Rhododendron *Rhododendron ponticum* control by mulching, cutting and herbicide application at Blean Woods RSPB Reserve, Kent, England

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SUMMARY

Measures were undertaken to attempt to eradicate invasive rhododendron *Rhododendron ponticum*. Mechanical removal is quick, but expensive (£1,000/day) and has a high potential for damaging the soil and coppice stools. Manual removal is labour intensive (120 man-days/4 ha), but was less damaging and could be applied in areas in which machinery could not be used. Weed-wiping regrowth was slower but more effective (70% kill rate) than spraying (40-50% kill rate).

BACKGROUND

Rhododendron *Rhododendron ponticum* is a non-native, invasive species in the UK. Blean Woods RSPB Reserve is one of the largest areas of ancient broadleaved woodland in southern England and is one of the few places in the UK where the nationally endangered heath fritillary butterfly *Mellicta athalia* occurs.

Five hectares of dense rhododendron about 5 m in height had become established within the reserve and was slowly increasing in area, spreading through the wood and threatening to stifle out the native ground flora, including common cow-wheat *Melampyrum pratense*, the larval food plant of the heath fritillary. It was decided that measures needed to be undertaken to eradicate it.

ACTION

Mechanical removal: It was decided that removal of rhododendron at Blean Woods by mechanically grubbing out with a digger would have been very damaging to the soil (due to compaction and wheel damage), and physical disturbance when rhododendron stumps were uprooted. It would also have been impossible to grub out patches of rhododendron growing in intimate association with native mature coppice areas, which if attempted, would have led to damage to the coppice stools themselves. However, in an area of the woodland away from coppiced areas, 1 ha of rhododendron was obliterated using a 400 horsepower mulcher.

Manual removal: Due to difficulties of using the mechanical methods described above, in areas in close proximity to existing coppice stools it was decided to remove the remaining 4 ha of rhododendron using volunteers with chainsaws, bow saws and loppers. Any regrowth would subsequently be treated with herbicide (Roundup, Biactive and Triptic).

CONSEQUENCES

Mechanical removal: The mulcher was quick but expensive (1 ha in 1½ days at £1,000/day). This technique was unsuitable for the remaining 4 ha of the rhododendron-infested woodland as the rhododendron was growing amongst mature coppice stools and it was therefore not possible to manoeuvre the mulcher without damaging them. In the area treated, mulching destroyed the above-ground rhododendron but did not kill all the stumps and roots. As there was a layer of mulch up to 50 cm deep, it has taken the rhododendron shoots a long time to break through to the surface, with much fresh foliage appearing in Year 2. So, the initial bare surface created by this process is deceptive.

Manual removal: Volunteers took the

equivalent of 120 man-days to cut and burn each of the remaining 4 ha. This technique whilst time consuming, had the advantage over mechanical removal in that it was less damaging to the soil and areas that would have been impossible to reach with machinery without damaging existing coppices, could be accessed.

Treatment of regrowth: Regrowth has been treated with herbicide over the past two years. In Year 1, growth was mostly sprayed in July and again in August, with a knapsack sprayer containing 2% Roundup Biactive in water, whilst less accessible areas were treated with a 33% solution of Roundup in a weedwiper mini. Weedwiping was slower but more effective, with approx. 70% control, compared to 40-50% control by knapsack spraying, despite sprayed areas being treated twice. Rhododendron is supposed to be more susceptible to herbicide treatment after two years' growth, which may help to account for the poor kill rate in Year 1.

In Year 2 dormant rhododendron was sprayed with a 2% solution of Triptic (formerly marketed as Timbrel) in May. This had a far more immediate impact, but by mid-summer it was evident from regrowth that it had not killed most of the stumps, and a further spraying was carried out in July. By the end of Year 2, only 60-70% of the regrowth was estimated to have died, despite four sprayings. On other sites, Roundup has been sprayed as a 5-6% solution, rather than 2%, and it is hoped to complete eradication with a stronger solution in 2005.