

Report to Forest Biosecurity Consultative Committee

Update on current MAF Biosecurity New Zealand forestry-related Post Border Surveillance, Pest Management and Incursion Response Activities For the meeting on Thursday March 6 2008

DUTCH ELM DISEASE, AUCKLAND (Disease Management programme)

- MAF Biosecurity New Zealand approached territorial authorities throughout New Zealand to seek financial contributions to address a funding shortfall for 2006/07. Auckland territorial authorities made a similar approach to currently unaffected territorial authorities during 2003/04 and again in 2005/06. The responses in all cases were limited.
- Three options for future management of the DED programme were identified, according to the level of funding committed:
 - a) **More than \$200,000** per annum over the next ten years: MAF Biosecurity New Zealand will continue its coordination role, including a commitment to provide one third of the programme's funding (a minimum of \$100,000 per annum).
 - b) **Between \$100,000 and \$200,000** - If requested, MAF Biosecurity New Zealand will act as a facilitator for a limited time to enable Councils to maintain the programme, but will not provide further financial contribution.
 - c) **Less than \$100,000** - MAF Biosecurity New Zealand will quickly transition out of the programme and allow regional or local authorities to manage or react to Dutch elm disease as they wish.
- A total of 14 territorial authorities (out of 86 approached) responded positively with funding, committing approximately \$100,000.
- The funding commitment by territorial authorities just triggers "Option b" where MAF Biosecurity New Zealand will act as a facilitator for a limited time to enable affected Councils to maintain the programme, but will not provide further financial contribution.
- MAF Biosecurity New Zealand has informed all Territorial Authorities of this decision and the new funding arrangements.
- MAF Biosecurity New Zealand is now working with Auckland City Council interested to facilitate a transfer of the programme to their management.
- MAFBNZ has not issued a public statement about changes to the Dutch Elm Disease programme as we are still working through the transition arrangements and as yet there are no changes for the public.

INTERNAL PATHWAY MANAGEMENT

- As part of a 2006 Budget bid, MAF sought and received funding to explore whether the level of risk reduction that can be achieved through internal border management represents value for money relative to other biosecurity measures.
- A project has been started to look at the risks associated with major domestic pathways and vectors, evaluate the potential management options, and assess the merit of any further investment in this area.

- Phase one of this project is currently being developed into a project management plan. Phase one will be a scoping exercise that will provide a better understanding of the current state of pathways and their management as well as the development of a pathway risk assessment methodology.
- Interested/affected parties (internal/external) will be identified for participation, consultation or to be informed as appropriate in relation to identification and resolution of issues.

NATIONAL INTEREST PESTS RESPONSES

- In 2004, Cabinet assigned MAF a new accountability for national pest management programmes, except for animals managed under the Wild Animal Control Act and freshwater fish, from 1 July 2005. As a result, five national pest management programmes were transferred to MAF from DOC.
- The Central Regional Government Biosecurity Forum endorsed an interim process for deciding when MAF will lead the delivery of national pest management programmes on 17 October 2006. This included principles and criteria for decision making and the overall process to be followed.
- In December 2006 an Inter-agency Advisory Group (comprising members from Regional Councils and Central Government) considered 20 pests that had been nominated as possible candidates for National Interest Pest Responses. It recommended that 11 pests be managed at national level, and MAF accepted this recommendation. The 11 pests in order of priority are:
 1. *Salvinia molesta*
Salvinia
 2. *Eichhornia crassipes*
Water hyacinth
 3. *Sorghum halepense*
Johnson grass
 4. *Moraea flaccida* (syn. *Homeria collina*)
Cape tulip
 5. *Ehrharta villosa*
Pyp grass
 6. *Phragmites australis*
Phragmites
 7. *Hydrilla verticillata*
Hydrilla
 8. *Ceratophyllum demersum*
Hornwort
 9. *Bryonia cretica subsp dioica*
White bryony
 10. *Trichoglossus haematodus*
Rainbow lorikeet

11. *Zizania latifolia*

Manchurian wild rice

- Ten of the eleven responses have now been rolled out. DOC is delivering 3 of the responses and the Regional Councils are delivering 3 responses.
- During 2007, operational plans were developed, in consultation with Regional Councils, DOC, experts, researchers and others with experience in their control. A Technical Advisory Group (TAG) was established to ensure optimum design of all plans over time and met on 16 November 2007.
- The exception is for Hydrilla, an aquatic weed found in only four lakes in Hawke's Bay. Substantive consultation is required for this response (e.g. with iwi, fish & game, in addition to DOC and the regional councils) and this is in progress. The operational plan is expected to be completed by the end of March.
- Common to all the responses is a particular focus on increased surveillance and public behaviour change and education. These will help in locating unknown populations of pests and in altering behaviours likely to allow the pests to be introduced or spread.
- The Department of Conservation and Regional Councils (represented by the Biosecurity Managers Group) have previously expressed a strong desire to form service delivery partnerships with MAFBNZ; where this would enable effective management of national interest pests and build on the service delivery strengths of those agencies. A small working group (comprising Regional Council, DOC and MAFBNZ representatives) was formed in late 2007 to explore this.
- In October 2007, the working group considered a discussion document (prepared by MAFBNZ) titled *Procurement models for the delivery of response services in partnership with the Department of Conservation and Regional Councils: Document for discussion between MAF Biosecurity New Zealand, Department of Conservation and Regional Councils*. The discussion document identifies the basis for agreeing when the parties would enter into such partnerships, and the principles and processes that would guide the formation of agreements.
- This work will continue through to May 2008, with a view to forming lasting operational agreements that will span multiple years where appropriate.
- In the interim and to enable roll out of response programmes for the current season (through to 30 June 2008), both 'MAFBNZ and DOC' and 'MAFBNZ and affected Regional Councils' have already finalised and ratified separate interim operational agreements.

SUBTERRANEAN TERMITES – NELSON AND AUCKLAND

- A colony of Australian subterranean termites, *Coptotermes acinaciformis*, was detected from Richmond, Nelson in January 2006 and at a property in South Rodney, Auckland in January 2007. The likely sources of both infestations are historically imported Australian railway sleepers used in landscaping. An eradication programme is underway at both locations.
- MAF Biosecurity New Zealand is eradicating the subterranean termites using the Sentricon Baiting system that uses the active ingredient hexaflumuron, which has been

proven to prevent termites from moulting, resulting in death and eventual elimination of the colony.

- In Nelson, inspections throughout 2006 through to summer 2007 indicated that termites were ingesting considerable amounts of toxic bait. The last bait station inspections were completed in May and June 2007. There were no signs of termite activity, indicating that the colony is eliminated. A monitoring programme will be operation for up to five years before the infestation can be declared eradicated. No live termite activity has been detected following the September/October 2007 and December 2007 monitoring events. A third delimiting survey out to 100 m from the two infested sites is planned for April 2008.
- In Auckland, bait stations and monitoring devices are checked monthly. Activity has not been detected since March 2007; however surveillance is continuing to confirm colony elimination. Once confirmed, monitoring will continue on a three monthly basis for up to five years. Like Nelson, a follow up survey is planned in early April 2008 to inspect all wooden buildings and structures, and all other possible host materials 500 m out from the termite infestation.
- An application for full registration of the termiticide hexaflumuron was lodged with the Environmental Risk Management Authority (ERMA) in October 2007. To ensure hexaflumuron is available for the Auckland termite response, a special emergency was given by the Minister on 24 December 2007, and has formally been accepted by ERMA until full registration is obtained.

DAMPWOOD TERMITES – LYTTELTON, KAIPARA AND AUCKLAND

- Colonies of the Australian dampwood termite *Porotermes adamsoni* are known at three locations in New Zealand: Lyttelton (Canterbury), Kaipara (Northland) and Auckland. The source of the infestations is likely to be historically-imported timber such as railway sleepers and utility poles.
- *P. adamsoni* attacks dead wood and living trees (principally eucalypts, but also other species including *Pinus radiata*). It is considered a forest pest in southern New South Wales and Victoria. It is not a serious pest of houses in Australia, but may attack house timbers where decay allows access.
- Lyttelton infestation: This is a long-standing infestation at Lyttelton wharf, detected in 1963. The wharf was constructed of Australian hardwood timber imported in the 1950s. Because of inaccessibility of the wharf timbers, eradication has not been considered feasible. However, the termites are considered contained within the wharf area, and are managed by visual inspections when wharf maintenance is carried out and the removal and destruction of infested timber as it is found. MAFBNZ is assessing the need for a more proactive surveillance programme.
- Kaipara infestation: Detected February 2007 when an alate (winged reproductive) was found in a spider web at a private residence in Kaipara Flats. Surveillance at the time did not locate the colony.
- Auckland infestation: Detected February 2008 when several alates were caught in a private residence in Remuera.

- Surveillance is currently underway in an effort to locate the Kaipara and Auckland colonies. In both cases, the alates were caught close to railway lines where sleepers and other structures made from imported Australian timber are present.

RED IMPORTED FIRE ANT - WHIRINAKI

- On June 7th 2006 *Solenopsis invicta* (Red Imported Fire Ant) was identified from Pan Pac Forest Products Ltd, Whirinaki. The nest was thoroughly treated with an insecticide drench and insecticidal ant bait on June 9th.
- The nest is estimated to be two to three years old and dispersal flights may have occurred.
- This form of fire ant is more likely to disperse by walking short distances rather than flying but is also capable of human-assisted dispersal.
- A Controlled Area has been declared out to a 2 km radius from the nest site and will remain in place until eradication is declared, which is expected in June 2009, provided no further fire ants are found.
- Surveillance through out the Controlled Area has been/is being conducted each summer season.
- Insecticidal fire ant baits are being applied within the Controlled Area where surveillance can not be conducted effectively.
- No further fire ants have been found to date.

This is the third incursion of red imported fire ants in New Zealand, both previous finds were eradicated. Genetic analysis has confirmed that the Whirinaki colony is unrelated to the previous incursion at Port of Napier in 2004.

ORANGE FRUIT BORER MOTH (OFB)

- The orange fruit borer moth (*Isotenes miserana*) was detected in Auckland. A solitary male moth was collected by an amateur entomologist, and subsequent surveillance activity has located OFB around the original site of detection and at an additional site approximately 400m away.
- OFB is a cryptic species and this makes surveillance and response actions potentially very difficult. There is no pheromone currently available for OFB.
- OFB has a wide host range with potential impacts for the avocado, citrus, ornamental plant, and tree crop industries. Control programmes to manage other insect pests, such as onion thrips, provide control of the current leafroller assemblage and it is likely that this will occur with OFB as well. In Australia OFB is one of a suite of about 8 species of leafroller that together are considered to cause moderate to severe damage to *Pinus radiata*. In New Zealand at least four species of leafroller have been associated with *Pinus radiata*. It is anticipated that any effects of OFB would be similar to that of leafrollers already present.
- The High Risk Site Surveillance programme is actively looking for sign of OFB. To date no sign of OFB has been detected.

- The cost estimates for an attempting eradication of OFB based on the current scenario (known distribution 5 properties including one site 400metres away from the original detection) is estimated to be in order of \$470,000 for one-off control costs (ground spraying, post-treatment monitoring and host removal) with ongoing monthly costs (surveillance, movement control) of approximately \$70,000. Should the moth be detected 2km away then the one off-control costs (ground and aerial spraying, post-treatment monitoring, movement controls, communications) escalate to over 2.2million dollars.
- A simple economic impact analysis has been prepared based on the Painted Apple Moth model. The model estimates a total cost to New Zealand (excluding conservation and increased costs of trade) in the absence of coordinated intervention for low and high impact scenarios, and for discount rates of 10% and 7%. The high impact scenario models higher damage to forest production and greater numbers of households spraying and therefore spending more per household, The analysis estimates costs of between \$530K (low) and \$3.3million (high) -discount rate 10%, and between \$1,1million (low) and \$6.9million (high) -discount rate 7%.
- From this work MAFBNZ has concluded that the costs of intervention significantly outweigh the benefits of an eradication programme, and consequently further MAFBNZ involvement is not appropriate.
- No effect of OFB on kanuka and manuka is anticipated as no members of these genera to which these species belong have been reported as hosts in Australia.
- OFB is able to complete its development on pohutukawa (*Metrosideros excelsa*). The effect on this iconic species appears to leaf-tying and leaf feeding; defoliation has not been observed on this or other species. It is anticipated that OFB will not have a major impact on pohutukawa.
- New Zealand has a rich leafroller fauna, both exotic and indigenous species, with an associated parasitoid and predator assemblage. Some of these species are polyphagous and it is anticipated that some level of attack will occur on OFB.
- A technical report summarizing the background, analysis of this detection (including response option and cost-benefit analysis) has been distributed to key stakeholders for comment.

BIOLOGICAL CONTROL OF GUMLEAF SKELETONISER

- Gumleaf skeletoniser is an Australian moth that continues to create problems in the greater Auckland region on eucalypts and a range of amenity tree species. GLS has now been found in Huntly, Hamilton and Cambridge, so appears to be becoming established in the Waikato region.
- Work on biological control of gumleaf skeletoniser has been underway for some time, funded largely by MAF. A Sustainable Farming Fund grant has been secured by the Gumleaf Skeletoniser Stakeholder Group to support Scion in continuing the project until 2010. This project is co-funded by FRST, FIDA (Forest Industry Development Agenda), FBRC and Farm Forestry Association, along with industry and Regional Council support.
- Scion entomologists have narrowed the potential agents down to two parasitic wasps: *Cotesia urabae* and *Dolichogenidea eucalypti* (Hymenoptera: Braconidae). Both wasps are believed to attack only gumleaf skeletoniser caterpillars. They lay their eggs inside the host caterpillar and the parasitic larva eventually emerges, killing the host.

- Host range testing is underway in quarantine in Rotorua on *Cotesia urabaeto* to determine the safety of this species against native and beneficial Lepidoptera in New Zealand. A range of choice and no-choice experiments are underway against five non-target species. Preliminary observations have shown that the parasitoid is willing to attack four of these species when confined together in a small dish. However it is too soon to determine if this attack will have any significant effect on the wellbeing of the caterpillars, or if they would pose any threat to the caterpillars in the wild. The answers to these questions will become clearer once the results of the experiments are obtained. Further experimentation will be done on the other parasitoid species, *Dolichogenidea eucalypti*, when it becomes available.
- Once the most suitable parasitoid has been identified, and host range testing and community consultation are complete, an application will be submitted to the Environmental Risk Management Authority (ERMA) to gain approval to release the insects in New Zealand. If the application is successful, releases of the biological control agent will then be made with the help of councils and forest owners in regions affected by gumleaf skeletoniser.