Conservation assessment of the Chatham Island Oystercatcher *Haematopus chathamensis*

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Summary

Taxonomic status

Although originally described as a subspecies of *Haematopus ostralegus* (Hartert 1927) the Chatham Island oystercatcher was later considered a full species *Haematopus chathamensis* (e.g., Baker 1974a, 1975, 1977, Turbott 1990, Marchant & Higgins 1993) and this is supported by the most recent genetics data (Banks & Paterson 2007).

Life-history

The Chatham Island Oystercatcher is a large sturdy oystercatcher of the pied form, with a smudgy border between the black and white plumage on the chest, a long thick reddish bill and short stout pinkish legs and feet. It is similar appearance to the pied morph of Variable Oystercatcher *H. unicolor* but is smaller, with shorter bill and stockier legs and feet (Marchant & Higgins 1993). Total length is 47-49 cm, and although the sexes are similar in appearance, females are larger and have a longer bill (Table 1; see also Marchant & Higgins 1993).

Paired oystercatchers defend their breeding and feeding territories and share parental care. They lay clutches of 1-3 eggs (Table 2). In northern Chatham Island in 1999 initiation of first clutches was between 19 October and 25 December (Table 2). Mean incubation time (from clutch completion to final chick hatching) was 29 days (Moore *et al.* 2001). Up to four nesting attempts per season are made if the first clutches are lost, with replacement clutches occurring through to early February (P. Moore, unpubl. data).

Breeding success is generally low but varies annually (Table 3). Davis (1988) and Schmechel (2001) estimated productivity at 0.22 and 0.44 fledged chicks per pair and a larger dataset produced an average of 0.4 chicks per pair (Table 3). However, conservation management can boost the average productivity of pairs in an area. Limited or sporadic trapping effort resulted in slightly elevated breeding success but more intensive management (daily trapping for most of summer, exclusion of farm animals and moving nests away from high tide) in northern Chatham Island (1998-2004) resulted in much higher breeding success (1.05; range 0.5-1.6 chicks per pair)(Table 3).

Surprisingly, on Mangere and Rangatira, which are island nature reserves with no introduced predators or farm stock, oystercatcher breeding success averaged only 0.5 chicks per pair. Possible explanations include vegetation change, the predatory influence of skua and the vulnerability to storm surges.

Mean minimum longevity on Rangatira and Mangere in the 1970s-80s was 7.7 years (Davis 1988). The oldest known birds include a 30+ year-old that was banded as an adult in 1970 and found dead in 1998 and a 29 year-old bird that was originally banded as a chick in 1977 and was still alive in 2006. Although annual adult (88%) and juvenile (48-68%) survival on Rangatira was considered to be high, productivity was low (0.22 fledged young/pair annually) and a population decline to extinction was predicted in 50-70 years (Davis 1988). A more recent study estimated adult breeder survival as 98% p.a. before and after management in northern Chatham Island, 97% in other parts of northern Chatham Island and 92% elsewhere. Survival of non-breeding floaters was estimated as 96%, 95% and 86% for the three respective areas and survival of juveniles in the first year after banding was 87-89%, 86% and 65% (D. MacKenzie, unpubl. data for 472 banded birds, 1970-2004). Birds bred at 2-5 years of age during a growth phase of the population (1998-2004).

Habitat and food

Chatham Island Oystercatchers use their sturdy bill to prize or hammer open marine molluscs from rocky habitat, and to probe and peck for worms and other small invertebrates in sand or gravel and amongst tidal debris. Observed food types include amphipods, nemerteans, polychaetes, molluscs, crustaceans, echinoderms, ascidians, anemones, and rarely, small fish (Baker 1974b, Davis 1988, Marchant & Higgins 1993).

Oystercatchers occur on rocky, boulder and sandy coasts or a mixture of these habitat types. Territories on sandy coasts are often also centred on intertidal rock platforms or stream mouths. Early records suggested variously that sandy shores (Travers & Travers 1872) or rocky shores were favoured (Fleming 1939) – the latter may have been influenced by observations on Rangatira and Mangere islands which are comprised solely of rocky shores. Davis (1988) found that most birds on Chatham Island used areas that had volcanic rock platforms that were exposed at low tide for feeding and used

adjacent sandy and boulder beaches for breeding and feeding during high tide. In the 1990s a greater use of sandy beaches was noted (Schmechel 2001, Schmechel & Paterson 2005). This trend continued into the mid-2000s as the population expanded in northern Chatham Island. Previous large territories were subdivided and new breeders spread along previously unoccupied sandy shoreline with little or no rocky habitat, especially at stream mouths. Birds also sometimes use adjacent farmland to feed, especially in damp areas and during winter months (pers. obs., Schmechel 2001).

Nests are generally unlined scrapes or depressions in sand, boulders among storm-tide debris or on rocks. Nests are usually close to the high tide mark on the beach in front of the fore-dune, rarely on adjacent farmland turf within view of the beach, or in an open sandy area behind the fore-dune.

Distribution

The Chatham Island oystercatcher breeds only on the Chatham Islands (Baker 1973, Marchant & Higgins 1993), which are 860 km east of New Zealand (44ºS 176º30'W). Birds breed on the coasts of the four islands: Chatham, Pitt, Rangatira (South East) and Mangere and there are occasional reports of birds on Star Keys (Davis 1988). Areas of the four islands are Chatham (90,700 ha), Pitt (6203 ha), Rangatira (219 ha) and Mangere (113 ha). Actual occupied breeding/foraging habitat is probably <800 ha.

Pre-European distribution is unknown but oystercatcher bones have been found in dune deposits and middens (Millener 1990). In the 1860s the Chatham Island oystercatcher was "usually found on sandy beaches" (Travers & Travers 1872). In the 1930s the Chatham Island oystercatcher had a range which was broadly similar to that found today, being widely distributed on the rocky shores near Kaingaroa, and other northern areas, and from Owenga to the Tuku in the south of Chatham Island, and was also present on Pitt, Mangere and Rangatira (Fleming 1939).

The outer coast of the four islands of the Chatham Islands is approximately 338 km in extent. About 154 km (46%) of coast includes 90-94% of oystercatcher breeding territories (Chatham Island: northern coast from Waitangi West to Kaingaroa, Port Hutt to northern Long Beach, Okawa, Owenga, south-west coast and parts of the south coast; east Pitt Island, Mangere and Rangatira) – note that these core oystercatcher areas also include unsuitable stretches of coast or unoccupied areas between territories. The remaining coastline includes minor (or establishing) breeding areas, nonbreeding areas and unsuitable beaches (exposed, rocky or cliffs). The main Te Whanga lagoon and inland lakes and ponds of Chatham Island have approximately 121 km and 79 km of shoreline respectively. No breeding has been recorded in these areas but nonbreeders frequent parts of the main lagoon. Territories can extend for up to 1km of coast, but generally the core feeding area is smaller, and in densely occupied areas, pairs may be <100m apart. When management allowed a population increase new pairs squeezed into areas and existing territories were subdivided – 16 km of shoreline had 16 pairs in 1998 and 42 pairs in 2006.

Breeding adults are generally sedentary and defend territories throughout the year. Juveniles migrate more extensively around the four islands, visiting breeding and non-breeding areas (e.g. Cape Pattison on north-west Chatham Island and Te Whanga Lagoon on Chatham Island).

Adults may feed away from the breeding territory, for example on neighbouring farmland, and even travel between neighbouring islands, e.g. between Rangatira and Pitt Islands (c. 2 km)(Davis 1988). This most likely occurs between breeding attempts if a clutch of eggs has been lost. Of birds banded as mature adults, 96% stayed in the area they were banded (within the same island or coastal area; usually <5km) and 4% moved to a new area (5-30 km away).

Juveniles and nonbreeders disperse widely to other breeding areas as well as coastline and lagoons were there are no territorial birds. Occasionally small flocks form, especially at the end of the breeding season. Individuals vary in their mobility, some being seen in multiple areas, whereas others are fairly sedentary. In 1970-2006 37% of birds that were banded as chicks recruited to their natal area (11 sectors of Chatham Island or 3 other islands; usually <5km), whereas 63% moved and bred elsewhere (5-80km)(N=171). The majority of birds stayed within their banding region; for example 87.5% of birds banded as chicks in the southern islands remained in that zone, 5% moved to Chatham Island and 7.5% moved to northern Chatham Island (N=60). Similarly, 90.1% of birds from northern Chatham Island recruited within that zone, 8.4% in other parts of Chatham Island and 1.5% to the southern islands (N=111).

Because of the tendency to recruit close to the natal site, the production of chicks from managed areas in northern Chatham Island in 1998-2004 mainly benefited the northern part of the range. Of 170 chicks banded at managed areas in 1998-2004, 87 (51%) had recruited (bred or held a territory) by 2006. Of these recruits, 69% had returned to the managed zones, 25.3% to other northern Chatham Island areas, 4.6% to other parts of Chatham Island and 1.1% to Pitt Island.

Populations: sizes and trends

In the 1860s the Chatham Island oystercatcher was "not common" (Travers & Travers 1872). In the 1930s the Chatham Island oystercatcher was "not particularly abundant" (Fleming 1939). Brief reviews of the birdlife of the Chatham Islands in the 1950s indicate a small and sparse oystercatcher population (Bell 1955, Dawson 1955, Lindsay *et al.* 1959).

The first published population estimate for Chatham Island oystercatchers was about 50 birds in 1970, partly based on sightings since the 1950s on Chatham Island (Baker 1973, Davis 1988). This suggested an uneven distribution of about 24 pairs and a few singles, with a concentration of birds on Rangatira and Mangere Islands (Baker 1973). The first definitive survey in 1987 found 110 birds and 44 breeding pairs (Davis 1988; re-assessed as 42 pairs (Moore in press 2008)). In 1998 there were 142 birds, including 34-41 breeding pairs (Schmechel & O'Connor 1999; re-assessed as 144 birds and 49 pairs), a 29% increase since 1987. Over the next seven seasons (1998-2004), during the period of intensive management in northern Chatham Island, the minimum total population more than doubled (121% increase) from 144 to 316 birds (Table 3) and the number of pairs increased from 49 to 89 pairs. The estimates are based on annual partial censuses, which include most of the core breeding areas, sightings of colour-banded birds at other times and a conservative estimate for areas not surveyed that year. In 2005-2006 the total population apparently levelled off, although the number of pairs increased to 109 (Table 4). The annual population growth rate was 2.3% between 1987 and 1998 and 15.1% between 1998 and 2004 but -0.5% in the next two years.

In 1970 the population was centred on Rangatira and Mangere Islands (Baker 1973), and including Pitt Island, 65% of the total was found on the smaller southern islands and 19% in northern Chatham Island (Table 3). Distribution changed with time and by 2004 60% of the population was in northern Chatham Island and only 20% on the southern islands.

At Rangatira there were 3 pairs in 1937 (Fleming 1939) increasing to a peak of 11-13 pairs in the 1970s, possibly because the absence of predators and the removal of sheep (Merton & Bell 1975, Davis 1988). At this time it appeared that excess production of chicks from Rangatira boosted the total population. However, numbers on Rangatira gradually declined to only 4 pairs in 2005-2006.

Demographic and mechanistic causes of population change

The low numbers of Chatham Island Oystercatchers historically are likely to be a result of the combined effects of hunting, habitat destruction and introduced predators. Oystercatcher bones are found in dune deposits and middens (Millener 1990) which suggests that Moriori, the Polynesian people who arrived on the Chatham Islands about 500 years ago, may have affected the oystercatcher population through hunting. Collecting specimens for museums in the late 1800s (e.g. Hartert 1927, Falla 1939) may also had an influence on the small population of birds. Farming of cattle and sheep on Chatham Island began in the 1840s-50s and by 1901 much forest had been cleared (Butler & Merton 1992). The coastal vegetation was heavily modified by overgrazing and trampling by farm animals and marram grass *Ammophila arenaria* brought in to stabilise the sand dunes probably created less favourable nesting habitat.

Soon after the arrival of Europeans to the Chatham Islands 200 years ago, a variety of introduced mammalian predators were introduced, causing several native bird species to go extinct or be severely reduced in numbers on the main Chatham Island. Video monitoring of Chatham Island Oystercatcher nests in 1999-2001 found that feral cats caused most egg failures. Over three seasons 19 nest failures were captured on film, including 13 (76%) caused by cats, three by weka (an introduced flightless rail from New Zealand), and one each by a red-billed gull, a sheep trampling eggs and the sea washing the eggs away (Moore *et al.* 2001, unpubl. data). The main causes of egg loss varied between years. In stormy years (e.g. 1994-97(Schmechel & Paterson 2005) 1998, 1999 and 2004(Moore in press 2008) 40-50% of egg losses were caused by the sea, but in other years predation by cats caused the most losses. Only 6% of eggs laid survived to fledge at unmanaged areas whereas 39% of managed eggs fledged (1999-2001).

Conservation action has been instrumental in protecting and boosting the population. Reservation and restoration began on Mangere and Rangatira in the 1950s-60s and Merton & Bell (1975) attributed an increased numbers of oystercatchers there to the reduction in sheep numbers. A possible explanation for the subsequent decline in numbers is that the recovery of coastal scrub and forest reduced the amount of suitable nesting habitat.

Sporadic management to assist oystercatchers occurred in northern Chatham Island (Wharekauri and Maunganui) during the 1990s, including some predator trapping and stock fencing and this may have improved productivity to some extent. In 1998-2004 more intensive management at these two areas protected 16 pairs of oystercatchers. Daily

trapping from October-February removed a variety of potential predators, including 26-51 cats and up to 719 weka annually (Moore *et al.* 2001, unpubl. data). Existing stock fences or portable electric fences were used to protect nests from farm stock and nests were also protected from flooding by gradually moving them to cleared areas of the fore-dune or raising them on mounds.

Management ceased in northern Chatham Island in 2004 and commenced on Pitt Island in 2005 to boost the productivity of 7 pairs, however efforts there met with minimal success. Dowding & Williams (2007) suggested a decrease in the population occurred in 2005-2006 after observing a relative lack of nonbreeding floaters and a high level of turnover of breeding adults in the formerly managed areas. Despite this, total breeding and territorial pairs have increased to about 109 pairs as a pulse of young birds produced during the management period (1998-2004) continued to enter the population. Improved breeding success in 2007 would to some extent have offset the poor years of 2005-2006. Currently the population has levelled off at around 300 birds, after a period of rapid increase, and a return to lower average productivity is likely to inhibit population growth.

Protection status

The global status of the Chatham Island Oystercatcher was classified by the IUCN as endangered. It was considered to have a very high risk of extinction because of its small population (Birdlife International 2007, IUCN 2006). The species is ranked by the New Zealand Department of Conservation as Nationally Critical, making it a very high priority for conservation management (Molloy *et al.* 2002, Hitchmough *et al.* 2007). The Chathams Island oystercatcher recovery plan (Aikman *et al.* 2001) aims to improve productivity and adult survivorship to increase the total population to >250 (mature) individuals by 2011. This would decrease the threat rankings to vulnerable (IUCN 2001) and nationally endangered (Molloy *et al.* 2002)

Threats

Many threats have been identified previously (Best 1987, Davis 1988, Aikman *et al.* 2001, Schmechel 2001) but are updated below.

Hunting

Hunting and shooting for food and collecting of museum specimens probably decreased by the turn of the 20th Century and is not a threat today.

Predators

Predation of eggs and chicks, and to a lesser extent, adults is a key issue on Chatham and Pitt islands. The resulting low productivity is the main impediment to population growth. Feral cats were the most common agent of egg failure (13/19 fatal events during video monitoring in 1999-2001 on northern Chatham Island). At some territories the same cat was observed returning to prey on replacement clutches of eggs, at other sites different cats visited nests. Some oystercatchers escaped the nest at the last possible moment when the cat arrived. Chick and adult corpses and disappearances suggest that cats are a threat throughout the breeding season and life cycle of oystercatchers. Weka were the second

most important agent of egg failure (3/19 failures seen on film) but the predation appeared to be more opportunistic, occurring when eggs were left unattended, for example before incubation had got fully underway. The Brown Skua is a predator on Rangatira, Mangere, and to a lesser extent, Pitt Island (Aikman *et al.* 2001) but it is rarely seen on Chatham Island because of persecution by farmers (Aikman & Miskelly 2004). Gulls sporadically prey on oystercatcher nests, 1/19 failures were caused by a red-billed gull, and predation by Southern Black-backed Gulls has been observed on Rangatira (Davis in Aikman *et al.* 2001) and suspected elsewhere. Uncontrolled domestic dogs are known predators on the main island, particularly of chicks. Other potential or suspected predators include possums (seen handling eggs during video monitoring), harriers (chased by oystercatchers), spur-winged plovers, hedgehogs, rats (all seen near nests during video monitoring) and pigs.

Trampling by farm animals

Trampling of eggs and chicks by domestic stock (sheep and cattle) is a problem in many areas of the inhabited Chatham and Pitt Islands, as stock commonly have access to the beaches. Chicks have disappeared after herds of stock passed through an area. Video monitoring of nests in 1999-2001 found 1/19 nests was trampled by sheep. Some unmanaged nests were constantly disturbed by sheep that approached the nests and crowded around the incubating bird – they appeared oblivious to the birds trying to drive them away.

Disturbance

Disturbance of oystercatchers by stock, dogs or people results in predation or exposure of eggs or chicks. The birds leave the nest when there is any sign of danger and do not return until the coast is clear. Many beaches on the Chatham Islands are protected from public use to a greater or lesser degree by private access, however even relatively infrequent visits by people (and dogs) have coincided with disappearances of nests and chicks. Vehicles towing dive boats along the beaches also occasionally crush nests and chicks that are hiding in the tidal debris.

Habitat destruction

Marram grass *Ammophila arenaria* was introduced in the early 1900s to re-vegetate the destabilised dunes – this probably made oystercatcher nesting areas less favourable on sandy shores by creating dense thickets of vegetation and steep dune fronts close to the high tide mark. Nests on the remaining narrow beaches are prone to being washed away by storm seas (Best 1987, Davis 1988, Aikman *et al.* 2001, Schmechel 2001, Schmechel & Paterson 2005).

Climate

Storm events and stormy years reduce productivity of oystercatchers. In some years 40-50% of egg losses are caused by the sea and this is exacerbated by the over-stabilisation of dunes by introduced marram along the sandy shores. This is likely to be an increasing phenomenon with climate change and the projected rise in sea levels.

Recommendations for conservation research

Continue population monitoring

Conduct a full census in 2010 and thereafter every 5 years.

Replace and maintain colour bands at the formerly managed areas in northern Chatham Island, the currently managed area of Pitt Island, and on the island reserves of Mangere and Pitt Island. Remove colour bands from breeders at other sites and in so doing collect information on recruitment movements.

Monitor the breeding success of pairs on Pitt Island (during the daily visits to trap predators), at formerly managed areas in northern Chatham Island (three visits per season – November, December and February), and opportunistically on Mangere and Rangatira.

Recommendations for management

Conservation awareness on the Chatham Islands has improved greatly since the 1960s, aided by high profile recovery efforts (e.g. black robin). The Department of Conservation Area Office on the island conducts several conservation programmes. Recent oystercatcher awareness efforts include signage, newspaper articles, television items, and fact sheets sent to landowners. The Chatham Island Oystercatcher recovery plan (Aikman *et al.* 2001) outlines a prescription of management actions to improve the status of the species and a Recovery Group meets annually to assess progress. It recommends to the Department of Conservation Area Office a course of action for the next year, which is carried out depending on resources. The recovery plan (Aikman *et al.* 2001) set a review date of 2011. However, an interim review of the management programme was conducted in 2005 and a number of recommendations were made for the second half of the period of the plan (Moore *et al.* 2006). These are summarised and updated below.

Intensive management and predator control

Conduct intensive management (predator control, exclusion of stock and moving of nests) for 5-year periods and rotate between northern Chatham Island (Wharekauri-Maunganui), Pitt Island and south-west coast, depending on the outcomes and success of the Pitt Island work. The idea behind rotating management between areas is to boost the population in different parts of the species' range. As the success of Pitt Island management was relatively poor in 2005-2007, the reasons need to be determined and rectified for the rotation policy to be useful. In the meantime limited predator control was reinstated at Wharekauri.

As trap designs improve and become available, control predators in oystercatcher areas using humane kill-traps which do not require daily visits.

Habitat improvement

The dune restoration on the north coast of Chatham Island should be expanded to a significant number of oystercatcher territories, as marram encroachment will continue to have a negative impact on nesting opportunities.

Public relations

Continue to promote local awareness about oystercatcher nesting areas to minimise disturbance by people, vehicles, dogs and farm animals. Encourage community interest in the eradication of cats from Pitt Island.

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Table 1. Biometrics of Chatham Island Oystercatcher

	Male	SD (N)	Female	SD (N)	Source
Mass (g)	540	(8)	640	(8)	Baker 1975
Wing length (mm)	252	6.2 (8)	266	8.5 (8)	Baker 1975
Bill length	67.8	2.7 (8)	76.8	5.6 (8)	Baker 1975
Tarsus	51.3	1.3 (8)	53.7	2.2 (8)	Baker 1975
Toe	34.9	1.1 (8)	36.7	1.3 (8)	Baker 1975

Table 2. Egg dimensions and clutch size of Chatham Island Oystercatcher

	mean	SD, N	Source
Mass (g)	46.0	1.77 (16)	Baker 1974c
Length (mm)	56.9	2.2 (21)	Baker 1974c
Width (mm)	40.5	1.2 (21)	Baker 1974c
Clutch size	2.2	0.6 (35)	Moore *et al.* (2001)
Clutch initiation	7 Nov	16.9 (16)	Moore *et al.* (2001)

Table 3. Breeding success of Chatham Island Oystercatcher at varying levels of management and different localities (1970-2007)

	Mean minimum chicks fledged per pair	SD	Range	N (description)
No management	0.35	0.33	0-1.0	41 (5 areas x 6-15 years)
Some management	0.41	0.30	0-0.85	18 (5 areas x 1-7 years)
Intensive management	1.03	0.33	0.51-1.56	7 (2 combined areas x 7 years)
Island reserves	0.40	0.32	0-1.0	44 (2 islands x 22 years)

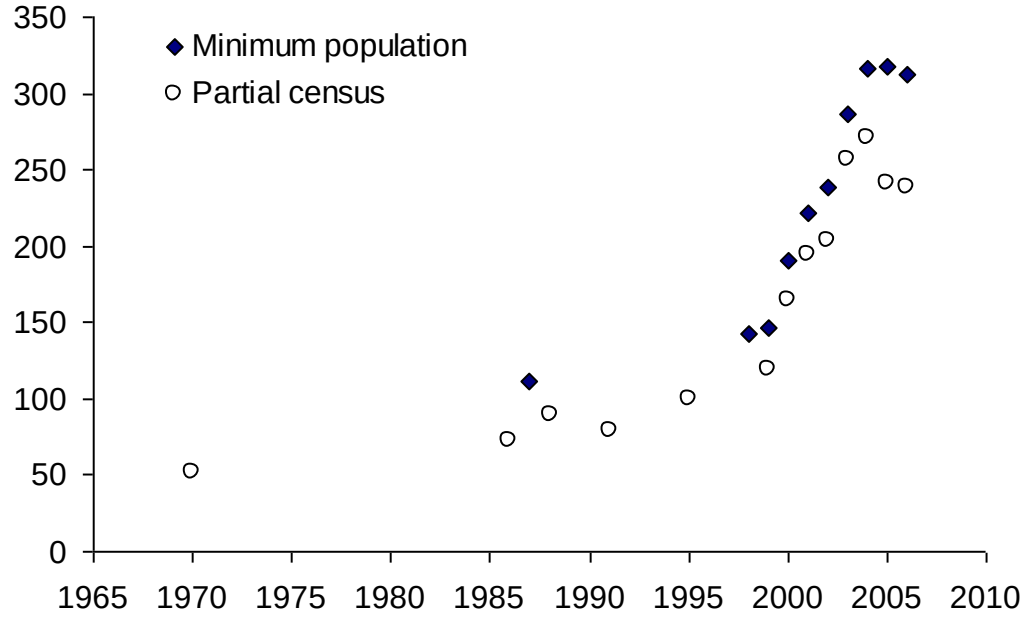
Table 4. Minimum population estimates of Chatham Island oystercatcher in different parts of the Chatham Islands 1970-2006

Area	1970	1987	1998	1999	2000	2001	2002	2003	2004	2005	2006
Northern Chatham Island	10	32	68	79	108	136	141	186	189	203	194
Other Chatham Island	8	32	27	20	22	29	38	45	64	58	60
Other islands	34	48	49	47	61	57	60	55	63	56	59
Total	52	112	144	146	191	222	239	286	316	317	313

Table 5. Estimated minimum number of breeding/territorial pairs, floaters and total numbers of Chatham Island oystercatchers in different parts of the Chatham Islands, based on partial censuses and monitoring of breeding areas in 2005-2006

Island	Area	Pairs	floaters	Total	Year
Chatham	Waitangi West-Cape Pattison	3	11	17	2006
	Maunganui-Tioriori	27	18	72	2006
	Wharekauri	18	7	43	2006
	Taupeka	4	2	10	2006
	Matarakau	4	2	10	2006
	Okawa	2	3	7	2006
	Point Somes	3	8	14	2006
	Port Hutt-Paritu	12	7	31	2006
	Long Beach	1	2	4	2005, 2006
	Waitangi	2	1	5	2005
	Southwest coast	8	2	18	2005, 2006
	Southern coast	2	2	6	2000, 2001, 2004
	Owenga	2	3	7	2006
	Te Whanga Lagoon (north)	0	5	5	2005, 2006
	Te Whanga Lagoon (south)	0	5	5	2005
Pitt	West coast	3	5	11	2005, 2006
	East coast	11	10	32	2006
Rangatira		4	1	9	2006
Mangere		3	1	7	2006
Total		109	95	313	

Fig. 1 Minimum population estimates and partial censuses of Chatham Island oystercatcher 1970-2006



Appendices

Overview of recent studies and research

Allan Baker made a variety of comparisons between the New Zealand oystercatcher species, including the Chatham Island oystercatcher, including population, systematics, morphology ecology, behaviour and foraging (Baker 1972, 1973, 1974a,b,c, 1975, 1977).

Alison Davis reviewed the status of the species and assessed the population size and trend, survivorship, breeding and habitat use (Davis 1988).

Frances Schmechel studied the habitat selection, breeding ecology and population (Schmechel 1999, 2001, Schmechel & O'Connor 1999, Schmechel & Paterson 2005).

Peter Moore conducted a Department of Conservation research programme to assess management effectiveness and monitor the population response (Moore *et al.* 2001, 2006, Moore, in press 2008). An annual partial census of oystercatchers was conducted each December in 1999-2006, covering at least the core breeding areas and 52-96% of coastline. This was supplemented by monitoring of breeding areas during the season and sightings of colour-banded nonbreeders. A band and colour-band programme in 1998-2004 aimed to mark as many adults and chicks as possible. Survival, movements and recruitment were monitored. Earlier work (1970-1997) had banded 68 adults and 115 chicks. Recent work (1998-2004) banded 49 adults and 240 chicks. Current monitoring includes maintaining colour bands at key sites (formerly managed areas of northern Chatham Island, Pitt, Mangere and Rangatira). Dune restoration at two sites on northern Chatham Island was trialled by replacing introduced marram with native vegetation. This allowed two oystercatcher pairs to nest further away from the sea (unpubl. data). As a consequence, one of the sites is being expanded.

Legal statement

The Chatham Island Oystercatcher is absolutely protected under the Wildlife Act 1953. Not listed under CITES