

# Aquatic Invasive Species Management Info Summary

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### 2. Aquatic Species Information

#### a. Invasive water primroses (*Ludwigia* spp.)

- i. ***Ludwigia* Control Project Final Report.** Laguna de Santa Rosa, Sonoma County, California. Julian Meisler, Laguna de Santa Rosa Foundation, Feb. 2008.  
<http://www.lagunadesantarosa.org/pdfs/Ludwigia%20Control%20Project%20Final%20Report.pdf>
- ii. Brenda Grewell, USDA-ARS. ***Ludwigia* Presentation Notes.** C. Durbecq, Sept. 2013.  
[http://www.bentonswcd.org/assets/Notes\\_on\\_Ludwigia\\_Presentation\\_Brenda\\_Grewell.pdf](http://www.bentonswcd.org/assets/Notes_on_Ludwigia_Presentation_Brenda_Grewell.pdf)
- iii. **Presentation: *Ludwigia* in the Lower Willamette Identification, Impact and Control.** Alex Staunch, PSU.  
[https://cwmatest.files.wordpress.com/2014/03/ludwigia\\_pull\\_together2.pdf](https://cwmatest.files.wordpress.com/2014/03/ludwigia_pull_together2.pdf)
- iv. **Delta Ponds *Ludwigia* Control.** Lauri Holts, City of Eugene. <http://eugene-or.gov/ludwigia>
- v. **WSSA Weed Watch: 'Shape-Shifting' Primrose Plant Plagues Communities in Coastal States, Posted on July 29, 2013.** <http://wssa.net/2013/07/wssa-weed-watch-shape-shifting-primrose-plant-plagues-communities-in-coastal-states/>
- vi. **WA Noxious Weed Control Board: Water Primrose (*Ludwigia hexapetala*).** <http://www.nwcb.wa.gov/detail.asp?weed=87>
- vii. **King County, WA: Water primrose (*Ludwigia hexapetala*).** <http://www.kingcounty.gov/environment/animalsAndPlants/noxious-weeds/weed-identification/water-primrose.aspx>
- viii. **Presentation: A new water primrose: *Ludwigia* in the Kissimmee Chain of Lakes,** Colette C. Jacono, PhD, Florida Museum of Natural History.  
<http://plants.ifas.ufl.edu/manage/docs/researchreview/2013/NewLudwigia-ColetteJacono.pdf>
- ix. **Creeping water-primrose (*Ludwigia peploides*), photos and facts.** Wildscreen ARKive. <http://www.arkive.org/creeping-water-primrose/ludwigia-peploides/image-G142669.html>
- x. **Squelching Water Primrose.** USDA-ARS.  
<http://www.ars.usda.gov/is/ar/archive/may06/water0506.htm>
- xi. **Invasive Species Compendium: Datasheets - *Ludwigia peploides* (water primrose).**  
<http://www.cabi.org/isc/?compid=5&dsid=31673&loadmodule=datasheet&page=481&site=144>
- xii. **Jepson Manual, Identification *Ludwigia* genus.**  
[http://ucjeps.berkeley.edu/cgi-bin/get\\_IJM.pl?tid=51358](http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=51358)

#### I. Scientific Articles - *Ludwigia*

- i. Dandelot, Verlaque, Dutartre and Cazaubon. 2005. Ecological, dynamic and taxonomic problems due to *Ludwigia* (*Onagraceae*) in France. *Hydrobiologia*. 55(2): 1-6.  
<http://link.springer.com/article/10.1007/s10750-005-4455-0>
- ii. Dandelot, Robles, Pech, Cazaubon and Verlaque. 2008. Allelopathic potential of two invasive alien *Ludwigia* spp." *Aquatic Botany*. 88:311-316.

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- <http://www.sciencedirect.com.proxy.lib.pdx.edu/science/article/pii/S0304377007001805#>
- iii. Hussner. 2010. Growth response and root system development of the invasive *Ludwigia grandiflora* and *Ludwigia peploides* to nutrient availability and water level. *Fundam. Appl. Limnol., Arch. Hydrobiol.* 177(3): 189-196.  
<http://www.ingentaconnect.com.proxy.lib.pdx.edu/content/schweiz/fal/2010/0000177/00000003/art00003>
  - iv. Lambert, Dutartre, Coudrese and Haury. 2010. Relationships between the biomass production of invasive *Ludwigia* species and physical properties of habitats in France. *Hydrobiologia.* 656:173-186.  
<http://link.springer.com.proxy.lib.pdx.edu/article/10.1007/s10750-010-0440-3>
  - v. Raux. 2009. Sexual reproduction of two alien invasive *Ludwigia* (Onagraceae) on the middle Loire River, France. *Aquatic Botany.* 90(2): 143-148.  
<http://www.sciencedirect.com.proxy.lib.pdx.edu/science/article/pii/S0304377008001393>
  - vi. Rejmankova. 1992. Ecology of creeping macrophytes with special reference to *Ludwigia peploides* (H.B.K) Raven". *Aquatic Botany.* 43(3): 143-148.  
<http://www.sciencedirect.com.proxy.lib.pdx.edu/science/article/pii/030437709290073R>
  - vii. Smida, Charpy-Roubaud, Cherif, Torre, Audran, Smiti, Petit. 2015. Antibacterial properties of extracts of *Ludwigia peploides* subsp. *montevidensis* and *Ludwigia grandiflora* subsp. *hexapetala* during their cycle of development. *Aquatic Botany.* 121:39-45.  
<http://www.sciencedirect.com.proxy.lib.pdx.edu/science/article/pii/S0304377014001648#>
  - viii. Stiers, Chrochain, Josens and Triest. 2011. Impact of three aquatic invasive species on native plants and macroinvertebrates in temperate ponds. *Biological Invasions.* 12:2715-27526  
<http://link.springer.com.proxy.lib.pdx.edu/article/10.1007/s10530-011-9942-9>
  - ix. Thouvenot, Haury and Thiebaut. 2013. A success story: Water primroses, aquatic plant pests". *Aquatic conservation: Marine and Freshwater Ecosystems.* 23:790-803  
<http://onlinelibrary.wiley.com.proxy.lib.pdx.edu/doi/10.1002/aqc.2387/full>
  - x. Thouvenot, Haury and Thiebaut. 2013. Seasonal plasticity of *Ludwigia grandiflora* under light and water depth gradients: an outdoor mesocosm experiment. *Flora.* 208(7): 430-437.  
<http://www.sciencedirect.com.proxy.lib.pdx.edu/science/article/pii/S0367253013000765>
  - xi. Thovenot, Puech, Martinez, Haury and Thiebaut. 2013. Strategies of the invasive macrophyte *Ludwigia grandiflora* in its introduced range: Competition, facilitation or coexistence with native and exotic species?" *Journal of aquatic ecology.* 107:8-16.  
<http://www.sciencedirect.com.proxy.lib.pdx.edu/science/article/pii/S0304377013000168>
  - xii. Zardini, Gu and Pave. 1991. On the separation of 2 species within the *Ludwigia uruguayensis* complex (onagraceae). *Systematic Botany.* 16:242-244.  
[http://www.jstor.org.proxy.lib.pdx.edu/stable/2419276?seq=1#page\\_scan\\_tab\\_contents](http://www.jstor.org.proxy.lib.pdx.edu/stable/2419276?seq=1#page_scan_tab_contents)

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- xiii. Zardini, Peng, and Hoch. 1991. Chromosome numbers in *Ludwigia* section Oligospermum and section Oocarpon (Onagraceae). *Taxon*. 40: 221-230.  
[http://www.jstor.org.proxy.lib.pdx.edu/stable/1222976?seq=1#page\\_scan\\_tab\\_contents](http://www.jstor.org.proxy.lib.pdx.edu/stable/1222976?seq=1#page_scan_tab_contents)
- b. **Yellow flag iris (*Iris psuedacorus*)**
- i. Shoreline Drizzle Applications for Control of Yellowflag Iris, Guy Kyser & Joseph DiTomaso, Nov. 2012.  
<http://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=8658>
- c. **Eurasian Water Milfoil (*Myriophyllum spicatum*)**
- i. The Decline of Native Vegetation Under Dense Eurasian Watermilfoil Canopies. John D. Madsen, J. W. Sutherland, J. A. Bloomfield, L.W. Eichler, and C.W. Boylen. *Journal of Aquatic Plant Management*, 29:94-99. 1991.  
<http://www.apms.org/japm/vol29/v29p94.pdf>
- ii. Use of Whole-Lake Fluridone Treatments to Selectively Control Eurasian Watermilfoil in Burr Pond and Lake Hortonia, Vermont. Kurt D. Getsinger, R. Michael Stewart, John D. Madsen, Adam S. Way, Chetta S. Owens, Holly A. Crosson, and Alan J. Burns. US Army Corps of Engineers; Aquatic Plan Control Research Program. Nov. 2002.  
<http://el.ercd.usace.army.mil/elpubs/pdf/trel02-39.pdf>
- iii. Incentivizing the Public to Support Invasive Species Management: Eurasian Milfoil Reduces Lakefront Property Values.  
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0110458>
- iv. Ecology of Eurasian watermilfoil. *Journal of Aquatic Plant Managmeent*. 28:55-64. 1990  
<http://www.apms.org/japm/vol28/v28p55.pdf>
- v. Phytoplankton as a factor in the decline of the submersed macrophyte *Myriophyllum spicatum*. *Hydrobiologia* 107: 213-219. 1983  
<http://link.springer.com/article/10.1007%2FBF00036690>
- d. **Knotweed (*Polygonum* ssp.)**
- i. Passive Reestablishment of Riparian Vegetation Following Removal of Invasive Knotweed (*Polygonum*). Shannon M. Claeson and Peter A. Bisson. *Invasive Plant Science and Management* 6(2): 208-218. 2013.  
<http://www.bioone.org/doi/abs/10.1614/IPSM-D-12-00070.1> (contact [cdurbecq@bentonswcd.org](mailto:cdurbecq@bentonswcd.org) for full article)
- ii. Impacts of Invasive Riparian Knotweed on Litter Decomposition, Aquatic Fungi, and Macroinvertebrates. Shannon M. Claeson, Carri J. LeRoy, Jacob R. Barry & Kevin A. Kuehn. *Biological Invasions*, Nov. 2013.  
[http://www.fs.fed.us/pnw/lwm/aem/docs/claeson/2013\\_claeson\\_et\\_al\\_knotweed\\_impacts\\_onlinefirst\\_112513.pdf](http://www.fs.fed.us/pnw/lwm/aem/docs/claeson/2013_claeson_et_al_knotweed_impacts_onlinefirst_112513.pdf)
- e. **Delta arrowhead (*Sagittaria platyphylla*)**
- i. *Sagittaria platyphylla* factsheet. Department of Primary Industries.  
<http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/profiles/sagittaria>
- ii. *Sagittaria platyphylla* clonal propagation and glyphosate. Australia Gov.  
<http://nrmonline.nrm.gov.au/catalog/mql:3092>
- iii. *Sagittaria platyphylla* biocontrol analysis.  
<http://www.caws.org.au/awc/2014/awc201410591.pdf>
- iv. *Sagittaria platyphylla* biomass partitioning.

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<http://www.bioone.org/doi/abs/10.2112/02110.1>

- f. **Common reed grass (*Phragmites australis*)**
    - i. **Common Reed (*Phragmites australis*).** Plant Conservation Alliance’s Alien Plant Working Group: Least Wanted. Fact Sheet. 2010.  
<http://www.nps.gov/plants/alien/fact/phau1.htm>
    - ii. **Native and Introduced *Phragmites*: challenges and Identification, Research, and Management of the Common Reed.** Saltonstall, K., Burdick, D., Miller, S., and Smith, B. National Estuarine Research Reserve Technical Report Series. 2005.  
[http://nerrs.noaa.gov/Doc/PDF/Research/Phrag\\_Final\\_2009.pdf](http://nerrs.noaa.gov/Doc/PDF/Research/Phrag_Final_2009.pdf)
  - g. **Guides and Databases**
    - i. **Introduction to Common Native and Potential Invasive Freshwater Plant in Alaska.** Vanessa H. Morgan and Mark Systma. PSU, Center for Lakes and Reservoirs, 2009.  
[http://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1026&context=centerforlakes\\_pub](http://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1026&context=centerforlakes_pub)
    - ii. **Benton SWCD Weed Profiles webpage.**  
<http://www.bentonswcd.org/programs/invasive-species/weed-profiles/>
    - iii. **Water Weeds: Guide to Aquatic Weeds in Benton County.** Benton County CWMA.  
<http://www.bentonswcd.org/assets/BSWCDcompleteAquaticWeedGuide.pdf>
    - iv. **Oregon Noxious Weed Profiles.** Oregon Dept. of Agriculture.  
<http://www.oregon.gov/ODA/programs/Weeds/OregonNoxiousWeeds/Pages/AboutOregonWeeds.aspx>
- 2. General AIS Resources**
- a. **Center for Lakes and Reservoirs Publications.** PSU. 1996 – Present.  
[http://pdxscholar.library.pdx.edu/centerforlakes\\_pub/](http://pdxscholar.library.pdx.edu/centerforlakes_pub/)
  - b. **2014 Interagency Noxious Weed Symposium, presentation website.**  
<http://www.oregon.gov/ODA/programs/Weeds/Pages/2014INWS.aspx>
- 3. General AIS Impacts**
- a. **Alien species in fresh waters: ecological effects, interactions with other stressors, and prospects for the future.** David L. Strayer, *Freshwater Biology*, Jan. 2010.  
<http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2427.2009.02380.x/full>
  - b. **Aquatic plant community invasibility and scale dependent patterns in native and invasive species richness.** *Ecology* 88:3135-3143  
<http://www.esajournals.org/doi/abs/10.1890/06-1911.1>
  - c. **Effect of invasive plant species on temperate wetland plant diversity.** *Conservation Biology*. 2004  
<http://onlinelibrary.wiley.com/doi/10.1111/j.1523-1739.2004.00391.x/abstract>
  - d. **Causes and consequences of invasive plants in wetlands: Opportunities and outcomes.** *Critical Review in Plant Science*. 23: 431-452. 2004.

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<http://www.botany.wisc.edu/zedler/images/CRPSreview.pdf>

### 4. General AIS Management Plans

- a. **Guide for Developing Integrated Aquatic Vegetation Management Plans in Oregon.** Maribeth V. Gibbons, Mark G. Rosenkranz Harry L. Gibbons, Jr, Mark D. Sytsma. Center for Lakes and Reservoirs, PSU. 1999.  
[http://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1014&context=centerforakes\\_pub](http://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1014&context=centerforakes_pub)
- b. **Invasive Ludwigia Peploides ssp Montevidensis Eradication Plan for the Blue Heron Wetlands, Northeast Portland, Oregon 2011-2017.** Prepared by Alex Staunch, East Columbia Neighborhood Association; and Robert Donley, Sean Griffin, Kara Mcinally and Abigail Rincon Of Portland State University; on Behalf of the Blue Heron Wetland Restoration Project. July 2012.  
[http://www.ecnapdx.com/images/bhwrp/Management\\_Final\\_7-12\\_1-3.pdf](http://www.ecnapdx.com/images/bhwrp/Management_Final_7-12_1-3.pdf)
- c. **Oregon Aquatic Nuisance Species Management Plan.** Produced by: Erik Hanson and Mark Sytsma, Center for Lakes and Reservoirs, PSU, June 2001.  
[http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5303413.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5303413.pdf)
- d. **California Aquatic Invasive Species Management Plan.** State of California Resources Agency Department of Fish and Game, January 2008.  
<https://www.wildlife.ca.gov/Conservation/Invasives/Plan>
- e. **Lake Champlain Basin Aquatic Nuisance Species Management Plan.** January 2005.  
<http://www.anstaskforce.gov/State%20Plans/LKChampANSMP.pdf>
- f. **Ludwigia Management Plan, Laguna de Santa Rosa.** 2006. Laguna de Santa Rosa Foundation.  
[http://www.goldridgercd.org/pdfs/ludwigia\\_man\\_plan.pdf](http://www.goldridgercd.org/pdfs/ludwigia_man_plan.pdf)

### 5. General AIS Control Methods

- a. **Biology and Control of Aquatic Plants: A Best Management Practices Handbook: Third Edition.** Aquatic Ecosystem Restoration Foundation. Lyn A. Gettys, William T. Haller, and David G. Petty. 2014. <http://www.aquatics.org/bmp%203rd%20edition.pdf>
- b. **Aquatic Vegetation Management and Control.** Pacific Northwest Extension Publication. R. Parker, PhD., R.D. Comes, Ph.D. Washington State University. 2005.  
<http://cru.cahe.wsu.edu/CEPublications/PNW0224/PNW0224.pdf>
- c. **Aquatic Weed Control, Pacific NW Weed Management Handbook.** Vanessa Howard Morgan and Kim Patten, Sept. 2012. <http://pnwhandbooks.org/weed/other-areas/aquatic-weed-contol>
- d. **Aquatic Pest Control, Pesticide Application Compendium, Vol. 5.** 2001. Patrick O' Connor-Marer. <http://anrcatalog.ucdavis.edu/Details.aspx?itemNo=3337>
- e. **Calibrating Equipment for Aquatic Herbicide Application.** F. M. Fishel. 2015.  
<http://edis.ifas.ufl.edu/pi236>
- f. **Control Costs, Operation, and Permitting Issues for Non-chemical Plant Control: Case Studies in the San Francisco Bay-Delta Region, California.** Ben K. Greenfield, M. Blankinship, and T.J. McNabb. J. Aquat. Plant Manage. 44:40-49. 2006.  
<http://www.apms.org/japm/vol44/v44p40.pdf>

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- g. **Research and Development Efforts for Improved Submersed Aquatic Vegetation Control.** Clean Lakes Inc. 2011.  
[http://www.cleanlake.com/images/010220\\_Newsletter\\_-\\_Research\\_and\\_Development\\_Efforts\\_for\\_Improved\\_Submersed\\_Aquatic\\_Vegetation\\_Control.pdf](http://www.cleanlake.com/images/010220_Newsletter_-_Research_and_Development_Efforts_for_Improved_Submersed_Aquatic_Vegetation_Control.pdf)
- h. **Herbicides in Aquatic Systems.** “Herbicides – Current Research and Case Studies in Use.” Chap. 13. Lyn A. Gettys, William T. Haller, and Gregory E. MacDonald. June 12, 2013. <http://cdn.intechopen.com/pdfs-wm/43449.pdf>
- i. **Glyphosate-Based Aquatic Herbicides an Overview Of Risk.** Susan Monheit, CDFA-IPC. April 2003. <http://manuaipdf.com/doc-file/glyphosate-based-aquatic-herbicides-an-overview-of-risk->
- j. **Effects of Herbicide Glyphosate and Glyphosate-Based Formulations on Aquatic Ecosystems.** Gonzalo Luis Perez, Maria Solange Vera and Leandro Miranda. Intech website. Agricultural and Biological Sciences, “Herbicides and Environment”, chp. 16. Edited by Andreas Kortekamp, Jan. 2011. <http://cdn.intechopen.com/pdfs-wm/12592.pdf>
- k. **Presentation: Factors affecting the choice of aquatic surfactants.** Kim Patten, WSU Long Beach.  
<http://longbeach.wsu.edu/spartina/documents/surfactanttalkwashweedsociety2005recommendations.pdf>
- l. **Presentation: Herbicide Toxicology & Current Issues.** Dave Stone, PhD OSU Extension.  
<https://cwmatest.files.wordpress.com/2014/04/herbicide-toxicity-current-issues.pdf>
- m. **Summary of Aquatic Acute Toxicity Data for Spray Adjuvants Allowed for Use on Aquatic Sites in Washington.** WA State Dept. of Agriculture (rev. 7/20/2012).  
<http://www.ecy.wa.gov/programs/wq/pesticides/enviroReview/riskAssess/AquivalentAquaticTox2012.pdf>

### **6. General AIS Survey & Monitoring Protocols**

- a. **How to conduct an Aquatic Plant Survey.** Vermont Dept. of Environ. Conservation. 2013. [http://www.vtwaterquality.org/lakes/docs/ans/lp\\_plantsurvey.pdf](http://www.vtwaterquality.org/lakes/docs/ans/lp_plantsurvey.pdf)
- b. **Aquatic Pesticide Monitoring Program Field Evaluations of Alternative Pest Control Methods in California Waters.** San Francisco Estuary Institute. April 2004.  
[http://www.waterboards.ca.gov/water\\_issues/programs/npdes/pesticides/docs/sfei\\_reports/pestalt\\_field.pdf](http://www.waterboards.ca.gov/water_issues/programs/npdes/pesticides/docs/sfei_reports/pestalt_field.pdf)
- c. **Aquatic Weed Survey Techniques.** Dept of Ecology, State of WA, Chp. 8 – Map Aquatic Plants.  
<http://www.ecy.wa.gov/programs/wq/plants/management/manual/chapter8.html>
- d. **A Review of Aquatic Plant Monitoring and Assessment Methods.** John D. Madsen and Ryan M. Wersal, Geosystems Research Institute, Mississippi State University for Aquatic Ecosystem Restoration Foundation, May 2012.  
<http://www.aquatics.org/pubs/plantassessment.pdf>

### **7. General AIS Reporting and Databases**

- a. **U.S. Geological Survey, NAS – Nonindigenous Aquatic Species:** Central repository for specially referenced biogeographic accounts of introduced aquatic species.

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<http://nas.er.usgs.gov/default.aspx>

- b. **iMapInvasives**. Oregon Biodiversity Information Center. Oregon contact: Lindsey Wise, [lindsey.wise@pdx.edu](mailto:lindsey.wise@pdx.edu). GIS-based data management system to assist citizen scientists and natural resource managers working to protect NR from the threat of invasive species.  
<http://www.imapinvasives.org/index.html>
- c. **Oregon Invasive Species Hotline**. Report potential invasive spp. you have found to provide vital early detection info to experts working to stop the spread.  
<http://oregoninvasiveshotline.org/>

### 8. Permitting & Regulations

#### a. Department of State Lands

Contacts: Gloria Kiryuta, Resource Coordinator, [Gloria.kiryuta@dsl.state.or.us](mailto:Gloria.kiryuta@dsl.state.or.us), 503-986-5226; Tami Hubert, Land Manager for Benton County, 503-986-5272 – Access Permission

#### Documents:

**Oregon Aquatic Habitat Restoration and Enhancement Guide. The Oregon Plan for Salmon And Watersheds. May 1999. pgs. 24-25, Riparian Brush and Weed Control.**  
<http://www.oregon.gov/OWEB/docs/pubs/habguide99-complete.pdf>

#### **DSL Aquatic Weed Management Staff Directory:**

[http://www.oregon.gov/dsl/Pages/contact\\_us\\_directory.aspx#%E2%80%8B%E2%80%8BWetlands & Waterways](http://www.oregon.gov/dsl/Pages/contact_us_directory.aspx#%E2%80%8B%E2%80%8BWetlands%20&%20Waterways)

**DSL jurisdiction:** “The Oregon Division of State Lands is the lead state agency regulating "fill and removal" activities for stream or watershed restoration. DSL works in conjunction with the US Army Corps of Engineers (ACOE) in regulating fill and removal activities in waters of the state. This jurisdiction extends to the bankfull stage, mean high water or high tide line, or to the line of non- aquatic vegetation - whichever is higher. **However if the activity involves filling or removing less than 50 cubic yards and is not in Essential Salmonid Habitat or in a State Scenic Waterway, DSL does not have jurisdiction.**”

#### **Required Forms:**

**Notification for Certain Exempt Voluntary Habitat Restoration Projects**  
<http://www.oregon.gov/dsl/PERMITS/Pages/forms.aspx>

#### **Application for Short-Term Access Agreement**

<http://www.oregon.gov/dsl/LW/Pages/forms.aspx>



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### b. NOAA Fisheries/NMFS

#### Documents:

##### **List of Permits & Authorizations:**

<http://www.westcoast.fisheries.noaa.gov/permits/index.html>

**National Marine Fisheries Service Application Instructions For Permits For The Incidental Take Of Endangered Or Threatened Species Under The Endangered Species Act:** [http://www.nmfs.noaa.gov/pr/permits/esa\\_permits.htm](http://www.nmfs.noaa.gov/pr/permits/esa_permits.htm)

##### **Willamette River Biological Opinion:**

[http://www.westcoast.fisheries.noaa.gov/fish\\_passage/willamette\\_opinion/index.html](http://www.westcoast.fisheries.noaa.gov/fish_passage/willamette_opinion/index.html)

##### **Upper Willamette River Salmon Recovery Plan:**

[http://www.westcoast.fisheries.noaa.gov/protected\\_species/salmon\\_steelhead/recovery\\_planning\\_and\\_implementation/willamette\\_river/upper\\_willamette\\_river\\_salmon\\_recovery\\_sub\\_domain.html](http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/willamette_river/upper_willamette_river_salmon_recovery_sub_domain.html)

#### Frequently asked questions:

##### **Do I Need to Apply for a Permit?**

“If you determine that your proposed activity would *directly take* a listed species (i.e., the listed species is the subject of your proposed activity, and conducting it would likely result in the species being harassed, captured, harmed, possessed, or killed) and your planned activity is otherwise lawful, a section 10 (a)(1)(A) permit is required. Examples of activities that may require a section 10 (a)(1)(A) permit include: surveys, genetic research, hatchery operations, relocations, capture and marking, and telemetric monitoring. Under certain circumstances, a section 10(a)(1)(A) permit may also be required for you to possess listed species’ tissues or body parts.

If you are engaged in an otherwise lawful activity where a listed species may be adversely affected, and the purpose of your activity is not scientific research or species enhancement, you may need to obtain a section 10(a)(1)(B) permit (*Incidental Take Permit*). Examples of activities that may require a section 10(a)(1)(B) permit include: state sportfishing programs, non-listed fish stocking programs, and other instream or watershed activities which may affect listed species. If your proposed activities require an incidental take permit, you will need to use the section 10(a)(1)(B) instructions. These are available at the addresses listed below under *Where Do I Send the Application?* and at the NMFS Office of Protected Resources web site, [http://www.nmfs.noaa.gov/pr/permits/esa\\_permits.htm](http://www.nmfs.noaa.gov/pr/permits/esa_permits.htm)”

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### Who must have a Scientific Taking Permit?

“A scientific taking permit is required to capture or handle marine and freshwater fish and shellfish and other marine invertebrates for scientific or educational purposes from the waters of Oregon. If you are targeting freshwater invertebrates (other than shellfish) but may capture fish with the sampling methods used, you will also need a Scientific Taking Permit.”

### c. **NPDES & DEQ**

Oregon Contact: Beth Moore, DEQ, [moore.beth@deq.state.or.us](mailto:moore.beth@deq.state.or.us), (503) 229-6402

Permit: **National Pollutant Discharge Elimination System (NPDES) Waste Discharge Pesticide General Permit (2300A)**

### **Notes:**

- Everyone treating aquatic invasives in Oregon is subject to this permit
- Everyone is required to keep a record of all applications, and have a copy of the NPDES permit on record (can be electronic)
  - o Must maintain records of treatment for at least 3 years and follow all specified conditions stated in the permit in: Schedule A, conditions 1 through 4; Schedule B, conditions 1 through 8; and Schedule F, when applicable
- You must register for a NPDES Pesticide General Permit if:
  - o Exceeding the threshold of allowable application of herbicides to water within a one year period. This threshold is 20 river miles or 20 acres.
  - o Your employer/group/agency is listed in the table on pg. 7 of the permit; this includes all federal and state employees and weed boards with regulatory authority
- Those who are required to register an NPDES permit are also required to complete and maintain a **Pesticide Discharge Management Plan** (described in the pesticide general permit).
  - o [Generic PDMP form](#)

### **Documents:**

**Main Page for Pesticide General Permit docs :**

<http://www.deq.state.or.us/wg/wqpermit/pesticides.htm>

**NPDES Pesticide General Permit:**

<http://www.deq.state.or.us/wg/wqpermit/docs/general/npdes2300a/2300aPermit.pdf>

**Fact Sheet for pesticide use in, on or near water:**

<http://www.deq.state.or.us/wg/pubs/factsheets/permits/2300APesticides.pdf>

**Table of Operators who are required to register under the permit:**

<http://www.deq.state.or.us/wg/wqpermit/docs/general/npdes2300a/2300aTable1.pdf>

**Pesticide Applications Covered Under The NPDES Permit:**

<http://www.deq.state.or.us/wg/wqpermit/docs/general/npdes2300a/2300aPermitOverview.pdf>

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### Application for NPDES Permit (2300A):

<http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes2300a/2300A.pdf>

### d. Army Corps of Engineers

**Permit:** Nation-wide Permit 27 for Aquatic Habitat Restoration, Establishment, and Enhancement Activities:

[http://www.saw.usace.army.mil/Portals/59/docs/regulatory/regdocs/NWP2012/NWP27\\_3-23.pdf](http://www.saw.usace.army.mil/Portals/59/docs/regulatory/regdocs/NWP2012/NWP27_3-23.pdf)

#### Notes:

- Can work with DSL to fulfill requirements for removal-fill under certain circumstances. Call to confirm.
- Refer to [SLOPES](#) when planning project.

#### Documents:

**Standard Local Operating Procedures for Endangered Species (SLOPES):**

<http://www.nwp.usace.army.mil/Missions/Environment/SLOPES.aspx>

**Restoration Biological Opinion:**

[http://www.nwp.usace.army.mil/Portals/24/docs/regulatory/SLOPES\\_V\\_restoration.pdf](http://www.nwp.usace.army.mil/Portals/24/docs/regulatory/SLOPES_V_restoration.pdf)

### e. OFW/USFWS

#### Documents:

**Frequently Asked Qs:**

[http://www.dfw.state.or.us/fish/license\\_permits\\_apps/scientific\\_taking\\_permit.asp#faq](http://www.dfw.state.or.us/fish/license_permits_apps/scientific_taking_permit.asp#faq)

**Oregon Guidelines for Timing of In-water Work to Protect Fish and Wildlife Resources:**

[http://www.dfw.state.or.us/lands/inwater/Oregon\\_Guidelines\\_for\\_Timing\\_of\\_InWater\\_work2008.pdf](http://www.dfw.state.or.us/lands/inwater/Oregon_Guidelines_for_Timing_of_InWater_work2008.pdf)

#### Notes:

- Find the in-water work period for the area you are working in using the [Oregon Guidelines for Timing of In-water Work](#).....
- **Excerpt from the [Oregon Aquatic Habitat Restoration and Enhancement Guide](#):**

“In relation to stream habitat restoration work, ODFW’s main role is to provide technical advice on how to design and implement projects that are the most beneficial to fish and other wildlife associated with aquatic and riparian environments. ODFW is mandated by the Oregon Legislature through the Wildlife Policy (ORS 496.012) and Food Fish Management Policy (ORS 506.109) to manage fishery resources, prevent the serious depletion of any indigenous

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species and to provide the optimum recreational, commercial, and aesthetic benefits for present and future generations of citizens.

The agency has direct authority related to physical alteration of stream habitat under Oregon legislative statutes. These statutes require the provision of a fish passage that meets criteria set by ODFW at any artificial obstruction placed across a stream. They require all water diversions to be screened where the possibility of diverting game fish exists. State statutes also require permission from ODFW prior to any use of explosives in streams. However, other state agencies with authority to issue permits or approve plans to alter streams and adjacent landscapes, such as Department of Forestry and Division of State Lands, have adopted rules requiring consultation with ODFW prior to such approval or issuance of permits. **As part of this consultation, ODFW has set guidelines for the allowable time period when in-water work can be conducted, (Oregon Guidelines For Timing of In-Water Work To Protect Fish and Wildlife Resources), such as, in- channel habitat restoration work. ODFW can grant waivers to allow work outside these guidelines."**

### f. Other Considerations

#### i. **County Planning Division**

Check with the Community Development Department in your county to make sure that your project fall within county and city planning regulations.

From [Oregon Aquatic Habitat Restoration and Enhancement Guide](#):

"Local governments in Oregon have a broad range of authorities and responsibilities which could apply to restoration projects. These include land use planning, storm drain system planning and maintenance, flood management, road system operation and maintenance, and water and sewer system operation and maintenance. Administration of local authorities will be almost unique from jurisdiction to jurisdiction. Restoration projects that occur under one or more authority may need to be reviewed by planning or engineering officials for the jurisdiction in which the project is located."

#### ii. **County Water Systems Departments**

- Check with county public works if there is a water intake near your project site (there may be several offices per county).
- Glyphosate should not be discharged within .5 miles up-stream of a public water intake.
- Check water intake locations by using the following sources:

**ODEQ Information Available on Drinking Water Intake Locations:**

<http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes700pm/IntakeLocations.pdf>

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**Private Drinking Water Sources: Interactive Water Right Map:**  
<http://www.wrd.state.or.us/OWRD/MAPS/index.shtml>

### iii. Oregon Dept. of Agriculture

[OR Pesticide Licensing Guide](#)

Herbicide applicator must have:

- Public or Commercial Pesticide Applicators License with Laws & Safety and Aquatic Pest Control Categories
- Maintain record for 3 years for each application
- Use of approved aquatic formulations registered for use in OR
- Follow all herbicide label requirements!