to deal with possible incursions. This planning needs to include:

1. review of internal reporting systems for unusual forest health observations by staff and contractors;
2. identification of key personnel who are authorised to make potentially critical decisions regarding pest and pathogen response;
3. models of spread through forest resources of different pests and pathogens;
4. models of potential direct and indirect economic impact; and
5. practice of response plans through exercising field and management staff in table-top type scenarios.

Management models are already available in terms of forest biosecurity management. Dr Gordon Hosking has produced an emergency response guide as a part of the Forest Research, Forest Health Group, PGSF output. Another system also exists, one that is being adopted as a standard protocol by New Zealand’s emergency management agencies. The New Zealand Coordinated Incident Management System (CIMS) is aimed at the management of emergency situations and has been endorsed by, amongst others, the New Zealand Forest Owners Association. Such models provide an approach to managing risk associated with normal or deliberate biosecurity incursions, but they need to be implemented in a timely fashion and reviewed on a regular basis. Other questions also need to be answered. Does the deliberate release of an economic pest pathogen constitute a terrorist act or is it criminal in nature? If it is defined as terrorist in nature how does this affect business insurance?

### Biosecurity in the forest industry: the spectre of deliberate release

While the deliberate release of pests or pathogens to impact upon either individual businesses or the New Zealand forest industry as a whole is unlikely, it is a scenario that needs to be considered industry-wide and factored in to current biosecurity risk management. It does differ from normal biosecurity incursions in that barriers to incursion will have been circumvented, there is generally a specific goal to the act, and that not only is it a biosecurity management problem, but is also a criminal act that will require investigation.

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### New psyllid pests found on eucalypts near Auckland International Airport

A recent forest health surveillance survey by Vigil has identified two new psyllids on *Eucalyptus botryoides* near Auckland International Airport. They are the lerping species *Creis literatus* and another free-living psyllid *Anoeconeossa communis*, often found in association with *Creis* (and also *Cardiaspina*) making use of the lerp for shelter and protection. *Creis* is a known pest species in Australia where it causes significant damage to commercial plantations of some eucalyptus species including *E. dunnii*, *E grandis*, *E ovata*, *E saligna*, *E botryoides*, *E goniocalyx*, *E cordata*, *E paniculata* and *E robusta*.

*A. Communis* is identified as a pest of species such as *E camaldulensis* and the red flowering gum, *E leucoxylon*. Heavy attack by these species causes leaves to turn red and necrotic, and gives the tree a purplish hue from a distance.

*Creis* is reportedly at outbreak numbers in northern NSW at present, previous spraying trials with malathione have only been partially successful, and insect numbers rebuild quickly. Heavy infestation can result in severe growth suppression and occasionally, tree death.

The population identified at Auckland International Airport appears to represent the remains of a generation grown up over the last summer on a stand of *E. Botryoides*, most adults have since dispersed and only a few early instars are present. Surveys have since located the same species on stands up to 2.5 km away in most directions.

The association of the same two species as occurs naturally in Australia, arriving at the same time suggests the likelihood that they arrived together on infected foliage. Even more interesting is the presence amongst the population of each species of a natural wasp predator, also both apparently new to New Zealand and arriving at the same time.

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**Creis on eucalypt foliage**

The likelihood of all four species making up this natural association blowing into Auckland Airport simultaneously is well outside the bounds of most statistical probability and almost certainly confirms transport on infected foliage. A recent container sampling trial by MAF found a relatively high percentage of containers with foliage amongst their contents, and up to 30% of this foliage was of *Eucalyptus* species so it is speculated that this was the method of transportation of the infected material. Trials suggest insects can remain alive for 4-10 days after leaves are pulled from trees, and as the relatively small amount known about the biology of the species indicates a 6 week life cycle it is possible at least 3 generations have occurred since the insect first arrived.

Retaining areas of potential host species around international airports and other gateways actually helps pests such as these establish. In this case the stands of *E botryoides* near Auckland International Airport have acted as an entry pathway – the pests would have had far less chance of gaining a foothold here with no potential host species close at hand. The proposed Biosecurity Strategy might consider ways to minimise the presence of significant commercial plant and animal species around this and other potential points of entry for pests.

Peter Berg