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Overview of plant import controls and incidences of harmful tree organisms—selected non EU countries

1 Background

This paper provides an overview of how countries outside the EU deal and have dealt with tree health and biosecurity issues. This paper builds upon a previous paper which set out the approaches to plant health and tree disease specifically within Northern Ireland, the UK and the EU as a whole.

It should be stressed that caution needs to be applied with regard to comparing the information presented within this paper and that contained in the previous paper dealing with Northern Ireland, the UK and the EU. The EU's so called Community Plant Health Regime standardises the approach to plant health across EU Member States and also operates within the context of a single market which limits the restrictions that can be placed on plant movements between EU Member States.

Countries outside the EU, not notwithstanding any special trade agreements that they may have with other countries, are able to regulate the area of plant health within their jurisdiction as they see fit.

With these caveats in mind however it does need to be recognised that the current EU Community Plant Health Regime and the systems used in many non EU countries are designed to meet the standards set out by the World Trade Organisation (WTO) Sanitary and Phytosanitary (SPS) measures agreement in 1995. The WTO SPS agreement effectively required the signatories to ensure that their plant health (Phytosanitary) measures were in line with the standards set by the International Plant Protection Convention (IPPC).

All of the countries referred to within this paper are signatories to the WTO and by default the WTO SPS measures agreement.

2 Plant import/biosecurity controls

Table 1 below sets out the main plant import controls utilised within the following non EU countries:

- Australia;
- New Zealand;
- South Korea;
- USA.

The table identifies the controls utilised for passengers entering the country, for the commercial importation of plants/plant material and any mechanisms utilised for plant/plant material movement within the country.

It is evident that these selected countries employ a range of mechanisms for controlling/preventing the introduction of plants/plant material which may pose a biosecurity hazard, but there are a number of issues worthy of note as follows:

- Individual passengers being required to fill out entry cards declaring plants/plant material they have in their hand or hold luggage – heavy penalties for failure to declare or false declaration;
- The use of risk based analysis to determine those plants species and points of origin which pose the greatest risk to indigenous plant health;
- The requirement for phytosanitary certification for imported plants/plant material;
- The use of quarantine procedures – either pre or post entry. Post entry requirements for nursery stock in particular meaning that plants need to be treated and proven pest free before being released;
- Checks on packing material and containers to reduce the risk of pest introduction;
- The role of local/state government in pest management/control – Australia New Zealand and USA.

Country	Entry control requirements for passengers entering the country in possession of plants/plant material	Entry requirements for the commercial importation of plants/plant material into the country	Requirements for the movement of plants/plant material within the country
Australia	<p>Australia's biosecurity policy is based on the assessment and management of pest and disease risk to human, animal and plant health and the environment.</p> <p>The Department of Agriculture, Fisheries and Forestry DAFF manages quarantine controls at Australia's borders to minimise the risk of exotic pests and diseases entering the country.</p> <p>In relation to individual passengers entering Australia they are all required to complete an incoming passenger card and declare if they are carrying food, plant material or animal products. Any declared items need to be taken to a clearance point for assessment by a DAFF biosecurity officer.</p> <p>Passengers also have the option of disposing of any food, plant material or animal products upon their arrival in quarantine bins provided in airport terminals.</p> <p>Plant/Plant material items that need to be declared include the following:</p> <ul style="list-style-type: none"> •tea containing seeds, fruit skin (for example citrus and apple peel) and fruit pieces; •remedies and medicines containing herbs, seeds, bark, fungi and dried plant material; •fresh or dried flower arrangements and potpourri; •dried herbs or leaves; •handicrafts—including wreaths and Christmas decorations—containing seeds, raw nuts, corn, pinecones, grapevines, bark, moss, straw or other 	<p>The Department of Agriculture, Fisheries and Forestry (DAFF) requires importers of plants/plant material to satisfy any quarantine concerns.</p> <p>DAFF maintains an Import Conditions (ICON) database which sets out the quarantine conditions required for various products. The ICON database carries data on more 20,000 foreign plant, animal, mineral and human commodities</p> <p>In simple terms this database categorises products as falling within one of the following three categories:</p> <ul style="list-style-type: none"> • Entry permitted; • Entry currently prohibited but require further assessment; • Entry prohibited; <p>For those items permitted entry into Australia the ICON database sets out the specific entry and quarantine requirements that will need to be met such as the need for:</p> <ul style="list-style-type: none"> • Notification that the shipment is coming in; • A Valid Import Permit – application to DAFF prior to import; • A Phytosanitary certificate, which confirms the material as free from pests/disease, issued by the government of the country where the material originated. <p>All plant/plant material consignments entering Australia must be visually inspected on arrival by a</p>	<p>Movement controls also exist that cover inter-state movement within Australia. These controls and the species covered are managed by the individual state government structures within Australia.</p> <p>Materials that individual people are proposing to move between states are labelled according to what can enter the destination state, in one of the following three ways:</p> <ul style="list-style-type: none"> • You can carry this item with you without restriction when travelling to this state/territory • PCI - You need to obtain an appropriate permit or certificate or provide more information to carry this item with you when travelling to this state/territory. • You cannot carry this item with you when travelling to this state/territory. <p>Commercial movements are governed by similar conditions but importers/exporters are required to contact the state governments involved to clarify requirements.</p>

	<p>plant material;</p> <ul style="list-style-type: none"> •wooden items with bark or signs of insects present <p>Items declared will often be returned to passengers after inspection. However, any items identified as presenting a biosecurity risk will be withheld. Depending on the risk, passengers can:</p> <ul style="list-style-type: none"> •pay for the item to be treated (for example fumigation, gamma irradiation)* •store the item at the airport for collection upon departure from Australia* •export the item*, or •have the item destroyed. <p>(options marked with * have costs which must be borne by the passenger)</p> <p>DAFF makes every effort to minimise the risk of damage caused as a result of treatment, but does not accept liability for any damage that may occur.</p> <p>Any passenger making a false declaration which is discovered upon inspection of baggage can be liable to either:</p> <ul style="list-style-type: none"> • A A\$340 on the spot fine; or • Prosecution, a fine or more than A\$66,000 and risk 10 years in jail and a criminal record. <p>Passengers will not be penalised if all items are declared – even if they are not allowed into Australia.</p>	<p>Quarantine officer for freedom from bacterial and fungal infection, disease symptoms, live insects and any other extraneous contamination of quarantine concern. Any infected or contaminated material is held and referred to an Australian Quarantine and Inspection Service (AQIS) plant pathologist for assessment and advice on actions that need to be taken.</p> <p>Live plants that are passed by a Quarantine officer are then sent directly to a post quarantine facility where they are fumigated and then grown for a minimum period and until required disease screening/testing is completed.</p> <p>Imported materials also need to meet the conditions of a Non-Commodity Information Requirements Policy. This policy deals with issues such as the cleanliness of the container in which materials were imported and the nature of the packaging material and any associated concerns or risks.</p>	
<p>New Zealand</p>	<p>New Zealand has very strict biosecurity procedures at airports and ports to prevent the introduction of pests and diseases of animals and plants. These procedures are managed by the Ministry for</p>	<p>Import health standards are in place for the import of plants and plant products into New Zealand.</p> <p>The first step in the importing process is to determine</p>	<p>There appear to be no general control regulations for plant/plant material movements within New Zealand but specific conditions or requirements can be set by the MPI for any plants/plant material imported into New Zealand, in</p>

	<p>Primary Industries (MPI).</p> <p>On arrival, all passengers are given a Passenger Arrival Card to fill in which is a legal document. In relation to plants and plant material the Passenger Arrival Card asks passengers to answer yes or no to the following question;</p> <p>Are you bringing into New Zealand, plants or plant products: including fruit, vegetables, leaves, nuts, parts of plants, flowers, seeds, bulbs, fungi, cane, bamboo, wood or straw?</p> <p>Passengers are also asked to declare if they have in the past 30 days (while outside New Zealand) visited a forest, had contact with animals (except domestic cats and dogs) or visited properties that farm or process animals or plants?</p> <p>Giving false or incorrect declarations on the Passenger Arrival Card is a criminal offence and as such it may result in fines or imprisonment (People failing to declare biosecurity risk goods can receive an instant fine of NZ\$400, be fined up to NZ\$100,000 and/or face up to five years in prison.)</p> <p>On arrival passengers may see MPI Biosecurity Detector Dogs that are specially trained to sniff out risk goods, and passenger bags may also go through an X-ray machine. If any items are found, Biosecurity staff may open bags for inspection. Passengers must declare or dispose of any prohibited items before the biosecurity process. Amnesty bins are located throughout airports.</p> <p>There is no law against bringing at risk goods into the country as long as passengers declare them to a biosecurity officer. When items are declared, they</p>	<p>the specific requirements for the commodity you wish to import by searching for the appropriate Import Health Standard (IHS). It should be noted that If there is an import health standard, it will inform importers what they need to do to successfully import their commodity. Requirements can include the following:</p> <ul style="list-style-type: none"> • An import permit – application must be made to the Ministry for Primary Industries (MPI) • Inspection on arrival - A randomly drawn sample of 600 units, from each homogenous lot within in a consignment, shall be inspected on arrival. Where a lot is comprised of less than 600 units, 100% inspection is required • Infestation by visually detectable quarantine pests on inspection at the border must not exceed the Maximum Pest Limit (MPL) which is currently set at 0.5%. • A phytosanitary certificate • Pesticide treatments for whole plants and cuttings • Post-Entry Quarantine <p>The MPI also has an import health standard which describes the phytosanitary requirements that must be met for wood packaging material to be given biosecurity clearance into New Zealand. This requirement applies to dunnage, crates, fillets, spacers, pallets, drums, and reels. Inspection of packaging is completed at risk.</p>	<p>relation to its final destination or use.</p> <p>The 1993 Biosecurity Act also has provision for the creation of so called biosecurity control areas within which special conditions must be met. These conditions can apply to the movement of plants either into or out of the control area and are designed to either contain or prevent the introduction or spread of invasive species/diseases.</p> <p>Local government structures within New Zealand, in the form of councils, whilst not playing an active role in the implementation of movement controls are required to develop 5 year Regional Pest Management Programmes. These programmes are designed to assist and facilitate local government in creating and maintaining sustainable pest-free natural and man-made habitats¹.</p>
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¹ [Auckland Regional Pest Management Strategy 2007-2012](#)

	<p>are inspected. Goods may be treated and returned if considered safe or If the biosecurity inspector determines that the items are prohibited goods, they may be re-shipped or destroyed.</p>	<p>Every shipping container entering New Zealand must have an accompanying quarantine declaration. This attests to the cleanliness of the sea container and whether or not it is carrying wood packaging, which can harbour wood-boring insects or fungi. The container must be inspected internally and externally to ensure it is clean (free of dirt, grass, insects, seed, etc.).</p> <p>New Zealand is currently in the process of reviewing its approach to border biosecurity and it appears that the system will be adapted to be more risk based in order to make better use of resources.</p>	
<p>South Korea</p>	<p>All visitors who enter Korea must submit a written baggage declaration to a customs officer upon entry This declaration card asks passengers to state whether they are carrying any plants, all of which are subject to quarantine inspection.</p> <p>All items entering or leaving Korea must go through inspection. Some items are strictly prohibited in all places and at all times, while others are restricted only on board a flight. Plants, fruits and soil may be quarantined, depending on their origin, description, and condition.</p> <p>A failure to declare or a false declaration can result in imprisonment of up to 5years</p>	<p>The Korean Animal and Plant Quarantine Agency is responsible for regulating the importation of plants and plant material into South Korea.</p> <p>The Korean Animal and Plant Quarantine Agency utilises pest risk analysis in relation to plant/plant material importation. This pest risk analysis effectively determines the risks posed by different species from different countries as well as determining what materials can be imported and how they must be inspected, treated, or certified to be imported safely into South Korea.</p> <p>Any person intending to import plants or associated container and packaging for the plants requires a phytosanitary certificate.</p> <p>Any person importing items subject to plant quarantine inspection must declare imported items to the head of the Plant Quarantine Inspection Agency provide access to the materials to enable inspection</p>	<p>Lack of data</p>

		<p>by a plant quarantine inspector.</p> <p>Inspections can be carried out pre or post entry and can lead to the following actions if there are concerns around the presence of pests or disease on the imported material;</p> <ul style="list-style-type: none"> • Live nursery material order the owner or the agent to carry out post-entry quarantine and undergo inspection in the growing field • Destroy the items • Disinfect the items • Reship the items <p>Plant quarantine inspector can also inspect wood packaging materials of import consignment as for the presence of regulated pests or potential regulated pests, or for the compliance with import requirements.</p>	
<p>USA</p>	<p>Every passenger planning to enter the USA is required to complete a Customs and Border Protection (CBP) Declaration Form 6059B. Amongst other things this form requires passengers to declare if they are bringing any of the following into the USA;</p> <ul style="list-style-type: none"> • Plants • Fruits • Vegetables • Seeds • Food • Insects <p>Some plants, cuttings, seeds that are capable of propagation, unprocessed plant products and certain endangered species are allowed into the</p>	<p>The Animal and Plant Health Inspection Service (APHIS) within the US Department of Agriculture (USDA) regulates the importation of plants for planting under the authority of the Plant Protection Act. The approach that APHIS takes is driven by pest risk analysis in relation to plant/plant material importation. This pest risk analysis effectively determines how imported materials must be inspected, treated, or certified to be imported safely into the United States</p> <p>For consignments of more than 12 articles (plants or plant material)</p> <p>Permits are required for the importation into the U.S. and transit through the U.S. of regulated plants and</p>	<p>APHIS does not generally regulate the movement of plants/plant material between States within the USA. The exceptions to this approach are parasitic plants and federal noxious weeds, which require a pest permit for interstate movement, and host plants regulated under specific domestic quarantines.</p> <p>State governments within the USA can and do impose restrictions on the types of plants/plant material that they will allow to access their territory from other US States. These restrictions vary depending on the species involved and the State that they are coming from. As in the case of imports from foreign countries the decision on the restrictions that need to be applied is driven by a risk analysis methodology in relation to the pest or disease threats posed by the materials involved.</p>

	<p>United States but require import permits and other documents; some are prohibited entirely. Threatened or endangered species that are permitted must have export permits from the country of origin.</p> <p>Passengers bringing in 12 or fewer articles of admissible plants, which are not subject to special restrictions, can be brought into the USA but must be declared and the passenger must have a phytosanitary certificate from the country of origin.</p> <p>Every single plant or plant product including handicraft items made with straw, must be declared to the CBP officer and must be presented for CBP inspection, no matter how free of pests it appears to be.</p> <p>Prohibited items that are not declared by passengers are confiscated and disposed of by CBP agriculture specialists. Fines can also be issued up to \$1,000 for a first-time offense. Depending on whether the confiscated, undeclared items are intentionally concealed, or determined to be for commercial use, civil penalties may be assessed as high as \$50,000 for individuals. The same fines apply to prohibited agricultural products sent through the international mail.</p>	<p>plant products for consumption or propagation. Plant and plant product permits include plants for planting such as nursery stock, small lots of seed, and post entry; plant products such as fruits and vegetable, timber, cotton and cut flowers; protected plants and plant products such as orchids, and threatened and endangered plant species; transit permits to ship regulated articles into, through, and out of the U.S.; and departmental permits to import prohibited plant materials for research.</p> <p>As well as a permit importers of plants/plant material must have a valid phytosanitary certificate for the consignment.</p> <p>Depending on the import conditions imposed by APHIS plants/plant material can also be subjected to quarantine or chemical treatment upon entry to the USA in order to ensure its pest free status.</p> <p>APHIS also has set standards for wood packaging material imported into the United States of America such as logs, lumber, and other unmanufactured wood articles. This rule states that all regulated wood packaging material shall be appropriately treated and marked under an official program developed and overseen by the National Plant Protection Organization (NPPO) in the country of export.</p>	<p>By way of example the State of California has regulations governing the importation of Christmas trees into California from the rest of the US, which sets different criteria on both a material and state of origin basis and can be accessed through the following hyperlink http://www.cdfa.ca.gov/plant/factsheets/ChristmasTrees.pdf</p>
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Table 1: Main plant import controls utilised within selected non EU countries

3. Harmful tree organism outbreaks and responses

Table 2 below identifies one harmful tree organism outbreak within each of the previously identified non EU countries. This table also highlights how the authorities within the countries have sought to either prevent, control or eradicate these organisms and makes an assessment as to how successful these efforts have been.

Country	Harmful organism	Tree species affected	Approach taken
Australia	<p>Myrtle Rust (<i>Uredo rangelii</i>) – identified in 2010 in New South Wales</p> <p>Attacks young, soft, actively growing leaves, shoot tips and young stems, as well as fruits and flower parts of susceptible plants</p>	<p>Can potentially attack all species of the Myrtaceae plant family including</p> <ul style="list-style-type: none"> • gum trees (Eucalyptus) • tea tree (Leptospermum) • paperbark (Melaleuca) • myrtle (Backhousia) 	<p>Initial efforts had been focussed on trying to stop the disease entering the state of Victoria.</p> <p>The main focus of this effort was the Victorian Importation Order which sought to restrict the movement of plants/materials that could host myrtle rust into Victoria from other Australian States such as New South Wales.</p> <p>These efforts have however proved unsuccessful as evidenced by the fact that since December 2011, more than 60 sites in Victoria have been infected with myrtle rust</p> <p>As a result of these outbreaks, the Victorian Importation Order has been removed, meaning that since the 30 June 2012 host materials have been able to enter Victoria from any state or territory without restriction, unless they are known to be infected with myrtle rust.</p> <p>Importers of myrtle rust host materials are still required to implement the Nursery and Garden Industry Australia myrtle rust management plan, to reduce the risk of infected host material entering and being distributed in Victoria.</p> <p>In particular, nursery stock is required to be carefully monitored for signs of the disease.</p> <p>It also remains illegal under Victorian Government legislation to sell plants with visible symptoms of myrtle rust (Section 18 of the <i>Plant Biosecurity Act 2010</i>).²</p>
New Zealand	Kauri dieback (Phytophthora taxon Agathis) – identified in 2008	Kauri	<p>Efforts are focused on limiting the spread of the disease and protecting uninfected locations</p> <p>national surveillance programme is helping to</p>

² [State Government of Victoria, Department of Primary Industries website, 29th March 2013](#)

	<p>Infected trees show a range of symptoms including yellowing of foliage, loss of leaves, canopy thinning, dead branches and lesions that bleed resin at the base of the trunk.</p> <p>Some infected trees can show canopy dieback and even be killed without any gum showing on the trunks as kauri dieback also acts as a severe root rot below ground.</p> <p>Kauri dieback can kill seedlings and trees of all ages. Nearly all infected kauri die.</p>		<p>assess and monitor locations of kauri dieback disease</p> <p>Some national parks have been closed in an effort to protect healthy trees from becoming infected</p> <p>Information is constantly being shared with landowners, visitors, community groups, journalists, clubs and event managers to help build awareness, understanding and action around kauri dieback</p> <p>Local and national government are working together to try and improve detection methods, increase knowledge of how the disease spreads and develop effective control methods</p> <p>Footwear cleaning stations are now installed at many track entrances in kauri areas. They should be used when entering and leaving.</p> <p>Work is also going into improving tracks construction, drainage and other made-made influences that will help reduce the spread of the disease</p> <p>Trialling phosphite for treatment of kauri dieback. Phosphite has proven to be an effective cure for Phytophthora species in Avocado orchards and in overseas forest environments.</p> <p>Lab trials with kauri dieback and phosphite control have been very promising³</p>
<p>South Korea</p>	<p>Pine wilt disease – first identified in Busan in 1988</p> <p>Caused by the pinewood nematode which is vectored by the pine sawyer beetle. Usually kills affected trees within a few weeks to a few months</p>	<p>Pine (various species)</p>	<p>Control has focussed on elimination of the pine sawyer beetle larvae by fumigating trees in winter or by targeting the adult beetles through the spraying of insecticide in summer.</p> <p>This approach however is costly and has failed to eliminate the disease, which has continued to reappear in treated areas..</p> <p>The transport of fumigated logs or wilt trees for lumber has also been identified as a cause of the spread of the disease.</p> <p>In 2005 a law for the control of pine wilt disease epidemics was introduced which created heavy penalties for the illegal movement of pine logs from infected areas. The law also boosted the funding available</p>

³ [Keep Kauri standing website, 29th March 2013](#)

			<p>for control actions from \$7.6m in 2004 to \$55.2m in 2006⁴</p> <p>In addition, since 2005 silvicultural control, involving clear cutting around infected pines has been adopted along with the use of a nematicide (pesticide) which is injected into trees. These measures have inhibited the spread of the disease to other areas.</p>
USA	Sudden Oak Death (<i>Phytophthora ramorum</i>) - formally identified in California in 2001	Tanoak, oak, rhododendron, mountain laurel, California bay laurel, Oregon myrtle.	<p>National quarantine regulations for <i>Phytophthora ramorum</i> are developed by the United States Department of Agriculture – Animal and Plant Health Inspection Service (USDA-APHIS). Individual states such as California, Oregon and Washington harmonise their approaches to this national approach.</p> <p>Entire states of California, Oregon, and Washington are regulated to limit the spread of <i>p. ramorum</i> from nurseries.</p> <p>Additional quarantine regulations are in place in the 14 California counties and partial area of Oregon with wild land infestations.</p> <p>A National Response Framework for Sudden Oak Death developed in October 2011⁵, and which has buy in from national and state government focusses on the following elements for dealing with <i>p ramorum</i>;</p> <ul style="list-style-type: none"> • Prevention – to limit the spread through known pathways. • Detection – surveys in streams, vegetation, and on tree hosts. • Response – new finds in forest require a multiple agency action. • Management – containing through slash and burn reducing risk of spread. • Restoration – resistance and non-hosts may provide key to recovery. • Outreach – provides information transfer on all aspects of the disease. • Research – continues to validate management and regulatory activities. <p>Acknowledgement that eradication of <i>p ramorum</i> once established is unlikely so efforts and concerns are now focussed on</p>

⁴ Derived from Kwon TS, Shin JH, Lim JH, Kim YK, Lee EJ. 2011. Management of pine wilt disease in Korea through preventative silvicultural control. Forest Ecology and Management 261(2011): 562-569

⁵ [National Response Framework for Sudden Oak Death, USDA and US Forest Service, October 2011](#)

			preventing introduction in eastern parts of the USA.
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Table 2: Harmful organism outbreaks affecting trees within selected non EU countries

Looking at the information in table 2 the following observations can be made:

- Even with the biosecurity systems in place within these countries there are ongoing issues with organisms harmful to trees;
- Whilst eradication of the identified diseases had been the objective in each country the approaches taken have largely moved to control and containment;
- Legislative responses and associated co-ordinated plans/strategies were adopted in all the countries;
- There was no 'magic bullet' to dealing with these harmful organisms – over time a suite of measures have been used;
- Research was and is critical to learning more about the harmful organism and how to combat it.

4. Conclusions

- Organisms harmful to trees and other plants are still a clear and present danger within the identified non EU countries despite their robust biosecurity systems, some of which it could be argued are more stringent than those used within the EU. This highlights the fact that no biosecurity system either is or can be expected to be 100% effective at stopping the entry of harmful plant organisms into a country.
- Rising world trade in plants and plant material is increasing the risks from harmful organisms. This rising trade also highlights the fact that the phytosanitary (plant health) certificate system used across the world has a fatal flaw, in that it relies totally upon the competence of the authorities within the country from which the material originates.
- The use of a risk based approach to determine conditions of entry for plants/plant material depending on their species and point of origin is clearly the one to take in light of the growing demand posed by increased plant imports and the finite resources of the plant health authorities within countries.
- The use of post entry quarantine facilities, particularly in relation to live plants/nursery stock is a key mechanism for addressing some of these phytosanitary certificate concerns, as it buys time for the authorities to confirm that a plant consignment is disease free. The forthcoming revision of the EU's Community Plant Health Regime needs to actively consider adopting such a system.
- The sharing of scientific and practical knowledge on how best to prevent, control or eradicate the presence of organisms harmful to plants is an increasingly globally interconnected and important activity due to the fact that these harmful organisms are so common in so many countries.

