

# Recovery plan for Chatham Island shag and Pitt Island shag

2001-2011

THREATENED SPECIES RECOVERY PLAN 43

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Cover: (top band) Pitt Island shag. (*J.L. Kendrick*)  
(main part) Chatham Island shag. (*Photographer unknown*)

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# Recovery plans

This is one of a series of recovery plans published by the Department of Conservation. Recovery plans are statements of the Department's intentions for the conservation of particular plants and animals for a defined period. In focusing on goals and objectives for management, recovery plans serve to guide the Department in its allocation of resources, and to promote discussion amongst a wider section of the interested public.

After a technical report which had been refined by scientists and managers both within and outside the Department had been prepared, a draft of this plan was sent to the Chatham Islands Conservation Board for comment. After further refinement, this plan was formally approved by the Wellington Conservator in January 2001. A review of this plan is due after ten years (in 2011), or sooner if new information leads to proposals for a significant change in direction. This plan will remain operative until a reviewed plan is in place.

The Department acknowledges the need to take account of the views of the tangata whenua and the application of their values in the conservation of natural resources. While the expression of these values may vary, the recovery planning process provides opportunities for consultation between the Department and the tangata whenua. Departmental Conservancy Kaupapa Atawhai Managers are available to facilitate this dialogue.

Comments and suggestions relating to the conservation of Chatham Islands endemic shags are welcome and should be directed to the Wellington Conservancy office of the Department.

# 1. Introduction

The Chatham Island shag *Phalacrocorax (Leucocarbo) onslowi* and the Pitt Island shag *Phalacrocorax (Stictocarbo) featherstoni* are both endemic to the Chatham Islands. The Chatham Island shag is ranked as a Category B species, the second highest priority category for conservation management by the Department of Conservation (Molloy & Davis 1994). The Pitt Island shag is ranked as a Category C species, the Department of Conservation's third highest priority category for conservation management. Chatham Island shag are ranked as Endangered internationally by the IUCN Red List Categories and Pitt Island shag are ranked as Vulnerable (BirdLife 2000).

This plan sets out the recovery programme for Chatham Island shags and the Pitt Island shags over the next ten years. Much of the material presented here has been taken from *Action plan for seabird conservation in New Zealand* (Taylor 2000).

## 2. Past/present distribution and population numbers

Both shag species breed only in the Chathams group. Chatham Island shags breed on Chatham Island, Rabbit Island and Star Keys. Pitt Island shags breed on Chatham, Pitt, Rangatira, Mangere, Tapuaenuku (Little Mangere), Star Keys, The Pyramid, The Forty Fours, Big and Middle Sister, The Murumurus, Rabbit, Western Reef, and The Castle (Imber 1994, Bell & Bell 2000). Neither species has been recorded away from the Chatham Island group.

The most complete census of shags in the Chatham Islands was carried out was in 1997. During this census, 842 breeding pairs of CI shag were counted at ten discrete breeding sites (Bell & Bell 2000). Previous counts of colonies, conducted by B.D. Bell, D.V. Merton and C.J.R. Robertson at various times between 1961 and 1990 suggest that the Chatham Island shag population has remained relatively stable or has possibly increased slightly over the past 20 years (Bell & Bell 2000). Counts at most breeding colonies were also conducted by Rob Chappell between 1986 and 1989 (DOC unpubl. file note).

Robertson & Bell (1984) estimated that there were less than 1000 breeding pairs of Pitt Island shag. The census conducted in 1997, covering the entire breeding range on the Chatham Islands, found 721 breeding pairs at scattered sites (Bell & Bell 2000). Subsequent counts by M. Bell in some areas have indicated that these numbers may be slightly low. There was a strong El Niño event in 1997, and this may have resulted in lower numbers of breeding pairs being counted that season (M. Bell pers. comm.).

CHATHAM ISLAND SHAG & PITT ISLAND SHAG

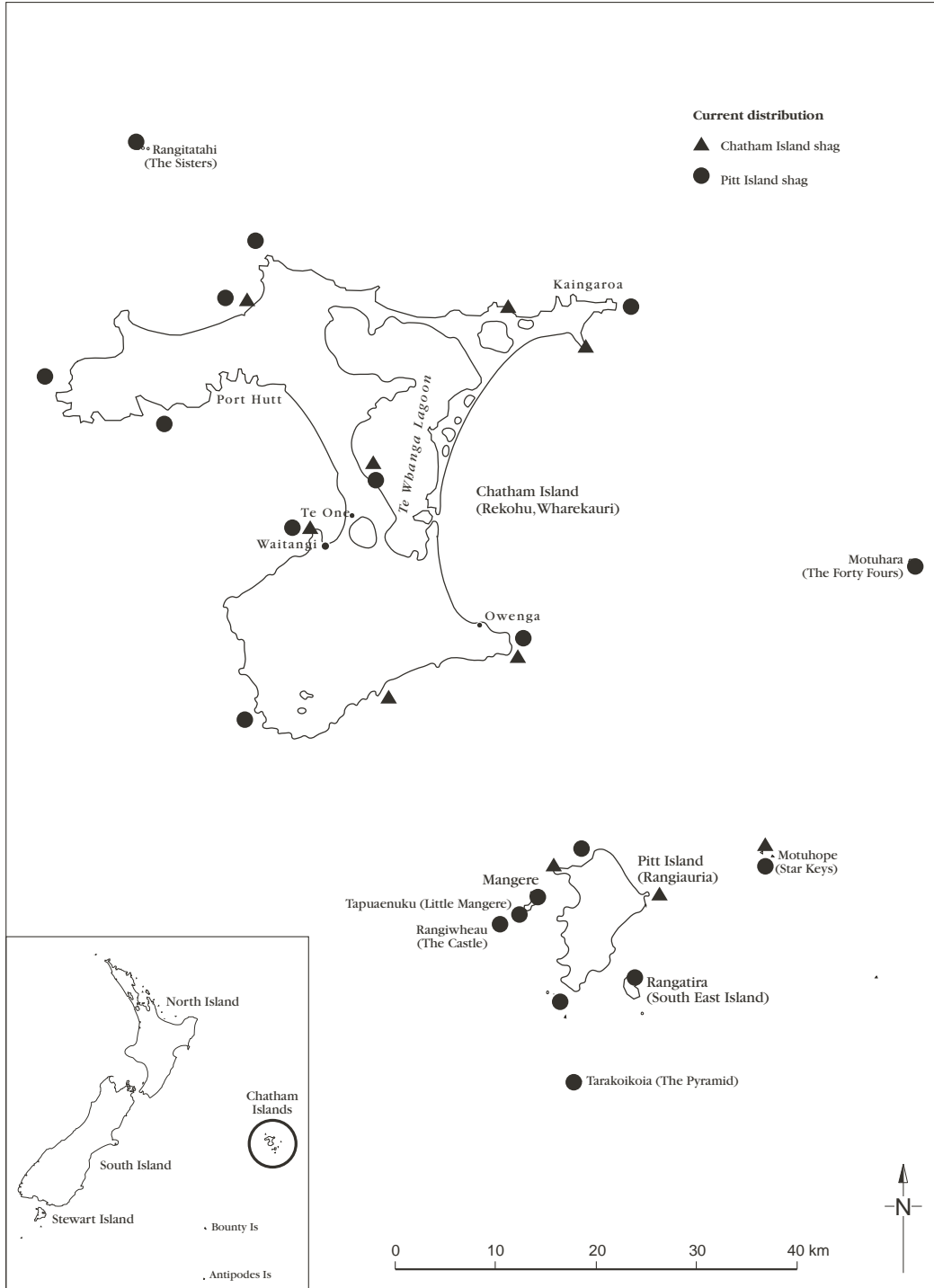


Figure 1. Distribution of Chatham Island shag and Pitt Island shag.

### 3. Cause of decline and present-day threats

The largest colonies of CI shags occur at predator-free sites, but some colonies are still present on Chatham Island and are subject to disturbance by feral cats, weka, possums, pigs, sheep, cattle, dogs, and people. Disturbance can lead to birds stampeding from nests with subsequent breakage of eggs or predation by gulls. Pitt Island shags usually nests on cliffs or on offshore islands and are probably not at risk from dogs, pigs, or stock. However, a few nests on Chatham and Pitt Islands have been found at sites that would be accessible to feral cats. Fur seals disturb CI shags nesting at the Star Keys and have occupied former colony sites there (M. Imber pers. comm.). Pitt Island shags are reasonably tolerant of disturbance by humans, but CI shags are not.

Norway and ship rats may take eggs and chicks at some colonies on Chatham Island, although there are no observations to measure the effect of these predators. Weka possibly take eggs or chicks at some colonies on Chatham and Pitt Islands.

Occasionally, illegal shooting of shags is reported. Fishing practices also potentially impact on these species. Shags, particularly Pitt Island shags, are sometimes caught in crayfish pots, but the effect on the population is unknown. It has been estimated that between 40 and 80 shags may be caught per year by boats working around the Chatham Islands (Bell & Bell 2000). The use of set nets, especially those placed close to breeding colonies, could be a future threat for both species, although this method of fishing is uncommon at the Chatham Islands at present. Oil spills, from shipping accidents or oil exploration in the region, are a potential but unlikely threat in the near future.

### 4. Species ecology and biology

CI shags nest in colonies on islands and exposed rocky headlands. Nests are made of twigs, seaweed, and other vegetation on a platform (Marchant & Higgins 1990). Up to four pale blue eggs are laid from August to December. CI shags usually feed deep offshore but occasionally feed close inshore or in rock pools. Birds usually feed alone, but often roost in flocks of 100+ birds.

Pitt Island shags breed in much smaller colonies than CI shags, with 5-20 pairs per colony. Pitt Island shag colonies are found on coastal cliff ledges and rocky islets. Three pale blue eggs are usually laid (Heather & Robertson 1996).

## 5. Past conservation efforts

A survey of all breeding sites and census of breeding pairs was conducted for both species by the Department of Conservation in 1997 (Bell & Bell in press).

Protection measures, such as the removal of stock and quarantine measures to prevent the arrival of mammalian predators, have probably benefited Pitt Island shag populations on Rangatira and Mangere Islands.

## 6. Recovery goal

Two goals are proposed—a longer-term goal and a shorter-term goal. The shorter-term goal of ten years is to be achieved by the year 2011, which is when this plan expires.

### LONG-TERM GOAL

To reduce human-induced impacts on shag populations to a point where both shag species are able to maintain self-sustaining colonies over much of their former range with minimal management intervention.

### TEN-YEAR GOAL

To establish a regular monitoring programme for shags and to protect existing breeding colonies so that they are stable or increasing in numbers.

**THIS WILL CHANGE THE IUCN RANKING OF CHATHAM ISLAND SHAG FROM ENDANGERED TO VULNERABLE.**

## 7. Options for recovery

### 7.1 OPTION 1

#### **No action**

This is not the preferred option. Without monitoring or any form of protection these small populations could slowly decline to a critical level without detection. There are a number of threats that could have a detrimental impact on shag numbers in the Chatham Island and, if a decline were not detected



quickly, intervention to promote the recovery of the population would be more difficult.

## 7.2 OPTION 2

### **Monitor breeding colonies only**

This is not the preferred option. There are currently no colonies of CI shag with legal protection, and several breeding colonies face immediate risks due to the accessibility of the sites to stock and to predators. Without some protection measures these colonies are likely to be deserted, resulting in a significant decline in the total population. The security of the Pitt Island shag population is probably reliant on the ongoing implementation of quarantine measures on Rangatira and Mangere Islands and the continued rat-free status of Pitt Island.

## 7.3 OPTION 3 (PREFERRED OPTION)

### **Monitor population and advocate protection measures at key breeding sites**

This is the preferred option. Regular monitoring will ensure that any significant change in populations is detected in time to take remedial action. Working with landowners at this stage, before mainland colonies are irreparably impacted on by stock or predators, will help to maintain existing colonies. Protection measures to safeguard colonies on offshore islands are also a sensible precaution.

Advocate to landowners with shag colonies on their land the importance of protecting colonies from stock and pig damage. Assist them with seeking legal protection if they are interested. Investigate options for the implementation of predator control measures, if landowners are supportive, and particularly where these can be implemented in such a way as to also benefit other species (e.g. CI oystercatcher).

# 8. Objectives for term of plan

The objectives for CI shag and Pitt Island shag recovery for the term of this plan are:

1. Protect key CI shag and Pitt Island shag colonies and monitor shag populations.
2. Increase understanding of CI shag and Pitt Island shag biology and population dynamics.
3. Promote the protection of shags from persecution and accidental catch during fishing operations in the Chatham Islands.

## 9. Work plan

Specific tasks required to achieve each objective, and performance measures to assess success in meeting objectives are set out below.

### OBJECTIVE 1. PROTECT KEY CI SHAG AND PITT ISLAND SHAG COLONIES AND MONITOR SHAG POPULATIONS

#### **Performance measures**

- (1) Total CI shag and Pitt Island shag populations are stable or increasing in numbers in the Chatham Islands.
- (2) Census of CI shag and Pitt Island shag populations conducted every five years, using current best practice; selected colonies to be monitored annually.
- (3) Protection measures in place for at least two CI shag colonies and covering 10% of the total Pitt Island shag population by 2011, subject to funding and landowner support.

#### ***Explanation***

No CI shag colonies are currently within reserves, although a number have some measure of protection by virtue of their isolation. Habitat deterioration and loss from predation are ongoing threats. Pitt Island shags are in a somewhat more secure position, having colonies in a number of reserves, including Rangatira and Mangere Nature Reserves, Point Munning Scenic Reserve, and the southern section of the Pitt Island Scenic Reserve.

#### **Actions required**

##### **Action 1.1 Implement pest quarantine measures on offshore islands**

#### ***Explanation***

Pitt Island shags breed on Rangatira and Mangere Islands and both species breed on Star Keys. It is important to ensure these islands remain free of introduced predators. Quarantine measures in place on Mangere and Rangatira need to be rigorously maintained. It should also be advocated that a similar level of care is taken by anyone visiting the Star Keys.

#### ***Priority***

Essential

#### ***Responsibility***

Chatham Island Area Office

**Action 1.2      Conduct census of entire CI shag and Pitt Island shag populations every five years, subject to funding**

***Explanation***

A census of all shag species (CI shag, Pitt Island shag, and black shag *Phalacrocorax carbo*) in the Chatham Islands was conducted during the 1997/98 breeding season. This should be repeated every five years to provide information on the status of each population throughout the Chathams group. If practical, this census should be undertaken in conjunction with the five-yearly CI oystercatcher survey. The next CI oystercatcher survey is scheduled to occur in 2003.

***Priority***

High

***Responsibility***

Chatham Island Area Office

**Action 1.3      Monitor selected breeding colonies of CI shags and Pitt Island shags annually**

***Explanation***

Breeding populations at one major colony at least of Chatham Island shag, and several smaller, accessible colonies of Pitt Island shag should be monitored annually to determine trends. This will provide information on the impacts of stock and/or predators at key sites and the need for management intervention to protect colonies.

***Priority***

Moderate

***Responsibility***

Chatham Island Area Office

**Action 1.4      Encourage and assist landowners to protect colonies from stock and pigs and to control predators if practicable**

***Explanation***

Stock and pig access to shag colonies, particularly CI shag, causes disturbance to the nesting shags and deterioration of habitat. The exclusion of stock from any colonies that are currently accessible should be promoted. Fencing to reduce stock movement to such areas, particularly during nesting, would provide important protection. Predators are likely to have an ongoing impact on accessible colonies. In some cases it may be possible to restrict predator access by creating a barrier at key access points. Alternatively, predator control, possibly in conjunction with other species programmes, should be considered to protect key colonies.

***Priority***

Moderate

***Responsibility***

Chatham Island Area Office

**Action 1.5 Promote the legal protection of CI shag colonies**

***Explanation***

There are currently no breeding colonies of CI shag that have legal protection. Legal protection of key colonies by means such as the establishment of covenants would help ensure the long-term protection of colony sites.

***Priority***

Moderate

***Responsibility***

Wellington Conservancy

Chatham Island Area Office

**OBJECTIVE 2. INCREASE UNDERSTANDING OF CI SHAG AND PITT ISLAND SHAG BIOLOGY AND POPULATION DYNAMICS**

**Performance measures**

Initiatives by external researchers to investigate key aspects of CI shag and Pitt Island shag population dynamics, biology and genetics supported by the Department and research initiated by the Department if funding available.

***Explanation***

Very little is known of the biology and population dynamics of CI shags and Pitt Island shags. Improved knowledge would assist with the protection and recovery of these species.

**Actions required**

**Action 2.1 Undertake studies on aspects of population dynamics of CI shag and Pitt Island shag**

***Explanation***

There is no information on age at first breeding, longevity, adult mortality, chick survival and recruitment, natal philopatry, and pair and site fidelity for CI shags and Pitt Island shags. This research, particularly on CI shags, would need to be undertaken with particular caution because of the small population size and their possible susceptibility to disturbance. Research on New Zealand pink-footed shag species (*Leucocarbo*) should initially be undertaken on Stewart or Auckland Island shags rather than CI shags. Banding cohorts of shag chicks with a single colour-band for each year class and a colour-band for locality could be considered for both species to provide important information on population dynamics.

***Priority***

Moderate

***Responsibility***

Chatham Island Area Office

Wellington Conservancy

**Action 2.2 Improve understanding of the feeding ecology of CI shags and Pitt Island shags**

***Explanation***

The feeding ecology of both species is totally unknown. Food items regurgitated by adults or chicks, or pellets should be collected from roosts. Information of dive profiles and time spent foraging during the breeding and non-breeding seasons would be useful.

***Priority***

Lower

***Responsibility***

Science Technology and Information Services

**Action 2.3 Investigate the taxonomy of CI shags and Pitt Island shags**

***Explanation***

Further assessment is needed of the taxonomy of the spotted shag group and of the pink-footed shags in New Zealand. A review of both groups is needed, using modern DNA techniques, together with a comparison of plumage, anatomy, body measurements, vocalisations, and body lice.

***Priority***

Lower

***Responsibility***

Science Technology and Information Services

**OBJECTIVE 3. PROMOTE THE PROTECTION OF SHAGS FROM PERSECUTION AND ACCIDENTAL CATCH DURING FISHING OPERATIONS IN THE CHATHAM ISLANDS**

**Performance measures**

No shags are deliberately killed, and numbers accidentally caught during fishing operations are kept to an absolute minimum

***Explanation***

Shags are occasionally shot, and advocacy is needed to ensure people are aware of the populations' vulnerability to such persecution. Shags are occasionally

caught in freshly baited cray-pots and would be vulnerable to entanglement in set-nets. Measures may be needed to reduce this bycatch of shags by the fishing industry and recreational fishers.

### **Actions required**

#### **Action 3.1 Advocate against the persecution of shags**

##### ***Explanation***

While less common than previously, there are still occasional reports of shags being shot in the Chatham Islands. Opportunities should be taken to increase the community's awareness of the protected status of these species, their uniqueness to the Chatham Islands, and their vulnerability to persecution.

##### ***Priority***

Moderate

##### ***Responsibility***

Chatham Area Office

#### **Action 3.2 Investigate methods of reducing bycatch of shags**

##### ***Explanation***

Shags, particularly Pitt Island shags, are prone to being caught in freshly baited crayfish pots when they are set in shallow water. This is not beneficial to either the shag population or the fishers. Techniques of preventing this bycatch need to be investigated and appropriate changes in fishing practices advocated that will reduce the risk of catching Pitt Island shags without impacting on fishing effort or catch rates.

##### ***Priority***

Lower

##### ***Responsibility***

Chatham Island Area Office

Science Technology and Information Services

## **10. Review date**

This plan will be reviewed after ten years, or sooner if new information leads to proposals for a significant change in direction. The plan will remain operative until a reviewed plan is in place. The date that is proposed for review of this recovery plan is **July 2011**.

# 11. References

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