Appendix 4
Rehabilitation of Ski Runs

A4.1 Introduction

Management of ski slopes is a major component of the rehabilitation work that has been undertaken in the resort areas. Various methods have been trialled for rehabilitation of ski slopes including use of different species of exotic grasses, native grasses and native shrubs. An overview of the main issues concerning these different approaches, based on experience within the resort areas, is presented below.

A4.2 Use of exotic vs. indigenous grasses

A trial of the use of Chewings Fescue vs Poa was undertaken on the Rollercoaster ski run at Perisher Blue was undertaken during the 1990s. In March 1993 the middle and bottom sections of the Rollercoaster were sown with *Poa* at 15g/m^2 (over re-spread topsoil), while the lower section was sown with Chewings Fescue. Coverage by the Fescue was poor and, in 1994 the area was dug up and re-sown, again with Fescue. The two areas are compared in Figures A4.2.1 and A4.2.2. Figure A4.2.3 shows the area sown with *Poa* more recently, while Figure A4.2.4 shows a site on the Accelerator ski run that was sown with Fescue about 4 years ago.

Figure A4.2.1 Planting of Chewings Fescue, showing low biomass levels, on the lower section of the Rollercoaster.

Photo: Wawick Papst

Figure A4.2.2 Section of the Rollercoaster rehabilitated with Poa. Note the much higher level of biomass in the *Poa*, compared with the Fescue, which provides robust protection of soil.

Photo: Wawick Papst

Figure A4.2.3 A recent photo of the section of the Rollercoaster rehabilitated with *Poa*. Note the level of regeneration of native shrubs which help to provide robust, permanent cover while being low growing enough not to impact on the quality of the ski slope.

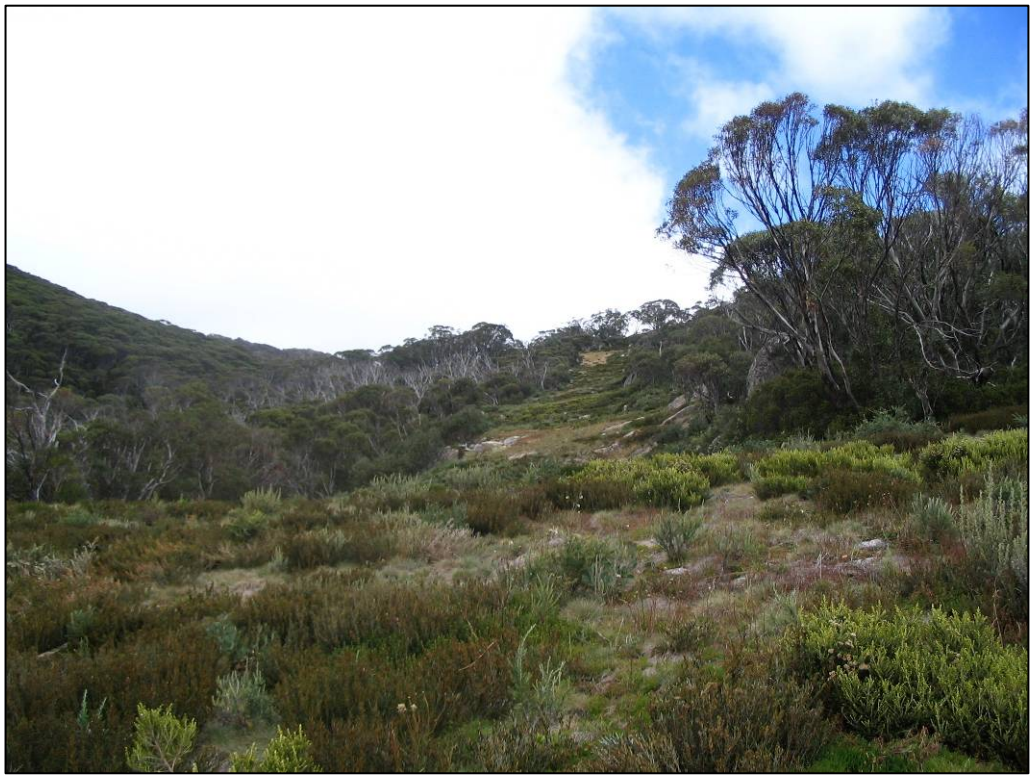

Photo: Elizabeth MacPhee

Figure A4.2.4 Accelerator ski run – a site sown with Fescue in c. 2003. Again the relatively poor coverage of the ground and low levels of biomass are obvious when compared with the sites sown with *Poa*.

Photo: Elizabeth MacPhee

From the above photos it is clear that the amount of biomass generated by *Poa,* is much greater than occurs in areas sown with Fescue, providing much better protection of soil and potential for regeneration of shrubs. It also appears that areas rehabilitated with native species are much more resilient and long lasting than areas where exotic grass has been used.

A4.3 Use of shrubs on ski slopes

Many native shrubs are low growing, tough and wiry, and have strong root systems that bind soils and contribute to the health of micro-organisms. A shrub layer more than 20 centimetres high also provides valuable habitat for native fauna such as Mountain Pygmy Possums and Broad-toothed Rats. These species benefit from the shelter offered by the shrubs, which allow them greater freedom of movement across ski runs.

Shrubs (and also native grasses) can also help retain snow cover by creating a layer of air between the soil and snow. This helps maintain constant temperatures and protect the snow from meltwater. Without the air layer, the meltwater would have a higher latent heat than the snow, thus it would hasten thawing. The constant temperatures created by the trapped air layer also contribute to the health of the soil.

Generally the tough, low growing alpine shrubs are considered hardy enough to withstand ski slope management activities without interfering with the effectiveness of slope management. Figure A4.3.1 is another recent photo of the area regenerated with *Poa* on the Rollercoaster which highlights the range and density of shrubs that have successfully colonised the area rehabilitated with *Poa.* It is clear that this area should pose no problems for slope management.

Figure A4.3.1 Recent photo of shrub colonisation of the section of the Rollercoaster rehabilitated with *Poa*.

Photo: Elizabeth MacPhee