

Benton County Cooperative Weed Management Area Five-year Management Plan

Purpose and description

The impacts of invasive weeds and the importance of their management are becoming apparent to a wide variety of organizations. After habitat loss, invasive species have been recognized as the second largest danger to threatened and endangered species (*Precious Heritage: The status of biodiversity in the United States*, The Nature Conservancy). Invasive weeds have also been estimated to cause annual economic losses to Oregon of over \$83 million per year for 21 state-listed species (*Oregon Noxious Weed Strategic Plan*, Oregon Department of Agriculture, 2001).

Because weeds extend across multiple ownerships and travel over the landscape, collaboration and partnerships are essential for effective management. In addition, partnerships can access new sources of funding and increase implementation efficiency. The Upper Willamette CWMA exists to create and support collaborative weed management among land managers and owners within its area. It promotes weed education/outreach, weed inventory/prevention, and control activities.

The Benton County Cooperative Weed Management Area includes 679 square miles of land which is the entirety of Benton County. Within this combined area, the topography varies from rugged steep mountains of the eastern slopes of the Oregon Coast Range to the valley floors and floodplains of the Willamette Valley and its tributaries. Watersheds within the CWMA include: Jackson-Frazier, Upper Luckiamute, Marys River, Long Tom, and Calapooia. Some of these watersheds are not completely contained in the Benton County CWMA.

There are at least six distinct ecosystem types: cold, high elevation noble fir forests, wet western hemlock forests, mixed pine and fir forests, oak woodlands, valley grassland or prairie, and riparian communities. Within these ecosystems there are 57 endangered or threatened fish, wildlife and plant species along with many unique and special places. The population of the CWMA is approximately 85,575. The economy of the CWMA has its basis in health care and social assistance, manufacturing, retail trade, accommodation and food services, professional, scientific and technical services (*2009 County Business Patterns for OR counties*, U.S. Census.)

Current CWMA participants include: Alliance for Recreation and Natural Areas, Alsea Watershed Council, Benton County Farm Bureau, Benton County Natural Areas and Parks, Benton County Public Works, Benton County Small Woodlands Association, Benton Soil and Water Conservation District, Calapooia Watershed Council, Cascade Pacific Resource Conservation and Development, City of Philomath, Greenbelt Land Trust, Institute for Applied Ecology, Luckiamute Watershed Council, Marys River Watershed Council, Natural Resources Conservation Service, Oregon Department of Agriculture, Oregon Department of Forestry, Oregon Department of Transportation, Oregon Military Department, Oregon State University College Forests, Oregon State University Extension Service, United States Department of Agriculture Forest Service, United States Fish and Wildlife Service, Western Invasives Network.

Management principles

The CWMA uses integrated weed management with the following principles:

- Projects are designed using an ecosystem management approach based on an understanding of weed biology, weed ecology, and landscape level processes.
- Treatment copies a wildfire/weed management model explained in a Utah State U. Extension brochure (Dewey) with the following priorities:
 - Target sources of spread and isolated populations while protecting high value localities.
 - Determine the perimeter of larger infestations and contain them to the area.
 - Attack larger infestations or widely dispersed weeds using biocontrols when available.
- Control projects are designed after serious consideration of a range of treatment options so that the control methods are the most effective and appropriate to a given situation.
- Projects include a vision and plan for desired future conditions after the weeds are gone.
- Education and outreach activities are targeted to specific audiences, with clearly defined desired behavioral changes.

Definition of management levels

- Eradicate: the weed species is eliminated from the management area, including all viable seeds and/or vegetative propagules.
- Control: Dispersal is prevented throughout the target patch and the area coverage of the weed is decreased over time. The weed is prevented from dominating the vegetation of the area but low levels are accepted.
- Contain: Weeds are geographically contained and are not increasing beyond the perimeter of the infestation. Treatment within established infestations may be limited, but areas outside are controlled or eradicated.
- Reduce: The density and/or rate of spread of the weed are reduced across a geographic area.
- Custodial: Specific treatment for a particular plant is deferred at this time. Infestations may be treated as a result of other weed priorities. The species may not be inherently invasive, habitats are not susceptible to invasion, or the infestation is not treatable with current technology or resources.

Goal

Prevent the introduction and control the spread of the most harmful invasive plant species in the CWMA region by facilitating cooperative management among all willing land managers.

Objectives and activities

- 1) *Share information about member organizations, funding opportunities, contractors, best management practices, and rules and regulations affecting weed control.*

Activities

- a) Hold regular CWMA meetings
- b) Prepare an Annual Report
- c) Use the Willamette Weed list-serve
- d) Create a CWMA webpage
- e) Hold workshops / field trips

- 2) *Detect new invaders*

Activities

- a) Create a list of new species with digital photos available
- b) Identify a distribution network for ODA Weed Alerts

- 3) *Sponsor effective and innovative inventory, treatment/restoration and monitoring projects.*

Activities

- a) Prioritize species, sites and funding
- b) Incorporate early detection and rapid response activities for new invaders
- c) Conduct early detection, inventory, and control activities for knotweed and false-brome
- d) Monitor Himalayan blackberry rust and develop restoration strategies for affected areas

- 4) *Conduct education and outreach related to objectives 1, 2, and 3 and appropriate to the scale at which the CWMA operates.*

Activities

- a) Distribute annual report to funding sources, media, government, citizen groups.
- b) Conduct knotweed and false-brome campaigns: use newsletters, news releases, landowner outreach in project sites as well as field trips, workshops, displays at county fairs, garden shows.

Modifications and term

The Management Plan is a living document and will be revised as needed after notification to CWMA Board members and discussion at a Board meeting. The Plan will be reviewed on a yearly basis and the weeds of concern list adjusted as necessary.

Appendix 1: Weeds of concern

WEEDS OF CONCERN: Upper Willamette Cooperative Weed Management Area 2007

¹UWCWMA status: 1=New invaders; 2=locally established; 3=widely established; W=watch list

²UWCWMA “dirty two dozen”: average rank of time and money spent by partners responding to 2006 questionnaire. The top five species are highlighted.

COMMON NAME	SPECIES	List ¹	Rank 2006 ²	ODA
List 1: New Invaders in the Upper Willamette				
Garlic mustard	<i>Alliaria petiolata</i>	1		B, T
Portuguese broom	<i>Cytisus striatus</i>	1	16	B
French broom	<i>Genista monspessulana</i> (= <i>Cytisus monspessulanus</i>)	1	19	B
Shining cranesbill	<i>Geranium lucidum</i>	1	15	NL
Giant hogweed	<i>Heracleum mantegazzianum</i>	1	22	A, T
Hawkweed complex	<i>Hieracium aurantiacum</i> , <i>H. floribundum</i>	1	24	A, T
Water primrose willow	<i>Ludwigia peploides</i>	1		NL
Yellow floating heart	<i>Nymphoides peltata</i>	1		A
Sulfur cinquefoil	<i>Potentilla recta</i>	1		B
Spanish broom	<i>Spartium junceum</i>	1		B
Gorse	<i>Ulex europaeus</i>	1	21	B, T
List 2: Locally Established in the Upper Willamette				
False-brome	<i>Brachypodium sylvaticum</i>	2	1	B
Distaff thistle	<i>Carthamus lanatus</i>	2		A
Diffuse knapweed	<i>Centaurea diffusa</i>	2	17	B
Spotted knapweed	<i>Centaurea maculosa</i>	2	18	B
Meadow knapweed	<i>Centaurea pratensis</i>	2	9	B
Common fennel	<i>Foeniculum vulgare</i>	2		NL
Yellow flag iris	<i>Iris pseudacorus</i>	2		B
Sweet pea	<i>Lathyrus latifolius</i>	2		NL
Ox-eye daisy	<i>Leucanthemum vulgare</i>	2	13	NL
Purple loosestrife	<i>Lythrum salicaria</i>	2	10	B, T
Harding grass	<i>Phalaris aquatica</i>	2	20	NL
Japanese, giant, hybrid knotweeds	<i>Polygonum cuspidatum*</i> , <i>sachalinense*</i> , <i>X bohemicum</i>	2	5	*B, T
Himalayan knotweed	<i>Polygonum polystachyum</i>	2	8	B
List 3: Widely Established in the Upper Willamette				
Bentgrass (escaped, non-ag pops)	<i>Agrostis capillaris, stolonifera, alba, tenuis,</i>	3	11	NL
Butterfly bush	<i>Buddleja davidii</i>	3	12	B
Canada thistle	<i>Cirsium arvense</i>	3		B
Bull thistle	<i>Cirsium vulgare</i>	3		B
English/single seed hawthorn	<i>Crataegus monogyna</i>	3		NL
Scotch broom	<i>Cytisus scoparius</i>	3	3	B
Herb Robert	<i>Geranium robertianum</i>	3	7	NL
English and Irish ivy	<i>Hedera helix*</i> , <i>hibernica</i>	3	6	*B

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COMMON NAME	SPECIES	List ¹	Rank 2006 ²	ODA
English holly	<i>Ilex aquifolium</i>	3		NL
Reed canary grass	<i>Phalaris arundinacea</i>	3	4	NL
Laurel	<i>Prunus laurocerasus</i>	3		NL
Feral pear	<i>Pyrus communis</i>	3		NL
Multiflora rose	<i>Rosa multiflora</i>	3	14	NL
Armenian & Evergreen blackberries	<i>Rubus armeniacus</i> (=R. <i>discolor</i>), R. <i>laciniatus</i>	3	2	B

Watch List

Tree of Brooklyn	<i>Ailanthus altissima</i>	W		NL
Common bugloss	<i>Anchusa officinalis</i>	W		B, T
Plumeless thistles	<i>Carduus tenuiflora</i> & <i>C. pycnocephala</i>	W		NL
Starthistle, yellow*	<i>Centaurea solstitialis</i>	W		B, T
Old man's beard	<i>Clematis vitalba</i>	W		B
Jubata grass	<i>Cortaderia jubata</i>	W		B
Spurge laurel	<i>Daphne laureola</i>	W		B
Patterson's curse	<i>Echium plantagineum</i>	W		A, T
Weeping lovegrass	<i>Eragrostis curvula</i>	W		NL
Creeping velvet grass	<i>Holcus mollis</i>	W	23	NL
Hydrilla	<i>Hydrilla verticillata</i>	W		A
Policeman's helmet	<i>Impatiens glandulifera</i>	W		B
Thin-leaved pea	<i>Lathyrus sylvestris</i>	W		NL
Bristly oxtongue	<i>Picris echioides</i>	W		NL
Fig buttercup	<i>Ranunculus ficaria</i>	W		NL
Creepy buttercup	<i>Ranunculus repens</i>	W		NL
Purple oyster plant	<i>Tragopogon porrifolius</i>	W		NL

WEEDS FOR DISCUSSION (Weeds proposed during 2006 management ranking process, but lacking a proponent at list revision meetings)

Wild oats	<i>Avena fatua</i>
Cheatgrass and other annual bromes	<i>Bromus</i> spp.
Teasel	<i>Dipsacus sativum</i> (=D. <i>sylvestris</i> ?)
Annual bluegrass	<i>Poa annua</i>
Black locust	<i>Robinia pseudoacacia</i>
Puncturevine	<i>Tribulus terrestris</i>