

NEW ZEALAND FALCON CONSERVATION PROJECT

MANAGEMENT PLAN

2008 - 2011

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Executive Summary

- **The endangered New Zealand Falcon is the last surviving endemic bird of prey species left in New Zealand.**
- **It has retreated to the hills and is slowly declining in the face of persecution and man-made hazards.**
- **The project aims to establish a breeding population in the vineyards in order to increase its numbers and range, but more importantly, find a useful place for it in modern New Zealand society so that people will become sympathetic to its needs and develop respect for falcons.**
- The Falcons for Grapes Project was established by International Wildlife Consultants (UK) Ltd in Marlborough in 2005.
- The IWC Manager is Colin Wynn, resident in Blenheim.
- By its third year, in 2008, the project has established 19 falcons resident in the Marlborough vineyards.
- Three pairs have bred successfully and the population is set to increase.
- The target for the Wairau Plain is 50 pairs by 2013.
- Preliminary studies show that falcons reduce bird damage to grapes and the need for netting vines.
- In other words, although still in early stages, the programme is a biological success as a win-win conservation/pest control programme.
- The programme provides potential for wine marketing and falcon tourism benefiting the local community.
- It also makes a significant contribution to conservation and understanding of the species through the scientific research.
- There are plans to continue and expand research into the role of falcons in pest bird control, together with the University of Canterbury, the Foundation for Arable Research at Lincoln, with Massey University and potentially with various other interested parties.
- It provides a potential source of falcons and skilled personnel to expand into other areas of New Zealand.
- Cash funding from the Sustainable Farming Fund finished 1 July 2008.
- We are seeking some cash funding to bridge the project for three years while a proper financial support programme is established.
- We estimate Services in Kind 2008 will total NZ \$74,550 (US\$56,908).
- We estimate pledged cash funding for 2008 at NZ \$326,242.

International Wildlife Consultants (UK) is contributing NZ\$ 142,000 (39%) of the budget and has successfully raised match funding from the Emirates Falconers' Club for the next three year period. The project is now developing its public awareness and marketing by establishing a charitable Marlborough Falcon Conservation Trust. The new Trust will be responsible for raising local funding support with a view to taking over the project in its entirety after three years.

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Introduction

The New Zealand Falcon is New Zealand's only surviving endemic bird of prey. Found nowhere else in the world, it is extinct on the Chatham Islands and, since settlement by Europeans over the past 150 years, it has been exterminated from virtually all the cultivated land area of New Zealand. Its breeding range is now restricted to the larger inaccessible mountain ranges and some of the larger forestry areas. Having done a PhD on the species, studied it since 1974, and watched its gradual decline in the face of increasing human pressure, Dr Nick Fox resolved to undertake a conservation programme to return the species into some of its former lowland range, thus both securing its future and raising public awareness of the plight of the species.

The New Zealand Falcon Conservation project is based in Marlborough, New Zealand. International Wildlife Consultants (UK) Ltd started the project in 2005 with a grant from the NZ Government Sustainable Farming Fund. The General Manager is Colin Wynn, based in Blenheim and the Project Leader is Dr Nick Fox. The charitable Marlborough Falcon Conservation Trust, now in formation, will have its own independent Board of Directors including representatives from the wine industry and from the Department of Conservation.

The project had three initial objectives:

- a) **The establishment of a proper demographic monitoring programme for wild New Zealand Falcons in the Marlborough hills surrounding the Wairau Plain.** This objective has now been achieved. Over 40 nesting pairs have been documented and contacts made with land-owners. A sample of these has been monitored each year. This information makes it possible to do further follow up surveys in future years.
- b) **The establishment of a new population of New Zealand Falcons in the vineyards of the Wairau Plain.** We have pioneered the methods for establishing a new population in farmed land and have so far achieved a population of around 17 resident falcons, including three breeding pairs.
- c) **The development of a cost-effective method of significantly reducing bird damage to grapes in the vineyards.** As we enlarge the population, so we are able to exert measurable predation pressure on pest birds.

Over the next three years our focus will be on enlarging the population to capacity and developing and researching crop protection. This will entail more involvement of the local community and we thus plan to expand our public relations and education programme.

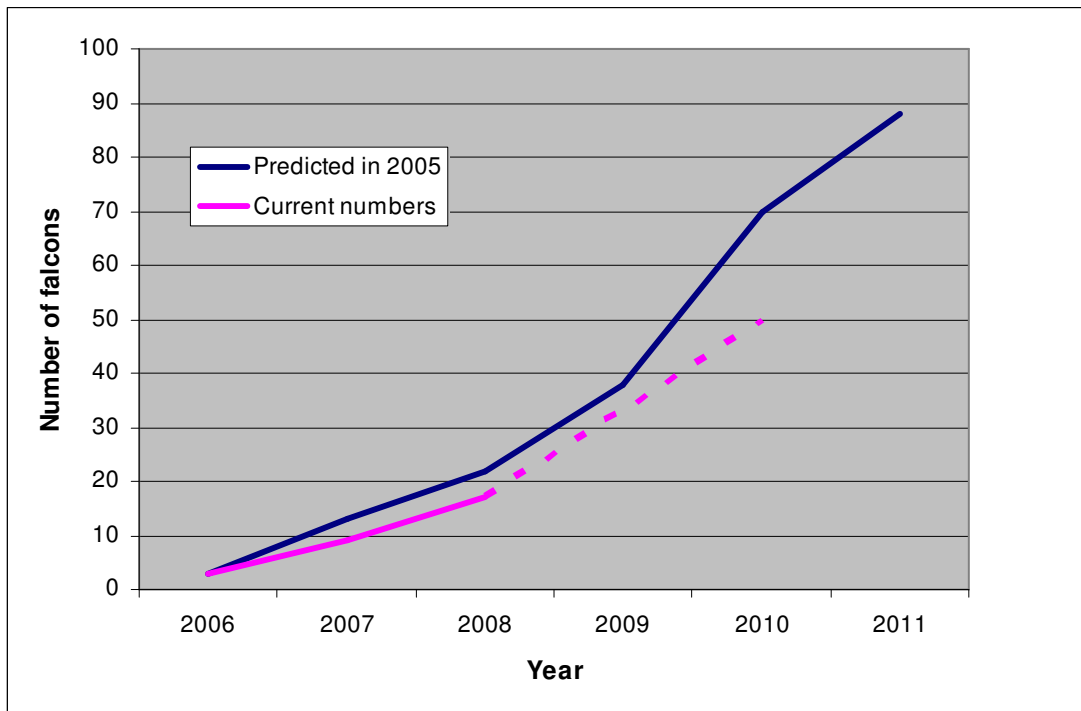
1. Progress to date

1.1. Achievements

1. Four chicks in 2005, 15 chicks in 2006 and 6 chicks in 2007 have been successfully taken from the wild and reared in the vineyards. An additional 6 chicks in 2007 have been bred in the vineyards.
2. Some wild falcons have been attracted into the vineyards by these birds, one has paired up with a released male.
3. Three pairs are successfully breeding in the vineyards in 2007 and 2008.
4. Up to 40 territories have been surveyed in the wild.
5. Their home ranges in the vineyards are currently about 10 Km². We think the potential carrying capacity of the Wairau Plain is in the order of 50 pairs.
6. Natural mortality has been minimal – 7 % (one youngster killed by a harrier)
7. Man-made mortality is quite high (47%) – 1 bird killed by a cat, 1 injured by the road, 5 electrocuted.
8. All birds have been successfully radiotracked, some for many months.
9. Four birds were successfully monitored in a pilot GPS tracking study.
10. The falcons hunt successfully in the vineyards and anecdotal reports to date indicate reduced pest bird damage at falcon sites.
11. Public awareness has increased significantly.
12. We have a staff depot at Renwick.
13. We have experienced staff, equipment and vehicles.

1.2. The current population in the vineyards.

Currently we have 17 falcons settled in the Wairau Plains in the vineyards. In the first year we moved four chicks from the wild, in the second year, 15 and in the third year six. Having established the methodology now, we hope to expand our input rate by moving 10 chicks from the wild per year and by harvesting eggs from the vineyard pairs to increase their production. The demographics of this population are shown below:



In 2006/7 we had 5 young falcons electrocuted during post-fledging. To avoid this, in 2008 we released the young chicks as unrelated pairs at sites as far as possible from electricity poles. This made them less likely to disperse far and more likely to establish a new nest site. This has been successful, with no electrocutions of this cohort.

If the falcons are radio-tagged, it is possible to find where they are breeding, and to support them with predator control etc. If they are not tagged then nests may well fail before they are found. Depending on mortality in the next three years, and on recruitment, the population should start to expand rapidly. By removing the first clutches of eggs from established pairs and incubating them artificially, the birds normally lay a replacement clutch, thus doubling productivity. This is a lot of skilled work for 2-3 months, but very productive.

The vineyard area is increasing but there are still large areas of the Wairau Plain that are in other land uses. Perhaps 25% or so of the 600 km² are in grapes. At 10 km² per pair, this is about 50 pairs (allowing for urban areas). At a higher density, then considerably more.

Based on current data, we could achieve capacity of 50 pairs by 2012 or 2013.

2. The Product and the Beneficiaries.

We now have a small resident population of falcons in the Marlborough vineyards. Our 'product' is a potential resource for:

- a. Marketing
- b. Pest Control
- c. Falcon Tourism
- d. Conservation

e. Research or Breeding Resource

2.1. Marketing opportunities.

Falcons and falconry are very visual. They provide exciting images both for publicity, magazines and for film footage. The Trust is developing a sponsorship logo system to enable sponsoring wine growers to obtain marketing benefits from their support. We plan to launch the Trust at the Marlborough Wine Festival on 14th February 2009 and have some live falcons present.

IWC also works on culture and heritage, particularly with the UNESCO Convention on Intangible Culture and Heritage. We help to organise the major international Festival of Falconry in UK with about 55 falconry nations attending, this is based outside London 11-12th July 2009 with significant opportunities for corporate hospitality. This is a wonderful opportunity to host VIP clients in a relaxed country estate atmosphere. The VIP list includes representatives from both the UK and UAE Royal families. IWC can offer NZWG the opportunity to host VIP corporate clients at this venue, and representatives from the Marlborough project will be there, complete with a live New Zealand Falcon.

Some of the visiting nations bring special label wines and beers to the festival, with falconry themed labels. It would be possible to do a consignment of New Zealand Wines for the VIP hospitality enclosure for companies sponsoring travel from New Zealand.

Festival sponsorship packs are available and we wish to finalise the VIP list by the end of November 2008. This is being handled by the PR company Bell-Pottinger, from the London and Abu Dhabi offices.

2.2. Pest Control

The lack of bird-hunting predators in lowland New Zealand means that the pest birds have been able to multiply largely unchallenged. As autumn comes, birds that have bred in the foothills lose their food supply and move down to the plains. Vineyards and crops provide ideal conditions for them and they come in increasing numbers. Much research and efforts have been made to control this situation.

2.2.1. What is the cost of bird damage to the wine industry?

Dr Val Saxton from Lincoln University has been assessing the grape damage in some of the trial vineyards where we are working with Falcons. 87% of the damage was pecking and 14% was from plucking whole grapes. Vineyards suffered 1-23% bird damage. One of the vineyards for example suffered 8.6% rot damage in their Sauvignon Blanc. One tonne of these grapes produces about 1000 bottles, which, downgraded from \$18 to \$13 per bottle, represents a loss of \$5000 per tonne. As the wine progresses from grape to bottle to retail, the losses are magnified, so that Dr Saxton estimates that the wine

industry is losing \$70 million per year, even for netted grapes, due to bird damage. As the world wine industry becomes more competitive, New Zealand must focus on premium grade wines and cannot afford down-grading. Bird damage is a major economic problem for Marlborough.

Marlborough is not the only area suffering from bird damage. We have had requests from vineyards, orchardists and arable farmers all over New Zealand. Each situation poses different problems. Colin Wynn has visited vineyards in Central Otago and Dr Val Saxton has applied for some research funding. Our resources are limited at the moment but we have ear-marked this for future development.

2.2.2. Managing Falcons for Pest Control.

There are two main methods for managing raptors in pest control:

1. Encouraging free-living falcons.
2. Using trained falcons.

2.2.3. Encouraging free-living falcons.

This is the method we are using at the moment. Benefits include expanding the population of a threatened species, public awareness, minimal skilled man-power. Drawbacks include daily exposure of falcons to man-made hazards, difficulty in encouraging them to nest off the ground away from predators, difficulty in targeting them onto desired areas, difficulties in achieving sufficient densities to impact the pest birds. This method is being used with some success in vineyards in the Americas and Europe.

This method entails establishing breeding pairs of falcons in the vineyards. Their young ones start to fly around January and are fed extra food every day. At grape ripening in late February the food supply is reduced so that all the falcons start to hunt more seriously. This provides maximum predation pressure during the grape ripening season.

We have not reduced the food supply in the programme yet because our priority has been to establish the founding falcon population with minimal losses. It is thus too soon to do a proper analysis of the damage limitation. However Dr Val Saxton's results (as well as anecdotal data) show a decrease in bird damage and indicate a damage free zone of about 350 metres around each release site. We believe that this zone will be considerably larger for established family groups.

Sara Kross has obtained a scholarship to undertake a PhD study, supported by The Ned vineyard, radiotracking the pest birds and the falcons, to analyse their interactions and correlate with bird damage and geophysical features. This, together with Dr Saxton's work, will start to reveal the effects of the falcons and indicate how best to manage them to maximise their effect. We have three other graduate field assistants and one other intern also working on the project. A total of 8 people are working on the Marlborough project this season, six of them graduates. Two of the staff have received specialist training at IWC in Wales.

2.2.4. Using trained falcons.

This method is used in vineyards in North America and Europe. It is also extensively used at landfill sites, airports and in urban and suburban situations where other methods such as shooting or bangers are socially unacceptable. It is best used for sites of limited area or duration. Trained birds are flown specifically to clear runways, sports stadia etc. Benefits are that almost complete clearance can be achieved for a limited period over a limited area. The service is not fixed but is mobile on a daily basis. Drawbacks are that it requires skilled falconers at a high ratio.

In 2008 we trained a male and a female falcon and used them to demonstrate pest bird control at the Foundation for Arable Research at Lincoln. These birds have also been used for demonstrations for vineyard owners, and for school education visits.

2.3. Tourism

2.3.1. Vineyard tours.

These include guided visits to host vineyards. Radiotagged falcons can be located by tour guides and an insight into the practical aspects of wildlife conservation provides an added benefit to wine tours. We have had a lot of requests to host visitors.

Marlborough tourism could benefit by having a unique selling point, similarly to the whales at Kaikoura. The tourism infrastructure could benefit because more people might stop overnight in Marlborough instead of directly transiting Picton-Christchurch or Nelson.

At the moment, accommodation occupancy in Marlborough is very low (23.9-26.1%) both in terms of the national average (32.6-33%) and especially against international levels. Tourism is also highly seasonal, based on November-April. Wine tourists tend to be high-spending, older independent travellers who are also interested in other cultural activities. We need to cater for these people and, as air travel becomes more expensive, falcons add an extra dimension to encourage long-haul tourism.

2.3.2. A Falcon Visitor Centre.

The project needs a focal point to help in public awareness and the obvious answer is a Visitor Centre. In order to avoid the need for constant attendance by skilled staff, falcons could be housed in aviaries. IWC are the world experts on breeding this species, having bred them for 31 years. We have techniques to enable the falcons to be seen by the public while also breeding and producing young. We have received a new permit from DOC to house a pair of falcons in captivity for public awareness and breeding purposes. This pair is now a year old and the birds are very compatible. We have a CCTV system sponsored and functioning. CCTVs can be placed on the nests to enable visitors to view proceedings on an indoor screen and on a website. Because we will also be managing wild vineyard pairs we can ensure that the falcons have

young to rear if they fail to produce their own. Thus there can be a productive interaction with the vineyard project. This also has the potential to produce falcons for vineyards in other parts of South Island without harvesting birds from the wild. Existing staff, with a little training, could manage the Visitor Centre and our own skilled Manager will be only a telephone call away if help is needed.

The shop and visitor centre can supply falcon related items for sale, including high quality photographic images of the falcons in a variety of formats. It can show the scientific work being done and can arrange vineyard tours with existing operators in order to see falcons living in the vineyards. It can also be a focus for the local community including school visits.

2.4. Conservation.

The conservation work involved in this project is benefiting the species itself by increasing its range and piloting the possibility to enable range recovery in other parts of New Zealand. It has expanded our knowledge of techniques and skill base for managing the species. It has revealed issues, such as electrocutions, that we had no data on before. It has widened public knowledge of the species and improved the public perception of the species.

The Department of Conservation have been very supportive of the project and show a continuing interest. We hope that they will be able to participate further, especially in the fields of technology transfer, law enforcement and the electrocution issue. However, DOC has suffered further funding cuts and is scarcely able to meet its existing obligations at present.

2.5. A Research or Breeding Resource.

The project has already provided research opportunities for a number of falconer biologists. A well documented population, especially of radio-tagged individuals, is a superb research resource. We hope that as GPS technology develops further, even more information will be forthcoming on the activities of the falcons and their relationships with habitat features and prey species.

As the population continues to expand, we are harvesting first clutches of eggs from older pairs, incubating them and using the resulting young to supplement first the Marlborough population and then additional new populations in other projects, thus reducing the need to translocate more birds from the wild. Thus the population could rapidly become a major cost-effective source of falcons.

3. Future objectives.

3.1. A capacity vineyard population.

So far in the project we have established a breeding population of falcons in the vineyards. If we abandon these birds now, they should survive, but they

may disperse and the work invested to date will be lost. We plan to continue managing the falcons and by increasing productivity and reducing mortality work towards a capacity figure of 50 pairs on the Wairau Plain. This would have a significant impact on pest bird damage.

How quickly this will be achieved depends on how quickly we can build our seed population to the point that in just one or two breeding seasons we reach the target. There is the potential to double in size every year. Running costs will increase as the population increases, but unit-cost will fall rapidly as cost efficiencies kick in.

In 2008 we have started to double clutch pairs that have bred before. This potentially doubles egg production. It requires artificial incubation and rearing, but this can be done; we have the capacity, the skills and the track record. We have purchased and imported further incubators and equipment and this is being done at the Waihopai base.

We currently have four holding aviaries at the depot in Renwick for injured or young falcons, and potential breeding or foster-rearing using incapacitated birds, to supplement the vineyard production.

3.2. Publicity and marketing

For the programme to succeed long term, we need first to build up the vineyard population. This will start to alleviate pest bird damage in the vineyards and yield direct economic benefits to the vineyards. This in itself could easily be cost-effective, but the problem is to gather funds from a variety of beneficiaries for a resource that is essentially wild.

We thus need to build up the marketing and tourism sectors and look for sponsors with sufficient size to embrace a project of this scale and spearhead not just the management funding but also the marketing and international image of the project, the wine industry and New Zealand itself.

At the local level, the Falcon Visitor Centre could be a focal point. The new Trust is scheduled to be launched at the Marlborough Wine Festival in February 2009 and the festival is planned to have a falcon theme and have live falcons present.

On a national level the project can be marketed through a variety of routes and media. The falcons tend to 'sell' themselves because they are quickly targeted by the press. A simple crop trial recently near Lincoln attracted two TV channels, 3 radio channels and the front page of The Press. We are currently preparing for a full programme in Country Calendar and filming the project in December and January. We have nests and staff lined up for this.

4. Sources of funding.

Funding is made up of a cash budget and services in kind. The Sustainable Farming Fund support finished on 1 July 2008. IWC is providing funding and resources and has successfully attracted match funding from the Emirates

Falconers' Club for the next three years. This will be used for the core project developing the falcon population and researching pest bird damage, meanwhile the newly forming Trust will concentrate on PR and local fund raising.