

2017 Washington State Exotic Pine Pest Survey



Prepared by
Washington State Department of Agriculture
Plant Protection Division
Entomology Branch

March 2018

In Cooperation with the
United States Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine

Introduction

In response to the threat of infestation from exotic pine pest, Washington State Department of Agriculture (WSDA) in cooperation with the United States Department of Agriculture (USDA) conducted an Exotic Pine Pest (EPP) detection survey throughout Washington.

East of the Cascade Mountains pine trees cover 33% of the forest area, a much higher component than in western Washington. In recent years, insects infesting pine forests east of the Cascades have risen dramatically. Pine tree mortality from native wood boring insects has more than quadrupled since 1979, with the most dramatic increases occurring in the past few years. Areas of trees killed by insect increase the risk of fire and threaten other species of conifers and residential areas. Stressed forests of the interior and Eastern Cascade Mountains are vulnerable to the introduction of an invasive pine pest.

Sirex noctilio (European wood wasp) is listed as a pest of national concern for 2009. *Sirex noctilio* has been repeatedly introduced outside its native range and has become successfully established in New Zealand, Tasmania, Australia and South America. It has had a damaging impact on pine forests where it has been introduced. Since its introduction in Fulton, New York in 2004, *S. noctilio* has spread throughout New York State. New detections have occurred since in Michigan, Pennsylvania and Vermont as well as north into southern Ontario, Canada. Recent surveys indicate that eradication is unlikely and that *S. noctilio* is fast becoming established in eastern North America. Early detection will be pivotal in preventing *S. noctilio* establishment in Washington State

Other targets included in the Lindgren funnel trapping survey are *Monochamus alteratus*, *Ips sublongatus* (Asian larch bark beetle), *Orthotomiscus erosus* (Mediterranean pine engraver), *Hylurgus ligniperda* (red-haired pine beetle) and *Tomicus destruens* (pine shoot beetle). The Cross-vane panel trapping survey will be *Tetropium fuscum*. *T. fuscum* is listed as a CAPS Pest of National Concern for 2009 and can attack apparently healthy trees, causing economic damage by reducing wood volume and quality. *Ips sublongatus* (Asian larch bark beetle) is reported to be one of the most destructive bark beetles of pine and larch trees in Europe. *T. destruens* (pine shoot beetle) is an important economic pest of pines in Europe, ranked 5th on the AHP Prioritized Pest List for 2010. The following target lepidopteron: *Lymantria mathura*, *Dendrolimus pini*, *Dendrolimus punctatus* and *Dendrolimus sibiricus* are economically important defoliators of pine forests.

Methods and Materials

Lindgren Funnel Trap Survey

WSDA deployed 12 cross-vane and 50 Lindgren funnel traps in May and June 2017 throughout Washington (map 1). The following number of traps were deployed with the lure combinations: 14 Ungelled alpha-pinene; 9 Monochamol, UHR ethanol and UHR alpha-pinene; 12 UHR ethanol and UHR alpha-pinene; 14 Spruce blend, UHR ethanol and Geranyl Acetol or 13 Sirex. Traps are checked on a three-week cycle, and lures are changed every three to six weeks or as determined by CAPS approved method. EPPS traps were removed in September.

Defoliating Moth Trap Survey

WSDA has deployed the following pine moth trap: 100 *Dendrolimus pini/sibiricus* Milk Carton Traps, 100 *Dendrolimus punctatus* Wing Trap Kits, 100 *Lymantria Mathura* Wing traps and 100 *Panolis flammea* bucket traps. The traps were deployed by the beginning July throughout eastern Washington (map 2). Each trap had one of the following lure combinations: *Panolis flammea*, *Dendrolimus punctatus*, *Dendrolimus pini/sibiricus* and *Lymantria muthura*. Traps are checked every three weeks and lures replaced as determined by CAPS approved method. All traps were removed in September 2016. All traps were negative for *Dendrolimus pini*, *Dendrolimus sibiricus*, *Dendrolimus punctatus*, *Panolis flammea* and *Lymantria muthura*.

WSDA personal used a iPhone in the field using “IForm” to record trap data, such as record trap number, collection dates, lure changes, waypoints and trap removal dates. All data from “IForm” were stored into one data base using Excel.

Emergence Chambers

Another aspect of the 2017 EPP survey was the rearing wood boring insects. Unfortunately, no rounds of concern were located for the 2017 season. So, no insects were reared for the 2017 season.

Identification

Throughout the 2017 EPP survey, samples were sorted and prescreened for all wood boring insects. Suspect wood boring insects were sent to James R. LaBonte (Curator for the Oregon Department of Agriculture), and Josh Vlach (Oregon Department of Agriculture) for final determination. The following were common wood boring insects identified:

- Female wood wasps: *Urocerus flavicornis* and *Xeris indecisus*.
- Bark beetles: *Dedroctonus valens*, *Xyleborinus saxesenii*, *Hylastes nigrinus*, *Orthotomicus latidens*, *Pseudips mexicanus*, and *Pityophthorus sp.*
- Buprestidae: *Chacophora angulicollis*
- Cerambycidae: *Xylotrechus longitaris*, and *Stictoleptura canadensis*.

Results

WSDA deployed 62 EPP-EWB traps and 400 defoliating moth traps throughout eastern Washington State. WSDA were able to sort and identify collected specimens in a timely matter. WSDA has had continued success with paperless surveys. WSDA continues to reduce sampling sorting time, while improving wood boring insect identification skills. WSDA continues to build the wood boring insect collection. Exotic pine pest were not detected during the 2017 survey.

Summary

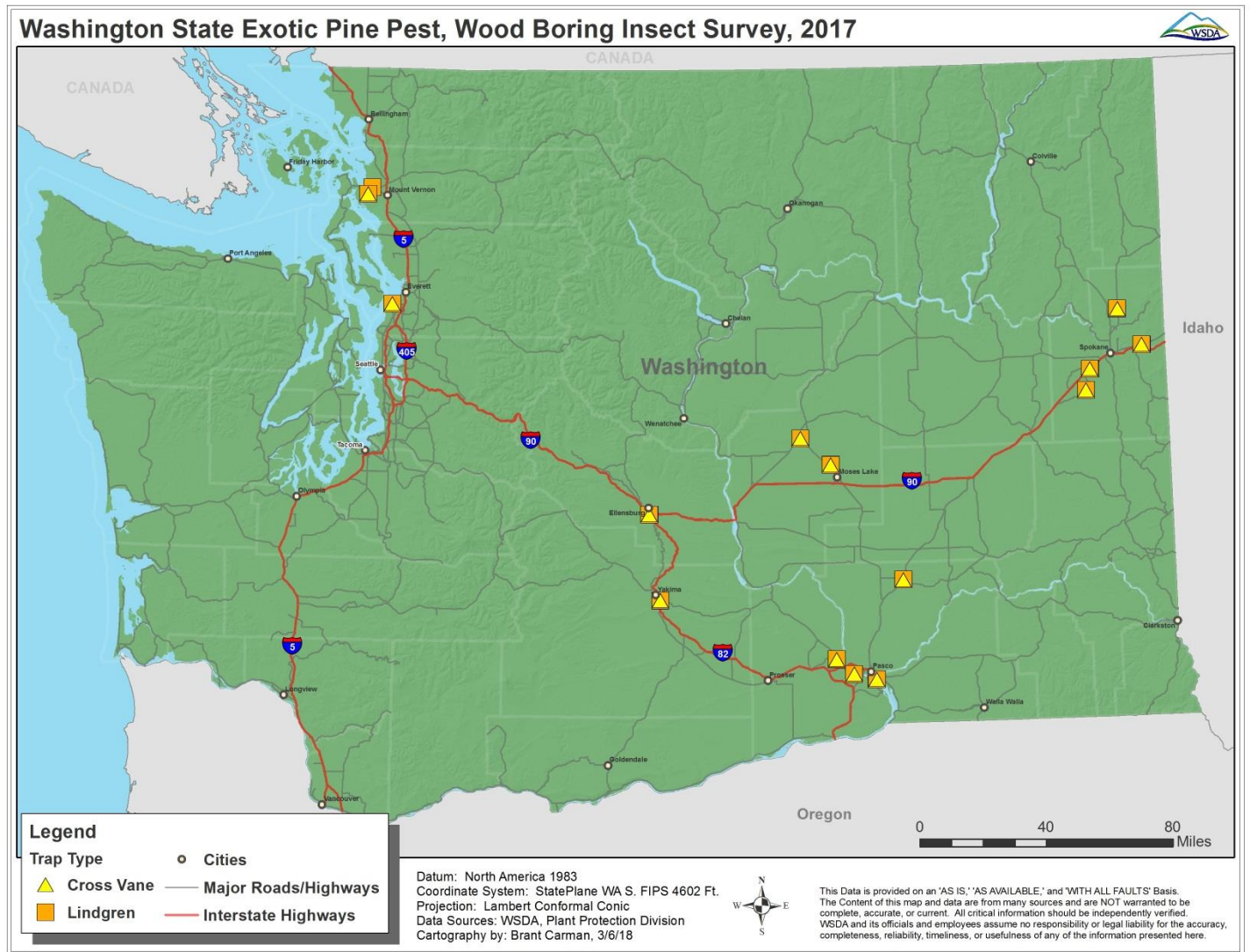
It proved quite successful for WSDA, ODA and USDA to jointly work together throughout the detection survey. It is essential to continue detection surveys throughout Washington to detect and prevent exotic pine pest infestations. An exotic pine pest infestation would devastate Washington's environment and economically impact agriculture, such as nursery industry and trees grown for timber.

Compiled by:

J. Cena

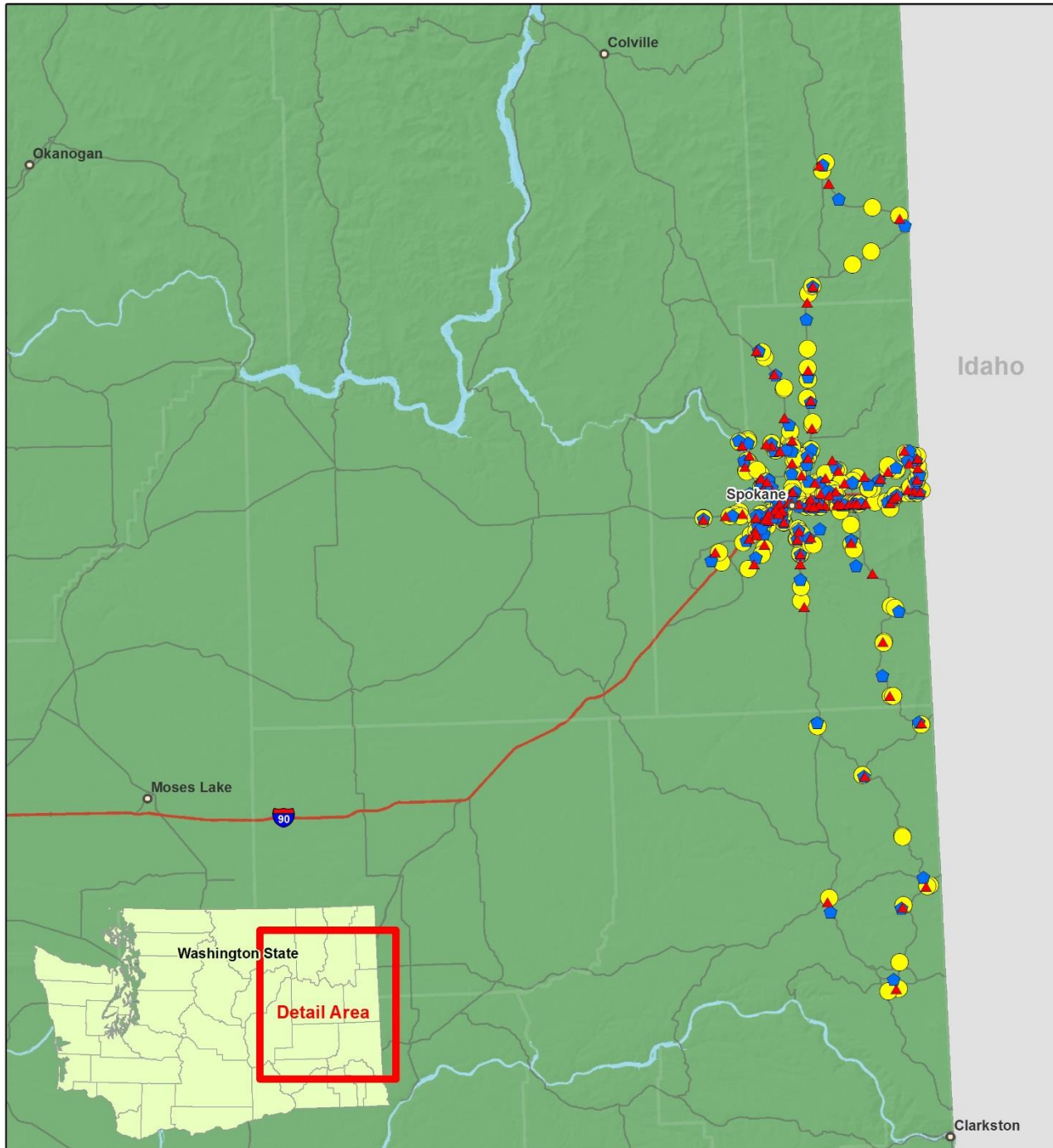
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Washington State Department of Agriculture



Map 2

Washington State Exotic Pine Pest, Defoliating Moth Survey, 2017



Legend

- | | |
|------------------|------------------------|
| Trap Type | ○ Cities |
| ▲ Plastic Bucket | — Major Roads/Highways |
| ⬠ Milk Carton | — Interstate Highways |
| ● Paper Wing | |

Datum: North America 1983
 Coordinate System: StatePlane WA S. FIPS 4602 Ft.
 Projection: Lambert Conformal Conic
 Data Sources: WSDA, Plant Protection Division
 Cartography by: Brant Carman, 3/6/18

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