

RUSSIAN CENTER OF FOREST HEALTH ALL-RUSSIA RESEARCH CENTER OF PLANT QUARANTINE



RUSSIA & UNITED STATES EXOTIC PEST MONITORING PROGRAM

In 1993 a cooperative program was initiated between Russia and the United States to develop an early warning system to alert ports in the U.S. and other cooperating countries of increasing forest pest populations in Russia's Far East. This effort focuses on meeting World Trade Organization phytosanitary requirements and facilitating trade by reducing the risk of international movement of three Lymantriid forest defoliators.

The Lymantriid monitoring program was developed to determine population levels and flight periodicity of three Lymantriid species (Asian gypsy moth, *Lymantria dispar*, Nun moth, *L. monacha*, and the Rosy or Pink gypsy moth, *L. mathura*) in Russian Far East ports. A variety of monitoring techniques such as pheromone traps, light traps and permanent forest sampling sites are used to track populations of these pests. The information obtained from the monitoring program is used to develop a database to determine infestation levels and regulatory risk associated with ships and cargo in the monitored ports. Other countries cooperating in this effort are New Zealand, Canada, Australia and Chile.

Historically, trade has increased significantly between the United States and Russia since 1993. Similar climate, forest types, and pests between the countries enhance the potential of further forest pest introductions into North America and other countries. The three monitored species if introduced into the United States could significantly contribute to tree mortality affecting large forest and urban landscapes throughout most of North America. Recognizing the risk for introductions of the three monitored Lymantriids, the USDA Forest Service - Forest Health Protection and the USDA - Animal and Plant Health Inspection Service (APHIS) established a cooperative project with their Russian counterparts, the Russian Center of Forest Health and the All-Russia Research Center of Plant Quarantine. Other cooperating Russian agencies include the Primorsky Forest Protection Center and the Far East Forestry Research Institute.



Asian Gypsy Moth



Pink Gypsy Moth



Nun Moth

PROJECT GOAL:

Facilitate trade through the development and implementation of a monitoring system to reduce the risk of Lymantriid introductions from Russia's Far East into the U.S.A. and other participating countries.

PROJECT OBJECTIVES:

- Monitor *Lymantria dispar*, *L. monacha*, and *L. mathura* population levels in and adjacent to Russian Far Eastern ports.
- Identify pest pathways or modes of travel and develop measures to mitigate the risk of new introductions.
- Annually produce a database that identifies periods of risk for ship traffic within monitored ports.
- Maintain a database of all ships in monitored ports during high risk periods.
- Understand the biology and behavior of the three Lymantriid species that addresses life cycles, host range, geographic distribution, outbreak cycles, natural enemies, and management practices.
- Develop methodology for technology and information transfer regarding pest risk management, monitoring, and control.
- Develop monitoring procedures that reduce costs and improve effectiveness.
- Expand the program to include other cooperating countries.

PROJECT RESULTS:

- APHIS has adjusted its risk period in Russian Far East ports from 6 to 3 months - July through September, reducing the regulatory burden on ship operators as well as inspectors at destination ports.
- High-risk ships are now identified for inspection prior to reaching U.S. ports to accelerate the docking and clearance process.
- Project has successfully developed a monitoring protocol and database that determines periods of low to high risk for all three Lymantriid species.
- Monitoring techniques annually determine population densities in forested areas adjacent to ports.
- A database has been developed for ships with destinations in cooperating countries within Russian ports during periods of risk.
- Russian port lighting has been diminished during periods of risk to reduce egg mass deposition.
- Inspection protocols have been developed for ship superstructure and cargo.
- The All-Russia Research Center of Plant Quarantine has improved inspection protocols and issues Phytosanitary Certificates as requested, if the ship will be visiting cooperating countries.
- Developed pheromone lure for the rosy gypsy moth, *L. mathura*.
- Aerial applications of *Bacillus thuringiensis* have been applied to outbreak populations of *L. dispar* and *L. mathura* to suppress populations adjacent to port areas .
- The successful USDA-Russian Lymantriid monitoring program has served as a model for a similar initiative in Japan.

FUTURE PROGRAM OBJECTIVES:

- Use survey information to initiate mitigation measures at Russian ports when unacceptable levels of risk are reached.
- Refine survey protocols for all monitored forest defoliators in Russia's Far East.
- Expand survey methodology to other countries where Lymantriids may pose a threat to North American forests.
- Improve flight periodicity monitoring methodology and egg mass sampling techniques for *L. mathura*.
- Increase the number of cooperating countries that would benefit from the monitoring database.

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