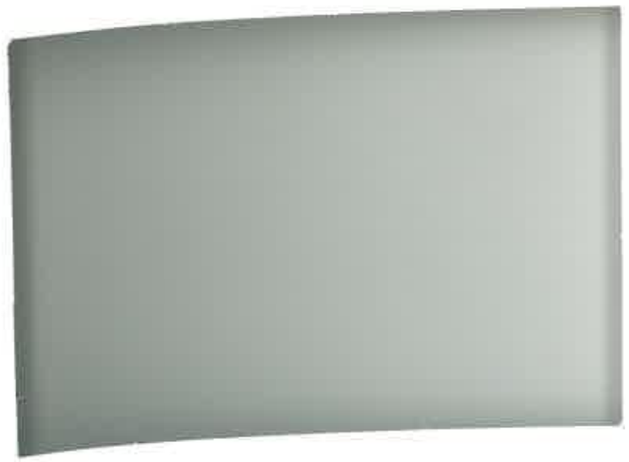

Reintroduction of New Zealand Shore Plover (*Thinornis novaeseelandiae*) A Release Strategy

by

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES 4

EXECUTIVE SUMMARY 5

CHAPTER ONE - GENERAL INTRODUCTION 8

CHAPTER TWO - REINTRODUCTION AS A CONSERVATION TECHNIQUE: NEW ZEALAND AND OVERSEAS EXPERIENCE 12

2.1 Introduction 12
2.2 Reintroduction as a Conservation Technique 13
2.2.1 Definitions 13
2.2.2 The role of reintroduction 13
2.3 Objectives of Reintroduction 14
2.3.1 Enhancing the long-term survival of a species 14
2.3.2 Reintroduction of a keystone species 15
2.3.3 Wider benefits of reintroduction 16
2.4 Reintroduction in New Zealand 17
2.5 Prerequisites for Successful Reintroduction 18
2.5.1 Adequate habitat protected from causes of decline .. 18
2.5.2 Suitable release stock 19
2.5.3 Assessment and coordination 20
2.6 Measuring the Success of Reintroduction 20
2.7 Reintroduction Guidelines 22

CHAPTER THREE - RELEASE STRATEGIES FOR AVIAN REINTRODUCTION 25

3.1 Introduction 25
3.2 Reintroduction Issues Specific to Birds 25
3.2.1 The ability to fly 25
3.2.2 Use of eggs 26
3.2.3 Characteristics of different birds 27
3.3 Pre-release Planning 28
3.3.1 Coordination 28
3.3.2 Health issues 28
3.3.3 Development of release techniques 29
3.3.4 Establishing criteria for success 30

3.3.5 Monitoring 31
3.4 Site Assessment 32
3.4.1 General considerations 32
3.4.2 Species requirements 33
3.4.3 Other considerations 35
3.5 Release Strategies 35
3.5.1 Rearing experience and pre-release training 36
3.5.2 Acclimatisation 38
3.5.3 Social dynamics 40
3.5.4 Post-release support 43
3.5.5 Dispersal 43
3.5.6 Presence of conspecifics 45
3.6 Conclusions 45

CHAPTER FOUR - A RELEASE STRATEGY FOR SHORE PLOVER 47

4.1 Introduction 47
4.2 Reintroduction as a Recovery Tool for Shore Plover 48
4.3 Shore Plover Captive Breeding Programme 48
4.3.1 Rationale for captive programme 48
4.3.2 History of shore plover in captivity 48
4.3.3 Current captive population 49
4.3.4 Captive methodology 50
4.4 Pre-release Planning 55
4.4.1 Coordination 55
4.4.2 Health issues 55
4.5 Development of Release Techniques 56
4.5.1 Previous transfer attempts 56
4.6 Site Selection 57
4.6.1 General considerations 57
4.6.2 Species requirements 57
4.6.3 Other considerations 59
4.7 Strategy for the trial release 60
4.7.1 Rearing experience and pre-release training 60
4.7.2 Acclimatisation 60
4.7.3 Social dynamics 61
4.8 Trial Release on Motuora I 61
4.8.1 Background 61
4.8.2 Study site and release stock 62
4.8.3 Logistics 62

4.8.4 Pre-release holding period 65
4.8.5 The release 66
4.8.6 Monitoring 66
4.8.7 Results 67
4.8.8 General observations 68
4.8.9 Discussion 70
4.8.10 Implications of trial results on future release strategies 72

CHAPTER FIVE - STRATEGIES FOR FUTURE SHORE PLOVER RELEASES 75
5.1 Introduction 75
5.2 Criteria for success 75
5.2.1 Objectives of release 75
5.2.2 Possible outcomes and recommendations for subsequent releases 76
5.2.3 Recommended contingency plan 76
5.2.4 Monitoring 77
5.3 Site assessment 77
5.4 Release strategy 79
5.4.1 Captive rearing and pre-release training 79
5.4.2 Acclimatisation 80
5.4.3 Social dynamics 81
5.4.4 Post-release support 82
5.5 Summary of Major Recommendations 83
5.5.1 Site selection and management 83
5.5.2 Rearing and pre-release training 83
5.5.3 Acclimatisation 83
5.5.4 Social dynamics 83
5.5.5 Post release support 83

ACKNOWLEDGMENTS 84

REFERENCES 85

APPENDIX 1 93

APPENDIX 2 95

APPENDIX 3 97

LIST OF FIGURES AND TABLES

FRONT PLATE Male shore plover in aviary at Mt Bruce (photo Garry Norman)

FIGURE 1.1 Map showing important shore plover locations in New Zealand.....9

FIGURE 2.1 Checklist of issues that must be addressed before undertaking a reintroduction programme.....24

TABLE 4.1 Statistics for the captive shore population between 1991 and 1995.....50

TABLE 4.2 Causes of mortality in captive shore plover between 1991 and 1995.....54

FIGURE 4.1 Motuora Island showing shore habitat, aviary location and shore plover sightings.....63

FIGURE 4.2 Pre-release aviary constructed on Motuora Island.....64

TABLE 4.3 Results for the eight shore plover transferred to Motuora I. for the trial release in 1994.....68

TABLE 4.4 Problems highlighted by the Motuora I. trial and some of the possible approaches to addressing these problems.....73

EXECUTIVE SUMMARY

Investigation Title: Reintroduction of New Zealand Shore Plover (*Thinornis novaeseelandiae*): A Release Strategy.

Study Venue: University of Otago, P.O. Box 56, Dunedin and Motuora Island, Department of Conservation, Hauraki Gulf.

Investigator: Hilary Aikman

Investigation Overview:

The New Zealand shore plover (*Thinornis novaeseelandiae*) is one of the rarest shorebirds in the world, being confined to a single wild population. The New Zealand Department of Conservation proposes to release captive-bred shore plover in an attempt to establish additional populations in the wild. This dissertation looks at the role of reintroduction as a conservation technique and at release methods that have been implemented in avian reintroductions internationally. This information is applied to the development of a release strategy for shore plover.

Objectives:

1. To examine the role of reintroduction as a technique to aid the conservation of threatened species and to determine the prerequisites for success.

2. To review release techniques that have been employed internationally in avian reintroductions and to identify issues that must be addressed when designing a release strategy

3. To apply international and New Zealand experience to the Department of Conservation's proposal to establish new populations of New Zealand shore plover by releasing captive-bred birds. Progress with the programme will be documented and recommendations made for future reintroduction attempts.

Methods:

A review was conducted of international literature on the role of reintroduction in conservation and on the release techniques that have been employed in avian reintroduction projects.

Experience gained by the writer while working with New Zealand shore plover is documented. This includes involvement with the captive management programme and the monitoring of a trial release of captive-bred birds on Motuora Island in September 1994. This material is combined with information on shore plover ecology on Rangatira Island.

Summary Of Findings:

Reintroduction is the intentional movement of an organism into a area from which it has disappeared in historic times. Reintroduction, habitat protection, legislative protection and predator control are some of the conservation options available when managing threatened species. Before a reintroduction programme is initiated there must be an objective assessment of all the options. Reintroduction having been chosen, careful planning and documentation are essential.

For a successful reintroduction the survival chances of the released individuals should be maximised. A release strategy should take into account factors specific to the reintroduced species and to the environment at the release site. Important considerations include site assessment, rearing experience and pre-release training, the acclimatisation and social dynamics of a released group and the need for post-release support.

There have been a large number of avian transfers around the world, but there is little documentation of techniques or results. Techniques for reintroduction of a strongly flighted shorebird, such as shore plover, are not well developed and more research is required.

The recovery programme for the New Zealand shore plover involves the release of captive-bred birds to establish new populations. Information regarding the sole remaining wild population on Rangatira Island, the captive population, and the trial release conducted on Motuora Island in 1994 have been combined to develop a release strategy for New Zealand shore plover.

During the trial release of shore plover on Motuora I, birds were lost through predation while held in a pre-release aviary (probably by harrier), predation at night after release (probably by morepork) and dispersal from the release site These factors must be addressed in future release strategies.

Recommendations For Future Shore Plover Releases:

Motuora I. is currently the preferred release site. For future releases on Motuora I.:

- Morepork should be removed from the island.
- Close monitoring should be carried out to increase understanding of shore plover habitat requirements and dispersal behaviour.
- Public involvement, particularly in assisting with monitoring of shore plover that disperse to the mainland, should be encouraged.
- There should be no major changes to current captive rearing methods.
- Shore plover should be acclimatised prior to release in a pre-release aviary, of improved.
- A release of a minimum of 15 juvenile shore plover should be carried out, but if this does not succeed, breeding pairs should be transferred to the island.
- Shore plover that disperse to the mainland shortly after release should be returned to Motuora I..

CHAPTER ONE

GENERAL INTRODUCTION

For nearly a century the New Zealand shore plover, *Thinornis novaeseelandiae,* has been restricted to a single small population in the Chatham Islands. This endemic New Zealand plover is one of the rarest shorebirds in the world (Hayman *et al.,* 1986). It is one of two species in the genus *Thinornis,* the other being the hooded plover, *Thinornis rubricollis*, which is endemic to southern Australia. Shore plover, or *tuturuatu* as these birds are known to Maori, were once widespread along the coasts of both New Zealand's main islands (Marchant and Higgins, 1993). By the 1880s the species had completely disappeared from mainland New Zealand (Davis, 1987). The decline of shore plover coincides with the spread of Norway rats (*Rattus norvegicus*) and feral cats (*Felis catus*), suggesting that shore plover are very vulnerable to predation by these species (Davis, 1987).

The New Zealand shore plover is now confined to one remaining population on Rangatira Island, a 218 ha nature reserve in the Chatham Island group (Figure 1.1). Regular censuses on Rangatira I. since 1981 have shown that the population is relatively stable at 100 - 130 individuals (Kennedy, 1993). Despite this stability, a single population is always highly vulnerable to the possibility of extinction. With such a limited distribution and restricted population size, the risk of extinction due to pest introduction, fire or disease poses an on-going threat to the long-term survival of shore plover. By international criteria, such as those of Mace and Lande (1991), the species is regarded as endangered. The New Zealand Department of Conservation (DoC) has developed a set of criteria for ranking threatened species (Molloy and Davis, 1994). Factors such as taxonomic distinctiveness, status of the species, threats facing the species, vulnerability of the species and human values were considered in these criteria. By this system shore plover are ranked as a category B species, or second priority threatened species.

The New Zealand Shore Plover Recovery Plan (Kennedy, 1993) sets out DoC's recovery strategy for the species. The long-term goal is to restore shore plover to as much of its former range as possible. In the medium term, the aim is to protect the existing population on Rangatira I., and to establish additional populations on other predator-free islands. A captive breeding programme has been initiated that aims to develop and document captive methodology, provide short- term 'insurance' against loss of the wild population, and produce a surplus of offspring for release.

However, should a second release of juvenile birds fail, raising birds on the island should be considered. A second release of juvenile birds is recommended, but should a large number disperse, the planning for rearing of shore plover on Motuora I. should begin.

5.4.4 Post-release support

The shore plover released in the trial did not display any interest in returning to the aviary area. There is no indication that the birds required supplementary food. (Captive-reared killdeer that were provided with artificial food after release were observed successfully foraging and they did not use the supplementary food provided (Powell 1991).)

It may be possible to use some type of cage or shelter to protect shore plover from predation at night. However, birds often feed at night so it is hard to imagine how this could be achieved.

Shore plover that disperse from Motuora I. may simply have become disoriented, and then lost from the island. To encourage birds to settle on Motuora I. and to keep numbers high enough to provide for natural social dynamic, birds that disperse to the mainland should be caught and returned to Motuora I. when possible. Nearby, rat-free islands could be regarded as a natural extension to the habitat available on Motuora I., so birds that disperse to these islands should be allowed to remain. The attempt to return birds to Motuora I. should continue for approximately one month after the release.

5.5 Summary of Major Recommendations

5.5.1 Site selection and management

- Motuora I. is the preferred site for a second release of shore plover.
- Morepork should be removed from the island.
- Post-release monitoring needs to be conducted to increase understanding of shore plover habitat requirements and dispersal behaviour.
- The general public should be encouraged to become involved with the release, particularly in assisting monitoring birds that disperse to the mainland.

5.5.2 Rearing and pre-release training

- Current rearing methods, which emphasise replication of natural conditions should be continued with no major changes.

5.5.3 Acclimatisation

- The captive-bred shore plover should be given the opportunity to acclimatise to their new environment before release. Holding birds in pre-release aviary for a minimum of two weeks is recommended. Clipping of feathers is not recommended because of the risk of predation.
- Aviary design should be improved to ensure that birds are secure from predation during the pre-release holding period.

5.5.4 Social dynamics

- A second release of juvenile birds should occur. If this fails, established breeding pairs should be transferred to the island, held in aviaries until they breed, then released with their offspring.
- A minimum of 15 juvenile shore plover should be released at one time.

5.5.5 Post release support

- An attempt should be made to catch shore plover that disperse to the mainland shortly after the release (within one month) and return them to Motuora I..