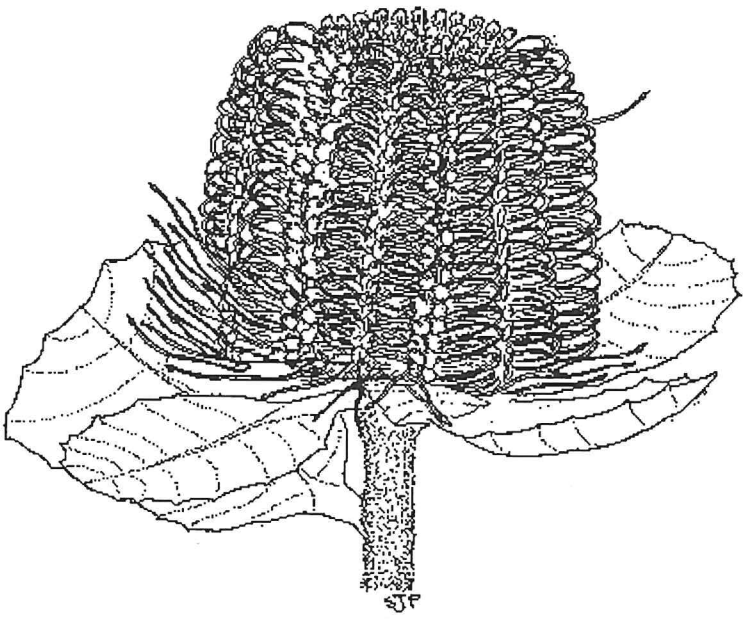
Management Guidelines for Remnant Vegetation Harvested for Cutflowers

Banksia baxteri and Banksia coccinea



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DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

BACKGROUND INFORMATION

These guidelines have been produced for use by landowners who wish to sustainably manage their remnant vegetation for cutflower production. The guidelines will also assist government authorities to advise on proposals to manage remnant vegetation for cutflower production on private land.

It is noted that some techniques that may be used to improve production of flowers, foliage or seeds from remnant vegetation may have the potential to adversely affect the nature conservation values of that vegetation, and to contribute to soil and water degradation. Land managers are thus advised to carefully assess management practices and their potential impacts before undertaking bush management for flower production.

Eight of the most heavily harvested species, or species of particular concern, were chosen for the preparation of these guidelines:

Agonis sp., ("coarse tea-tree")
Agonis parviceps, ("fine tea-tree")
Banksia baxteri
B. coccinea
B. hookeriana
Dryandra formosa
Meeboldina scariosa formally Leptocarpus scariosus
Verticordia eriocephala.

The recommendations within these guidelines are based on information received from land owners (who are currently managing these species on their properties), and from survey, monitoring and research results conducted in other managed stands.

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Guidelines for the Sustainable Management of Remnant Bushland Harvested for Banksia baxteri and B. coccinea Cutflowers

Introduction

Banksia baxteri and B. coccinea are two popular species of native flora harvested for the cutflower industry in Western Australia. Both species are native to shrublands growing on infertile sands along the south coast from Albany to near Hopetoun.

Until the early 1990's the majority of B. baxteri and B. coccinea blooms harvested were from Crown land. Harvesting of both of these species has since been banned on Crown land because of the devastating effects of disease on many populations. A large number of B. baxteri and B. coccinea blooms are harvested from managed bush on private property. Increasingly, both species are also being harvested from plantations in WA and South Australia. The area under cultivation is continuing to grow.

The purpose of these guidelines is to advise on the best methods to sustainably manage B. baxteri and B. coccinea and the remnant vegetation from which they are harvested. These guidelines are based on recommendations by farmers who have managed and harvested B. baxteri and B. coccinea blooms from their remnant bushland , and on research carried out by Agriculture WA and others.

Biology

Both B. baxteri and B. coccinea are reseeder species which are killed by fire and depend on seeds for regeneration. B. baxteri holds all its store of seeds in the canopy and continues accumulating this store until a fire occurs. B. coccinea, however, releases some seeds between fires which can germinate in good seasons.

The blooms and seeds of both species are eaten by weevils and moth larvae. Cockatoos also damage blooms and cones in their search for the weevils and moth larvae.

The peak marketable bloom production period for B. coccinea from wild stands is between 10 and 15 years of age, and for B. baxteri between 8 to 20 years. However, in cultivation at Wellstead, B. baxteri will flower in its second year and B. coccinea in its third to fourth year.

The main harvest period for B. baxteri is from December to February and for B. coccinea from July to October. Most shoot growth for both species occurs over the summer period between November and February.

Fire

In the absence of harvesting, neither of these banksia species will have sufficient seeds stored in their cones for parent replacement until about 15 years of age. Consequently fires should not be any more frequent than this.

Production of top quality blooms (with straight stems 50 - 60 cm long) declines as the plants get older. As a result, some producers use fire to rejuvenate their stands. An alternative to fire, especially in small bushland remnants, is pruning. However, fire in the long term (25-30 years) is a necessary

component of the banksia shrubland ecosystem because of its role in the regeneration of legumes, and banksia seed release.

Recommendations

- **The minimum interval between fires in remnant vegetation being managed for production of B. baxteri or B. coccinea should be 20 years.**
- **Stands should not be harvested the year before a planned fire to ensure sufficient seed heads are present to regenerate the banksia plants.**

Pruning

Pruning of plantation-grown and wild banksias is a good horticultural practice to improve the production of commercial quality blooms.

A trial by Agriculture WA on 11 year-old B. baxteri in bushland near Wellstead showed that light pruning (into 1-2 year-old wood) increased the proportion of commercial quality blooms by 80%. Heavy pruning, into 4 - 6 year-old wood, decreased bloom production, killing some of the plants.

The age of stems can be gauged by counting the number of annual nodes (raised areas on stem formed at the end of each growth season) back from the growing tip (figure 1). In general, pruning should not remove all the green leaves from the stem being cut.

It takes 1 to 2 years after pruning for bloom production to increase. This is much quicker than after burning and is an alternative to burning for increasing production from older plants (10-15 years) where it is still too early to burn.

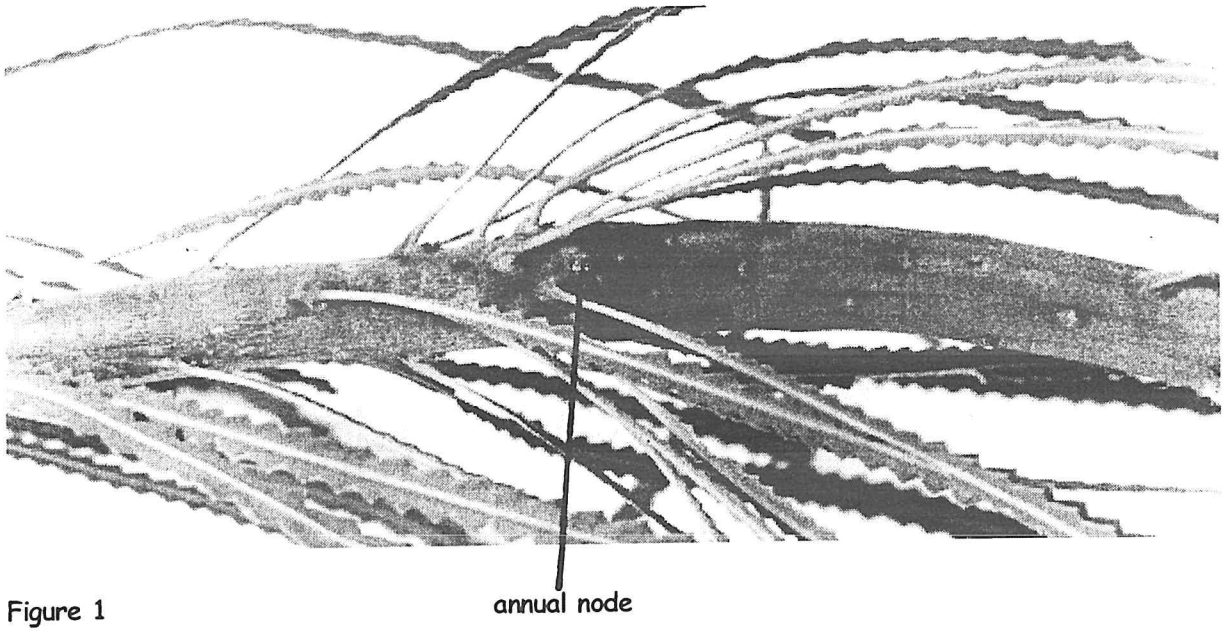

Figure 1

Recommendations

- **Pruning carried out using hygienic methods (disinfecting secateurs with methylated spirits) can be used as a method of increasing production of B. baxteri blooms from older plants.**
- **Prune only into 1 or 2 years old wood, and ensure some green leaves are left on the stem to assist the stem to reshoot.**

Fencing

Stock may not cause much direct damage to banksias, except after a fire when they can eat the seedling. They do compact the soil, cause soil erosion and can spread plant diseases. Remnant bushland that is grazed is soon degraded and it is strongly recommended that bushland used for banksia cutflower production be fenced to exclude stock.

Recommendation

- **Remnant bushland being managed for the production of B. baxteri and B. coccinea flowers should be fenced to exclude livestock and should not be grazed.**

Harvesting

Research carried out by Curtin University on Banksia hookeriana (also a reseeder banksia species) in bushland has shown that heavy harvesting (more than 30% of blooms in any one season) reduces general health of the plants and its capacity to produce and accumulate seed. It is likely that B. baxteri and B. coccinea would behave in a similar way. It is therefore important to ensure that there will be sufficient seed reserves to replace the parent plants after fire i.e. it is necessary to limit the proportion of blooms harvested in any year and to give the stand a break from picking before planned burning.

Recommendations

- **Harvesting should not be carried out until B. baxteri plants are 8 years-old and B. coccinea plants are at least 10 years-old.**
- **No more than 30% of blooms should be harvested in any one year.**
- **Green leaves should be left below all harvest cuts.**
- **A stand should not be picked for a year prior to it being burnt.**

Chaining

Chaining just prior to burning is sometimes used as a method of controlling fire intensity and increasing the success of regeneration in B. baxteri stands. However research indicates that if the interval between chaining and burning is too long, there will be seed losses of B. baxteri and other serotinous species (species that store their seeds in cones that remain attached to the plant).

Recommendation

- **Remnant bushland being managed for B. baxteri and B. coccinea cutflower production may be chained prior to burning but the interval between chaining and burning should not be more than a few weeks to minimise seed losses.**

Fertilisers

B. baxteri and B. coccinea, like all Proteaceae, are sensitive to high levels of phosphorus. The use of fertilisers also raises nutrient levels in remnant bushland which leads to an increase of weeds.

Recommendation

- **No fertiliser should be applied to remnant bushland being managed for the production of B. baxteri and B. coccinea flowers.**

Disease

Both species are highly susceptible to Phytophthora root-rot and many areas of bushland containing B. baxteri and B. coccinea on the south coast are infested. The Phytophthora pathogen is most often spread in soil attached to vehicles and on the bottom of shoes. Great care must be taken to prevent its introduction or spread. Harvesting of B. coccinea takes place in spring at a particularly risky time for spread of diseases which are most active in warm, wet conditions.

Aerial canker disease caused by air-borne fungi, attacks the stems of banksias. This disease has caused widespread damage on the south coast. Plants appear to be most at risk if they are old or already under stress from drought or over-harvesting. Open wounds on stems are a site of entry for the canker fungi and the disinfection of secateurs between plants and the use of pruning paints is highly recommended.

Recommendations:

- **Effective measures should be taken to protect remnant bushland being managed for the production B. baxteri and B. coccinea flowers from the introduction and spread of plant diseases. This can be done by cleaning all machinery, vehicles and footwear between each stand, and disinfecting secateurs with methylated spirits between each plant.**
- **Dead or dying stems should be cut from plants, removed and burnt to prevent disease spread.**

References

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