

(for radiata) is of a twenty to twenty five year rotation without extraction thinning and with selective pruning of only a number of butt logs." This idea had been developing as I did more grade study analyses. It is, of course, the short rotation proposal.

The two papers above were part of a failed thesis.

3. Douglas fir profitability. *New Zealand Journal of Forestry Science* 6 (1): 80-100, 1976.

4. I wrote sections on risk; and marketing in the FRI

symposium on Douglas fir (in 1973 ?)

5. Three papers covering a decade of trans-Tasman trade all included volume and value data on Douglas fir e.g. *Trans-Tasman Forest Products trade after a decade of NAFTA*. *NZ J. For. Sci.* 9(1) 100-123.

R Fenton,
Jomtien
Thailand

news

Natural enemy unleashed on buddleia

The Chinese weevil *Cleopus japonicus* was released into Rotorua's Whakarewarewa Forest this week as the first step in biological control of *Buddleja davidii* (buddleia) in New Zealand.

The release marked an important milestone for Ensis Forest Biosecurity and Protection (FBP) researchers, government funding providers, the Forest Biosecurity Research Council, and members of the forest industry who have supported this initiative.

Buddleia is a woody species with attractive purple flowers that was introduced to the country as an ornamental shrub and has since become one of the biggest weed problems in New Zealand forestry.

Its capacity to out-compete young trees makes buddleia a serious problem for forest owners, particularly in the Central North Island.

Dave Little, Harvesting and Marketing manager of Crown Forestry, says that forest owners see the release of cleopus as a milestone in buddleia control, and they will be watching with great interest to what impact it may have.

"The industry is under constant pressure to reduce chemical use, and the cleopus initiative demonstrates how we are keen to support serious efforts to find alternatives."

Ensis FBP scientists based in Rotorua identified the leaf-eating weevil ten years ago as a potential biological control agent against this aggressive weed. Cleopus was approved for release by ERMA [Environmental Risk Management Authority] after a long and rigorous process to screen the insect's diet to ensure it does not have an appetite for native or beneficial species.

Ensis scientist and project leader, Dr Brian Richardson says if cleopus is able to establish successfully in the New Zealand environment, it has the potential to stunt the growth of buddleia through defoliation and enable young trees to out-compete the weed.

This could mean cost-savings to the forest industry, and a decrease in the amount of chemical herbicides required to control buddleia.

"Buddleia now costs the New Zealand forest industry between \$0.5 and \$2.9 million annually in control costs and lost production. It also compromises biodiversity in

From left - Nod Kay, Ensis entomologist who initiated the project, Dr Darren Kriticos (Ensis) who is leading the monitoring of cleopus spread and Rotorua MP, Steve Chadwick



native forest areas where weed control is seldom carried out, including slips and river beds," he explains.

It is anticipated that the cleopus weevil will slowly spread into all areas where buddleia is abundant, a process that will be encouraged by further releases in affected forests.

Dr Richardson says the release of a new insect into New Zealand's environment is a significant occasion, so the cleopus weevil was liberated in Whakarewarewa Forest with the blessing of local iwi.

"We wish cleopus all the best, and hope it enjoys a good feast on buddleia in New Zealand."

Cleopus will be released at five study sites in plantation forests around the Bay of Plenty and Hawke's Bay.

"After the initial testing, cleopus will be made available to regional councils and others," Dr Richardson explains.

Despite the need for management tools to control buddleia and other weeds, Dr Richardson says biological control is never undertaken lightly and every effort is made to reduce risks to the environment. The Foundation for Research, Science and Technology has been a key investor over the last decade in the development of the science underpinning cleopus and will continue to provide funding to support post-release monitoring and research. The investment has been made through the Foundation's Environmental Research Fund.