greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

Report	11.333
Date	4 July 2011
File	WB/04/01/11
Committee	Environmental Wellbeing Committee
Author	Richard Grimmett, Senior Biosecurity Officer (Plants)

Bio-control opportunities in the Wellington region

1. Purpose

To inform the Committee of the increased benefits which will be achieved by expanding the existing biological control (Bio-control) programme for pest plants within the Wellington region.

2. The decision-making process and significance

No decision is being sought in this report.

3. Background

Bio-control is an important tool as part of integrated pest management. It is cost effective, low risk and has huge merits as a means of suppressing weeds without the use of herbicides. A successful bio-control agent requires limited ongoing management and persists in the environment.

The Biosecurity Department contributes $50,000 annually to the National Biocontrol Collective that involves 15 regional councils and DoC and is managed by Landcare Research. The collective operates on an annual budget of $550,000-650,000 per annum for the research and development of biological control. This includes national surveys of targeted species, home range surveys for potential agents (overseas) and host specificity testing which can take years in some cases.

Additional funds are allocated each year for the purchase of bio-control agents for release within the region. This cost varies depending on the agents that are available but is generally around $10,000 p.a.

Around 0.5FTE staff time is currently allocated for bio-control operations. The main objectives for staff are to:

- Purchase new agents and release in the region
- Where possible collect new agents from other councils or DoC at minimal cost to GW
- Supply agents which are well established within Greater Wellington (GW) to other councils on request
- Distribute established agents throughout the region
- Monitor establishment successes, spread and outcomes
- Promote and raise awareness to landholders

4. Comment

4.1 GW successes

To date 29 agents have been purchased and released at 127 different sites in the region. A total of 585 transfers of established agents have been made in addition to this. Also a number of releases have been supplied to Horizons Regional Council. Some of the biocontrol agents have made a significant impact in the region and are readily recognised by the public. There is a high level of awareness of ragwort agents amongst the farming community. Regular requests for ragwort agents are received. Ragwort flea beetle has been subsequently harvested and distributed to landowners throughout the region with positive results recorded anecdotally.

Positive results from newly established agents on buddleia and Californian thistle are being recorded. Californian thistle is a pest plant which is spread throughout the country costing millions each year in production costs and requiring large amounts of chemical for limited control. A suite of effective agents on this plant would increase production and greatly reduce the dependence on chemical applications within the region.

Old Mans Beard and broom are significant pests in our river corridors. Whilst some agents exist for these pests there are opportunities to import more to reduce the current heavy reliance on chemical control adjacent to waterways.

4.2 National successes

There have been very positive results from the mist flower fungus in Auckland and Northland. Detailed studies have shown the fungus (*Entyloma ageratinae)* reduced the mean percentage of mist flower from 81% to 1.5% over five years, and that species richness was increased at these localities.

The ragwort flea beetle is well known and highly regarded as an important factor in the suppression of ragwort on productive land nationally and locally. As a result of this success herbicide use to control ragwort has fallen dramatically. As much of this information is anecdotal the actual economic benefits of the ragwort flea beetle have not been accurately assessed. A recent survey carried out by Landcare Research in conjunction with regional councils on ragwort asked a number of questions, one of which was “provide three words that best describe your view of biological control of ragwort. Four land owners were asked this in the Wairarapa and their answers were

"environmentally brilliant", "simple, consistent, reliable", "very good" and "the cats whiskers". None of these answers were prompted.

4.3 International success

The prickly pear moth (*Cactoblastic cactorum*) successfully controlled millions of hectares of land overrun by prickly pear in Australia. Within 10years the infestation had been reduced by 99%. The moth has kept prickly pear under control ever since.

4.4 On-going risks

There are three areas of risk to the bio-control program. The first is potential damage or attack to non-target species. This is researched extensively by Landcare Research and other institutes involved in this programme. Rigorous native and beneficial plant feeding trials are required by the Environment Risk Management Agency (now Environmental Protection Agency) for permission to import, test and release bio-control agents.

Secondly, release of new biocontrol agents is dependent on Landcare Research continuing to receive enough Crown funding to further develop the bio-control programme. The contributions to the collective are not inflation adjusted so Landcare Research are working with diminishing funds each year.

Thirdly, there has been limited monitoring both nationally and regionally resulting in management decisions based on anecdotal evidence and gut feelings. Landcare Research has recently held a national workshop to encourage monitoring and to establish appropriate assessment procedures. To complete this monitoring, participating councils will require additional resources. On a regional basis GW is at the forefront in the drive for a nationally accepted protocol to monitor the effects of all bio-control agents.

Enhanced monitoring will enable better understanding of where and how the bio-control agents colonise their target species. Instead of just releasing bio-control agents, best practise on establishing and transferring species can be determined. Also scientifically collected data will increase confidence in the use of bio-control agents and assist in promoting bio-control as an important and effective pest control tool.

4.5 Options for the future

Increased resources to develop appropriate monitoring programmes will improve GW's outcome results and result in informed decision making, resource allocation and promotion.

Increased resources would allow additional purchases of bio-control agents. These could be available for use either to complement those already working on a pest species or new agents for use on newly targeted pest plant species.

Examples of agents available this year which could be potentially beneficial to the region are ($ per release):

- Broom gall mite $1,000
- Broom leaf beetle $3,000
- Californian thistle stem miner $6,000
- Tradescantia beetle agents (x3) $4-6,000 each
- Green thistle beetle (Californian thistle) $3,000

For this current financial year the budget allocation of $10,000 will be used for one green thistle beetle release and two tradescantia leaf beetle releases. Ideally the program could be doubled to allow the simultaneous release of bio-control agents on both sides of the Rimutaka ranges. This would improve the distribution of such agents across the GW region. The benefit of such an approach is quicker establishment and consequently reduced herbicide use, especially into high value and sensitive environmental areas which will also free up funds for other biodiversity functions.

5. Communication

Biosecurity staff have organised a biocontrol workshop scheduled for 25 July 2011 to raise awareness of the benefits that biocontrol offers to the environmental and economic wellbeing of the region. Invites have been extended to GW staff from other departments, territorial authorities, other agencies and the general public.

6. Recommendations

That the Committee:

1. ***Receives*** *the report.*

2. ***Notes*** *the content of the report.*

Report prepared by:

Richard Grimmett
Senior Biosecurity Officer (Plants)

Report approved by:

Davor Bejakovich
Manager Biosecurity

Wayne O'Donnell
General Manager, Catchment Management