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The purpose of this letter is to transmit a request for proposals to conduct an accelerated survey in Asia for natural enemies of hemlock woolly adelgid, in 2005, 2006, and 2007.

The hemlock woolly adelgid (HWA) is native to Asia where it is a common but harmless inhabitant of several hemlock species. In eastern North America, it has become the single greatest threat to the health and sustainability of eastern hemlock, *Tsuga canadensis* Carriere.

The U.S. Department of Agriculture Forest Service and cooperators have an ongoing five-year project with the goal of reducing the damage to eastern hemlock. HWA, *Adelges tsugae* Annand (Homoptera: Adelgidae), is the focal insect of this project, although in 2004 a sub-component initiative was funded to study the elongate hemlock scale, *Fiorinia externa* Ferris (Homoptera: Diaspididae), and its interaction with HWA. It is necessary to accelerate the biological control component of the overall project for HWA.

Half of the range of hemlock in the eastern United States is now infested with HWA, and the entire range is at risk. In the forest, and especially in those situations in which insecticide use is not appropriate, biological control with natural enemies (predators, pathogens) is the preferred way to manage HWA populations.

In the eastern United States there are few native predators of HWA, and most of these tend to be generalists and do not maintain HWA populations at sufficiently low densities to prevent damage to hemlocks. A classical biological control program that utilizes natural enemies is required to maintain HWA populations at non-damaging levels.

In 1992 efforts were initiated to import natural enemies to the United States from Japan, China, and Canada. These efforts have been extremely successful with the release of over 1 million specimens of *Sasajiscymnus tsugae* (Sasaji and McClure) [Coleoptera: Coccinellidae], as well as the release of *Scymnus* (subgenus *Neopullus*) *sinuanodulus* Yu and Yao [Coleoptera: Coccinellidae], and *Laricobius nigrinus* Fender [Coleoptera: Derodontidae]. These three species, and *Scymnus ningshanensis* Yu and Yao, represent the major predators of HWA currently being reared for release in the United States. At



present, there is no clear indication that *S. tsugae* is having an impact on HWA, although it has been established at numerous release sites. *L. nigrinus* and *Sc. sinuandodulus* have only recently been released and thus, it is too early to determine field establishment or host impacts.

The four predators, *S. tsugae*, *Sc. sinuandodulus*, *Sc. ningshanensis*, and *L. nigrinus* are not considered an immediate remedy to the HWA problem but rather parts of a long-term solution. The rearing of these predators in laboratories must continue, along with their release into numerous geographical areas to establish and promote their natural spread. Field insectaries need to be established in an effort to supplement the release of these laboratory-reared individuals with “wild” individuals, which are more adapted to climate and other local variables. Additional natural enemies are needed.

A Notice of Availability – Request for Proposals is enclosed. This request for proposals has been posted on the adelgid list server and distributed to scientists who have previously expressed an interest in biological control of HWA, but broad distribution is desired. This request for proposals is also available on the HWA website at:

www.fs.fed.us/na/morgantown/fhp/hwa.

/s/ Richard C. Reardon

RICHARD C. REARDON
Program Manager for Biological Control

Enclosure

cc: HWA Biological Control Technical Committee
HWA Coordinating Committee
HWA Steering Committee

Notice of Availability – Request for Proposals

Accelerated Foreign Exploration in Asia for Natural Enemies of Hemlock Woolly Adelgid

Introduction

The U.S. Department of Agriculture Forest Service Forest Health Technology Enterprise Team (FHTET) is requesting proposals for an accelerated and coordinated foreign exploration effort in Asia to collect and conduct preliminary host range testing of natural enemies of hemlock woolly adelgid. This is a collaborative effort within the Forest Service, supported by Forest Health Protection staffs in the Northeastern Area State and Private Forestry, Southern Region, FHTET, and the Northeastern and Southern Research Stations. FHTET (with the assistance of Forest Service International Programs) will have the lead role in developing cooperative agreements, contracts, etc. for the project and the transfer of funds internationally. The review team (see below) will provide technical oversight of the project.

FHTET will be accepting proposals from September 29, 2004 through October 22, 2004. A total of \$300,000 is EXPECTED TO BE MADE AVAILABLE in 2005 and the same amount again in 2006 and 2007 (depending upon adequate levels of funding and accomplishments in year 1 and 2 of this project).

The submitted proposals will be reviewed and ranked by members of the HWA Coordinating Committee (Brad Onken, Kathleen Shields, Jim Hanula, Dennis Souto, Rusty Rhea and Richard Reardon) and scientists with expertise in conducting classical biological control projects in Asian countries (Lee Humble – Canadian Forest Service, Victoria, BC; Mark McClure – retired, Connecticut Agricultural Experiment Station; and Paul Schaefer, USDA – Agricultural Research Service, Beltsville, MD). The rankings will be made available by November 12, 2004 to all investigators who submitted proposals. The funding status of proposals is dependent upon the availability of funds; therefore, all investigators who submitted proposals will be notified as soon as possible after ranking of proposals.

Focus

There is an urgent need to accelerate and coordinate the search in Asian countries for additional natural enemies of HWA. A 3-year program (2005-2007) is proposed requiring a FULL-TIME PERSON dedicated to this effort for the duration of the project. This person would work overseas for extended periods of time, represent the various cooperating agencies/partnerships, as well as coordinate the search and host range testing of potential natural enemies in Asia. This full-time person must be identified and his/her resume included with the proposal.

The proposal should contain:

1. A preliminary schedule of activities in Asia and USA for the full-time person
2. The identity of potential collaborators in Asia and USA and their roles (e.g., taxonomists, field support, and quarantine laboratory space).

The following list of tasks by year is provided as a broad outline to assist in preparation of the proposal.

FY 05

1. Identify Asian countries and provinces for initial collection/survey activities, and initiate collections/surveys.
2. Develop a standardized protocol(s) for host range testing in Asia and USA, and initiate host range testing in Asia.
3. Identify organizations that have quarantine facilities in the USA and establish agreements for receiving promising natural enemies in 2006 and 2007.
4. Begin field and laboratory evaluations of new predators and HWA life history.
5. Collect and ship supplemental colonies of natural enemies currently being evaluated and reared by scientists in the USA.

FY 06

1. Continue the search for natural enemies.
2. Maintain colonies of promising species and continue collection of information on the biology, host range, and life history.
3. Ship promising species of natural enemies to quarantine facilities in the USA, establish colonies, and initiate host range testing.
4. Prepare environmental assessments for field release/study in the USA.

FY 07

1. Continue the search for natural enemies.
2. Continue host range testing in Asia and USA.
3. Ship promising species of natural enemies to quarantine facilities in the USA.
4. Continue host range testing and rearing of promising species.
5. Release promising species.

Submission must be no more than 20 pages:

- FHP COVER SHEET including abstract (not over 500 words for abstract) – see format box. Please include address, telephone/fax number, and email for principal investigators and cooperators.
- Body of the proposal, including information under the following headings:
 1. Title
 2. Objectives
 3. Background and Justification for effort (e.g., identify the problem/opportunity of concern)
 4. Description of annual plan of work
 5. Detailed budget (do not expect reimbursement of indirect charges). List cost sharing from other sources

- 6. Deliverables (e.g., natural enemies, publications, reports)
- 7. References cited.

Please submit 8 hard copies of each proposal to Richard Reardon, 180 Canfield Street, Morgantown, WV 26505 or an electronic version to rreardon@fs.fed.us, phone (304) 285-1566.

Format for FHP cover sheet

Principal Investigator(s)_____ Institution(s)_____
Proposal Title_____
Cooperating Organizations USA and Asia_____
Cost Sharing from Other Sources (% amt)_____
Amount Requested in FY2005_____, FY2006_____ FY2007_____
Abstract

Proposal Letter Sent to the Following:

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