Monitoring *Phytophthora ramorum* in Western Washington Waterways, 2009

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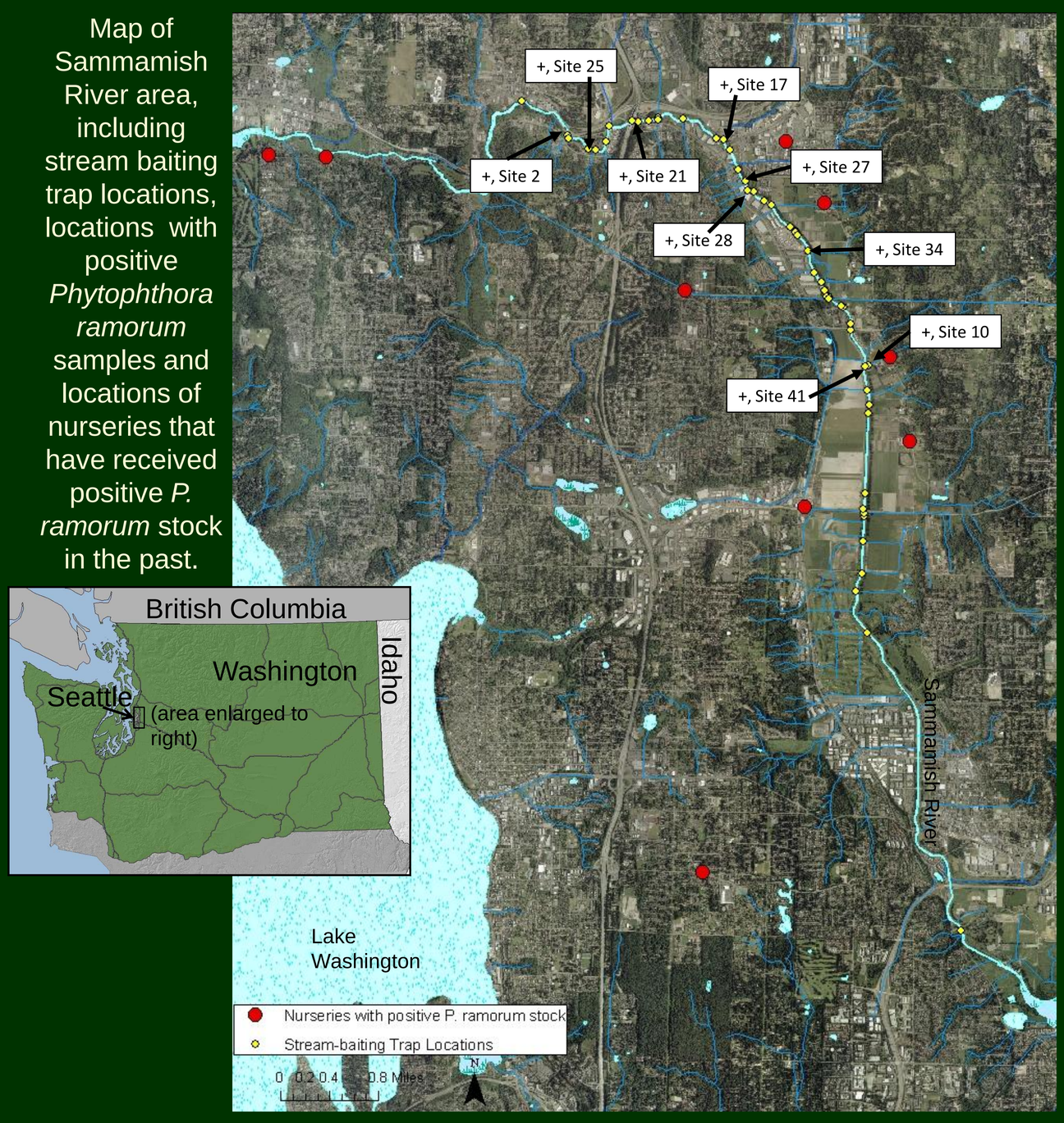
Introduction

Phytophthora ramorum is the causal agent of Sudden Oak Death (SOD), ramorum leaf blight, and ramorum dieback. Western Washington is at risk for SOD due to the presence of known *P. ramorum* hosts in the natural environment, suitable climatic conditions (extended periods of moist weather and mild temperatures), and the presence of nurseries receiving positively identified *P. ramorum* host stock.

Survey and Monitoring 2003 – 2008

Aquatic monitoring and forest and nursery perimeter surveys have been conducted since 2003, with efforts since 2006 focusing on aquatic areas near previously reported positive *P. ramorum* nurseries. The first *P. ramorum* positive sample in the Sammamish River, King County, WA, was found in April, 2007. In 2007 and 2008, through collaborative efforts among the WA Dept. of Natural Resources, the WA Dept. of Agriculture and USDA Forest Service, two more positive samples were found in the river. During that time twenty-two stream baiting traps were placed in the Sammamish River and two separate streamside vegetation surveys were conducted in order to determine the origin of the *P. ramorum* inoculum. All vegetation samples collected were negative for *P. ramorum*.

Map of Sammamish River area, including stream baiting trap locations, locations with positive *Phytophthora ramorum* samples and locations of nurseries that have received positive *P. ramorum* stock in the past.



Survey and Monitoring 2009

In 2009 stream baiting continued in Washington, with traps placed at 51 water courses entering into the Sammamish River (see map below, left). Positive *P. ramorum* samples were obtained from nine stream baiting sites. Landscape vegetation surveys and riverside vegetation surveys were conducted and soil samples were collected to try and determine where the inoculum was originating from. All samples from the vegetation surveys and the soil were negative for *P. ramorum*.

Stream Baiting Methods

- Established in January, 2009
- Two *Rhododendron* leaf traps at each site
- 6 replicates from Jan. to June
- Samples sent for analysis
  - WA Dept. of Agriculture
  - Oregon State University

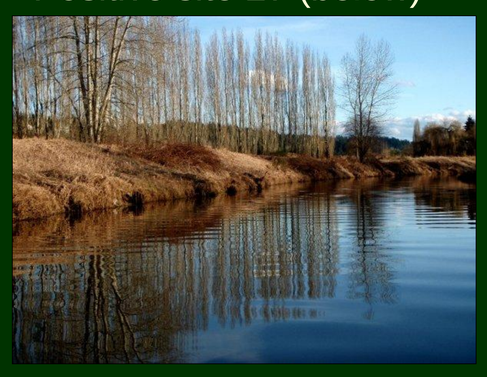

Stream-baiting leaf trap.

Stream Baiting Results

- Nine *P. ramorum* positive stream-baiting sites (see map to left)
- 17 *P. ramorum* positive samples


Positive site 21 (above)

Positive site 27 (below)



Areas of Sammamish River survey

Discussion

Seventeen positive *Phytophthora ramorum* samples have been collected through stream baiting traps in the Sammamish River since January, 2009. Dr. Gary Chastagner and Dr. Marianne Elliott and their lab at Washington State University have been conducting molecular fingerprinting on the positive Sammamish River samples in efforts to determine where the *P. ramorum* inoculum is originating from. It remains unknown where the inoculum is originating from and whether there are one or multiple *P. ramorum* inoculum entry points into the river.

Stream baiting will resumed in January 2010, in the Sammamish River, Green River and Stillaguamish River in King and Snohomish Co., WA.

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