

The Bradley Method of Eliminating Exotic Plants from Natural Reserves

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A method of weed control in natural areas, developed at Sydney, Australia, by Joan Bradley and her sister, has been so successful a summary of their methods is presented here with the thought that similar endeavors in California would result in better weed control where such methods might be appropriate.

The Bradley method makes practical use of well-known ecological principles. The method consists of hand weeding, without replanting, selected small areas of vegetation in such a manner that after weeding, each area will be promptly re-inhabited and stabilized by the regeneration of native plants.

If the weeding is approached as a conventional gardening operation, in which large areas are cleared and burned or the debris carted away, the effort will fail because large exposed and disturbed areas will become re-colonized by new weeds. The Bradley method urges a naturalist's approach by encouraging the native vegetation to become reestablished. The Bradleys used their method to successfully rid a forty-acre woodland reserve of weeds so that the reserve needed slight attention only once or twice a year, mainly in vulnerable spots such as creek banks, roadsides, and clearings, to be maintained weed-free.

They summarize their activities as follows:

"We are regenerating bush with conspicuous success over a total area of about forty acres, and our results are plain to see, both in Ashton Park and on nearby Chowder Head. We have also taken care of the weeds induced by a six-acres "silvicultural" winter burn, and about four or five acres of other fires. We have not overworked at it. We are both over fifty, able-bodied but by no means Amazonian. My sister takes the dog for a walk on most mornings. and I do the same in the afternoons. On these walks we might average, between the two of us, about three-quarters of an hour spent actually pulling up weeds."

"Done in our way, the regeneration of weed-infested bushland is an easy and fascinating part-time occupation. We are still forging ahead, my sister mainly on a dry ridge, myself mainly in a damp gully, faster than we should have thought possible... We hope that this outline of our methods will encourage and help you to do the same."

Preliminaries

- **Permits and Permission.** Initially, of course, permission must be obtained from a landowner, whether a public park or private reserve, to carry out the weed control program. If necessary, a permit to collect plant specimens for identification must also be secured from the appropriate authorities.
- **Plant Identification.** Although it is not necessary to know every species in an area, it is essential to be sure that no natives are pulled up and no weeds are left behind. The Bradleys maintain a collection of dried specimens, which had been identified at the National Herbarium in Sydney, for every plant species in their working area.

- **Labor.** The Bradleys emphasize that a single person, working intelligently, will do more good than many persons crashing through a project area.
- **Strategy.** The basis of this method is the native species' ability to recolonize by tipping the ecological balance away from the weeds and toward the native plants. If one begins by clearing the weeds will come right back because they are now given ideal conditions; bare, disturbed soil, exposed to full sunlight. But by working a little at a time, from the strongholds of natural vegetation is favored and its natural regenerative power will prevail over the weeds.

In undisturbed vegetation, soils are often covered with a litter of decaying plant material. This natural mulch, when present, will permit very few weed seedlings to come through. Since disturbed soil favors the weeds over the natives, and weeding disturbs the soil, all natural litter possible should be replaced over the spots that are weeded. Also, wherever possible, the weeds themselves should be used as a mulch, except that such things as seeds, bulbs, rhizomes or other parts that might sprout should be removed.

- **Plan of Work**

In this sequence the Bradleys designed work for one person to follow, working from the best stand of native vegetation to the worst infestation of weeds. By keeping the sequence always the same, it can be followed by any number of people in any number of places.

1. Prevent Deterioration of Good Areas. Start by getting rid of weeds that occur singly or in groups of four or five. Check once or twice a year for missed weeds.

2. Improve the Next Best. Choose a place that you can visit easily and often, where the native vegetation is pushing against a mixture of weeds and natives, preferably not more than one weed to two natives. Start with a strip about 12 feet wide and no longer than you can cover about once a month during the growing season. If this boundary is on a steep slope that might erode, clear a number of patches instead, but still no more than 12 feet from the vigorous native vegetation. Let a few months go by before you lengthen the strip. Your experience will dictate whether to make the strip longer or shorter.

3. Hold the Advantage Gained. Resist the temptation to push deeper into the weeds before the regenerating natives have stabilized each cleared area. The natives need not be very tall but should form a dense ground cover. The Bradleys think excluding light from the ground is very important since weed seedlings consistently appear in bare soil at the edges of paths and clearings even when relatively undisturbed and surrounded by dense native vegetation.

4. Cautiously Move into the Really Bad Areas. When the new growth consists almost entirely of native species with only a few weeds, it is safe to move further into the weeds. Don't start to clear a block of solid weeds until you have brought the good native vegetation right up to that area. Solid infestations of weeds can be worked on at the edges by forming peninsulas of weeds, small clearings less than six feet in diameter. Also, spot weeding, removing a single large weed plant next to a native plant in the middle of a solid weed infestation, will bring remarkable results by allowing the native plant to grow much faster. There is no reason to hurry this process; much more is gained by allowing the native plant to grow well before removing another adjacent weed.

- **Records**

The Bradley sisters keep general written records, make periodic surveys, and map the weed infestation. They find it much easier than relying on memory of past infestations. Also, the

mapping is useful to show local authorities the progress of the work. Their work has been so successful, and the regenerated native vegetation looks so good, that it is difficult to show people what has been done. Wouldn't it be nice if all our parks and reserves were that weed-free?

Reference

Bradley, Joan. 1971. Bush Regeneration: The Practical Way to Eliminate Exotic Plants from Natural Reserves. The Mosman Parklands and Ashton Park Association, Mosman (Sydney), New South Wales. 15 pp.
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