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STATE OF WASHINGTON

RECREATION AND CONSERVATION OFFICE

December 2007

Message from the Chair:

As Chair of the Washington Invasive Species Council (Council) I am pleased to present the State Noxious Weed Funding Report. The council was charged with reviewing the current funding mechanisms and levels for state agencies to manage noxious weeds on lands under their authority. This document contains a summary of that review.

Washingtonians are fortunate to live in a state that has pristine landscapes, great biodiversity, and a thriving economy. The Council is working to promote ecosystem health and to keep our economy flourishing. One of the greatest obstacles to achieving these goals is the rapid expansion of weeds across the state. Noxious weeds are non-native plants introduced into our state and their impact is enormous. They spread quickly, are difficult to control, and out-compete native plants. They invade our croplands, forests, prairies, rangeland, rivers, lakes, wetlands, and estuaries causing both economic and biological damage.

In the course of conducting this review, we learned that state agencies accomplish a remarkable amount of weed control. We also learned that statewide invasive species information is both incomplete and in many cases unavailable to assess the full scope of funding. For example, state agencies in the course of their work may address noxious weeds as a component of a program but do not track funding for control or eradication of noxious weeds as a separate item. Other factors that affect our ability to track funding are cooperative projects where state funding is used to leverage local funding; federal funding that is passed through state agencies; and funding from grants that have varying fiscal years or timelines.

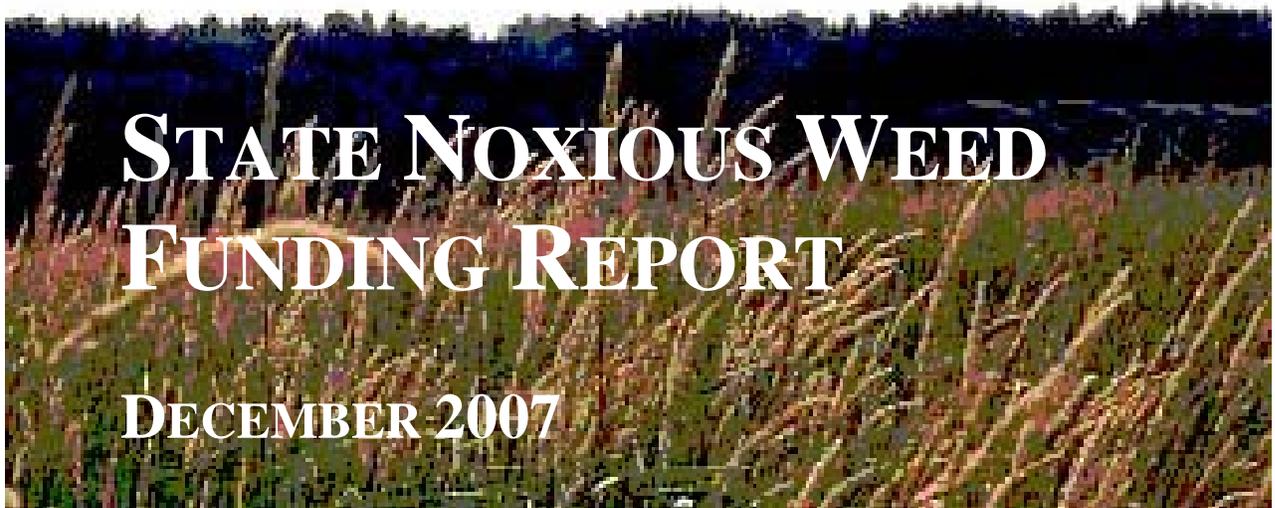
The information contained in this report and the lessons learned from the review have been helpful to the Council as it develops a statewide strategic plan for the prevention and control of invasive species. We hope that it will be useful to you as we work together to fight the serious impacts of noxious weeds and other invasive species.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. Moran".

Bridget Moran
Chair, Washington Invasive Species Council





STATE NOXIOUS WEED FUNDING REPORT

DECEMBER 2007



WASHINGTON STATE
RECREATION AND CONSERVATION OFFICE

Washington Invasive
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STATE NOXIOUS WEED FUNDING REPORT

DECEMBER 2007



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Special thanks to the agency and university staff who have supplied the information for this report and helped to assure its accuracy:

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All agency and university Web sites were very helpful to complete this report. Of particular help were the Web sites of the State Parks and Recreation Commission, Washington State University, and the University of Washington.

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SUMMARY OF FINDINGS

This report is a review of Washington State agency noxious weed control work for the 05-07 biennium. The money spent by or passing through state government probably represents less than half of the expenditures for noxious weed control and reflects the tremendous economic and environmental impact that noxious weeds can cause.

TRACKING NOXIOUS WEED EFFORTS

Arriving at an accurate total for noxious weed investments by state agencies and universities presents a number of challenges.

- There is no standardized tracking, and in some cases no tracking at all, for noxious weed control.
- A great amount of noxious weed funding comes through federal grants or other sources that have varying fiscal years or timelines.
- There are numerous cooperative projects where state funding leverages local or other funding sources.
- Money is transferred between agencies for noxious weed control.
- What gets tracked is what gets done. It would be a significant benefit if agencies specifically tracked expenditures for noxious weeds (and other invasive species).

Given the rate of spread and the current scope of the problems, many agencies do not have adequate resources to successfully address noxious weed problems. Agencies individually and collectively accomplish a remarkable amount of weed control. This is particularly evident when reviewing varying funding levels for county noxious weed control boards.

NOXIOUS WEED EXPENDITURES

Total state agency spending for noxious weeds is estimated to be over \$18 million for fiscal years 2006-07, based on information provided by Departments of Agriculture, Ecology, Fish and Wildlife, Natural Resources, and Transportation, and the State Parks and Recreation Commission, Recreation and Conservation Office, and State Noxious Weed Control Board.

Total noxious weed spending for research universities, Washington State University and the University of Washington, is estimated to be \$3.3 million for the 05-07

biennium, bringing the grand total spent by agencies and the research universities to \$19.4 million for the 05-07 biennium.

INTRODUCTION AND OVERVIEW

This report is narrow in its scope in that it addresses only noxious weeds, a subset of invasive species. Additionally, it only reviews funding that is provided by or passes through state agencies and research universities. Although many state agencies conduct noxious weed maintenance on the grounds of their facilities, it is not reflected in this report, as this work is part of basic property maintenance and is not tracked specifically as related to noxious weed control, nor does this portion make a large impact on budget figures listed here. Noxious Weeds are defined by State law, Revised Code of Washington (RCW) Chapter 17.10.

STATE LEVEL NOXIOUS WEED CONTROL ACTIVITY

Noxious weeds, like most invasive species, do not respect boundaries. State and federal lands, if not maintained, become a source of seeds for adjacent lands. State agencies, in addition to their role as land managers, are important sources of funding for local weed control efforts, regulatory controls, and technical assistance.

State weed control activities can be divided into three categories:

- 1) Weed control by land managing agencies – primarily the Departments of Fish and Wildlife, Natural Resources, and Transportation, and the State Parks and Recreation Commission. These agencies are acting in their capacity as landowners.
- 2) Weed control activities and funding for weed activities by agencies that have statutory mandates for weed control but are not significant land managers – Departments of Agriculture and Ecology, Conservation Commission, Puget Sound Partnership, Washington State Noxious Weed Control Board, and the Recreation and Conservation Office.
- 3) Technical support and research – primarily Washington State University and the University of Washington.

THE IMPACT OF AGENCY MISSIONS, MANDATES, FUNDING, AND MANAGEMENT

Noxious weed funding and control activities are impacted by state agency missions and priorities. With the exception of the Department of Agriculture and the Washington State Noxious Weed Control Board, state agencies do not have specific

missions to control noxious weeds. Although all agencies strive to be good stewards of their lands, noxious weed control is not a top priority.

The Department of Natural Resources manages land to provide economic benefits to the people of Washington, provides fire suppression and prevention on forest lands, manages trust lands, natural area preserves and aquatic lands, and regulates forest practices and surface mining. Its focus on weed control is done on aquatic lands, natural area preserves, and trust lands. The Department of Fish and Wildlife manages land to create and sustain habitat, primarily for animals and fish. The Department of Transportation works to produce safe and efficient transportation corridors. The State Parks and Recreation Commission's focus is on the park experience for its visitors.

Weed management can be complicated for agencies such as State Parks because of the near constant flow of visitors, who make large scale weed control more difficult. Many agencies, such as the Departments of Transportation and Natural Resources, deal with broader issues of managing vegetation and not noxious weeds specifically.

The Department of Agriculture is mandated to deal with invasive species including weeds, insects, and plant pathogens. It is specifically mandated to address *Spartina* and knotweed. These two weeds account for a large percentage of the agency's weed funding. The Department of Agriculture also has some responsibility for weed control in counties (Douglas) without activated weed boards.

The Washington State Noxious Weed Control Board coordinates the activities of local weed boards and districts. County weed boards and districts are mandated to enforce Revised Code of Washington 17.10 on most lands (excluding federal and tribal) but most of them are under-funded and enforcement can be politically difficult.

The Department of Ecology has a narrower mandate dealing with aquatic and semi-aquatic weeds and primarily acts to fund local efforts. The Recreation and Conservation Office periodically provides funding in limited situations for restoration and habitat conservation projects that involve noxious weed management.

The Puget Sound Partnership (PSP) contributes to the prevention and control of noxious weeds through project coordination and by participating in research efforts. For example, PSP coordinated the *Spartina* Drift Card Study with the Department of Agriculture, The Nature Conservancy, and partners in British Columbia. The study provided information on wind, current, and tide impacts on *Spartina* distribution. The information gathered assists with risk assessment and targeting limited state resources.

Washington State University and the University of Washington, provide scientific research and expertise. Washington State University, as the state's land grant college, also provides extension services and is a key player in biological controls.

Neither university has any regulatory authority and both are primarily consumers rather than providers of funding. Within these constraints, state staff and local weed board staff accomplish a remarkable amount of noxious weed control work.

STATE EXPENDITURES FOR NOXIOUS WEED CONTROL

Given current tracking systems, a fully accurate figure for state expenditures for noxious weed control is probably not attainable. There is no standardized tracking system for projects that involve noxious weed management. For State Parks, as an example, weed control is one of many duties for the land steward and is not tracked separately, if at all. There are also a number of agency activities, such as restoration projects by the Department of Fish and Wildlife, which have multiple objectives, one of which is noxious weed control or prevention. There is no clear answer as to how much of the cost is attributable to weed control. There also are numerous interagency transfers of money through grants, contracts, and interagency agreements with more than one agency as recipient.

In addition, federal budget years and state budget years do not coincide and federal grants, which provide significant funding, come at varying times throughout the year. Other grants also come at times that do not coincide with state budget timelines.

Finally, there is a great deal of agency activity in support of noxious weed work that is not accounted for in budget figures. A significant part of that has been captured in Individual agency reports. The following table represents the most accurate and complete information that could be obtained from the affected agencies.

TABLE 1: STATE AGENCY EXPENDITURES FOR NOXIOUS WEEDS

Agency	Biennial State Base	Grants and Contracts Received	Non-budget Expenditure Estimated	Grants to Other State Agencies	Grants to Non-State*	Adjusted Total Expenditures
Agriculture	\$3,248,894	\$384,989		\$190,600**	\$1,094,848	\$3,824,483
Conservation Commission	\$1,120,000 ***				\$1,120,000 ***	\$1,120,000
Ecology	\$1,203,300	\$7,840		\$39,562	\$699,575	\$1,250,702
Fish and Wildlife	\$1,268,119	\$1,149,512				\$2,417,631
Natural Resources	\$617,000	\$70,161	\$25,000	\$4,000	\$10,000	\$716,161
Parks and Recreation		\$9,000	\$85,000		\$9,000	\$94,000
Recreation and Conservation Office	\$635,125***				\$635,125 ***	\$635,125
State Weed Board	\$499,951	\$14,750			\$9,090	\$514,701
Transportation	\$4,956,705	\$25,000	\$2,484,293*	\$2,351		\$7,463,649
Total	\$13,549,094	\$1,661,252	\$2,594,293	\$236,513	\$3,577,638	\$18,036,452

*Includes a percentage of noxious weeds controlled but not mandated under the category nuisance weeds.

**Does not include \$34,000 for crupina for a Washington Conservation Corps crew from Department of Ecology.

***Blended federal and state money.

Note: To reduce the possibility of double counting, grants to other state agencies are deducted from each agency total to arrive at an adjusted total.

UNIVERSITY EXPENDITURES FOR NOXIOUS WEEDS

The largest university expenditure for noxious weed work is staff costs. Because of the varying responsibilities of staff for research and teaching, figures represent the best professional estimates.

TABLE 2: UNIVERSITY EXPENDITURES FOR NOXIOUS WEEDS

Reporting Area	Staff Costs	Other Costs	Funding and Grants Received	Total
Washington State University				
Weed Research			\$865,354	\$865,354
Extension Staff and Bio-control*	\$868,451	\$341,547	\$514,598	\$1,724,596
University of Washington				
Center for Urban Horticulture	\$100,000**		\$127,000	\$ 227,000
Olympic Natural Resources Center			\$355,478	\$355,478***
Sea Grant			\$170,855	\$170,855
Burke Herbarium	\$10,000**			\$10,000
Herbarium and Union Bay****	\$25,000			\$25,000
Total	\$1,003,451	\$341,547	\$2,033,285	\$3,378,283

*Estimate from Washington State University

**Estimated

***Estimated, based on prorating of grants for reporting period

****Weed control

OTHER KEY CONTRIBUTORS

Developing a comprehensive picture of noxious weed control expenditures in Washington is a very complex task because of the sheer number of participants. Noxious weeds are, without question, addressed by more parties than any other invasive species. No understanding of noxious weed control is accurate without understanding that individual and private landowners (including public landowners and managers) spend a great deal of money on weed control. There are no accurate figures available to represent this.

FEDERAL

State weed law Revised Code of Washington 17.10 is not directly applicable to federal and tribal lands. The federal government is, however, an active participant. A number of federal agencies, such as the U.S. Fish and Wildlife Service, U.S. Forest

Service, and Bureau of Land Management have extensive weed control programs. In addition, federal agencies such as the U.S. Department of Agriculture's Animal and Plant Health Inspection Services provide major funding for state, local, and private weed control efforts.

Federal funding levels are a serious concern. Weed control is highly dependent on grants and interagency agreements, especially federal grants. The pressure on the federal budget not only decreases available grant funding but also threatens funding for noxious weed control work on federal lands.

TRIBAL

Weed control on tribal lands is also outside the scope of Revised Code of Washington 17.10. Several tribal governments, such as the Confederated Tribes of the Colville Reservation, Shoalwater Bay Indian Tribe, Quinault Indian Nation, Confederated Tribes of the Chehalis, Yakama Tribe, Nez Perce Tribe, Tulalip Tribe, and the Swinomish Tribe, have engaged in cooperative weed control activities, but total extent of tribal activity is not well documented.

LOCAL GOVERNMENT

Local governments play a significant role in noxious weed control. Weed control activities are carried out by a large number of local entities including county and municipal road departments, irrigation and dike districts, public utility districts, county and city park departments, and Seattle and Tacoma Power.

NON-GOVERNMENTAL ORGANIZATIONS AND PRIVATE INDUSTRY

There are also a number of non-governmental entities that conduct weed control activities, mostly but not exclusively, on public lands. Groups like the Cascade Land Conservancy and the Starflower Foundation have been involved in restoration projects that often begin with the removal of invasive species. Many state and federal parks benefit from volunteer efforts that actively maintain the park. A number of private businesses, such as REI, also have removed weeds during employee work events.

AGENCY REPORT: WASHINGTON DEPARTMENT OF NATURAL RESOURCES

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

The Department of Natural Resources (DNR) does specific planning for noxious weed control on aquatic lands and in both Natural Area Preserves and Natural Resource Conservation Areas. Dealing with issues such as *Spartina* on aquatic lands, DNR has specific budget numbers and management structure.

DNR conducts invasive plant control in natural areas, as part of routine site management and in restoration projects. Most sites have individual weed management plans or the weed management plans are incorporated into a comprehensive site management plan. These plans emphasize integrated pest management, incorporating a variety of management techniques. Plans also stress that monitoring the effectiveness of treatments and using adaptive management helps ensure long-term success. DNR conducts regular surveys to identify new infestations and track the distribution of existing infestations.

In other program areas, at the present time, noxious weeds control is addressed as an element in individual plans. In a number of program areas, such as engineering, noxious weed control is part of a larger process such as roadside vegetation management. In some areas, such as sustainable forest certification, invasive species control is an element in the certification process but not broken out specifically.

LAND MANAGEMENT RESPONSIBILITIES

DNR is one of the state's major land management agencies, managing more than 5 million acres, of which 2.4 million are aquatic lands. The complexity of DNR's landownership – forests, farms, commercial properties, natural areas, and aquatic lands – is a reflection of its dual mission to manage lands for the economic benefit of the citizens through sales of products and leases (in 2005, generating \$271 million for the state) and protecting the state's natural resources.

Natural areas are of particular importance for weed and other invasive species control. Natural Area Preserves protect the best remaining examples of ecological communities including rare plant and animal habitat. The Natural Heritage Program has identified the highest quality, most ecologically important sites for protection as Natural Area Preserves. The preserve system presently includes nearly 31,000 acres in 51 sites distributed throughout the state. In eastern Washington, habitats protected on preserves include outstanding examples of arid land shrub-steppe, grasslands, vernal ponds, oak woodlands, sub-alpine meadows and forest, ponderosa pine forests, and rare plant habitats. Western Washington preserves

include five large coastal preserves supporting high quality wetlands, salt marshes, and forested buffers. Other habitats include mounded prairies, sphagnum bogs, natural forest remnants, and grassland balds. Preserves range from eight acres to 3,500 acres in size.

Natural Resource Conservation Areas protect outstanding examples of native ecosystems; habitat for endangered, threatened, and sensitive plants and animals; and scenic landscapes. Habitats protected include coastal and high elevation forests, alpine lakes, wetlands, scenic vistas, nesting areas for birds of prey, rocky headlands, and unique plant communities. Conservation areas also protect geologic, cultural, historic, and archeological sites. Thirty-one sites total more than 88,000 acres in Washington.

Management plans are developed for each natural area to guide necessary action for the protection of natural features.

NOXIOUS WEED BUDGET

TABLE 3: DNR NOXIOUS WEED BUDGET

Source: Aquatic Lands Enhancement Account	2006-2007 Biennium	Full-time Equivalent Staff
<i>Spartina</i> Control	\$582,000	1.75*
Silviculture	\$25,000**	
Natural Areas Program	\$10,000	.33
Total	\$617,000	2.08

*Funds four temporary employees for 10 months of the biennium.

**Estimate of less than 1 percent of the \$3 million spent for vegetation management.

Many of the programs within DNR deal with noxious weeds as part of a broader vegetation management strategy and do not specifically set out a “noxious weed” budget.

- The Silviculture Program, although it does not have a specific allocation for noxious weeds, spends about \$3 million a biennium controlling broad leaf and other unwanted vegetation in order to successfully regenerate trees. Weed control is a collateral benefit. DNR estimates that specific noxious weed treatments probably represent less than one percent (estimate \$30,000) of the budget.
- The Engineering Division applies herbicides to control roadside vegetation and preserve the integrity and safety of forest roads. Primary targets are encroaching brush species like alder, fir, and maple. Roadside spread is one of the most serious avenues for the spread of noxious weeds. Although this is not the primary aim of roadside management, control of the spread of noxious weeds is a desirable outcome.

- As part of the weed prevention strategy on newly harvested forest lands, DNR has an extensive aerial grass seeding program.
- The Natural Area Preserves Program has weed control as a specific performance measure in its biennial work plans. In fiscal year 2007, the program allocated \$10,000 in general funds plus four staff months (0.33 full-time equivalent staff) to control weeds. These efforts are supplemented by private, state, and federal grants of about \$46,500 for the 05-07 biennium.
- Staff in all six DNR regions routinely visit all Natural Area Preserves and Natural Resource Conservation Areas to assess conditions. Some sites have established monitoring programs. In addition, volunteer stewards visit the majority of sites during spring and summer months.

FEDERAL FUNDING

In 2006-07, DNR had three grants from the U.S. Department of Agriculture Natural Resource Conservation Service for work in Natural Area Preserves. Staff work is not associated with these funds. Funds are used for services and are overseen by existing staff. These include:

- \$27,000 for weed control and prairie restoration for Mima Mounds Natural Area Preserve.
- \$2,000 for weed control and restoration for Rocky Prairie Natural Area Preserve.
- \$3,500 for weed control for Washougal Oaks Natural Area Preserve.

TABLE 4: OTHER GRANTS RECEIVED

Source	Object	Amount
Department of Ecology	Purple Loosestrife Control on Chehalis River Flood Plain	\$3,751
Department of Ecology	<i>Spartina</i> Control in Bone and Niawiakum NAPs	\$26,300
National Fish and Wildlife Foundation	<i>Spartina</i> Control in NAPs	\$7,610
Recreation and Conservation Funding Board	<i>Spartina</i> control and Willapa Bay restoration	\$250,000
Total		\$287,661

GRANTS AND INTERAGENCY AGREEMENTS FOR NOXIOUS WEED CONTROL

DNR works cooperatively with federal and state agencies in a large number of its weed control projects. For example, an interagency committee plans and carries out *Spartina* and Purple loosestrife projects.

Specifically in grants:

- DNR provided \$4,000 to the Department of Fish and Wildlife to support *Phragmites* (Common Reed) control in the Winchester wasteway of Grant County.
- DNR provided \$10,000 to Thurston County for control of Brazilian elodea, an aquatic weed found primarily in freshwater, in the Chehalis River.

REQUIREMENTS FOR NOXIOUS WEED CONTROL IN LEASE AGREEMENTS

On DNR agricultural trust lands, the lessee has the clear responsibility to deal with noxious weeds. DNR works with lessees through resource management plans to address noxious weeds. On some eastern Washington DNR timber sales contracts, the contractor is specifically required to clean equipment before entering state lands. DNR aquatic land leases have less specificity on stewardship. This issue is currently under review at DNR.

OTHER AGENCY ACTIVITIES

COOPERATION WITH COUNTY WEED BOARDS AND WEED DISTRICTS

DNR field staff work closely with county noxious weed boards and weed districts. DNR pays county weed assessments on its Natural Area Preserves in counties where assessments are levied on private lands. Individual cooperative projects range from chemical applications to mechanical control and bio-control.

OUTREACH AND TECHNICAL ASSISTANCE

DNR staff provides outreach and technical assistance to small forest landowners to deal with noxious weeds. Natural Area Preserve staff regularly work with adjacent landowners to control noxious weeds that may impact the preserves and to assist staff to locate funding sources.

COOPERATIVE WEED MANAGEMENT AREAS

Washington has 15 cooperative weed management areas, which work across jurisdictional lines to address specific weed problems. DNR field staff are involved in a number of these areas, including Chehalis (loosestrife) and Skagit (knotweed). DNR joined with the Okanogan County Noxious Weed Control Board, U.S. Forest Service, Bureau of Land Management, Washington Department of Fish and Wildlife, and private landowners on the Mineral Hill Cooperative Weed Project to control St. John's Wort across multiple ownerships in the Conconully area.

WEED DATABASE PROJECT

In conjunction with the Department of Fish and Wildlife, DNR is developing an aquatic weeds database and allocated \$25,000 in the 05-07 biennium from its information technology budget to support the project.

ECO-REGIONAL ASSESSMENTS AND THE NATURAL HERITAGE PROGRAM

The Nature Conservancy, Department of Fish and Wildlife, and DNR spearheaded the development of an eco-regional assessment in Washington using the boundaries developed by DNR in its Natural Heritage Plan. Although they are not focused on immediate weed control, eco-regional assessments will help conservation planners, agencies, and organizations prioritize areas that will most benefit biodiversity conservation at a statewide scale and will be important in developing a long-term strategy.

PUBLIC EDUCATIONAL MATERIALS

The DNR Web site provides a wealth of educational materials. The Natural Heritage Program is an excellent resource on threatened and endangered native plant species and helps highlight the threat from invasive weeds.

REPORTS

DNR's work on *Spartina* is included in the 2006 *Spartina* Eradication Progress Report prepared by the Washington Department of Agriculture.

AGENCY REPORT: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

The Washington Department of Fish and Wildlife's (WDFW) noxious weed program is part of a larger vegetation management approach that strives to enhance habitat, improve recreational experiences, and meet legal requirements. Weed control is conducted autonomously at the local level by staff with land management responsibilities, such as wildlife areas and access sites. These managers possess site-specific weed information and maintain cooperative relationships with neighbors conducting weed control. Statewide weed issues, special projects, intra-agency coordination, and interagency cooperation are the responsibility of the wildlife program's noxious weed coordinator. A draft agency weed management policy has been written and is currently under review.

Weed control is carried out both at the state level and at the wildlife area level. Each wildlife area complex plan has an appendix that identifies high priority weeds, outlines treatment methods, and sets objectives for control. These plans are updated annually, progress related to weed control is noted, and adaptive management is implemented based on results.

In addition, the agency is specifically involved in a number of cooperative planning efforts with other agencies including:

- Chehalis River Integrated Aquatic Vegetation Management Plan – The purpose of this plan is to coordinate the efforts of landowners and land managers, including private, federal, tribal, state, and county entities, to control invasive aquatic weeds in the Chehalis River watershed. Coordinating weed management will allow expertise and resources to be shared across management jurisdictions, resulting in identification of high priority areas for control and more thorough control of invasive aquatic weeds.
- Willapa Bay, Grays Harbor, and Puget Sound Annual *Spartina* Control Plans – These plans are developed yearly by agencies conducting *Spartina* control with input from an advisory group. The plan assigns areas of responsibility and applies adaptive management based on the control results of the previous year.

LAND MANAGEMENT RESPONSIBILITIES

WDFW is a major land managing agency, with responsibility for about 840,000 acres. Of that, the agency owns about 530,000 acres and the balance is administered under a variety of agreements with other organizations.

NOXIOUS WEED BUDGET

TABLE 5: 2005-2007 WDFW NOXIOUS WEED CONTROL BUDGET

Fund Title	Source	Willapa <i>Spartina</i>	North Puget <i>Spartina</i>	Freshwater Weeds	Terrestrial Weeds	Total
North Puget Chemical Control	State grant		\$192,427			\$192,427
Triangle Cove Landowner Incentive Program	Department of Agriculture contract		\$20,000			\$20,000
English Boom	State grant, federal match		\$59,644			\$59,644
Skagit Bay Nearshore Restoration	Private grant, WDFW match		\$172,849			\$172,849
Cordgrass 2004	Wildlife state	\$25,608				\$25,608
<i>Spartina</i> Pacific County	Department of Agriculture contract	\$120,000				\$120,000
Willapa Cedar River	Federal grant	\$47,000				\$47,000
Willapa <i>Spartina</i>	State grant	\$240,632				\$240,632
Grays Harbor <i>Spartina</i>	Department of Agriculture contract	\$35,000				\$35,000
Airboat Purchase	Wildlife state	\$20,000				\$30,000
<i>Phragmites</i> Seattle	Department of Transportation contract			\$2,351		\$2,351
<i>Phragmites</i> Grays Harbor	U.S. Fish and Wildlife Service contract			\$2,000		\$2,000
Chehalis River Aquatic Weed Plan	Department of Ecology grant, WDFW match			\$12,912		\$12,912
Western Washington Weeds	Wildlife state				\$188,888	\$188,888
Wildlife Area Weed Control*	Combination public utility district, federal, state				\$921,210	\$921,210
Wildlife Area Weed Control	Wildlife state				\$347,110	\$347,110
Total		\$488,240	\$444,920	\$17,263	\$1,457,208	\$2,407,631

*Estimated from a single control season, then doubled to produce biennial figure. Wildlife area weed control is broadly defined and includes activities such as planting cover crops that prevent weed infestation.

Most noxious weed control is only part of a staff member's duties. The following table describes how the total of 23 full-time equivalent staff was calculated.

TABLE 6: WDFW STAFF TIME FOR NOXIOUS WEED CONTROL

Complex Name	Manager	Permanent Staff	Temporary Staff	Total	Description of Temp Help
Blue Mountains Wildlife Area Complex	0.04	0.79	0.33	1.16	
Colockum Wildlife Area Complex	0.08	0.19		0.27	
Columbia Basin Wildlife Area Complex	0.04	1.62		1.66	
Cowlitz Wildlife Area Complex	0.02	0.06	0.10	0.18	
Klickitat Wildlife Area Complex	NA	NA	NA	NA	Manager position is vacant
L.T. Murray-Wenas Wildlife Area Complex	0.03	1.08	0.03	1.14	WCC, several project contracted
Lake Terrell Wildlife Area Complex	0.12	0.01	0.14	0.27	WCC, temp
Methow Wildlife Area Complex	0.16	0.19	0.87	1.22	Temps, WCC inmates, volunteers
Mount Saint Helens-Shillapoo Wildlife Area Complex	0.19	0.52	0.59	1.30	Inmate, temp, volunteers, lessees, contractor disking
Oak Creek Wildlife Area Complex	0.02	0.10	0.04	0.16	Volunteers
Olympic-Willapa Hills Wildlife Area Complex	0.20	0.40	0.45	1.05	WCC, temp
Scotch Creek Wildlife Area Complex	0.17	0.79	1.08	2.04	WCC, inmates
Sherman Creek Wildlife Area Complex	0.00	0.25	0.17	0.42	
Sinlahekin Wildlife Area Complex	0.02	0.62	0.11	0.75	WCC, inmates
Skagit-Snoqualmie Wildlife Area Complex	0.08	0.45	0.25	0.78	
South Puget Sound-Scatter Creek Wildlife Area Complex	0.08		0.35	0.43	Inmates, temps
Sunnyside Wildlife Area Complex	0.18	0.57		0.75	
Swanson Lakes Wildlife Area Complex	0.03	0.30	0.25	0.58	
Wells-Chelan-Sagebrush Flats Wildlife Area Complex	0.04	0.25	0.12	0.41	
<i>Spartina</i> (and additional weed projects)	1.00	4.00	1.00	6.00	
Statewide Weed Coordinator	1.00			1.00	
Farm Bill Coordinator	0.10			0.10	
Region 1 Access	0.04	0.12		0.16	
Region 2 North Access	0.05			0.05	
Region 2 South Access	0.17			0.17	
Region 3 Access	0.07			0.07	
Region 4 North Access	0.02			0.02	

Complex Name	Manager	Permanent Staff	Temporary Staff	Total	Description of Temp Help
Region 4 South Access	0.06			0.06	
Region 5 Access	0.05			0.05	
Region 6 Access	0.19	0.09		0.28	
Upland Habitat Restoration-Kittitas	0.02			0.02	
Upland Habitat Restoration-Region 1	0.00	0.08		0.08	
Upland Habitat Restoration-Region 2	0.08	0.04		0.12	
Upland Habitat Restoration-Columbia Basin	0.04	0.08		0.12	
Total	4.39	12.60	5.88	22.87	

FEDERAL FUNDING

WDFW has aggressively pursued federal grants as well as engaged in a number of cooperative efforts to restore and enhance habitat. These efforts include noxious weed control as a primary or secondary objective to augment agency resources.

Federal funds include:

- Rocky Mountain Elk Foundation Grant (\$18,000) – This grant was used to hire a prison crew to hand pull weeds along the Tucannon River and Cummings Creek drainages. U.S. Forest Service used the same crew to continue the work on federal lands.
- Cooperative Rocky Mountain Elk Foundation Grant (\$97,000) – A cooperative grant between WDFW, U.S. Forest Service, and the Foundation for North American Wild Sheep used to control weeds in critical big game habitat (specifically areas burned in the school fire and Columbia complex fire). The project includes aerial mapping and noxious weed spraying, hand pulling weeds in campgrounds, native grass seeding, and all-terrain vehicle roadside spraying.
- National Fish and Wildlife Foundation Skagit Bay Nearshore Restoration Grant (\$237,356) – This grant funds nearshore restoration through chemical and mechanical control methods. There is a strong monitoring component to capture initial data regarding sediment dynamics, vegetation, and invertebrate, bird, and fish use of *Spartina* impacted mud flats to determine the ability of these sites to recover ecological function.
- Wenas Wildlife Area (\$300,000) – In the late 1990s, more than 600 acres of restoration work on the Wenas Wildlife Area was done using Bonneville Power Administration and Rocky Mountain Elk Foundation funding to provide habitat and reduce weed issues.

OTHER GRANTS RECEIVED

- Asotin County Mediterranean Sage (\$15,400) – Asotin Creek Wildlife Area was funded by a grant from the State Noxious Weed Control Board to help eradicate the Mediterranean sage population with the help of the Asotin County Noxious Weed Control Board.
- Chehalis River Integrated Aquatic Vegetation Management Plan Grant (\$30,000) was funded by a grant from Department of Ecology – This grant funded the writing and publication of the aquatic weed plan.

GRANTS IN PROCESS

Washington Wildlife and Recreation Program Grants – WDFW applied for seven grants that list weed control as an objective in the goal of enhancing or restoring native habitat. Several focus on building a weed resistant habitat through competitive planting of native vegetation.

- Audubon Lake Grassland Restoration (\$95,804) – WDFW will use this grant to restore 80 acres of Palouse grassland, west of Spokane, using all native seeds to replace the exotic species now present. This effort will serve as a pilot for future restoration projects on larger plots of Palouse grassland by state and federal agencies and others. It also will provide environmental education opportunities. It is reported that the Palouse grassland ecosystem is one of the most endangered ecosystems in the world with only one-tenth of one percent remaining.
- Willapa Bay Restoration (\$297,000) – WDFW and the Department of Natural Resources have teamed up to restore 500 acres of habitat in Willapa Bay that have been harmed by *Spartina*. *Spartina* had colonized 7,400 acres. It threatens the ecology of the bay by choking out native plants and creating meadows that raise the elevation of mudflats. A multi-agency *Spartina* control program, implemented in 1995, has substantially reduced the infestation.
- Methow Shrub-Steppe Restoration (\$314,923) – WDFW will use this grant to restore 600 acres of historic dryland agricultural fields in the Methow Wildlife Area, in north central Washington, to native shrub-steppe vegetation. This is part of an ongoing effort to protect and preserve the ecological integrity of low elevation shrub-steppe habitat in the Methow Wildlife Area. Restoration will include evaluation of each site for soil conditions, vegetation, habitat potential, and wildlife use before and after treatment; control of invasive weeds; seeding each site with native vegetation; and follow-up weed control and monitoring.
- Beebe Springs Restoration Phase 2 (\$249,410) – WDFW will use this grant to restore 20 acres of land surrounding Beebe Springs adjacent to the Chelan Fish Hatchery. Work will include establishing riparian and shrub-steppe habitat adjacent to the restored Beebe Creek and enhancing fish rearing habitat along the Columbia River shoreline. Restoration will include planting

of native vegetation in the upland areas, removal of non-native species, and planting of trees and shrubs along the shoreline.

- L.T. Murray–Wenas Wildlife Area Rehabilitation (\$137,798) – WDFW will use this grant to restore shrub-steppe habitat at four locations on the L.T. Murray–Wenas Wildlife Area Complex. The lands were once used as farms or pasture, and now are highly degraded as wildlife habitat. About 130 acres of alfalfa fields at Mountain Vale Ranch west of Selah will be seeded with native grass and shrubs to return the area to a more natural condition. Another eight acres of hay and pasture north of Vantage near Quilomene Bay will be restored through mowing, burning, treating of noxious weeds, and seeding with native species. On 150 acres above the Yakima River southwest of Ellensburg, WDFW will mow, burn, treat noxious weeds, seed native species, and fertilize. On 5,000 acres in Skookumchuck, east of Ellensburg, WDFW will treat weeds and seed with native species.
- Wooten Wildlife Area (\$32,415) – After the 2005 school fire burned much of the Wooten Wildlife Area in southeast Washington, WDFW worked to restore the area through projects such as weed control, grass seeding, and streamside plantings. WDFW will use this grant to improve riparian habitat at six campgrounds. Work will include establishing a 150-foot-wide stream buffer by planting native grass, shrubs, and trees.
- Campbell Field Restoration (\$106,536) – WDFW will use this grant to restore 260 acres of abandoned agricultural fields in the Asotin Creek Wildlife Area. The land will be turned into wildlife habitat by planting native grasses and forbs. Department staff will use the project as a way to train new staff in restoration techniques. Staff will use a combination of integrated vegetation management methods and local native seed mixes, with monitoring over several years to develop a weed-resistant native plant community. The land is dominated by smooth brome, which creates low plant diversity and provides little habitat for most wildlife.

Duck Stamp Grant Proposals

- *Phragmites* (Common reed) in the Winchester Wasteway (\$10,000) – *Phragmites* have taken the place of purple loosestrife as the dominant vegetation in a large portion of the wasteway. WDFW, Department of Natural Resources, and Bureau of Reclamation are using herbicides to reduce the infestation. More funding is needed and a Duck Stamp grant has been submitted.
- Lake Creek Drainage Project (\$15,000) – WDFW, Bureau of Land Management, and Ducks Unlimited have submitted a grant proposal for a wetland restoration and weed control project in the Lake Creek drainage. In addition, the Swanson Lakes Wildlife Area submitted a grant proposal to the Department of Ecology. Results of grant applications are due this year.

GRANTS AND INTER-AGENCY AGREEMENTS

Landowner Incentive Program (LIP) – This competitive grant program administered by WDFW is designed to provide money to private landowners to protect, enhance, or restore habitat for species at risk. Weed control is often a significant component of these projects. To date \$1,318,797 has been approved for projects that identify weed control as part of the restoration and enhancement process on some portion of 3,850 acres. A table showing these projects and their target weed is listed in Table 7.

LANDOWNER INCENTIVE PROGRAM

TABLE 7: LANDOWNER INCENTIVE PROGRAM PROJECTS THAT INCLUDE WEED CONTROL

Project	Partner	County	Habitat	TH	CH	TOG	SB	BB	RCG	SP	Acres	\$
Mima Corridor	Nature Conservancy various landowners	Thurston	Prairie			x	x				130	\$110,789
Middleland Oak	Plas Newydd	Clark	Oak woodland				x	x			30	\$4,415
Willapa <i>Spartina</i>	WSDA; Justin Taylor; Dick Wilson	Pacific	Nearshore							x	330	\$200,980
CLT Klickitat Oak	Columbia Land Trust	Klickitat	Oak woodland	x	x						60	\$67,000
Port Susan <i>Spartina</i>	Nature Conservancy	Snohomish	Nearshore							x	2,000	\$65,062
Kinney Creek Habitat	Nooksack RFEG Sharon Akers	Whatcom	Riparian					x			0.2	\$4,450
Bjorn/Fish Creeks Habitat	David & Melinda Gladstone Foundation	Snohomish	Riparian, upland				x		x		140	\$60,000
Tenmile Creek Habitat	Nooksack RFEG	Whatcom	Riparian						x		132	\$60,500
Little White Salmon Oak Woodland	Columbia Land Trust; Cold Springs Conservation; Jack Morby	Skamania	Oak woodland	x			x				232	\$44,250
Snoqualmie River Riparian	Stewardship Partners	King	Riparian					x	x		3	\$46,500
Morgan Weir Prairie	Nature Conservancy	Thurston	Prairie			x	x				100	\$40,434
Sequim Oak	Sarah Blake	Clallam	Oak				x				5	\$3,500
Walla Walla Natural Area	Walla Walla Academy	Walla Walla	Wetland	x			x		x		3	\$7,500
Wilhite Woodlands	Wilhite Family	Klickitat	Oak	x			x				20	\$13,304
Silva Oak	Ena; Hickman; Hicks; Kane; Kost	Klickitat	Oak				x				115	\$111,789
Brady Bottoms Wetlands	Dick Jacobs	Grays Harbor	Wetland						x		12	\$67,000

**BB – Himalayan Blackberry, CH – Cheatgrass, RCG – Reed canarygrass,
SB – Scotch Broom, SP – *Spartina*, TH – Thistle, TOG – Tall Oatgrass,**

Project	Partner	County	Habitat	TH	CH	TOG	SB	BB	RCG	SP	Acres	\$
McEwan Prairie	Green Diamond	Mason	Prairie				x	x			4	\$53,500
Dos Rios Riparian	John Jamison	Walla Walla	Riparian					x	x		5	\$13,500
McEvoy Creek Habitat	Page; Wolfram; Duthie; Anderson	Walla Walla	Riparian					x	x		60	\$97,654
Tokeland <i>Spartina</i>	WSDA; Terry & Vicki Larson; Nathan & Tricia Needham	Pacific	Nearshore							x	299	\$187,935
Triangle Cove <i>Spartina</i>	WSDA; Ron Wells	Island	Nearshore							x	170	\$58,735

**BB – Himalayan Blackberry, CH – Cheatgrass, RCG – Reed canarygrass
 SB – Scotch Broom, SP – *Spartina*, TH – Thistle, TOG – Tall Oatgrass,**

REQUIREMENTS FOR NOXIOUS WEED CONTROL IN LEASE AGREEMENTS

WDFW enters into agricultural leases with farmers to meet WDFW management goals on lands by providing food and cover for targeted wildlife species. These leases may keep traditional farmland in production, reducing weed colonization. Currently, there are 38 leases comprising 11,000 acres. Noxious weed control is the responsibility of the lease holder.

OTHER AGENCY ACTIVITIES

EDUCATIONAL ACTIVITIES AND PROGRAMS

Aquatic Plants and Fish Pamphlet – Published by the Habitat Program, this pamphlet serves as an educational guide for people who want to remove aquatic plants (including noxious weeds) from their waterfront.

Organizing Volunteers for Weed Control – WDFW commissioned a publication called *Organizing Volunteers to Control Purple Loosestrife* with the Puget Sounders and Whatcom County Noxious Weed Control.

Grass Carp Stocking Form – This form is used to apply for permission from WDFW to stock sterile grass carp to control aquatic vegetation. This document is one of several that may be required before stocking.

Boater Education – WDFW's Aquatic Nuisance Species Program does annual boater education surveys where aquatic weed educational material is distributed and boaters are informed that it is illegal to transport weeds on boats and trailers. In addition, the program posts signs at boat launches discouraging boaters from inadvertently transporting aquatic weeds, and it is developing a similar pamphlet.

Vehicle Undercarriage Wash Station – This wash station was set up at the Sinlahekin and Scotch Creek Wildlife Areas to reduce seeds being transported by vehicles during hunting season. This was a cooperative effort by Okanogan County Noxious Weed Control Board, U.S. Forest Service, and Department of Natural Resources.

Private Land Biologists – The biologists work to establish and enhance habitat for all species by writing vegetation prescriptions that improve weed control and soil management on private lands. As part of this work, they help establish biological control agents for weeds and plant desirable species for competition. In addition, the biologists provide technical assistance for Conservation Reserve Program weed control during critical bird nesting seasons as required by the Farm Service Agency policy.

Weed Geodatabase – A cooperative project with Department of Natural Resources Aquatics Program, this program allows staff to enter weed control activities and surveys into a centralized database. It also will allow people to download maps to a

hand-held global positioning device, enter data, and upload weed data back into the database.

Grazing Project – WDFW is developing new monitoring methods to measure the effects of grazing on vegetation, including weeds.

Best Management Practices – Any work WDFW does, has contracted out, or has permitted to be done on wildlife areas that causes ground disturbance, involves some weed control and seeding. As part of the Road Management and Mapping Program, during abandonment and decommissioning of roads in wildlife areas, all disturbed areas are seeded with a native seed mix to reduce weed invasions.

PRIORITY HABITAT AND SPECIES (THESE PROJECTS OFTEN INCLUDE WEED CONTROL)

Scotch Creek Restoration – 200 acres per year of weed-infested agricultural fields are restored to shrub-steppe to improve nesting and brooding habitat for sharp-tail grouse, a state threatened species.

Puget Prairie Restoration – Scotch broom and tall oatgrass are being controlled at prairie sites to improve habitat for several species including the Mardon Skipper and Taylor's Checkerspot, both federal candidate and state endangered species. This work is being done with consultation from The Nature Conservancy, Department of Natural Resources, and Fort Lewis, who manage similar habitat types and species.

SCHOOL FIRE RESTORATION ACTIVITIES

WDFW has been working to restore the areas devastated in Columbia County in 2005. Efforts included:

- Riparian areas – In a cooperative project with local Natural Resource Conservation Service and conservation districts, WDFW spent \$36,000 to aerial seed native grass on 1,000 acres of intensely burned drainages. The work is intended to reduce erosion and siltation in Endangered Species Act protected fish-bearing streams, and reduce the spread of weeds during post-fire release. In addition, WDFW spent \$42,000 hiring an inmate crew to hand pull knapweed along 25 miles of riparian corridors (Tucannon River, Cummings Creek, and Tualum Creek) and spray 1,800 acres of yellow starthistle on burnt uplands. The agency also purchased herbicide and a four-wheeler to spray roadsides.
- Riparian Planting – The Umatilla Tribe donated \$15,000 toward post-fire rehabilitation. The money was used to purchase 10,000 trees and shrubs to reestablish vegetation in burned riparian areas. WDFW staff, Americorps, and private citizens volunteered more than 1,000 hours of planting.
- Camp Wooten – Work around Camp Wooten both before and after the fire supported weed control. WDFW (with \$250,000 allocated pre-fire) closed two campgrounds in riparian areas and developed three helicopter landing pads

(used during salvage logging) into new campgrounds – preserving camping and improving wildlife habitat. All campgrounds and helicopter landings have been seeded with native grass to compete with noxious weeds. Campgrounds are also being planted with native trees and or shrubs.

- Post-fire Weed Response Study (Wooten Wildlife Area) – Rocky Mountain Research Station along with staff from the University of Idaho have been studying the post fire effects of weed spread and erosion. The state will receive the report when it is finished in two more years.

REPORTS

Aquatic Nuisance Species – www.wdfw.wa.gov/fish/ans/ans1.htm includes links to reports on *Spartina* and a few other plants.

Aquatic Plants and Fish Pamphlet – This pamphlet (found at www.wdfw.wa.gov/hab/aquaplnt/aquaplnt.htm) acts as a Hydraulic Project Approval for hand removal of weeds and provides some aquatic weed information.

WDFW MEMORANDA OF UNDERSTANDING (MOU) AND COOPERATIVE WORKING GROUPS FOR NOXIOUS WEED CONTROL:

- Willapa Bay MOU provides a cooperative arrangement to share information and resources and work together to eradicate *Spartina alterniflora* in the Willapa Bay watershed and Pacific County without compromising individual authorities and responsibilities. Partners are U.S. Fish and Wildlife Service, Willapa Bay National Wildlife Refuge Complex, Pacific County Noxious Weed Control Board, WDFW, Department of Natural Resources, and Department of Agriculture.
- Chehalis River MOU provides weed management interests or responsibilities on adjacent and co-mingled lands associated with the tributaries and main stem of the Chehalis River in Lewis, Thurston, and Grays Harbor Counties. Partners include Department of Natural Resources, WDFW, U.S. Fish and Wildlife Service, Nisqually National Wildlife Complex, Grays Harbor County Noxious Weed Control Board, Thurston County Noxious Weed Control Board, Lewis County Noxious Weed Control Board, The Nature Conservancy, Chehalis River Council, and Quinault Indian Nation.
- Okanogan Coordinated Weed Management Area Cooperative Agreement provides noxious weed control responsibilities on lands in the Okanogan County Cooperative Weed Management Area. Partners include U.S. Forest Service, Okanogan and Wenatchee National Forests, Bureau of Land Management, Okanogan County, Department of Natural Resources, WDFW, Department of Transportation, U.S. Department of Agriculture - Natural Resources Conservation Service, Okanogan Conservation District, Colville Confederated Tribes, Bureau of Indian Affairs, and the Okanogan County

Noxious Weed Control Board.

- Skagit River Cooperative Weed Management Area MOU provides weed control in the Skagit River basin. Partners include WDFW, Department of Natural Resources, U.S. Forest Service, North Cascades National Park, Seattle City Light, Snohomish County Noxious Weed Control Board, Skagit County Noxious Weed Control Board, Whatcom County Noxious Weed Control Board, and The Nature Conservancy.
- Stillaguamish Cooperative Weed Management Area MOU provides weed management interests or responsibilities on adjacent and co-mingled lands associated with the tributaries and main stem of the Stillaguamish River of Snohomish and Skagit Counties. Partners include Department of Natural Resources, WDFW, U. S. Forest Service, the Stillaguamish Tribe, Snohomish County, Snohomish Conservation District, Snohomish County Noxious Weed Control Board, Stilly-Snohomish Fisheries Enhancement Task Force, The Nature Conservancy, and citizen representation from the Stillaguamish watershed.
- Yakima River Drainage MOU implements the provisions of the Yakima River Purple Loosestrife Control Project and initiates the control of purple loosestrife in the Yakima River drainage by the task force. Partners include Yakima County Noxious Weed Control Board, Yakama Tribe, Benton County Noxious Weed Control Board, and WDFW.
- Tri-State Demonstration Weed Management Area establishes a framework that increases the cooperative relationship necessary for effective management, coordination, and implementation of an integrated noxious weed management program on the tribal, state, and federal lands involved within the Tri-State Demonstration Weed Management Area. Partners include Bureau of Land Management, U.S. Forest Service, WDFW, Idaho Department Fish and Wildlife, Idaho Department of Lands, Washington Department of Natural Resources, Nez Perce County Weed Control, Wallowa County Weed Control, Lewis County Weed Control, Asotin County Weed Control, U.S. Army Corp of Engineers, The Nature Conservancy, Nez Perce Tribe, University of Idaho, Hells Canyon Preservation Council, and the Idaho Department of Agriculture.

COOPERATIVE WORKING GROUPS

- North Puget Sound *Spartina* Advisory Group – This group coordinates *Spartina* management in the north Puget Sound area and includes members from WDFW, Department of Agriculture, Department of Ecology, Tulalip Tribe, Swinomish Tribe, Skagit County Noxious Weed Control Board, Snohomish County Noxious Weed Control Board, Island County Noxious Weed Control Board, The Nature Conservancy, People for Puget Sound, and private landowners.

- Willapa Bay *Spartina* Advisory Group – This group offers suggestions and recommendations about *Spartina* control in Willapa Bay and is made up of representatives from U.S. Fish and Wildlife Service-Willapa Refuge, Department of Agriculture, WDFW, Department of Natural Resources, Washington State Noxious Weed Control Board, Shoalwater Bay Indian Tribe, Pacific County Noxious Weed Control Board, shellfish growers, University of Washington-Olympic Natural Resources Center, Washington State University-Long Beach, and local landowners.
- Grays Harbor *Spartina* Advisory Group – This group offers suggestions and recommendations about *Spartina* control in Grays Harbor and is made up of representatives from U.S. Fish and Wildlife Service - Nisqually Refuge, Department of Agriculture, WDFW, Department of Natural Resources, The Nature Conservancy, Friends of Gray Harbor, Audubon Society, and local landowners.
- Chehalis River Weed Working Group – In addition to the partners described in the MOU, other partners include, Department of Ecology, Department of Agriculture, Washington State Noxious Weed Control Board, Confederated Tribes of the Chehalis, and the Thurston County Conservation District.
- Saltcedar Task Force – Columbia Basin Wildlife Area has been a member of the task force, which addresses the developing saltcedar problem in eastern Washington along with several other weed species. This group consisted of private citizens, herbicide manufacturers, WDFW, Department of Agriculture, Department of Ecology, U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, Tribes, U.S. Army Corps of Engineers, several weed boards and districts, irrigation districts, and public utility districts.

TABLE 8: WDFW WEED PROJECTS FOR 2005

Weed Name	Survey Entries	Acres Treated	Acres Affected	Methods Used	Counties Affected
Babysbreath	4	13.4	13.4	Chemical, mechanical	Okanogan
Bindweed	2	50	50	Chemical	Chelan, Kittitas
Blackberry	3	100	300	Chemical, mechanical	Clark, Skagit
Blue mustard	1	40	40	Chemical	Kittitas
Broadleaves	61	1,243.6	1,636	Chemical	Asotin, Chelan, Douglas, Grant, Okanogan, Skagit, Snohomish, Yakima
Butterfly bush	1			Chemical	King
Cattails	1	6	5,000	Chemical	Grant
Cereal rye	1	110	120	Chemical	Yakima
Cheatgrass	7	53.5	1,910	Chemical	Asotin, Douglas, Kittitas, Yakima
Common tansy	5	15	322	Chemical	Okanogan
English ivy	2			Chemical	Skagit, Snohomish

Weed Name	Survey Entries	Acres Treated	Acres Affected	Methods Used	Counties Affected
Fiddleneck	1	40	40	Chemical	Kittitas
General weeds	99	2,915.7	13,637.3	Chemical, mechanical	Adams, Asotin, Benton, Chelan, Columbia, Douglas, Franklin, Grant, King, Kittitas, Lincoln, Okanogan, Pierce, Snohomish, Walla Walla, Whatcom
Goatgrass	1	500	500	Chemical	Kittitas
Grasses	52	16.2	21.6	Chemical	Asotin, Columbia, King, Pend Oreille, Pierce, Snohomish, Spokane, Stevens, Walla Walla, Whitman
Hawkweed, mouseear	1	2	2	mechanical	Thurston
Houndstongue	13	150.4	962	Chemical, mechanical	Lincoln, Okanogan, Yakima
Knapweed, diffuse	46	5,208.8	7,953.3	Chemical, mechanical, biological	Asotin, Benton, Chelan, Cowlitz, Grant, Kittitas, Lincoln, Okanogan, Yakima
Knapweed, Russian	48	606.3	2,736.5	Chemical, mechanical, cultural	Asotin, Columbia, Douglas, Grant, Kittitas, Okanogan, Spokane, Yakima
Knapweed, spotted	2	1.5	1.5	Chemical	Asotin, Cowlitz
Knotweed, Japanese	4	2.7	2.7	Chemical	King, Whatcom, Yakima
Kochia	11	235.5	467	Chemical, mechanical	Asotin, Franklin, Grant, Kittitas, Okanogan, Yakima
Leafy spurge	1	0.1	0.1	Chemical	Asotin
Loosestrife, purple	20	5,140.8	25,366	Chemical, mechanical, biological	King, Skagit, Whatcom
Mullein, common	10	219.2	1,233.9	Chemical, mechanical, biological	Asotin, Grant, Okanogan, Walla Walla
Oxeye daisy	1	4	25	Chemical	Okanogan
Perennial pepperweed	4	60	955	Chemical	Grant, Kittitas, Yakima
<i>Phragmites</i>	6	149.4	5,202	Chemical	Franklin, Grays Harbor, Grant
Pigweed	2	80	80	Chemical	Kittitas
Poison hemlock	12	38.2	38.2	Chemical, mechanical	Asotin, Clark, Skagit, Snohomish

Weed Name	Survey Entries	Acres Treated	Acres Affected	Methods Used	Counties Affected
Puncturevine	18	24.6	45	Chemical, mechanical, biological	Asotin, Franklin, Okanogan, Yakima
Quackgrass	2	65	65	Chemical	Whatcom
Reed canarygrass	4	350	475	Chemical, mechanical	Grays Harbor, Skagit
Rush skeletonweed	7	82	2,700	Chemical, mechanical, biological	Adams, Asotin, Benton, Franklin, Grant
Russian Olive	8	76.2	10,500	Chemical, mechanical	Franklin, Grant, Okanogan, Yakima
Saltcedar	6	36.9	1,014	Chemical	Franklin, Grant
Scotch broom	19	993	3,600	Chemical, mechanical	Cowlitz, Island, Thurston, Whatcom
<i>Spartina alterniflora</i>	16	472.8	1,000	Chemical, mechanical	Grays Harbor, Pacific
<i>Spartina anglica</i>	12	345.3	687.6	Chemical, mechanical	Island, Skagit, Snohomish
<i>Spartina densiflora</i>	1	1.7	1.7	Chemical	Grays Harbor
St. Johns wort	3	8,822	8,822	Chemical, biological	Lincoln, Okanogan
Starthistle, yellow	4	141	302	Chemical	Chelan, Kittitas, Yakima
<i>Sulfur cinquefoil</i>	1	1.5	1.5	Chemical	Asotin
Tall oatgrass	5	105	400	Chemical	Thurston
Tansy ragwort	8	3,043	3,043	Chemical, mechanical	Cowlitz, Thurston
Thistle, Canada	38	1,522.6	17,302.8	Chemical, mechanical, biological	Adams, Douglas, Clark, Franklin, Grant, Grays Harbor, Jefferson, Lincoln, Okanogan, Thurston, Yakima
Thistle, musk	4	123	402	Chemical, mechanical	Kittitas, Okanogan
Thistle, plumeless	2	0.1	1	Chemical, mechanical	Okanogan
Thistle, Russian	11	1,272.2	1,663	Chemical, mechanical, biological	Chelan, Grant, Kittitas, Okanogan
Thistle, Scotch	19	9,426	10,113	Chemical, mechanical	Asotin, Grant, Okanogan, Yakima
Thistle, unidentified	2		80	Chemical, mechanical	Skagit
Thistle, musk	5	8.5	159	Chemical, mechanical	Grant, Yakima
Toadflax, Dalmatian	30	1,345.5	2,394	Chemical, mechanical, biological	Adams, Douglas, Grant, Kittitas, Okanogan, Yakima
Toadflax, yellow	4	2.2	2.2	Chemical, mechanical	Pend Oreille, Stevens

Weed Name	Survey Entries	Acres Treated	Acres Affected	Methods Used	Counties Affected
Volunteer rye	1	10	10	Chemical	Chelan
Volunteer wheat	1	40	40	Mechanical	Kittitas
Whitetop	27	789	1,942	Chemical, mechanical, biological	Asotin, Chelan, Kittitas, Lincoln, Okanogan, Yakima
Total	680	46,101.4	135,381.3		

AGENCY REPORT - WASHINGTON DEPARTMENT OF TRANSPORTATION

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

Weed control in the Washington State Department of Transportation (WSDOT) is handled within the Maintenance Division of the agency for those rights-of-way under the jurisdiction of WSDOT. Weed control along these rights-of-way is a critical part of the overall state program because weeds tend to spread along transportation corridors and into neighboring property.

WSDOT promotes the use of integrated vegetation management through development of area plans, which contain an inventory of roadside management aspects and detailed guidance on how to effectively manage vegetation along each highway mile. The plans outline weed control priorities and prescriptions for control methods. WSDOT controls all designated noxious weeds growing on state highway rights-of-way, using mechanical, manual, chemical, cultural, and biological controls.

Integrated Vegetation Management began in 2004 with one plan, nine plans in 2005, eight more in 2006, and six in 2007. The planning is an ongoing process to respond to changes over time.

There are two individuals (one east and one west) overseeing WSDOT's noxious weed control as part of the vegetation management program statewide. These two people work with 24 area maintenance offices in six regional offices throughout the state to oversee noxious weed control on about 100,000 acres of rights-of-way.

NOXIOUS WEED BUDGET

The noxious weed management budget is \$4,956,705 with 27.41 full-time equivalent staff. The budget is a part of the larger roadside vegetation management program. There are four budget groups for roadside vegetation management activities within the highway maintenance program: noxious weed control, nuisance weed control, control of vegetation obstructions, and landscape maintenance. Noxious weed control accounts for control of legally designated noxious weed species as determined by county weed boards. Most weeds controlled as nuisance weeds are on the state noxious weed list, but not legally mandated for control. Budgeted amounts for the 2006-07 biennium are as follows:

- Noxious weed control \$4,956,705
- Nuisance weed control \$8,822,121
- Control of obstructions \$7,238,723
- Landscape maintenance \$4,337,154

Control of legally mandated weed species accounts for about 20 percent of all roadside vegetation management expenditures by WSDOT maintenance. Control of all Class A, B, and C listed weeds accounts for about 54 percent of all roadside vegetation management expenditures by WSDOT maintenance (a total of \$7,440,998).

FEDERAL FUNDING

WSDOT maintenance is funded entirely from state revenue sources. However, an unquantifiable amount of federal funding is used for noxious weed control through highway construction projects as part of planting and plant establishment costs.

OTHER GRANTS RECEIVED

WSDOT received \$25,000 this biennium from a federal highways fund to support a Weeds Cross Borders project between British Columbia and Okanogan County.

GRANTS AND INTER-AGENCY AGREEMENTS

None

REQUIREMENTS FOR NOXIOUS WEED CONTROL IN LEASE AGREEMENTS

Not applicable

OTHER AGENCY ACTIVITIES

PARTNERSHIP WITH U.S. FOREST SERVICE – WSDOT has been working on easement language for roads across forest service land to allow for treatment of noxious weeds with herbicides where necessary. Some forest service corridors still prohibit the use of herbicides.

ROADSIDE DESIGN AND VEGETATION ESTABLISHMENT – WSDOT uses design and restoration of native plant systems along rights-of-way to improve weed control. When soil is preserved and improved and native vegetation is restored during highway construction, ongoing maintenance costs and weed problems are lower.

PREVENTION ON ROADSIDE STRIPS – WSDOT is examining its policy for maintenance of a vegetation-free strip along the edge pavement. WSDOT is testing alternative methods, such as greases up to the edge of pavement, annual cultivation along the pavement edge, and use of weed-blocking materials under guardrails. A challenge in transitioning from gravel shoulders that were maintained to be vegetation-free, is managing weed infestations over time. If competitive grass stands can be established and maintained on unpaved road shoulders, there is less opportunity for weeds to grow.

REPORTS

Nothing identified at present.

AGENCY REPORT - WASHINGTON STATE PARKS AND RECREATION COMMISSION

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

State parks' resource stewardship program oversees resource management planning for the agency and is developing a 10-year action plan to guide the conservation and protection of cultural and natural resources. The 5-year-old Classification and Management Planning (CAMP) process is a public process designed to identify and address important resource issues in state parks. To date, 25 percent of the parks have resource management plans. The CAMP process serves as the guiding document for on-the-ground resource protection and recreational development. At the end of the process, there will be land use plans to guide activities in all 120 state parks.

Each of the agency's four regions has a resource steward that addresses noxious weed control, along with many other responsibilities. Integrated pest management plans have been developed for most staffed parks, but there is no comprehensive noxious weed plan for the agency.

LAND MANAGEMENT RESPONSIBILITIES

The mission of the State Parks and Recreation Commission is to "acquire, operate, enhance and protect a diverse system of recreational, cultural, historical and natural sites" in an effort to leave a valued legacy to future generations. State Parks' resource stewardship program is charged with protecting the natural and cultural resources on a diverse system of 120 parks and other recreational, cultural, historical, and natural sites totaling 260,479 acres, with complex, and often conflicting, demands of environmental protection, cultural and historic preservation, and outdoor recreation.

NOXIOUS WEED BUDGET

The agency does not have any specific budget items or staff dedicated to noxious weed control and does not track expenditures for weed control. Figures for noxious weed control, as a consequence, are best estimates. The Eastern Regional Office spent about \$32,000 in 2006, an estimated 80 percent of the agency expenditures on noxious weed control, which would make the agency total about \$45,000 with a 0.5 full-time equivalent employee, a figure somewhat inflated by a Milfoil project at one park.

The noxious weed work is done by staff in the course of other duties and by volunteers. Volunteer activity is not reflected in the budget figures.

FEDERAL FUNDING

None

OTHER GRANTS RECEIVED

State Parks received \$3,500 for knotweed control in southwest Washington from the Department of Agriculture. The grant provided chemicals and money to contract with the Skamania and Pacific County Noxious Weed Control Boards for weed control at two state parks.

GRANTS AND INTER-AGENCY AGREEMENTS

None

REQUIREMENTS FOR NOXIOUS WEED CONTROL IN LEASE AGREEMENTS

State Parks leases some land from the federal government. These leases require State Parks to control noxious weeds on the property. In addition, State Parks has agricultural leases on some of its own land that require lessees to control noxious weeds as part of the lease agreement.

OTHER AGENCY ACTIVITIES

HABITAT RESTORATION PROJECTS – Invasive species control has been a significant component of several habitat restoration projects. In addition, the agency has completed numerous comprehensive vegetative surveys on park land, which have identified rare plants, as well as noxious weeds. Researchers surveyed more than 10,000 acres this past year.

Varied control efforts are being used on noxious weed infestations across the state (e.g. bio-control of dalmatian toadflax, rush skeletonweed, tansy ragwort, purple loosestrife, and Brazilian elodea, and diver hand-pulling of Eurasian watermilfoil).

State Parks' Centennial 2013 plan highlights the removal of invasive species and noxious weeds, which should focus more attention on these activities as the park system approaches its 100th birthday.

VOLUNTEERS – State Parks uses volunteers for many activities including some noxious weed control. About 1,000 volunteers contribute more than 275,000 hours a year. In addition, about 270 partner groups help sustain the park system. The volunteer aid provided to the agency is equivalent to roughly 145 full-time staff.

State Parks is developing a volunteer stewardship program designed to identify individuals or organizations that are interested in assisting the agency's stewardship specialists in monitoring and managing significant cultural and natural resources in state parks. At Mount Spokane, volunteers are assisting with the control of noxious

weeds in the Ragged Ridge Natural Area Preserve, as well as helping to secure grants for further stewardship projects. Volunteers at Beacon Rock are helping to evaluate the effects of rock climbing activity on rare plant and peregrine falcon populations. Many parks celebrate Earth Day with cleanups and one-day projects. National Trails Day, the first Saturday in June, offers a chance to help with restoring and improving State Parks trails.

GROUP VOLUNTEERS – Clubs and organizations help with specific park improvements. Groups also adopt a favorite park and offer it longer-term care. Volunteer groups are asked to commit to two service projects in a given year or to a single annual service project for two consecutive years.

FRIENDS OF INDIVIDUAL PARKS – A number of nonprofit groups have been formed to benefit specific state parks. Funds raised on-site by these “Friends Groups,” through gift shops sales, special events, and other activities are used toward improvements and programs at that particular park. Currently there are 17 parks or properties with support from official “Friends Groups”.

COOPERATION WITH LOCAL WEED BOARDS – Resource stewards work in cooperation with local noxious weed control boards to comply with requirements under Revised Code of Washington 17.10.

OTHER COOPERATIVE ACTIVITIES –State Parks has cooperated on *Spartina* control in Grays Harbor and Knotweed control on the Dosewallips River. State Parks has worked with the Department of Ecology to test the efficacy of diquat for long-term control of Brazilian elodea at Battle Ground Lake. State Parks also has used interagency agreements to accomplish control work, such as with the Thurston County Weed Board for milfoil management in Deep Lake, the Washington Department of Fish and Wildlife for gorse control at Grayland Beach, and with the Skamania and Pacific County Weed Boards for knotweed control. State Parks has worked with Washington State University to determine effective controls for indigobush and is now using this information to control indigobush along the Columbia River as part of a cooperative project with The Nature Conservancy.

REPORTS

Information on the State Parks Stewardship Program may be found on their Web site at www.parks.wa.gov/stewardship.

AGENCY REPORTS - WASHINGTON STATE

DEPARTMENT OF AGRICULTURE

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

The management of noxious weed issues resides in many divisions of the Washington State Department of Agriculture (WSDA). The Plant Protection Division manages noxious weed control activities while the Pest Program handles noxious weed regulation and *Spartina* and Knotweed activities. Nursery inspections are conducted by the Plant Services Program and the registration for pesticides used in noxious weed control is handled by the Pesticide Management Division.

LAND MANAGEMENT RESPONSIBILITIES

WSDA is not a land managing agency, but does carry out a significant amount of direct control work because of its statutory responsibilities for *Spartina* and Japanese knotweed control. WSDA works primarily on public lands for *Spartina*, both in Willapa Bay and Puget Sound. The agency also provides grants to other agencies and non-governmental organizations, and serves as the contractor for aerial treatment of *Spartina*, for knotweed control, and for control of other noxious weeds.

NOXIOUS WEED BUDGET

Although the biennial budget for the noxious weed efforts of the WSDA is relatively robust at \$3,663,883, the figures are somewhat deceptive. The Department's base budget for the noxious weed program represents only about 8.7 percent of the biennial budget. Of the total, \$1,836,271 (ca. 50.5 percent) is earmarked for *Spartina* and \$974,000 (ca. 26.8 percent) is earmarked for knotweed. Much of the balance represents money for specific grant activities by the agency. Although these specific items in the budget are extremely important, the degree of flexibility for the agency to deal with broader issues or new invaders is limited.

TABLE 9: BIENNIAL BUDGET BREAKDOWN BY SOURCE

Source	Fiscal Year 2006	Fiscal Year 2007	Biennium
State General Fund	\$646,822	\$693,072	\$1,339,894
Aquatic Land Enhancement Account	\$946,000	\$963,000	\$1,909,000
Aquatic Weeds Management Fund			\$54,812
Federal	\$35,000	\$35,243	\$330,177
Total	\$1,627,822	\$1,691,315	\$3,633,883

TABLE 10: WSDA NOXIOUS WEED RELATED BUDGET

Budget Category	Fiscal Year 2006	Fiscal Year 2007	Biennium	Funding Source	Staff FTE**
Noxious weed regulation	\$150,572	\$150,572	\$301,144	General Fund State	1.45
Noxious weed projects*	\$9,250	\$5,500	\$14,750	General Fund State	
<i>Spartina</i> -Grays Harbor proviso		\$50,000	\$50,000	General Fund State	
<i>Spartina</i>	\$884,940	\$901,331	\$1,786,271	Aquatic Lands Enhancement Account	5.99
Knotweed	\$487,000	\$487,000	\$974,000	General Fund - State	1.14
Purple loosestrife	\$61,060	\$61,669	\$122,729	Aquatic Lands Enhancement Account	0.14
Bureau of Land Management noxious weed control			\$61,199	Bureau of Land Management	0.07
U.S. Fish and Wildlife Service invasive plants		\$35,243	\$35,243	US Fish and Wildlife Service	0.01
National Fish and Wildlife Foundation Crupina	\$35,000		\$35,000	National Fish & Wildlife Foundation (federal)	
Department of Fish and Wildlife IAA landowner incentive (Tokeland <i>Spartina</i>)			\$55,000	Federal	
Department of Ecology IAA yellow flag iris control and education			\$10,500	Aquatic Weeds Management Fund	
Department of Fish and Wildlife IAA landowner incentive (Willapa Bay)			\$100,000	Federal	
Department of Ecology IAA hairy willow herb			\$9,562	Aquatic Weeds Management Fund	
Department of Ecology IAA watermilfoil weevil augmentation			\$16,000	Aquatic Weeds Management Fund	
Department of Ecology IAA mapping and denotyping of <i>Phragmites</i>			\$18,750	Aquatic Weeds Management Fund	
Department of Fish and Wildlife IAA landowner incentive (Triangle Cove)			\$43,735	Federal	
Totals	\$1,627,822	\$1,691,315	\$3,633,883		8.80
*This money has been used by the State Noxious Weed Board for special projects					
**Full-time equivalent employee					

FEDERAL FUNDING

In the 2005-07 biennium, WSDA received \$330,177 in federal grants (see Table 9), which have added only .08 full-time equivalent staff. Of the federal grants, \$61,199 and .07 full-time equivalent staff were for specific weed control on Bureau of Land Management lands, \$35,000 passed to the National Fish and Wildlife Foundation for crupina control in Chelan County; and the balance passed through to support *Spartina* efforts.

OTHER GRANTS RECEIVED

None

GRANTS AND INTER-AGENCY AGREEMENTS

WSDA passed a substantial portion of its noxious weed budget, \$1,285,448, through to other entities during the 2005-07 biennium. This included \$748,042.00 in contracts for knotweed control and eradication, \$498,650.00 for *Spartina* control and eradication, \$2,255.00 for purple loosestrife surveys, \$34,000.00 for crupina eradication, and \$2,500 to Washington State University for an efficacy study for yellow flag iris.

Grants are often bundled together or used to secure additional federal or private funding by recipients. Determining an accurate amount of additional resources leveraged as match for these grants is difficult. Most recipients are governmental agencies. The Knotweed grants were pass-through but had substantial matching requirements. In the 2007 fiscal year, partners produced more than \$500,000 in match, both in-kind and in other money they were able to leverage for knotweed control with WSDA grants.

In addition, for the 07-09 biennium, WSDA was appropriated \$200,000 by the Legislature (\$100,000 per year) to pass through for noxious weed control by local weed boards. The Washington State Noxious Weed Control Board will provide advice to the Department on the criteria for selecting those projects, which will be funded through interagency agreements.

TABLE 11: WSDA CONTRACTS FOR NOXIOUS WEED CONTROL

Contractor	Contract #	Time Period	Title	Award Amount
Clallam County Noxious Weed Control Board	IA-07-09-05	07/01/05-06/30/06	Knotweed control and eradication	\$10,000
Clark County Noxious Weed Control Board	IA-07-10-05	07/01/05-06/30/06	Knotweed control and eradication	\$93,000
Island County Noxious Weed Control Board	IA-07-11-05	07/01/05-06/30/06	Knotweed control and eradication	\$5,000
King County Noxious Weed Control Board	IA-07-12-05	07/01/05-06/30/06	Knotweed control and eradication	\$10,000
Lewis County Noxious Weed	IA-07-13-05	07/01/05-	Knotweed control and	\$22,500

Control Board		06/30/06	eradication	
The Nature Conservancy	PSC-07-02-05	07/01/05-06/30/06	Knotweed control Southwest Washington	\$65,000
The Nature Conservancy	PSC-07-03-05	07/01/05-06/30/06	Knotweed control and eradication	\$19,500
Pacific County Noxious Weed Control Board	IA-07-14-05	07/01/05-06/30/06	Knotweed control and eradication	\$43,000
Skamania County Noxious Weed Control Board	IA-07-15-05	07/01/05-06/30/06	Knotweed control and eradication	\$55,500
Snohomish County Noxious Weed Control Board	IA-07-16-05	07/01/05-06/30/06	Knotweed control and eradication	\$10,000
Washington State Parks and Recreation Commission	IA-07-17-05	07/01/05-06/30/06	Knotweed control and eradication	\$5,500
Whatcom County Noxious Weed Control Board	IA-07-18-05	07/01/05-06/30/06	Knotweed control and eradication	\$10,000
Yakima County Noxious Weed Control Board	IA-07-19-05	07/01/05-06/30/06	Knotweed control and eradication	\$8,000
Knotweed Totals for Fiscal Year 2006				\$357,000
Asotin County Noxious Weed Control Board	IA-07-57-05	07/01/06-06/30/07	Knotweed control and eradication	\$900
Clallam County Noxious Weed Control Board	IA-07-58-05	07/01/06-06/30/07	Knotweed control and eradication	\$35,000
Clark County Noxious Weed Control Board	IA-07-59-05	07/01/06-06/30/07	Knotweed control and eradication	\$90,000
Island County Noxious Weed Control Board	IA-07-60-05	07/01/06-06/30/07	Knotweed control and eradication	\$6,000
Jamestown S'Klallam Tribe	IA-07-61-05	07/01/06-06/30/07	Knotweed control and eradication	\$15,000
King County Noxious Weed Control Board	IA-07-62-05	07/01/06-06/30/07	Knotweed control and eradication	\$15,000
Lewis County Noxious Weed Control Board	IA-07-63-05	07/01/06-06/30/07	Knotweed control and eradication	\$26,858
The Nature Conservancy	PSC-07-43-05	07/01/06-06/30/07	Knotweed control and eradication Southwest Washington	\$45,000
The Nature Conservancy	PSC-07-42-05	07/01/06-06/30/07	Knotweed control and eradication Skagit	\$30,000
Pacific County Noxious Weed Control Board	IA-07-64-05	07/01/06-06/30/07	Knotweed control and eradication	\$40,000
Washington State Parks and Recreation Commission	IA-07-68-05	07/01/06-06/30/07	Knotweed control and eradication	\$3,500
Skagit County Noxious Weed Control Board	IA-07-65-05	07/01/06-06/30/07	Knotweed control and eradication	\$4,000
Skamania County Noxious Weed Control Board	IA-07-66-05	07/01/06-06/30/07	Knotweed control and eradication	\$54,000
Snohomish County Noxious Weed Control Board	IA-07-67-05	07/01/06-06/30/07	Knotweed control and eradication	\$8,713
Whitman County Noxious Weed Control Board	IA-07-69-05	07/01/06-06/30/07	Knotweed control and eradication	\$10,000
Yakima County Noxious Weed Control Board	IA-07-70-05	07/01/06-06/30/07	Knotweed control and eradication	\$7,072
Knotweed Totals for Fiscal Year 2007				\$391,043
Department of Fish and Wildlife	IA-07-02-05	07/01/05-06/30/07	<i>Spartina</i> control and eradication	\$175,000
Island County Noxious Weed	IA-07-03-05	07/01/05-	<i>Spartina</i> control and	\$100,000

Control Board		06/30/07	eradication	
Skagit County Noxious Weed Control Board	IA-07-06-05	07/01/05-06/30/07	<i>Spartina</i> control and eradication	\$80,000
Snohomish County Noxious Weed Control Board	IA-07-05-05	07/01/05-06/30/07	<i>Spartina</i> control and eradication	\$100,000
Swinomish Tribe	IA-07-04-05	07/01/05-06/30/07	<i>Spartina</i> control and eradication	\$20,000
Washington State University	IA-05-19-05	04/01/05-05/31/08	<i>Spartina</i> treatment efficacy study	\$4,400
Willapa Vegetation Management	PSC-05-29-05	06/01/05-11/30/05	<i>Spartina</i> herbicide oversight	\$19,250
<i>Spartina</i> Totals for Fiscal Year 2006 and 2007				\$498,650
Jefferson County Noxious Weed Control Board	IA-07-84-05	08/31/06-10/31/06	Purple loosestrife survey	\$2,255
Department of Ecology (Washington Conservation Corps)	WCC06-04-001	03/15/06-06/30/06	Crupina eradication	\$34,000
Washington State University	IA-05-21-05	04/15/05-10/31/06	Yellow flag iris efficacy study	\$2,500
Total of Grants				\$1,285,448

OTHER AGENCY ACTIVITIES

In addition to items that have specific budget allocations or allotments, WSDA carries out several other activities that play an important role in noxious weed control.

- WSDA has promulgated rules under its quarantine authorities, Revised Code of Washington Chapters 17.24 and 17.10, which prohibit the movement or sale of specific noxious weeds in the nursery trade.
- WSDA, through membership in the Western Plant Board and the National Plant Board, works closely with other states and the U.S. Department of Agriculture to set policy on invasive species including noxious weeds.
- WSDA, through the director's designee, serves on the Washington State Noxious Weed Control Board, which is housed within the agency. WSDA provides administrative functions for the board and agency staff that serve on various weed board committees.
- WSDA has played a key role in organizing 15 cooperative weed management areas, which enhance cooperation between federal, state, local, and private entities in dealing with noxious weeds
- WSDA is an active participant in the Aquatic Nuisance Species Coordinating Council and a member of the Washington Invasive Species Council.
- Individuals applying to use pesticides for noxious weed control on or near water are required to work under a National Pollution Discharge Elimination System permit. With the exception of lake permits, WSDA acts as the umbrella permit

holder for applications. This role allows timely treatment of noxious weed infestations. It is particularly critical for weeds such as *Spartina*, knotweed, and purple loosestrife.

- The Pest Program facilitates the release of certain types of biological control agents.
- The Pesticide Management Division registers all pesticides in the state and assists in processing applications for emergency and special use permits for pesticides used in noxious weed control.

REPORTS

WSDA prepares extensive reports for the Legislature and stakeholders on the control efforts for *Spartina* and for knotweed. These can be found on the WSDA Web site at www.agr.wa.gov/PlantsInsects/Weeds

AGENCY REPORT: WASHINGTON STATE NOXIOUS WEED CONTROL BOARD

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

The Washington State Noxious Weed Control Board, established under Revised Code of Washington 17.10, advises the Washington Department of Agriculture about noxious weed control and serves as the state's noxious weed coordination center. Through its actions and policy decisions, including adoption of the state noxious weed list (Washington Administrative Code chapter 16-750), it coordinates and supports the activities of the 48 county noxious weed control boards and weed districts. The existence and activities of the state weed board helps to secure and direct the \$6.2 million in county weed board and weed district funding. Those county boards and districts, in turn, direct the much larger weed control efforts of property owners.

LAND MANAGEMENT RESPONSIBILITIES

The State Noxious Weed Control Board does not directly manage land but primarily provides a coordination, education, and support structure for implementing the state weed law's noxious weed control efforts.

The state weed law provides a sound, risk-based approach to addressing noxious weeds. However, the priorities in the law do not necessarily dictate funding and prioritization of control activities, causing a piecemeal approach to invasive species management.

NOXIOUS WEED BUDGET

TABLE 12: BIENNIAL BUDGET BY SOURCE

Source-- State General Fund	Fiscal Year 2006	Fiscal Year 2007	Biennium	Full-time Equivalent Staff
State Weed Board	\$134,696	\$139,093	\$273,789	1.4
Weed Board education	\$64,489	\$66,623	\$131,112	1.0
Fiscal Year 2007 Proviso		\$95,050	\$95,050	0.6
Total	\$199,185	\$300,766	\$499,951	3

WEED BOARDS AND WEED DISTRICTS

Although it is not technically state funding, funding for individual county weed boards and weed districts is critical for a successful noxious weed program. However, fiscal years vary and the information available is not consistent, making tracking difficult. In general, the most recent budget amounts available are for 2005 and do not include federal, state, or other grant sources.

Budgets, and the adequacy of the county weed budgets, vary widely between counties. In general, those counties with adequate weed assessments have stronger programs. Staffing varies from full-time professionals to single, part-time people. Base county funding, by most recent available figures, is as follows:

TABLE 13: COUNTY NOXIOUS WEED CONTROL BOARDS AND DISTRICTS 2007 FUNDING

County Noxious Weed Control Board or District	Year Information Received	Basic Budget	Assessment	General Fund
Adams	2005	\$151,000	Yes	No
Adams District 1	2005	\$78,367	Yes	No
Asotin	2005	\$63,000	Yes	No
Benton	2005	\$215,550	Yes	No
Benton District 1	2005	\$12,000	Yes	No
Chelan	2005	\$54,771	No	Yes
Clallam	2005	\$87,822	Yes	No
Clark	2005	\$500,000	No	Yes
Columbia	2006	\$178,165	Yes	No
Cowlitz	2007	\$138,000	Yes	No
Douglas**	2005		No	No
Ferry	2005	\$57,000	Yes	No
Franklin	2005	\$230,000	Yes	No
Garfield	2005	\$24,000	Yes	No
Grant	2005	\$375,000	Yes	No
Grant District 1	2005	\$38,383	Yes	No
Grant District 3	2005	\$32,589	Yes	No
Grays Harbor	2005	\$35,420	No	Yes
Intercounty District 51	2002	\$31,789	Yes	No
Intercounty District 52	2002	\$30,800	Yes	No
Island	2005	\$21,239	No	Yes
Jefferson	2005	\$20,542	No	Yes
King	2005	\$930,958	Yes	No
Kitsap	2005	\$116,250	Yes	No
Kittitas	2005	\$81,500	Yes	No
Kittitas District 1	2005	\$10,000	Yes	No
Kittitas District 2	2005	\$18,000	Yes	No
Kittitas District 3	2005	\$15,000	Yes	No
Kittitas District 4	2005	\$6,200	Yes	No
Kittitas District 5	2005	\$30,000	Yes	No
Klickitat	2005	\$71,122	Yes	No
Lewis	2005	\$69,676	No	Yes
Lincoln	2005	\$173,419	Yes	No
Mason	2005	\$2,400	No	Yes
Okanogan	2005	\$200,662	Yes	No
Pacific	2007	\$28,850	No	Yes
Pend Oreille	2005	\$129,850	No	Yes
Pierce	2005	\$373,005	Yes	No
San Juan	2005	\$74,000	Yes	No
Skagit	2005	\$64,663	No	Yes
Skamania	2005	\$35,730	No	Yes
Snohomish	2005	\$72,500	No	Yes
Spokane	2005	\$315,000	Yes	No

County Noxious Weed Control Board or District	Year Information Received	Basic Budget	Assessment	General Fund
Stevens	2005	\$179,150	Yes	No
Thurston	2005	\$273,169	Yes	No
Wahkiakum	2002	\$45,000	No	Yes
Walla Walla	2005	\$32,400	Yes	No
Whatcom	2005	\$159,036	No	Yes
Whitman	2005	\$79,838	No	Yes
Yakima	2005	\$242,279	Yes	No
TOTAL		\$6,205,094		

**Douglas County does not have an activated County Weed Board

Note on Total Funding for Local Weed Boards: The \$6,205,074 does not represent the total of expenditures for weed control by local weed boards and weed districts. A large number of the boards have been very aggressive looking for grants and have entered into interagency agreements to carry out projects for state and federal agencies. Weed boards have been the major recipients of grants from the Department of Agriculture for knotweed control work and *Spartina* work in Puget Sound and for aquatic weed management grants from Department of Ecology. Currently, there is not a comprehensive figure for weed board expenditures that includes these grant funds.

FEDERAL FUNDING

None

OTHER GRANTS RECEIVED

Although it is not technically a grant, in addition to money from the general fund, the State Weed Board has used a noxious weed project fund, accounted in the Department of Agriculture’s budget, which had \$9,250 for fiscal year 2006 and \$5,500 for fiscal year 2007 for a total of \$14,750 for the biennium.

In addition, for the 2007-09 biennium, the Legislature appropriated \$200,000 to the Department of Agriculture (\$100,000 per year) for noxious weed control by local weed boards. The Washington State Noxious Weed Control Board will provide advice to the Department of Agriculture on criteria for selecting projects, which will be funded through interagency agreements.

GRANTS AND INTER-AGENCY AGREEMENTS

In fiscal year 2006:

- The State Weed Board provided \$4,090 to a cooperative effort with the Crupina Control Task Force to eradicate the only state infestation of common Crupina (*crupina vulgaris*) in Chelan County. The project, which involves the U.S. Forest Service, National Park Service, Chelan County, Okanogan County, and others, is the recipient of a \$50,000 Pulling Together Initiative Grant from the National Fish and Wildlife Foundation.
- The State Weed Board provided financial assistance to the weed coordinators from Klickitat and Asotin Counties to participate in the National Invasive Weed Awareness Week in Washington D.C.

- The State Weed Board completed a two-year, noxious weed survey of Cowlitz County. The findings were used by the county weed board to successfully implement an assessment for future funding of the county weed program.

In fiscal year 2007:

- The State Weed Board is again participating in the Crupina Control Task Force, and contributing \$5,000 to herbicide treatments for eradication.
- The State Weed Board financially assisted Okanogan County in participating in National Invasive Weed Awareness Week.
- The board entered into interagency agreements to help fund eradication work for four Class A weed infestations such as: Giant hogweed in Kitsap County, Mediterranean sage in Asotin County, Eggleaf spurge in San Juan County, and Buffalobur in Kittitas County.

OTHER AGENCY ACTIVITIES

The State Weed Board's role can best be described as providing the critical support for on-the-ground activity of county weed boards and weed districts. "The Board seeks to improve coordination of the combined statewide efforts for noxious weed control. Those activities include:

- Determining and adopting the state noxious weed list.
- Gathering and distributing information on noxious weed species and control strategies. In that regard, the State Weed Board maintains an excellent Web site at www.nwcb.wa.gov and provides educational displays.
- Coordinating training, technical assistance, control strategies, and educational program development at the county, state, and regional levels and providing educational resources to local boards and the public.
- Supporting and promoting the activation of local weed control boards.
- Assisting in the development and promotion of biological control projects.
- Conducting and supporting prevention programs and early detection surveys, including the development of statewide integrated weed management plans for specific species.
- Promoting cooperation, compliance, coordination, and adequate weed control budgets for 38 county weed boards, 11 weed districts, 12 state and federal land management agencies, 34 tribes, two neighboring states, and British

Columbia.

Since 2003, State Weed Board staff has become increasingly involved in monitoring bills in Congress, informing the state's congressional delegation of the needs of weed control programs, and helping local programs do the same. As of 2006, the State Weed Board had helped weed coordinators from Asotin, King, Klickitat, Lincoln, Thurston, and Whatcom Counties to participate in National Invasive Weed Awareness Week in Washington, D.C.

REPORTS

The Washington State Noxious Weed Control Board prepares a comprehensive report to the Legislature on its activities. The report is available on the State Weed Board's Web site at www.nwcb.wa.gov.

AGENCY REPORT - WASHINGTON DEPARTMENT OF ECOLOGY

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

FUNDING, EDUCATION, TECHNICAL ASSISTANCE, AND MONITORING

The primary noxious weed control responsibility of the Washington Department of Ecology (Ecology) resides in the Aquatic Weeds Management Program, a subset of the Water Quality Program. The weeds management program provides educational, financial, and technical assistance to local and state governments, tribes, special purpose districts, and the public to reduce the propagation of freshwater aquatic weeds and to better manage the problems these weeds cause.

The program targets state-listed, freshwater noxious weeds and Department of Agriculture quarantine-listed freshwater species. Ecology offers immediate funding when an invasive freshwater weed is discovered early in the invasion of a water body. Early and rapid intervention results in far less economic and environmental costs than controlling widespread infestations. Ecology sets aside \$100,000 per year as an emergency fund for these types of projects. It also funds plan development and management of widespread infestations of freshwater plants during an annual competitive grant cycle. State agencies, local governments, tribes, and special purpose districts are eligible to apply for grants. Lake residents and the public benefit from funding, education, and technical assistance about freshwater plants.

REGULATION

Ecology also plays a role in noxious weed management through the regulation of aquatic pesticides. Herbicides are often used to manage widespread infestations of invasive weeds. Ecology regulates the use of aquatic pesticides via National Pollutant Discharge Elimination System permits. Three permits govern the use of herbicides in aquatic settings:

- The Aquatic Noxious Weed Control General permit covers herbicide treatment of invasive emergent plants like purple loosestrife and *Spartina* and the treatment of invasive plants growing in rivers.
- The Aquatic Plant and Algae Management permit covers herbicide treatment of invasive plants like Eurasian watermilfoil that grows in lakes.
- The Irrigation System Aquatic Weed Control permit covers herbicide treatment of plants growing in irrigation ditches.

LAND MANAGEMENT RESPONSIBILITIES

Although not usually considered to be a land-managing agency, Ecology's Shoreline Program does manage lands at Padilla Bay in Skagit County and owns a piece of tideland at the south end of Alice Bay (part of Samish Bay). Both properties have *Spartina* infestations and Ecology is working to eradicate them. In 1997 (peak acreage), there were 17.2 acres of *Spartina alterniflora* and *Spartina anglica* in Padilla Bay. In 2006, there were 0.06 acres of mixed *Spartina* species.

Ecology manages its building grounds using integrated pest management principles. There are no Class A or Class B noxious weeds on the grounds. Ecology employees (on their own initiative) remove Class B (non-designate) noxious weeds such as scotch broom by hand removal or cutting.

NOXIOUS WEED BUDGET

As a result of legislation in 1991, \$3 from each boat trailer license fee is dedicated to the Aquatic Weeds Management Program. The Legislature appropriates about \$1.2 million to Ecology each biennium for this program. By statute, Ecology commits two thirds of the appropriation to pass-through to state and local governments, tribes, or special purpose districts via grants and contracts. The program funds two full-time equivalents, one of whom manages the program and provides education, technical, and financial assistance to local and state governments to help them manage freshwater invasive plants. The other surveys Washington's lakes and rivers for invasive plants and coordinates applied research projects to determine the efficacy of various management measures.

Ecology currently spends about \$5,600 a year for *Spartina* management. This includes salaries, benefits, indirect, supplies, and staff training and certifications. In earlier years, costs ranged from \$40,000 to 50,000 a year.

TABLE 14: ECOLOGY NOXIOUS WEED EXPENDITURES

Budget Category	Fiscal Year 2006	Fiscal Year 2007	Biennium	Source	Full-time Equivalent Staff
Aquatic Weeds Management Program	\$600,000	\$600,000	\$1,200,000	State	2.0
<i>Spartina</i> management	\$5,600	\$5,600	\$11,200	30 percent state and 70 percent federal	0.1

FEDERAL FUNDING

Ecology receives National Oceanic Atmospheric Administration funds for Padilla Bay *Spartina* management. This pays for non-chemical control, salaries, supplies and training.

OTHER GRANTS RECEIVED

None

GRANTS AND INTER-AGENCY AGREEMENTS

The Aquatic Weed Management Fund is a grant program that provides funding to cities, counties, state agencies, tribes, and special purpose districts for the prevention and management of freshwater invasive plants. Lake groups and other private organizations must work in conjunction with their local or state governments to receive funding for projects. Types of projects eligible for funding include survey, monitoring, planning, plan implementation, control and eradication activities, pilot projects (applied research), demonstration projects, and education.

Invasive submersed or floating-leaved plants managed under this program include Hydrilla, Eurasian watermilfoil, Brazilian elodea, Parrotfeather milfoil, Fragrant water lily, and other state-listed noxious weeds or plants listed under the Department of Agriculture’s quarantine list. Emergent invasive species include Purple loosestrife, Garden loosestrife, Reed canary grass, Yellow flag iris, Hairy willow-herb, and other state-listed emergent noxious or quarantine-listed weeds.

Ecology requires local sponsors to provide 25 percent of eligible project costs as match to state funds. However, sponsors may use in-kind services as local match. Ecology requires a 12.5 percent match for early infestation projects and pilot projects.

Funds are limited to \$30,000 (state share) for planning grants and \$75,000 (state share) for other projects. Ecology limits early infestation projects to \$50,000 per project. Each public body is limited to \$75,000 per annual grant cycle and \$75,000 for early infestation projects.

Sponsors with projects preventing or managing freshwater invasive submersed plants like Eurasian watermilfoil (*myriophyllum spicatum*) or Brazilian elodea (*egeria densa*) receive funding priority over projects dealing with invasive emergent plants or nuisance native plants. Class A noxious weed projects receive funding priority over Class B weed projects, which are higher priority than Class C noxious weed projects. Projects that implement an Ecology-approved, integrated aquatic plant management plan receive the highest priority. Other factors considered when evaluating applications include the environmental and economic impacts of the invasive plants on the ecosystem, the degree that the project will benefit the public, and the likelihood of the problem plant to spread to other water bodies.

TABLE 15: PROJECTS FUNDED IN FISCAL YEARS 2006-2007

Aquatic Weed Management Fund Grants – Fiscal Year 2006		
Applicant	Project	Grant
Mason County Conservation District	Plan implementation project- Mason lake	\$36,000
Mason County Conservation District	Herbicide containment barrier pilot project	\$10,500
Department of Agriculture	<i>Epilodium hirsutum</i> control and eradication	\$9,562

Chelan County	Roses Lake milfoil eradication project	\$43,575
Spokane County	Newman Lake milfoil eradication project	\$75,000
Pend Oreille County	Davis Lake milfoil eradication project	\$30,000
City of Richland	Richland Columbia River milfoil plan	\$30,000
Island County Noxious Weeds	Lone Lake <i>Egeria</i> eradication project	\$30,000
King County	Hydrilla eradication in Pipe and Lucerne Lakes	\$90,000
Skagit County *	Beaver Lake <i>Egeria</i> eradication project	\$37,625
Thurston County Noxious Weeds*	Black Lake Eurasian milfoil eradication project	\$21,875
Subtotal		\$414,137
Aquatic Weed Management Fund Grants – Fiscal Year 2007		
King County	Hydrilla eradication in Pipe and Lucerne Lakes	\$90,000
Skagit County	Clear/Beaver Lake plan implementation	\$75,000
Confederated Tribes of the Chehalis Reservation	Brazilian elodea removal project in the Chehalis River	\$50,000
Thurston County Noxious Weeds	Chehalis River Brazilian elodea control	\$50,000
Department of Fish and Wildlife	Silver Lake milfoil control plan	\$30,000
King County Noxious Weeds	Garden loosestrife early infestation project	\$30,000
Subtotal		\$325,000
Total		\$739,137

*Ecology evaluates early infestation projects under separate criteria.

REQUIREMENTS FOR NOXIOUS WEED CONTROL IN LEASE AGREEMENTS

Not applicable.

OTHER AGENCY ACTIVITIES

- Aquatic Weeds database –The aquatic weeds botanist surveys a subset of public access lakes and rivers each year. Ecology maintains an extensive inventory of both native and invasive plant species for each water body and an online database of more than 436 surveyed locations. It can be viewed at: (www.ecy.wa.gov/programs/eap/lakes/aquaticplants/index.html)
- Web site – (www.ecy.wa.gov/programs/wq/links/plants.html) - Aquatic Weed Program employees maintain a comprehensive Web site about invasive non-native freshwater plants and native freshwater plants. This Web site includes sections on plant identification, general information about invasive aquatic plants, control and eradication methods, planning information and plans, information about aquatic herbicides, and general lake information.

RESEARCH

Aquatic Weed Program employees conduct applied research to evaluate the efficacy of various methods to manage invasive freshwater weeds. Staff published several peer-reviewed journal articles about these projects with more to follow.

COMMITTEES AND BOARDS

Ecology employees participate on the following boards or committees that deal with invasive weeds:

- The Washington State Noxious State Weed Control Board, including its Education Committee and Scientific Committee
- The Aquatic Nuisance Species Committee
- Washington Invasive Species Council
- Washington State Conservation Commission

REPORTS

Ecology does not prepare legislative reports or other summaries of annual activities related to freshwater weeds. However, Ecology posts information about the grant program at this Web site: www.ecy.wa.gov/programs/wq/plants/grants/index.html.

AGENCY REPORT: WASHINGTON CONSERVATION COMMISSION

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

The Washington State Conservation Commission (WSCC) works with 47 independent conservation districts throughout Washington State to assist private landowners with projects that protect the State's natural resources. WSCC administers federal and state grants for conservation districts to help landowners conserve water and soil, protect water quality, and enhance habitats. Typical projects include farm planning, efficient irrigation systems, livestock fencing, manure management systems, conservation tillage, fish passage improvements, and riparian restoration. Noxious weed control on private lands is addressed through farm planning, maintenance of riparian restoration sites, and special projects.

FARM PLANNING

Farm plans help landowners inventory the resources on their property (soil, water, livestock, crops, etc.), identify the objectives of their farm, and create a dynamic plan that reflects those objectives while protecting the quality of the natural resources. Noxious weed control options are identified in farm plans, and conservation districts help connect landowners to local resources for managing weed problems.

RIPARIAN RESTORATION SITE MAINTENANCE

The Washington State Conservation Commission administers the Conservation Reserve Enhancement Program (Enhancement Program) which provides grants to farmers and ranchers who enroll land located along water bodies with priority salmonid stocks. Eligible land is planted to create forested riparian buffers that are protected for 10-15 years. Participants are reimbursed for 100 percent of the eligible costs to establish the buffer and receive an annual rental payment per acre enrolled.

An important part of every Enhancement Program contract is the commitment on the part of the landowner to properly maintain Enhancement Program acreage, which includes the control of noxious weeds. The grant includes funding for maintenance activities which are performed in accordance with Natural Resource Conservation Service technical standards. As an example of invasive species control, in calendar year 2005, WSCC spent \$1.12 million for maintenance on Enhancement Program projects statewide. Grant totals for the 2005-07 biennium include a total of 110 contracts, with 89 stream miles protected.

LAND MANAGEMENT RESPONSIBILITIES

The Conservation Commission is not a land managing agency.

NOXIOUS WEED BUDGET

No specific noxious weed budget.

FEDERAL FUNDING

The agency does not receive specific funds for noxious weed control but does administer federal funds through grants such as the Conservation Reserve Enhancement Program.

OTHER GRANTS RECEIVED

The Washington State Water Quality Implementation grant may be used for projects to control weeds through new technologies that reduce pesticide use.

REQUIREMENTS FOR NOXIOUS WEED CONTROL IN LEASE AGREEMENTS

Not applicable.

OTHER AGENCY ACTIVITIES

Four conservation districts have undertaken the following special projects to help private landowners control noxious weeds:

- Japanese Knotweed Control - Wahkiakum Conservation District in Southwest Washington contacted all landowners adjacent to waterways within the Willapa Watershed and discussed knotweed issues with them. The District received permission to treat 150 acres of Japanese knotweed across 10.5 miles of the Willapa River and estuary, with follow-up control measures taking place the next year.
- Computerized Weed Control Reduces Pesticide Use - Through a water quality grant, Benton Conservation District purchased a WeedSeeker chemical applicator to loan to local farmers in South Central Washington. The WeedSeeker can be calibrated to recognize certain weeds and then spray pesticide on only those weeds rather than onto the entire field. This technology provides benefits by reducing costs and herbicide use.
- Bio-Control for Dalmatian Toadflax and Other Noxious Weeds - Foster Creek Conservation District worked with over 100 landowners in North Central Washington to identify and treat weed species on their lands. The District assisted landowners in releasing 25,000 insects for bio-control, including *Mecinus janthinus*, a stem-boring weevil to control Dalmatian toadflax.
- False Indigo Control - Pomeroy Conservation District in Southeast Washington began experimental trials for controlling over 20 miles of False indigo through cutting and spraying along Deadman and Meadow Creeks. Education of landowners and continued monitoring and treatment will be a

long-term process.

REPORTS

Grant information and reports on conservation district activities are available on the agency Web site: www.scc.wa.gov.

AGENCY REPORT: WASHINGTON RECREATION AND CONSERVATION OFFICE

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

The Washington State Recreation and Conservation Office (RCO), formerly the Interagency Committee for Outdoor Recreation, does not engage directly in noxious weed control but administers federal and state grants, which contain noxious weed control as a part of habitat restoration. The grants are funded through the Salmon Recovery Funding Board (SRFB) and the Recreation and Conservation Funding Board (RCFB). Grants awarded by these two boards are based on a public, competitive process that weighs the merits of proposed projects against established criteria.

The Boards' PRISM database tracks many acquisition, development, and restoration grants that include noxious weed work, but many other grants including important conservation and plant removal work do not track noxious weed efforts specifically. The figures noted in this section, therefore, cover only some of the Boards' grant programs.

SALMON RECOVERY FUNDING BOARD GRANTS

The SRFB administers two grant programs for protection and restoration of salmon habitat. Depending on the grant program, eligible applicants may include municipal subdivisions (cities, towns, counties, and special districts such as port, conservation, utility, park and recreation, and school), tribal governments, state agencies, nonprofit organizations, regional fisheries enhancement groups, and private landowners.

To be considered for funding, projects must be operated and maintained in perpetuity for the purposes for which funding is sought. All projects require approval and must be a high priority in the lead entity strategy or regional salmon recovery plan.

In the 2005-07 biennium, SRFB projects working on habitat restoration in riparian zones treated nearly 607 acres for invasive species.

RECREATION AND CONSERVATION FUNDING BOARD

The RCFB also administers several grant programs for recreation and conservation. Many grant recipients use grant money to restore habitats, clear trails, and purchase and preserve land. These efforts may involve noxious weed or invasive species control and eradication work.

The Washington Wildlife and Recreation Grant Program (WWRP) provides funding for local and state parks, water access sites, trails, habitat conservation, and

farmland preservation. Projects within many of these categories may include noxious weed control efforts as a part of their restoration or acquisition work.

RCFB also sets policy for eligible costs associated with acquiring property. The 1993-1995 state capital budget included a proviso to require state agencies buying property rights for the WWRP to comply with the weed control provisions of RCW 17.10. In response to this requirement, in 1994 the RCFB added initial noxious weed control as an eligible cost and set a limit of \$75 per acre as the maximum reimbursement for control of noxious weeds on property newly acquired with a RCFB grant (In November 2007, the RCFB approved an increase to \$125 per acre). The purpose of the policy is to encourage sponsors to eradicate noxious weeds on lands purchased with RCFB grants.

LAND MANAGEMENT RESPONSIBILITIES

The Recreation and Conservation Office is not a land managing agency.

NOXIOUS WEED BUDGET

No specific noxious weed budget.

FEDERAL FUNDING

The agency does not receive specific funds for noxious weed control but does administer federal funds through grants.

OTHER GRANTS RECEIVED

None

GRANTS AND INTER-AGENCY AGREEMENTS

The SRFB awarded \$305,575 in federal funds and \$15,000 in state funds to grant recipients for noxious weed control efforts. Following is an example of one of those grants:

SRFB awarded the Quinault Nation \$242,775 with a \$45,000 sponsor match to survey the Prairie Creek sub-watershed for Japanese knotweed and to then eradicate the knotweed with herbicide treatments repeated over three years. In addition, the roads and uplands in the watershed were to be inspected and treated to prevent re-infestation of the stream.

The RCFB distributes grants under 11 grant programs, some of which include noxious weed control work. Under the Washington Wildlife and Recreation Program's many grant categories the RCFB distributed \$113,550 to grant recipients for noxious weed control efforts. Following is an example of one of those grants:

Through the Washington Wildlife and Recreation Program, RCFB awarded \$11,000 for noxious weed control in addition to other funds to secure land for the Methow Watershed project in Okanogan County. The project goal was to secure the habitats necessary to maintain all of the ecological processes of the watershed and to sustain maximum biological diversity.

The Aquatic Lands Enhancement Account Grant Program provides funding for the purchase, improvement, and protection of aquatic lands for public purposes, and for providing and improving access to such lands. The RCFB provided \$1,000 in the 2005-07 biennium to a grant recipient for noxious weed control work.

REQUIREMENTS FOR NOXIOUS WEED CONTROL IN LEASE AGREEMENTS

Not applicable.

OTHER AGENCY ACTIVITIES

The Recreation and Conservation Office houses and administers both the Washington Invasive Species Council and the Washington Biodiversity Council.

The Washington Invasive Species Council was established by the 2006 Legislature with a \$200,000 biennial budget to develop a strategic plan that provides direction, planning, and coordination to combat and prevent harmful invasive species in Washington. To most effectively develop this plan, the council has formed five work groups to focus on major themes such as education, funding, coordination, technical efforts, and regulations. This information will be used to develop recommendations and data about the status of invasive species in the state.

The Washington Biodiversity Council recently released its strategic plan, which recommends guiding investments on the land through the use of biodiversity maps, improving incentives and advancing markets for landowners to provide tangible benefits for conservation on working lands and open spaces, and engaging citizens to work with scientists to inventory and monitor Washington's biodiversity.

REPORTS

The Biodiversity Conservation Strategy, grant information, information on the Invasive Species Council, and many other agency reports are available on the agency Web site: www.rco.wa.gov.

AGENCY REPORT: WASHINGTON STATE UNIVERSITY

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

Washington State University (WSU), the state's land grant college, and the University of Washington, play a very important role in noxious weed control. Funding their research and using their scientific expertise is a critical part of any successful program. For WSU, the noxious weed work is centered in the Crop and Soil Sciences Department of the College of Agriculture, the Human and Natural Resource Sciences and the Entomology Department, and Cooperative Extension. The faculty members and extension agents from WSU work closely with federal agricultural resource scientists at WSU facilities in Pullman, Puyallup, Mount Vernon, Prosser, and the Tri-cities.

In the overall weed control effort, WSU plays several key rolls:

- At the highest level, the universities are developing new ideas about how to better integrate noxious weed control into the building of healthier, more sustainable ecosystems.
- At the on-the-ground level, WSU researchers carry out extensive research work on effective strategies and tools to control both noxious and non-noxious weeds in crops and in the environment.
- WSU is the center for research on and distribution of biological control agents for noxious weeds in the state. It provides most of the biological control agents used in Washington and, through several extension agents in counties such as Kittitas, Douglas, and Chelan, is also actively involved in distribution.
- There are 39 WSU Extension offices that contribute to prevention and control of noxious weeds. They provide office locations for weed board coordinators, offer Master Gardner programs that conduct clinics and assist public identification of noxious weeds, loan equipment for eradication and control of invasive species, provide education workshops that include noxious weed information, and they contribute to integrated pest management.
- WSU, through its various publications and extension bulletins, is a major source for information on noxious weed control. The *Pacific Northwest Weed Management Handbook*, compiled and updated yearly by the experts from Oregon, Washington, and Idaho, is a key publication. This handbook is designed as a quick and ready reference of weed control practices used in various cropping systems and situations in the three states. The handbook was originally planned as a manual for county extension agents. However, it also

may be useful to company field representatives, commercial spray applicators and consultants, herbicide dealers, teachers, and some producers.

- WSU provides on-the-ground assistance and technical expertise in weed control through the Cooperative Extension Service.
- The Washington State Pest Management Resource Service serves as a hub for research-based information about pest management practices, including both chemical and alternative control methodologies. It evolved from the Washington State University Pesticide Information Center. The service serves Washington State agricultural producers, researchers, extension staff, and policymakers, making relevant and accurate information widely available in a timely and accessible manner.
- WSU educates students in a number of related fields using the latest techniques of vegetation management including noxious weed work.

NOXIOUS WEED BUDGET

TABLE 16: WSU WEED RESEARCH

Fund Source	Amount
Federal dollars	\$2,853,895
Federal grants	\$2,559,371
Non-federal grants	\$2,712,591
State	\$527,682
Total weed research	\$8,653,541
Estimated 10 percent on noxious weeds*	\$865,354

*Estimate per WSU

TABLE 17: WSU EXTENSION STAFF AND BIO-CONTROL**

Reporting Area	Staff Costs for Extension and Bio-Control	Other Extension Costs	Extension Grants Received	Total
NE District	\$189,570	\$85,246	\$258,598	\$533,414
NW District	\$142,881	\$69,301	\$40,000	\$252,182
SE District	\$210,000	\$130,000		\$340,000
SW District	\$76,000		\$40,000	\$116,000
Soils and Crops	\$250,000	\$57,000	\$176,000	\$483,000
Total	\$868,451	\$341,547	\$514,598	\$1,724,596

**Estimated staff costs

TABLE 18: WSU TOTAL INVESTMENT

Weed Research	\$ 865,354.11
Extension Staff and Bio-Control	\$ 1,724,596
WSU Total	\$ 2,589,950.10

WEED RELATED RESEARCH

WSU does extensive research in weed related issues. Although faculty salaries are generally included in the base budget, much research is grant funded. From 2005 to the present, WSU has received more than \$440,000 in grants for weed-related research. Many of the research projects are funded by and for specific agricultural crops and do not distinguish between noxious weeds and native species in the crop. The primary concern in these projects is controlling non-crop weeds that limit production of the agronomic crop, for example, weed control in potatoes or weed control in peas. Others, for example, include a project on field evaluations of herbicides for knotweed control, which are very specific to noxious weeds. A list of weed research projects is listed as Table 19.

BIOLOGICAL CONTROL PROGRAM

Dr. Gary Piper has, for many years, been the state expert on biological control for noxious weeds. Dr. Piper, working closely with WSU extension agents, primarily Dan Fagerlie, chair of the Ferry County extension, is spearheading an extensive release and redistribution of biological control agents in Washington. Releases have been made in Chelan, Clallam, Clark, Cowlitz, Douglas, Ferry, Grays Harbor, Island, Jefferson, King, Kitsap, Kittitas, Klickitat, Lewis, Mason, Okanogan, Pacific, Pend Oreille, Pierce, San Juan, Skagit, Skamania, Snohomish, Stevens, Wahkiakum, Whatcom, and Yakima Counties.

The effort has involved a number of separate entities including Ferry County, U.S. Forest Service, Colville National Forest, Okanogan-Wenatchee National Forest, Confederated Tribes of the Colville Reservation, Smith-Lever, Stevens County, Pend Oreille County, Okanogan County, Douglas County, King County, Stevens County Weed Board, Okanogan County Weed Board, WSU Extension, and the Washington Department of Fish and Wildlife.

In 2006, more than 223,000 biological control agents, representing 20 plant pathogen and bio-agent species, were released at 557 sites across the state. GPS coordinates were taken and are used to map the sites. Characteristics such as soil type, precipitation, slope, aspect, and size and density of weed infestation were recorded to make it possible to evaluate future releases.

The program also has benefited neighboring states. Nearly 60,000 insects from the project's breeding sites were distributed to five other western states to control Dalmation toadflax. Six new biological control agents were released to control other weeds in Washington. Project staff developed handouts, posters, and newspaper alerts on weed identification and control options. These materials were distributed throughout the state as well as to California, Idaho, Montana, Oregon, and British Columbia. Some costs are recovered by the charges for biological control agents.

OTHER UNIVERSITY ACTIVITIES

INTERACTION WITH LOCAL WEED BOARDS

WSU Cooperative Extension agents work closely with local weed boards and in the case of Douglas County have been the lead in noxious weed control and education, and providing expertise to state agencies. Dr. Kim Patten, as an example, has played a key role in measuring the effectiveness of efforts against *Spartina* for the state and federal agencies.

TECHNICAL EXPERTISE

WSU scientists serve as scientific advisors and play a key role on the State Noxious Weed Control Board's noxious weed committee that reviews proposed additions to the state weed list.

EDUCATION AND LEADERSHIP

County extension agents, with their close links to local government and citizens, educate people at the local level about invasive species including noxious weeds and provide control recommendations.

SOURCES OF INFORMATION

WSU produces a vast amount of useful information on noxious weeds both in its publications and on its Web site.

TABLE 19: WEED RELATED GRANTS TO WASHINGTON STATE UNIVERSITY

Agency	Fiscal Year Awarded	Title	Date Proposed/Awarded	Awarded
The Land Institute	2005	Laboratory, field screening and genetic work	5/12/2004	\$9,000
AMVAC-GemChem	2005	Weed control in corn	6/16/2005	\$2,000
BASF Corp	2005	Weed control in irrigated crops	1/25/2005	\$1,000
FMC Corp	2005	Weed control in mint	11/24/2004	\$2,000
Gowan	2005	Weed control in vegetable crops	1/25/2005	\$2,200
Syngenta Crop Protection, Inc	2005	Weed control in snap bean	5/25/2005	\$4,500
Valent USA Corp	2005	Weed control in mint	1/5/2005	\$2,000
NARF	2005	Weed control in cucumbers		\$9,810
NARF	2005	Weed control in peas		\$5,570
NARF	2005	Weed control in vegetable seed crops		\$4,990
Washington Blueberry Commission	2005	Weed control		\$4,505
Washington Red	2005	Caneburning and weed control		\$20,000

Agency	Fiscal Year Awarded	Title	Date Proposed/Awarded	Awarded
Raspberry Commission				
The Scotts Company	2005	Weed management in turfgrass research	6/21/2005	\$4,000
Washington Mint Commission	2005	Weed control research on mint	4/27/2005	\$24,889
Washington Wheat Commission	2005	Weed control in wheat		\$20,000
WSCPR	2006	Mustard seed meal for weed suppression in organic mint	11/14/2006	\$3,000
WSCPR	2006	Weed control in commercial ornamental propagation nursery	10/25/2005	\$4,500
Bayer Corp	2006	Weed control in irrigated crops	7/21/2005	\$2,000
Bayer Corp	2006	Weed control in potato	11/15/2005	\$1,000
Dow AgroSciences	2006	Weed control on onion	6/20/2006	\$4,000
DuPont	2006	Weed control in irrigated crops	11/29/2005	\$2,000
DuPont	2006	Weed control in potato	9/9/2005	\$1,000
FMC Corp	2006	Weed control in onion	12/20/2005	\$2,000
Valent USA Corp	2006	Weed control in irrigated crops	5/25/2006	\$9,000
Small Planet Foods (General Mills)	2006	Organic weed research	5/25/2006	\$14,000
WSCPR	2006	Alternative mulches for weed control in vegetable production	10/25/2005	\$15,355
NARF	2006	Weed control in cucumbers	3/13/2006	\$9,425
NARF	2006	Weed control in peas	3/13/2006	\$5,565
NARF	2006	Weed control in vegetable seed crops	3/13/2006	\$4,610
Washington Blueberry Commission	2006	Weed control	2/13/2006	\$4,728
Washington Red Raspberry Commission	2006	Caneburning and weed control	3/14/2006	\$7,645
Washington Red Raspberry Commission	2006	Postemergence Canada thistle and bindweed control	3/14/2006	\$2,330
Washington Strawberry Commission	2006	Weed control in strawberries		\$10,840
Washington Strawberry Commission	2006	Weed control in strawberries	2/28/2006	\$10,830
WSCPR	2006	Red Raspberry research	10/25/2005	\$4,600
WSDA	2006	Research natural organic lawn fertilizer to impact weed growth	4/12/2006	\$10,500
Washington Mint Commission	2006	Weed control research on mint	5/10/2006	\$35,749
WSCPR	2006	Cranberry weed, insect and disease management for Washington	10/25/2005	\$18,800

Agency	Fiscal Year Awarded	Title	Date Proposed/Awarded	Awarded
WSCPR	2006	Field evaluations of herbicides for knotweed control	10/25/2005	\$2,250
Bureau of Land Management	2006	Noxious weed biological control insects acquisition	11/21/2005	\$10,000
U.S. Fish and Wildlife Service	2006	Biological control of noxious weeds	6/8/2006	\$7,175
Washington State Department of Ecology	2006	Alternatives to burning and their effects on insect and weeds	9/21/2005	\$49,068
USADPLC	2006	Weed control	8/5/2005	\$5,000
Washington Mint Commission	2007	Weed control research on mint	4/12/2007	\$28,972
Washington Mint Commission	2007	Mint oil yields, weeds and pests under deficit irrigation	4/12/2007	\$9,500
Bayer Corp	2007	Weed control on irrigated crops	9/11/2006	\$1,800
FMC Corp	2007	Weed control in grape	12/8/2006	\$1,200
Valent USA Corp	2007	Weed control on irrigated crops	10/5/2006	\$4,000
Small Planet Food	2007	Organic weed research	10/12/2006	\$14,000
Bureau of Land Management	2007	Noxious weed bio-control organism acquisition	9/25/2006	\$10,000
Univ. of Idaho (Cool Season-07)		Determining critical weed-free period for broadleaf weeds	11/30/2006	\$442,906

BIOLOGICAL CONTROL PROGRAM REPORTS

- Biological Control in Pest Management Systems of Plants, Gary Piper
- Biological Control of Invasive Toadflaxes in Washington, Gary Piper
- Integrated Weed Control Spreading Across Washington, WSU Impact 2007

AGENCY REPORT: UNIVERSITY OF WASHINGTON

MANAGEMENT STRUCTURE FOR NOXIOUS WEED CONTROL

The University of Washington (UW) makes significant contributions in the control of estuarine and wetland weeds such as *Spartina* and knotweed and in the treatment of noxious weeds in the urban environment and restoration projects. Funding its research and using its scientific expertise is a critical part of any successful program.

Within the University of Washington, four programs can be highlighted; the two most relevant to noxious weeds are in the College of Forest Resources.

1. The Botanic Gardens – The Center for Urban Horticulture is the largest program in the world devoted to questions about plants in an urban environment. The College of Forest Resources also has sponsored the Denman Lecture series that has provided a forum on invasive species, including noxious weeds.
2. The Olympic Natural Resources Center is headquartered in Forks but has played a significant role in *Spartina* in Willapa Bay and on knotweed efforts.
3. The Sea Grant Program provides research money for estuarine environments including the impact of *Spartina*.
4. The Herbarium at the Burke Museum maintains the states most extensive reference of plants, including noxious weeds and an outstanding Web site for reference.

NOXIOUS WEED BUDGET

TABLE 20: PROGRAM ACTIVITY

Program	Staff Costs-State	Grants Received	Grants Given	Total
Center for Urban Horticulture	\$100,000*	\$127,000		\$227,000
Olympic Natural Resources Center		\$355,478		\$355,478**
Sea Grant		\$170,855	\$170,855	\$170,855
Burke Herbarium	\$10,000*			\$10,000
Herbarium and Union Bay***	\$25,000			\$25,000
Total	\$135,000	\$653,333	\$170,855	\$788,333

*Estimated

**Estimated, based on prorating of grants for reporting period

***Weed control

The College of Forest Resources of the University of Washington has identified invasive species and noxious weeds as priorities. Both the Center for Urban Horticulture and the Olympic Natural Resources Center work on these priorities.

The Center for Urban Horticulture of the College of Forest Resources, through two key researchers, is involved in very important areas for noxious weed prevention and control. Dr. Sarah Reichard's key research interest is about "Biological invasions including the traits of invasive plants, prediction of invasive ability, early detection and rapid assessment of new invaders, and the impacts of plant invaders on native ecosystems and plants." This research became particularly important with a number of highly invasive species, such as English ivy, Japanese knotweed, and Butterfly bush that began as garden or landscape plants.

Dr. Reichard has worked with the Washington nursery industry to raise awareness and develop codes of conduct to prevent the spread of invasive exotics. Currently, she is sponsoring research in several important areas for weed control including:

- Habitat occupied by *Buddleia davidii* (Butterfly bush) in riparian areas
- Invasive plants in Pacific coast forestlands: creation of a priority list and identification and management aids.
- The economics and ecology of the risk of invasive plant establishment from the horticultural trade in North America
- Ecological effects and control of *polygonum cuspidatum* (Japanese knotweed).
- A synthesis of Pacific Northwest invasive plant issues.

Dr. Kern Ewing is doing research on the restoration of degraded environments, maintenance of restored systems, and management of invasive species in restoration.

The Olympic Natural Resources Center (Center) of the College of Forest Resources has been an important player in both the *Spartina* and knotweed control activities. The Center, like the Center for Urban Horticulture, provides a great deal of extension-type work. The Center and CRA have raised more than \$1.6 million in federal grants for *Spartina* bio-control feasibility and release work. The Center, with its GIS expertise, also has provided valuable mapping and public education work for *Spartina* in Willapa Bay using both federal funds and Aquatic Lands Enhancement Account Volunteer Cooperative grant funds. The Center continues to be an active player in the cooperative *Spartina* effort in Willapa.

Currently, the Center is working in the knotweed eradication program. It is supplying mapping of knotweed locations for WRIA 20 (Clallam County). The Center has

collected data from the Hoh Tribe, Makah Indian Tribe, Quileute Tribe and Clallam County in developing a better database.

The emphasis for biological control has moved from *Spartina* to knotweed. Currently, that feasibility work is being funded by the U. S. Forest Service (\$150,000-\$200,000 so far).

The Sea Grant Program of the College of Ocean and Fisheries Sciences focuses on ecosystem health of the marine environment and ways to protect the environment from degradation from human activity. The program seeks to identify issues, develop better management tools, and initiate working partnerships. The program began as a federal experiment in local investment. Today, the Washington Sea Grant Program is part of a network of 30 sea grant colleges and programs administered by the National Oceanic and Atmospheric Agency in the U.S. Department of Commerce. The Sea Grant Program funds research and outreach projects to address marine needs.

Although the vast majority of projects funded are not related to noxious weeds, the Sea Grant Program has addressed *Spartina* as an element in environmental health. Currently, two projects are being funded. The first is a "*Spartina* Eradication and Education Service-Learning Project" working with the Department of Agriculture, the Island County Noxious Weed Control Board, and middle school students. The second is developing a *Spartina* control handbook building on previous Washington Sea Grant Program efforts dealing with *Spartina* eradication.

The University of Washington Herbarium is an international resource for plant, fungal, lichen, and marine algae research. The Herbarium is one of the largest in the Pacific Northwest. It contains more than 580,000 specimens—more than 60 percent of which are from the Pacific Northwest and 5,000-10,000 specimens are added to the collections each year. Currently the Herbarium is working with groups such as the Washington Native Plant Society to expand its reference collection of noxious weeds.

The Herbarium also is working on projects such as the plant inventory, which began in 2004, of the San Juan Islands. The University of Washington's David Giblin has been working closely with Peter Dunwidde of The Nature Conservancy to complete the comprehensive plant survey, which identifies both native and invasive plants in this fragile ecosystem that will help determine invasive species biology and future management directions.

INFORMATION

The University has an extensive amount of information available on its Web site under: Seagrant@u.washington.edu, The Center for Urban Horticulture, Olympic Natural Resources Center, and the University of Washington Herbarium.