

Rapid Detection of Exotic Lymantriids and Scolytids Pilot Study

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Abstract

Exotic invasive species, inadvertently introduced into North America through importation and travel, are threatening the integrity of North American forest ecosystems. The National Invasive Species Council in their 2001 Strategic Plan identified a collaborative program for early detection, diagnosis and response to high-risk, exotic, invasive insects, pathogens and plants as essential for minimizing pest damage to these ecosystems. In 2001, the Animal and Plant Health Inspection Service (APHIS) and the Forest Service (FS) established a multi-organizational Exotic Pest Rapid Detection Team. Team members included the National Plant Board, National Association of State Foresters, Oregon Department of Agriculture, Maryland Department of Agriculture, Cornell University, APHIS, and FS. The team developed national strategies for detecting exotic bark beetles (Coleoptera: Scolytidae) and nun moth (Lepidoptera: Lymantriidae *Lymantria monacha* Linnaeus), implemented pilot tests to evaluate these strategies, and identified gaps and research needs. Components of the strategies include: developing and modifying detection technologies; enhancing detection and diagnostic capabilities; implementing a monitoring program; and developing and implementing rapid response plans for eradication and managements.

During 2001, pilot tests for 10 targeted exotic Scolytids were conducted near the ports of Erie PA, Oswego NY, Toledo OH, Long Beach CA, Seattle WA, Portland OR, Baton Rouge LA, Alexandria LA, and Houston TX. These tests were a success and demonstrated the feasibility of a national survey regionally coordinated for early detection of exotic pests. *Hylurgops palliatus*, a targeted exotic scolytid species and *Arhopalus pinetorum* a non-targeted Cerambycidae were detected for the first time in the United States. In addition, numerous new state and country records were established for many non-targeted exotic scolytids. Nun moth pilot tests, conducted in Portland, OR and at the Department of Defense Naval Weapons Station-Earle, NJ, were also successful because no nun moths were detected. Associated overseas nun moth lure trials, demonstrated that the lures attracted male nun moths and highlighted the need for additional overseas trials to delineate differences in European and far eastern moth behavior. Results of and lesson learned during the 2001 pilot test were used to modify and improve protocols for the 2002 exotic scolytid pilot tests and the overseas nun moth lure trials.