

Oregon Department of State Lands Statewide Fee-in-Lieu Instrument

| | |
|---|-------------|
| I. PREAMBLE..... | 4 |
| A. PURPOSE..... | 4 |
| B. GOALS AND OBJECTIVES | 4 |
| C. APPROVAL | 5 |
| D. ESTABLISHMENT AND USE OF CREDITS | 5 |
| E. DISCLAIMER..... | 5 |
| F. EXHIBITS | 5 |
| II. DEFINITIONS* | 6 |
| III. REGULATORY AUTHORITIES..... | 11 |
| A. FEDERAL AUTHORITIES | 11 |
| B. AUTHORITY OF THE ARMY CORPS OF ENGINEERS..... | 11 |
| C. STATE AUTHORITIES..... | 11 |
| D. AUTHORITY OF THE OREGON DEPARTMENT OF STATE LANDS..... | 11 |
| IV. PROGRAM STRUCTURE..... | 12 |
| A. STATEWIDE INSTRUMENT | 12 |
| B. INTERAGENCY REVIEW TEAM..... | 12 |
| C. FIL PROGRAM ACCOUNT | 13 |
| D. FIL PROGRAM CLOSURE..... | 14 |
| E. FIL PROJECTS | 14 |
| V. FIL PROJECT ESTABLISHMENT AND OPERATION..... | 14 |
| A. ESTABLISHMENT..... | 14 |
| B. OPERATION..... | 15 |
| C. MONITORING..... | 16 |
| D. MANAGEMENT..... | 17 |
| VI. CREDIT ACCOUNTING | 19 |
| A. GENERATION OF CREDITS..... | 19 |
| B. CREDIT RELEASE..... | 20 |
| C. COST OF CREDITS..... | 20 |
| D. SALE OF CREDITS..... | 20 |
| VII. PROGRAM REPORTING | 21 |
| VIII. OTHER PROVISIONS | 22 |
| IX. MODIFICATIONS | 24 |
| X. REFERENCES..... | 24 |
| XI. EXHIBIT A: PRIORITIZATION AND COMPENSATION PLANNING FRAMEWORK..... | XI-I |
| A. STATEWIDE PRIORITIES..... | XI-I |
| B. CRITERIA FOR SELECTION OF FIL PROJECTS | XI-II |
| C. PRIORITY WATERSHED PROFILES | XI-IV |

| | |
|--|-----------------|
| NORTH COAST BASIN | XI-IV |
| <i>Lower Columbia (FIL High Priority Watershed)</i> | <i>XI-v</i> |
| <i>Necanicum (FIL Medium Priority Watershed)</i> | <i>XI-viii</i> |
| <i>Wilson Trask-Nestucca (FIL Medium Priority Watershed)</i> | <i>XI-x</i> |
| WILLAMETTE BASIN | XI-XIV |
| <i>Lower Willamette (FIL High Priority Watershed)</i> | <i>XI-xv</i> |
| <i>Tualatin (FIL High Priority Watershed)</i> | <i>XI-xvii</i> |
| <i>Clackamas (FIL Medium Priority Watershed)</i> | <i>XI-xviii</i> |
| <i>Molalla-Pudding (FIL Medium Priority Watershed)</i> | <i>XI-xx</i> |
| UMPQUA BASIN | XI-XXI |
| <i>South Umpqua (FIL High Priority Watershed)</i> | <i>XI-xxii</i> |
| SOUTH COAST | XI-XXV |
| <i>Coos (FIL Medium Priority Watershed)</i> | <i>XI-xxv</i> |
| ROGUE BASIN | XI-XXVII |
| <i>Middle Rogue (FIL High Priority Watershed)</i> | <i>XI-xxix</i> |
| DESCHUTES BASIN | XI-XXX |
| D. REFERENCES | XI-XXXIII |
| XII. EXHIBIT B: INSTRUMENT MODIFICATIONS..... | XII-I |
| XIII. EXHIBIT C: FEE-IN-LIEU FINANCIAL ACCOUNTING STRUCTURE | |
| XIII-I | |
| XIV. EXHIBIT D: MITIGATION PLANS | XIV-I |
| XV. EXHIBIT E: STATEMENT OF SALE OF CREDIT | XV-I |

This Fee-In-Lieu Program Instrument (hereinafter, Instrument), regarding the establishment, use, operation, and maintenance of the Oregon Department of State Lands Statewide Federally Approved Fee-in-Lieu Program (hereinafter, FIL Program), is an agreement made and entered into by the U.S. Army Corps of Engineers, Portland District (Corps), and the Oregon Department of State Lands (DSL). By signature of this agreement, the following agencies have indicated their acceptance: the Environmental Protection Agency, the U.S. Fish and Wildlife Service, the Oregon Department of Environmental Quality, the Oregon Department of Fish and Wildlife, and the Oregon Department of Transportation.

I. Preamble

A. PURPOSE

The purpose of this Instrument is to establish guidelines, responsibilities, and standards for the establishment, use, operation, and maintenance of the FIL Program. The FIL Program will be used for compensatory mitigation for unavoidable impacts to waters of the United States that result from activities authorized under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and for impacts from other activities as the Corps District Engineer may authorize, provided that such activities have met all applicable requirements and are authorized by the appropriate authority. The FIL Program will also be used to implement Oregon's Removal-Fill Law [Oregon Revised Statutes (ORS) 196.800-196.990], though this Instrument addresses only the Federal aspect of the FIL Program.

This Instrument addresses compensatory mitigation for impacts to wetlands. DSL may propose, in a future modification to this Instrument, to expand the FIL Program to include compensatory mitigation for non-wetland jurisdictional waters such as streams and lakes.

B. GOALS AND OBJECTIVES

The primary goal of the FIL Program is to provide effective compensatory mitigation for the functions and services of waters of the U.S. lost through authorized impacts.

The objectives of the FIL Program are as follows:

- a) Provide an alternative to permittee-responsible compensatory mitigation by constructing mitigation projects adequate to meet current and expected demand for credits in prioritized service areas.

- b) Minimize the temporal loss of wetlands by developing mitigation projects in advance of mitigation needs.
- c) Maintain a level of accountability commensurate with mitigation banks, such that mitigation obligations assumed by DSL are met in a timely and effective manner.
- d) Achieve ecologically significant restoration projects that sustain aquatic resource functions and services consistent with a watershed approach.

C. APPROVAL

This Instrument is considered fully executed upon the latter date of signature by the Director of DSL and the District Engineer.

D. ESTABLISHMENT AND USE OF CREDITS

In accordance with the provisions of this Instrument and upon satisfaction of the performance standards described in mitigation plans (contained herein as subparts of Exhibit D), credits will be available for use as mitigation in accordance with all applicable requirements for permits issued under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The District Engineer, based on recommendations of an Interagency Review Team (IRT), will determine the number of credits available for each compensatory mitigation project (hereinafter, FIL project) based upon the approved design and the resulting habitats achieved, in accordance with the terms and conditions contained herein.

Though this Instrument focuses solely on Federal requirements, DSL intends that credits will be available for use as mitigation for impacts that are jointly regulated by the Corps and Oregon's Removal-Fill Law.

E. DISCLAIMER

This Instrument does not in any manner affect statutory authorities and responsibilities of the signatory parties.

F. EXHIBITS

Exhibit A—Prioritization and Compensation Planning Framework
Exhibit B—Instrument Modification Procedure
Exhibit C—Fee-In Lieu Financial Accounting Structure
Exhibit D—Mitigation Plans

II. Definitions*

***This Instrument uses Federal definitions. However, in cases where DSL has a differing term or definition, clarification has been added in brackets.**

1. BUFFER – An upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.
2. COMPENSATORY WETLAND MITIGATION –The restoration, establishment, enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization have been achieved.
3. COMPENSATORY MITIGATION PROJECT—Compensatory mitigation implemented by the permittee as a requirement of a DA permit (i.e. permittee-responsible mitigation), or by a mitigation bank or an in-lieu-fee program.
4. COMPLETE PROJECT COST- The cost of developing an ecologically viable mitigation project, including the costs of project planning and design; construction; plant materials; labor; riparian areas, buffers, and upland restoration activities if they are required for the functionality of the site and approved by the District Engineer; any additional means needed to ensure protection of the site from adverse future land uses, including acquisition of land, easements, or equivalent mechanisms; legal fees; monitoring; maintenance; remediation or adaptive management activities; funding for long-term management and stewardship; and administrative costs.
5. [CONVERTED WETLAND—A DSL term that means a) Wetlands that on or before June 30, 1989, have been diked, drained, dredged, filled, leveled or otherwise manipulated to impair or reduce the flow, circulation or reach of water for the purpose of enabling production of an agricultural commodity and are managed for that purpose; and b) includes land that the Natural Resources Conservation Service of the United States Department of Agriculture, or its successor agency, certifies as prior converted cropland or farmed wetland, so long as agricultural management of the land has not been abandoned for five or more years.]
6. [CREATION – A DSL term defined as converting an area that has never been a wetland to a jurisdictional wetland.]

7. CREDIT – A unit of measure (e.g., a functional or areal measure or other suitable metric) representing the accrual or attainment of aquatic functions at a compensatory mitigation site. The measure of aquatic functions is based on the resources restored, established, enhanced, or preserved.
8. [CROPPED WETLAND—A DSL term referring to a converted wetland that is regularly plowed, seeded and harvested in order to produce a crop for market. Pasture, including lands determined by the Natural Resources and Conservation Service to be “farmed wetland pasture,” is not cropped wetland.]
9. DA—Department of the Army.
10. DEBIT – A unit of measure (e.g., a functional or areal measure or other suitable metric) representing the loss of aquatic functions at an impact or project site. The measure of aquatic functions is based on the resource impacted by the authorized activity.
11. [DEGRADED WETLAND – A DSL term that refers to a wetland with diminished functions and services resulting from hydrologic manipulation (such as diking, draining and filling) that demonstrably interfere with the normal functioning of wetland processes.]
12. ENHANCEMENT – The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area. [DSL limits this definition to a human activity that increases the function of an existing degraded wetland by addressing past hydrologic manipulation.]
13. ESTABLISHMENT—The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions. [The DSL equivalent term is “Creation.”]
14. FUNCTIONAL CAPACITY—The degree to which an area of aquatic resource performs a specific function.
15. FUNCTIONS—The physical, chemical, and biological processes that occur in ecosystems.
16. [GRANTEE – The entity that receives a grant from DSL for the purposes of establishing and maintaining a Compensatory mitigation project.]

17. IMPACT—Adverse effect.
18. IN-LIEU FEE PROGRAM – A program involving restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements for DA permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor.
19. IN-LIEU FEE PROGRAM INSTRUMENT – The legal document for the establishment, operation, and use of an in-lieu fee program.
20. INTERAGENCY REVIEW TEAM (IRT) – An interagency group of federal, state, tribal, and/or local regulatory and resource agency representatives that reviews documentation for, and advises the District Engineer on, the establishment and management of a mitigation bank or an in-lieu fee program.
21. MITIGATION BANK—A site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by DA permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.
22. MITIGATION BANKING INSTRUMENT—The legal document for the establishment, operation, and use of a mitigation bank.
23. MITIGATION PLAN – The document that formally establishes a compensatory mitigation project and stipulates the terms and conditions of its construction, operation, and long-term management. Each mitigation plan will be bound by the terms and conditions of the Instrument by reference.
24. PERFORMANCE STANDARDS—Observable or measurable physical (including hydrological), chemical and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.
25. PRESERVATION – The removal of a threat to, or preventing the decline of, aquatic resources by action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

26. RE-ESTABLISHMENT—The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area, functions and services. [The DSL equivalent term is “Restoration”.]
27. REHABILITATION— The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area. [The DSL equivalent term is “Enhancement.”]
28. RELEASE OF CREDITS—A determination by the District Engineer, in consultation with the IRT, that credits associated with an approved mitigation plan are available for sale or transfer, or in the case of an in-lieu fee program, for fulfillment of advance credit sales.
29. RESTORATION— The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation. [The DSL equivalent terms are “Restoration” and “Enhancement”. Restoration for DSL means to re-establish wetland hydrology to a former wetland sufficient to support wetland characteristics.]
30. SERVICE AREA – The geographic area within which impacts can be mitigated at a specific mitigation bank or an in-lieu fee program, as designated in its instrument.
31. SERVICES—The benefits that human populations receive from functions that occur in ecosystems.
32. SPONSOR—Any public or private entity responsible for establishing, and in most circumstances, operating a mitigation bank or in-lieu fee program.
33. STANDARD PERMIT—A standard, individual permit issued under the authority of section 404 of the Clean Water Act and/or sections 9 or 10 of the Rivers and Harbors Act of 1899.
34. STEWARD – An entity such as a land trust or local government with the mission and capacity to provide ongoing management of a mitigation site as a natural area to sustain wetland functions and services in perpetuity.

35. **TEMPORAL LOSS**—The time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site. Higher compensation ratios may be required to compensate for temporal loss. When the compensatory mitigation project is initiated prior to, or concurrent with, the permitted impacts, the District Engineer may determine that compensation for temporal loss is not necessary, unless the resource has a long development time.
36. **[WATERS OF THE STATE**—All natural waterways, tidal and non-tidal bays, intermittent streams, constantly flowing streams, lakes, wetlands, that portion of the Pacific Ocean that is in the boundaries of this state, all other navigable and non-navigable bodies of water in this state and those portions of the ocean shore, as defined in ORS 390.605, where removal or fill activities are regulated under a state-assumed permit program as provided in 33 U.S.C. 1344(g) of the Federal Water Pollution Control Act, as amended.]
37. **WATERS OF THE UNITED STATES**—Waterbodies, including wetlands, over which there is Federal jurisdiction under the Clean Water Act and/or the Rivers and Harbors Act.
38. **WATERSHED APPROACH**—An analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs, and how locations and types of compensatory mitigation projects address those needs. A landscape perspective is used to identify the types and location of compensatory mitigation projects that will benefit the watershed and offset losses of aquatic resource conditions, past and projected aquatic resource impacts in the watershed, and terrestrial connections between aquatic resources when determining compensatory mitigation requirements for DA and DSL permits.
39. **WATERSHED PLAN**—A plan developed by federal, tribal, state, and/or local government agencies or appropriate non-governmental organizations, in consultation with relevant stakeholders, for the specific goal of aquatic resource restoration, enhancement, and preservation. A watershed plan addresses aquatic resource conditions in the watershed, multiple stakeholder interests, and land uses. Watershed plans may also identify priority sites for aquatic resource restoration and protection. Examples of watershed plans include special area management plans, advance identification programs, and wetland management plans.
40. **[WETLAND GRANT**—A grant awarded by DSL to a grantee to implement a Compensatory mitigation project.]

* Derived from 33 CFR 332 (Federal Register v73 19594-19705); Cowardin, L.M. et al. 1979; Oregon Revised Statutes ORS 196.600 et seq.

III. Regulatory Authorities

The establishment, use, operation, and maintenance of the FIL Program will be carried out in accordance with the following authorities:

A. FEDERAL AUTHORITIES

- Clean Water Act (33 USC 1251 et seq.)
- Rivers and Harbors Act of 1899 Section 9 and 10 (33 USC 403)
- Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-332)
- Endangered Species Act (16 USC 1531 et seq.)
- Fish and Wildlife Coordination Act (16 USC 661 et seq.)
- National Historic Preservation Act, Section 106

B. AUTHORITY OF THE ARMY CORPS OF ENGINEERS

The District Engineer or designee is the official chair for the IRT and will be responsible for establishing the IRT and managing the IRT process. The District Engineer will make the final decision regarding the amount and type of compensatory mitigation to be required of federal permittees, and determine whether and how use of credits from the FIL Program is appropriate to compensate for unavoidable impacts.

C. STATE AUTHORITIES

- ORS Chapter 196.600 – 196.990

D. AUTHORITY OF THE OREGON DEPARTMENT OF STATE LANDS

DSL serves as the administrative arm of the Oregon State Land Board (Governor, Secretary of State, State Treasurer). The agency ensures continued availability of state waterways for commerce, recreation, navigation and fisheries; protects, restores and enhances wetlands; supports the efforts of The Oregon Plan for Salmon and Watersheds and the Healthy Streams Partnership; and controls the regulation and enforcement of removal and fill operations within all waters of the state, including wetlands.

IV. Program Structure

A. STATEWIDE INSTRUMENT

Under this Instrument, DSL establishes itself as a statewide sponsor of federally approved in-lieu fee mitigation. This Instrument is intentionally broad and sets the framework under which DSL-sponsored FIL projects will be identified, funded, operated, maintained and managed. The Instrument provides the authorization for the FIL Program to provide credits to be used as compensatory mitigation for DA permits and activities. As projects are identified, DSL will submit site-specific mitigation plans to the District Engineer for review and approval as modifications to the Instrument through the process outlined in Exhibit B, and included in this Instrument as subparts of Exhibit D.

B. INTERAGENCY REVIEW TEAM

The District Engineer will establish an IRT for the FIL Program.

The FIL Program IRT will consist of:

- U.S. Army Corps of Engineers, Portland District (Chair)
- U.S. Environmental Protection Agency, Region 10
- U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office
- Oregon Department of Environmental Quality
- Oregon Department of Fish and Wildlife
- Oregon Department of Transportation

The IRT will review and provide comments on the Instrument and subsequent modifications. IRT members will also review and provide written comments on mitigation plans, annual monitoring reports and field inspections, credit release requests, and remediation plans. The IRT agencies may also be requested to provide expertise on other related matters, such as assessing the achievement of performance standards, reviewing long term management plans, and recommending corrective actions or adaptive management. Written comments will be submitted within the time limits established by 33 CFR 332.8. Comments received after such deadlines will only be considered at the discretion of the District Engineer to the extent that doing so does not jeopardize the deadlines for actions required of the District Engineer.

The IRT for individual FIL projects may be augmented, at the discretion of the District Engineer, with representatives from additional Tribal, Federal, State, or local agencies. Additional members of the IRT will be specified in each mitigation plan added to this Instrument under Exhibit D. In general, these IRT

members' roles will be limited to providing project-specific review and comments to the District Engineer.

The District Engineer serves as the Chair of the IRT, and alone retains final authority for approval of the Instrument and subsequent modifications. The District Engineer will give full consideration to any timely comments and advice of the IRT.

Any of the IRT members may terminate their participation upon written notification to the Corps. Any such termination will not invalidate this Instrument. Participation of the IRT agency seeking termination will end thirty (30) days after written notification.

C. *FIL PROGRAM ACCOUNT*

The Wetland Mitigation Bank Revolving Fund (WMBRF) is an Oregon statutory account that collects fees in lieu of mitigation (deposits) and expends the funds on wetland restoration (wetland grants). The WMBRF may not be used for purposes other than those outlined by statute (Exhibit C) and is maintained as a separate account from DSL's general operating budget.

Upon Corps approval of the FIL program, DSL will create a separate FIL Program Account within the WMBRF. The Program Account will collect deposits from the sale of credits, and will be used only for the selection, design, acquisition, implementation, monitoring, management and protection of FIL projects, and administrative costs for DSL. Administrative costs, not to exceed 15% of the Program Account, are allowed for DSL to manage the FIL Program.

All interest and earnings from the Program Account will remain in that account for the purpose of providing compensatory mitigation for impacts to Waters of the U.S. Initially, funds for the FIL Program wetland grants may be borrowed from existing WMBRF monies and repaid as credits are sold.

Complete budgets for FIL projects will be approved as part of mitigation plans. Annual accounting reports will be presented by December 1 for approval by the Corps. Reports will include detailed summaries of Program Account deposits and disbursements for each FIL project made over the previous State fiscal year (July 1 – June 30) (Section VIII). Any deviation in excess of ten percent from the approved budget will require Corps approval before additional funds are disbursed. The Corps may review Program Account records with 14 days written notice. When so requested, DSL shall provide all books, accounts, reports, files, and other records relating to the Program Account.

D. *FIL PROGRAM CLOSURE*

Upon 30 days written notice to the Corps, DSL may request closure of the FIL Program. In the event that the FIL Program is closed, DSL is responsible for fulfilling any remaining obligations for credits sold. Funds remaining in the FIL Program Account after these obligations are satisfied should continue to be used for wetland restoration, establishment, enhancement, and/or preservation of aquatic resources. Therefore, these funds will remain in the WMBRF for uses dictated in Oregon statute, as described in Exhibit C. Any changes to use of the WMBRF must be approved by the Oregon Legislature.

E. *FIL PROJECTS*

FIL projects will be funded through the Oregon WMBRF, and administered as wetland grants. Potential grantees will apply for funds to conduct a project; DSL will review the proposed project for consistency with the Instrument and submit a mitigation plan, including a project budget, to the Corps along with a written request for an Instrument modification (Exhibit B). DSL will manage the grant through advancements and reimbursements for pre-authorized eligible expenses and report annually to the Corps and IRT (Section VIII).

V. *FIL Project Establishment and Operation*

A. *ESTABLISHMENT*

Project Site Selection

DSL staff will seek FIL projects based on the prioritization and compensation-planning framework outlined in Exhibit A. Sites that meet the criteria for selection (Exhibit A) will be recommended for approval to the IRT and Corps through the Instrument modification process outlined in Exhibit B. DSL will, in most instances, ask for preliminary review of a project prospectus in order to identify and address potential issues early.

Instrument Modifications

As FIL projects are identified, DSL will submit a written request to the Corps to modify the Instrument. This process is outlined in Exhibit B.

Permits

Grantees will obtain all appropriate permits and authorizations needed to construct and maintain FIL projects. This Instrument, mitigation plans, or wetland grant contracts between DSL and grantees do not substitute for such authorization. DA authorizations issued to grantees for construction of FIL projects will not include special conditions specific to the achievement of performance standards outlined in FIL Project mitigation plans.

Financial Assurances

Notwithstanding any other provision of this Instrument, DSL's financial obligation for the FIL Program will be limited to funds in the FIL Program Account. DSL will take the following actions to ensure funds are available to meet mitigation requirements for credits sold:

- 1) Funds outlined in approved project budgets will be earmarked, held in the WMBRF, and paid to grantees as 120-day advances and reimbursements as work is accomplished. An exception is the long-term funding mechanism, which may be paid to the grantee or to an approved third-party steward as a lump sum.
- 2) A contingency fund will be established within the Program Account. At any point in time, the balance of this fund will be equal to 30% of the statewide average cost for in-lieu fee mitigation multiplied by the number of credits sold from FIL projects in their monitoring phase.

B. OPERATION

Service Areas

Service areas shall be sized appropriately to ensure that the aquatic resources provided by the FIL project will effectively compensate for expected adverse impacts. In general, DSL proposes that service areas be the fourth field hydrologic unit code (HUC) watersheds west of the Cascade Mountains where compensatory mitigation needs are historically higher and more concentrated, and as sub-basins (as identified by the Oregon Water Resources Department) east of the Cascades where needs are historically fewer and more diffuse.

Proposed service areas for individual FIL projects will be identified in mitigation plans. Considerations will include the extent of ecologically similar areas, the expected amount and type of mitigation required in an area (demand) compared

with the aquatic resources and amount of credits that are expected from a FIL project, the availability of private mitigation banks in the area, population and growth information, ongoing watershed management programs, and the watershed's compensation planning framework. Final service area determinations will be made by the Corps in consultation with the IRT.

Mitigation Plans

Mitigation plans for each FIL project will outline measurable objectives, performance standards, and monitoring requirements (Exhibit B). Pre- and post-project implementation wetland delineations and functional assessments will be completed using Corps-approved techniques. Mitigation plans must include a map that defines the complete project area.

C. MONITORING

DSL will monitor the complete project area regardless of the percent of funding DSL provides, unless otherwise specified in the mitigation plan. The frequency and duration of monitoring, and specific reporting requirements will also be defined in each mitigation plan. In general, DSL will provide annual monitoring reports for each project to the Corps and IRT by December 1 of each year until 5 years after the last credit is released. Each report will be submitted in paper and electronic format, and shall contain the following:

1. Plans, maps, and/or photographs to illustrate site conditions;
2. A narrative summarizing the condition of individual FIL projects;
3. Monitoring results with comparison to performance standards, and;
4. Recommendations for adaptive management at the site.

The monitoring duration may be extended at the Corps' discretion if performance standards have not been met, or if the FIL project involves aquatic resources with slow development rates, such as forested or vernal pool wetlands. The District Engineer may also reduce or waive monitoring requirements upon determination that performance standards have been met, however, projects must be monitored for a minimum of 5 years.

DSL shall provide for access to the project site by members of the IRT or their agents or designees at reasonable times as necessary to conduct inspections and compliance monitoring with respect to the requirements of this Instrument. Inspecting parties shall not unreasonably disrupt or disturb activities on the property, and will provide written notice within reasonable time prior to the inspection.

D. **MANAGEMENT**

Maintenance Provisions

FIL projects will be designed, to the maximum extent practicable, to be self-sustaining once performance standards have been achieved. DSL shall be responsible for maintaining FIL projects, consistent with the appropriate mitigation plan, to ensure their long-term viability as functional aquatic resources. DSL shall retain such responsibility unless and until the long-term project responsibility is formally transferred to an approved long-term steward. The long-term management plan to be developed for each FIL project will include a description of anticipated management needs with annual cost estimates and an identified funding mechanism (such as non-wasting endowments, trusts, contractual arrangements with future responsible parties, or other appropriate financial instruments).

Contingency Plans/Remedial Actions

If monitoring or other information indicates that a FIL project is not progressing toward meeting its performance standards in a timely manner, DSL shall notify the District Engineer as soon as possible. Likewise, if the District Engineer and IRT determine that terms of the FIL Program Instrument or mitigation plans have not been met, the District Engineer may report, in writing, any findings and recommend corrective measures if needed.

In such instances, the District Engineer, in consultation with DSL and IRT, will determine the appropriate measures DSL should take to meet the objectives of the mitigation plan. Measures may include, but are not limited to, site modifications, design changes, revisions to maintenance requirements, and/or revised monitoring requirements. DSL shall use the contingency fund as necessary to implement adaptive management plans as outlined in mitigation plans, or developed in coordination with the IRT. Performance standards may be revised, upon mutual agreement, to reflect the measures taken, or to reflect changes in management strategies and objectives. If the new standards do not provide ecological benefits that are comparable to the approved FIL project, the Corps may reduce the number of credits available from the project or request DSL provide a commensurate amount of additional mitigation.

The District Engineer may require DSL to disburse funds from the FIL Program Account to alternate FIL projects in cases where there is a compensatory mitigation deficit by the third growing season after any advance credit in the service area is sold, and the District Engineer determines that additional time to plan and implement an in-lieu fee project is not in the public interest.

Default

Should the District Engineer determine that DSL is in material default of any provision of this Instrument or an approved mitigation plan, the District Engineer may take appropriate action. Such actions may include, but are not limited to, suspending credit sales, adaptive management, decreasing available credits, directing funds to alternate locations, taking enforcement actions, or terminating the Instrument.

FIL Project Closure

At the end of the monitoring period and approval of the long-term stewardship contract, or upon sale of the last credit, whichever is later, the Corps shall issue a written "project closure certification" to DSL.

DSL may request that part of or an entire FIL project be closed early, and that the associated credits anticipated be forfeited, if it is determined that the performance standards are unattainable or it is otherwise in DSL's interest. The Corps shall decide whether to grant such requests. In the case that credits were debited or transferred prior to the early closure, DSL shall be responsible for fulfilling all related obligations consistent with this Instrument.

Long-Term Ownership and Protection

DSL shall be responsible for ensuring long-term protection of each FIL project. On publicly owned property, long term protection may be provided through facility management plans or integrated natural resource plans. On privately held property, including property held by conservation organizations, real estate instruments shall be recorded. DSL will ensure that such protection mechanisms are in place prior to site closure or final credit release, as stipulated in each mitigation plan. The draft conservation easement or equivalent protection mechanism shall be submitted to the IRT for review.

Where permanent legal property protection instruments are appropriate, conservation easements will be held by entities such as Federal, Tribal, other State or local resource agencies, or non-profit conservation organizations. The protection mechanism shall assign long-term stewardship roles and responsibility for the project and will, to the extent practicable, prohibit incompatible uses that might otherwise jeopardize the objectives of the FIL project. Copies of such recorded instruments shall be sent to the Corps and become part of the official project record. Each protection instrument shall contain a provision requiring notification to DSL and the District Engineer if any action is taken to void or modify it.

VI. Credit Accounting

A. GENERATION OF CREDITS

DSL may use any funds within the WMBRF to establish FIL projects. When using funds from the State's payment in-lieu (formerly payment to provide) program, defined as non-federal deposits made prior to Corps approval of this Instrument, these funds will be reimbursed to the payment in-lieu account, and the debit reflected in the FIL Program Account.

DSL may only generate credits from a FIL project when there is a net benefit to aquatic resources at the site as determined by the difference between pre- and post- site conditions, and the benefit is in excess of any existing State mitigation obligation in the project's Oregon Water Resources Department sub-basin.

Credit generation may be based on the standard mitigation ratios established in DSL rules, or based on a functional assessment and evaluation methodology approved by the Corps. The standard mitigation ratios are currently:

- a) Restoration: One (1) acre of restored wetland for one (1) acre credit.
- b) Creation: One and one-half (1.5) acres of created wetland for one (1) acre of credit.
- c) Enhancement: Three (3) acres of enhanced wetland for one (1) acre of credit.
- d) Enhancement of cropped wetland: Two (2) acres of enhanced cropped wetland for one (1) acre of effected wetland.

Preservation of existing wetlands that support a significant population of rare plant or animal species, or that are a rare wetland type (S1 or S2 according to the Oregon Natural Heritage Program) may be proposed to generate credits. Credits may also be proposed for preservation or improvements of riparian areas, buffers and uplands if the resources in these areas are essential to maintain the ecological viability of a water of the U.S. Credits generated for preservation and buffers will be determined on a case-by-case basis through negotiation between DSL and the Corps in consultation with the IRT.

FIL projects that are eligible for collaborative funding from multiple sources are encouraged under the FIL Program. Credits will be based solely on aquatic resource functions provided as a result of the mitigation plan, over and above those provided by funding programs identified as Public Resource Protection and Restoration Programs, in accordance with Oregon Interagency Recommendations (2008). The Corps, in consultation with the IRT, will determine the amount of mitigation credit available to DSL for collaboratively funded projects, based on the proportion of FIL Program Account disbursements relative to the complete project cost. Credit apportionment may be modified by Oregon Department of State Lands

the Corps and IRT if, after a collaboratively-funded project is completed, an audit indicates that DSL's actual financial contribution was substantially more or less than anticipated.

B. CREDIT RELEASE

Credits may not be sold prior to approval of the FIL Project mitigation plan. Each mitigation plan will include a credit release schedule referenced to performance standards.

In general, credits will become available according to the following schedule:

- Up to 15% of credits may be available as an advance upon approval of a mitigation plan.
- At least 55% of credits will be released incrementally upon approval of the as-built report and achievement of performance standards, as approved in mitigation plans.
- 30% will be released upon Corps and IRT approval of a stewardship contract between DSL and a third-party entity, which includes a long-term management plan with a protection and funding mechanism.

The actual number of credits available at any given point in the development of a FIL project will be determined through annual site monitoring and reports.

Additional credits may be available as a result of increased wetland functions and services that accrue over time. Additional credits are contingent on achievement of the performance standards over time and are at the discretion of the Corps.

C. COST OF CREDITS

The cost of each credit will be determined by DSL annually as the average cost of credits available from all active mitigation banks in the state, per Oregon statute, ORS 196.643.

D. SALE OF CREDITS

All activities regulated under Section 10 of the Rivers and Harbors Act, Section 404 of the Clean Water Act, Oregon's Removal-Fill Law [Oregon Revised Statutes (ORS) 196.800-196.990] and other activities as the Corps or DSL may authorize consistent with this Instrument may be eligible to use the FIL Program as compensatory mitigation for unavoidable impacts. Credits purchased may only be used in conjunction with a Corps and/or DSL permit authorization, resolution of an unauthorized activity, or in conjunction with other actions as the

Corps or DSL may authorize. The Corps and DSL, to the extent practicable, will work to ensure that mitigation requirements for an impact regulated by both agencies are consistent. Credits may be sold to fulfill State requirements even when no Corps authorization is required. Deposits for such credits shall be placed in the FIL Program Account.

The District Engineer will make decisions about the most appropriate compensatory mitigation on a case-by-case basis, during evaluation of a DA permit application. This instrument does not guarantee that the Corps will accept the use of FIL program credits for a specific project, and authority for approving use of the FIL program for compensatory mitigation lies with the District Engineer.

The responsibility to provide compensatory mitigation remains with the permittee unless and until credits are purchased from the FIL Program. Upon Corps approval of purchase of credits from the FIL Program, the permittee may contact DSL to secure the necessary amount and resource type of credits, as outlined in DA permit conditions. Each Section 404 authorization that includes a special condition requiring purchase of credits from the FIL program will include a requirement that DSL certify the transfer of responsibility via written communication to the permittee and the Corps. Certifications will outline the Corps permit number and state the number and resource type of credits that have been sold to the permittee (Exhibit E). A copy of each certificate will be retained in the administrative and accounting records for the FIL Program Instrument. Debits will be reflected in annual accounting reports as outlined in Section VIII.

DSL is responsible for fulfilling mitigation requirements for authorized activities that utilize the FIL Program. This responsibility will remain with DSL for individual authorizations until the project from which credits were purchased is closed (Section V-D).

VII. Program Reporting

DSL shall submit an annual report by December 1 to the District Engineer and IRT containing the following:

FIL Program Report

The report shall describe all income, disbursements, and interest earned with respect to the FIL Program Account for the state's previous fiscal year (July 1 to June 30).

FIL Project Reports

The report shall contain the following information for each FIL project that has not been approved for closure:

- a. A report that includes the Corps, DSL, or other agency permit number, the amount of authorized impacts, the amount of required compensatory mitigation, the amount paid to the FIL Program, and the date the funds were received from the permittee;
- b. An accounting of expenditures for the FIL project;
- c. The balance of advance credits and released credits at the end of the report period for each resource type, and any changes in credit availability (including additional credits released).
- d. The annual monitoring report (if the monitoring period has not ended).
- e. A description of any remedial action items implemented during the prior year.
- f. An explanation if performance standards are not being met and any adaptive management strategies undertaken in the last year, or planned for the upcoming year.

VIII. Other Provisions

- A. Force Majeure: DSL or a grantee will not be responsible for FIL project failure that is attributed to natural catastrophes such as flood, drought, disease, or regional pest infestation, that the IRT Chair, determines is beyond the reasonable control of DSL or a grantee to prevent or mitigate.
- B. Dispute Resolution: Resolution of disputes concerning the signatories' compliance with this Instrument shall be in accordance with those stated in 33 CFR 332.8. Disputes related to satisfaction of performance standards may be referred to independent review from government agencies or academia that are not part of the IRT. The IRT will evaluate any such input and determine whether the performance standards have been met.
- C. Validity of the Instrument: This Instrument will become valid on the latter date of the signature of Director of DSL and the Corps District Engineer. This Instrument may only be amended or modified with the written approval of the Director of DSL and the District Engineer.
- D. Notice: Any notice required or permitted hereunder shall be deemed to have been given either (i) when delivered by hand, or (ii) three (3) days following the date deposited in the United States mail, postage prepaid, by

registered or certified mail, return receipt requested, or (iii) sent by Federal Express or similar next day nationwide delivery system, addressed as follows (or addressed in such other manner as the party being notified shall have requested by written notice to the other party):

U.S. Army Corps of Engineers
CENWP-OD-G Policy Specialist
P.O. Box 2946
Portland Oregon 97208-2946

Oregon Department of State Lands
WWC Wetland Mitigation Specialist
775 Summer Street NE, Suite 100
Salem, Oregon 97301-1279

- E. Invalid Provisions: In the event any one or more of the provisions contained in this Instrument are held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provisions hereof, and this Instrument shall be construed as if such invalid, illegal or unenforceable provision had not been contained herein.
- F. Headings and Captions: Any paragraph heading or captions contained in this Instrument shall be for convenience of reference only and shall not affect the construction or interpretation of any provisions of this Instrument.
- G. Binding: This Instrument shall be immediately, automatically, and irrevocably binding upon DSL and its successors, assigns and legal representatives upon signing by DSL and the Corps even though it may not, at that time or in the future, be executed by the other potential parties to this Instrument, such as the various IRT agencies.
- H. Liability of Regulatory Agencies: The Corps and DSL administer their regulatory programs to best protect and serve the public's interest in its wetlands and waterways, and not to guarantee the availability of credits to any entity, or ensure the financial success of mitigation banks, specific individuals, or entities. The public should not construe this Instrument as a guarantee in any way that Corps or DSL will ensure sale of credits from the FIL Program, or that the regulatory agencies will forgo other mitigation options that may also serve the public interest.
- I. Right to Refuse Service: Corps approval of purchase of credits from the FIL program does not signify DSL's acceptance or confirmation of DSL's offer to sell. DSL reserves the right to refuse to sell credits from the FIL program for any reason.

- J. Notification of Modification: If any action is taken to void or modify a FIL Project real estate instrument, management plan, or other long-term protection mechanism, DSL must notify the Corps in writing.

IX. Modifications

This Instrument may not be modified except by written agreement between DSL and the Corps. Instrument modifications, including the addition or expansion of FIL projects and expansion of the FIL program to include compensatory mitigation for non-wetland waters, will follow the process outlined in Exhibit B. The District Engineer may use a streamlined modification review process for changes reflecting adaptive management of the FIL program, credit releases, changes in credit releases and credit release schedules, and changes that the District Engineer determines are not significant (Exhibit B).

X. References

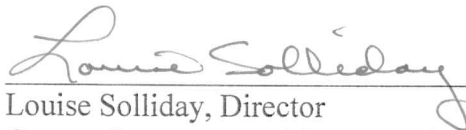
33 CFR 332. Compensatory Mitigation for Losses of Aquatic Resources (FR V. 73 No. 70, April 10, 2008). Department of Defense, Department of the Army, Corps of Engineers. 33 CFR Parts 325 and 332.

Cowardin, L.M. et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U. S. Fish and Wildlife Service, Office of Biological Services. Washington, D.C. FWS/OBS-79/31. 131 pp.

Oregon Interagency Recommendations (January 4, 2008). Public funds to restore, enhance, and protect wetland and at-risk, threatened and endangered species habitats: Appropriate uses of these funds in species and wetland mitigation projects. U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, Oregon Department of State Lands, Oregon Watershed Enhancement Board, Oregon Department of Fish and Wildlife.

Oregon Revised Statutes ORS 196.600 et seq., Oregon Administrative Rules 141-085.

IN WITNESS WHEREOF, the parties hereto have executed this fee-in-lieu Instrument on the date herein below last written by the IRT Chair



Louise Solliday, Director
Oregon Department of State Lands

2/4/09
Date

INTERAGENCY REVIEW TEAM

By the IRT Chair:



Steven R. Miles, P.E.
Colonel, Corps of Engineers
District Commander

20 Feb 09.
Date

By the IRT members of the FIL Program:

Paul Henson
State Supervisor
Oregon Fish and Wildlife Office
U.S. Fish and Wildlife Service

Date

By the IRT members of the FIL Program:

Environmental Protection Agency
Richard Parkin
Director
Office of Ecosystem, Tribal and Public Affairs

Date

By the IRT members of the FIL Program:

Oregon Department of Environmental Quality

Date

By the IRT members of the FIL Program:

Oregon Department of Fish and Wildlife
Roy Elicker
Director

Date

By the IRT members of the FIL Program:

Date

Oregon Department of Transportation

Oregon Department of State Lands Fee In Lieu Program Instrument

XI. EXHIBIT A: Prioritization and Compensation Planning Framework

DSL will use a watershed approach for establishing FIL projects in the state. This approach considers watershed needs, and how locations and types of mitigation projects address those needs. A landscape perspective is used to identify the types and locations of FIL projects that will benefit the watershed and offset losses of aquatic resource functions and services caused by activities authorized by DA and DSL permits. This compensatory planning framework considers landscape scale, historic and potential aquatic resource conditions, past and projected aquatic resource impacts in the watershed, and terrestrial connections between aquatic resources and key habitats.

A. Statewide Priorities

Over time, DSL hopes to have FIL projects around Oregon that will provide appropriate compensatory mitigation for impacts to waters of the U.S. and waters of the state. Priority watersheds of the state are determined by the following:

- Past mitigation needs in the watershed based on historical permitted impacts;
- Future need for mitigation in the watershed based on projected growth and development trends;
- Lack of private mitigation banks to meet the demand for credits in the service area; and
- Availability of funds in the third-field hydrologic unit watersheds of the state.

Evaluation areas are fourth-field sub-basins (HUC4) west of the Cascade Mountains and as third-field basins (HUC3) east of the Cascades. Fund availability was evaluated by HUC3 because the Wetland Mitigation Bank Revolving Fund (WMBRF) is documented at this scale.

Based on an evaluation of current information, DSL has established initial priority watersheds in the state (Table 1, Figure 1). Additional watersheds may be added as information changes or becomes available. Service areas may or may not follow HUC3 or HUC4 boundaries. The service area for each FIL project will be described in its mitigation plan and will be based on criteria outlined in the Instrument.

Table 1. Priority watersheds in the state by HUC3 and HUC4.

Basin 1 – North Coast

Lower Columbia
Necanicum
Wilson-Trask-Nestucca

Basin 2B—Mid-Willamette

Molalla-Pudding

Basin 2C—Lower Willamette

Clackamas
Lower Willamette
Tualatin

Basin 5--Deschutes

Basin 15—Rogue

Middle Rogue

Basin 16—Umpqua

South Umpqua

Basin 17—South Coast

Coos

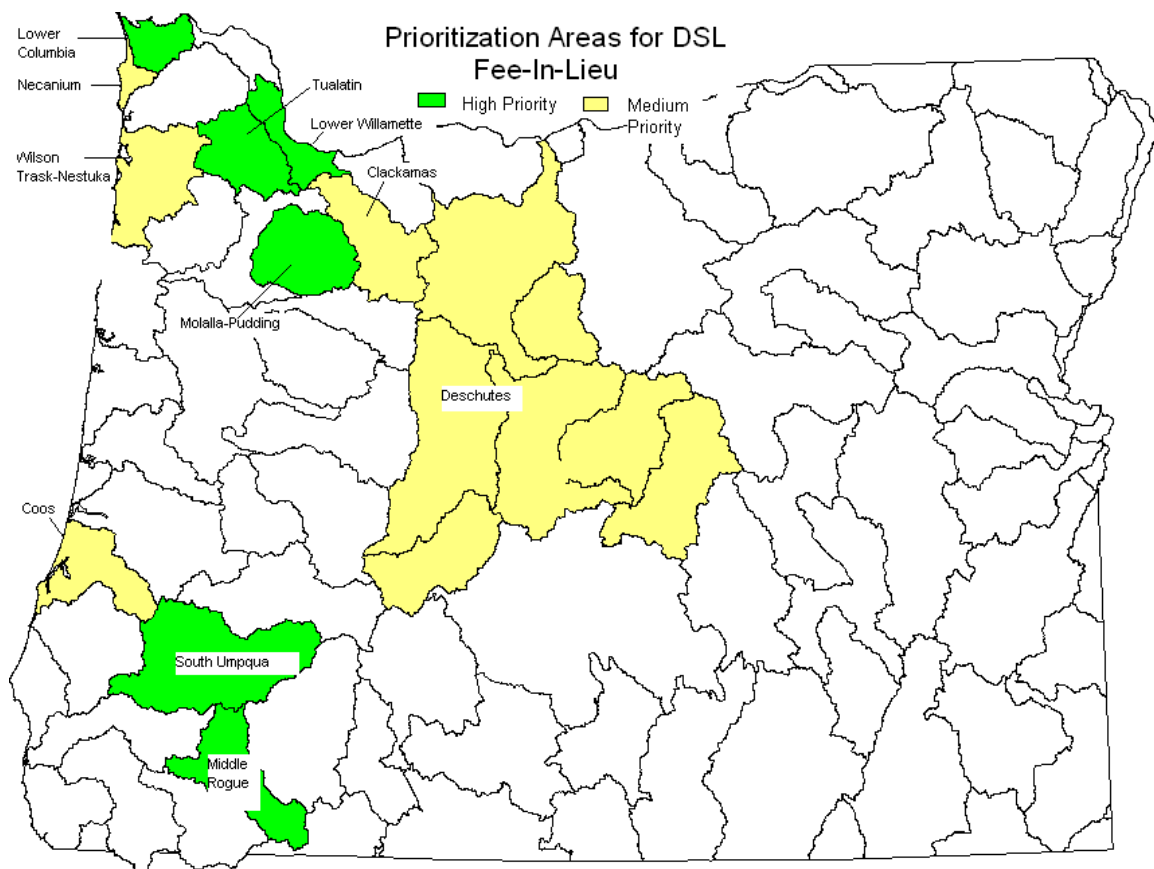


Figure 1. Priority watersheds for the establishment of FIL projects.

B. Criteria for Selection of FIL Projects

Each potential FIL project will be evaluated for its ability to provide appropriate compensatory mitigation for impacts to the waters of the U.S. based on the following criteria:

- **Likelihood of success:** Funded projects must demonstrate a high likelihood of success through a sound wetland restoration, creation and/or enhancement concept. The water source for the site should be reliable. Threats from invasive species or vandalism should be low or manageable. The project will be evaluated for its ability to result in successful and sustainable net gain of wetland acreage and/or function, with limited maintenance. Restoration projects will receive priority due to the higher lift in function that can be achieved, and the higher success rate of these types of projects.
- **Multiple objectives:** The project will be evaluated for its ability to address multiple functions and services such as improvement of fish and wildlife habitat, support for rare species, flood attenuation, water quality improvement, and recreation or education values. The project should target native plant community diversity and natural processes. Greater functional gains will be given more preference.
- **Supports regional conservation initiatives and is compatible with the surrounding landscape:** Projects should be located where they pose minimal conflicts with adjacent land uses and where they meet regional conservation priorities, address limiting factors identified in watershed assessments, provide habitat corridors, and/or add to the effectiveness of nearby protected natural areas.
- **Capacity of the applicant and the project team:** The applicant must demonstrate that they have sufficient capacity and expertise to manage the project. The project team must have the necessary expertise and capacity to carry out pre-implementation planning, restoration construction, follow-up monitoring and remediation of project problems.
- **Fund leveraging and project costs:** Collaborative funding from multiple sources is encouraged, but not necessary. The project budget should identify all sources of funding and in-kind services, and itemized list of components to be funded including planning, implementation, monitoring and accounting. Projects with a high wetland functional gain per dollar will be given preference.
- **Long-term management:** Suitable projects must have a plan for long-term management and stewardship. Long-term stewardship could be provided by a non-profit conservation organization, local government or other interested constituency.

C. Priority Watershed Profiles

The capacity of a project to address appropriate functions and services will be evaluated based on the historic, existing and future aquatic resource conditions for each priority watershed. This information was compiled at the basin scale from the Oregon Watershed Enhancement Board's Acquisition Priorities, Oregon Department of Fish and Wildlife summer water flow restoration priority maps, and ODFW's Oregon Conservation Strategy. Within selected basins, watershed information was compiled from watershed assessments and action plans, restoration prioritization summaries prepared for OWEB, DSL's internal database, and other sources as documented. Maps are credited to the USDA-NRCS 8-digit Hydrologic Unit Profiles.

North Coast Basin

(Oregon Watershed Enhancement Board, North Coast Basin Priorities, 2004)

Rocky coastal headlands; tidal rivers, estuaries and floodplains; relatively flat stretches of coastal plains and the steep-sloped ridges and hills of the Coast Range characterize the North Coast Basin. The vegetation in this heavily forested region is dominated by Sitka spruce, western hemlock, and Douglas fir, with stands of alder in disturbed areas. The major land use is commercial timber production, with agriculture confined largely to coastal lowlands and river valleys. Roughly half of the basin is in public ownership.

Eight unobstructed tributaries to the Pacific Ocean drain the North Coast Basin, including some of the most diverse and healthiest aquatic systems in the state. The basin is a stronghold for coho, chum, and chinook salmon, cutthroat trout, and steelhead.

Major wetland conservation issues in the North Coast Basin include conversion and fragmentation of tidal and floodplain wetlands, and loss and degradation of sand dune systems and riparian areas.

FIL Priority Watersheds within the North Coast Basin are the Lower Columbia, Necanicum, and Wilson Trask-Nestuka watersheds.

Priority Wetland Ecological Systems

Eelgrass beds
Floodplain/outwash lowland riparian, linear, wetlands
Freshwater marsh and aquatic beds
Intertidal mudflats
Intertidal salt marsh
Lowland depressional shrub wetlands and wet prairies
Lowland non-linear forested wetlands

Lowland riparian woodland and shrubland
Mesic herbaceous wetlands
Montane non-linear forested depressional wetlands
Mudflats
Tidally influenced freshwater wetlands
Western Oregon upland prairie and oak savanna

Lower Columbia (FIL High Priority Watershed)

(Oregon Watershed Enhancement Board, Lower Columbia Basin Priorities, 2004;
North Coast Watershed Association)

The Lower Columbia (HUC 17080006) is a relatively small basin (207,000 acres) draining the westernmost floodplains and tidal reaches of the Columbia River. The tidal wetlands serve as the gateway between the entire Columbia system and the Pacific and are extremely important for anadromous fish, especially young out-migrating salmon seeking food and cover prior to entering the ocean. Land use is 75% public forestland, and 3% pastureland used for beef and dairy operations.



The Oregon Conservation Strategy identifies the Columbia-Clatskanie area (CR-02) as a conservation opportunity area. The area encompasses the Julia B. Hanson Refuge for the Columbian white-tailed deer, and migrating and wintering waterfowl heavily use the area. A recommended conservation action is to restore floodplain wetlands, tidal wetlands, and bottomland forests. The Oregon Biodiversity Project identified Columbia River bottomlands as a conservation opportunity area, noting that since there is already significant public ownership in these areas, it is possible to restore and manage critical wetlands on a larger scale than in other parts of the state. The Lower Columbia River Estuary Management Plan seeks to restore 3,000 acres of tidal wetlands along the lower 46 miles of the river in order to return tidal wetlands to 50% of their 1948 level.

Nearly two-thirds of the shallow marshes and side channels along the lower Columbia have been converted to other uses, primarily farm and pastureland but also, more recently, hybrid cottonwood plantations. Restoring tidal wetlands is considered critical to ecosystem health on the lower Columbia.

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|-----------------------|------------------|----------------|------------------|
| DEP | 40% | PEM | 51% |
| Unknown | 22% | PFO | 21% |
| Slope/Flat | 20% | PSS | 11% |
| Riverine Flow Through | 11% | | |

Priority Wetland Ecological Systems

Depressional wetland shrublands
Freshwater aquatic beds
Freshwater emergent marsh
Freshwater mudflats
Intertidal freshwater wetlands
Intertidal mudflat
Subalpine or montane wet meadow
Tidal salt marsh
Western Oregon wet prairie

Skipanon

(E&S Environmental Chemistry, Inc. and Skipanon Watershed Council. 2000)

The Skipanon Creek watershed is 28 square miles and enters the Columbia River at river mile 10.7. The watershed is a mix of rural residential, pasture/agriculture and forestlands. Protected areas include the Fort Stevens State Park and a portion of the Lewis and Clark National Historic Park. The Skipanon River is generally groundwater-driven and is within the Clatsop Plains groundwater management area.

While wetland and grassland features dominate current land cover in the urban growth boundary, historic and continued development on the floodplain and filling/modification of wetlands are of concern. Of particular interest are loss of fish and wildlife habitat, water quality, hydrologic effects (decreased flood water storage and groundwater recharge), and aesthetic quality functions. Many wetlands are diked and disconnected from the stream.

Current limiting factors are flow modifications, temperature, nutrients and aquatic weeds (lakes). Low summer flows are a concern that is growing as the area becomes more populated. The City of Warrenton's water system master plan suggests alternatives to using all of its water right out of the Lewis and Clark River in the Young's Bay Watershed, including adding more water storage in the watershed.

FIL projects in this watershed should focus on restoration of historic estuarine wetlands, as well as protection and restoration of streamside wetlands in order to maintain water storage and delay, nitrogen and phosphorus removal, thermoregulation, and anadromous fish habitat support.

Young's Bay

(E&S Environmental Chemistry, Inc. and Young's Bay Watershed Council, 2000)

The Young's Bay watershed is located near the mouth of the Columbia River. The dominant land use in the watershed is commercial forestry. The three dominant stream systems are the Lewis and Clark River, Young's River and the Wallooskee River. The lower reaches of the Lewis and Clark River and Young's River are part of the nationally significant Columbia River Estuary. Past research shows that the Young's Bay Estuary is one of the Lower Columbia's most biodiverse areas. Another key area is the Fort Clatsop National Memorial.

Wetlands represent about 1% of the watershed and are dominated by palustrine wetlands. These mostly occur in the floodplains of the three major rivers, but higher elevation forested and emergent wetlands also exist, and palustrine scrub-shrub wetlands are scattered throughout the watershed. Wetlands have been diked and disconnected from streams in the lower elevations, and many tidal estuarine wetlands have lost their tidal connection. Almost the entire west bank of the Young's River arm of Young's Bay has been diked, as well as much of the tidal portions of the Lewis and Clark River and Wallooskee River. Development is concentrated in the 4 square mile urban growth boundaries of the cities of Astoria and Warrenton. This area is in the lower watershed and has 15% of the area occupied by wetlands (based on National Wetland Inventory maps).

Current water quality limitations include nutrients and bacteria in the major streams, and possibly temperature in the lower reaches of the streams near the mouth. Current and future draws from the river are of concern to the local watershed council. The City of Warrenton in the Skipanon watershed is one of the fastest growing communities in Oregon and has its municipal water rights out of the Lewis and Clark River. Future dewatering on the Young's River above the Klaskanine River due to an undeveloped water right owned by the City of Astoria, and on Lewis and Clark River above Heckard Creek due to the water withdrawal by the City of Warrenton, are future concerns.

FIL projects in this watershed should focus on restoration of estuarine wetlands for anadromous fish habitat; and streamside wetlands to provide water storage and delay, thermoregulation, and anadromous fish habitat support functions.

Nicolai-Wickiup Watershed

(E&S Environmental and the Nicolai-Wickiup Watershed Council, 2000)

The Nicolai-Wickiup watershed is 114 square miles and includes Bear Creek, Big Creek, and Gnat Creek, as well as smaller creeks, which all flow into the Columbia River Estuary. The watershed with the upper watershed is primarily managed as private industrial forests, and the lowlands are mostly devoted to raising cattle. The City of Astoria owns the majority of the Bear Creek subwatershed and Bear Creek is the primary source of municipal water.

Wetlands cover approximately 2% of the watershed and are predominantly palustrine, with emergent wetlands in the lower elevations and some forested and emergent wetlands in higher elevations. Draining and diking, including extensive diking near the mouths of the Blind Slough, Warren Slough and Fertile Valley Creek subwatersheds, have disconnected the floodplain and palustrine wetlands and removed tidal influence.

Modified hydrology has contributed to stream bank erosion, particularly in the Blind Slough subwatershed. Limited data suggests relatively good water quality in the watershed.

FIL projects in this watershed should focus on restoration of estuarine wetlands and streamside wetlands for anadromous fish habitat; and water storage and delay.

Necanicum (FIL Medium Priority Watershed)

(E&S Environmental and the Necanicum Watershed Council, 2000)

The Necanicum watershed is 87,000-acres and includes the Neawanna, Neacoxie, and Necanicum Rivers, which join together to form the Necanicum Estuary shortly before reaching the ocean in the Seaside-Gearhart area. Ninety four percent of the land use is forestry, of which 88% is privately owned. The 451-acre estuary is designated as an Important Bird Area by the National Audubon Society, and as a Conservation estuary under the Oregon Estuary Classification system. It is also part of the Clatsop Plains-Necanicum River portfolio site in The Nature Conservancy's Pacific Northwest Ecoregional Assessment. Key species identified in the Oregon Conservation



Strategy for the estuary are shorebirds, waterfowl, chum salmon, coho salmon, and winter steelhead.

The Oregon Conservation Strategy identifies the following conservation opportunity areas:

- Clatsop Plains (CR-01) contains Gearhart Fen, the largest contiguous wetland of its kind remaining on the Oregon coast, and the Clatsop beaches that provide a concentration point for shorebirds (mostly sanderlings) and gulls. Key habitats are coastal dunes and freshwater wetlands.
- Necanicum Estuary (CR-04) is designated as a Conservation estuary. The City of Seaside and the North Coast Land Conservancy have acquired a network of tidal wetlands along Neawanna Creek estuary that are designated as a natural history park. In 2004 the NCLC purchased the 365-acre Circle Creek Preserve along the Necanicum River that includes one of the largest blocks of spruce swamp on the Oregon coast. Key habitats are estuary and riparian areas.
- Tillamook Head (CR-05) contains Ecola State Park. Coastal dunes and late successional conifer forests are key habitats.

Wetlands, marshes and braided channels have been straightened, channelized, drained and deforested for croplands and urban areas. The lower estuary is one of the most urban of Oregon's estuaries with many stormpipes entering it. However, water quality ranges from good to excellent at the DEQ ambient site at Seaside. Monitoring data collected elsewhere in the watershed suggest that temperature, nitrogen, total phosphorus and bacteria may be moderately impaired.

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|-----------------------|------------------|----------------|------------------|
| Lacustrine Fringe | 31% | L1OW | 44% |
| Slope/Flat | 28% | PFO | 25% |
| Depressional | 13% | PSS | 13% |
| Riverine Flow Through | 11% | PEM | 11% |
| Slope | 10% | | |

Coastal coho, a threatened species, use nearly the entire Necanicum River watershed as habitat. Pertinent factors implicated in Coho population decline in the watershed are rearing and spawning habitat degradation, reduction in summer streamflow, loss of complex instream structure, loss of winter side channels and sloughs, and loss of riparian vegetation and shade. Timber harvest has contributed to winter habitat loss and lack of large wood, siltation from roads, road-failures, loss of ground cover, and reduction of water filtering and shade due to removal of riparian vegetation. In the lowlands, agriculture and

urbanization have degraded coho rearing habitat through diversion of water, channelizing streams, channelizing off-channel and estuary areas, and releasing effluents that elevate temperatures and reduce water quality.

Threats to the watershed include continued growth and demands on water supply, increased nutrient inputs, and potential harvest of forests coming to harvestable age after the Tillamook Fires in 1930s and 1940s and subsequent reforestation efforts in the 1950s and 1960s.

FIL projects should focus on reconnecting and restoring floodplain habitats; controlling water, sediment and nutrient runoff; and possibly enhancing off channel habitats and side channel meanders. Wetland functions that should be targeted are water storage and delay, sediment stabilization and phosphorus retention, nitrogen removal, resident and anadromous fish habitat support, breeding water bird support, and wintering and migrating water bird support.

Wilson Trask-Nestucca (FIL Medium Priority Watershed)

The Wilson-Trask-Nestucca watershed is approximately 605,000 acres located primarily in Tillamook County. Extensive upland forests dominate the basin's land area, with 65% of the land in public forestland. Rich, fertile alluvial soils in the lowlands are used for pasture, grass, and hay that supports commercial dairy and beef production, as well as small farms and ranchettes (USDA, 2005). This land use is particularly concentrated to the southeast of Tillamook Bay in the Sitka Spruce Belt—Coastal Lowlands along the Trask and Tillamook River valleys. Several small communities in the watershed support a fishing industry. The Tillamook Estuary was designated an estuary of national significance in 1994, and the Tillamook Estuaries Partnership, local watershed councils, and other partners work to develop and manage projects that restore and monitor watershed health.



The Oregon Conservation Strategy (ODFW, 2005) identifies the following conservation opportunity areas:

- Tillamook Bay and tributaries (CR-08) area is an important migration stopover for shorebirds and waterfowl and has heavy use by wintering waterfowl, including brant. Tillamook Bay supports an important mineral site for band-tailed pigeons. Tillamook County has acquired about 400 acres of diked former tidelands in the river delta area at south of the of the bay through collaborative effort with Tillamook Estuary Partnership,

USFWS, Oregon Watershed Enhancement Board, Trust for Public Land, and Oregon Department of Fish and Wildlife. The Tillamook Pioneer Museum acquired key 150-acre property at Kilchis Point with extensive tidal marshes, forested wetlands, and undeveloped shoreline. Opportunity exists to link lowland conservation efforts with upland forest management. Recommended conservation actions include improving water quality; maintaining or enhancing in-channel watershed function, connection to riparian habitat, flow and hydrology; maintaining or restoring riparian habitat and ecological function; reconnecting cutoff sloughs in lowlands around the bay; and restoring tidal wetlands in the river delta at the south end of Tillamook Bay.

- Netarts Bay (CR-10) is a wintering site for significant populations of brant and is a designated Conservation estuary. Cape Lookout State Park protects the undeveloped south spit.
- Sand Lake area (CR-11) is designated a Natural Estuary. It is marine-dominated and one of Oregon's least developed estuaries. The area contains some of the most extensive dunes on the northern coast. State Parks purchased Whalen Island, a large, undeveloped island with extensive high quality tidal marshes, in 2000. Recommended conservation activities are restoring and maintaining tidal marshes and freshwater wetlands on the southern spit (Beltz Marsh).
- Nestucca Bay (CR-12) is designated a Conservation Estuary. It contains the Nestucca Bay National Wildlife Refuge that protects a major wintering area for the bulk of the Semidi Island population of the Aleutian and Dusky Canada Goose. The Neskowin Marsh Unit of the refuge protects a large freshwater coastal wetland that includes bogs and other rare plant communities. There are ongoing projects by USFWS and Ducks Unlimited to acquire land on the Little Nestucca River to increase goose and tidal marsh habitat. Recommended conservation actions include improving water quality, maintaining short-grass pastures to benefit wintering goose populations, and restoring tidal wetlands.
- Nestucca River Watershed (CR-13) was identified by the Oregon Plan and the American Fisheries Society as an extremely important area for native salmonids. Much of the area is designated by the Siuslaw National Forest as an Adaptive Management Area, focusing on conservation values. Recommended conservation actions are to improve water quality; maintain or enhance in-channel watershed function, connection to riparian habitat, flow and hydrology; and maintain or restore riparian habitat and ecological function.

Limiting factors in the basin include decline of key habitats, water quality, erosion and sedimentation, and flooding. Key habitats include instream and riparian areas, tidal marshes and lowland sloughs. Water quality concerns listed in decreasing number of stream miles affected are temperature, fecal coliform, dissolved oxygen, sedimentation and iron.

High bacteria levels in Tillamook Bay restrict its use for shellfish harvest and recreational contact in many areas and at certain periods of time. Bacteria sources include rural and urban residential development, urban stormwater runoff, livestock management and other agricultural activities, and several wastewater treatment plants that discharge either to the rivers or the Bay (DEQ, 2001).

The watershed has 16 water availability basins that are state flow restoration priorities for summer months. The watershed is designated a groundwater management area due to shallow alluvial sediments that are vulnerable to pollution. Frequent flooding occurs along lowland streams and the concern is increased by bedload deposition. Flooding is addressed through the Tillamook County Flood Hazard Mitigation Plan, which takes a comprehensive approach to floodplain management and innovative ways to enhance floodplain function and restore habitats (Tillamook County Performance Partnership, 1999).

The Tillamook Bay Comprehensive Conservation and Management Plan (1999) developed an action plan for each of the limiting factors in the Tillamook Bay watersheds. Actions pertinent to the FIL Program are:

- Protect and enhance upland riparian areas
- Protect and restore floodplain/lowland riparian vegetation
- Protect and restore freshwater wetland habitat
- Protect and restore tidal wetlands
- Protect and restore eelgrass habitat
- Reconnect sloughs and rivers to improve water flow
- Ensure adequate non-point urban runoff treatment and retention
- Implement agricultural pollution prevention and control measures

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|------------------------|------------------|----------------|------------------|
| Flat | 32% | PFO | 29% |
| Slope | 19% | PEM | 21% |
| Riverine Impounding | 16% | E2 | 18% |
| Slope/Flat | 14% | Slope | 16% |
| Unknown | 13% | | |

Information for assessed subwatersheds is below:

Miami River

The Miami River watershed drains 36.7 square miles near the town of Garibaldi. Historic prairies, swamps, marshes and tidally influenced forests in the lowlands have been cleared and drained for pasture. Construction of dikes and levees has not been common. Predominant wetland types remaining are palustrine with a few tidal salt marshes. Riparian areas in the lowlands all lack sufficient density of conifers; the tidal mainstem is in poor condition with blackberries and non-

native grasses dominant; and summer mainstem temperatures often exceed state standards.

Kilchis River

The Kilchis River watershed drains 65 square miles and is just north of Tillamook. The Kilchis is a high gradient system with a fairly short section of the mainstem in lowlands. The watershed has low permeability and stores only a small volume of the annual precipitation. Streamflow is abundant in the wet season and very low in the late summer. Ninety-two percent of the watershed is utilized for forest use.

Wilson River

The Wilson River watershed is 194 square miles and the largest of the Tillamook Bay drainage. The watershed has steep forested uplands and flat alluvial lowlands. The lower Wilson River runs adjacent to the City of Tillamook. Eighty-one percent of the watershed's total area is state and federal forest lands, and lowlands have seen quite a bit of development. Water quality is impaired for temperature, nitrogen and bacteria. Other limiting factors pertinent to wetland restoration activities are lack of off channel habitat for winter refuge and rearing of coho salmon and cutthroat trout, sedimentation, and modified hydrologic function and reduced fish habitat due to diking of estuarine wetlands.

Trask River

The Trask River watershed is 175 square miles and contains the City of Tillamook. Eighty-five percent of the watershed characterized by moderate- to steep-gradient streams and narrow valley floors. The western portion of the watershed is characterized by very low gradient, meandering streams often under tidal influence and bordered by mostly flat floodplains dominated by dairy farming and urban development. Land use is primarily forest related (97%). Historic prairies, swamps, marshes and tidally-influenced forest in the lowlands has been converted to pastures. Riparian conditions in the tidal mainstem are poor, and are variable elsewhere. Limiting factors include channelization of lowland reaches, disconnect of the river with floodplains and wetlands and sedimentation. Water quality issues are temperature throughout the watershed, and fecal coliform bacteria and dissolved oxygen in the lowlands. The Trask River contributes proportionally more water pollution loading (bacteria, sediment, and nitrogen) to Tillamook Bay than any other river.

Tillamook River

The Tillamook River watershed is 61 square miles and flows out of the coastal hills southwest of Tillamook. The watershed is primarily privately owned and land use is split between private forest and agriculture. Low gradient channels make up over 30% of the stream network with extensive lowland floodplains that have been primarily converted to pasture. The lower river is confined by a set of low levees that overtop during high flow events and result in lowland flooding. Limiting factors include channelization of lowland stream reaches and resulting

disconnection of the river from floodplains and wetlands, lack of off-channel habitat, erosion, pollution, soil compaction, and degraded riparian and floodplain habitat. Water quality limitations include temperature and low summer flows. The river routinely has the highest bacteria concentrations of the five tributaries making up the Tillamook Bay watershed.

Nestucca and Neskowin Rivers

The Nestucca River and Neskowin River watersheds consist of forested headwaters and midslope areas, with lowlands utilized for agricultural, small woodlot and industrial activities. Residential development occurs along the streams and in the estuaries. Limiting factors throughout the watersheds are sedimentation and inadequate riparian vegetation. Lowland areas are also limited by fecal coliform in some stream segments, lack of fish rearing habitat, and decreased amounts of estuary and wetland habitats.

Willamette Basin

(Oregon Watershed Enhancement Board, Willamette Basin Priorities, 2004)

The Willamette Basin is the state's largest drainage basin with an area of 12,000 square miles, and is one of the most urbanized with over two-thirds of Oregon's population living in the Willamette Valley. Historically, the Willamette was the key feature in a broad floodplain of sloughs, wetlands, and bottomland forests surrounded by an open valley dominated by prairie and savanna vegetation. Since European settlement, the valley has undergone extensive urban, suburban and agricultural development, and today its ecosystem is highly altered and fragmented.

The Willamette River and its tributaries support threatened native populations of Chinook salmon, steelhead trout and bull trout, as well as rainbow and cutthroat trout. Large dams on many of the Willamette's tributaries have significantly altered stream flow regimes. Conservation issues include a simplified channel (including the disconnection of the river from its floodplain); declining habitat complexity; and declines in water quality. The Oregon Biodiversity Project has identified oak savannas and woodlands, wetlands, and bottomland hardwood forests as broad-scale conservation priorities based on an assessment of historical changes and current management status.

Priority Wetland Ecological Systems

Autumnal freshwater mudflats
Coniferous forested wetlands
Depressional wetland broadleaf forests
Depressional wetland shrublands
Freshwater aquatic beds
Freshwater emergent marsh

Riparian forests and shrublands

Sphagnum bogs and fens

Vernal pools

Western Oregon wet prairie

Western Oregon upland prairie and oak savanna

The Willamette is divided into three drainage areas: the Lower, Middle, and Upper Willamette. FIL Priority Watersheds within the Lower Willamette Basin are the Lower Willamette, Tualatin, and Clackamas watersheds. The FIL Priority Watershed within the Middle Willamette is the Molalla-Pudding watershed.

Lower Willamette (FIL High Priority Watershed)

(Willamette Basin Watershed Councils, Biosystems Consulting, and Watershed Initiatives. 2005.)

The Lower Willamette watershed is comprised of 260,900 acres. It includes the Scappoose Creek and Johnson Creek 5th field watersheds, and the city of Portland is situated along the lower 17 miles of the river. Over 90% of the subbasin is privately owned, and approximately one-third of

that is developed. More than one-half of the private land is forestland, with the remaining used for pasture and hay, row crops, shrubs, nurseries, Christmas trees, and grain crops. The west side of the Lower Willamette watershed is characterized by the Tualatin Mountains rising from a narrow terrace along the Willamette River. This area contains Forest Park. At 5,000 acres, it is the largest urban forest reserve in the U.S. and the area provides an important wildlife corridor between the Coast Range and Willamette Valley ecoregions. Adjacent to this is the 143-acre wildlife sanctuary managed by the Audubon Society of Portland. The eastside is relatively flat and has been almost completely urbanized with streams, with the exception of Johnson Creek, diverted into sewers.



The Oregon Conservation Strategy identifies the following conservation opportunity areas that include wetland habitat conservation:

- Columbia River Bottomlands (WV-01) includes the 12,000-acre Sauvie Island Wildlife Area managed by the Oregon Department of Fish and Wildlife, and almost 1,000 acres along Multnomah Channel owned by Metro and Bonneville Power Administration. The area is one of the most important habitat complexes in the Pacific Flyway for migrating and wintering waterfowl, and the area is used by significant numbers of waterfowl and shorebirds. There are ongoing projects by ODFW, Ducks

Unlimited, Natural Resource Conservation Service, USFWS, and Oregon Duck Hunters Association to restore and enhance wetlands in this area. Recommended conservation actions include improving the water delivery system on the Sauvie Island Wildlife Area to enhance the effectiveness of wetlands management; maintain or restore riparian habitat and ecological function; and restore or enhance seasonal wetlands.

- Smith-Bybee Lakes (WV-04) is located north of Portland, adjacent to the confluence of the Willamette and Columbia Rivers. The area provides a wintering site for significant numbers of waterfowl. The Oregon Natural Heritage Program lists the Columbia sedge meadows here as “critically imperiled” in Oregon. Seasonally dry lakes provide emergent wetland and mudflat habitats. Recommended conservation actions are to actively manage wetlands to optimize habitat values for diversity of species, and restore floodplain forest habitats.

Limiting factors are primarily the result of urbanization. The population increased 9.2% and 7.5% for Multnomah and Columbia counties, respectively, between 2000 to 2007 (Population Research Center, 2008). Effects of urbanization include altered river and floodplain interaction, groundwater recharge and discharge, small-scale patterns of flow and velocity, and tributary inflows and interaction with the mainstem. The Oregon Plan identifies summer (July – September) water flow restoration priorities for the recovery of salmonids as “highest” for the Milton Creek and South Scappoose Creek areas. Water quality limitations include summer temperature, copper, lead, and bacteria. Biological integrity has been greatly reduced due to development. Continued growth in the area and demand for riverside industrial and residential land will exacerbate these trends.

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|-----------|------------------|----------------|------------------|
| Unknown | 80% | Unknown | 73% |
| | | PEM | 19% |

Restoration activities identified pertinent to the FIL program are to improve stormwater management to restore water quality and reduce quantities of stormwater runoff entering rivers, and to improve the Willamette River’s connection to its current and historic floodplain. Portland Metro has identified the Industrial and Ross Island sections of the watershed as having the best potential to provide increased watershed health benefits if restored. Currently, over 7,360 acres of land in Portland’s Willamette Watershed are within environmental overlay zones and Metro has deemed that more than 10,000 acres of land within this watershed provide regionally significant riparian resources and/or wildlife habitat.

Tualatin (FIL High Priority Watershed)

(Willamette Basin Watershed Councils, Biosystems Consulting, and Watershed Initiatives. 2005.)

The Tualatin River watershed drains 712 square miles. Fifteen percent of its area contains the urban areas of southwest Portland, Hillsboro, Tigard and Beaverton; 35% is in agricultural use near the center of the watershed; and 50% is forestland concentrated along its borders with Oregon's Coast Range, Tualatin Mountains and Chehalem Mountains. The population in Washington County has increased 14.8% in the last seven years (Population Research Center, 2008).



The Oregon Conservation Strategy identifies the Tualatin River (WV-05) area, which includes the Tualatin River and its floodplain from the Tualatin National Wildlife Refuge to Wapato Lake, east of Gaston. The area is a significant breeding area for migratory songbirds, an overwinter site for waterfowl, and a great blue heron nesting site. The Tualatin River National Wildlife Refuge has an authorized boundary encompassing 3,084 acres along 10 miles of the river. Currently, the refuge includes almost 1,100 acres. Wapato Lake was historically one of the most important waterfowl sites in the Willamette Valley, and has high potential for wetland restoration. The USFWS currently manages 150 acres of land in this historic lakebed. Recommended conservation actions include maintenance or restoration of riparian habitat and ecological function, and restoration of floodplain wetlands and riparian forests. Another opportunity area identified by ODFW is Banks Swamp (WV-02), a willow/ash wetland located along Highway 6 west of Banks, Oregon. Key species are riparian birds, willow flycatcher and winter steelhead.

Wetlands have been significantly reduced in number. A priority action is to address habitat fragmentation including preservation, restoration and enhancement of wetlands and floodplains; including emergent wetlands, scrub-shrub, wet prairies and riparian forests. Focal species include Northwestern pond turtles, red-legged frogs, Pacific salamander, bald eagle, peregrine falcon, water howellia, winter steelhead, and *Euonymus occidentalis* (burning bush).

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|-----------------------|------------------|----------------|------------------|
| Flat | 41% | PEM | 53% |
| Unknown | 20% | Unknown | 22% |
| Slope/Flat | 11% | | |
| Riverine Flow Through | 10% | | |

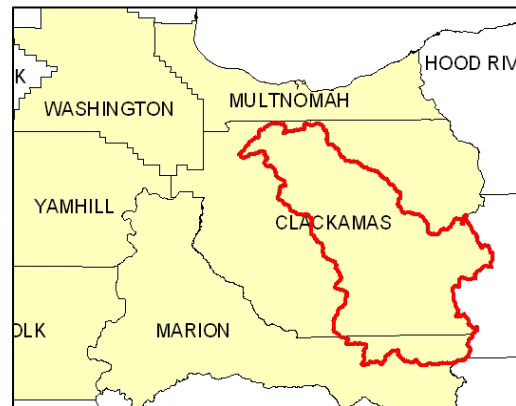
Limiting conditions include low summertime flows, increased peak flows and storm water management in urbanized areas, channelization of streams and disconnected floodplains, reduced riparian vegetation composition and extent, fragmented habitat, and water quality. The Tualatin Basin is water quality limited and has a TMDL for phosphorus, temperature, bacteria, dissolved oxygen, chlorophyll a, ammonia and pH. Limitations also exist for flow and habitat modifications, and biological criteria.

FIL projects should include as many of the functions as possible within priority wetland types and riparian areas, concentrating on expanding and connecting core habitat areas.

Clackamas (FIL Medium Priority Watershed)

(Willamette Basin Watershed Councils, Biosystems Consulting, and Watershed Initiatives. 2005; Clackamas River Basin Council, 2005.)

The Clackamas River watershed is 1,000 square miles and flows from Ollalie Butte near Mt. Hood into the Willamette River near Oregon City. Clackamas county has seen a 10% increase in population in the last 7 years (Population Research Center, 2008).



The Oregon Conservation Strategy identifies the Clackamas River area (WV-07) as an opportunity area with ongoing restoration and planning efforts by the Clackamas River Basin Council. The area contains aquatic and riparian habitats needed for coho, fall Chinook, pacific lamprey and winter steelhead. Recommended conservation actions are to maintain or enhance in-channel watershed function, connection to riparian habitat, flow and hydrology; and to maintain or restore riparian habitat and ecological function.

Wetland prairies, seasonal marshes and other wetlands are found in the lower basin near the valley floor or at the base of the foothills within the Prairie

Terraces and Valley Foothills Ecoregions. Seasonal marshes also occur in the forested upper portions of the basin within the Cascade Mountains.

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|-----------|------------------|----------------|------------------|
| Unknown | 42% | PEM | 74% |
| Flat | 25% | Unknown | 47% |

Limiting conditions include the channelization of streams, disconnected floodplains, reduced floodplain and riparian vegetation composition and extent, altered hydrologic processes from development and loss of wetlands, storm water inputs, and reduced water quality. Water quality concerns include stream flow, temperature, and bacteria.

Restoration priorities important to the FIL program include improving aquatic and riparian functions. Key habitats are historic backwater areas for wildlife, degraded riparian/floodplain corridors, and stream-associated wetlands. Side channels and alcoves are critical habitat for salmon and steelhead, and placements of roads, dikes and riprap have reduced these areas. Restoration actions should focus on restoring these areas and combining these actions with restoration of other floodplain functions such as establishing native vegetation and creating wetlands. Floodplain forests provide water quality improvements, flood control, and wildlife habitat, as well as social and recreational amenities near urban areas. Protection of existing high quality areas, and restoration of stream segments with water quality issues and reaches between high quality riparian habitats for connectivity are priorities. Wetland protection, restoration and creation can assist in retention, infiltration, and water filtration. The Clackamas River Basin Council has compiled specific locations for restoration actions.

Flow restoration is also a restoration need in the basin. The Lower Basin, which includes all major tributary drainages downstream of River Mill Dam, has the greatest need for flow restoration in the Clackamas Watershed. Lower Clackamas River flow regime is influenced primarily by the PGE Clackamas River Hydroelectric Projects, but also by water withdrawals, lack of riparian canopy, and recreational activities. The highest needs are in Cow, Sieben, Foster, and Goose Creeks, Rock and Richardson Creeks, and Deep Creek and its tributaries. In addition, there is a high need for flow restoration in Middle and Upper Clear Creek, and Eagle Creek and its tributaries.

FIL projects should focus on stream-associated wetlands that provide water storage and delay, thermoregulation, and anadromous fish habitat support.

Molalla-Pudding (FIL Medium Priority Watershed)

(Willamette Basin Watershed Councils, Biosystems Consulting, and Watershed Initiatives. 2005.)

Molalla-Pudding watershed is 877 square miles and consists of two 5th fields, the Molalla River watershed and the Pudding River watershed.

The Molalla River drains the Western Cascades of southwestern Clackamas County. The river quickly descends for half its length until it enters Dickey Prairie, where the river begins to meander through agricultural lands until it reaches its mouth at the Willamette River at rivermile 36 near Canby. The Pudding River



Watershed is northeast of Salem, beginning in the low-lying Waldo Hills. For nearly all of its length, the Pudding River slowly meanders through prairies used for agricultural operations. The Pudding River meets the Molalla about one-and-a-half miles above its confluence with the Willamette River near Canby. Fifty-one percent of the land is forested, and thirty-one percent is grass, hay, and pasture, which include commercial dairy and beef operations. Over 92% of the Pudding River Watershed is privately owned, with agriculture and forestry the dominant land uses. Clackamas and Marion counties have had population increases of 10.0% and 9.2%, respectively between 2000 and 2007 (Population Research Center, 2008).

The Oregon Conservation Strategy identifies Lower Little Pudding River (WV-10) as a conservation opportunity area. The area extends from Mt. Angel to the confluence with the Willamette River and is the focus of ongoing conservation actions by the Pudding River Watershed Council. The area was once an important breeding area for wood ducks, and the restoration of forested wetlands, seasonal wetlands and riparian areas along the Pudding River would once again create habitat for waterfowl and improve water quality in the river. Cutthroat trout, spring Chinook salmon, and winter steelhead are key species.

Riparian function is reduced throughout the Molalla watershed, especially in the lower watershed with reduced width and connectivity to floodplains. Priority areas for riparian function improvements are Milk, Cedar, and Canyon Creeks. Summer temperatures in lower tributaries and the Molalla River, particularly the Milk Creek subwatershed, are over the state standard for salmon productivity. High bacteria levels in the lower Molalla River are also a concern.

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|-----------|------------------|----------------|------------------|
| Unknown | 51% | Unknown | 47% |
| Flat | 25% | PEM | 30% |
| | | PFO | 11% |

Priority habitats for restoration include upland prairie, wetlands and wet prairies, and riparian and bottomland forests in the lower watershed. Restoration priorities in the Molalla watershed pertinent to the FIL program include watershed process and function, water quality and connectivity. Ensuring adequate flow, with priorities in the Molalla River and Milk Creek, for spring Chinook, winter steelhead and cutthroat trout is important.

In Pudding River, elevated temperature and low stream flows are limiting, especially in late summer. Priority areas are in the lower basin, and low portions of tributaries draining the western Cascades (e.g., Rock, Butte, Abiqua, Silver, and Drift Creek). These areas are also priorities for decreasing chemical runoff and sediment delivery to streams. Pudding River, Zollner Creek and Silver Creek are water quality limited for high fecal coliform concentrations. Zollner Creek is water quality limited for nitrate and nitrite. Important wetland habitats for restoration include the historically extensive wetland areas, bottomland forests along the river, and wet prairies in the lowlands. Butte, Abiqua, and Silver Creeks are the most important anadromous fish streams in the Pudding River Watershed.

Umpqua Basin

(Oregon Watershed Enhancement Board, Umpqua Basin Priorities, 2004; Umpqua Basin Action Plan, Partnership for the Umpqua Rivers, 2007)

The Umpqua Basin contains the drainages of the South Umpqua, North Umpqua, mainstem Umpqua and the Smith River. The basin lies primarily within three ecoregions (Coast Range, Cascades and Klamath Mountains) and contains a wide variety of vegetation, from Sitka spruce-dominated forests on the coast, to Oregon white oak and Pacific madrone woodlands in interior valleys, to Douglas fir and mixed conifer forests in the Cascades. Anadromous fish in the basin include Chinook, chum salmon, steelhead and cutthroat. Roughly 55% of the basin is publicly owned.

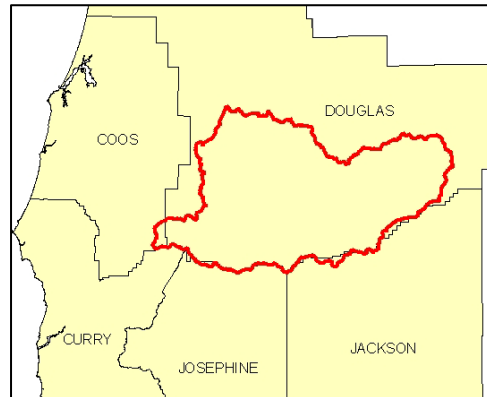
Priority Wetland Ecological Systems

Autumnal freshwater mudflats
Coniferous forested wetlands
Depressional wetland broadleaf forests
Depressional wetland shrublands

Emergent marsh
 Freshwater aquatic beds
 Lowland riparian woodland and shrubland
 Sphagnum bogs and fens
 Vernal pools
 Western Oregon wet prairie

South Umpqua (FIL High Priority Watershed)

The South Umpqua watershed is comprised of 1,152,000 acres, about half of which is privately owned. Eighty-six percent of the subbasin is forestland, and the remainder is primarily small acreage, privately owned grassland, hayland and pastureland.



The Oregon Conservation Strategy identifies the Umpqua River area (KM-01) as an opportunity area, which includes part of the South Umpqua watershed at its confluence with the North Fork Umpqua. Special features of the area include several important river confluences, a relative abundance of northwestern pond turtles with populations in all the rivers, a large percentage of the Klamath Mountains ecoregions' purple martin habitat, and 14% of the ecoregion's grassland and oak savanna habitat. Key habitats include aquatic, grasslands and oak savanna, pine-oak woodlands and riparian. Maintenance and enhancement riparian habitat and connections with channels, and river flow and hydrology are recommended for conservation. The Umpqua Headwaters (WC-09) is also an opportunity area and includes the headwaters of the North and South Umpqua Rivers. The area encompasses some of the West Cascade ecoregion's most important salmonid habitat, including 11 American Fisheries Society aquatic diversity areas. Northwestern pond turtle is found in low elevation lakes and streams, particularly in the South Umpqua area. Maintenance or enhancement of in channel watershed function, connection to riparian habitat, flow and hydrology is a recommended conservation action. Impacts from recreation activities such as motorized watercraft, shoreline activities and road usage on water quality and watershed function should be considered.

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|------------|------------------|----------------|------------------|
| Unknown | 59% | Unknown | 32% |
| Slope/Flat | 15% | PEM | 32% |
| | | R4SB | 14% |

The Partnership for the Umpqua River (2007) has assessed limiting factors from its watershed assessments in the South Umpqua subbasin. Assessed areas and their known and suspected limiting factors pertinent to the FIL program are highlighted below:

Cow Creek

Cow Creek was divided into Lower, Middle, Upper, and West Fork Cow Creek for assessment purposes. Wetland functions were limited in the Lower Cow Creek and Middle Cow Creek watersheds due to development and agricultural land use affects on wetlands, primarily related to loss of connectivity with river flows. Known limiting factors pertinent to the FIL program include insufficient riparian buffers in Lower Cow Creek; low streamflows; and state water quality limitations for temperature and toxics (heavy metals from Formosa Mine in Lower Cow Creek, and high mercury levels in fish in Upper Cow Creek), and pH in Middle and Upper Cow Creek. Recommended practices include restoring wetlands, especially where evidence suggests historical wetlands may have been located, or enhancing agricultural or pasture wetlands. Methods would include filling and blocking ditches, removing or blocking drains, and removing fill to restore the microtopography on any of the large areas of farmed wet pasture along Cow Creek and its tributaries. Priority areas for wetlands are Copper Creek, lower reaches on Cow Creek from Beatty Creek downstream (especially between Russell and Catching Creeks), Mitchell Creek, and Rail Gulch (below the smelter site).

Deer Creek

Deer Creek is composed of two HUC6 watersheds comprising a total of 43,090 acres. Development of agriculture (grazing/hay) and the city of Roseburg have altered or eliminated wetlands that were historically present in the watershed. Temperature, dissolved oxygen, and bacteria exceed state standards. Deer Creek is also water quality limited for flow modification, and low streamflows are limiting. There is not enough natural stream flow in South Fork Deer Creek to meet consumptive use demands in August. The first action recommended to restore wetland function is to reconnect Deer Creek to its historic floodplain. The second action is to restore farmed wet pasture to wet prairie by filling ditches, removing or blocking drains, and removing fill to restore microtopography. Priority areas are Ramp Creek/Canyon; farmed wet pastures along Deer Creek, North Fork Deer Creek (upstream of Livingston Creek) and South Fork Deer Creek; the Dixonville millpond; DaMotta Branch; and a tributary to Middle Fork of South Fork Deer Creek. A third strategy is enhancement of created wetlands in Shick Creek. Conservation strategies include purchasing greenway easements along Deer Creek within the Roseburg Urban Growth Boundary.

Myrtle Creek

The Myrtle Creek HUC5 is 76,332 acres of primarily forested lands, and contains the city of Myrtle Creek. Development has affected once-abundant wetlands in lowland valleys, especially within the urban growth boundary. Stream

temperature and bacteria levels exceed state standards, and Myrtle Creek is water quality limited for flow modification. Recommended practices include restoring key wetland areas to provide improved wildlife habitat, hydrologic control, and water quality. South Myrtle Creek near the golf course is listed as a potential wetland restoration site.

Olalla-Lookingglass

The Olalla-Lookingglass HUC5 is 103,000 acres and contains the city of Winston at its juncture with the South Umpqua River. Development has affected once-abundant wetlands in lowland valleys. Stream temperature (Bear, Lookingglass, Olalla, and Thompson Creeks) and toxics (iron on Olalla Creek) exceed state water quality standards. Water quality is also limited for flow modification, and low stream flows are of concern in Lookingglass, Olalla, Morgan, and Tenmile Creeks. Specific sites for wetland restoration are Little Muley, Lookingglass, Olalla, Tenmile, and Willingham Creeks.

South Umpqua

The South Umpqua River is divided into the Lower South, Middle South, and South Umpqua River watersheds, which together comprise 268,345 acres. The Lower South Umpqua contains part of the cities of Roseburg, Green, and Winston. Development and agriculture have altered wetlands that were historically present in the watershed. The South Umpqua exceeds state standards for temperature, pH, bacteria (Middle and South), dissolved oxygen, phosphorus (Lower South), toxics (Lower South—arsenic and cadmium), and flow modification. Low stream flow is also a limiting factor. Recommended practices for wetlands include enhancing riverine and palustrine wetlands through high-density planting and seeding, expanding forested wetlands, and converting cleared lands to wetland prairie by plugging drain ditches and eliminating livestock access. Priority areas in Lower South Umpqua are Happy Valley, Newton Creek, South Umpqua River near Shady Drive at Melrose, and along the Winston Section Road in Winston. Priority areas in Middle South Umpqua are riparian zones and floodplains of South Umpqua River near Lane Creek, near Dillard at the end of Brockway Road, and along the Missouri Bottom near Myrtle Creek Airport; and associated with Rice Creek near Barrett Creek.

Tiller Region

The Tiller Region HUC5 in the eastern portion of the South Umpqua Watershed consists primarily of forested lands. While some historical wetlands have been altered by human activities, this alteration is not considered a limiting factor in the watershed. State water quality limitations exist for temperature, pH, sediment, and flow modification.

South Coast

(Oregon Watershed Enhancement Board, Rogue Basin Priorities, 2004)

Two types of drainages characterize the South Coast Basin. To the north, the Coos and Coquille rivers flow from headwaters in the Coast Range across the Coos Bay dunes and marine terraces to the ocean. In the south, several smaller streams flow from the steeper headwaters in the Klamath Mountains.

Habitats in the South Coast Basin are particularly diverse. It includes grasslands and shrublands typical of the central and northern California coast, as well as habitats more similar to those in the Willamette and Umpqua Valleys.

The basin contains several areas identified as “core areas” for the recovery of coastal salmon and as important genetic refuges for aquatic species (American Fisheries Society). The Oregon Biodiversity Project identified native sand dune systems, estuaries and headlands and old-growth conifer forests as priority habitats in this basin, and identified the Cape Blanco area as a good place to address biodiversity conservation because of its at-risk species and unique coastal habitats. Coho salmon in this basin are listed as threatened under the Endangered Species Act.

Priority Wetland Ecological Systems

Deciduous swamp

Freshwater emergent marsh

Intertidal freshwater wetland

Intertidal mudflat

Lowland riparian woodland and shrubland

Montane riparian woodland and shrubland

Tidal salt marsh

Western Oregon upland prairie and oak savanna

Western Oregon wet prairie

Coos (FIL Medium Priority Watershed)

The Coos watershed is comprised of 718 square miles and lies primarily within Coos County. The subbasin is 89 percent private and public forest land, and 11 percent hay and pasture use. The cities of Coos Bay and North Bend make up the largest urban area on the Oregon Coast. The Coos River has the largest estuary on the coast besides the Columbia River, and is a major shipping and manufacturing center. Federally threatened species pertinent to the FIL program are



Western lily (*Delphinium leucophaeum*), Gentner's fritillaria (*Fritillaria gentneri*), and Coho salmon (*Oncorhynchus kisutch*).

The Oregon Conservation Strategy (Oregon Parks and Recreation Department, 2006) identifies the following conservation opportunity areas that target the conservation and restoration of wetland habitats:

- North Bend Dunes (CR-31) includes BLM's Coos Bay Shorelands Area of Critical Environmental Concern; key habitat for western snowy plover. Key habitats include coastal dunes and freshwater wetlands. Recommended conservation actions are to maintain deflation plan wetlands in early seral conditions, manage recreational use to limit disturbance to sensitive habitats, and remove European beach grass in targeted areas to enhance habitat for western snowy plover.
- Elliot State Forest (CR-32) contains late successional conifer forests and is an Oregon Plan Core Salmon Area for coho salmon and winter steelhead.
- Coos Bay Area (CR-34) includes the South Slough National Estuarine Research Reserve and Shore Acres State Park. The area contains rare plant species, including Western Lily, and is an important area for wintering and migrating waterfowl, and shorebirds. Key habitats are coastal bluffs and montane grasslands, estuary, and freshwater wetlands. Recommended conservation actions include the restoration of freshwater wetlands and tidal wetlands, and the reconnection of tidal sloughs where feasible and appropriate.

The Coos Watershed Association has assessed conditions in the watershed and identified limiting factors within regions. Wetlands historically have been concentrated in the Head of Tide (Coos Watershed Association 2005), Slough System, and Direct Bay Tributaries regions.

The Head of Tide region consists of forested uplands and agricultural lowlands. Streams and rivers here are within the mixing zone of fresh and brackish waters, and provide critical habitat for coho, Chinook, chum, and steelhead, searun and resident cutthroat trout. The tributaries provide spawning habitat in their headwaters, and rearing habitat in pools, connected wetlands, and tidal channels. During the summer, these streams also provide thermal refugia; and during winter they provide refugia from high velocity flows. Many of the streams, including the Millicoma and South Fork Coos Rivers, have been diked, dredged and straightened, degraded by splash damming and simplified by large wood removal. This has led to restricted fish access, reduced salmonid spawning beds, and limited the quantity and quality of both freshwater and estuarine fish nursery habitats. Channel widening and removal of riparian vegetation in lowland tributary streams have contributed to increased summer water temperatures.

The Slough System contains forested uplands and urban/rural residential uses. This area faces development pressure, and contains coho rearing areas. The primary limiting factor here is connectivity of habitats.

Tributaries entering Coos Bay have forestry, agriculture and rural residential land uses. The tributaries are highly productive for coho salmon, but have tide-gated stream mouths. The primary limiting factors are floodplain connectivity and temperature. Summer habitat structure, temperature, and winter habitat off-channel areas are limiting for coho use.

In addition to temperature limitations, water quality in the watershed has widespread limitations for fecal coliform, particularly in slough areas. Aquatic weeds and algae in Tenmile Lake are also limiting, with blue-green algae levels periodically causing warnings of a potential health hazard.

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|-----------------------|-------------------------|-----------------------|-------------------------|
| Unknown | 27% | Estuarine | 46% |
| Flat | 25% | PEM | 43% |
| Estuarine | 20% | PFO | 6% |
| Depressional | 18% | PSS | 2% |
| Slope | 5% | blank | 1% |
| Riverine Flow-Through | 4% | PEM, PSS | 1% |
| Riverine Impounded | <1% | PEM, PFO | <1% |
| Lacustrine Fringe | <1% | L1UB | <1% |

FIL projects should restore watershed connectivity by improving passage at culverts and tide gates, between streams and floodplains, and help to restore natural streamflows. The creation of natural channels and banks, water storage and delay, processing of sediment, and thermoregulation can help restore symptoms of disturbance in the watershed.

Rogue Basin

(Oregon Watershed Enhancement Board, Rogue Basin Priorities, 2004)

The Rogue River flows for 200 miles from its headwaters near Crater Lake to join the Pacific Ocean at Gold Beach. Its large drainage basin covers an area characterized by steep, forested, dissected mountains to gentle foothills and valley bottoms. Land use patterns in the basin range from the cities and towns of the Rogue Valley with their surrounding suburbs, orchards and farms, to commercial forestlands, to extensive public forestlands and wilderness areas.

The basin lies largely within the Klamath Mountains ecoregion, an area widely recognized for its complex geologic structure, vegetation patterns and overall biological diversity. Of note are the serpentine, limestone and granitic habitats, which are found only in this part of western Oregon and adjacent California. This unusual geology, and the fact that the mountains are the oldest in Oregon, has resulted in the evolution of many endemic plant species, a number of which are considered at-risk.

Major rivers include the Rogue, Applegate and Illinois. The lower 88 mile section of the Rogue is a state and federal wild and scenic river, and the lower 46 miles of the Illinois has been designated a state scenic waterway. While the basin's chinook salmon and steelhead fisheries are world-renowned, native stocks of almost all its anadromous fish are declining. Coho salmon are listed as threatened under the Endangered Species Act. Douglas fir forests, oak woodlands and ponderosa pine woodlands once dominated most of the landscape in the Rogue Basin. All have declined significantly over the past 150 years due to fire suppression, rural residential development and timber harvesting.

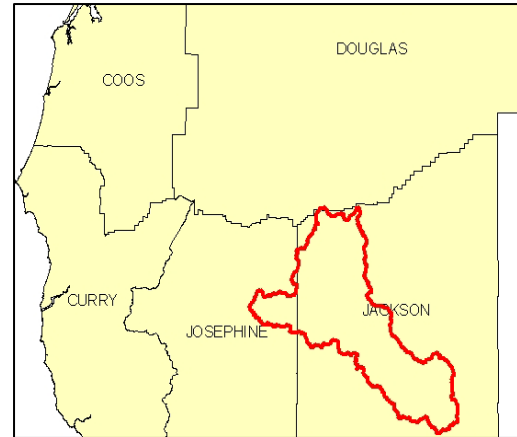
Important conservation issues in the basin include dealing with the long-term impacts of fire suppression, loss of wetlands, riparian habitat and floodplain connectivity along portions of the Rogue and its tributaries, restoration of coastal salmon populations, and conservation of at risk plant species, especially endemics, in developing areas.

Priority Wetland Ecological Systems

California – Southern Oregon coastal bluffs and headlands
Coastal sand dune
Deciduous swamp
Intertidal freshwater wetland
Intertidal mudflat
Lowland riparian woodland and shrubland
Montane riparian woodland and shrubland
Subalpine or Montane wet meadow
Tidal salt marsh
Western Oregon upland prairie and oak savanna
Western Oregon wet prairie

Middle Rogue (FIL High Priority Watershed)
(Rogue Basin Coordinating Council, 2006)

The Middle Rogue watershed is 564,000 acres and includes the Middle Rogue, Bear Creek, and Seven Basins areas. Sixty-six percent of the watershed is forestland and twenty-three is used for pasture, hay and grass. Jackson county, which contains the metropolitan area of Medford, has had an increase in population of 11.6% from 2000 to 2007 (Population Research Center, 2008).



The Middle Rogue watershed lies within the Klamath Mountains Ecoregion, and intersects with the Cascade region in its southeastern area. Due to the unique geology of the Klamath Ecoregion, the area boasts a high amount of species diversity. The Bear Creek Watershed includes the Agate Desert vernal pool ecosystem, as does Sams Valley and Table Rocks areas in the Seven Basins area.

The Oregon Conservation Strategy identifies the North Medford Area (KM-08) as an opportunity area for low elevation habitat containing many endemic, rare plants and as an important site for migrating and nesting waterfowl. Key habitats include aquatic, riparian and wetland habitats. The Antelope Creek area (KM-09) in the foothills east of Medford is also an opportunity area due to the diversity of habitats for both terrestrial and aquatic species.

Residential development lines both sides of the Rogue River, and the cities and surrounding areas of Grants Pass, Medford and Ashland are growing rapidly. Many wetlands have been lost from development for agriculture, transportation and urban growth, and the Rogue Valley is prioritized for wetland restoration and acquisition (Oregon Parks and Recreation Department, 2003). Stream flows are regulated by releases from Lost Creek and Applegate Dams. Savage Rapids Dam at river mile 106 is considered a major fish passage problem and is scheduled for removal in 2009.

Low summer rainfall, high temperatures and extensive irrigation withdrawals limit stream water flows in the summer months and result in limiting water temperatures for salmonids. Additional limiting factors in the Middle Rogue watershed include 303d listings for fecal coliform, dissolved oxygen, phosphorus, ammonia, aquatic weeds, chlorophyll a, and pH.

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|--------------|------------------|----------------|------------------|
| Unknown | 67% | Unknown | 69% |
| Depressional | 12% | PEM | 30% |
| Slope/Flat | 11% | | |

FIL projects should focus on replacement of wetlands that address multiple functions. Priorities are wetlands that provide riparian habitat and floodplain connectivity, restoration of coastal salmon populations, and conservation of at risk plant species, especially endemics, in developing areas.

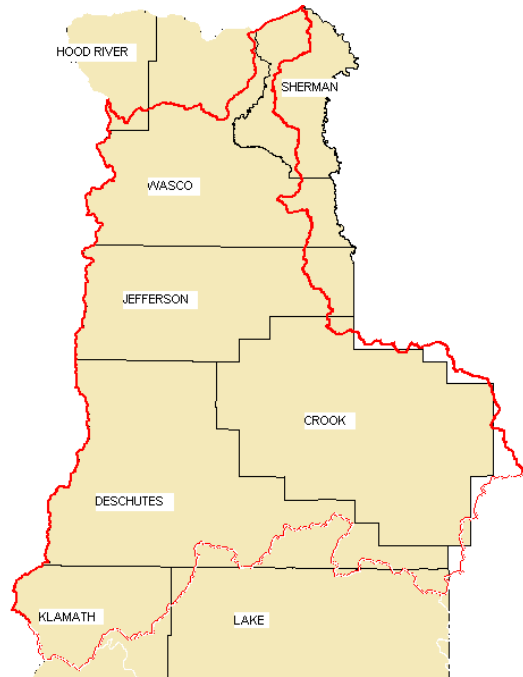
Deschutes Basin

(Oregon Watershed Enhancement Board, 2004)

The Deschutes River drains over 10,000 square miles, making its basin one of the largest in Oregon. The terrain of the basin varies markedly, from the east slope of the Cascades and the western edge of the Ochoco Mountains to the Deschutes Valley and the high plateau between the Deschutes and John Day rivers. The climate of the basin is slightly influenced by the Pacific Ocean, making it a little warmer, and a little moister, than most other east side drainages.

The Deschutes Basin straddles parts of three different ecoregions – the Columbia Basin, East Cascades and the Blue Mountains. Its vegetation is as varied as its climate and elevation, and many ecological systems are represented here. On the west side of the basin, coming down from the crest of the Cascades, conifer forests cover the slopes. To the east, in the Blue Mountains ecoregion, Western juniper is dominant.

Prior to European settlement, basin big sagebrush, native grasslands and riparian woodlands were widespread in this watershed. Today, irrigated agriculture occupies most of the valley bottoms and plains, while juniper has spread into many former shrub-steppe vegetation types. About half the basin is in public ownership.



The Deschutes River itself, fed by snowfields in the Cascades, flows through high elevation wet meadows and lava plains before dropping through scenic canyons and shrub steppe to join the Columbia. The Deschutes supports one of the few remaining wild spring chinook populations in the Columbia Basin, as well as fall chinook and summer steelhead. Bull trout and steelhead are listed under the federal Endangered Species Act.

Conservation issues in the Deschutes Basin include habitat loss and fragmentation due to rapid population growth and urban development around Bend, Redmond and Madras, and to recreational development in both these and outlying areas. Deschutes, Crook, and Jefferson counties have seen the highest population increase in the state between 2000 and 2007 at 39.4%, 35%, and 15.9%, respectively (Population Research Center, 2008). Loss and degradation of wetland and riparian habitats is a concern throughout the basin.

Projects that address important systems and species and also provide for flow improvements in the Upper Deschutes and Crooked River systems would have particularly high ecological benefit in this basin. Similar to other east side basins, peak flows in the Deschutes occur in the spring and lowest flows (and highest demand) in late summer. The upper Deschutes has been fully appropriated since 1913. A volume representing about one-third of the consumptive water rights issued in the basin is diverted from the Deschutes near Bend. The most even flows in the basin are found in the Metolius drainage, and the greatest variability is found in Crooked River flows (another third of the volume of consumptive water rights issued in the basin is diverted from the Crooked River). The lower Deschutes, fed by springs originating as snowmelt in the upper basin, is characterized by more uniform flows.

Priority Wetland Ecological Systems

Alkaline wetlands (Conservation)
Aspen forest and wetland
Deciduous swamp
Foothill and lower montane riparian woodland
Freshwater emergent marsh
Lowland riparian woodland and shrubland
Montane riparian forest and shrubland
Subalpine or montane wet meadow

The Oregon Conservation Strategy (Oregon Parks and Recreation Department, 2006) identifies many conservation opportunity areas that target the conservation and restoration of wetland habitats:

- Warm Springs River (EC-03) for naturally spawning spring Chinook.
- Big Marsh Creek/Crescent Creek (EC-06) includes Big Marsh, a large high-quality wetland in the headwaters of the Crescent Creek drainage, where the Forest Service has ongoing enhancement efforts. Big Marsh

supports one of the largest remaining populations of Oregon spotted frog as well as breeding yellow rails.

- Little Deschutes River Basin (EC-07) has an extensive wet meadow system and some high-quality shrub habitats. Restoration of wetlands and wet meadows is a recommended conservation action.
- Ochoco Mountains area (BM-04) includes part of the section of the North Fork Crooked River designated as a Wild and Scenic River; Scenic River Big Summit Prairie is one of the largest montane wetlands in eastern Oregon, streams throughout this area provide habitat for inland Columbia Basin redband trout, and there is a high potential for increase in breeding sandhill cranes.
- Lower Deschutes River (CP-03) encompasses the Lower Deschutes Wild and Scenic River corridor and includes excellent steelhead and trout fisheries.

Limiting factors were evaluated by HUC6 through the Deschutes Basin Restoration Priorities (OWEB 2004) for aquatic/channel habitats, upland precipitation and storage, terrestrial/upland habitats, riparian/floodplain habitats, and wetland habitats. Where documentation existed, a rating of No, Low, Moderate, or High Impact was assigned for each parameter within habitat types. The most common factors having a “high impact” across the basin in aquatic/channel habitats are altered thermal regimes, altered disturbance regimes, and instream flows. The most common “high impact” parameters for riparian/floodplain habitats were loss of shade/cover and habitat fragmentation/connectivity.

Wetland impacts were based on wetland function assessments determined by aerial reconnaissance. Areas with high impact included the Upper North Fork Crooked River. This area includes the Ochoco Mountains where montane meadows have been drastically altered by diking, draining and heavy grazing. Riparian areas here have low levels of stability. The area also has a moderate impact of habitat loss, altered species composition, and altered soil condition/compaction/fill.

Other areas with high impacts were the Chimney Rock, Lower Ochoco Creek, Lower Crooked Valley areas. Wetlands in these HUC6 areas showed high impacts of habitat fragmentation/connectivity due to low levels of riparian stability; altered species composition based on low levels of wetland and riparian biodiversity; and altered soil condition/compaction/fill due to low levels of sediment stabilization in the watershed. These watersheds also showed moderate impacts due to intense grazing pressure and moderate levels of water storage and delay.

The major classifications of permitted wetland impacts (DSL) are:

| HGM Class | Percent of Acres | Cowardin Class | Percent of Acres |
|-----------|------------------|----------------|------------------|
| Slope | 48% | PEM | 99% |
| Unknown | 42% | | |

FIL projects should target restoration of diked and drained wetlands that will provide water storage and delay in combination with other functions. The Deschutes Basin Restoration Priorities identifies several watersheds with moderate impacts to water storage and delay that may contribute to low instream flows. These are: Whychus Creek, Willow Creek, Middle Deschutes River, White River, Mud Springs Creek, and Lower Trout Creek.

D. **References**

- Clackamas River Basin Council. 2005. Clackamas River Summary Watershed Overview and Clackamas River Basin Action Plan. Clackamas, Oregon.
- Coos Watershed Association. 2005. Heads of Tide Assessment (Draft). Coos Bay, Oregon.
- Department of Environmental Quality. 2001. Tillamook Bay Watershed Total Maximum Daily Load. Department of Environmental Quality, Salem, Oregon.
- E&S Environmental and the Necanicum Watershed Council. 2000. Necanicum Watershed Assessment.
- E&S Environmental and the Nicolai-Wickiup Watershed Council. 2000. Nicolai-Wickiup Watershed Assessment.
- E&S Environmental Chemistry, Inc. and Skipanon Watershed Council. 2000. Skipanon Watershed Assessment.
- E&S Environmental Chemistry, Inc. and Young's Bay Watershed Council. 2000. Young's Bay Watershed Assessment.
- North Coast Watershed Association. <http://www.clatsopwatersheds.org>.
- Oregon Department of Fish and Wildlife. 2005. Oregon Conservation Strategy. Oregon Department of Fish and Wildlife, Salem, Oregon.
- Oregon Parks and Recreation Department. January 2003. 2003-2007 Oregon, Statewide Comprehensive Outdoor Recreation Plan: Appendix L: Oregon Wetlands Priority Plan. Oregon Parks and Recreation Department, Salem, Oregon.
- Oregon Watershed Enhancement Board. 2004. Deschutes Basin Priorities. http://www.oregon.gov/OWEB/GRANTS/docs/acquisition/AcqPriorities_Deschutes.pdf. Oregon Watershed Enhancement Board, Salem, Oregon.
- Oregon Watershed Enhancement Board. Deschutes Basin Restoration Priorities. http://www.oregon.gov/OWEB/restoration_priorities.shtml#Deschutes_Basin. Oregon Watershed Enhancement Board, Salem, Oregon.
- Oregon Watershed Enhancement Board. 2004. Lower Columbia Basin Priorities. http://www.oregon.gov/OWEB/GRANTS/docs/acquisition/AcqPriorities_LowerColumbia.pdf. Oregon Watershed Enhancement Board, Salem, Oregon.
- Oregon Watershed Enhancement Board. 2004. North Coast Basin Priorities. http://www.oregon.gov/OWEB/GRANTS/docs/acquisition/AcqPriorities_NorthCoast.pdf. Oregon Watershed Enhancement Board, Salem, Oregon.

Oregon Watershed Enhancement Board. 2004. Rogue Basin Priorities.
http://www.oregon.gov/OWEB/GRANTS/docs/acquisition/AcqPriorities_Rogue.pdf. Oregon Watershed Enhancement Board, Salem, Oregon.

Oregon Watershed Enhancement Board. 2004. Umpqua Basin Priorities.
http://www.oregon.gov/OWEB/GRANTS/docs/acquisition/AcqPriorities_Umpqua.pdf. Oregon Watershed Enhancement Board, Salem, Oregon.

Oregon Watershed Enhancement Board. 2004. Willamette Basin Priorities.
http://www.oregon.gov/OWEB/GRANTS/docs/acquisition/AcqPriorities_Willamette.pdf. Oregon Watershed Enhancement Board, Salem, Oregon.

Population Research Center. 2008. College of Urban and Public Affairs, Portland State University, Portland, Oregon.

Willamette Basin Watershed Councils, Biosystems Consulting, and Watershed Initiatives. 2005. Willamette Basin Restoration Priorities: Watershed Summaries. Prepared for Oregon Watershed Enhancement Board.
http://www.oregon.gov/OWEB/restoration_priorities.shtml#Willamette_Basin.

Partnership for the Umpqua Rivers. 2007. Umpqua Basin Action Plan.

Rogue Basin Coordinating Council. 2006. Rogue Basin Regional Restoration Priorities.
http://www.oregon.gov/OWEB/restoration_priorities.shtml#Rogue_Basin.
Prepared for the Oregon Watershed Enhancement Board, Salem, Oregon.

Oregon Department of State Lands Fee-In-Lieu Program Instrument

XII. Exhibit B: Instrument Modifications

As FIL projects are identified, DSL will submit a written request to the Corps to modify the Instrument according to the process outlined in this Exhibit (33 CFR 332.8). Other forms of Instrument modifications, including expansion of the FIL program to include compensatory mitigation for non-wetland waters and expansion of approved FIL projects, will also follow the process outlined herein.

Requests for Instrument modifications will be accompanied by the appropriate supporting documentation as determined by the District Engineer. DSL expects that requests for addition of a FIL project will include the following information:

- The river basin and watershed (hydrologic unit code) of the site
- The goals and objectives of the site related to the watershed compensation planning framework
- Proposed service area
- Current zoning and zoning for adjacent properties
- Site conditions and location
- Proposed preliminary concept plan and/or feasibility study (if complete/available)
- How the project meets the project selection criteria outlined in Exhibit A.
- Estimate of proposed acreage/linear footage and type of mitigation
- Proposed protection and long-term management strategy
- Other information as needed

DSL may elect to ask for a preliminary review and consultation of a modification request. In this case, the District Engineer will provide copies of the draft request to the IRT and will provide comments back to DSL within 30 days.

Within 30 days of receipt of DSL's formal request for an instrument modification, the District Engineer will notify DSL whether the instrument modification request is complete. Within 30 days of receipt of a complete modification request, the District Engineer will provide public notice of the request that summarizes the project documentation provided by DSL, and makes this information available to the public upon request. The comment period will be 30 days, unless otherwise determined and justified by the District Engineer. The District Engineer and IRT members may also provide comments to the sponsor at this time. The Corps will provide copies of all comments to IRT members and DSL within 15 days of the close of the public comment period.

DSL will prepare a draft amendment and submit it to the District Engineer for a completeness review. The draft amendment will include the following information as the mitigation plan (as required by 33 CFR Part 332.4 (c)):

- Information included in the initial modification request.
- Mitigation plan with a legend and scale
- Estimate of proposed acreage/linear footage and type of mitigation
- Description of existing functions and services and how they will be improved or enhanced through specific mitigation measures
- Project budget
- Determination of credits and the credit release plan
- Maintenance plan
- Performance standards
- Monitoring requirements
- Long-term management plan
- Adaptive management plan
- Other information as needed

The Corps will notify DSL within 30 days of receipt of the amendment whether it is complete, or will request additional information. Once any additional information is received and the amendment is complete, the Corps will notify DSL. DSL will provide copies of the amendment for the Corps to distribute to the IRT for a 30-day comment period. This comment period begins 5 days after the copies of the amendment are distributed. Following the comment period, the District Engineer will discuss any comments with the appropriate agencies and DSL to seek to resolve any issues using a consensus based approach, to the extent practicable. Within 90 days of receipt of the complete amendment, the District Engineer must indicate to DSL whether the amendment is generally acceptable and what changes, if any, are needed.

DSL will submit a final amendment to the District Engineer for approval, with supporting documentation that explains how the final amendment addresses the comments provided by the IRT. DSL will also provide copies directly to IRT members. Within 30 days of receipt of the final amendment, the District Engineer will notify the IRT members whether or not he intends to approve the amendment. If no IRT members object by initiating the dispute resolution process within 45 days of receipt of the final amendment (Army Corps of Engineers, 2008), the District Engineer will notify DSL of his final decision, and if approved, arrange for signing by the appropriate parties.

Streamlined Review Process

The District Engineer may use a streamlined modification review process for changes reflecting adaptive management of the FIL program, credit releases, changes in credit releases and credit release schedules, and changes that the District Engineer determines are not significant. In this event, the District

Engineer will notify the IRT members and DSL of this determination and provide them with copies of the proposed modification. IRT members and DSL have 30 days to notify the District Engineer if they have concerns with the proposed modification. If IRT members or DSL notify the District Engineer of such concerns, the District Engineer will attempt to resolve those concerns. The District Engineer will notify the IRT members and DSL of his intent regarding the proposed modification within 60 days of providing the notice to the IRT members. If no IRT member objects, by initiating the dispute resolution process (33 CFR 332.8) within 15 days of receipt of the notification, the District Engineer will notify the sponsor of his final decision and, if approved, arrange for it to be signed by the appropriate parties.

Oregon Department of State Lands In Lieu Fee Program Instrument

XIII. Exhibit C: Fee-In-Lieu Financial Accounting Structure

The Wetland Mitigation Bank Revolving Fund (WMBRF) will be used to manage the federally approved deposits and expenditures from the FIL Program. The following excerpts from statute outline collection and use of funds from the WMBRF:

ORS.196.643 Payments to comply with permit condition, authorization or resolution of violation. *A person who provides off-site compensatory wetland mitigation in order to comply with a condition imposed on a permit in accordance with ORS 196.825 (5), an authorization issued in accordance with ORS 196.800 to 196.905 or a resolution of a violation of ORS 196.800 to 196.905 may make a payment for credits to an approved mitigation bank with available credits, or to the Oregon Wetlands Mitigation Bank Revolving Fund Account, if credits from a mitigation bank are not available. If the person is making a payment to the Oregon Wetlands Mitigation Bank Revolving Fund Account, the payment shall be equal to the average cost of credits available from all active mitigation banks in the state. [2003 c.738 §22]*

196.650 Use of account. *The Department of State Lands may use the moneys in the Oregon Wetlands Mitigation Bank Revolving Fund Account for the following purposes:*

- (1) For the voluntary acquisition of land suitable for use in mitigation banks.*
- (2) To pay for specific projects to create, restore or enhance wetland areas for purposes of carrying out the provisions of ORS 196.600 to 196.905. Moneys deposited in the account for wetland impacts may be used only for wetland creation, restoration and enhancement.*
- (3) For purchase of credits from approved mitigation banks.*
- (4) For payment of administrative, research or scientific monitoring expenses of the department in carrying out the provisions of ORS 196.600 to 196.655.*
- (5) For the disbursal of funds received under the Federal Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451 et seq.), for such purposes as specifically stipulated in a grant award.*
- (6) For the disbursal of funds received under the Federal Emergency Wetlands Resources Act of 1986, P.L. 99-645, for the voluntary acquisition of wetlands and interests therein as identified in the wetlands provisions of the Statewide Comprehensive Outdoor Recreation Plan. [Formerly 541.585; 1993 c.18 §37; 2003 c.738 §12]*

Upon Corps approval of the FIL program, DSL will create a separate account in the WMBRF, called the FIL Program Account. This account will be maintained separately from funds received prior to Corps approval and separately from funds resulting from mitigation requirements not under Corps jurisdiction (PIL Program Account).

FIL projects will be funded through the Oregon Wetland Mitigation Bank Revolving Fund Account and administered as wetland grants. Initially, funds for wetland grants may be borrowed from existing deposits in the PIL Program Account, and repaid as credits are sold. Once the FIL Program Account receives sufficient deposits, this account will be exclusively used for the FIL Program.

Oregon Department of State Lands In Lieu Fee Program Instrument

XIV. Exhibit D: Mitigation Plans

Oregon Department of State Lands In Lieu Fee Program Instrument

XV. Exhibit E: Statement of Sale of Credit



Oregon

Theodore R. Kulongoski, Governor

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregonstatelands.us

State Land Board

Theodore R. Kulongoski

Governor

Bill Bradbury

Secretary of State

Randall Edwards

State Treasurer

CENWP-OD-G Policy Specialist

P.O. Box 2946

Portland, Oregon 97208-2946

Subject: Statement of Sale for (Number of Credits) Wetland
Mitigation Credits from the Project Name to Permittee Name

Date

The Department of State Lands (DSL) has a Memorandum of Agreement with the U.S. Army Corps of Engineers (Corps) to establish and operate an In-Lieu Fee Program.

This letter confirms the sale of (Number of Credits) credits of (Resource Type A), and (Number of Credits) credits of (Resource Type B). These credits are being used as compensatory mitigation for (Number of Acres) acres of impact to (Resource Type A), and (Number of Acres) acres of impact to (Resource Type B) in the (Impact HUC) as authorized by DA permit (DA permit number) and Oregon Removal-Fill Permit/GA (DSL permit number).

By selling credits to the permittee above permittee, DSL is the party responsible for fulfilling the mitigation aspect of the Permit(s) listed above.