incidents, whether or not deaths have been net related and if it can be established which sector, amateur or commercial, has been responsible for the death or incident. We consider that this is, although very time consuming, fruitful in that it enables early action to be taken to remedy any unsatisfactory situation and gives a better platform on which to build informed comment in discussion on measures

Our club executive is satisfied that these activities have not only assisted to ensure that conflict between Hector's dolphin and set nets has been minimized but has also given us a very useful basis for making informed comment on proposals for further protection of the dolphin while still allowing a reasonable degree of amateur set netting to take place in a manner acceptable to the reasonable person. There is no reason to believe that our efforts will diminish in the future. We also believe that it assists in policing the restrictions imposed.

A summary of the AHRFC's contributions to this issue is given in Appendix 1.

## **2 ANALYSIS OF SCIENTIFIC INFORMATION ON HECTOR'S DOLPHIN**

### **2.1 Hector's dolphin population estimates**

The idea has long been put forward that Hector's dolphin is endangered and under threat by human caused mortality by the use of set nets. This has been asserted by the researchers S Dawson and E Sooten, Forest and Bird, and DOC, amongst others. Over many years misleading statements have been presented to the public about this so often that these statements have come to be accepted as fact. Most of what one reads in the papers or hears on the radio about the parlous state of Hector's dolphin is simply untrue. In fact, the opposite may well be the case off the Canterbury coast.

**Evidence both anecdotal and scientific shows that Hector's dolphins are more abundant than they have ever been.**

The total New Zealand population was estimated at 3-4,000 (Dawson and Sooten, 1988). The threat management discussion document produced by MFish and DOC (2007) increased the estimate to 7,381. (Page 15)

In Canterbury, anecdotal accounts going back to the 1940's from long time fishers, commercial and recreational (Appendix 2), all concur that Hector's dolphins were much less abundant 50 years ago than they are now.

There have been two scientific surveys to estimate dolphin numbers in Canterbury waters. In 1984/85 the population from Motunau to Timaru was estimated at 832 (Dawson and Sooten, 1988). In 1988 the estimate was 1,197 (DuFresne, Dawson and Sooten, 2001) - an increase of 365 (44%).

In Southland the population in Te Waewae Bay was estimated at 89 in 1998 (DuFresne et al 2001). A new estimate for 2004/05 gave a summer population of 403 (unpublished data referred to in the Hector's dolphin and Maui's dolphin threat management plan document - Page 93).

All of these results have one common factor - each subsequent estimate shows an increased population.

### **2.2 Canterbury dolphin population**

In our area of interest (Canterbury) the population estimates are biased low because the survey area covered only a small part of the dolphin's range (to 4 n m from shore).

The habitat of Hector's dolphin extends out at least as far as the 100m isobath, which can be up to 35 n m offshore, and averages 28-29 n m. This vast area, at least six times larger than the survey area, was completely discounted in the population estimates. However, dolphins are well known to occur offshore. During the years 1984-1988 there were four times as many dolphin entanglements more than 4 n m offshore (in commercial nets), than within 4 n m (Voller R, 1992), and most of these were in the summer months (the same months as the survey period). Even at the low density of dolphin sightings for the offshore area found by Dawson et al (2000), allowance for this would more than double the Hector's dolphin population estimate for Canterbury waters, to some 2,500.

The surveys also assumed that every one of this small cryptic species, which spends at least 99% of its time below the surface, were seen and counted. This is made very difficult by the fact that Hector's dolphin favours areas with discoloured water. (Appendix 3). An early name for the species was the "cloudy water dolphin". It is impossible for all dolphins to have been seen and counted during the surveys. Future surveys need to employ a consistent methodology with the results considered as an index of abundance until more reliable methods are in place.

### **2.3 Reasons for population increase**

The principal reason for the increase in Hector's dolphin numbers is most likely to be the enormous changes in the marine ecosystem over the past 50 years through the development of New Zealand's commercial fishing industry. Stocks of commercially exploited fish are usually reduced to half or less of their original biomass when they are fully exploited, which is the case for most of our coastal species. Fishing mainly catches the larger species and larger individuals, which feed on smaller ones. The smaller fish become more abundant and it is these small fishes which are the food of Hector's dolphins. Availability of food and competition for it are important limiting factors for dolphins which feed near the top of the food chain. Fishing has also reduced the number of large sharks, which are its main predators.

Another factor favouring population growth is the increase in sea water turbidity due to human activity. Forest clearance, farming, and industrial activity have all contributed to a greater sediment load by Canterbury rivers. Around Banks Peninsula heavy rain results in a noticeable swath of discoloured water around its many bays and headlands. (Appendix 3) The periodic opening of Lake Ellesmere to the sea also contributes to turbidity. If one looks at the distribution of Hector's dolphin around our coasts it correlates closely with areas of low water clarity, and is absent from areas of clearer water like the Marlborough Sounds and the east coast of the North Island.

Improved growth rates and fecundity could easily enable the Hector's dolphin population to expand. A population growth rate of 2% per year would see 2.5 times the population after 50 years. The actual rate observed between the 1984/85 and 1998 surveys was 2.8% per year (DuFresne et al 2001). The combination of an expanded population of dolphins and high levels of fishing effort prior to the introduction of the quota system in 1987 was the probable cause of the large number of dolphin deaths in the mid 1980s. The situation now is very different with fishing related deaths at an extremely low level.

## 2.4 Entanglement data

It is not possible to determine the past population size of Hector's dolphins before the first surveys in the 1980's. Despite this, E Slooten in 2001 stated, "The current population is about one third of the original population size..."<sup>1</sup>. She went on to estimate the Banks Peninsula population at 1,200 individuals. Based on these figures, about 130 dolphins would have to be killed in set nets every year for 30 years to reduce the population from 3,600 to 1,200 (more than the total fishing deaths for the whole of New Zealand for the past 18 years). In 2005 K Hackwell of Forest and Bird stated, "Since 1970, more than 12,000 Hector's and Maui's dolphins have been killed in fishing nets."<sup>2</sup> On 2 May 2007 K Knowles of Forest and Bird said on Radio NZ "... set nets kill literally hundreds of dolphins each year..." Even more impossible figures have been given through the media by Forest and Bird, WWF and by E Slooten. Various numbers in the range 26,000-30,000 have been stated as the population in 1970. Mention of this is also made in the threat management document but no reference is identified for this claim, or how it was arrived at.

Our calculations estimate that between 35,000 (from 26,000) and 40,000 (from 30,000) dolphins would have to have been killed to result in this population decline, and they would still be being killed in fishing nets at 500 per year. This is based on the same proportion being killed each year and uses the growth rate of 2.8% per year found by DuFresne et al (2001).

The records as shown in DOC's dolphin incident list are very different and are at least two orders of magnitude lower (Table 1).

**Table 1: Confirmed fishing related deaths of Hector's dolphins 1921-2007 (15 March)**

	Set net			Trawl	Craypot
	Commercial	Recreational	Unknown		
North Is	0	0	1	0	0
WCSouth Is	2	8	14*	4	0
Nelson	3	0	4	3	3
Canterbury	29	12	17	6	0
Otago	4	0	8	0	0
Southland	0	0	1	0	0
Totals	38	20	45	13	3
<b>Total confirmed fishing related deaths 119</b>					

\* One "other" fishing related death included here  
 Maui's dolphin deaths not included

Source: Hector's dolphin threat management discussion document, Appendix C.

In addition to confirmed fishing related deaths there were a further 244 deaths of unknown cause (Hector's). Some of these are probably fishing related; some are probably due to natural causes (including predation). There were a further seven attributed to natural causes, three to boat strike and eight to trauma. Thirteen dolphins caught during fishing were released alive.

For Maui's dolphin the incident list shows two deaths due to fishing, two due to natural causes and 38 deaths of unknown cause.

## **2.5 Dolphin deaths attributed to recreational set net entanglements**

Table 1 shows 20 confirmed Hector's dolphin deaths in recreational set nets since 1921. Some in the not known category were probably also due to recreational netting. However many this may be, the total number is very small, perhaps averaging one or two a year. Table 2 shows the records for the Banks Peninsula Marine Mammal Sanctuary.

**Table 2: Dolphin deaths in recreational set nets within the Banks Peninsula Marine Mammal Sanctuary, 1988-2007**

<b>Year</b>	<b>Akaroa Harbour</b>	<b>Other sanctuary</b>	<b>Totals</b>
1988	0*	1	1
1989	0	0	0
1990	0	0	0
1991	0	0	0
1992	0	0	0
1993	0	0	0
1994	0	0	0
1995	0	0	0
1996	0	0	0
1997	0	0	0
1998	0	0	0
1999	0	0	0
2000	1**	0	1
2001	0	0	0
2002	0	0	0
2003	0	0	0
2004	0	0	0
2005	1**	0	1
2006	0	0	0
2007	0	1***	1
<b>Totals</b>	<b>2</b>	<b>2</b>	<b>4</b>

Source: DOC incident database in Hector's dolphin threat management discussion document, except 2007 (club information).

\* There was one death in January 1988 prior to the sanctuary's establishment

\*\* Probably recreational but "unknown" sector in DOC incident list

\*\*\* Caught in an illegally set net

In the area of interest to our club (Akaroa Harbour), there have been two deaths since December 1988 and in 18 of the past 20 years no deaths have been recorded due to recreational set netting. Over the same period two deaths were attributed to boat strike in Akaroa. For the sanctuary as a whole, there have been four deaths (one due to illegal fishing) giving an overall average of 0.2 dolphin deaths per year due to recreational fishing. These results clearly demonstrate that fishing under the sanctuary

regulations poses an extremely low risk to dolphins, and certainly none to the viability of the population.

## 2.6 Post mortem analysis

In the past, most dolphin deaths were routinely blamed on fishing. In recent years autopsies have been carried out whenever the carcass has been available. Our club has started to receive details of the autopsy results. The most recent data are shown in Table 3.

**Table 3: Autopsy results for Hector's and Maui's dolphins from 24 April 2006 to present**

Area	Entanglements			Total fishing	Not fishing	All incidents
	Recreational	Commercial	Unknown			
<b>ECSI</b>	1	0	1	2	6	8
<b>SCSI</b>	0	0	0	0	2	2
<b>WCSI</b>	0	0	2	2	14	16
<b>WCNI</b>	0	0	0	0	4	4
<b>Totals</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>26</b>	<b>30</b>

These data show that of the 30 most recent incidents that we have information on, only four (13.3%) were fishing related. Full details of the autopsy results are given in Appendix 4.

## 2.7 Under reporting of dolphin incidents

In recent years as the number of dolphin deaths has fallen in Canterbury waters, opponents of set netting have increasingly claimed that this is because of under reporting. It has been claimed by E Slooten and others that five to seven times as many deaths go unreported and that known incidents are only "the tip of the iceberg"<sup>3</sup>. There is no evidence for this. For recreational fishers who set their nets within a few metres of the rocky shores or in the innermost bays where flounder fishing is allowed, it would be very difficult for any entanglement to escape attention, let alone to the extent alleged by E Slooten. Our club makes a point of urging all fishers always to observe the regulations and the reporting requirements, and we have passed on intelligence to DOC where this has come to our knowledge. It should also be noted that in the past, opponents of set netting have greatly inflated the number of entanglements. Dawson and Slooten (1988) gave figures for the period 1984-1988 of 200 deaths in commercial nets and 11 in recreational nets in Canterbury waters. When a much more detailed analysis of

a much larger number of fishers was made by the Ministry of Agriculture and Fisheries, figures of 112 deaths in commercial nets and 5 in recreational were found (Voller, 1992).

Under reporting will never be known precisely. It probably exists, but at a low level. In the 1994 review of the Marine Mammal Sanctuary the report concluded (p 24)"There is no anecdotal evidence that catches [entanglements] are significantly higher than those reported." (Department of Conservation and Ministry of Agriculture and Fisheries, 1994).

**However if the 26,000 - 30,000 former population size is to be believed, an enormous "iceberg" comprising some 34,000-40,000 fishing related deaths went unreported, and apparently unnoticed.**

### 3 AKAROA HARBOUR RECREATIONAL FISHING CLUB PREFERRED OPTION

We have reviewed all the available information on Hector's dolphin in our area and set out below our preferred option which is Option 2a, with minor modifications. We think it desirable that the same regulations apply to the whole of the East Coast South Island.

It is our view that these measures will provide more than adequate safeguards for the conservation of Hector's dolphin in our area. Our conclusions are based on many decades of fishing experience; the last 19 years fishing under the Marine Mammal Sanctuary regulations. Since their inception in 1989, there have been only two fishing related deaths in Akaroa Harbour. Our proposals, we believe, will bring this number to zero.

Proposal: Amateur set-netting to be prohibited inside 2 nm from shore (MHW) in the East Coast of the South Island region (EC SI) as defined in the discussion document between 1<sup>st</sup> October and 31<sup>st</sup> March annually with provision to permit set-netting in the designated flat fish and butterfish areas as defined in Appendix 6 of the discussion document between 1 April and 30 November each year. The following measures shall apply:

1. Mandatory attendance with set nets other than flatfish nets in a designated area. \*

2. Maximum of one set net per person and two set nets per vessel if two or more fishers are on the vessel. \*\*

3. No overnight setting of nets other than a flatfish net in a designated area as defined in the discussion document.

4. Fishers are permitted to use a net that has a maximum net length of 30m when targeting butterfish and 60m when targeting flatfish.

5. That specifications for nets currently in force remain unaltered. \*\*\*

6. Only flatfish nets are permitted to be set in designated flatfish areas. \*\*\*\*

\* Fishers to remain within 50m of net whether set from vessel or land.

\*\* With one net per vessel many fishers are going out alone and that induces a risk to fishers. Permitting two nets per vessel will mitigate this risk by making assistance available in the event of 'man over board' which can easily happen.

\*\*\* Mesh sizes etc are irrelevant to dolphin protection and do not need to be altered for such They are a fish enhancement measure specified under specific regulations dealing with general net use. Alteration would involve fishers in substantial unnecessary cost.

\*\*\*\* The low height profile of flatfish nets substantially reduces the risk to dolphins but non-exclusion of unattended butterfish nets from flatfish areas increases the risk of entanglement.

+ Designated butterfish areas out to 100m from MHW

#### 4 SOCIO-ECONOMIC EFFECTS

Many of our members are residents of the settlements around Akaroa Harbour, or have holiday houses there. A primary attraction for many of these people is the opportunity to go fishing. It is a pastime enjoyed by young and old. There are not many places in Canterbury outside Banks Peninsula where you can safely go fishing in a small boat. We value the harbour greatly. In particular, set net fishing is a very valued fishing method for our members. For flounders there is no alternative to this method as the areas where drag netting can be used are very limited due to most of the harbour coastline being rocky cliffs and most beaches being heavy mud. Nor is there an alternative method for butterfish which feed on seaweed and do not take bait. In recent years the demise of red cod stocks has made set net fishing even more important. [We are very pleased that the Minister of Fisheries has now substantially cut the TACC for this species, something we have raised with the Ministry for several years.]

The importance of set netting to our members and to other recreational fishers in the Canterbury area can be seen in Table 4 below. This table only shows species targeted by set nets. The data are for the years 1991-1992, and clearly demonstrate the very great importance of set net fishing to the recreational fishers of Canterbury. This will be totally destroyed if Option 3 is enforced, as it would for every where else in New Zealand.

**Table 4: Importance of recreational set net fishing in the Canterbury area.**

Area	No of fishers	No of trips	No of fish caught per year			Totals
			Flatfish	Butterfish	Moki	
N Canty	1,900	24,600	6,000	1,000	1,000	8,000
<b>Banks Peninsula</b>	<b>21,500</b>	<b>72,500</b>	<b>47,000</b>	<b>11,000</b>	<b>7,000</b>	<b>65,000</b>
S Canty	4,600	32,000	2,000	0	0	2,000
Totals	28,000	139,100	55,000	12,000	8,000	75,000

Source: Teirney, L D and Kilner, A R, 2002: Marine recreational fishing survey in the Ministry of Fisheries South region, 1991-92. 109 pp. (Report held by Ministry of Fisheries, Dunedin)

## 5 REFERENCES AND DATA SOURCES

Dawson S M and Slooten E, 1988. Hector's dolphin *Cephalorhynchus hectori*, distribution and abundance. *Rep. Int. Whal. Comm. (Spec. Issue)* 9: 315-324

Dawson S M and Slooten E, 1992. Conservation of Hector's dolphin: a review of studies which led to the establishment of the Banks Peninsula Marine Mammal Sanctuary. Banks Peninsula Marine Mammal Sanctuary Technical Report, pp B1-B16. Canterbury Conservancy Technical Report Series No. 4. Christchurch.

Dawson S, Dufresne S, Slooten E and Wade P, 2000: Line-transect survey of Hector's dolphin abundance between Motunau and Timaru. Department of Conservation, unnumbered report.

Department of Conservation and Ministry of Agriculture and Fisheries, 1994: Review of the Marine Mammal Sanctuary. Canterbury Conservancy Miscellaneous Report Series No. 3.

DuFresne S, Dawson S and Slooten E, 2001: Line transect survey of Hector's dolphin abundance between Timaru and Long Point, and effect of attraction to survey vessel. Department of Conservation, unnumbered report.

Ministry of Fisheries and Department of Conservation, 2007: Hector's dolphin threat management discussion document.

Voller R, 1992: Entanglements of Hector's dolphins in set nets between Motunau and Timaru. Ministry of Agriculture and Fisheries, Dunedin. Report, 21 p

### Other sources

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

1. E Slooten evidence to the resource consent hearing on marine farming applications in Akaroa Harbour (2001).
2. Press release by Forest and Bird 26.8.05
3. Christchurch Press "Mainlander" 20.10.07

**Appendix 1: Details of the Akaroa Harbour Recreational Fishing Club's involvement with the conservation of Hector's dolphin in Canterbury waters and elsewhere in New Zealand.**

1. The Club President, Mr R A Meikle, has been involved in the National Hector's/Maui dolphin Threat Management Plan Advisory Board since the boards' inception.
2. 21.08.01...Called and financed a public meeting at ChCh Boys' High School to enable local fishers to discuss and become aware of the proposed measures of that time. Approx 180 attended.
3. 17.07.01...Active input into DOC/Mfish convened meeting at Commodore Hotel where about 250 attended to learn about and have input into measures being contemplated at that time....Our Club President had to intervene at this meeting to restore & obtain some semblance of order to enable the meeting to proceed.
4. The club had active participation and a lead role in having preventative measures taken prior to the temporary measures of 2001 being instituted.
5. Writing to known fishing clubs in the Canterbury area on 04.04.02 seeking their input into proposed new measures and also requesting their views on forming a Canterbury wide organisation to provide a forum for discussing issues such as this.
6. Attended a meeting of fishers' representatives at Hoon Hay Club on 19 March 01 re dolphin issue. We called the meeting, beach fishers included. It was also attended by Messrs Mike Donoghue (DOC ) & R Voller (Mfish). 14 attended.
7. On the 22.08.01 at the request of M/s Amy Burke of TV3 Meikle travelled to Wainui to enable their camera crew to film the actual setting of a butterfish net and its recovery. (To my knowledge it was never broadcast..... suspect it was too innocuous).
8. During May 2001 our club representatives had numerous meetings with other groups on this issue. Included local Maori, Forest & Bird Representative, Ms Eugenie Sage (29.05.01 and Port Levy residents to name a few.
9. Together with other 4 fishers attended a meeting in Christchurch on the 20<sup>th</sup> July 2001 with Mr Jim Anderton, MP for Wigram to discuss this issue.
10. Met with Hon. Doug. Kidd, then opposition Fisheries spokesperson, on the 6<sup>th</sup> August 01 in Blenheim in connection with this matter.
11. This issue has been discussed at several South East Fishers Committee meetings in Dunedin since the early 1990's. A representative of our club attends each of these.
12. The club circulates regular newsletters to members with encouragement to share them with other fishers. Most of these contain references to the measures that are in force to protect Hector's dolphins and exhorting compliance with them. Those issued and containing such a reference include dates of issue 26.02.02; Dec

2004; Nov 2004; April 2004; Nov 2003; 25 March 2002; 29.10.01; 31.10.02; Dec 2005; Dec 2006; May 2005; 17.04.01; Dec 2002; Dec 2001; July 2002; July 2002; July 2003 & Nov 2006.

13. The club has caused numerous items to be published in local newspapers bringing the requirements of the legislation protecting dolphins to notice of the public generally.
14. For a number of years the club has had a stand at the Duvauchelle A & P Show on Banks Peninsula mainly to demonstrate the art of economically filleting fish. Posters and distribution of literature pointing out the danger to dolphins from nets and methods of preventing these casualties has been prominent also on these occasions.

From this it will be seen that the Club has been very pro-active in securing the future of the Hector's dolphin and has every intention to continue to do so.

## **Appendix 2: Persons and sources recording dolphin abundance past and present in Canterbury waters.**

The following persons all confirm that the abundance of Hector's dolphins in Canterbury waters is far greater now than in the past.

R Meikle, commercial and recreational fishing around Banks Peninsula from 1940s  
J Crossland, commercial (Pegasus Bay) and recreational fishing (Akaroa Harbour) from 1950s  
E Robinson, recreational fishing (Banks Peninsula) from 1950s  
E Nicholls, recreational fishing (Akaroa Harbour) and sailing around Banks Peninsula since 1950s  
R Dunnachie, recreational fishing (Akaroa Harbour) since 1972  
K Davidson, recreational fishing (Akaroa Harbour) since 1972  
Lester Atkinson, recreational fishing (Akaroa Harbour & commercial fishing (trawler on own account) in adjacent waters since 1950's.  
Alan Reid, recreational fishing & commercial fishing (crayfish and groper on own account) in Banks Peninsula waters since 1950's.

### **Additional sources**

A video made by I Waghorn (deceased) long time resident of Little Akaloa showing a major aggregation of Hector's dolphins estimated in the hundreds, in Little Akaloa in 1987.

C Weir formerly a resident of Akaroa who made numerous trips across Akaroa Harbour during the summers of the 1950s to play cricket at Wainui, without ever seeing a dolphin in the harbour.

C Hill commercial fisher in a sworn statement (1996) reported large aggregations offshore in Pegasus Bay.

Gordon Mitchell commercial fisher (24/5/07) in Timaru Herald "He said contrary to Forest & Bird's claims Hector's dolphin numbers seemed to be growing."

**Appendix 4: National log of Hector's and Maui dolphin deaths, 24 April 2006 to 27 July 2007 including autopsy results.**

<b>DOC Ref:</b>	<b>Date Reported:</b>	<b>Location:</b>	<b>Circumstances:</b>	<b>Cause of Death:</b>
121/06	21.04.06	Seaview: (North of Hokitika) WCSI	Skeletal remains; head missing.	Not known.
122/06	04.09.06	Twin Beach, Heaphy Track WCSI	Beach cast.	Not known as at 23.12.06. No association with nets.
123/06	12.10.06	Beach at Hokitika Sewage Ponds. WCSI	Beach cast	PM indicated sick animal. No association with nets.
124/06	10.11.06	Farewell Spit. WCSI	Beach cast Juvenile:	May have been killed in storm. No association with nets.
125/06	13.11.06	Sunset Beach, Waikato. WCNI	Beach cast. Juvenile Maui	Not determined. No association with nets.
126/06	26.11.06	Te WaeWae Bay. (West end) SCSI.	Beach cast.	Not determined. No association with nets. PM confirms no indication of entanglement.
127/06	04.12.06 Approx.	Karioitahi Beach, South Auckland. WCNI	Beachcast; Adult Maui.	Not determined. No association with nets. PM open on cause of death.
128/06	About 4.12.06	Karioitahi Beach, South Auckland. WCNI	Beachcast Maui juvenile.	Not determined. No association with nets PM open on cause of death..
129/06	About 7.12.06	Kaikoura. Close inshore. ECSI	Floating. Possibly immature male.	Lesions consistent with net. Probably recreational. PM confirms lesions consistent with net.
130/06	7.12.06.	Gore Bay. ECSI	Beachcast. Young animal. Neonate:	Probable maternal separation. No association with nets.

131/06	18.12.06	Washdyke Lagoon, Timaru ECSI	Beach cast skeletal.	Too autolysed being skeletal remains only.
132/07	07.01.07	Te WaeWae Bay. SCSI	Not known.	To be supplied. No present association with nets.
133/07	07.01.07	Gillespie's Beach, West Coast. WCSI	Recovered from Recreational set net.	Confirmed net marks that were on snout & leading edge of pectoral flipper. Lungs: Moderate bilateral oedema & congestion
134/07	Found 18.01.07	A Hokitika Beach. WCSI	Beach cast skeletal.	Tail had sharp cuts. Probably death was result of net as human action indicated. Confirmed by autopsy.
135/07	17.02.07	Mohikinui River Beach, near Westport. WCSI	Beach cast; badly decomposed	Sent to Massey for necropsy. Open...too autolysed.
136/07	20.02.07	Rarangi Beach, Clifford Bay ECSI	Young male.	Sent to Massey for necropsy. Autopsy indicates probable entanglement.
137/07	28.02.07	North of Arahura River, West Coast. Beach cast. WCSI	One of three Hector heads.	Sent for necropsy. Fourth was common dolphin. PM result..too decomposed.
138-07	28.02.07	" " " " WCSI	" " "	" " " " "
139-07	28.2.07	" " " " WCSI	" " "	" " " " "
140-07	08.03.07	Ngaranui Beach, Raglan WCNI	1.52m female?	Mildly decomposed; sent to Massey. PM result possible predation.
141-07	12.03.07	Just north of Granity, WCSI	Beach cast.	Advanced decomposition. Autopsy. Result. Too decomposed to tell.
142/07	23.03.07	South of Ure River mouth. ECSI	Beach cast.	PM result: Too decomposed to establish.
143/07	23.03.07	Hokitika Beach WCSI	Beach cast.	PM Result:Open skull only.

144-07	24.03.07	A Port Levy Beach ECSI	Beach cast.	Reported by public member. Carcass not found. Accepted as entanglement either customary or amateur fisher.
145/07	29.04.07	Barrytown...just north of Greymouth WCSI	Beach cast.	Autopsy Result: 1. Severe chronic pleuropneumonia 2. Severe chronic gastric parasitism.
146/07	9.5.07	Believed Greymouth. WCSI	Found in section	PM Result: Skull only..open too decomposed.
147/07	About 1.5.07	Marlborough Coast. ECSI	Beach cast.	PM Result: Open - too autolysed
148/07	25.07.07	Okari Beach, (Near Cape Foulwind) WCSI	Spinal column only; no skull or flesh.	Autopsy Result: Open - skeletal remains only
149/07	27.07.07.	Cape Foulwind. WCSI	Found on beach.	Autopsy result: It seems unlikely that this animal died as a result of entanglement
150/07 *	16.09.07	Up Waikouaiti River. Otago. ECSI	Presume beached.	PM result: To be confirmed

\* Not taken into account as no result of autopsy yet available.