

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

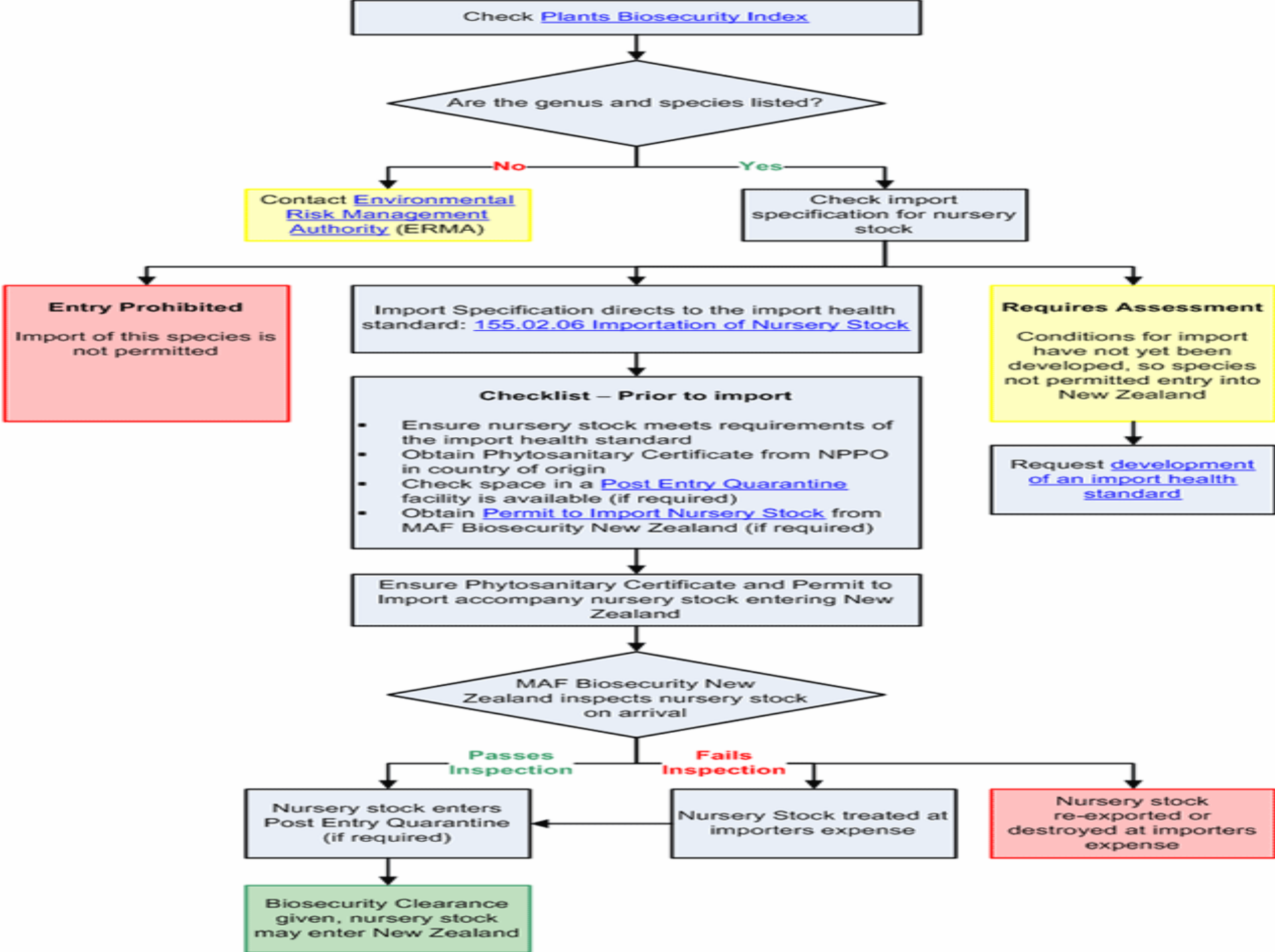
# Imports and Exports of Plants for planting

## 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



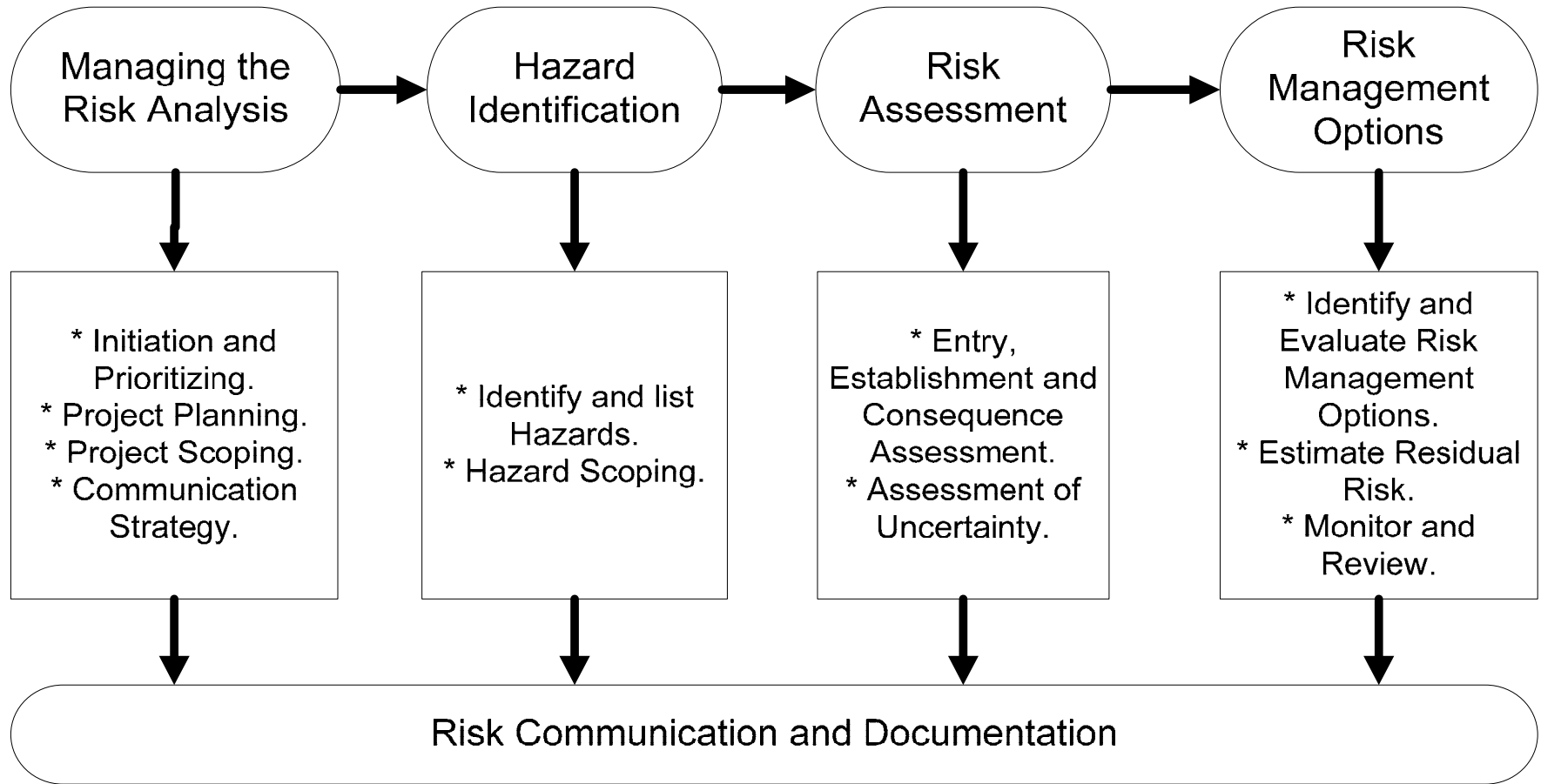
# Issues

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
<b>Invertebrates</b>	(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>Neophyllapis araucariae</i>
<b>Micro-organisms</b>	(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.