Conservation Services Programme
Annual Report 2003/04

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Contents

1 Introduction

1.1 Purpose

This report outlines the research carried out through the 2003/04 Conservation Services Annual Plan, and provides updates on projects uncompleted from earlier annual plans.

1.2 Background

The Conservation Services Programme originated in 1995 after an amendment to the Fisheries Act 1983 allowed for a Conservation Services Levy to be charged to the fishing industry, to recover the costs of research related to the impact of commercial fishing operations on marine mammals and seabirds, and the development of ways to mitigate bycatch. The Minister of Conservation can also require the production of population management plans, which can include the setting of maximum-allowable levels of fishing-related mortality for threatened species.

1.3 CSP Objectives

The overall aim of the Conservation Services Programme[1] is to:

> …work in partnership with the New Zealand commercial fishing industry, Ministry of Fisheries, and other interested groups, to assess the impacts of fishing operations on protected marine species and to develop and investigate the effectiveness of mitigation measures which minimise the incidental take of protected marine species in interactions with the New Zealand commercial fishing industry.

Conservation Services Programme activities in 2003/04 were divided into three main areas:

1. The Fisheries Observer Project
2. Bycatch mitigation
3. Interaction and sustainability research.

For the 2003/2004 year the objectives of the Programme were:

- To ensure that adequate bycatch data are collected, verified and analysed to give estimates of the numbers and characteristics of the incidental take of marine protected species in New Zealand commercial fisheries interactions, so that the Minister of Conservation is enabled to carry out his statutory duties;
- To research the status and population demography of protected marine species so as to enable the Minister of Conservation to make informed decisions about the relative threat of New Zealand commercial fisheries interactions on individual species, and to carry out his statutory duties;
- On a species-specific basis, to assess fisheries related mortality and the spatial and temporal aspects of commercial fisheries interactions, to provide information on the impact of New Zealand commercial fishing interactions on protected marine species (as

[1] From the Approved Conservation Services Plan 2003/2004.

opposed to fisheries outside the EEZ, and the variety of other causes of mortality), to enable the Minister of Conservation to carry out his statutory duties.

1.4 Development of the Annual Plan

Because much of the research carried out in the Conservation Services Programme is funded through a levy on the fishing industry, CSP has its own programme-setting process that is coordinated with the Ministry of Fisheries process to set fishery services levies. The funding year runs from July to June, although levies are set for the October to September fishing year. Before each year's research programme is set, a draft plan showing indicative projects and costs for the year ahead is released to the fishing industry and other interested parties, including Maori, recreational and environmental groups. Some CSP projects are multi-year, such as studies of the populations of particular species to determine how they are affected by bycatch levels.

The Annual Plan took account of feedback from stakeholders, and was approved, along with the final costs to be levied, by the Minister of Conservation. The Conservation Services Plan 2003/2004 was approved by the Minister of Conservation on 20 March 2003 and amended by the Associate Minister of Conservation on 18 June 2003. The Ministry of Fisheries then allocated the levy among the different fish stocks, at the same time as the fishery services levies are set. The Minister of Fisheries usually approves a new levy order which, when signed by the Governor-General, comes into force at the start of the new fishing year on 1 October. This year the levy was set in April 2004.

CSP followed a comprehensive formalised stakeholder consultation process which allowed interested parties, such as industry representatives or conservation groups, to provide input. This included technical working group sessions to consider issues related to marine mammals or seabirds. Three technical working groups were held to provide progress reports on CSP projects to stakeholders. In addition, stakeholders were able to provide feedback on the year's prospective research plan during two further meetings.

Research projects were contracted to external specialists or were carried out by the Department's scientists. Reports on projects funded by the Conservation Services Levy have been published through the Science Publishing Unit, and are listed in Department of Conservation bibliographies (printed and electronic). Research is also reported in external, peer-reviewed science publications. A Stocktake of CSP reports can be found at: http://www.csp.org.nz/CSPStocktake.pdf.

1.5 Strategic and Research Plans

The Conservation Services Programme has been operating now for almost a decade and it is appropriate[2] to define a strategic direction for the Programme. Work commenced in 2003/04 on the preparation of a Strategic Plan and a Five-year Research Plan.

The Strategic Plan will be an enduring, high level document, identifying goals and objectives for the Programme, and establishing criteria and a framework for the determination of priority

[2] This was recommended by the Auditor-General – see section 5.

species and priority projects to be undertaken through the annual plans of work. The scope of the Strategic Plan is limited to activities:

- undertaken by the commercial fishing industry,
- within New Zealand's fisheries waters,
- that have an adverse effect on protected species.

A Five-year Research Plan will articulate how the Strategic Plan will be implemented and, as such, will provide quite specific guidance for the subsequent annual plans. The Research Plan will have a five-year time horizon and will be reviewed annually to allow consultation on annual plans to focus on project details, rather than broader strategic issues.

1.6 Seabird National Plan of Action

The National Plan of Action to Reduce the Incidental Catch of Seabirds in New Zealand Fisheries (NPOA) was approved by the Minister of Conservation and the Minister of Fisheries on 8 April 2004. Those aspects of the Conservation Services Programme which relate to seabirds are being closely aligned to the NPOA through the CSP Strategic and Research Plans. The activities of the CSP Technical Working Group, the Ministry of Fisheries Aquatic Environment Working Group, and the NPOA Technical Working Group are being integrated.

2 Projects in the 2003/04 Annual Plan

2.1 Observer Programme

2.1.1 Observer sea days

OBS 2003/1, OBS 2002/1: Services provided through Ministry of Fisheries Observer Services, plus CSP staff time
Income: $1,311,540[3], balance: $412,574

Government fishery observers have accompanied commercial fishing vessels in New Zealand waters for many years. Funds from the Conservation Services Levy have enabled increased observer coverage in fisheries with known protected species bycatch problems. The aim is to more accurately estimate numbers of animals caught, and to develop and to assess the efficacy of any mitigation measures employed. All fisheries observers are routinely trained in protected species identification and are given a comprehensive manual and reference books for use at sea. Observers also retrieve and return seabird and mammal carcasses for autopsy by experienced specialists. Observers are debriefed on return, and some masters and skippers are also interviewed, in order to build a complete picture of the way fishing vessels interact with protected species.

Protected species observer time totalled 1522 days during the 2003/2004 financial year. This provided significantly more coverage than in the first year of the programme (1995/96). The chartered pelagic tuna fishing fleet has had 100 percent observer coverage for several years

[3] This "income" and that for the other projects are from a variety of sources, including carried forward funds. See Table in Section 8 for more detail.

and observer coverage of the demersal ling long-line fleet increased substantially since 1996. Increased coverage in the squid fishery around the Auckland Islands has allowed reliable estimates of New Zealand sea lion deaths, which were crucial to the application of the limit on fishing-related mortality managed by the Ministry of Fisheries.

The 1522 observer days represented 80% of the target days requested (see Table 1). Over three-quarters (84 %) of CSP observer days were concentrated on four fisheries: deep-sea ling long-line, domestic pelagic tuna long-line, squid trawl and snapper long-line fisheries. The remaining 16 % were spent in the chartered pelagic tuna longline, hoki trawl and inshore ling long-line fisheries. The 146 sea days achieved in the snapper longline fleet is particularly pleasing and could not have been achieved without the help of Kate Bartram (Executive Officer, Northern Inshore Fisheries Company Ltd) and Grant Johnson (CSP Advisory Officer) and the cooperation of the skippers.

Table 1: Observer coverage for 2003/2004

Fishery	CSL days 2003/04	Daily rate	Cost at sea	Total Days dropped*	Over Recovery
Hoki Trawl	200	$461	$92,200	100	$46,100
Southern Blue Whiting Trawl	100	$461	$46,100	100	$46,100
Hake Trawl	30	$461	$13,830	30	$13,830
Squid Trawl	200	$461	$92,200	0	$0
Chartered Pelagic Tuna Longline	120	$461	$55,320	0	$0
Domestic Pelagic Tuna Longline	250	$711	$177,750	15	$10,665
Demersal Ling Longline: deep sea+	850	$461	$391,850	150	$69,150
Demersal Ling Longline: inshore	200	$711	$142,200	179	$127,269
Demersal Snapper Longline	150	$711	$106,650	4	$2,844
TOTALS	**2,100**		**$1,118,100+**	**578**	**$315,958**

Note:
* As agreed by the MFish Observer Allocation Committee
\+ Includes 200 days carried forward from 2002/03.

The Ministry of Fisheries Observer Services was unable to provide all the observer sea days requested by CSP and other clients, resulting observer sea days being about 20% less than that specified in the annual plan. This led to a substantial over-recovery to be returned to the industry[4]. The Ministry of Fisheries is addressing the difficulty in meeting requested services through the following projects:

- Implementation Project: defining the specific information that observers need to collect and its ultimate use.
- Observer Cooperation Group: facilitating placement of observers on fishing vessels and resolving operational issues such as observers on small vessels, safety etc.
- Improving service delivery:
  - Forming a stand alone business unit that delivers services to clients.
  - Developing a NZQA-linked training framework for observers
  - Defining performance measures for service delivery.
  - Improving staff recruitment

[4] Processes managed by the Ministry of Fisheries return funds to industry through reductions in future levies. Hence, "returned to industry" means "Declared and actioned under the agreed protocols for under/over recovery between the Crown and Industry".

- An Observer Information Strategic Plan to address issues of data management.

The need for timely advice to stakeholders about important events involving protected species has been recognised by the establishment of occurrence reports. The first report, dealing with the deaths of 15 common dolphins in the Taranaki Bight jack mackerel fishery in December 2003/January 2004 was released on 4 March. Further reports will be issued as required.

Funding was also carried forward for the purchase of special equipment for observers ($71,600) and since this equipment was not needed, the funding will be returned to industry. Funding was also carried forward for unused overheads for briefing officers prior to 2002/03 ($24,600) and these funds will also be returned.

2.1.2 Seabird carcass recovery project

OBS 2001/4: (Christopher Robertson – Wild Press)
Income $90,486, balance: $23,452

Dead seabirds collected by observers are bagged, frozen and sent to a laboratory in Wellington, where they are examined by experts. The return of carcasses in good condition allows precise examination of the dead seabirds, allowing the species killed to be identified and the cause of death to be established, providing a profile for the population affected by fishing (in terms of age, sex, breeding status, condition and stomach contents etc). Complementing observer reports, autopsy information on seabird stomach contents can also reveal trends, such as the relationship between the availability of offal (fish guts and waste thrown overboard) and the likelihood of birds being captured.

The summaries presented in the tables below are for birds autopsied within the financial year and hence differ from the numbers that are reported on by the autopsy contractor by the fishing year (i.e. 1 October to 30 September).

A small proportion of vessels were catching most of the birds being caught (16% of observed vessels caught 88% of all the birds returned). It appears that characteristics of some vessels significantly increase the risk of bycatch, therefore these characteristics should be investigated further. The high level of offal or fisheries discharge found in birds caught in squid and fish trawl and bottom-longlining fisheries was also highlighted. Offal from other boats can attract birds to a fishing area resulting in those birds being caught by vessels nearby but not discharging offal.

The balance of funds is intended to be carried forward into 2004/05 to complete payments for a contract to be completed by March 2005.

Table 3: Seabird Species from Observed Fishing Vessels Autopsied – 1 July 2003 to 30 June 2004.

Species	
Antipodean (wandering) albatross	2
Black petrel	1
Black-browed albatross	1
Buller's albatross	27
Campbell albatross	12
Common diving petrel	1
Fairy prion	1
Flesh-footed shearwater	1
Gibson's (wandering) albatross	5
Grey petrel	61
Grey-backed storm petrel	1
Grey-faced petrel	15
Salvin's albatross	12
Sooty shearwater	103
Southern cape pigeon	10
Southern royal albatross	3
Western weka	1
Westland petrel	2
White-capped albatross	124
White-chinned petrel	44
White-faced storm petrel	2
White-headed petrel	3
Total	**432**

Vessel type	
Domestic bottom longliner	141
Domestic tuna longliner	3
Joint venture[5] tuna longliner	22
Pelagic tuna longliner	54
Scampi trawler	7
Squid trawler	183
Trawler	22
Total	**432**

2.1.3 Marine mammal carcass recovery project

OBS 2001/3: Institute of Veterinary, Animal and Biomedical Sciences, Massey University
Income: $63,669, balance: $11,900

Marine mammal carcasses are bagged by observers, frozen and sent from ports to Massey University in Palmerston North. The following table shows marine mammals and marine reptiles captured on observed vessels.

Twenty-five pinnipeds (20 female sealions, four male sealions, and one male fur seal) have been examined to date (July 2004) from the 2003/04 fishing season. All died as a direct result of asphyxiation, and 13 of the female (65%) and one of the male (25%) sealions had blunt trauma pathology that would have been inconsistent with their survival. Further work, including age determination and histological examination, is being undertaken.

Thirteen cetaceans (four common dolphins and nine Hector's dolphins) have been examined to date[6]. The four common dolphins (three females, one male) were known bycatch and two of the Hector's dolphins had pathology consistent with having been bycaught. Further work

[5] Now called "Charter tuna longliner".
[6] Note that this report includes results from a separate contract (paid by the Department of Conservation) for beach-cast marine mammals, some of which will have died as a result of commercial and recreational fishing. Costs are recovered from industry where the cause of death can be attributed to commercial fishing.

including age determination, and collection of morphometric, stomach content, and reproductive tract data, is yet to be completed.

Table 2: Marine Mammals and Marine Reptiles captured by observed vessels July 2003 – June 2004

Species	Fishery									
	ORH	SQU	JMA	SNA	STN	BIG	LIN	HOK	SCI	Total
NZ sea lion		18							3	21
NZ fur seal	2	15		1	22			50	1	94
Common dolphin			15							15
Pilot whale					1		1			2
Unknown whale					1					1
Unknown turtle						1				1
Total	2	33	15	1	24	1	1	50	4	134

Note that this table refers to marine mammals and reptiles recorded by observers – not all of these are returned for autopsy.

The current contract ends in November 2004, leaving an outstanding liability of $28,782, plus $2000 publishing costs. $11,900 was accrued from 2002/03 and paid in 2003/04. A similar amount will be carried forward to 2004/05, but this will be insufficient to meet financial liabilities - there are contractual obligations and other costs of $28,782[7] due in 04/05. . Industry was advised last year of $19,000 under-recovery. This will be increased by $3324 to account for publication and miscellaneous costs.

2.2 Bycatch mitigation

2.2.1 Advisory Officers

A particular highlight of the 2003/2004 work programme was the employment of three advisory officers to help ling, tuna and snapper fishers avoid seabird bycatch. The idea of employing advisory officers was first mooted by the fishing industry and its support has ensured the success of these positions. Advisory officers (who are usually former fishermen) meet with fishers at their local ports, visit their boats and go to sea with them to share knowledge about ways to avoid the incidental capture of protected species. Seabird identification books are distributed and tori lines to reduce seabird mortality were made by the advisory officers and given to individual skippers at no cost.

2.2.2 Advisory services for the snapper longline fishery

MIT 2002/2: Grant Johnson
Income: $134,654, balance: $59,036

About 100 vessels from four companies operated during the 2003/2004 season in the northern snapper fishery. October to March is the time when birds tend to be seen around boats, with flesh-footed shearwaters, black petrels, sooty shearwaters, and grey-faced petrels commonly observed. Some Buller's shearwaters are seen but they seemed reluctant to dive for bait.

[7] Including publication costs for the 2001/02 report ($2700).

Albatrosses/mollymawks were occasionally seen in low numbers in winter (fishers fish in deeper waters in winter).

The majority of snapper fishers are long-term operators (at least 10-15 years in the fishery) and most have developed their own methods for minimising seabird catch. These methods include setting at night, using heavier weights when birds are around, and (in one case) the use of shorter snoods to reduce bird catch (many birds appear to be foul-hooked), switching baits from pilchards to squid when birds are around, and gutting squid at home so there is no discharge during baiting of the hooks.

During the year, the advisory officer visited skippers in ports from Tauranga to the far north and attended meetings of local fisher groups. Due to the delay in contracting Grant Johnson, funds for this project have been carried over into 2004/05 and the contract ends in April 2005.

2.2.3 Advisory services for the inshore ling longline fishery

MIT 2000/1[8]: Dave Kellian
Income: $63,000, balance: $40,558

Dave Kellian, previously employed to work alongside skippers and crew in the northern tuna fleet changed to working with the inshore ling fleet in May 2004. During the first few months Dave met with ling fishers who have the most experience in seabird friendly fishing practice and observed the methods they use on a daily basis. From this a design for a tori line devised by Laurie Hill was adopted and Dave assisted the other advisory officers in making up tori lines for free distribution to fishers. Thirteen vessels were visited and a seabird information pack and a seabird identification manual were distributed. Practices such as holding offal on board until the line hauling process is complete were encouraged.

The SARS epidemic in Asia dramatically reduced the patronage of restaurants, and severely depressed New Zealand exports of ling. Thus, for much of the year vessels that would normally have been engaged in fishing for ling were fishing for other species. This led to an over-recovery and the need to return funds to the industry.

2.2.4 Advisory services for the domestic tuna longline fishery

MIT 2002/1: Pat Hibell
Income: $62,153, balance: $13,401

Pat visited about 90 skippers in large and small ports from Milford Sound to North Auckland. In general these small-vessel skippers were aware of the need to lessen seabird mortality and they were receptive to discussions on the various methods they could adopt to mitigate the effects of their fishing practices. Most skippers were setting in the dark and about 60% were using a tori line when setting at night. For a number of vessels the superstructure was too low to give adequate height for the attachment of a tori line so a method of hauling the tori line to the masthead was devised. The importance of bait retention was emphasised.

[8] Funded from observer day carry-forwards after consultation with industry.

These inshore vessels often switch from one target species to another. This pattern of activity is not driven entirely by the seasonal availability of a particular species but is also a response to economic factors. In the latter part of the period under review, the inshore tuna fishery has been in recession owing to the impending introduction of tuna into the quota management system. A common perception is that many inshore vessels will be out of the tuna fishery by the end of 2004 with large fishing companies engaging chartered vessels to fish their quota of the fish stock.

Because of the down-turn in the domestic tuna fishery, the advisory officer's time was reduced, reducing costs, and leading to an over-recovery. A small quantity of funds is to be carried forward to address outstanding contractual matters.

2.3 Interaction and sustainability research

2.3.1 Evaluation of the impact of fisheries bycatch on the Gibson's (Auckland Island) wandering albatross

BRD 2001/1: Kath Walker and Graeme Elliott (Albatross Research)
Income: $148,513; balance: $21,200 (50% Crown funded)

Concern about the population status of Gibson's wandering albatross (*Diomedea gibsoni*) and Antipodean wandering albatross (*Diomedea antipodensis*) because of high incidental capture in long-line fisheries led to a study of their population trends, population dynamics, and of the overlap of these species with fisheries. The population of Gibson's albatross has risen slightly, but not significantly, since 1998, but productivity has declined during that time. Counts of nesting albatrosses are too variable to quickly detect population changes, but mark-recapture estimates of population size based on the banding and re-sighting of birds can detect declines of 1% per annum within 11 years. Estimates of recruitment are required before a reliable model of their population dynamics can be constructed and a sustainable bycatch level determined. Gibson's wandering albatross forages mostly in the Tasman Sea, but ranges as far as the south-west corner of Australia and the Louisville Ridge, north-east of the Chatham Islands. Despite the wide range of this species, a high proportion of the time of these birds (34%) is spent within the New Zealand EEZ, and while breeding they spend about 55% of their time within it. Extensive overlap with long-line fisheries has occurred over the last 40 years. The potential for interaction with fisheries has been greatest in the western Tasman Sea and off the coasts of the South Island.

2.3.2 Evaluation of the impact of fisheries bycatch on the Antipodean wandering albatross

BRD 2001/2: Kath Walker and Graeme Elliott (Albatross Research)
Income: $157,263; balance: $9500 (50% Crown funded)

The population of Antipodean albatross has increased at a rate of approximately 3% per annum since 1996. Counts of nesting albatrosses are too variable to quickly detect population changes, but mark-recapture estimates of population size, based on the banding and re-sighting of birds can detect declines of 1% per annum within 11 years. Estimates of recruitment are required before a reliable model of their population dynamics can be constructed. The Antipodean wandering albatross forages mainly in the Pacific Ocean, from

New Zealand as far east as the coast of Chile. Individuals go as far south as 73°S, just off the coast of Antarctica, and as far north as Fiji (24°S). Despite their wide range, a high proportion of their time (48%) is spent within the New Zealand EEZ, and while breeding they spend about 62% of their time within it. Extensive overlap with long-line fisheries has occurred over the last 40 years. The potential for interaction with fisheries has been greatest near Antipodes Island and along the east coast of New Zealand.

The balance of funds has been carried forward to contribute to the removal of the hut at the end of the project.

2.3.3 Evaluation of the impact of fisheries bycatch on the black petrel of Great Barrier Island

BRD 2002/1: Elizabeth Bell (Wildlife Management International)
Income: $50,549; balance: $417 (100% Crown funded)

The black petrel, *Procellaria parkinsoni,* a small, endemic seabird, breeds on Little Barrier Island and on Great Barrier Island, with the main breeding area there around the summit of Mount Hobson (Hirakimata). The long-term study on Great Barrier Island began in the 1995/96 breeding season. During the 2003/04 breeding season, 327 burrows were checked and intensively monitored over summer, however only 324 burrows were included in the long-term study. Of these study burrows, 208 were used by breeding pairs, 57 by non-breeding adults and the remaining 59 burrows were empty. Several factors affecting the black petrel breeding success were noted and by 10 May 2004, 108 chicks were still present in the study burrows and 50 others were presumed to have already fledged, corresponding to a breeding success of 76%. Nine census grids were monitored within the study area and accounted for 134 of the inspected burrows, with 78 burrows being used for breeding. Two extra burrows were found in the grids, both of which were newly dug this season. Extrapolating from these grid burrows, the black petrel population around the peak of Mount Hobson was estimated to range from 2936 to 4690 birds. There were 12 chicks from earlier breeding seasons recaptured within the Mount Hobson colony area this season. Of these, three have paired and bred (one successfully). One chick (banded in 1998/99 season) was recaptured off the coast of Peru, but this bird has not been recaptured at the Great Barrier colony yet. It is 5 years old and was released alive and well. There were 13 adults colour marked (with fluorescent spray paint). No sightings of these birds at sea were reported.

2.3.4 The impact of fisheries bycatch on the New Zealand sea lion – Auckland Islands

MAM 2002/1: (Science and Research Unit, Department of Conservation)
Income: $351,794, balance: $85,226 (0% Crown funding).

New Zealand sea lions, an endangered species, are caught and killed in the course of fishing for squid off the Auckland Islands. A team of researchers led by Louise Chilvers studied the New Zealand sea lion on Enderby Island in the Auckland Islands from December 2003 to February 2004. An estimate of pup production was calculated for each of the four breeding sites in the Auckland Islands based on mark recapture estimates and direct counts. The total estimated was 2222 pups. 566 pups were tagged to provide a pool of known individuals for the estimation of parameters such as survival, recruitment and reproductive rate as part of a long-term study.

62 captures of 26 females that were suckling pups were made at Sandy Bay as part of a foraging and diet study. Ten of these females were also fitted with satellite tags and time depth recorders. Positional data were collected from 10 deployments, with females spending most time to the north and north east of Enderby Island. Foraging data will be analysed in relation to oceanographic parameters and females' age.

67 pups were captured and weighted and measured at regular intervals from 24 hours after birth until 18 February. The mothers of 24 of these pups were fitted with VHF transmitters and their attendance patterns recorded between mid January and mid February. Data on attendance will be used to examine the relationship between maternal foraging cycles and pup growth.

Daily monitoring of pup mortality at Sandy Bay indicated the pup mortality rate returned to a 'normal' level this season at 6%, relative to the 17.4% and 20% mortality seen in the previous two seasons. Given the high variability in the level of pup mortality seen in the past six breeding seasons, it indicates that population modelling work needs to be continued for a greater understanding of the effect of fluctuating pup productivity and catastrophic events on this species' viability.

Expenditure was under-budget this year, due to the resignation of a key staff member. Funds have been carried forward into 2004/05 to complete earlier commitments.

3 Projects from earlier Annual Plans

3.1 Current projects

3.1.1 2002/03 Observer seadays

OBS 2002/1 Income: $188,349, balance: $96200
Funds for 200 observer seadays for the demersal ling fishery were carried forward into 2003/04. Half of these days were delivered (in addition to those levied for the 2003/04 season). The balance will be returned to industry.

3.1.2 Population management plans

New Zealand sea lion PMP: CSL 4A (1995/96); Balance: $6304
Wandering albatross PMP: CSL 4A (1995/96); Balance: $10,135
Hectors dolphin PMP: CSL 4A (1998/99); Balance: $4800

DoC is proceeding with a population management plan (PMP) for NZ sea lions for the 2005/06 fishing year. A species management plan will be produced to provide context for the PMP and address matters unable to be covered in the PMP. Funds for this PMP have been carried forward into 2004/05.

Funds for the other PMPs have also been carried forward into 2004/05 and a decision will be made in 2004/05 to proceed with the plans or return the funds to industry.

3.1.3 Testing the effectiveness of blue dye in reducing incidental seabird mortality

MIT 2002/3: Greg Lydon, New Zealand Seafood Industry Council
Income: $40,000; balance: $5,000

This pilot experiment was designed to test the effectiveness of blue dye in reducing incidental seabird mortality and its effect on fish catch rates in the New Zealand domestic tuna industry. The East Cape region on the east coast of the North Island of New Zealand was the area chosen to conduct the experiment. The goal was to maximise the probability of observing encounters between fishing gear and seabird species while achieving high catch rates for target tuna species. This would provide maximum contrast between blue-dyed bait and the control (un-dyed bait). A total of seven long-line sets were observed over an 11 day trip. 10,040 hooks were set of which 4,999 contained control baits (un-dyed squid) and 5,041 hooks contained blue dyed squid. Two Antipodean wandering albatrosses were caught in the first set on the control bait section of the long-line. Aversion behaviour by seabirds rather than a camouflage effect is put forward as the reason for blue dye mitigation and further sea trials are to be held.

The balance of $5,000 has been carried forward into 2004/05 for the final contract payment.

3.1.4 Electronic monitoring

(OBS 2001/1[9]): Archipelago Marine Research Ltd and South East Finfish Management Company.
Income: $70,000; balance: $0

This project, initiated by South East Finfish Management, investigated the use of electronic monitoring (EM) systems to examine interactions between protected species and fishing gear in the Canterbury coast inshore set net and trawl fisheries. This pilot study involved field testing EM systems on fishing vessels engaged in commercial fishing operations where, for a number of reasons, it is difficult to place human observers. EM systems, consisting of two closed circuit television cameras, GPS, hydraulic and winch sensors, and on-board data storage, were deployed on four set net and one trawl fishing vessel for a total monitoring effort of 82 fishing days, 113 set events and 269 retrieval hours. Most of the imagery recorded was usable for detailed analysis of such events. Results from the study demonstrated that EM systems operated very reliably for the inshore set net and trawl fleet and could effectively monitor retrieval operations and encounters with protected and endangered species, particularly Hector's dolphins – two dolphins were observed captured. EM systems could be used to effectively monitor dolphin encounters and mitigation measures for both the trawl and set net fishery. The set net imagery could also be used to identify the majority of catch to species or species group.

In this monitoring application, EM offers a number of advantages over observer programmes including lower cost, labour savings, logistical efficiency, fleet suitability, and industry acceptance. Issues standing in the way of implementing an EM-based monitoring programme include expanding fleet awareness of EM programme requirements, developing local infrastructure to support an EM-based programme, and developing data sharing agreements

[9] These funds were derived from levies for an observer programme inshore setnets and trawlers at the suggestion of the South East Finfish Management Company.

that specify the monitoring objectives, what information is being collected, and how it will be used.

3.2 Closed projects for which funds are to be returned

3.2.1 The impact of commercial and recreational fishing on Hoiho

BRD 2002/1, Balance: $40,000
No satisfactory tender was received for this project. Balance will be returned to industry.

3.3 Projects closed as part of the Agreement

Some projects were settled as part of the Agreement with industry, with funds remaining in CSP.

3.3.1 Design of a protected species observer programme

OBS 2000/2: Bryan Manly and David Fletcher, Proteus Wildlife Research
Income: $107,000; balance: $94,637

This project, the first stage of a more complex project was proposed for 2000/01, tenders sought, but a contract was not signed until 2004. The objective is to assess the adequacy or usefulness of Ministry of Fisheries data for the purpose of designing a protected species observer programme, and to develop guidelines for guiding CSP in the allocation of observer effort. As at July 2004, the data had not yet been obtained in the format needed for analysis and further discussion is being held with the Ministry of Fisheries to clarify the nature of the data.

Until now, only trawling, surface long-lining and bottom long-lining have received substantial observer coverage, although they together only account for 55% of the total fishing effort in terms of hours. Set-netting and purse-seining have been suggested as candidates for future observer coverage. The next step in this project is to examine the bycatch reported by vessel captains and this should give an indication of what bycatch would be recorded if other fishing methods received observer coverage.

Some of the balance has been carried forward to provide for commitments to complete the existing contract. Depending on the outcomes from the first contract, further work is envisaged in 2004/05.

3.3.2 Campbell albatross

CSL 3A(iv) (1997); balance: $5860

These funds have been carried forward to 2004/05 to allow a compendium of Campbell Island albatross work be published. While this contract was completed several years ago, publication (due in 2004/05) has been awaiting completion of other research on this species.

3.3.3 Seabird video monitoring

OBS 2000/5; Balance: $45,000
Funds have been carried forward into 2004/05 to form a Crown contribution to an investigation of electronic monitoring (INT 2004/3).

3.3.4 Development of an age-structured model for New Zealand sea lion

MAM 2001/3: Balance: $20,340
Carried forward funds are to be used to pay for current modelling work.

3.3.5 Development of a stochastic model for Hector's dolphin

MAM 2000/5: Balance: $54,000
Carried forward funds are to be used to develop a users' manual for the model, publish the 2001 report, or contribute to MFish's Maui's dolphin model work.

3.4 Other projects

3.4.1 mDNA analysis to determine population boundaries for South Island Hector's dolphin population

MAM 2000/6: Balance: $8800
This project was completed in 2000/01 and fully paid. However, the invoice was miscoded to other work that the contractor had done for DoC Science and Research. Hence, the balance of the funds will be returned to DoC Science and Research.

4 Other Activities

CSP staff have participated in the meetings of the Hoki Fishery Management Company Environmental Steering Group concerned with improving seabird and marine mammal deterrent techniques.

CSP is assisting Southern Seabird Solutions with the design of a possible trial to investigate the effectiveness of fish oil on the sea surface as a technique for deterring seabirds.

The Manager has participated regularly in the seabird National Plan of Action Officials Group and Technical Working Group to assist the implementation of the NPOA.

5 Auditor-General's investigation

In December 2002, the office of the Auditor-General released a report on the Administration of the Conservation Services Programme. The Report contained a number of recommendations to the Department of Conservation. In April 2004, the General Manager, Science, Technology and Information Services wrote to the Auditor-General advising his office of progress in implementing the recommendations. The Department's response to the main recommendations is given below:

- *A strategic plan is prepared for the Conservation Services Programme.*
- *A more transparent process is needed for changes in the direction and content of the Programme.*
  A draft Interim Strategic Statement has been prepared in consultation with stakeholders that will guide the development of the 2004/05 Conservation Services Plan. We intend to prepare a Conservation Services Strategic Plan and a Five-year Research Plan by 31 August 2004 to guide the development of subsequent annual plans[10].

- *Clear justification is needed of the relationship between research projects, the effect of commercial fishing and the levy*
  We intend to explain the relationship between research projects, the effects of commercial fishing and the levy at a high level in the Strategic Plan and in more detail in the annual plans. The Interim Strategic Statement identifies the impact of fishing as a criterion for the determination of priorities for the 2004/05 Plan.

- *Risk assessment should be improved*
  This is a difficult policy area and one we intend to address in the Strategic Plan.[11]

- *Prepare a population management plan for the New Zealand sea lion.*
  We are currently analysing different policy options, including population management plans, to achieve conservation objectives in the management of fishery impacts on sealions and other marine protected species. While we will articulate our conclusions in the Strategic Plan, we anticipate that we would be able to finalise the sealion population management plan in the 2004/05 year, should this be the preferred option.[12]

- *More actively translate research findings into improved fishing practices*
  The Conservation Services Programme group has employed three fisheries advisory officers to work closely with fishers and assist their adoption of improved fishing practices, and a scientist has been employed to write up existing data. The Interim Strategic Statement proposes to increase funding for the development or testing of mitigation techniques.

The Office of the Auditor-General was preparing a follow-up report in early 2004/05.

6 Staffing

The Conservation Services Programme is managed within the Marine Conservation Unit of the Department of Conservation, situated adjacent to the Department's Head Office in Wellington. Staff (as at June 2004) were:

- Bob Zuur, Manager
- Caroline Hart, Policy Analyst
- Johanna Pierre, Scientific Officer

[10] These plans have been delayed by about a month/
[11] We have subsequently commissioned a short review of risk assessment from Janet Gough (Taylor Baines and Associates).
[12] A decision has been made to prepare a PMP for the New Zealand sea lion.

- Wendy Norden, Scientific Officer
- Denis Fairfax, Briefing Officer
- Sandra Derwin, Administrator (part time)
- Grant Johnson, Advisory Office (Snapper)
- Patrick Hibell, Advisory Officer (Tuna)

Staff notes

- Bob Zuur was appointed to the position of Manager in October 2003, replacing Caroline Hart, who was acting-Manager. Bob came to CSP from the Ministry for the Environment, where he was Manager, Sustainable Industries.
- Wendy Norden, CSP Assistant Briefing Officer, was appointed as Scientific Officer on 30 May. Wendy is a graduate of the University of Rhode Island in marine biology. She is particularly responsible for the scientific aspects of monitoring protected species / fishing interactions at sea, especially through the CSP Observer Project.
- Reg Blezard, long-serving Briefing Officer since the early years of the Programme, was farewelled on 14 May on his retirement from the Department of Conservation.
- Patrick Hibell, Advisory Officer (Tuna), finishes his contract at the end of June 2004.
- Chris Pugsley completed a part-time contract on matters relating to the observer project and has prepared a draft stocktake of CSP activities. Chris had been associated intermittently with CSP since 1994.
- Dave Kellian completed his six-month contract as Advisory Officer (Ling) in November 2003.We are pleased to note that he recently received a Green Ribbon Award from the Minister for the Environment in the category ‘sustainable business’.
- Caroline Hart’s salary is funded by the Department of Conservation (not through levies) to lead the development of the Conservation Services Strategic Plan. She will move into the Marine Conservation Unit as the Strategic Plan nears completion to work on a range of marine policy issues.

7 Financial report

Annual Plan Code	Project title	Approved Annual Plan 2003/04	Contribution from Vote Conservation	Expense transfers from 02/03	Total income	2003/04 expend-iture	Expense transfers to 2004/05	2003/04 "Overs /Unders"[13]
	CSP overheads	365522	39700	21253	**426475**	410068	16400	
OBS 2003/1	Observer seadays	1123191			**1123191**	806766		316374
OBS 2002/1	CFWD Observer days			188349	**188349**	92200		96200
OBS 2001/4	Seabird autopsy	76621			**76621**	67034	9552	
OBS 2001/4	CFWD Seabird carcass			13865	**13865**		13900	
OBS 2001/3	Marine mammal autopsy	51807			**51807**	55131		-3362
OBS 2001/3	CFWD MM autopsy			11862	**11862**		11900	
OBS 2001/1	Electronic monitoring pilot (Canterbury)			70000	**70000**	70000		
OBS 2000/5	SB Video monitoring			45000	**45000**		45000	
OBS 2000/2	Design protected species Obs. Prog.			107000	**107000**	12363	94637	
MIT 2002/1	Tuna advisory officer			62153	**62153**	48752	1600	11801
OBS 2002/1	Ling advisory officer			63000	**63000**	22442		40558
MIT 2002/2	Snapper advisory officer	85000			**85000**	75580	9374	
MIT 2002/2	CFWD Snapper advisory officer			49654	**49654**	38	49662	
MIT 2002/3	Blue bait			40000	**40000**	35000	5000	
MAM 2002/1	Sea lion research	299000			**299000**	230327	68673	
MAM 2002/1	CFWD Sea lion			52794	**52794**	36241	16553	
MAM 2001/3	Sea lion age structured model			20343	**20343**		20300	
MAM 2000/5	Hectors dolphin stochastic model			54000	**54000**		54000	
MAM 2002/4	Hectors dolphin DNA			8768	**8768**		8800	
BRD 2001/2	Albatross - Antipodes Is.	151800			**151800**	147800	4000	
BRD 2001/2	CFWD Albatross - Antipodes Is.			5463	**5463**		5500	
BRD 2001/1	Albatross - Auckland Is.	136300			**136300**	127300	9000	
BRD 2001/1	CFWD Albatross - Auckland Is.			12213	**12213**		12200	
BRD 2003/1	Black petrel	47000			**47000**	46700	417	
BRD 2002/5	CFWD Black petrel			3549	**3549**	3432		
BRD 2002/1	Hoiho			40000	**40000**			40000
BRD 9904	Campbell Island albatross			5857	**5857**		5900	
CSL 4A (95/96)	PMP sea lion			6304	**6304**		6300	
CSL 4A (95/96)	PMP Albatross			10135	**10135**		10100	
CSL 4A (98/99)	PMP Hectors dolphin			4802	**4802**		4800	
Total		**2336241**	**39700**	**896364**	**3272305**	**2287174**	**483568**	**501571**

[13] Declared and actioned under the agreed protocols for under/over recovery between the Crown and Industry