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Oregon State Weed Board
Grant Program

Section 28-5 – Application Form

Oregon State Weed Board
635 Capitol St NE • Salem, OR 97301-2532
Tristen Berg, Noxious Weed Grant Coordinator
503-986-4622 • Fax: 503-986-4786

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Application Submission Requirements

1. **Provide the Oregon State Weed Board (OSWB) with and electronic version submitted through FTP server upload:** http://files.oda.state.or.us/?login=oswb

2. **Submit by mail two SIGNED - single sided original versions of your completed application.**

3. **Electronic versions MUST be submitted in workable format Microsoft Word preferred.**

4. **Mandatory attachments: must be included or your application will automatically be rejected. These items include: project budget, photos of project area, maps of project area, required project partner form and landowner lists for cost reimbursement projects.**

5. **All documents must be submitted by December 12, 2014 and mailed to:**

Tristen Berg, Noxious Weed Grant Program
Oregon Dept. of Agriculture
635 Capitol St NE
Salem, OR 97301

OSWB Grant Application Form 2015 Cycle
Grant Cycle 28-5 – Application Due Date: December 12, 2014

Project title: (Using 6 words or less give your project a descriptive title)
Willamette River Aquatic Weed Management Phase 2
County or Counties project is located in:
Benton County

Type of Organization:

☒ Cooperative Weed Management Area	☐ Not-For-Profit Organization
☐ Political Subdivision (not a state agency)	☐ Private
☐ Institute for Higher Education	☐ Tribe
☐ Soil & Water Conservation District	☐ Watershed Council

OSWB dollars requested: $ 36,604 **Total cost of project: $** 56,365

Name of Applicant or Organization: Benton County Cooperative Weed Management Area

Contact: Crystal Durbecq **email:** cdurbecq@bentonswcd.org

Address: 456 SW Monroe Ave. Suite 110

City: Corvallis **State:** OR **Zip:** 97333

Phone: 541-753-7208 **Fax:** 541-753-1871

Project Manager for Applicant or Organization: Benton Soil & Water Conservation District

Contact: Crystal Durbecq **email:** cdurbecq@bentonswcd.org

Address: 456 SW Monroe Ave Suite 110

City: Corvallis **State:** OR **Zip:** 97333

Phone: 541-753-7208 **Fax:** 541-753-1871

Fiscal Agent for Applicant or Organization: Benton Soil & Water Conservation District

Contact: Jen Floro **email:** jfloro@bentonswcd.org

Address: 456 SW Monroe Ave Suite 110

City: Corvallis **State:** OR **Zip:** 97333

Phone: 541-753-7208 **Fax:** 541-753-1871

Project Information

1.Weed Species: (List all state listed noxious weeds pertaining to this project. Use common name plus genus and species. If your project has more weeds than the allowable space please duplicate this table on a separate sheet and attach to this application)

*Habitat	**Method of treatment	*Weed species	Net/treatment acres	Gross/survey acres	Herbicide(s)	Define the timing of treatment
Wetland	*Bio-Control*	*Purple loosestrife, Lythrum salicaria*	*1*	*13*	*N/A*	*Late June*
Instream (Lake)	Herbicide	Yellow floating heart, Nymphoides peltata	0.5	16.5	Aquatic Glyphosate	July (when plant is flowering and water temp is at least 60 degrees F)
Instream (River Side Channel)	Herbicide	Uruguayan primrose-willow, Ludwigia hexapetala	11	11	Glyphosate (Aquatic Label)	July when approx. half the plants are flowering, before they have gone to seed.
Instream (River Inlet)	Manual	Uruguayan primrose-willow, Ludwigia hexapetala	1.5	10.5	N/A	June/July prior to herbicide application
Instream	Manual	Uruguayan primrose-willow, Ludwigia hexapetala	1	5	N/A	June/July when plant are just starting to flower

*Choose the primary habitat the weed exist – Upland, Riparian, Wetland, Instream, Estuary. It is recognized that some projects have mixed habitat types, chose only one habitat per weed per line. Habitats are described within the instructions. Use only state listed noxious weeds as described within the instructions Exhibit B.
**see section (5) below for designated treatment types

Total estimated project acreage: net: 17 gross: 43
(see appendix c with instructions for understanding calculation of your total project net/gross project acreage)

2. Project location: (directions to the site) Horseshoe Lake (Nymphoides peltata site): From Hwy 20, head north onto NW N. Albany Rd, right onto NW Quarry Rd, left onto NW Cacade Heights Dr, and right onto NW Horseshoe Lake Cir. Parking area is on the right.

Collins Bay (Ludwigia hexapetala site): Heading east on Hwy 20, take the first right after intersection of HWY 20 & Independence Hwy, onto private road. Park at bridge and walk along ag field edge towards Willamette River. For both sites, call BSWCD to get landowner permission before entering private land.

Several small patches of Ludwigia will be hand pulled on the Willametter River between Corvallis and Albany.

Latitude: (Np Site: W 123.114417) (Lh Site: W 123.173014) Longitude: (Np Site: N 44.661758) (Lh Site: N 44.63495) (at least one lat/long reading is mandatory)

3. Does this project exist within a designated weed control district?
(Refer to ORS569.360)

☐Yes ☒No If Yes, provide district name:

4. Is this part of an established Cooperative Weed Management Area? ☒
Yes ☐No If yes provide name: Benton County Cooperative Weed Management Area (BC CWMA)

****5. Identify your integrated pest management methods:** (all activities must be directly related to the proposed project)**:**

☐Assessment/Management Plan Development
☐Biological control
☒Herbicide control
☒Mechanical control
☒Prevention
☐Other – Explain:
☐Survey –
Describe the method of survey planned:
☒Education and outreach
☒Manual control
☒Monitoring
☐Restoration

6. Have you consulted with ODA staff? ☒Yes ☐No

If yes who? Glenn Miller & Tristen Berg

7. Is this a landowner reimbursement (cost share) project? ☐Yes ☒No

Remember to attach a list of landowners with acreage by weed species. Updated landowner lists are required with your progress reporting.

8. Project summary: In 200 words – give a statement about your overall project. Provide a summary in 200 words (1000 characters) or less describing what the project will accomplish and what problems will be addressed. The information you provide will be used for project review, OWEB reporting purposes and will be displayed to the general public.

The Willamette River Aquatic Weed Management Phase 2 (WRAWMP) is the continuation of a project started by Benton County CWMA in 2014 with Oregon State Weed Board funding. This project is proposed as an integrated approach to continue management and control of invasive aquatic plants on the Willamette River. The main focus of this project is the control of Ludwigia hexapetala (Uruguayan primrose-willow) and Nymphoides peltata (yellow floating heart): two aggressive, invasive aquatic plants that pose a threat to fish and wildlife habitat in fresh water systems. N. peltata is an A list Oregon State Noxious Weed. The

project area spans the reach of the Willamette from Corvallis to Albany, and covers about 15 river miles. WRAWMP consists of three main components:

1. Management of aquatic weed species.

    a. A-rated Nymphoides peltata at Horseshoe Lake, North Albany.

    b. B-rated Ludwigia hexapetala in Collins Bay, an inlet of the Willamette River.

    c. Youth Corps and volunteer weed pulls for Ludwigia on the mainstem Willamette River.

2. Targeted community outreach consisting of 2 workshops and distribution of the Water Weeds Guide for Benton County.

3. Effectiveness and water quality monitoring of treatment sites before and after treatments.

9. What are you proposing to do? (1,300 words which is approximately 8,000 characters) give an overview of the project.

This should include: if this is an extension of a previously funded project if so, include details of past treatments such as successes and failures • estimated acreage for treatment • method of control • objectives • restoration component • how this project relates to other projects within the area. It is important be concise and keep this to the 1,300 word limit, but give the details outlined above, this portion is essential in the overall review process.

Was this project previously funded by OSWB? ☒Yes ☐No

If yes what year(s) and provide the grant number? 2014-27-400

Proposal details:

The Willamette River Aquatic Weed Management Phase 2 (WRAWMP) is the continuation of an existing project to control, monitor, and perform outreach related to key invasive aquatic plants on the Willamette River. For this project the Benton County CWMA propose the following activities:

1. Control of Aquatic Weed Infestations:

The main goal of this project component is to increase the quantity and quality of open water habitat in the Willamette River system through control of invasive aquatic weeds. Specifically, we will reduce the ecological impacts of Ludwigia on the river system, decrease its propagule pressure and downstream spread and promote native plant recovery. We also plan to conduct a follow-up treatment and eventually eradicate yellow floating heart (N. peltata) from Horseshoe Lake, the only known population in Benton County.

a. Nymphoides peltata:

One component of this project is the continued control of A-rated N. peltata at Horseshoe Lake, North Albany. (Appendix A: Map of N. peltata treatment area and pictures). This population was treated during summer, 2014 with OSWB funds. These treatments appear to have been successful, though follow-up control may be necessary. We estimate a reduction in N. peltata of 90% after last year's treatments. This grant would fund the follow-up survey and control for this population.

Horseshoe Lake is a 16.5 acre lake that is within the 100-year floodplain of the Willamette River (Willamette River Basin Atlas, L. Ashkenas et al., 2002, pp. 28-29). One goal of this project is to significantly reduce, and eventually eradicate, N. peltata from Horseshoe Lake and to prevent its spread to other side channels and the mainstem of the river. This population is the only known site in Benton County, making it a prime candidate for rapid response.

Careful consideration of appropriate application equipment, methods and long-term impacts will be taken to minimize damage to the native community. We plan to use the most appropriate method to achieve effective plant suppression with minimal impact to the native community. We will use 2-3% aquatic label Glyphosate with 1-2% surfactant (Agridex) and an indicator dye. Treatments will

take place in June/July when plants are flowering and water is at least 60 degrees F. If necessary, a second treatment will take place six to eight weeks after initial treatment. Concurrent with our proposed treatment regimen, the Homeowners Association on the lake will have their detention pond, which drains into the lake, inspected for N. peltata, and treated by a contracted professional if any plants are found.

b. Ludwigia hexapetala:

Continued control of B-rated L. hexapetala will occur in Collins Bay, a side-channel inlet of the Willamette River. This site was treated in summer, 2014 for Ludwigia by professional contractors. Based on results from treatments conducted on similar sites, we expect control to be about 60-70% mortality of the L. hexapetala population. We are requesting funds to continue treatment of this area.

Collins Bay is an 11-acre river inlet connected to the mainstem of the Willamette River, the entirety of which is infested with Ludwigia (Appendix B: Map and pictures of Ludwigia treatment area at Collins Bay). The infestation was identified and mapped during a 2-year landscape scale invasive plant assessment of the floodplain along the Willamette River from Corvallis to Albany. The survey was conducted by Dick Brainerd and consultants with Carex Working Group (CWG). In his final report, Dick identified Ludwigia as a priority for removal from the Willamette River system, and specifically recommended treating the Collins Bay population due to the rarity of open marshland habitat on the mainstem of the river, which is vital habitat for birds, fish, pond turtles, river otters and many other species. (Carex Working Group, Sept. 2013).

Manual removal will be conducted prior to herbicide applications. To avoid damage to non-target plants, manual control will occur in areas with low to moderate infestations around native plant populations. Manually treated Ludwigia plants will be bagged and disposed of off-site by a contracted professional.

Herbicide will be applied to thick mats of Ludwigia in open water and the shoreline. To minimize non-target impacts to aquatic organisms, backpack sprayers will be used to treat dense infestations around native plant communities. An herbicide mixture of 2 to 3% aquatic label glyphosate and 1-2% surfactant (Agridex) will be used. Total application will not exceed the per acre label rate. All chemical treatments will be performed by contractors with Pesticide Applicator's licenses, as required by state law, and all state permitting requirements will be addressed. Herbicide applications will be timed accordingly with weather conditions. Applications will take place in early summer, when about half of the plants have flowered, but seed capsules have not yet matured. A follow-up application will take place about two months later.

Both Horseshoe Lake and Collins Bay have significant native plant communities, which are expected to increase once competition from the target invasive species is alleviated. Therefore we do not anticipate the need to replant native vegetation

in these aquatic systems. If secondary invaders emerge, a rapid management approach will be implemented.

c. Youth Corps and volunteer weed pulls:

During the summer of 2015, we will host two volunteer and at least two Youth Corps weed pulls by boat to reduce Ludwigia biomass in locations determined by previous year's survey results between Corvallis and Albany (Appendix C: Map of Ludwigia sites for hand pulling between Corvallis and Albany). With the help of trained volunteers and contracted Youth Corps crews, Ludwigia and other target invasives such as purple loosestrife, will be manually harvested and secured in heavy duty plastic bags on individual watercrafts. The objective of these volunteer events is to remove Ludwigia and other target invasives from the river in areas where it is just getting established by practicing an early detection management response before these smaller populations become more significant. Monitoring of these sites will take place at least once each year following weed pulls, to determine treatment effectiveness. OPRD and Willamette Riverkeeper will participate to provide boats as well as assistance with coordination, safety and labor.

2. Targeted community outreach consisting of two workshops:

The first workshop will be by boat on the Willamette River, with a target audience of river land managers, and volunteers. The second workshop will be held in a building, with a target audience of volunteers, recreationists and landowners. Other interested parties will be invited to attend any of the training sessions. These workshops will contain information on aquatic weed identification and appropriate response techniques for Ludwigia, Nymphoides and several other EDRR aquatic weeds. For these workshops we will distribute the new Water Weed Guide for Benton County, which was developed by the BC CWMA coordinator for the first phase of this project (Water Weeds: Guide to Aquatic Weeds in Benton County, June 2014).

3. Effectiveness and water quality monitoring:

Monitoring will consist of strategic photo-points throughout the area of infestation and GIS mapping of the pre- and post-treatment extent of Ludwigia. Monitoring will also include pre- and post-treatment survey of native species and documentation of perceptible changes in species density.

We also propose to conduct water quality monitoring to measure pre- and post-treatment changes is dissolved oxygen, turbidity, pH and temperature. We will hire a contracted professional to conduct water quality monitoring on at least two treatment sites and one untreated site, and submit a report on results (Appendix E: Water Quality Monitoring Estimate).

10. Using a bulleted list: Explain the project goals and objectives.
(See Instructions section for specific guidance on goals and objectives writing)
One goal of this project is to increase the quantity and quality of open aquatic habitat in the Willamette River system through control of invasive aquatic weeds. Specifically, we plan to diminish the ecological impacts of Ludwigia on the river system, decrease its propagule pressure and downstream spread and promote native plant recovery. For Horseshoe Lake the goal is to significantly reduce, and eventually eradicate, N. peltata from the lake system, to prevent its spread to other side channels and the mainstem of the river.

• An objective of this project is to use mapping and photo-point monitoring techniques to show measurable changes in pre- and post-treatment distribution and abundance of Ludwigia and N. peltata and changes in native plant distribution as well as monitor non-target impacts at Collins Bay and Horseshoe Lake. We will also conduct water quality monitoring to record pre- and post-treatment effects on dissolved oxygen, temperature, pH, and turbidity in the water at Collins Bay, and at least one other Ludwigia site.

• It is an objective of this project to reach at least 60 members of the local community through outreach activities including workshops/volunteer trainings and volunteer and Youth Corps weed pulls, and to provide information on aquatic weed identification and proper response techniques. Through volunteer and Youth Corps weed pulls, Ludwigia will be removed from areas where it is just becoming established, before it forms significant populations.

• Another objective of this project is to share treatment methodology and results with other land managers. All data collected throughout the course of this project will be entered into iMapInvasives and Oregon WeedMapper, with the intent that other agency representatives may refer to and use this data to inform management activities on the river. Efficacy of control treatments will be recorded and shared through meetings, presentations and workshops.

11. Is the project part of an existing weed management plan?
☒Yes ☐No (if yes, provide the plan name, author & date published)
This project fits within the goals and management principles outlined in the Benton County CWMA Five-year Management Plan. Specifically, “projects [should be] designed using an ecosystem management approach based on an understanding of weed biology, weed ecology, and landscape level processes.” (Benton County CWMA, 2012; pp. 2-4).

The treatment of Ludwigia on the Willamette is recommended in the "Willamette Mainstem Vegetative Habitat Survey and Assessment Final Report." This report was prepared by Dick Brainerd of Carex Working Group based on invasive plant and habitat assessment and survey work completed in 2012 & 2013 on approximately 2,500 acres of riparian habitat on the Willamette River from Corvallis to Albany. This document was reviewed by the WMC steering committee members, and Oregon Watershed

Enhancement Board and Meyer Memorial Trust staff. The abridged version of this report can by found on the WMC webpage at www.bentonswcd.org/assets/Willamette-Mainstem-Assessment-Final-Report-Abridged.pdf (Carex Working Group, Sept. 2013).

12. Are there additional partners? ☒Yes ☐No
Who are the additional partners and what are their roles and responsibilities?
Additional partners include Oregon Parks and Recreation Department (OPRD), Willamette Riverkeepers (WRK), Oregon Department of Agriculture (ODA), private landowners within the project area, the Willamette Mainstem Cooperative (WMC) and Willamette Aquatic Invasive Network (WAIN).

Glenn Miller, Integrated Weed Management Specialist with ODA, has already and will continue to provide in-kind support in the form of professional advice and consultation on weed control activities. ODA will also provide photos and maps from aerial surveys for Ludwigia in the Willamette River system, conducted during summer 2014. This data will help us to assess the extent of Ludwigia populations in our area, and form a strategic plan for management of this plant.

OPRD staff plan to perform control work on Ludwigia hexapetala at Bowers Slough, located downstream from Collins Bay (Appendix D: Project Overview Map). This site has a moderate to high density infestation of Ludwigia growing in the backchannel areas of the slough. This population has potential to spread throughout the side-channel system and is currently a source of seeds and stem fragments for downstream dispersal. OPRD staff will access the population by boat and treat it with a high-pressure spray nozzle and backpack sprayer with a 2% aquatic glyphosate mixture with surfactant. Hand pulling will be practiced by OPRD staff, BSWCD staff, volunteers and Youth Corps crews as needed. Treatments are planned for June or July of 2015 with a follow-up treatment in August or September. Monitoring for pre-and post-treatment plant density and water quality parameters will also be conducted on this site. OPRD staff will also participate in at least one aquatic weed training workshop and volunteer weed pulls on the Willamette River between Corvallis and Albany.

WRK staff will be working with the BC CWMA to organize two aquatic invasive workshops/volunteer trainings, two volunteer weed pulls, and at least two Youth Corps crew weed pull days. Willamette Riverkeeper will provide in-kind funding in the form of equipment use including boats, vans and trailers for weed pull and outreach events. This application requests funds to support WRK staff time for coordination of these events, and for supervision of volunteers and Youth Corps crews.

Private landowners at Horseshoe Lake and Collins Bay will be partners in this project through site monitoring, regular contact with Benton SWCD and outreach to neighbors in the area. The Horseshoe Lake Neighborhood Association will continue to monitor and treat N. peltata, as necessary in a detention pond that drains into the lake. Benton SWCD will provide informational handouts about the project and weeds of concern to interested landowners.

Peter Kenagy, a private landowner and farmer on the Willamette River downstream from the project site, has been treating a population of Ludwigia on his property for the last few years, and will continue to treat this population in 2015.

The WMC and WAIN are both partner groups with a focus on management of invasive species on the mainstem of the Willamette River. The WMC is a group of landowners, organizations, volunteers and other interested parties working towards shared long-term stewardship of Willamette River resources with a focus on the Corvallis to Albany river reach. The WAIN is a newly formed group of land managers with a focus on information sharing, coordinating efforts, and establishing a priority list of aquatic weeds for the Willamette River system. Much of the information and support for this project have come from partners participating in both of these groups. BC CWMA will continue to coordinate and work with these groups to share methodologies and lessons learned in the management of Ludwigia.

13. Which elements of the project will OSWB funds be used for? Be specific to activity and specific timing of the activity.

The Benton County CWMA is requesting OSWB funds for the following elements of this proposed project:

1. Salary and Wages:

Over the duration of the project, funding will be used for Benton SWCD staff time for project coordination and management. Benton SWCD staff will perform monitoring (pre- and post-treatment), help coordinate and supervise two volunteer and two Youth Corps weed pulls (June or July) and two aquatic weed workshops (summer, 2015).

2. Contracted Services:

Survey and monitoring to determine previous treatment effectiveness and post-treatment of Nymphoides on 0.5 acres of Horseshoe Lake as needed. Treatment will occur in July, when the plants are flowering and the water is at least 60 degrees F. Monitoring will take place approximately two weeks before and after treatment. If necessary, a follow-up treatment will occur in August or September.

Survey and monitoring of Collins Bay to determine 2014 treatments effectiveness and continued treatment of Ludwigia hexapetala on 11 acres. Treatment will occur in June/July, depending on conditions, when plants are starting to flower, but have not yet developed seed pods. Chemical control will immediately follow manual control. Secondary control treatments will occur about one month later (July/Aug) to spray remaining plants in heavily infested areas and shoreline, and manually remove plants from areas of low to moderate infestation and areas of high native plant density. Effectiveness and water quality monitoring will take place before and after treatments and as needed.

Funding is requested for community outreach in the form of two aquatic weed workshops for land managers, landowners, recreationists and volunteers. These activities will be led by Benton SWCD staff in partnership with Oregon Parks and Recreation Department (OPRD), and Willamette Riverkeeper. Trainings will occur in early summer, 2015. OSWB funds will pay for a portion of BSWCD and Riverkeeper staff time to coordinate these workshops. Supplies and materials, OPRD staff time, and much of the BSWCD staff time will be in-kind matching services.

OSWB funds are requested for manual control and coordination of two days of volunteer weed pull activities and two days of Youth Corps crew work on the Willamette River from Corvallis to Albany. This effort will be led by Willamette Riverkeeper and Benton SWCD, and funds would cover staff time for the coordination of these activities. These activities are planned for June and July, 2015.

Monitoring of project sites will include pre- and post-treatment photo points and aerial imagery mapping. Funding is requested for further monitoring which would include measurement and tracking of changes to water quality parameters including dissolved oxygen, pH, temperature and turbidity.

3.Travel
We are requesting funds for some project-specific mileage expenses accrued over the course of the project.

14. How does this project relate to other projects (BLM, USFS or local projects) completed or planned? If the project is related to work funded in part with another grant from OWEB (i.e. restoration, land acquisition, or technical assistance)? List the OWEB grant number and briefly describe the relationship to this proposal.
The Willamette River Aquatic Weed Management Phase 2 (WRAWP) fits within the mission and guiding principles of the Willamette Mainstem Cooperative (WMC), a group of landowners, organizations and volunteers who work together to improve stewardship of natural resources across all landownerships on the mainstem, with a focus area of Corvallis to Albany (WMC Programmatic Bylaws, 2012). WMC is funded by Meyer Memorial Trust, through the Willamette River Initiative program with Benton SWCD providing leadership and fiscal management.

The Ludwigia site at Collins Bay was identified and mapped during a 2-year landscape scale invasive plant assessment of the floodplain along the Willamette River from Corvallis to Albany. The survey was conducted for the Willamette Mainstem Cooperative by Carex Working Group (CWG). In his final report, Dick Brainerd of CWG identified Ludwigia as a priority for removal from the Willamette River system, and specifically recommended treating the Collins Bay population due to the rarity of open marshland habitat on the mainstem of the Willamette.

Ludwigia is currently being controlled on several locations on the Willamette River. One of the larger projects is being implemented by City of Eugene, which has been working on Ludwigia hexapetala control since 2011 at the Delta Ponds Natural Area. City of

Eugene developed the Invasive Ludwigia hexapetala Management Plan for The Delta Ponds Natural Area. Delta Ponds Natural Area is a series of gravel extraction ponds recently reconnected to the Willamette River. This 5-year plan outlines the systematic treatment of Ludwigia hexapetala in the Delta Ponds integrating manual and herbicide control methods. WRAWMP proposes to apply successfully implemented techniques for Ludwigia control, as outlined in the Management Plan by City of Eugene.

The Delta Ponds Natural Area is located upstream from the WRAWMP project area. The project manager has consulted with several experts working on the Delta Ponds Invasive Ludwigia Control Project. Individuals consulted include: Lauri Holts, Resources Coordinator with the City of Eugene; Dr. Brenda Grewell, Delta Ponds project consultant and ecologist with USDA-Agricultural Research Service Exotic & Invasive Weeds Research Unit; Glenn Miller, Integrated Weed Management Specialist with the Oregon Department of Agriculture; Mark Systma, Associate Vice President for Research, Research & Strategic Partnerships at Portland State University; and Matt Mellenthin, Delta Ponds Ludwigia control contractor with Integrated Resource Management.

Oregon Parks and Recreation Department is planning to implement control of Ludwigia hexapetala in a side-channel system known as Bowers Slough about one mile downstream from Collins Bay (Appendix D: Project overview map). OPRD efforts will continue in 2015 to correspond with the treatments proposed in this application.

Willamette Riverkeeper plans to conduct an invasive and aquatic weed survey of the Willamette River banks from Albany to Portland in summer 2015. Focus will be directed on mapping Ludwigia, especially in side-channels, and hand-pulling small populations with volunteer and Youth Corps crews. All survey information will be shared with land managers working in relevant river reaches.

15. How does this project fit into the statewide and/or local weed management objectives? Identify the county weed listing priority if known.
Oregon State’s Noxious Weed Control Strategic Plan outlines ten objectives and associated strategies for implementation. WRAWMP meets the first eight of these as follows:

• Objective One: Leadership and Organization - Strategy One: Provide consistent statewide and local leadership and organization.

The Benton County CWMA provides leadership and organization to groups, agencies and landowners related to invasive plant issues around the county. The Benton County CWMA Management Plan outlines management principles for CWMA activities that align with this project such as; "projects are designed using an ecosystem management approach based on an understanding of weed biology, weed ecology, and landscape level processes." (Benton County CWMA, 2012).

• Objective Two: Cooperative Partnerships - Strategy Two: Develop and expand partnerships.

The Benton County CWMA is made up of a broad partnership of agency, organization and landowner representatives. Benton SWCD provides fiscal oversight and coordination of the Benton County CWMA. Benton SWCD has a strong history of developing partnerships and collaborating with other agencies, organizations and landowners to complete projects and develop programs for the stewardship of natural resources. Another partnership that will be involved in the planning and implementation of this project is the Willamette Mainstem Cooperative, which is supported by a group of stakeholders, representative of local agencies and landowners.

For this project Benton County CWMA and Benton SWCD will work with Willamette Riverkeeper and Oregon State Parks and Recreation Department to implement the workshops, volunteer training, and survey and control work. Benton SWCD also plans to work closely with Oregon State University Biology Department, Oregon Department of Fish and Wildlife, and other interested groups to ensure that it is meeting Ludwigia control objectives while minimizing impacts to local fish and wildlife species.

• Objective Three: Planning and Prioritizing - Strategy Three: Develop and maintain noxious weed lists and plans.

The Benton County CWMA has developed and maintains an invasive plant list for Benton County. This list is regularly reviewed and updated by members of the CWMA EDRR Action Team. Ludwigia hexapetala is a B-rated weed on the Oregon state noxious weed list and a B-rated weed on the Benton County invasive plant list, and is targeted for outreach and data collection, both of which would be fulfilled through this project. Nymphoides peltata is an A-rated noxious weed by the state of Oregon and A-rated in Benton County as well. It is targeted for immediate removal and ODA response.

The species and sites proposed for treatment in this application have been carefully considered and chosen based on recommendations from several specialists and land managers who operate on the mainstem Willamette River.

• Objective Four: Education and Awareness - Strategy Four: Provide education and awareness.

For this project Benton SWCD in partnership with Willamette Riverkeeper and Oregon Parks and Recreation Department will provide community outreach to land managers, land owners and the general public through a series of aquatic weed workshops, a volunteer training and two volunteer weed pulls on the Willamette River. For these events, we will discuss the benefits of identifying and removing, and reporting invasive plant populations before they spread. The objectives for these workshops are to educate targeted audiences on the identification of aquatic invasive plants, the impact on wildlife, humans and native plant communities and the methods for timely response relative to the species of concern. Benton SWCD will develop outreach materials and distribute them to workshop participants and interested landowners.

Two other objectives of these events are to increase public awareness of aquatic invasives and provide tools to members of the community to make informed decisions for management of aquatic weeds.

• Objective Five: Integrated Weed Management (IWM) - Strategy Five: Continue to support and advocate the principles of IWM.

The Benton County CWMA is dedicated to using tested, integrated approaches in weed management. This project is supportive of integrated weed management principles in the use of manual and chemical control of Ludwigia on the mainstem and at each project site. For each site, all appropriate methods for treatment will be thoroughly analyzed and considered based on resources available and existing conditions.

• Objective Six: Early Detection and Control of New Invaders - Strategy Six: Implement early detection and control.

This project includes early detection and control of new invaders as a key element: we plan to control the only known Nymphoides peltata population in Benton County.

According to Dr. Grewell of USDA-ARS, the invasive Ludwigia in the upper Willamette River are currently at a level where early detection of new populations and control of established populations can still be effective in significantly reducing, and eventually removing, the plants from the river system.

• Objective Seven: Noxious Weed Information System and Data Collection - Strategy Seven: Upgrade Noxious Weed Information System.

With the implementation of weed surveys and the mapping of project sites using GPS technologies, we can contribute to existing state weed information systems such as the Oregon Invasives Hotline and IMap Invasives. Data collected during the course of this project can be made available for reference by other land management agencies, to inform the development of other projects or management plans.

• Objective Eight: Monitoring and Evaluation - Strategy Eight: Monitor noxious weed projects to evaluate effectiveness.

Regular monitoring will be integrated into this project to determine the short and long-term effectiveness of control activities. Photo-points will be strategically placed at each site to collect information before and after each treatment occurs. Populations will be mapped and updated throughout the duration of the project and in subsequent years as funding allows.

16. How will restoration be a part of your project? If restoration is not a component of this project please explain.

Since each site described in this proposal has a significant native plant community it is expected that the suppression and removal of targeted invasive species will reduce

competition to native plants. These native plants may then occupy areas, where aquatic invasive plants have been removed. In Collins Bay, where open water once existed, spraying and removal of dense mats of Ludwigia should restore these areas to open water habitat. The Nymphoides at Horseshoe Lake occupies a small area and is predominately in open water, so no planting of native species is anticipated.

Though restoration is not a component of this project phase, a strategic plan for Collins Bay and other Ludwigia sites on the Willamette will be developed based on the response of the site to initial and follow-up treatments. This plan will be part of a larger management plan for invasive plants on the mainstem. If monitoring shows that native plant re-establishment is not adequate to compete with the remaining L. hexapetala after the first few years of control, or if secondary invaders emerge in competitive numbers, a more active restoration approach will be pursued.

17. If this project protects a high priority species or habitat, please give a brief description of the species or habitat/land use designation.

1. Anchor Habitat for Anadramous Fish: Collins Bay is within the areas identified in OWEB's Willamette River Habitat Protection and Restoration Program 2010-2015 Habitat Technical Team Proposal as part of the priority anchor habitats for anadromous fish along the Willamette River mainstem (Oregon Watershed Enhancement Board, 2010). Collins Bay is also within Oregon Dept. of Fish and Wildlife designated essential salmon habitat (ODFW, 2011).

2. Open Water Marsh Habitat: Collins Bay was also listed as a special habitat by Carex Working Group during the 2012-1013 invasive plant and habitat assessment, by stating that the open water marsh habitat was rarely encountered during survey work and that the site is worth noting for preservation/restoration work. They also recommended the removal of Ludwigia from the area to maintain the water regime (Carex Working Group, Sept. 2013).

3. Western Pond Turtles: Western pond turtles are considered a sensitive species by the State of Oregon and are one of the strategy species listed in the Oregon Conservation Strategy (OR Dept. of Fish and Wildlife 2006). While there are no official surveys on record, Stanley and Louise Snyder who own and live on the property spoke of the pond turtles and large fish once found in Collins Bay. They claim that since the bank eroded into the inlet over 15 years ago, the water depth went from 20 feet to about three feet. After this occurred, L. hexapetala (which had previously been there in small amounts) spread rapidly and filled in the marsh. Since Ludwigia filled in the open water, they have not witnessed the presence of any pond turtles or large fish in the bay. Other landowners from properties nearby have verified the Snyder's account of the progression of Ludwigia and subsequent changes in Collins Bay.

Western pond turtles require open water habitat with native emergent vegetation to feed, bask, reproduce and hide from predators. Infestations of aquatic weeds, such as Ludwigia, result in thick vegetation mats that limit movement of aquatic and semi-aquatic species, severely limiting their ability to navigate, feed and reproduce. In

addition, these dense mats of vegetation die off at the end of the growing season and the process of decay can drastically reduce dissolved oxygen in the water. These areas of low dissolved oxygen may create a barrier for the movement of aquatic organisms through a waterway, or cause the fatality of aquatic organisms that are unable to move into areas with sufficient dissolved oxygen. Furthermore, the thick mats of vegetation formed by Ludwigia filter out sediment, potentially altering the floodplain capacity and side-channel characteristics of waterways such as Collins Bay.

18. Salmon/Steelhead Populations Targeted and Expected Benefits to Salmon/Steelhead

The information provided will be used by OWEB to better meet federal and state reporting requirements. Completion of this section is required but will not be used to evaluate this application for funding.

☐ This project is NOT specifically designed to benefit salmon or steelhead.

- If you check this box do not answer supplemental question 18(A)

Targeted Salmon/Steelhead Populations: Select one or more of the salmon ESUs (Evolutionary Significant Unit) or steelhead DPSs (Distinct Population Segment) that the project will address/benefit. Additional information on the designation and location of the salmon/steelhead populations can be found at http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Maps/Index.cfm

Chinook Salmon (Oncorhynchus tshawytscha)		**Coho Salmon (O. kisutch)**	
☐	Deschutes River summer/fall-run ESU	☐	Lower Columbia River ESU
☐	Lower Columbia River ESU	☐	Oregon Coast ESU
☐	Mid-Columbia River spring-run ESU	☐	Southern Oregon/Northern California ESU
☐	Oregon Coast ESU		
☐	Snake River Fall-run ESU	**Steelhead (O. mykiss)**	
☐	Snake River Spring/Summer-run ESU	☐	Klamath Mountains Province DPS
☐	Southern Oregon and Northern California Coastal ESU	☐	Lower Columbia River DPS
☐	Upper Klamath-Trinity Rivers ESU	☐	Middle Columbia River DPS
☒	Upper Willamette River ESU	☐	Oregon Coast DPS
		☐	Snake River Basin DPS
Chum Salmon (O. keta)		☐	Washington Coast DPS (SW Washington)
☐	Columbia River ESU	☒	Upper Willamette River DPS
☐	Pacific Coast ESU	☐	Steelhead/Trout unidentified DPS

18(A). Expected Benefits: Write a brief description of the goals and purpose of the project and how it is expected to benefit salmon/steelhead habitat.

The goal of this project is to remove aquatic invasive plants from side-channels, ponds and sloughs within the Willamette River system. Aquatic weeds such as water primrose act as sediment traps, and can fill in open water habitat and side-channel systems over time. These plants reduce the amount of available dissolved oxygen in the water with the rapid growth and decay of large biomasses. Removal of these weeds will improve water quality and reduce habitat degradation caused by these plants, thus improving habitat for fish and other wildlife (Sears et. al., 2006).

19. How will success be determined, what elements will be monitored/evaluated and by whom, how often and for how long? Who will maintain the project and for how long?

To determine success for this project photo-points which have already been established, will continue to be used for monitoring purposes. Data on the extent of native and invasive plants present at each site will be recorded and mapped. Each plot will be monitored to evaluate the response of the plant communities to each treatment method. Monitoring will take place before and after each treatment, and annually after that to assess the extent of Ludwigia and Nymphoides at each waterbody. Success will

be determined by comparing the post-treatment distribution and abundance of Ludwiga and Nymphoides and native plants to pre-treatment abundance and distribution. We will also measure and record water quality parameters and compare pre-and post-treatment findings with those found on another Ludwigia site that has not been treated. This will help us to determine the impacts of Ludwigia control on water quality with dense populations.

This project addresses the second year of treatment for Ludwigia at Collins Bay and Nymphoides at Horseshoe Lake. Collins Bay is expected to require several years of treatment to adequately reduce plant densities to levels that the native habitats can sustain without significant impact from these invasive species. The Nymphoides at Horseshoe Lake may only require two years of treatment to eradicate this population, since it is relatively small and sparse. The first year is expected to have been the most intensive for control work, with a reduction in labor as the plants are reduced to more manageable levels.

Make sure to attach
Oregon State Weed Board Project Budget
with your application.
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Project Partners

List agencies/organizations from which funding is anticipated for the proposed project.

The Oregon State Weed Board requires 25% match for projects, however if you concerns with this requirement please contact the Tristen Berg, ODA Grant Program Coordinator at 503-986-4622.

Show all anticipated funding sources, and indicate the dollar value for cash and in-kind contributions. Be sure to provide a dollar value for each funding source. For all funding please provide within the "use of contribution" column exactly what the cash/in-kind will be used for, this helps the OSWB gain a better understanding of the roles and responsibilities the partners will have with the project. Check the appropriate box to denote if the funding status is secured or pending. In the Amount/Value Column, provide a total dollar amount or value for each funding source. Match should be directly related to the noxious weed project. OWEB funding is no longer eligible for match toward OSWB grants, SWCD and Watershed Councils must provide proof their match is from a source other than OWEB.

NOTE: If your project is selected for funding your organization will be asked to provide signatures for 25% match as a component of agreement procedures.

Funding Source (Name the Partner)	Use of Contribution	Cash	In-kind	Secured (x)	Pending (x)	Amount/Value
Sample Agency	***GIS mapping, and ATV use***		***$2,500***	*X*		***$2,500***
OSWB	**Noxious weed control, project coordination, community outreach, restoration work, water quality monitoring, and travel.**	$36,604.00	**N/A**	☐	☒	$36,604.00
Oregon Dept. of Agriculture	**Glenn Miller - Aerial survey and photos from airplane Ludwigia survey, photo analysis, GIS maps from survey; consultation on Ludwigia control treaments. (3 days total)**	**N/A**	$1,425.00	☒	☐	$1,425.00
Benton Soil and Water Conservation District	**Project coordination, project management, supplies and material, and travel**	**$**	$10,033.00	☒	☐	$10,033.00
Willamette Riverkeeper	**Equipment usage for volunteer and Youth Corps weed pulls including boats, van and trailers.**	**$**	$1,000.00	☐	☒	$1,000.00
Oregon State Parks and Recreation Dept.		**$**	$2,500.00	☒	☐	$2,500.00
Volunteer Labor	**Volunteers will hand-pull Ludwigia on the Willmette River**	**$**	$4,803.00	☐	☒	$4,803.00

	between Corvallis and Albany. Estimated volunteer hours: 225 hrs. x $22.55/hr. = $5,073.75					
		$	**$**	☐	☐	**$**
		$	**$**	☐	☐	**$**
		$	**$**	☐	☐	**$**
		$	**$**	☐	☐	**$**
		$	**$**	☐	☐	**$**
		$	**$**	☐	☐	**$**
		$	**$**	☐	☐	**$**
Total Estimated Funds (add all amounts in the far-right Column):	(The total should equal the total cost of the project on page 1 of the application)					***$**56,365.00
Have any conditions been placed on matching funds that may affect completion? ☐ Yes ☒ No If Yes , Explain:						

NOTICE of Grant Award Conditions

☒ If this proposal is funded, you will be required to:

- Sign a Grant Agreement containing the terms and conditions for the project implementation, release of funds, and documentation of completion.
- Payments will be made only for work started after the effective date of the grant agreement, unless special conditions have been placed by ODA/OWEB.

☒ Before ODA/OWEB releases the Grant Agreement, you will be required to:

- Resolve any and all outstanding issues from your previous grants with ODA/OWEB.

☒ Upon signing the Grant Agreement, you will be required to:

- Certify in the Grant Agreement that prior to starting work on private land, you have or will obtain cooperative agreements with the private landowner(s). Exhibit D of the ODA/OWEB Grant Agreement may also require you to submit copies of those agreements to ODA/OWEB prior to the release of funds.
- Agree that monitoring information resulting from projects are public domain.
- Determine whether and what permits and licenses are required.

☒ Before ODA/OWEB releases any payments, you will be required to:

- Document that 25% match funding has been secured.
- Submit a Public Certification Form
- Submit copies of all applicable permits and licenses from local, state, or federal agencies or governing bodies, or certify that permits and licenses not needed.

☒ Upon completing the project, you will be required to:

- Submit a Project Completion Report as required in the Grant Agreement, including maps, photos and Match Form that documents at least 25% actual match. OGMS Online Project Completion Reporting can be completed at http://apps.wrd.state.or.us/apps/oweb/fiscal/default.aspx.
- Submit your Oregon Watershed Restoration Inventory report(s) electronically at http://apps.wrd.state.or.us/apps/oweb/owrio/default.aspx.
- Submit data to Oregon Weedmapper at http://www.oregon.gov/ODA/programs/Weeds/Pages/WeedMapper.aspx

Initial each category and be sure this page is submitted along with your completed proposal.

CERTIFICATION:

I certify that this application is a true and accurate representation of the proposed work for watershed restoration and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant certifies that they are aware of the requirements (***see Application Instructions***) of an OSWB/OWEB grant and are prepared to implement the project if awarded. **I have read and initialed the NOTICE of Grant Award Conditions**

Applicant Signature: _____ Date: _____

Print Name: _____ Title: _____

Co-Applicant Signature: _____ Date: _____

Print Name: _____ Agency: _____

All appendices are housed within the application instructions section and can be downloaded at: http://www.oregon.gov/ODA/programs/Weeds/Pages/GrantProgram.aspx

Mandatory attachments:

- Maps highlighting specific area of project activities
- Photos (please use the same photo points as you will use on interim progress reporting and project completion reports should this project be awarded)
- For landowner reimbursement projects – landowner list with acreages listed by weed species
- Project partners form
- Initialed notice of grant condition statement and signed certification form