

## Group getting the wilding message out

The South Island Wilding Conifer Management Group is getting the message out about wilding spread and the most cost-effective ways to control it. Funded by MAF's Sustainable Farming Fund (SFF), and involving all the major stakeholders (see Box below), the Group has recently held two wilding control workshops and is getting plenty of hits on its website ([www.wildingconifers.org.nz](http://www.wildingconifers.org.nz)). In addition, simple wilding spread risk assessment procedures and risk maps have been produced (see page 2) and over one hundred plots established to monitor vegetation successions associated with wilding control (see page 3).

In March, two field workshops were held, one on Balmoral station near Lake Tekapo, and the other on Flock Hill station in the upper Waimakariri catchment. The main focus was on control techniques, but time was spent on identifying conifer species (particularly contorta pine – the most vigorous spreading species) and prevention methods for minimising the risk of unwanted spread.

A comprehensive handout was produced, and copies of this can be obtained from the website or the Editor.

After the Flock Hill workshop, a newly-formed community wilding control group (the Waimakariri Ecological Landscape Restoration Alliance) held its first meeting. The main focus of this group is to co-ordinate, and seek funding for, wilding control in the area. A similar community-based



*A group of attendees at the Tekapo wilding workshop on Balmoral station. Nick Ledgard, SFF wilding project manager is in the middle.*

movement, the Marlborough Sounds Restoration Group, has recently formed, and raised considerable funds for wilding control in their part of the country.

The SFF wilding project is helping both these groups with practical advice. Anyone seeking such assistance should contact the project manager, Nick Ledgard.

### 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  | Chris Todd  | Sue Maturin              |
| High Country Federated Farmers   | Jim Ward  | Hamish Roxburgh          |
| Research providers   | Nick Ledgard (Scion, Ch/Ch)<br>Stephen McNeill (Landcare Research, Lincoln)<br>Thomas Paul (Scion, Rotorua) |                          |
| <p>* 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 Ltd; Proseed NZ Ltd; Rayonier NZ Ltd; Red Stag Timber Ltd; Selwyn Plantation Board Ltd; Timberlands Ltd; Wenita Forest Products Ltd; plus 18 Associate Co-op members.</p> <p>** Territorial Authorities: Tasman District Council; Marlborough District Council; Environment Canterbury; Environment Southland</p> |   |                          |

## Mapping and assessing spread risk

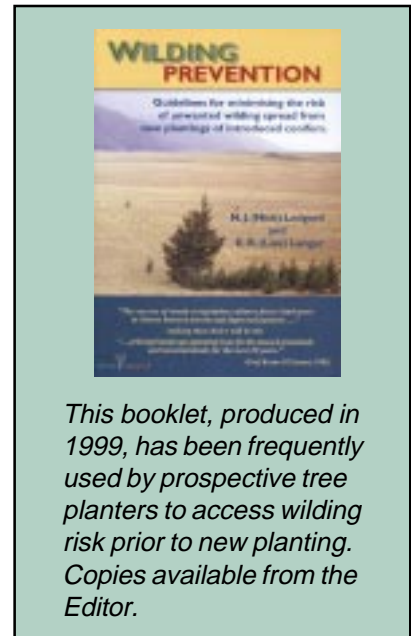
In order to calculate the risk of spread, information must be supplied under three categories – the conifer species involved, the siting or location of those species, and the vegetation of the surrounding land - together with its use.

The considerable knowledge gained in these three areas has gone into producing two assessment forms which are simple to complete, and allow land managers to estimate the risk of tree spread, even if they have no prior knowledge on the topic. The forms are based on an original prototype produced 15 years ago, but have been improved by incorporating more recent findings. For example, in the original 'risk of spread from new plantings' form, which has seen much use over the years, Douglas-fir has been moved from the second to the highest spreading vigour category, due to experience gained over the last few years, and dwarf mountain pine has been included as more is

known about the species. Also included are cypresses/leylands, spruces and cedars, all of which can be grown in the high country, but none of which are known to spread readily.

The new assessment form which assesses risk into any site anywhere, has only just been produced. It should be noted that in this form, a score of zero for any one category can mean a very low spread risk, even if scores for the other factors are high. For example, there is little likelihood of wilding spread from a very spread-prone species in an exposed windy site, if it is surrounded by intensively grazed pasture.

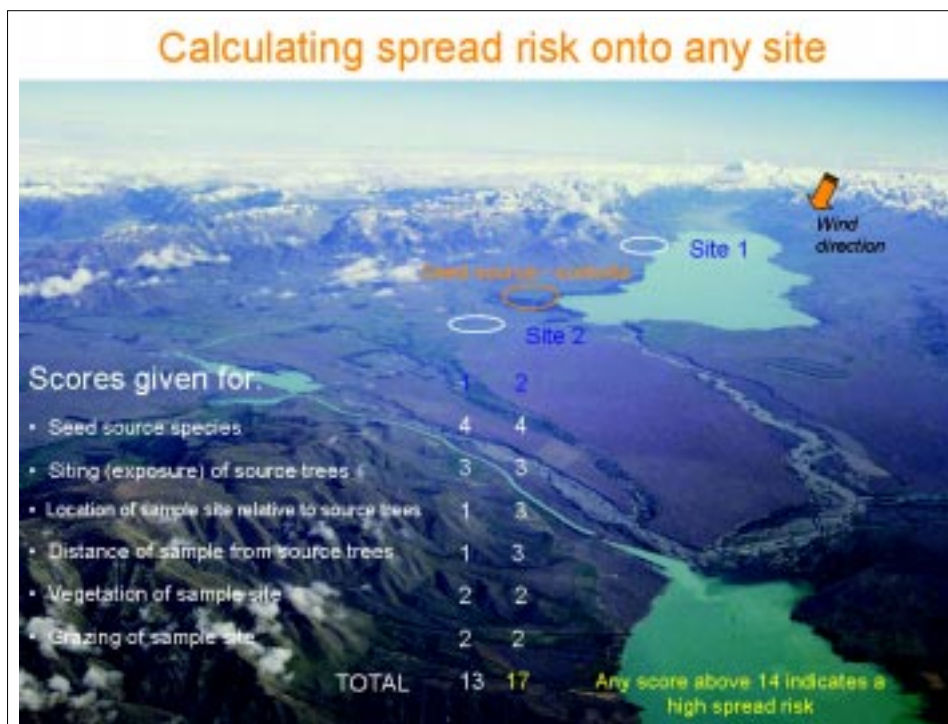
The two assessment forms are designed so that land managers can quickly undertake an assessment of likely risk of wilding spread. Depending on the resulting score, they can do a sensitivity analysis i.e., test how they might lower the risk of spread by changing factors such as siting



*This booklet, produced in 1999, has been frequently used by prospective tree planters to access wilding risk prior to new planting. Copies available from the Editor.*

of new plantings or the use of surrounding land. In this way, spread risk can be mitigated or avoided by good decision-making either prior to planting a conifer plantation, or prior to the time when wildings could arrive at any new site and possibly become a problem.

New mapping work has linked the risk assessment forms to GIS maps, and then use terrain analysis to provide automated



mapping of wilding risk. The approach uses simple rules-of-thumb to assess wind exposure and seed dissemination, using a high-resolution digital elevation model, combining this with the Land Cover Database-2, and the SFF project's database of wilding sources, to create attributes for every point. These attributes are combined, reproducing the logic of the assessment form, and presenting it as large-scale maps. The output is a map of points showing risk of wilding establishment over the landscape.

*Assessing the risk of wildings arriving at two sites (one upwind / one downwind) adjacent to a stand of contorta pine. As expected, the assessment shows a much higher risk at the downwind site (Site 2).*

## Vegetation successions associated with wilding spread

In Newsletter No 1, it was stated that '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'. Since then, we have been busy assessing vegetation recovery at a range of sites where conifers have been controlled. Five are shown and described on this page.



*At left: These 30 year old mountain beech in Craigieburn Conservation Park, were planted under a Scots pine stand in 1978. Research has shown that in exposed situations, beech survival is better under a 'nurse' crop of conifers, but that these must be managed (thinned and later removed) to promote best growth.*



*Above: The felling of wildings can promote a flush of vigorous growth amongst the slash – particularly grasses, both native and exotic. This can last for 20 years, before declining vigour will allow the invasion of other species.*



*Above: Assessing vegetation recovery after mulching of dense small wildings (foreground) and windrowing of older trees (background – by digger / dozer combination) at Tarndale, Molesworth station.*



*Above: Vigorous native regeneration under large wildings stem-poisoned 10 years ago – note no new conifer wildings. In comparison, a nearby felled and harvested area was dominated by dense wilding regeneration.*



*At left: A fire killed these trees on Mt Cook station near Lake Pukaki. The deer fence and plastic sheeting is to monitor recovery (with and without browsing) and additions of seed (pasture, conifer and native).*

## Controlling wilding trees

Objective 2 of the SFF Wilding project looks at control techniques and how to make them more available to all land users, particularly farmers. This has mainly involved reviewing current operational methods, although one new stem-poisoning trial has also been established.

In the Marlborough Sounds, Scion researchers have been working with DoC and local landowners, Alistair and Jenny Malcolm, to determine the most safe and cost-effective ways to kill standing conifers. Eighteen different chemical mixes and rates of application have been applied to large radiata trees, many over 1 m in diameter. Early indications are that most chemicals can be effective, and that metsulphuron is displaying particularly pleasing results – but another year is needed to confirm this. Both metsulphuron and glyphosate have been tried in solid as well as liquid form, which will please operators who are not keen on carrying poisonous liquids up steep slopes and through sometimes thick scrub.

During the past year, all current techniques have been included in

a review of wilding control methods. The report summarises knowledge about burning, grazing, use of fertilisers, physical means involving hand-pulling, hand-tools, chainsaws and scrub-bars, larger machines such as diggers and dozers, and chemicals applied to the foliage and cut stumps, or by stem poisoning or soil injection. As with virtually all weed control, there is no one 'silver-bullet' and the answer is nearly always a mix



Above: A wilding removal contractor showing the efficiency of scrub-bars to clear wildings near Lake Pukaki .

of the tools available. Hence, a major aim of the review is to help land managers choose the best tool for their circumstances. The report is available on the wilding project's website or in hard copy from the Editor. But, do not rush to get one now, as by this time next year, the aim is to have produced a more comprehensive and well illustrated Manual.

*Below: Researcher, Dave Henley and Arapawa Island landowner, Alistair Malcolm, poisoning a tree with metsulphuron crystals, as part of a stem poisoning trial in the Marlborough Sounds.*



### Sustainable Farming Fund Wilding project – contact details

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|--|---|---|--|
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