



# Washington State Program for the Control of Invasive Knotweeds



**Marshall Udo**

*Washington State  
Department of  
Agriculture*



# Washington State Program for the Control of Invasive Knotweeds

- Invasive knotweeds targeted for control
- Program Framework
- Project Selection
- Program History
- Treatment methodology
- Program Results and Achievements



# Invasive Knotweeds

- Japanese (*Polygonum cuspidatum* Sieb. & Zucc.)
- Giant (*P. sachalinense* Schmidt)
- Bohemian (*P. x bohemicum* Chrtek & Chrtkova )
- Himalayan (*P. polystachyum* Wall)



# Framework

- WSDA supports local projects with funding, herbicide, outreach materials, training
- Resources are provided through interagency agreements or contracts with local organizations
- Projects implemented by County Noxious Weed Control Boards, Tribal governments, Washington State Parks, and one non-governmental organization



# Project Selection Process

- WSDA solicits proposals in March/April
- WSDA facilitates annual stakeholder meeting to obtain input regarding proposal evaluation criteria
- Based on stakeholder input, WSDA has supported projects that
  - Were well underway
  - Could cost-effectively control knotweed populations
  - Demonstrated a commitment to monitoring



# Project Elements

- Multiple partners in one project area
- Address areas with low-level knotweed infestations, protect functional riparian habitats or endangered plant species, or target areas in the early stages of invasion
- Treatment strategies follow an integrated pest management approach
- Work is performed on both private and public land



# Program History

- Pilot project initiated in 2004
  - \$500,000 appropriated for control work in Southwest Washington Counties
  - Agreements were entered into with County Noxious Weed Control Boards, The Nature Conservancy, and the Washington State Parks and Recreation Commission
  - Treatment methods were evaluated by Dr. Tim Miller of the Washington State University



# Program History

- 2005 Program expands statewide
  - Continued funding level of \$500,000
  - Projects initiated in 2004 receive continued support
  - Projects on the Olympic Peninsula, Puget Sound, and Yakima County are added to program



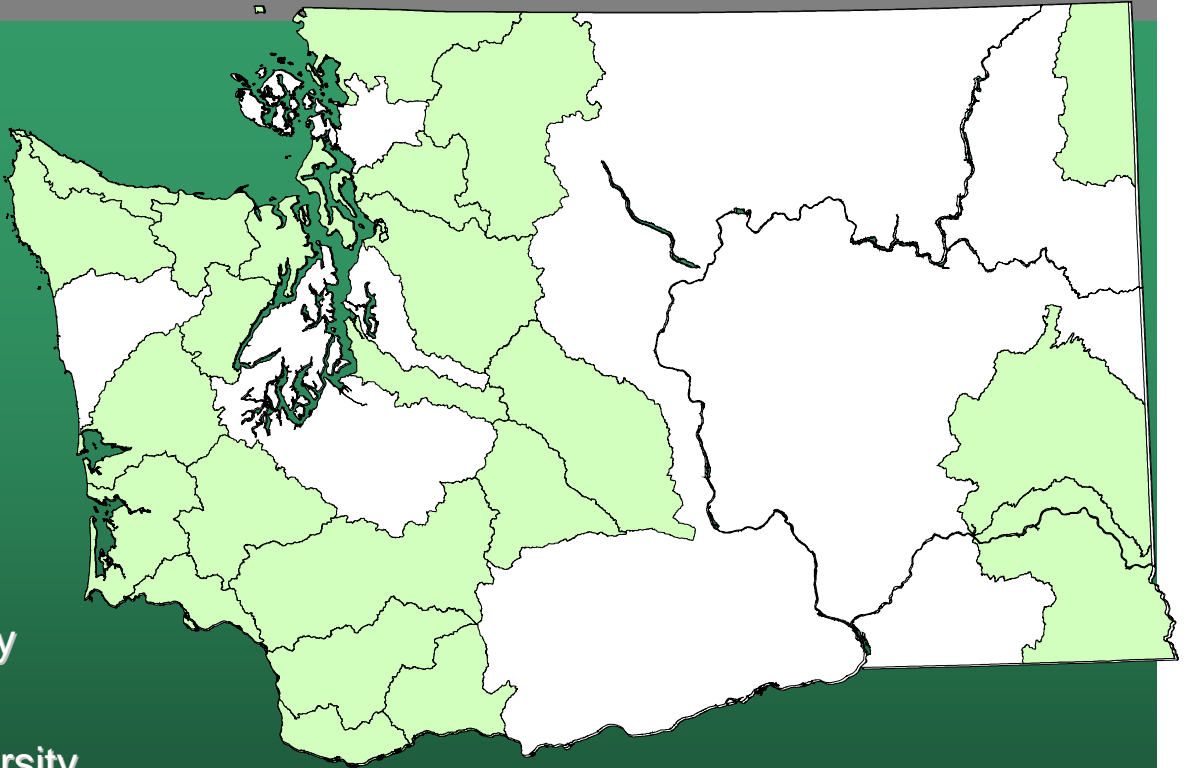


# Program History

- 2006 Program adds partners in Eastern Washington and Olympic Peninsula
  - Continued funding of \$500,000
  - Program Cooperators brought over \$500,000 of additional resources to local projects
  - Projects initiated in 2004 or added in 2005 receive continued support
  - Whitman County, Asotin County, Skagit County, and the Jamestown S’Klallam Tribe added as project partners



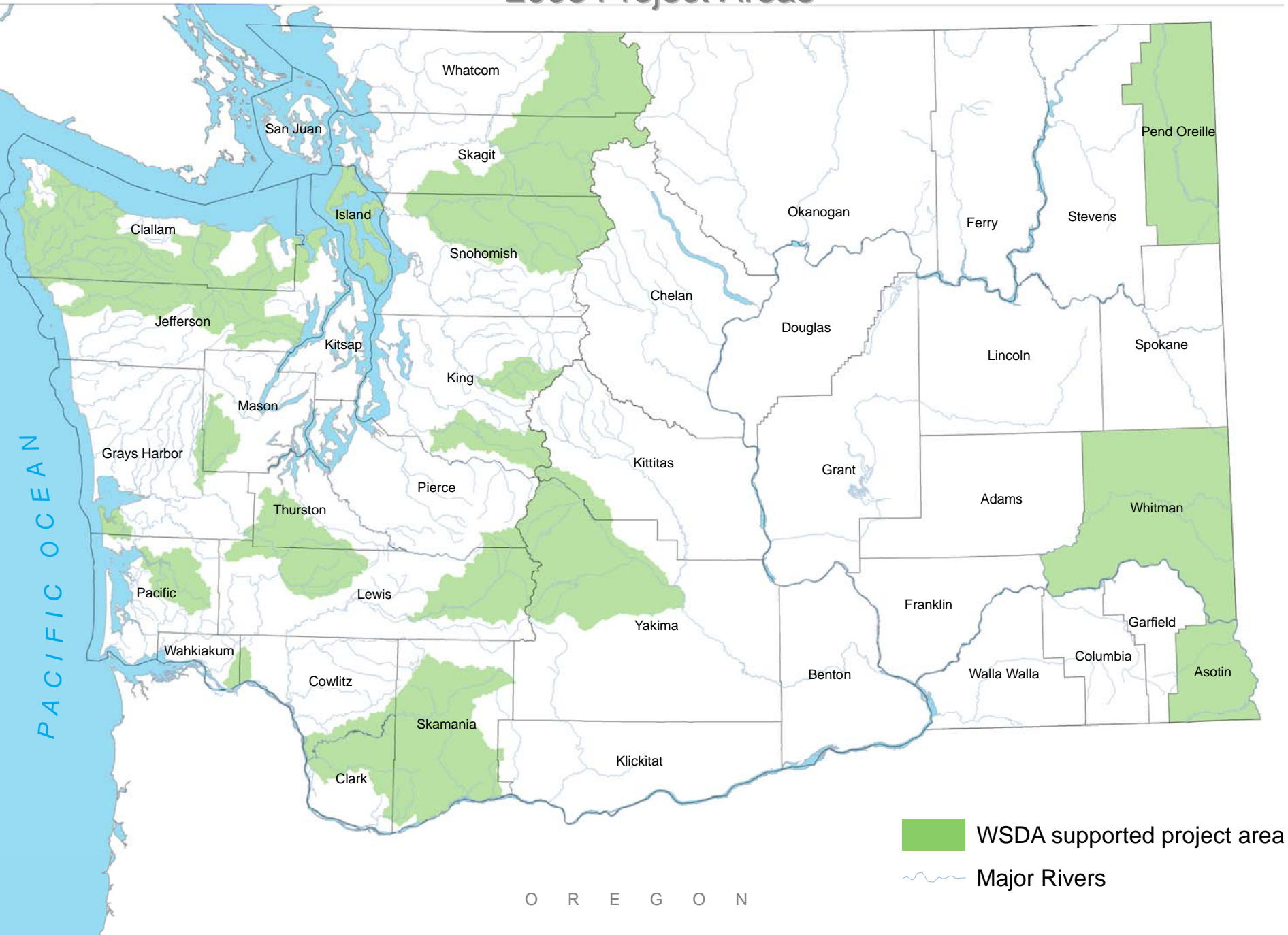
# Project Areas



## 2006 Partners

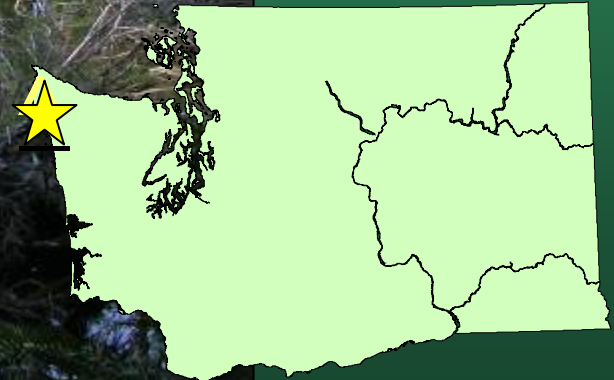
- 2004 and 2005 Partners
- Whatcom County
- Benton County
- Benton County
- Skagit County Conservancy
- Skagit County
- Jefferson State University
- Jamestown S'Klallam Tribe

# 2006 Project Areas





# Dickey River Olympic National Park



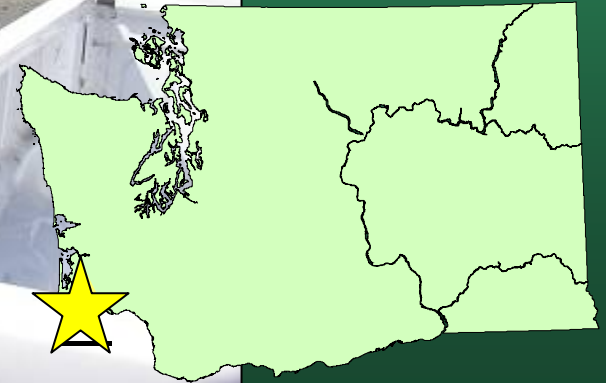


# Strait of Juan de Fuca



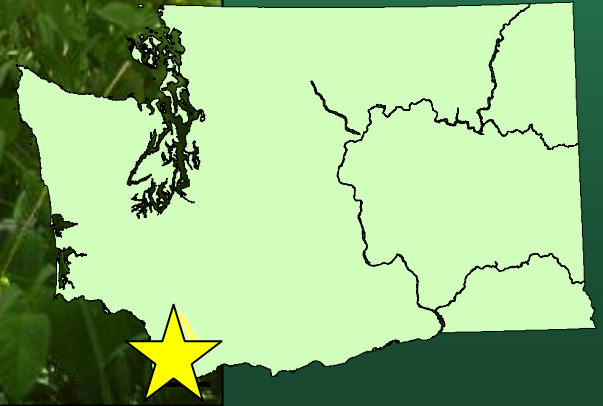


# Wahkiakum County



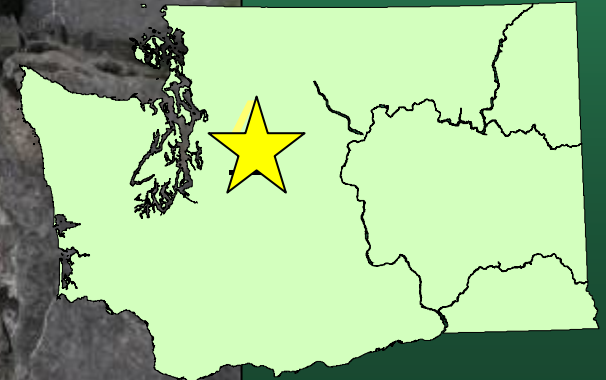


# Clark County





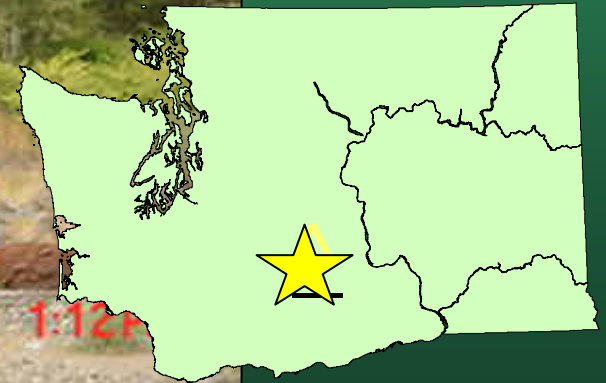
# Snoqualmie River





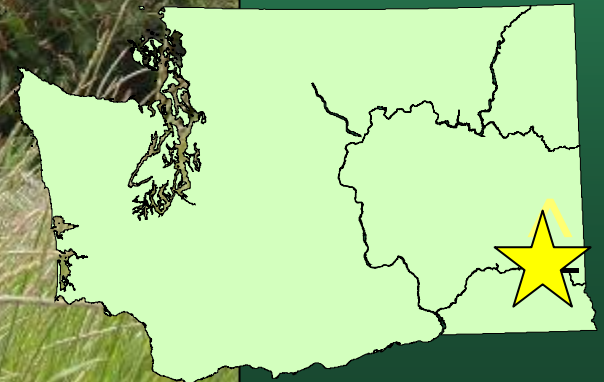


# Yakima County





# Whitman County





# Treatment Methods

- Foliar application of herbicide
- Injection of an undiluted glyphosate formulation
- Combination inject + foliar
- Combination manual + foliar



# Foliar Application of Herbicide

- Usually made with a backpack sprayer
- 2% - 8% concentration of glyphosate formulation (and registered for use at aquatic sites)
- 0.5% - 1% concentration of imazapyr formulation (and registered for use at aquatic sites)
- Addition of a spray adjuvant



# Injection of Herbicide

- Usually deliver 3 – 5 mL undiluted herbicide per stem
- Glyphosate formulation and registered for application with injection equipment



# Combination Inject + Foliar

- Usually deliver 3 – 5 mL undiluted herbicide per stem
- Glyphosate formulation and registered for application with injection equipment
- Foliar application of herbicide to plants too small to inject



# Combination Manual + Foliar

- Visit sites in May or June to bend or cut knotweed stems
- Revisit sites after sufficient time to allow for regrowth
- Foliar application of herbicide



# Program Results

| Year | River Miles |
|------|-------------|
| 2004 | 311         |
| 2005 | 607         |
| 2006 | 1,564       |





# Program Achievements 2004-2006

- All known riparian populations of knotweed treated in 24 river systems
- Riparian knotweed populations of the Little White Salmon River basin (Skamania County) exhibited no regrowth in 2006
- All known upland and riparian populations treated in Whitman County, Yakima County



# Washougal River 2004





# Washougal River 2006





Washington State Department of Agriculture  
Knotweed Control Program  
[www.agr.wa.gov](http://www.agr.wa.gov)

