



Biological weed control a team effort

Shire councils, state agriculture departments, community groups and landowners are working with CSIRO to speed the biological control of pasture and environmental weeds in south-eastern Australia.

They have organised networks to distribute and monitor insects bred by CSIRO to control weeds such as Scotch thistle, St John's wort and bitou bush.

Shires in the Southern Tablelands district of New South Wales have helped to establish sites and raise funds for the release of a weevil (*Larinus latus*) that destroys the seeds of Scotch thistle. The collaboration was instigated by the Harden Landcare Group which asked CSIRO what the group could do to hasten the program to beat the weed, which is difficult and costly to control with chemicals.

Scientists at the Division of Entomology had introduced the weevil (from Europe) into quarantine in 1990 as part of a biological control program sponsored by the Wool Research and Development Corporation, the Meat Research Corporation and the Federal Government. But the local graziers needed the weevils to be distributed more quickly.

Division of Entomology research scientist, Dr David Briese, says with the \$60 000 raised by the shires, students were employed to step up the testing and mass rearing of the weevils during summer. Field cages have been built to facilitate wider releases of the control agents. The contribution will also speed up testing and

release of other control agents such as the stem borer and seed fly.

Briese says the noxious weed officers from each shire also help by locating and helping to set up sites for insect release, and by organising field days. He says a network is being established to assist ongoing collaboration between CSIRO and the community.

'The pressure is on for biological control agents to be distributed faster,' Briese says. 'The role of local governments is becoming more and more valuable in this and bio-control is a good option for councils because it cuts costs.'

Shire councils and NSW Agriculture have also helped to release a mite to control St John's wort, a noxious weed that has infested pastures since early this century. They have worked with CSIRO to mass-rear the mites and release them at more than 170 sites in NSW and Victoria. Biological Control Group scientific liaison officer, Sharon Corey, says collaboration is vital to ensure that the mite is spread quickly.

Corey says the division's bitou bush program will also be more effective thanks to the involvement of councils and Landcare-dunecare groups along the east coast of NSW.



Division of Entomology

Bill Pettit and Dr David Briese from the Division of Entomology release the weevil *Larinus latus* onto Scotch thistle.

There has been interest from shire councils in the possibility of a biological control program for serrated tussock. Corey says because the chances of obtaining grants from rural industry funding bodies are slim, the councils plan to contribute at least part of the funds required for such a program and run their own campaign to obtain the rest.

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Native grasses add interest to low-maintenance

Native grasses are becoming popular as a low-cost, attractive alternative to mown turf in public landscapes, but seed supplies are low, and much remains to be learned about their establishment and management.

Trials conducted by Dr Brian Sindel and his team at CSIRO's Division of Plant Industry have shown native grasses to be ideal for low-maintenance and low-management applications. They grow slowly, become established without nutrient addition and are comparatively drought-hardy if mulched at sowing, Sindel says. For these reasons they may require less mowing, water and fertiliser than introduced turf grasses.

Native grasses generally produce

relatively few seeds which shed easily and irregularly, making seed harvesting difficult and expensive. To overcome this deficiency, a process of selection on one of the cool-season wallaby grass species (*Danthonia richardsonii*), was initiated, the aim being to select a variety (known as 'Hume') that would produce large quantities of seed suited to mechanical harvesting and commercial production. CSIRO has entered into a commercial agreement with Melbourne company Heritage Seeds for its multiplication and sale. It is anticipated that seed will be released in 1994.

In association with the Roads and Traffic Authority of New South Wales, sowings of wallaby grass have been

compared with standard seed mixes in a roadside trial near the NSW-ACT border. Sindel says the trial, now in its fifth year, has shown that given the right environmental conditions, *Danthonia richardsonii* establishes well from seed and that at high enough densities can provide excellent long-term cover, virtually free of weeds.

A second project funded by the RTA was begun in 1989 to determine the seed production and domestication potential of a complementary warm-season native perennial species, kangaroo grass, (*Themeda triandra*) with the aim of using it for revegetated roadsides.

Sindel says trials have revealed a huge variation in the tolerance of

Daintree community to save cassowaries

A study by CSIRO's Tropical Forest Research Centre in Atherton into cassowary numbers in the Daintree area of Far North Queensland will assist decisions about land use, chairman of Douglas Shire Council, Mike Berwick, says.

The report on cassowary populations and their conservation between the Daintree River and Cape Tribulation triggered the formation of a new community cassowary conservation initiative when it was presented at a public meeting held at Cow Bay, north of Daintree, on June 19.

Cr Berwick, whose shire covers the Daintree region, said that the report was particularly useful in making people realise that it was not possible to fragment cassowary habitat without jeopardising their survival. The survey confirmed that areas favoured by cassowaries were the same as those favoured by people.

'The cassowary's strongholds are those areas that have been cleared the most, that are mostly in private ownership and that are being settled and developed rapidly,' the authors, Francis Crome and Les Moore, say.

The survey produced an estimate of 54 adult cassowaries in the 16 000 hectares between the Daintree River and Cape Tribulation. The areas of greatest density (mostly on private freehold land) were similar to the biggest cassowary concentrations in the Mission Beach area where a community conservation group was established two years ago following a study by CSIRO and the Australian National Parks and Wildlife Service.

The Daintree survey identified critical,



Division of Wildlife and Ecology.

important and marginal habitat zones as well as natural corridor zones. It found that the central Daintree lowlands and foothills between the Alexandra Range and Table Mountain and the Noah Creek lowlands must be considered significant cassowary habitat, not only for the region, but for the Wet Tropics as a whole, with bird density comparable with other cassowary 'hot spots' at Mission Beach and Mt Whitfield.

As a result of the meeting at Cow Bay a recommendation has gone to the Douglas Shire Council to seek funding from the Wet Tropics Management Agency for the appointment of a co-ordinator to assist in the conservation of cassowaries, the rehabilitation of important habitat areas and developing public awareness of the many issues concerning cassowary conservation.

Les Moore (centre) takes measurements of an adult cassowary. CSIRO has prepared a report on cassowary numbers in the Daintree region of Far North Queensland.

The community will now use the information gained in the survey to develop strategies for safeguarding the remaining habitat.

The survey work was done on foot by Les Moore over a six month period. Each of the 19 survey zones covering a total of 7000 ha was systematically traversed for a period from two to five days. CSIRO's Tropical Forest Research Centre is part of the Division of Wildlife and Ecology.

Peter Trott

landscapes

kangaroo grass to acid soils. This suggests that varieties could be bred to combat this widespread and increasing problem in Australia.

Kangaroo grass takes up less soil moisture than wallaby grass and the introduced species perennial ryegrass and tall fescue. This may indicate a reduced requirement for irrigation, greater avoidance of stress during prolonged drought and, perhaps, the usefulness of kangaroo grass for revegetating water catchments where runoff needs to be maximised.

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Division of Plant Industry

CSIRO is developing native grasses that provide an attractive, low-maintenance alternative to traditional turf species.

