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Region

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Forest Health Protection International Activities

Accomplishment Report for Fiscal Year 2007

Prepared by the FHP International Activities Team



International Workshop on Biological Control of
Invasive Species of Forests - Beijing, P. R. China

FOREST HEALTH PROTECTION INTERNATIONAL ACTIVITIES FOR FISCAL YEAR 2007

Summary

This report is a consolidation of the Forest Health Protection (FHP) international activities in FY 2007. Funding for these activities comes from a variety of sources including FHP staff units and FHP International Activity Team (IAT) funds, USDA Forest Service International Programs (IP), USDA Animal and Plant Health Inspection Service (APHIS), US Agency for International Development (USAID), United Nations Food and Agriculture Organization (UN/FAO), and support from hosting countries.

During FY 2007, FHP specialists were involved in approximately 53 international-related activities with 18 countries. These activities included: providing technical assistance and training, cooperating on projects and pest risk assessments, giving presentations, and participating in international meetings.

There are four FHP International Activity Goals. These goals are:

- Goal 1.** U.S. Forests are protected from exotic pests.
- Goal 2.** North American countries have strong forest pest management programs.
- Goal 3.** Biological control options are in place to protect U.S. forests from exotic pests.
- Goal 4.** Forest health technology and expertise are shared worldwide.

FY 2007 Highlights

Mexico: Several cooperative projects were conducted with Forest Health counterparts in Mexico. These included:

- A continuing project with CONAFOR to develop a cooperative program of work on assessing bark beetle populations, flight periodicity and management recommendations for pine regeneration in Jalisco;
- Continued cooperation with Southern Research Station, Texas Forest Service, and El Colegio de la Frontera Sur (ECOSUR) on a project involving a new species of bark beetle (*Dendroctonus*) in Chiapas, with the objective of determining the ecological role of the new species and to identify potential attractants and pheromones to be used in surveys and management;
- Cooperation with Rocky Mountain Research Station to collect *Armillaria ostoyae* in native stands of Douglas-fir and 5-needled pines in Mexico, as part of two related projects entitled “Invasive species risks associated with new introductions of fungal species already existing in the USA” and “Assessing potential adaptation of forest pathogens to changing climate”; and
- Co-publish the “Diseases of Mexico” book.

Biological Control Workshop in P. R. China: The International Workshop on Biological Control of Invasive Species of Forests was held on 20-25 September 2007, Beijing, P. R. China. This workshop was organized by the USDA Forest Service-Forest Health Technology Enterprise Team; the Chinese Academy of Forestry - Research Institute of Forest Ecology, Environment and Protection; the Asian-Pacific Forest Invasive Species Network; and the Asian-Pacific Association of Research Institutions. The workshop was widely considered a successful meeting. It was attended by 129 delegates from 15 countries, and co-sponsored by five organizations: the Chinese Academy of Forestry, Beijing Normal University, the Chinese Academy of Agricultural Sciences, IUFRO 7.03.08 - Forest Protection in Northeast Asia, and the USDA Forest Service - Northern Research Station, NRS-03, Ecology and Management of Invasive Species and Forest Ecosystems. Objectives of the Workshop were to:

- Summarize 15 years of cooperation between the USDA Forest Service and P. R. China on management of invasive forest species;

- Plan future cooperation among the USDA Forest Service and various organizations in P. R. China, as well as other countries in the Asian-Pacific region;
- Strengthen and develop strategies for minimizing introductions of invasive forest species;
- Encourage informal exchanges of scientists and workshops about biological control of invasive forest species;
- Harmonize the shipment of natural enemies of invasive species, and
- Document the biology, life history, natural enemies, etc. for a prioritized list of potential invasive species of forests between the USA and P. R. China, as well as other countries.

Asian Gypsy Moth (AGM) and Invasive Lymantriinae Port Trapping: Since 1993, the USDA Animal and Plant Health Inspection Service and the USDA Forest Service, Forest Health Protection have worked cooperatively with Russia to conduct the Asian Gypsy Moth Pest Exclusion Program. The program focuses on port trapping and ship inspections during the high risk period associated with female egg mass deposition of the three Lymantriid species. In Russia, this Lymantriid monitoring program also includes Pink or Rosy Gypsy Moth and Nun Moth. AGM and Rosy or Pink Gypsy Moth populations are once again increasing in the Russian Far East. In 2007, the Russians removed over 250,000 egg masses from one ship berthed in Vostochnyy, the Russian container port.

This successful program was expanded to include monitoring several ports in Japan in 2004, and South Korea's two major ports of Hunan and Posen, in 2007. A ship inspection program in the monitored ports in Japan was began in 2007. Also in 2007, the USDA Pest Exclusion Team initiated discussions with representatives from P. R. China to discuss implementing a port monitoring program in P. R. China beginning in 2008. Data collected in the port trapping program is shared with Canada, New Zealand, and Australia.

FHP is also involved in support, development, and participation of three international invasive species organizations and networks – the Insect and Disease Working Group of the North American Forestry Commission (NAFC), the Asia-Pacific Forest Invasive Species Network (APFISN), and the Forest Invasive Species Network of Africa (FISNA). In FY 2007, FHP provided funding to help support attendees to the APFISN and the FISNA workshops and meetings held in Kuala Lumpur, Malaysia and Peoria, South Africa, respectively.

The attached table summarizes the primary FHP international activities in FY 2007 by country. Source of funding and participation are listed in order to show the cooperation and participation that goes to support FHP international activities.

Additional information can be obtained either through the IAT or the regional FHP international activity coordinators. Previous Activity Reports and many of the project and trip reports prepared by FHP specialists can be found on the FHP International Activities website:

http://www.fs.fed.us/foresthealth/forest_health_management.shtml and click on “International Activities”

IAT – Dayle Bennett, Iral Ragenovich, Noel Schneeberger, Denny Ward, and Larry Yarger

Regional FHP IAT Coordinators

WO and FHTET – Larry Yarger	R3 – Debra Allen-Reid	R8 – Denny Ward
R1 and R4 – Dayle Bennett	R5 – Phil Cannon	R10 – Mark Schultz
R2 – Tom Eager	R6 – Iral Ragenovich	NA – Noel Schneeberger

FY 2007 FOREST HEALTH PROTECTION INTERNATIONAL ACTIVITIES

COUNTRY	ACTIVITIES	TECHNICAL SPECIALISTS	SOURCE OF FUNDING
ARGENTINA	In cooperation with the National Agricultural Technology Institute of Argentina, develop a <i>Sirex noctilleo</i> distribution and spread model	Liebhold (NS)	NS/IAT
AUSTRALIA	Attend Australia/New Zealand Forest Health Surveillance Workshop in Coff's Harbor, Australia – give 4 presentations on aerial survey and monitoring, and demonstrate the digital sketch map system.	Wittwer (R10) Bennett (R4)	IAT/FHP
CANADA	Provide aerial application assistance with GPS/GIS logistics and Spray Advisor on a 1+ million acre jack pine budworm spray project in Ontario.	Ghent (R8) Onken (NA)	FHP/IAT
	Attend and give presentations at SERG-I (Spray Engineers Research Group-International)workshop in Quebec City, Quebec	Thistle (FHTET) Ghent (R8) Onken (NA)	FHP/IAT
	Continue cooperation with Canadian Forest Service, Pacific Forestry Center on maintenance of Douglas-fir tussock moth colony and virus testing. Work with PFC to begin efforts to bring colony back to the U.S.	Reardon (FHTET) Ragenovich(R6)	FHP
	Participate in field trip hosted by B.C. Ministry of Forests on mountain pine beetle outbreak and other forest insect problems in Kamloops Region of B.C.	Ragenovich (R6) Spiegel (R6)	FHP
	Attend and give a presentation at “Whitebark pine in Western Canada” - current research and management issues workshop, Whistler B.C.	Schwandt (R1)	FHP
	Work with the Canadian Forest Service and University of Alberta to collect parasitized amber marked birch leafminers, and transport them for release in Alaska	Reardon (FHTET)	FHP
	Develop agreement with Sylvar, a private forestry enterprise devoted to production of forest biological control products, to produce GypChek , the virus for gypsy moth.	Reardon (FHTET)	FHP

People's Republic of CHINA	<p>Help organize a International Workshop: <u>Biological Control of Invasive Species of Forests in the United States and P. R. China</u></p>	<p>Yun Wu (FHTET) Reardon (FHTET)</p>	<p>IAT,FHP</p>
	<p>Attend and give presentations at the International Workshop on <u>Biological Control of Invasive Species of Forests in the United States and P. R. China</u></p>	<p>Yun Wu (FHTET) Reardon (FHTET) Clarke (R8) Eager(R2)</p>	<p>IAT,FHP</p>
	<p>A joint APHIS/FS team visited China, and Chinese representatives came to the U.S., to discuss implementing a AGM port monitoring system in 2008.</p>	<p>Munson (R4) Leonard (R8) Mastro (APHIS) Fussell (APHIS) McMillin (R3)</p>	<p>APHIS FHP</p>
	<p>Continue project to develop a semiochemical-based monitoring and control program for <i>Tomicus yunnanensis</i> in the People's Republic of China</p>	<p>Clarke (R8) Eager (R8)</p>	<p>FHP/IAT</p>
	<p>Continue to participate on a team to develop a book on Forest Insects of China - provide input, review drafts, etc. as needed.</p>	<p>Clarke (R8) Bohne (R5)</p>	<p>FHP</p>
	<p>Continue coordination with China on biocontrol projects – these projects test natural enemies of the invasive pests to determine whether they will complete their life cycle on additional hosts. If so, then they will not be imported into the U.S:</p> <ul style="list-style-type: none"> ▪ Continue host range testing for selective pathogenic fungi and herbivores of mile-a-minute weed. ▪ Continue a biological control project of Tree of heaven using pathogenic fungi and weevils. ▪ Continue a biological control of Kudzu project using an imitation rust and herbivores. ▪ Continue to cooperate on biological control of Japanese knotweed. ▪ Cooperative effort with Southern Research Station for biological control effort in China for Chinese privet. 	<p>Reardon, Yun Wu (FHTET)</p>	<p>FHP</p>

People’s Republic of CHINA (cont)	<ul style="list-style-type: none"> ▪ Collect and test host range for natural enemies of emerald ash borer. • Collect and test the host range of natural enemies for hemlock woolly adelgid. <p>Cooperate with and publish “Parasites and Predators of Forest Pests in China”.</p> <p>Cooperate and publish “Invasive Plants of Asian Origin Established in the U.S and Their Natural Enemies Vol. 2”.</p> <p>Continue cooperation on “Forest Diseases of China” book.</p>	<p>Yun Wu, Reardon (FHTET)</p> <p>Yun Wu, Reardon (FHTET)</p> <p>Yun Wu, Reardon (FHTET)</p>	<p>FHP</p> <p>FHP</p> <p>FHP</p>
COSTA RICA	<p>Attend and present paper at 32nd International Symposium on Remote Sensing of the Environment on “Mapping the risk of natural resource damage to watersheds associated with wildland fire and an outbreak of the southern pine beetle in Nueva Segovia, Nicaragua”</p>	<p>Ward (R8) Ellenwood (FHTET)</p>	<p>FHP</p>
HUNGARY	<p>Attend the IUFRO, 7.02.02, foliage, shoot, and stem diseases working group meeting in Sopron, Hungary and present a paper on the results of a survey of the impact of Swiss needle cast on Douglas-fir in western Oregon.</p>	<p>Filip(R6)</p>	<p>FHP, IAT</p>
ITALY	<p>Provide spatial statistics routines, GIS code, and sampling routines to a professor at Laboratorio di Ecologia e Geomatica Forestale, Universita degli Studi del Molise for use in field and classroom studies. The professor is also applying the tools in design of the Italian government forest inventory.</p>	<p>Downing (FHTET)</p>	<p>FHP</p>
JAPAN	<p>Give presentation to about 20 Japanese foresters and forest industry representatives visiting the U.S.</p> <p>Continue to work with Japan on the Asian Gypsy Moth Pest Exclusion Program. Japan initiated a ship inspection program in high risk ports.</p> <p>Develop a cooperative agreement with Dr. Kamata at Tokyo University to continue surveys and host range testing of natural enemies of mile-a minute weed and kudzu.</p>	<p>Daoust (R6)</p> <p>Munson (R4) Leonard (R8) Mastro (APHIS) Fussell (APHIS)</p> <p>Reardon (FHTET)</p>	<p>FHP</p> <p>APHIS FHP</p> <p>FHP</p>

JAPAN (cont)	Manuscript submitted and accepted by the Florida Entomologist on “Herbivoires and natural enemies of mile-a-minute weed in Japan”.	Reardon (FHTET)	FHP
	Continue cooperation on surveys for nartual enemies of, and life history studies of hemlock woolly adelgid.	Reardon (FHTET)	FHP
MALAYSIA	Provide funding for and participate in workshop sponsored by Asian Pacific Invasive Species Network and USDA FS FHP on developing invasive species management plans, including early detection and response. Attendees represented a number of Asia-Pacific countries.	Mangold(WO) (funding) Tkacz (WO) Duerr (R8) (attended)	FHP
MEXICO	Develop a cooperative program of work with CONAFOR on assessing bark beetle populations, flight periodicity and management recommendations for pine regeneration in Jalisco	Steed (R1/4) Willhite (R6)	IAT/FHP
	Participate with Southern Research Station on a project involving a new species of bark beetle (<i>Dendroctonus</i>) and southern pine beetle and determine which species are responsible for initiating attack and killing pines – 2 trips	Clarke (R8)	IAT/FHP
	Visit various parts of Mexico to collect <i>Armillaria ostoyae</i> in native stands of Douglas-fir and 5-needled pines. This activity is a part of two related projects entitled “Invasive species risks associated with new introductions of fungal species already existing in the USA” and “Assessing potential adaptation of forest pathogens to a changing climate.”	Cannon (R5) Mee Sook-Kim (RMRS) Klophenstein (RMRS)	FHP/IAT RMRS
	Publish “Diseases of Mexico” book	Mangold (WO)	CONAFOR FHP
NICARAGUA	Provide technical assistance to Nicaraguan Forest Department (INAFOR) for evaluation of insects and diseases in pine forests; give seminar on pests of pines at the Universidad Nacional Agaria; collect pathology culture samples.	Ward (R8) Menard (R8)	FHP/IAT
	Provide USAID and Nicaraguan Forest Department (INAFOR) with satellite coverage of Hurricane Felix damage and help develop a proposal for USAID and INAFOR to mitigate damage caused by Hurricane Felix.	Ward (R8)	FHP

POLAND	Participate and serve as FHP representative on a Forest Service delegation to Poland to discuss forest research, forests in the context of rural development, forest health monitoring, and forest inventory and analysis. Attend IUFRO meeting on “Forests and forestry in the context of rural development”	Tkacz (WO) Bartuska (WO-Research) and other representatives from Research)	FHP/WO Research
RUSSIA	Continued cooperation with Russia to trap high risk ports in the Russian Far East in the AGM Pest Exclusion Program.	Munson (R4) Leonard (R8) Mastro (APHIS) Fussell (APHIS)	APHIS FHP
SOUTH AFRICA	Provide funding to the Forest Invasive Species Network of Africa for the FISNA executive meeting held in conjunction with the <i>Sirex</i> workshop in Pretoria, S.A.	Mangold(WO) Chilima (FISNA)	FHP
	Participate in an international symposium and workshop on the <i>Sirex</i> woodwasp and its growing threat to worldwide forests and forestry, Pretoria, S.A.	Dodd(NA) Schneeberger (NA)	IAT FHP
SOUTH KOREA	Continue cooperation with South Korea with the AGM Pest Exclusion trapping program for Asian Gypsy Moth in two ports. Met with South Korean representatives to discuss port monitoring program and 2007 data.	Munson (R4) Leonard (R8) Mastro (APHIS) Fussell (APHIS)	APHIS FHP
SWITZERLAND	In cooperation with CABI-Bioscience – conduct survey and host range testing for pathogens and parasites and predators of knotweeds collected from throughout Europe, to determine if they are able to complete life cycles in other plants.	Reardon (FHTET)	FHP
	In cooperation with CABI-Bioscience – conduct survey and host range testing for weevils for control of garlic mustard.	Reardon (FHTET)	FHP
UNITED KINGDOM	In cooperation with CABI-Bioscience – conduct survey and host range testing for pathogens and parasites and predators of knotweeds collected from throughout Europe to determine if they are able to complete life cycles in other plants.	Reardon (FHTET)	FHP
	In cooperation with CABI-Bioscience – conduct survey and host range testing for weevils for control of garlic mustard.	Reardon (FHTET)	FHP

GENERAL	Serve as President of the International Economist group and attend annual meeting in Berlin, Germany.	Lewis (WO)	FHP
	Attend NA Forestry Commission and associated Forest Insect and Disease Working Group and Invasive Species Working Group meetings in Fredrickton, New Brunswick, CA.	Mangold (WO) Smith (WO) Cota (WO)	FHP
	Attend, give presentations and present posters at the Western International Forest Disease Work Conference in Smithers, BC.	Various regions	FHP
	Helped coordinate (with UC Berkley) the IUFRO Root and Butt Rot Working Group meeting and field trip held in northern California and southern Oregon. Approximately 30 countries were represented.	Filip (R6)	FHP

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