

# **BRIEF EXPLANATION OF THE WILDING CONIFER HERBICIDE CONTROL SYSTEM**

## **Introduction**

Control of wilding conifers in New Zealand is based on two activities, namely physical and chemical control methods. Although effective, physical control can only be used where trees are accessible. Also, these methods are labour intensive.

If they work, chemical control methods are more cost effective and less labour intensive than physical control methods. For dense infestations or situations where trees are inaccessible chemical control is the only solution.

The wilding conifer herbicide control system that I have am perfecting together with Stefan Gous of SCION has been developed to deal with accessible scattered individual trees (ground-based basal bark and cut stump techniques), inaccessible scattered individual trees (aerial basal bark application or ABBA) and dense infestations (boom spraying).

## **A. Ground-based basal bark treatment methods for accessible scattered individual trees**

- 1 part 600g/l Triclopyr butoxyethyl ester in 4 parts oil (120g/l active ingredient)
- Trees up to stem diameter of 30cm can be effectively treated
- >98% trees dead after one year
- All conifer species susceptible

### ***1. Standard ground-based basal bark method***

- Treat 5+ trees in the time it takes to cut and poison one
- Limiting factor is the time it takes to walk from tree to tree
- Can be done at any time of the year but is most effective during the active growing season



## **Field operational example**

- 30 hectares treated in 2.5 days on Ben Ohau Station, Twizel

- 5 operators(>3000 trees each per day)
- Traditional physical methods = >10days
- >\$10k saved on this job



## ***2. Cut stump method incorporating ground-based basal bark treatment***

- Used wherever where aesthetics of dead standing trees is an issue or to monitor contractor performance.
- Cut stems off close to ground level ( $\pm 5 - 15\text{cm}$ ) with scrub bar or chainsaw
- Apply basal bark herbicide mix to the cut stump surface and remaining bark
- Can be done at any time of the year



## B. Aerial basal bark application or ABBA for inaccessible scattered individual trees

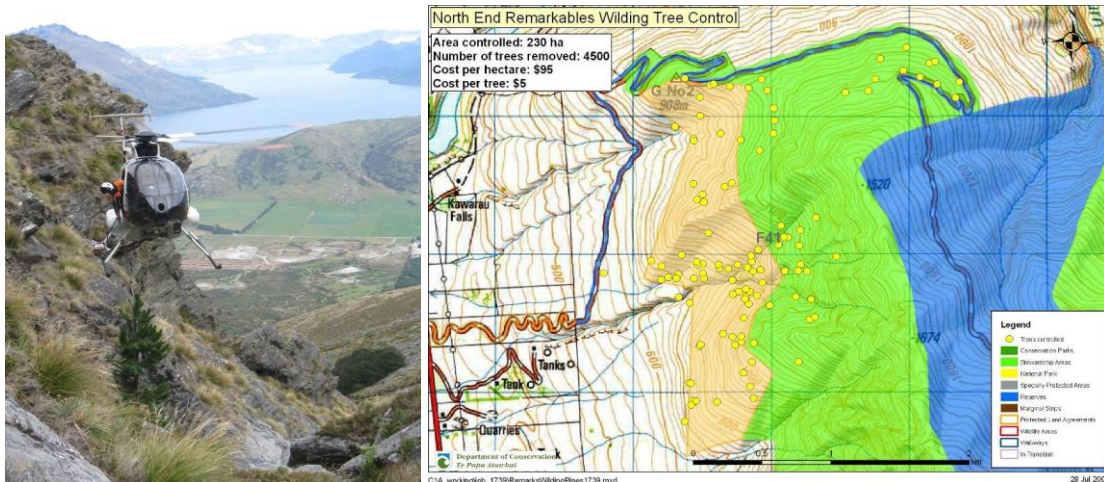
- Helicopter with wand
- About half a litre of basal bark herbicide mixture per tree



### Advantages

- 10 – 15 trees can be treated for 1 using skid-hopping (>40% saving)
- Minimal collateral damage
- Small volume of herbicide carried = increased flying time
- DOC staff member doing quality control

### Field operational example



### **C. Boom spraying for dense infestation of trees**

- This method is used to control dense infestations of pines
- The Lucifer Brew which is a combination of Triclopyr butoxyethyl ester, Dicamba and Picloram herbicides applied at 400 litres per hectare and a droplet size of 350 microns has resulted in >95% kill of all treated conifer species after 2 years.



### **Twizel operational example**

- 36 hectares treated over wide logistical area in 2 days
- Only dense areas sprayed (too much herbicide lands on the ground and is wasted in areas supporting scattered trees)
- Untreated, scattered trees to be controlled using ground-based basal bark method at a later stage but before they start coning



### **Outcomes**

- New Zealand is going fully operational using ground-based basal bark methods, ABBA and boom spraying with Lucifer for all species of wilding conifers
- Massive time and cost savings
- Can now efficiently treat large dense infestations cost effectively at the landscape scale