

The background features a stylized landscape with a blue sky, yellow and green mountains, and a teal body of water. The text is overlaid on this background.

Pest Risk Analysis & Challenges in Plants for Planting Pathway

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Outline

- Plants for planting pathway in New Zealand
- New Zealand's Risk Analysis process
- Challenges
- Examples

New Zealand



More than any other developed country, New Zealand's economy, people and environment depend on the success of our Agriculture & Forestry based industries.

Biosecurity New Zealand Goal

To protect New Zealand's biodiversity and facilitate exports, by managing risks to the environment, to the economy and to human health

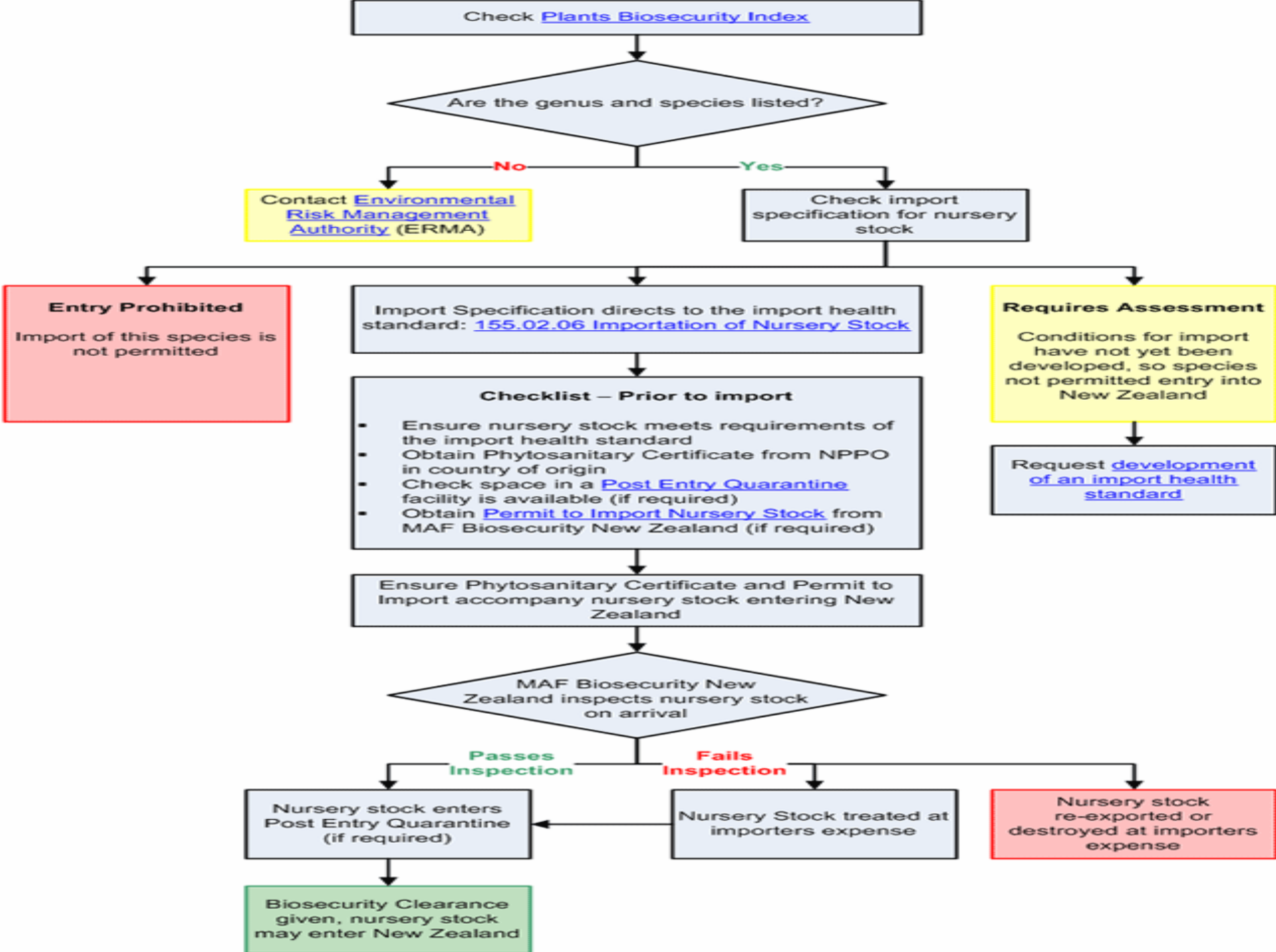
Imports and Exports of Plants for planting

Importation requirements under

- International Agreements (SPS, IPPC)
- NZ Import Health Standards
 - Biosecurity Act, 1993
 - Hazardous Substances & New Organism Act, 1996

Export of plants

- International Agreements
- Bilateral Arrangements



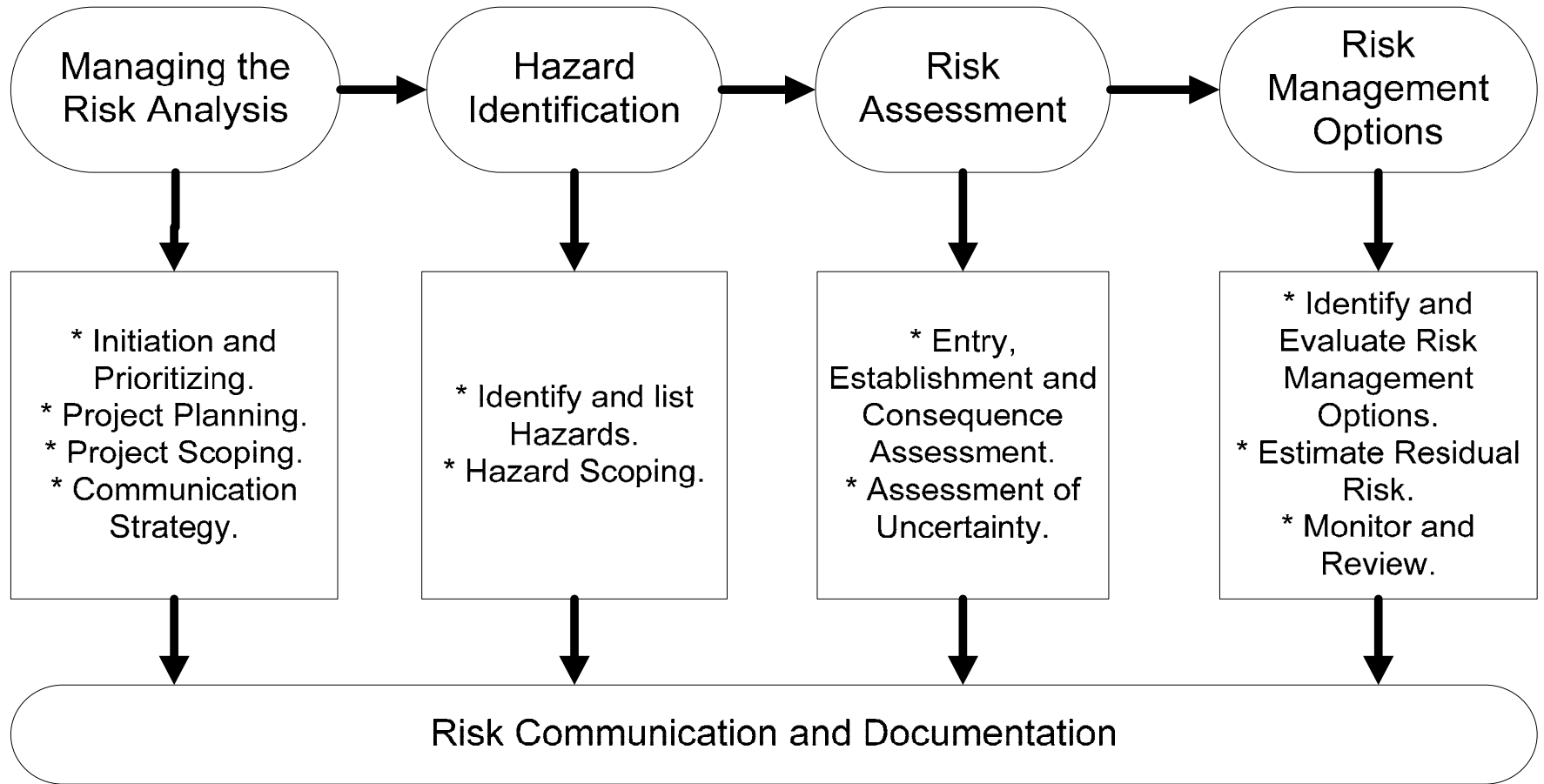
Issues

To meet international & domestic obligations

Import Health standards must be:

- based on a risk analysis
- not be disguised restrictions on trade
- We can only focus on biosecurity risk issues
- We rely on science to analyse biosecurity risk

Risk analysis framework



Uncertainty and Residual Risk

- Identifying Uncertainty
 - identify weaknesses in analysis
 - develop research priorities in support of risk analysis
- Measuring Residual Risk
 - Aids in monitoring effectiveness of measures (know what failure is)
 - Informs risk management decision maker

Challenges in Pest Risk Analysis

- Meeting expected performance (effectiveness & efficiency)
 - Limited scientific information & subject experts
 - Future proof
- Missing science
 - Taxonomy (species, strains)
 - Organism epidemiology, behaviour in new environments
 - likely consequences
 - treatment efficacy information

Risk analysis for importation of *Wollemia nobilis*



Photo courtesy of M. Ormsby

- New Plant Genus & species
- Related to NZ's iconic Kauri (*Agathis australis*)
- Only two diseases recorded
- Risk analysis was conducted for potential hazards of family Araucariaceae
- Rely on system approach & pre export & post entry quarantine

Potential hazard grouping

Potential Hazard Category	Description	Significant Examples
Invertebrates	(Beetles, moths, aphids)	
Surface Feeding Invertebrates	Pollen feeders, Seed eaters, Shoot feeders, Moths, Scales, Aphids.	<i>Agathiphaga queenslandensis</i> , <i>Chrysomphalus dictyospermi</i> , <i>Hyblaea puera</i> , <i>Neophyllaxis araucariae</i>
Micro-organisms	(Fungi, bacteria)	
Foliage Diseases	Rusts, leaf spots, mildews.	<i>Aecidium fragiforme</i>
Root Diseases	Root rots	<i>Phellinus noxius</i> , <i>Sclerotium rolfsii</i>

Interceptions in plants for planting pathway

- Last 5 years number of interceptions increased
- 84% of the post-entry quarantine interception identifications were pathogens.
- High number of incomplete fungi Identifications

Possible reasons for high interception records

- Increases in trade and tourism
- Improved systems for reporting
- Greater biosecurity awareness
- New technologies for detection
- Reporting of saprophytes & benign organisms.

Can we rely on interception data?

- How detectable the organism or infestation is during visual inspection;
 - high volumes & sample size
 - homogeneity of the consignment in relation to pest distribution
 - ability of the inspector to detect the organism or infestation
 - latent for a long time
 - treatments could mask the symptoms
 - symptomless hosts

Interception of Pitch Canker in Douglas Fir



- Future proof
- Symptomless hosts



Outcomes of the interception

- Douglas fir now considered a potential symptomless host and source of inoculate,
- Further restrictions on imports of Douglas fir and *Pinus* species
- Improved diagnostic methods
- Sampling/Testing of possible symptomless hosts for pitch canker

Enhancing New Zealand's natural advantage



New Zealanders, our unique natural resources, our plants and animals are protected from damaging pests and diseases.