EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION
ЕВРОПЕЙСКАЯ И СРЕДИЗЕМНОМОРСКАЯ ОРГАНИЗАЦИЯ ПО КАРАНТИНУ И ЗАЩИТЕ РАСТЕНИЙ
ORGANISATION EUROPEENNE ET MEDITERRANEENNE POUR LA PROTECTION DES PLANTES

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WPPR point 12.2

Report of a Pest Risk Assessment

This summary presents the main features of a pest risk assessment which has been conducted on the pest, according to EPPO Standard PP 5/3(1) Pest Risk Assessment Scheme.

Pest: *Lymantria mathura*

PRA area: Non-Asian part of the EPPO region

Assessor: EPPO Panel on Quarantine Pests for Forestry

Date: September, 2004

1. INITIATION

1.1 Reason for doing PRA: Study of the risk of forest pests occurring on the territory of the former USSR for the western part of the EPPO region

1.2. Taxonomic position of pest: *Lymantria mathura* Moore (Lepidoptera: *Lymantriidae*)

2. PROBABILITY OF INTRODUCTION

2.1 Entry

2.1.1 Geographical distribution:
EPPO region: Russia (Southern Far East).
Europe: Absent
Asia: China (Western and Northern), India (Northern), Nepal, Japan, Koreas, Russia (Southern Far East).
EU: Absent.
North America: Absent
Central America & Caribbean: Absent
South America: Absent
Oceania: Absent

2.1.2 Major host plants: *L. mathura* attacks many species of *Quercus, Juglans, Malus, Ulmus, Tilia, Salix, Betula, Castanea* and other deciduous trees. Its preferred hosts in the Russian Far East are: *Juglans mandshurica, Malus mandshurica, Quercus mongolica, Quercus dentata, Ulmus* and *Tilia*

2.1.3 Which pathway(s) is the pest likely to be introduced on: *L. mathura* can naturally spread by flight of adult moths. All stages of the life cycle can be transported on plants moving in trade particularly plants for planting and cut branches (including Christmas trees). Eggs may be associated with wood with bark of different trees (not only of host species) or in crevasses on other articles. Egg masses are small and well hidden, which makes them difficult to detect. During outbreaks especially, larvae may be associated with wood containing bark and may be hitchhikers on

other products.
In decreasing order of risk, main pathways for *L. mathura* are:
1. Plants for planting
2. Cut branches
3. Wood with bark
4. Other substrates

2.2 Establishment

2.2.1 Crops at risk in the PRA area: *Quercus, Juglans, Malus, Ulmus, Tilia, Salix, Betula, Castanea* and other fruit and deciduous trees. The biggest risk exists for forests, city plantations, ornamental and fruit trees and shrubs.

2.2.2 Climatic similarity of present distribution with PRA area (or parts thereof): The Central and the Southern parts of the EPPO region have similar climatic conditions with the area of origin and present distribution of the pest.

2.2.3 Aspects of the pest's biology that would favour establishment: The pest is extremely polyphagous and genetically adaptable.

2.2.4 Characteristics (other than climatic) of the PRA area that would favour establishment: Host plants are widely distributed within the PRA area. Suitable ecological niches are available throughout the PRA area.

2.2.5 Which part of the PRA area is the endangered area: The endangered part of the PRA area covers most of central and southern regions of the EPPO territory including mountain areas

3. ECONOMIC IMPACT ASSESSMENT

3.1 Describe damage to potential hosts in PRA area: *L. mathura* is a defoliator. It may attack both stressed and healthy trees of different ages considerably reducing the yield of wood and fruits and sometimes leading to the death of forest and ornamental trees.

3.2 How much economic impact does the pest have in its present distribution: *L. mathura* is one of the most important defoliators of deciduous trees (walnut, oak, apple and lime trees, etc.) in the area of its present distribution. Its outbreaks usually occur throughout large areas (the outbreak of 1998 in the south of Primorie territory covered 200.000 ha) and often result in complete defoliation of forests or orchards. The pest damage does not usually kill trees but lead to significant loss of vigour and yield of fruits in the case of fruit orchards. During outbreaks, pest populations may reach more than 1000 caterpillars per tree. Furthermore, outbreaks of *L. mathura* are also very often followed by outbreaks of wood borers (scolytids, cerambycids and others). These pests are able to kill trees which are heavily stressed by *L. mathura*. Important damage occurs in fruit orchards. Outbreaks of *L. mathura* have been reported from Japan, India and Russian Far East. Often, they occurs together with outbreaks of *L. dispar* increasing the impact caused by gypsy moth.

3.3 How much economic impact would the pest have in the PRA area: Considering the similarity of ecological conditions, the damage in the endangered part of the PRA area could be similar to that in the present area of the pest.

4. CONCLUSIONS OF PRA

4.1 Summarize the major factors that influence the acceptability of the risk from this pest:	This pest • comes from an area with similar climatic conditions to those of the PRA area and could easily establish throughout a large part of it; • can cause serious economic damage there; • is the pest of many ornamental, forest and fruit trees, which are important in the PRA area.
4.2 Estimate the probability of entry:	medium with plants for planting, low with cut branches, high with wood with bark and other substrates
4.3 Estimate the probability of establishment:	high
4.4 Estimate the potential economic impact:	medium
4.5 Degree of uncertainty	There is little uncertainty in this assessment

5. OVERALL CONCLUSIONS OF THE ASSESSOR

The endangered part of the PRA area covers most of central and southern regions of the EPPO territory. The probability of the pest entry is medium with plants for planting, low with cut branches, high with wood with bark and other substrates. The probability of the pest establishment is high. Its impact within the endangered area would be the direct damage to plantations of many forest, fruit and ornamental trees, which would consist in wood and fruit yield losses, stress or death of forest and ornamental plants. *L. mathura* is of limited distribution in the EPPO region (only in South-Eastern Russia). Phytosanitary measures could prevent its introduction into the endangered area.

L. mathura is proposed for the A2 list.