South Island Wilding Conifer Management Group
www.wildingconifers.org.nz

Sustainable Farming Fund

Sustainable Farming Fund (SFF) Wilding Project
Newsletter No.1

June 2007

Group co-ordinates wilding management efforts

The spread of Scots pine wildings at Tarndale on Molesworth station. Since the 2006 photo was taken, all of these trees have been removed.

The spread of wilding conifers affects many land owners and agencies in New Zealand, particularly in the South Island. Amongst the larger areas affected are tens of thousands of hectares on Molesworth station, the country's largest farm.

When the farm Manager, Jim Ward and his Landcorp Farming 'boss', Collier Isaacs, were considering solutions two years ago, they realised that the problems they faced were common to many others. So they thought 'why don't we seek solutions together?'

They asked Nick Ledgard, Ensis's wilding conifer expert, to contact all the major players and talk to them about a collaborative project, funded by MAF's Sustainable Farming Fund (SFF).

From this beginning, the South Island Wilding Conifer Management Group was born, and last year was successful in getting a three-year project (2006-09) funded by the SFF. Members of the Group are listed at right.

The Group's main aim with this project is to collate and disseminate all existing data and information, as well as to explore new areas of wilding management (greater detail is given on Page 2).

By the end of the project, maps will be produced showing conifer seed sources and areas of greatest risk, a wilding control manual will have been published, and a website (www.wildingconifers.org.nz) will be running.

It is hoped that the prevention and management of wildings will soon be as accepted by land managers as is the need to contain domestic animals within managed areas, and to remove them if they move outside.

The Group held its first formal meeting on 7 June, 2007, when a Management Committee was elected. Presentations were made on Year 1 progress in all the objectives.

South Island Wilding Conifer Management Group

Members	Management committee representatives	Stand-by representatives
Landcorp Farming	Collier Isaacs (Chair)	
Dept of Conservation	Keith Briden	Clayson Howell
NZ Douglas-fir Research Co-operative (representing forest owners*)	Peter Weir	Phil De La Mare
Territorial authorities **	Richard Bowman	Philip Grove
Land Information NZ	David Morgan	
Royal Forest & Bird Society		Sue Maturin
High Country Federated Farmers	Jim Ward	Hamish Roxburgh
Research providers	Nick Ledgard (Ensis, Ch/Ch) Heather North (Landcare Research, Lincoln) Thomas Paul (Ensis, Rotorua)	

* Forest owners: Blakely Pacific Ltd; Cainard Forestry LLC; City Forests Ltd; Ernslaw One Ltd; Hancock Forest Management NZ Ltd; NZ Redwood Company Ltd; P.F. Olsen & Co Ltd; Proseed NZ Ltd; Rayonier NZ Ltd; Red Stag Timber Ltd; Selwyn Plantation Board Ltd; Timberlands Ltd; Wenita Forest Products Ltd; Weyerhaeuser NZ Ltd; plus 18 Associate Co-op members.

** Territorial Authorities: Tasman District Council; Marlborough District Council; Environment Canterbury; Environment Southland

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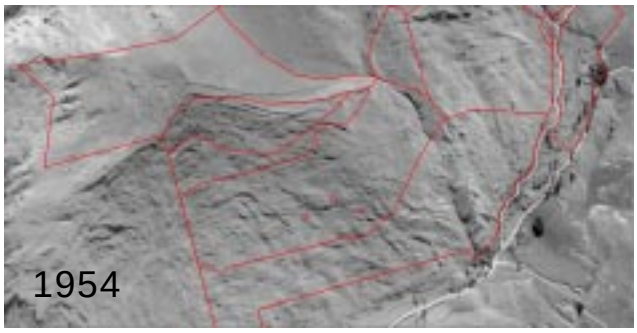
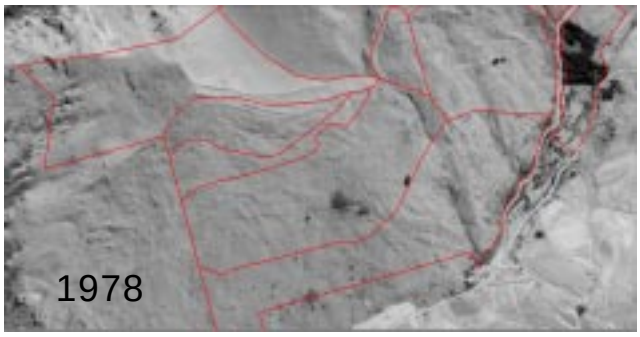
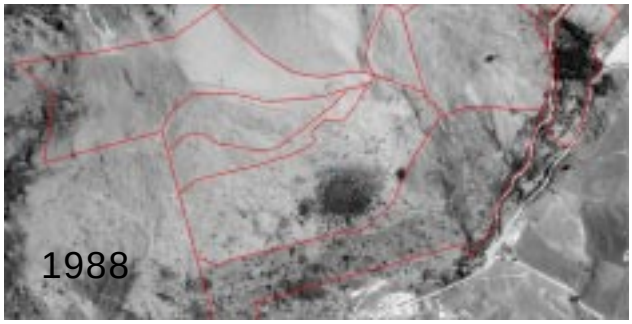






The spread of wildngs (mostly larch) at Mt Dewar station near Queenstown. The major increase between 1988 and 2004 was assisted by a significant reduction in stock numbers.

SFF wilding project – key objectives

The 3-year project has three major objectives:

- Objective 1. To improve the assessment of wilding spread risk and the prioritisation of control areas
- Objective 2. To promote the most appropriate techniques for preventing spread and removing wildings
- Objective 3. To determine the vegetation successions occurring after wilding invasion and control, so that these might be manipulated to bring about the most desirable outcomes (maybe pasture, or perhaps a return to native species).

In the first year, there has been considerable emphasis on mapping (Obj 1), and this is covered in more detail on page 4.

Objective 2 will involve some new trials looking at how to kill standing conifers safely and cost effectively. However, this objective mainly involves reviewing current techniques and making them more available to all land users, particularly farmers. The main output will be a user-friendly manual, written in the same format as the very successful 'Wilding Prevention' booklet produced in 1999. Many councils now use this as a free handout to prospective tree planters in spread-susceptible land.

Objective 3 looks at how we might utilise the success of conifers to promote the establishment of more desirable vegetations, such as native species or pasture. This is covered in more detail on page 3.

Equally important as the objectives themselves is the need to advocate the existing and all new information. To this end, a dedicated website (www.wildingconifers.org.nz) has been developed.

The website will be developed and maintained in response to user needs. It will include maps, case studies and items relating to wilding conifers in New Zealand and overseas. The site has a standard layout with a menu on the left hand side, making navigation easy.

How could wildings promote a desired vegetation succession?

Wildings are arguably the most vigorous plants that have ever grown on many of the sites they invade. Hence, they rapidly bring about significant changes to existing conditions, both above and below ground. We tend to view these negatively, but this need not always be the case. Objective 3 of the SFF project looks at how we might use some of these impacts to our advantage.

There has been a significant improvement in the vigour of native grasses and woody shrubs within the shelter of this felled wilding 'carcass' (right), compared to unsheltered 'control' site alongside.

Ensis has tried to establish native species amongst the shelter of young conifers on our Balmoral (Tekapo) trial site, but conditions are harsh and the first to die were amongst the trees – where it is presumed that moisture stress was greatest. So, we have looked at similarly sheltered sites where the conifers are dead. And, as can be seen from the photos above, the response of resident plants, particularly the native grasses and woody shrubs, has been positive.

Perhaps, such shelter could be used to get adventive woody species such tawhini (Osmothamnus, formerly Cassinia spp.) established, and so trigger a new and long term succession of native woody plants.

Elsewhere, we have looked at what happens to vegetation successions if wildings are left to run their course. We have monitored a grassland site from when wildings first arrived in 1975 to the present day. Over the first 10 years wildings invaded steadily until they reached a stocking of 35,000 stems/ha. They dominated and suppressed all other existing vegetation (initially 40 species, over 60% of which were native). But by 2007, wind and snow had opened up the canopy, and a new ground cover had started to establish. Right now it covers less than 5% of the ground surface, and consists of only seven species, none of which are native (the most frequent is Hieracium praealtum). However, evidence from elsewhere is that although light levels are still far too low for the light-demanding pines, they could well be suitable for more shade-tolerant native species. But for this to occur a local seed source is required, and if not present, seed may have to be introduced artificially. Such management will be tested in future work.

Getting the information out

The success of any programme such as the SFF wilding project is as good as the dissemination of the information and the results it uncovers. The Wilding Group is well aware of that, and therefore puts great importance on what is commonly called Information Transfer (IT).

Our most potent IT tool, and also our 'shop window', will be the website (see box on P2). Developed and running on a linux webserver with an easy to use content management system (freeware Joomla) we will be able to publish the latest news, reports and updates quickly and efficiently. The system is hosted and administered by Andrew Dunningham and Thomas Paul at Ensis and future developments and modifications will therefore be easy to implement. We have the ability to input texts and images quickly and simply – this is of great relief to old-timers such as the Project manager. The website will be launched at the end of June – so watch the web (www.wildingconifers.org.nz).

As well as the website, we will be using the more traditional methods of newsletters such as this, media articles in magazines and newspapers, and workshops and field-days. During the last year (2009), we will be touring the South Island with a 'roadshow', which will visit all the local centres.

In the more immediate future, there will be a workshop in the Mackenzie Basin in March next year. The exact date and venue have yet to be decided, but the agenda will include the likes of conifer species identification and aging, and demonstrations of farmer-friendly techniques for wilding prevention and control. Examples of how wildings might be used to promote the establishment of more favoured vegetation such as native plants will also be demonstrated.

Mapping wilding areas, seed sources and risks

In discussions about wildings, particularly with senior decision-makers, the question of the areas affected invariably arises. Among other questions, the mapping objective (1) sets out to answer this – although there will always be problems with the word 'affected'. Is that 100 trees/ha; one tree/ha or one tree/10 ha?

During the latter half of last year, Heather North and Nick Ledgard toured the South Island to visit people and agencies which held data on conifer stand location, species and age, plus information of wilding control operations. Data was supplied in all shapes and sizes – from hand-drawn maps to computer-stored GIS layers. Contributed datasets will be added to a GIS base layer of Land Cover Data Base (LCDB2) conifer classes.

All the datasets supplied by forestry companies have been designated 'secure', which means that only the researchers will be able to see stand boundaries with species and age attributes, while all publicly available maps will only show the forest outline (internal stand boundaries will be dissolved). The major agency funding this part of the wilding project is Land Information New Zealand (LINZ).

The risk-calculation component of the mapping is derived from the input of two Decision Support Systems (DSSs); the first of which looks at the risk of spread from existing plantings, whilst the second looks at the risk of conifer invasion onto any given site.

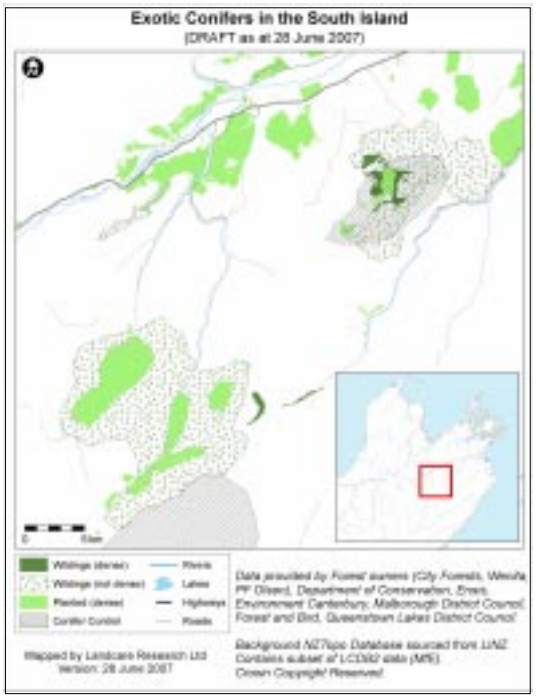
The level of risk is assessed by giving scores for the following attributes – conifer species involved, siting of source trees relative to the sample area (distance away, exposure to prevailing winds) and the vegetation cover and use of the target land area – particularly relative to grazing. Much of this information can be obtained from existing data sets or the likes of digital terrain models, but the hardest to evaluate will be land use, not least because it changes frequently.

The major work for 2007/ 08 will be to link the risk DSSs to the GIS maps, so that an area-based assessment can be made of the level of risk, and hence priorities set for wilding prevention and control work.

All this work on conifer location and risk assessment can only be as accurate as the datasets provided, and is most useful down to catchment scale. For this reason, the final year will see the focus concentrated on finer scale maps which can be taken down to farm level. The aim is to provide all farmers in spread-susceptible areas of the South Island with a map of their property showing the location of on-farm and adjacent spread-prone species and the areas of land under threat.

Along with a map, recommendations will be given about how to deal with any threat, utilising the wilding control manual arising from Objective 2.

Below: A section of the wilding map from inland Marlborough, showing planted and wilding conifer sites, plus areas where control has been carried out.



Sustainable Farming Fund Wilding project – contact details

An annual newsletter produced by the South Island Wilding Conifer Management Group, to report on the Group's work and to inform on wilding matters generally

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