# Plant commodity/country risk analysis process

Plant import risk analyses assess the biosecurity risk associated with the importation of plants and plant products and identify appropriate ways to manage risk to an acceptable level.

1 Pest categorisation

A filtering process that aims to identify quarantine pests on a plant import pathway.

As a World Trade Organisation member, Australia bases this process on standards set by the International Plant Protection Convention.

ALL PESTS with potential to be imported on the commodity
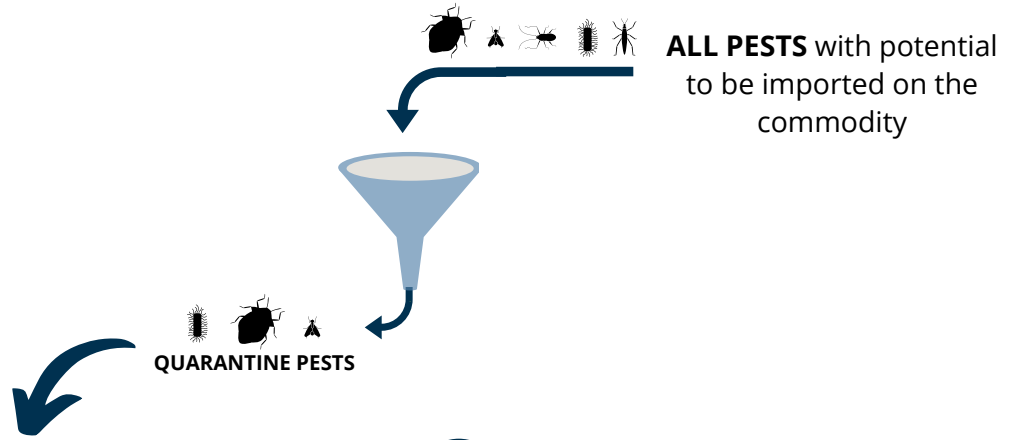
QUARANTINE PESTS

2 Assessment of overall likelihood

An assessment of the likelihood that a quarantine pest will enter, establish and spread in Australia.

LIKELIHOOD OF ENTRY

OVERALL LIKELIHOOD

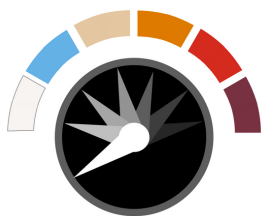LIKELIHOOD OF SPREAD

LIKELIHOOD OF ESTABLISHMENT
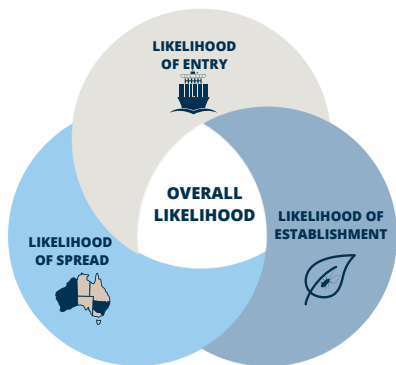
3 Assessment of overall consequence rating

An assessment of the consequence (economic and environmental impacts) should a quarantine pest enter, establish and spread in Australia.
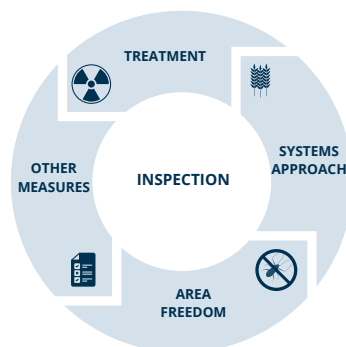
OVERALL CONSEQUENCE RATING

4 Estimation of unrestricted risk

The likelihood and consequence ratings are combined to determine the biosecurity risk posed by a quarantine pest for Australia. An unrestricted risk estimate is established for each quarantine pest.
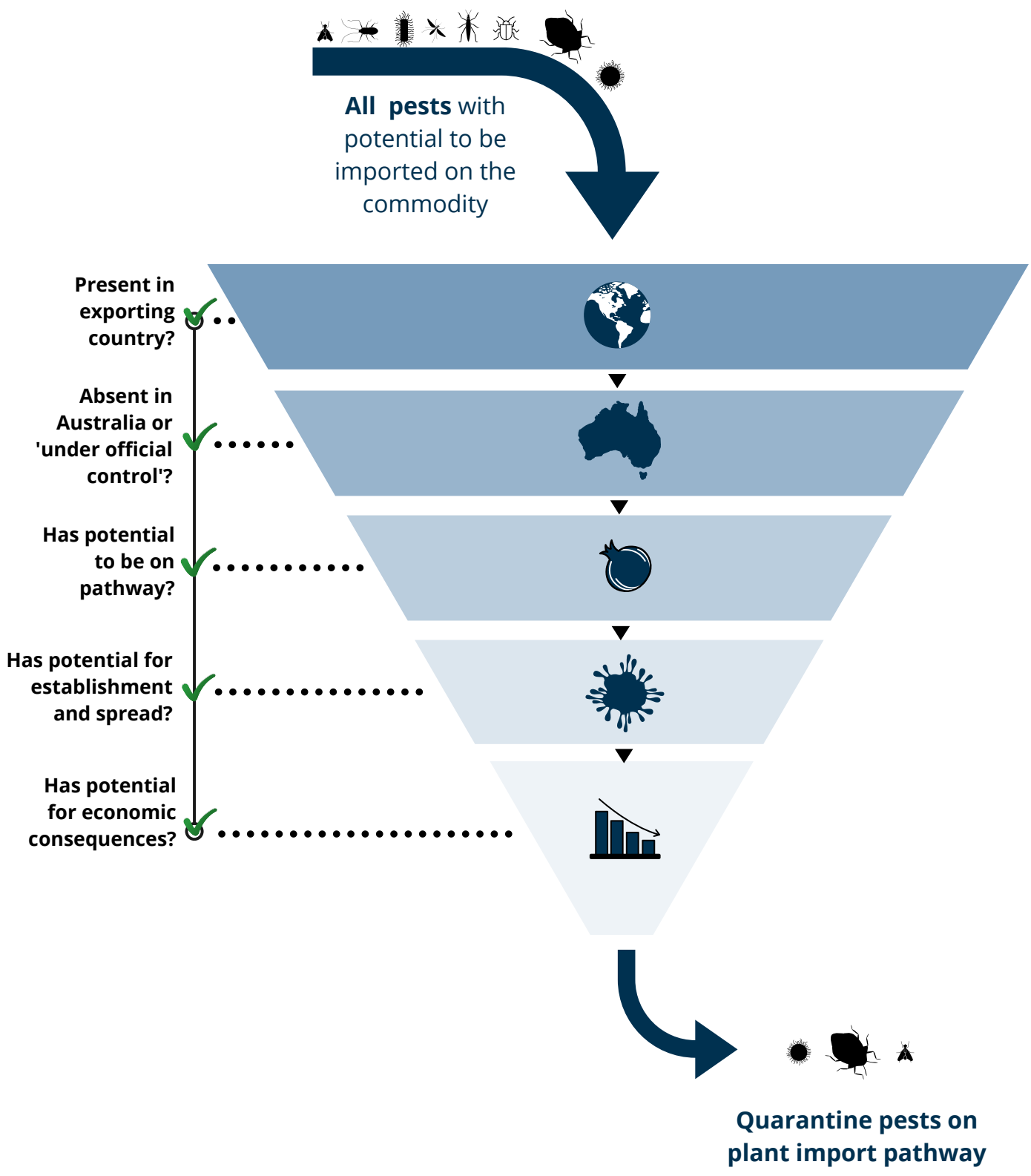
5 Pest risk management

Pest risk management measures are required if the unrestricted risk estimate for a quarantine pest does not achieve the appropriate level of protection (ALOP) for Australia. The ALOP for Australia is very low, but not zero.

TREATMENT

SYSTEMS APPROACH

INSPECTION

OTHER MEASURES

AREA FREEDOM

1 Pest categorisation

A filtering process that aims to identify quarantine pests on a plant import pathway.

All pests with potential to be imported on the commodity

Present in exporting country?

Absent in Australia or 'under official control'?

Has potential to be on pathway?

Has potential for establishment and spread?

Has potential for economic consequences?

Quarantine pests on plant import pathway

Australian Government
Department of Agriculture,
Fisheries and Forestry

An assessment of the likelihood that a quarantine pest will enter, establish and spread in Australia.

We assess how likely the pest could spread throughout Australia by looking at factors that affect the pest's mobility.

We assess how likely the pest is to enter Australia on the imported commodity by looking at the pest's biology and the commercial production practices of the commodity in the exporting country.

Likelihood of entry

Likelihood of spread

Overall likelihood

Each likelihood is combined to determine the overall likelihood that the pest could enter, establish & spread in Australia.

Likelihood of establishment

We assess how likely the pest could establish in Australia by looking at the pest's biology and the suitability of the Australian environment that could encourage the pest to establish and survive.

The overall likelihood of a pest being able to enter, establish and spread in Australia is determined by assessing and combining each likelihood. These three steps are outlined in the tables below using Pest-X as an example. These assessment tables use a set of rules for combining qualitative likelihoods that are based on indicative probability ranges. For example, these rules mean that combining two 'moderate' likelihoods results in a 'low' likelihood outcome.

Assessment table key

COMBINED RESULT	High	Moderate	Low	Very Low	Extremely Low	Negligible
DEFINITION	Very likely to occur	Likely to occur	Unlikely to occur	Very unlikely to occur	Extremely unlikely to occur	Almost certainly won't occur

Entry

- The likelihood of entry is made up of two parts: importation and distribution.
- For Pest-X, the likelihood of it being imported on the commodity is Moderate and the likelihood it will be distributed is also Moderate.
- Therefore, the likelihood of Pest-X **entering** Australia is LOW.

Entry & Establishment

- Pest-X has a Low likelihood of entering Australia.
- The likelihood of Pest-X establishing in Australia is High.
- Therefore, the likelihood of Pest-X **entering and establishing** in Australia is LOW.

Entry Establishment & Spread

- Pest-X has a Low likelihood of entering and establishing in Australia.
- The likelihood of Pest-X spreading in Australia is Moderate.
- Therefore, the overall likelihood of Pest-X **entering, establishing and spreading** in Australia is LOW.

Overall likelihood

By combining each likelihood estimate, the overall likelihood of Pest-X entering, establishing and spreading in Australia is LOW.

An assessment of the consequence (economic and environmental impact) should a quarantine pest enter, establish and spread in Australia.

The economic and environmental consequence (impact) should a quarantine pest enter, establish and spread in Australia is assessed for each geographic level:

National **Regional** **District** **Local**

A rating is given to a geographic level at which the quarantine pest is likely to have an impact:

Major significance **Significant** **Minor significance** **Indiscernible**

Direct environmental impacts

Plant life or health

Eradication & control costs

OVERALL CONSEQUENCE RATING

By combining the impact scores of each consequence, an overall consequence rating for the pest is determined.

International trade

Domestic trade

**Non-commercial values & indirect environmental impacts**

The overall consequence rating for a quarantine pest is determined by combining the impacts the pest is likely to have if it was to enter, establish and spread in Australia. This process is outlined below using Pest-X as an example.

Assign impact scores

Once the impact of all likely consequences associated with a quarantine pest has been estimated at the geographic level, an impact score is assigned. The impact score ranges on a scale from A to G.

Let's take a look at how an impact score is assigned for the consequence 'Plant life or health'. If Pest-X enters, establishes and spreads in Australia, it is likely to impact plant life or health at the regional level. Also, the impact is likely to be significant for the region. Using the table, we find that the impact score for the plant life or health consequence is E.
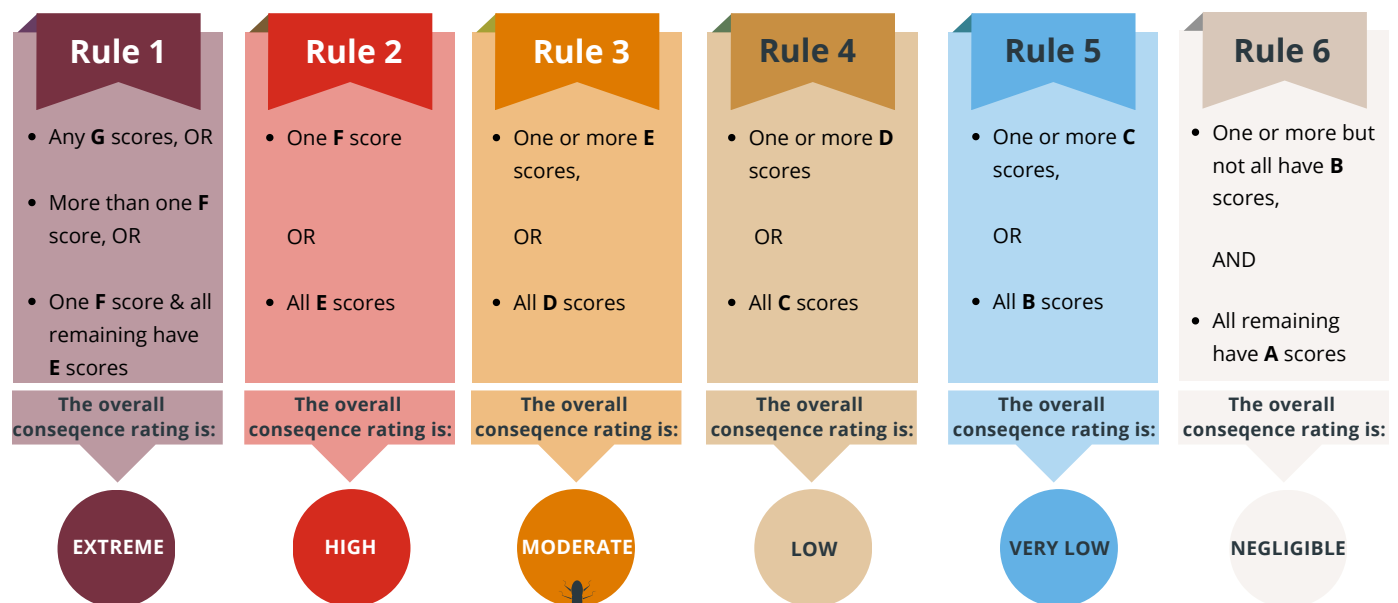
Plant life or health
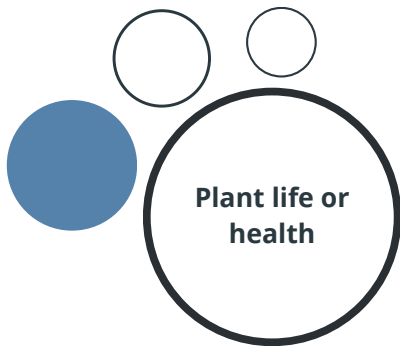
Assessment table

GEOGRAPHIC SCALE

IMPACT	LOCAL	DISTRICT	REGIONAL	NATIONAL
INDISCERNIBLE	A	A	A	A
MINOR SIGNIFICANCE	B	C	D	E
SIGNIFICANT	C	D	E	F
MAJOR SIGNIFICANCE	D	E	F	G

This step is repeated for the other five consequences. Now it's time to combine them.

Combine impact scores

The overall consequence rating is determined by assessing the impact scores against a series of rules. Starting at Rule 1, we go through each criterion to determine which Rule our impact scores satisfy.

| **Rule 1**	**Rule 2**	**Rule 3**	**Rule 4**	**Rule 5**	**Rule 6**
• Any **G** scores, OR • More than one **F** score, OR • One **F** score & all remaining have **E** scores	• One **F** score OR • All **E** scores	• One or more **E** scores, OR • All **D** scores	• One or more **D** scores OR • All **C** scores	• One or more **C** scores, OR • All **B** scores	• One or more but not all have **B** scores, AND • All remaining have **A** scores
The overall conseqence rating is:	The overall conseqence rating is:	The overall conseqence rating is:	The overall conseqence rating is:	The overall conseqence rating is:	The overall conseqence rating is:
EXTREME	HIGH	MODERATE	LOW	VERY LOW	NEGLIGIBLE

With one **E** impact score, Pest-X has been assessed as having an overall consequence rating of **MODERATE**.

The unrestricted risk estimate (biosecurity risk) of a quarantine pest is determined by combining the overall likelihood and overall consequence ratings. This process is outlined below using Pest-X as an example.

In steps 2 and 3, we found that for Pest-X:

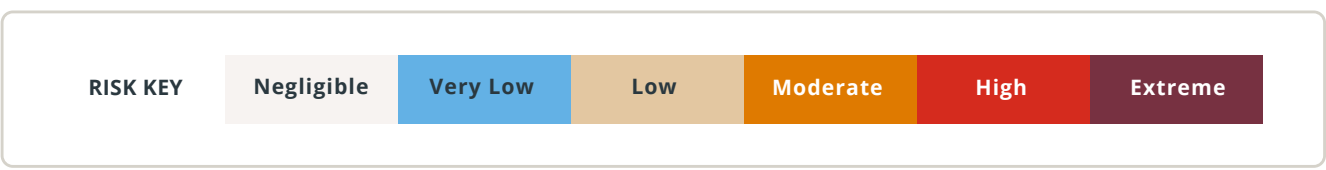The overall likelihood of entry, establishment and spread is **LOW**

&
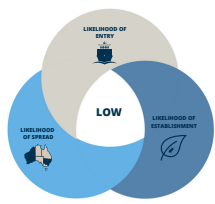
The overall consequence rating is **MODERATE**

Using the matrix below we combine the overall likelihood and overall consequence ratings. The consequence rating is plotted along the top, and likelihood is shown along the side.

Although the ratings for each axis are similar the matrix is not symmetrical, reflecting the different range of ratings for overall likelihood and consequence. As a result, different risk estimates are obtained by combining a 'low' likelihood with a 'high' consequence and a 'high' likelihood with 'low' consequence.

RISK KEY	Negligible	Very Low	Low	Moderate	High	Extreme

CONSEQUENCE OF PEST ENTRY, ESTABLISHMENT & SPREAD

	NEGLIGIBLE	VERY LOW	LOW	MODERATE	HIGH	EXTREME
HIGH		Very Low	Low	Moderate	High	Extreme
MODERATE		Very Low	Low	Moderate	High	Extreme
LOW			Very Low	Low	Moderate	High
VERY LOW				Very Low	Low	Moderate
EXTREMELY LOW					Very Low	Low
NEGLIGIBLE						Very Low

By combining the overall likelihood and overall consequence ratings, Pest-X has an unrestricted risk estimate of **LOW**.

Australia's Appropriate Level of Protection (ALOP) is defined as providing a high level of protection for human, animal and plant life that reduces risk to a very low level, but not to zero. As the unrestricted risk estimate for Pest-X does not achieve ALOP (it is Low not Very Low), the risk is unacceptable. Accordingly, risk management measures are required to reduce the risk of Pest-X to an acceptable level (Very Low).
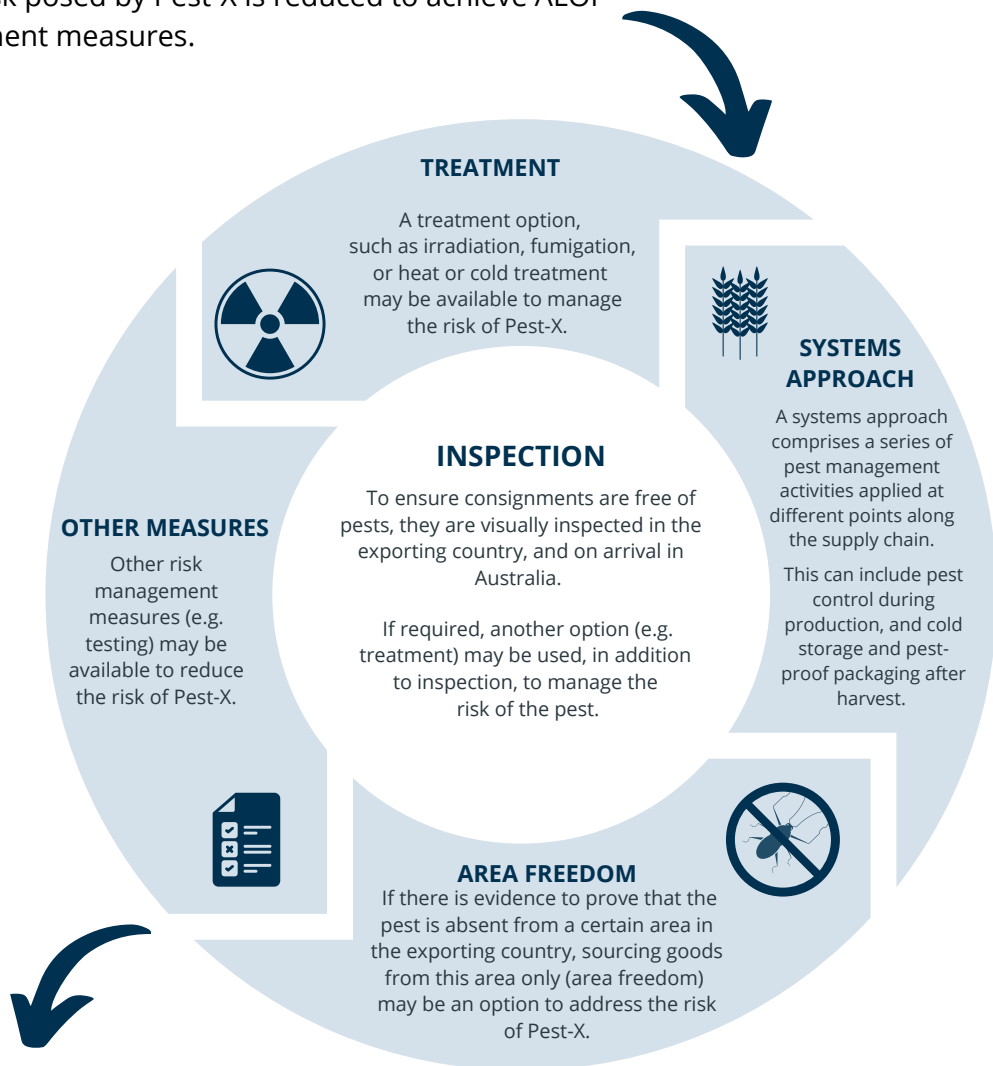
Pest risk management measures are required if the unrestricted risk estimate of a quarantine pest does not achieve the appropriate level of protection (ALOP) for Australia. The ALOP for Australia is very low, but not zero. Let's now take a look at the measures needed for Pest-X.

There are a number of risk management options that can be used to manage the biosecurity risk of a quarantine pest. The biosecurity risk of most pests can be managed by one or more of the management options presented.

RISK KEY

| Negligible | Very Low | Low | Moderate | High | Extreme |

ACHIEVES ALOP ✔

DOES NOT ACHIEVE ALOP ✘
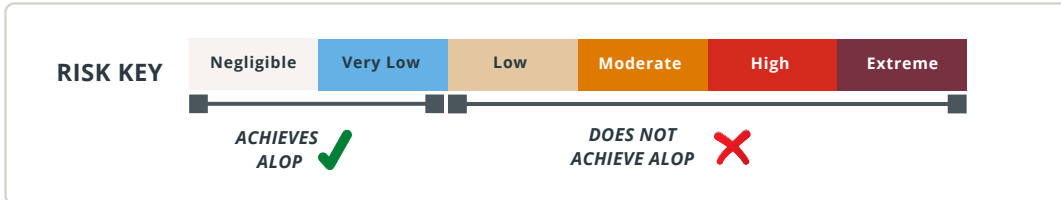
UNRESTRICTED RISK

Pest-X has an unrestricted risk estimate of Low, which does not achieve Australia's ALOP. Risk management measures are required to reduce the risk to achieve ALOP. The commodity cannot be imported unless the biosecurity risk posed by Pest-X is reduced to achieve ALOP using pest risk management measures.

TREATMENT

A treatment option, such as irradiation, fumigation, or heat or cold treatment may be available to manage the risk of Pest-X.

SYSTEMS APPROACH

A systems approach comprises a series of pest management activities applied at different points along the supply chain.

This can include pest control during production, and cold storage and pest-proof packaging after harvest.

INSPECTION

To ensure consignments are free of pests, they are visually inspected in the exporting country, and on arrival in Australia.

If required, another option (e.g. treatment) may be used, in addition to inspection, to manage the risk of the pest.

OTHER MEASURES

Other risk management measures (e.g. testing) may be available to reduce the risk of Pest-X.

AREA FREEDOM

If there is evidence to prove that the pest is absent from a certain area in the exporting country, sourcing goods from this area only (area freedom) may be an option to address the risk of Pest-X.

RESTRICTED RISK

When risk management measures are applied, the risk posed by Pest-X is reduced to VERY LOW. This means Australia's ALOP is achieved and importation of the commodity may be permitted.