

Appendix A.
Engrossed Second Substitute House Bill 2860,
Columbia River Water Management Act

Chapter 90.90 RCW **Columbia river basin water supply**

Chapter Listing

RCW Sections

90.90.005 Finding.

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90.90.900 Effective date -- 2006 c 6.

90.90.005

Finding.

(1) The legislature finds that a key priority of water resource management in the Columbia river basin is the development of new water supplies that includes storage and conservation in order to meet the economic and community development needs of people and the instream flow needs of fish.

(2) The legislature therefore declares that a Columbia river basin water supply development program is needed, and directs the department of ecology to aggressively pursue the development of water supplies to benefit both instream and out-of-stream uses. [2006 c 6 § 1.]

90.90.010

Columbia river basin water supply development account — Use for storage facilities and access to water supplies — Evaluation — Public comment — Use of net water savings.

(1) The Columbia river basin water supply development account is created in the state treasury. The account may receive direct appropriations from the legislature, receipts of any funds pursuant to RCW 90.90.020 and 90.90.030, or funds from any other sources.

(2)(a) Expenditures from the Columbia river basin water supply development account may be used to assess, plan, and develop new storage, improve or alter operations of existing storage facilities, implement conservation projects, or any other actions designed to provide access to new water supplies within the Columbia river basin for both instream and out-of-stream uses. Except for the development of new storage projects, there shall be no expenditures from this account for water acquisition or transfers from one water resource inventory area to another without specific legislative authority.

(b) Two-thirds of the funds placed in the account shall be used to support the development of new storage facilities; the remaining one-third shall be used for the other purposes listed in this section.

(3)(a) Funds may not be expended from this account for the construction of a new storage facility until the department of ecology evaluates the following:

- (i) Water uses to be served by the facility;
 - (ii) The quantity of water necessary to meet those uses;
 - (iii) The benefits and costs to the state of meeting those uses, including short-term and long-term economic, cultural, and environmental effects; and
 - (iv) Alternative means of supplying water to meet those uses, including the costs of those alternatives and an analysis of the extent to which long-term water supply needs can be met using these alternatives.
- (b) The department of ecology may rely on studies and information developed through compliance with other state and federal permit requirements and other sources. The department shall compile its findings and conclusions, and provide a summary of the information it reviewed.
- (c) Before finalizing its evaluation under the provisions of this section, the department of ecology shall make the preliminary evaluation available to the public. Public comment may be made to the department within thirty days of the date the preliminary evaluation is made public.
- (4) Net water savings achieved through conservation measures funded by the account shall be placed in trust in proportion to the state funding provided to implement a project.
- (5) Net water savings achieved through conservation measures funded by the account developed within the boundaries of the federal Columbia river reclamation project and directed to the Odessa subarea to reduce the use of ground water for existing irrigation is exempt from the provisions of subsection (4) of this section.
- (6) Moneys in the Columbia river basin water supply development account created in this section may be spent only after appropriation.
- (7) Interest earned by deposits in the account will be retained in the account.
- [2006 c 6 § 2.]

90.90.020

Allocation and development of water supplies.

(1)(a) Water supplies secured through the development of new storage facilities made possible with funding from the Columbia river basin water supply development account shall be allocated as follows:

- (i) Two-thirds of active storage shall be available for appropriation for out-of-stream uses; and
 - (ii) One-third of active storage shall be available to augment instream flows and shall be managed by the department of ecology. The timing of releases of this water shall be determined by the department of ecology, in cooperation with the department of fish and wildlife and fisheries comanagers, to maximize benefits to salmon and steelhead populations.
- (b) Water available for appropriation under (a)(i) of this subsection but not yet appropriated shall be temporarily available to augment instream flows to the extent that it does not impair existing water rights.
- (2) Water developed under the provisions of this section to offset out-of-stream uses and for instream flows is deemed adequate mitigation for the issuance of new water rights provided for in subsection (1)(a) of this section and satisfies all consultation requirements under state law related to the issuance of new water rights.
- (3) The department of ecology shall focus its efforts to develop water supplies for the Columbia river basin on the following needs:
- (a) Alternatives to ground water for agricultural users in the Odessa subarea aquifer;
 - (b) Sources of water supply for pending water right applications;
 - (c) A new uninterruptible supply of water for the holders of interruptible water rights on the Columbia river mainstem that are subject to instream flows or other mitigation conditions to protect stream flows; and
 - (d) New municipal, domestic, industrial, and irrigation water needs within the Columbia river basin.

(4) The one-third/two-thirds allocation of water resources between instream and out-of-stream uses established in this section does not apply to applications for changes or transfers of existing water rights in the Columbia river basin.
[2006 c 6 § 3.]

90.90.030

Voluntary regional agreements — Scope and application — Reports to legislature — Definitions. (Expires June 30, 2012.)

(1) The department of ecology may enter into voluntary regional agreements for the purpose of providing new water for out-of-stream use, streamlining the application process, and protecting instream flow.

(2) Such agreements shall ensure that:

(a) For water rights issued from the Columbia river mainstem, there is no negative impact on Columbia river mainstem instream flows in the months of July and August as a result of the new appropriations issued under the agreement;

(b) For water rights issued from the lower Snake river mainstem, there is no negative impact on Snake river mainstem instream flows from April through August as a result of the new appropriations issued under the agreement; and

(c) Efforts are made to harmonize such agreements with watershed plans adopted under the authority of chapter 90.82 RCW that are applicable to the area covered by the agreement.

(3) The protection of instream flow as set forth in subsection (2) of this section is adequate for purposes of mitigating instream flow impacts resulting from any appropriations for out-of-stream use made under a voluntary regional agreement, and the only applicable consultation provisions under state law regarding instream flow impacts shall be those set forth in subsection (4) of this section.

(4) Before executing a voluntary agreement under this section, the department of ecology shall:

(a) Provide a sixty-day period for consultation with county legislative authorities and watershed planning groups with jurisdiction over the area where the water rights included in the agreement are located, the department of fish and wildlife, and affected tribal governments, and federal agencies. The department of fish and wildlife shall provide written comments within that time period. The consultation process for voluntary regional agreements developed under the provisions of this section is deemed adequate for the issuance of new water rights provided for in this section and satisfies all consultation requirements under state law related to the issuance of new water rights; and

(b) Provide a thirty-day public review and comment period for a draft agreement, and publish a summary of any public comments received. The thirty-day review period shall not begin until after the department of ecology has concluded its consultation under (a) of this subsection and the comments that have been received by the department are made available to the public.

(5) The provisions of subsection (4) of this section satisfy all applicable consultation requirements under state law.

(6) The provisions of this section and any voluntary regional agreements developed under such provisions may not be relied upon by the department of ecology as a precedent, standard, or model that must be followed in any other voluntary regional agreements.

(7) Nothing in this section may be interpreted or administered in a manner that precludes the processing of water right applications under chapter 90.03 or 90.44 RCW that are not included in a voluntary regional agreement.

(8) Nothing in this section may be interpreted or administered in a manner that impairs or diminishes a valid water right or a habitat conservation plan approved for purposes of compliance with the federal endangered species act.

(9) The department of ecology shall monitor and evaluate the water allocated to instream and out-of-stream uses under this section, evaluate the program, and provide an interim report to the appropriate committees of the legislature by June 30, 2008. A final report shall be provided to the appropriate committees of the legislature by June 30, 2011.

(10) If the department of ecology executes a voluntary agreement under this section that includes water rights appropriated from the lower Snake river mainstem, the department shall develop aggregate data in accordance with the provisions of RCW [90.90.050](#) for the lower Snake river mainstem.

(11) Any agreement entered into under this section shall remain in full force and effect through the term of the agreement regardless of the expiration of this section.

(12) The definitions in this subsection apply to this section and RCW [90.90.050](#), and may only be used for purposes of implementing these sections.

(a) "Columbia river mainstem" means all water in the Columbia river within the ordinary high water mark of the main channel of the Columbia river between the border of the United States and Canada and the Bonneville dam, and all ground water within one mile of the high water mark.

(b) "Lower Snake river mainstem" means all water in the lower Snake river within the ordinary high water mark of the main channel of the lower Snake river from the head of Ice Harbor pool to the confluence of the Snake and Columbia rivers, and all ground water within one mile of the high water mark.

(13) This section expires June 30, 2012.
[2006 c 6 § 4.]

90.90.040

Columbia river water supply inventory — Long-term water supply and demand forecast.

(1) To support the development of new water supplies in the Columbia river and to protect instream flow, the department of ecology shall work with all interested parties, including interested county legislative authorities and watershed planning groups, adjacent to the Columbia river, and affected tribal governments, to develop a Columbia river water supply inventory and a long-term water supply and demand forecast. The inventory must include:

(a) A list of conservation projects that have been implemented under this chapter and the amount of water conservation they have achieved; and

(b) A list of potential water supply and storage projects in the Columbia river basin, including estimates of:

(i) Cost per acre-foot;

(ii) Benefit to fish and other instream needs;

(iii) Benefit to out-of-stream needs; and

(iv) Environmental and cultural impacts.

(2) The department of ecology shall complete the first Columbia river water supply inventory by November 15, 2006, and shall update the inventory annually thereafter.

(3) The department of ecology shall complete the first Columbia river long-term water supply and demand forecast by November 15, 2006, and shall update the report every five years thereafter.

[2006 c 6 § 5.]

90.90.050

Columbia river mainstem water resources information system.

(1) In order to better understand current water use and instream flows in the Columbia river mainstem, the department of ecology shall establish and maintain a Columbia river mainstem water resources information system that provides the information necessary for effective mainstem water resource planning and management.

(2) To accomplish the objective in subsection (1) of this section, the department of ecology shall use information compiled by existing local watershed planning groups, federal agencies, the Bonneville power administration, irrigation districts, conservation districts in the basin, and other available sources. The information shall include:

(a) The total aggregate quantity of water rights issued under state permits and certificates and filed under state claims on the Columbia river mainstem and for ground water within one mile of the mainstem; and

(b) The total aggregate volume of current water use under these rights as metered and reported by water users under current law.

(3) The department of ecology shall publish the aggregate data on the department's web site no later than June 30, 2009, and shall periodically update the data.

(4) For purposes of this section, the definition of Columbia river mainstem in RCW [90.90.030](#)(12) shall apply and the use of the definition is solely limited to the purpose of collecting data to meet the information requirements of this section.
[2006 c 6 § 6.]

90.90.900

Effective date — 2006 c 6.

This act takes effect July 1, 2006.

[2006 c 6 § 10.]

Appendix B. Summary Scoping Comments

Summary of Scoping Comments

Comments	Discussion/EIS Section Reference
SEPA Issues	
The EIS should be a supplement to the 2004 EIS on the Columbia River Mainstem Water Management Program.	Refer to Sections 1.4, 1.6 of the EIS
The Programmatic EIS will be inadequate for addressing specific large-scale projects, which will have their own separate SEPA review, and thus these should not be included in the programmatic EIS.	Refer to Sections 1.2 and 1.4 of the EIS
SEPA review is currently conducted for all new water rights issuances, and usually results in a Determination of Nonsignificance.	<p>The Columbia River Management Program will involve a significant number of actions, of which some, but not all, would create probable significant environmental impacts. While it is acknowledged that issuance of individual water rights or transfers would generally involve a Determination of Nonsignificance under SEPA, many of the storage and conveyance projects envisioned by the Management Program would likely result in probable significant adverse environmental impacts.</p> <p>The SEPA Rules clearly state that:</p> <p>A threshold determination shall not balance whether the beneficial aspects of a proposal outweigh its adverse impacts, but rather, shall consider whether a proposal has any probable significant adverse environmental impacts under the rules stated in this section. For example, proposals designed to improve the environment, such as sewage treatment plants or pollution control requirements, may also have significant adverse environmental impacts (WAC 197-11-330)</p>
Since full mitigation is required by the legislation, it is inappropriate to assume that issuance of new water rights would have a significant environmental impact.	<p>The Columbia River Management Program will involve a significant number of actions, of which some, but not all, would create probable significant environmental impacts. While it is acknowledged that issuance of individual water rights or transfers would generally involve a Determination of Nonsignificance under SEPA, many of the storage and conveyance projects envisioned by the Management Program would likely result in probable significant adverse environmental impacts.</p> <p>The SEPA Rules clearly state that:</p> <p>A threshold determination shall not balance whether the beneficial aspects of a proposal outweigh its adverse impacts, but rather, shall consider whether a proposal has any probable significant adverse environmental impacts under the rules stated in this section. For example, proposals designed to improve the environment, such as sewage treatment plants or pollution control requirements, may also have significant adverse environmental impacts (WAC 197-11-330).</p>
It is unnecessary to complete SEPA review on issues already allowed for and administered under RCW and WAC.	Through passage of Columbia River Management Act, the legislature directed the Ecology to develop the Columbia River Management Program and authorized expenditures from the Columbia River Account for that purpose. The definition of an "action" under the SEPA Rules includes the following:

Comments	Discussion/EIS Section Reference
SEPA Issues (continued)	
	<p>(a) New and continuing activities (including projects and programs) entirely or partly financed, assisted, conducted, regulated, licensed, or approved by agencies; [or]</p> <p>(b) New or revised agency rules, regulations, plans, policies, or procedures (WAC 197-11-704(1)).</p> <p>The Management Program currently being created under authority of the legislation fits within the definitions provided above and is subject to environmental review under SEPA. This Programmatic EIS is not intended to address existing administrative procedures and processes, only new processes and projects that were created or enabled by the legislation.</p>
<p>A piecemeal approach to SEPA analysis could result unless all projects occurring in the region are identified (e.g., the ECBID transfers of water to Odessa are already occurring and therefore may not be included in this analysis).</p>	<p>One of the principal purposes of this Programmatic EIS is to ensure that all foreseeable actions that and activities that may be undertaken as part of the Columbia River Management Program are identified and associated impacts evaluated to the extent that they are known. The East Columbia Basin Irrigation District transfers alluded to in the comment are not being undertaken as part of the Management Program.</p>
<p>The CSRIA VRA should not be analyzed until the EIS is complete and policies have been established.</p> <p>SEPA review of a VRA proposal is premature at this time.</p>	<p>Voluntary Regional Agreements are being analyzed at a broad, programmatic level within this document to support evaluation of associated policy and rule making options. That does not preclude the subsequent evaluation of the more narrowly focus Columbia Snake River Irrigators' VRA proposal within the same document. The SEPA Rules state that:</p> <p>“The SEPA process shall be integrated with agency activities at the earliest possible time to ensure that planning and decisions reflect environmental values, to avoid delays later in the process, and to seek to resolve potential problems (WAC 197-11-055).</p>
<p>The implementation of VRAs should use rulemaking procedures.</p>	<p>Rule making is being considered by Ecology for resolution of various policy issues associated with implementation of the Columbia River Management Program. Refer to Chapter 6 for additional discussion of rulemaking.</p>
<p>SEPA analysis now would be incomplete for projects that will require further NEPA and ESA analysis at a later time. The SEPA analysis would need to incorporate the results of the NEPA and ESA analyses.</p>	<p>WAC 197-11-055 states that:</p> <p>The lead agency shall prepare its threshold determination and environmental impact statement (EIS), if required, at the earliest possible point in the planning and decision-making process, when the principal features of a proposal and its environmental impacts can be reasonably identified.</p> <p>The fact that proposals may require future agency approvals or environmental review shall not preclude current consideration, as long as proposed future activities are specific enough to allow some evaluation of their probable environmental impacts.</p>

Comments	Discussion/EIS Section Reference
SEPA Issues (continued)	
	Thus, initial programmatic review of projects that will require additional SEPA and NEPA analysis would appear to be consistent with the SEPA rules. See also Sections 1.2, 1.4 of the EIS.
Alternatives	
Alternatives should include other potential future water scenarios based on different actions by neighboring jurisdictions, including Canada, tribal lands, and surrounding states.	The state of Washington regularly participates with representatives of the states of Idaho, Montana, and Oregon in discussions over governance of the Columbia River. The Columbia River Management Program was developed in consultation with that group, and it is anticipated that discussions will be ongoing in regard to achievement of regional consensus over management of the river system. It is the intent of the state of Washington to engage the governments of Canada and British Columbia in discussions over Columbia River management; however, in recognition of the federal government’s role in addressing transboundary issues, those discussions will not be formally initiated until consultation with appropriate federal agencies.
When project and non-project actions are intertwined, SEPA requires examination of reasonable alternatives to the non-project action.	SEPA requires evaluation of “reasonable alternatives” regardless of whether the action is project or nonproject. In the case of the Columbia River Management Program development, the limitations placed by the legislative enabling act preclude development of full stand-alone alternatives to the program with the exception of the no action alternative. Where appropriate, policy and procedural options within the scope of the enabling act are considered. In addition, alternatives for projects envisioned under the act are evaluated to the extent currently possible.
“Alternative levels of precaution” should be analyzed when dealing with uncertainties in supply and demand.	The state of Washington regularly participates with representatives of the states of Idaho, Montana, and Oregon in discussions over governance of the Columbia River. The Columbia River Management Program was developed in consultation with that group, and it is anticipated that discussions will be ongoing in regard to achievement of regional consensus over management of the river system. It is the intent of the state of Washington to engage the governments of Canada and British Columbia in discussions over Columbia River management; however, in recognition of the federal government’s role in addressing transboundary issues, those discussions will not be formally initiated until consultation with appropriate federal agencies.
Analyze alternative of buying water rights, or existing farms.	Refer to Section 2.4.3 of the EIS.
Analyze different methods of defining “consumptive use”.	Refer to Section 2.2 of the EIS.
Analyze the use of reclaimed municipal water as an alternative.	Reclaimed water is included as a component of municipal conservation, as described in Section 2.1.2 of the EIS.
The forecast of demand should be quantified based on actual current use and should take into consideration actual demand and potential climate change.	Refer to Section 2.1.2.4 of the EIS.
A range of water supply alternatives for meeting projected consumptive use demand and instream flow protection should be assessed. Alternatives should be based on economic and demographic trends	Refer to Section 2.1.2.4 regarding demand forecasting, and Section 2.2.5 and Chapter 6 for discussions on how instream flows affects water rights.
Assess other alternatives for assisting Odessa Subarea irrigators (in addition to delivering CBP water to the Subarea).	See Section 2.1.2.1.

Comments	Discussion/EIS Section Reference
Storage	
Consider raising the height of Banks Lake by one foot in the analysis.	As part of the Odessa Special Study, several different proposals affecting the height and amount of draw down of Banks Lake will be analyzed. At least one proposal will be to store additional water (raise the level) in Banks Lake, while other proposals will evaluate drawing down Banks Lake to lower levels than current practices.
The study should include raising Lake Roosevelt by increasing the height of Grand Coulee Dam.	According to the U.S. Bureau of Reclamation, raising Grand Coulee Dam is not feasible. The dam's design would not safely accommodate construction of a lift above the current in-place structure.
Examine aquifer storage (ASR) and surface storage options that include water from the Columbia and Spokane Rivers. Also, examine reclaimed water as mitigation for surface and subsurface flows in the Crab Creek drainage.	Aquifer storage projects are a subset of storage projects that would be potentially eligible for funding under the Columbia River Management Program. Ecology is currently considering several aquifer storage proposals that are at a conceptual stage, including a proposal by the city of Kennewick to augment its public water. See Section 2.1.2.1.
Analyze the feasibility of transporting a portion of the water from the proposed Hawk Creek reservoir to the headwaters of Crab Creek.	Hawk Creek is one of the potential reservoir sites being evaluated as part of the Columbia River Mainstem Off-Channel Storage Appraisal Study. This study is being conducted by the Bureau of Reclamation as part of the Columbia River Management Program. The current appraisal study is evaluating the general suitability of the Hawk Creek site as a potential reservoir. Options concerning how and to where water would be discharge from the Hawk Creek site will be evaluated in a future feasibility study if that site advances beyond the appraisal level.
The EIS should include an examination of ASR and surface discharge options for Sinking Creek.	Such a proposal is not currently under consideration by Ecology. However, consistent with Section 16 of the 2004 Memorandum of Understanding between Bureau of Reclamation, the state of Washington, and the Columbia Basin Irrigation Districts, Ecology has indicated a willingness to explore the potential for an aquifer recharge project for the Odessa area once the current ground water replacement projects have been initiated.
The analysis should include consideration of small-scale storage projects along the Columbia River Mainstem and its tributaries.	Ecology is open to considering all proposals that meet the objectives of the Columbia River Management Act. Projects will be evaluated for funding eligibility using criteria developed under the program implementation process (see Chapter 6).
Consider operating Lake Roosevelt for the benefit of instream resources in the EIS.	The Bureau of Reclamation has filed two water rights applications with Ecology to put a total of 132,000 acre-feet of water stored behind Grand Coulee Dam under Reclamation's existing storage right to beneficial use. One of the applications is to put 82,500 acre-feet to beneficial use on an annual basis. Of that amount, 27,500 acre-feet would be dedicated to instream flow augmentation downstream of Grand Coulee Dam. The other application is to put 50,000 acre feet to beneficial use during drought years with 17,000 acre feet of that amount to be dedicated to instream flow augmentation downstream of Grand Coulee Dam. This proposal is discussed in Section 2.5.1 and Chapter 5 of the EIS.

Comments	Discussion/EIS Section Reference
Storage (continued)	
Is Potholes Reservoir Supplemental Feed Route intended to offset the effects of recently implemented conservation measures on ground water feeding the reservoir, or is it intended to facilitate irrigation in the Second Half of the Columbia Basin Project?	The Supplemental Feed Route Project is intended to provide the Bureau of Reclamation with increased operation flexibility in moving irrigation water from Banks Lake to Potholes Reservoir. Currently, most of the flow to Potholes Reservoir is through the East Low Canal. The Supplemental Feed Route Project will provide an alternative route to the Potholes Reservoir and ensure a more reliable supply to the South Columbia Basin Irrigation District. In the future, the Supplemental Feed Route could also play a role in some of the alternatives under consideration as part of the Bureau of Reclamation's Odessa Special Study Project.
The Moses Coulee storage site has risen to the level of a "project", and thus requires SEPA review.	The Moses Coulee site was evaluated in the Pre-Appraisal Report prepared by Ecology and Reclamation in 2005. It was not selected as one of the four sites that will be evaluated by Reclamation in an Appraisal Report. Therefore, no SEPA review of the site is warranted.
The evaluation should include an alternative that uses 100% of new water that is a result of altering operations of existing storage facilities to in-stream uses.	Refer to the discussion of Alternatives 2C-1, 2C-2 and 2C-3 in Section 2.2 and in Chapter 6.
Explain how storage on tributaries will be addressed in the mainstem program	Proposals for storage projects in the tributaries of the Columbia and Snake Rivers may be eligible for funding from the Columbia River Account provided that they provide some tangible benefits to the Mainstem Columbia and Snake Rivers. Such proposals are currently being inventoried under provisions of Section 5 of the Columbia River Management Act.
Conservation	
Analyze an alternative that does not deliver Columbia Basin Project water to the Odessa Subarea. This should include limited or different farming.	Refer to Section 2.1.2.2 for a discussion of Conservation. Refer to Section 2.1.2.1 for a discussion of alternatives considered for Odessa.
Analyze a demand-management program as an alternative to development of a new water supply, and include the use of pricing mechanisms as a demand management approach.	Refer to Chapter 1 for a discussion of the Columbia River Water Management Act and accompanying requirements, which includes a requirement to address storage options in addition to demand management. See also Section 2.4.1 regarding a conservation only approach.
Develop a "sustainable agriculture" alternative (i.e., smaller scale, lower chemical use, higher water efficiency and soil building practices).	Sustainable agriculture practices are included in the Conservation Component described in Section 2.1.2.2.
Analyze an alternative that includes aggressive conservation and efficiency measures in the Odessa Subarea.	Refer to Section 2.1.2.2 for a discussion of Conservation. Refer to Section 2.1.2.1 for a discussion of alternatives considered for Odessa.
Irrigation scheduling (IWM) does not qualify for conservation funding under the CRWMP, and it should be considered.	If sufficient quantities of consumptive water savings can be achieved through IWM, and those savings can be placed in trust, Irrigation Water Management could be eligible for funding through the Columbia River Account.
Short-term solutions, such as the Conservation Reserve Enhancement Program, BPA power buybacks, and IWM, should be explored while long-term solutions are sought.	Refer to Section 2.1.2.2 for a discussion of Conservation components, and Section 2.5 for a discussion of early action items being considered.
The EIS should address whether water conservation in the watersheds could be transferred to and serve as mitigation for water use from the mainstem of the Columbia River.	See Sections 6.2.4 and 6.2.7.
Conservation and reclaimed water programs should be evaluated prior to implementation of a new storage project.	The legislation authorizes both storage and conservation projects. The legislation does not require that storage projects are contingent on conservation programs.

Comments	Discussion/EIS Section Reference
Conservation (continued)	
Require new water right recipients to use the best available technology.	This requirement is not included in the legislation, but is one of the things that Ecology can consider in processing water rights.
The EIS should evaluate the useful life of conservation projects, and weigh alternatives for substituting other methods when they become obsolete.	This level of analysis will be conducted at a project level when specific conservation projects are proposed.
Only those lands closest to the East Low Canal, or those with highly efficient irrigation practices, should receive Columbia River water.	The recipients of Columbia River water will be determined as part of the on-going Odessa Subarea studies.
Voluntary Regional Agreements (VRAs)	
How will “no net loss” of in-stream flow during the specified months be ensured for approved VRAs?	Diversions associated with Voluntary Regional Agreements would be required to be measured and reported to Ecology. Ecology is developing additional capacity for verification of diversions.
How will VRAs under the Management Program affect flows outside of the specified months, and will these effects be addressed and mitigated?	The legislation is clear that instream flow mitigation for VRAs is only during July and August on the Columbia River and April to August on the Snake River. Ecology can and will consider the Impacts of VRAs on existing water rights. See the discussion of water quantity impacts in Section 4.1.3.
What sort of monitoring is planned, and what contingency actions will be required, for VRAs?	The ability to measure diversions, monitor trust water acquisitions, and protect state water trust acquisitions will be conditioned through both funding agreements and through Voluntary Regional Agreements.
Is there a timeframe to submit a VRA?	There is no specific time frame for submitting a Voluntary Regional Agreement to Ecology, however, the statutory provision for establishment of VRAs expires June 30, 2012.
How is the term “regional” defined as it applies to a VRA? Is it by WRIA, or some other parameter?	The term “regional” is not defined in statute, but would be determined on a case-by-case basis through each specific Voluntary Regional Agreements that is proposed
What are the rules, or criteria, for a VRA? Does the 4-part test still apply for all water rights issued under a VRA?	The criteria for Voluntary Regional Agreements are described in Section 4 of the Columbia river Management Act, including the “no negative impact” on flows restriction. The four part test as well as other fundamental elements of state water law still apply. Refer to section 5.1.1.5 for a discussion of impacts from VRAs on water rights.
How will the Management Program affect applications that are not part of a VRA?	Refer to Section 6.x.x.x for a discussion of the impacts from the Management Program on processing Water Rights applications.
No negative impact on in-stream flow should be defined as no diminution of flow below the point of diversion, with mitigation at or above the point of diversion.	Refer to Section 6.2.7.
The CSRIA VRA proposal cannot be processed until the policies for the program have been formulated. There is a danger that the analysis will be geared toward the CSRIA proposal and not look at a broad range of proposals.	The ability to measure diversions, monitor trust water acquisitions, and protect state water trust acquisitions will be conditioned through both funding agreements and through Voluntary Regional Agreements.
Ecology should establish basic rules of mitigation, the types of mitigation practices that are acceptable, to be applied when reviewing VRAs. The EIS should evaluate the level of protection these rules would provide.	The mitigation standard for a Voluntary Regional Agreement is established in Section 4 of the legislation. There is also an alternative under consideration to help further define that mitigation. See Sections 6.2.5, 6.2.6, 6.2.9, 6.2.10, and 6.2.11.

Comments	Discussion/EIS Section Reference
Voluntary Regional Agreements (VRAs) (continued)	
The EIS should include an evaluation of conditioning VRAs on attaining flow levels in the FCRS Biological Opinion.	For water rights to fill new off-channel storage facilities, mitigation and instream flow requirements would be developed through environmental review and consultation. The Biological Opinion flow would be a consideration in review of specific projects.
Mitigation water must be added to the river from the same pool as the diversion point; make no assumption that mitigation water would pass downstream of a dam.	Refer to the discussion in Section 6.2.8.
It is premature and inappropriate for the programmatic EIS to encompass a specific voluntary regional agreement.	<p>Voluntary Regional Agreements are being analyzed at a broad, programmatic level within this document to support evaluation of associated policy and rule making options. That does not preclude the subsequent evaluation of the more narrowly focus Columbia Snake River Irrigators' VRA proposal within the same document. The SEPA Rules state that:</p> <p>“The SEPA process shall be integrated with agency activities at the earliest possible time to ensure that planning and decisions reflect environmental values, to avoid delays later in the process, and to seek to resolve potential problems” (WAC 197-11-055).</p>
Surface Water/Instream flows	
Moses Lake could benefit from the Supplemental Feed Route project by additional flushing with clean water.	See Section 5.2.
The EIS should discuss the timing of water diversion and the effects of timing limitations on agriculture.	Timing of diversions may be considered as a form of mitigation for stream flow impacts. See Section 6.2.1.
The EIS should discuss flow velocity and the velocity buffering effect, especially in relation to the release of 87,000 acre-feet of water from McNary Dam, as recently required.	The Biological Opinion flows are discussed in Section 3.6.3.6.
Clarify when and if trans-WRIA transfers will be allowed.	<p>The only limitation placed on trans-WRIA transfers under the Columbia River Management Act is found in Section 2 of the Act, which states that:</p> <p>“Except for the development of new storage projects, there shall be no expenditures from this account [Columbia River Account] for water acquisition or transfers from one water resource inventory area to another without specific legislative authority.”</p> <p>Trans-WRIA transfers are discussed in Section 6.3.2.</p> <p>Trans-WRIA acquisitions and transfers funded through a source other than the Columbia River Account are not affected.</p>
Clarify how direct withdrawals from the Columbia River will be treated with regard to the WRIA boundaries.	See Section 6.2.3.
Include Canada and other states when looking at flow projections.	The state of Washington regularly participates with representatives of the states of Idaho, Montana, and Oregon in discussions over governance of the Columbia River. The Columbia River Management Program was developed in consultation with that group, and it is anticipated that discussions will be ongoing in regard to achievement of regional consensus over management of the river system. It is the intent of the state of Washington to engage the

Comments	Discussion/EIS Section Reference
Surface Water/Instream flows	
	governments of Canada and British Columbia in discussions over Columbia River management; however, in recognition of the federal government's role in addressing transboundary issues, those discussions will not be formally initiated until consultation with appropriate federal agencies.
The EIS should consider ground and surface water connectivity.	The Columbia River Management Act did not alter the body of existing water law. Ground and surface water continuity will continue to be considered in all water right decisions.
The EIS should discuss the water quality impacts of surface water storage.	Any proposed surface water storage facility proposed and/or funded under the Columbia River Management Act will undergo environmental review under the State Environmental Policy Act and, potentially, the National Environmental Policy Act. All probable significant environmental impacts, including those to water quality, will be identified and evaluated. Refer to section 4.1.1.3.
The EIS should provide equal emphasis on instream flows enhancement as on out-of-stream uses.	Refer to Section 4.1.1.3.
The EIS should evaluate methods to protect conserved water "instream".	Refer to Section 2.1.2.2, which describes the conservation component. Surface water impacts are discussed in Sections 4.1.1.3 and 5.1.1.3.
Conservation projects should be evaluated from the perspective of protecting instream flows as the baseline.	See Chapter 6.
If instream flows are going to be improved, instream storage is needed to keep up the flow.	Refer to Section 4.1.1.3.
Assess how this state management program will relate to flows prescribed in the biological opinion for FRCPS.	For water rights to fill new off-channel storage facilities, mitigation and instream flow requirements would be developed through environmental review and consultation. The Biological Opinion flow would be a consideration in review of specific projects.
The PEIS should lay the groundwork for establishing new flows, and should discuss how instream flows will be protected and restored as part of the program	Establishing new instream flows is beyond the scope of Columbia River Management Program established by the legislature. Instead of establishing or authorizing establishment of new instream flows, the legislature identified the mitigation standard for Voluntary Regional Agreements (no negative impact on Columbia River mainstem instream flows in the month of July and August) and mandated that 1/3 of new storage be dedicated to instream flow improvement. Water right applications that are not addressed by Voluntary Regional Agreements or storage would be subject to instream flows or mitigation measures determined through consultation under the existing Columbia River Consultation Rule.
The PEIS should assess potential impacts associated with removing water from the Columbia River without mitigation, outside of the July-August timeframe.	See Section 6.2.4 and 6.2.7.
Ground Water	
Lincoln County stratigraphy is critical to understanding ground water issues in the Columbia Basin. The state should be encouraged to fund stratigraphy and aquifer mapping.	Comment noted. Refer to Section 3.5 for a discussion of existing ground water conditions.
The EIS should evaluate the effect of BMPs that might be implemented under the program on habitat, especially with regard to the value of irrigation seepage for aquifer recharge.	Refer to Section 4.1.2.6 for a discussion of impacts of conservation projects on wildlife and habitat.

Comments	Discussion/EIS Section Reference
Ground Water (continued)	
The Odessa Subarea water depth information is 25 years old and should be updated.	Refer to Section 3.5.3 for a discussion of current ground water conditions in the Odessa Subarea. Updated information will be added as it is available.
How much water is being contributed (by both surface and ground water) from WRIA 43 to the Potholes Reservoir as “natural recharge”?	Comment noted. This is out of scope of the EIS.
The EIS should examine the problem of illegally constructed wells and the degree to which these are contributing to the problems in the Odessa area.	It is acknowledged that illegally constructed wells could be contributing to problems in the Odessa area, however, a definitive analysis of such problems is beyond the scope of the Management Plan EIS.
Water Rights/Water Supply	
Would it be necessary to provide “new water” if permits are to be issued from the John Day/McNary pools as described in WAC 173-531A?	Yes. Chapter 173-531A is subject to the consultation process to determine mitigation and flow requirements. Reserved water under Chapter 173-531A must be appropriated through new permits (See WAC 173-531A-060).
The EIS should review Tribal water rights.	Refer to Section 3.6.3.3.
How will the Management Program affect applications for ground water located more than a mile from the main channel of the Columbia or Snake Rivers?	The legislation requires consideration of ground water within a mile of the mainstem rivers. See Section 6.2.8 for a discussion of how the one mile will be measured.
The baseline for water use should be July 1, 2006.	Ecology is limited by the legislation in how it can implement the program. The effective date of the Columbia River Water Management Act is July 1, 2006. Water must meet the requirements of RCW 90.42 for beneficial use.
VRAs may represent a departure from existing rules of prior appropriation in the processing of water rights applications.	Refer to Section 5.3 for a discussion of impacts to water rights from VRAs.
Trust water rights should be used for the twin goals of serving out-of-stream and instream uses.	See the discussion of Alternatives 2C in Chapter 6.2.
Water supply needs should be assessed for out-of-stream consumptive use necessary to meet the public interest as part of the programmatic EIS.	Refer to Section 4.1.1.3. and 4.1.2.3.
Fish and Wildlife	
Full mitigation for impacts to inundated lands should be included as part of the total project costs.	Project costs will be incorporated into feasibility and cost/benefit evaluations conducted by Reclamation, and are not included in this SEPA evaluation.
The EIS should map all habitat types in the basin, and identify which will be impacted by the Management Program.	Refer to Section 3.7.
Impacts to wetlands and potholes (including conversion to open water for storage projects) should be considered in the EIS.	Refer to Section 4.1.1.6 and Section
The EIS should address the potential for conversions from native vegetation to new agricultural uses, including the loss of shrub-steppe habitat and attendant impacts to species dependent on that habitat.	Refer to Section 4.1.1.6.
The EIS should address the effect of conversions of land use from agricultural to municipal uses on seasonality of flows.	Refer to Section 4.1.1.8.
The EIS should analyze risk to salmon from water impacts that result from large off-channel storage projects, including temperature, flow and seasonality.	Refer to Section 4.1.16.
The EIS should address “false attraction” from high flows discharged to tributaries.	Refer to Section 4.1.1.6.
The EIS should consider the benefits of spill versus power generation with regard to dispensation of water allocated for in-stream flow augmentation.	Refer to Sections 4.1.1.6 and 4.1.1.12.

Comments	Discussion/EIS Section Reference
Fish and Wildlife (continued)	
The EIS should consider the costs of monitoring, evaluation and adaptive management for every mitigation alternative.	Cost benefit evaluations will be conducted as part of feasibility evaluations conducted by Reclamation.
The EIS should discuss the flow velocity and temperature relationship to fish health and survival.	Refer to Section 4.1.1.6
Current drawdown for salmon has impacts on carp spawning and spotted frog survival in Kettle River area, which should be evaluated in the EIS.	Refer to Section 4.1.1.6
The EIS should examine the full range of issues discussed in the NAS report and how they can be solved.	Section 4.1.1.6 includes a discussion of those issues included in the NAS report that are relevant to this programmatic evaluation.
The EIS should describe how the Management Program would comport with intertribal fish restoration plans, statutory in-stream flows, and relevant court cases regarding fish habitat protection.	Refer to Section 4.1.1.6 and Section 5.1.1.6.
The EIS should examine the importance of high flows for river health, including consideration of established flow targets for spring and summer migration periods.	Refer to Section 4.1.1.6 and Section 5.1.1.6.
The EIS should address the trout population in Crab Creek and any impacts to that population that might occur as result of the Alternative Feed Route project for Potholes Reservoir.	Refer to Section 4.1.1.6 and Section 5.1.1.6
What sort of economic studies will be done with regard to endangered species?	Socioeconomic evaluations associated with the Management Program are included in Section 4.1.1.7 and 5.1.1.7.
The EIS should examine ways to use an incentive-based program to reward sound stewardship to enhance habitat or species.	Mitigation measures for fish-related impacts associated with the Management Program are included in Section 4.1.1.6. Incentive-based programs for habitat enhancement are not specifically included, but are not precluded from this discussion.
The EIS should assess how this state management program will relate to the biological opinion for FRCPS.	For water rights to fill new off-channel storage facilities, mitigation and instream flow requirements would be developed through environmental review and consultation. The Biological Opinion flow would be a consideration in review of specific projects.
Land Use	
The EIS should address the potential for conversions of land use to new agricultural uses.	Refer to Section 4.1.1.8 and 5.1.1.8.
The EIS should address the potential for conversions of land use from agricultural to municipal uses.	Refer to Section 4.1.1.8 and 5.1.1.8.
Economics	
The EIS should consider economic impacts that could result from adversely affecting hunting, fishing and wildlife watching.	Refer to Section 4.1.1.7 and 5.1.1.7.
The EIS should conduct a robust economic analysis of all alternatives, and should use realistic and peer-reviewed construction cost assumptions.	A detailed economic analysis of all proposed storage alternatives will be conducted by Reclamation and others as part of site-specific evaluations. A programmatic evaluation appropriate for SEPA review is included in Section 4.1.1.7 and 5.1.1.7.
The EIS should evaluate the impacts of the program on farmers who rely on irrigation, and on businesses who rely on those farmers.	Refer to Section 4.1.1.7 and 5.1.1.7.
The document should consider the independent analysis by Texas A&M, and consider the economic impact on all growers in the State, not just those who rely on Columbia River water.	This discussion is included in Section 4.1.1.7 and 5.1.1.7.
The economic analysis should not minimize the economic importance of salmon.	Economic impacts to salmon are included in Chapters 4 and 5.

Comments	Discussion/EIS Section Reference
Economics (continued)	
The EIS should discuss the cost of subsidies for agricultural water users.	Refer to Section 4.1.1.7 and 5.1.1.7 for a programmatic discussion of this issue; this SEPA EIS does not include a cost-benefit analysis.
The EIS should discuss social and economic equity issues related to what groups would benefit most from the Management Program.	Refer to Section 4.1.1.7 and 5.1.1.7.
Recreation	
The EIS should address impacts to hunting, fishing, and wildlife watching, and examine alternatives for avoiding adverse impacts.	Refer to Section 4.1.1.11 and Section 5.1.1.11.
Drawdowns in Lake Roosevelt below elevation 1280' could affect boat access and expose contaminated sediments during peak tourist season.	Refer to Section 4.1.1.11 and Section 5.1.1.11
The EIS should investigate more recreation opportunities associated with wildlife, to get more people out to the country to have fun.	Refer to Section 4.1.1.11 and Section 5.1.1.11
Public Services and Utilities	
The EIS should consider storage tanks versus reservoirs in canyons, and should consider fire control equipment in planning.	Ecology has not yet entertained specific proposals for tanks in lieu of reservoirs, but would be open to such proposals provided they meet the funding criteria that will be established under the Management Plan.
Cultural Resources	
Erosion from additional drawdowns in Lake Roosevelt below elevation 1280' can expose cultural resources to vandalism and other impacts. The costs for enforcement of programs to protect cultural resources should also be considered.	Refer to Section 5.1.1.9. This SEPA EIS does not include a cost benefit evaluation.
The EIS should examine the effects the Management Program could have on tribal fishing and water rights.	Refer to Section 4.1.1.9 and 5.1.1.9, as well as 4.1.1.6 and 4.1.15.
Activities considered under this program could impact cultural resources. Consultation with tribes should be included in the process.	Refer to Section 4.1.1.9 and 5.1.1.9.
Investigations for the supplemental feed routes need to be more than records searches, since these areas have not been studied for archaeology.	Site specific investigations will be part of the NEPA environmental evaluations conducted by Reclamation.
Others	
The EIS should analyze the cumulative impacts of development of the Second Half of the CBP.	The development of the second half of the Columbia Basin Project is not be considered at this time. If Reclamation proposed to develop the Second Half in the futures, NEPA environmental evaluations will be required which will include cumulative impacts.
Ecology should engage in rulemaking to establish policies for the program.	Rule making is being considered by Ecology for resolution of various policy issues associated with implementation of the Columbia River Management Program.
Hydroelectric generation should be considered as part of the Supplemental Feed Route for the Potholes Reservoir project.	The only Supplemental Feed Route alternative with the potential for hydropower generation is the W20 route. The potential for hydropower will be considered by Reclamation as part of the feasibility study for the alternative routes.
The Plain Talk Principles should be used to produce the EIS.	The EIS has been prepared with the intention of being as understandable as possible.
The rulemaking process should be used for developing new BMP requirements.	Rule making is being considered by Ecology for resolution of various policy issues associated with implementation of the Columbia River Management Program.
Any requirement for metering or reporting of all surface or ground water should be addressed by the Legislature.	Section 7 of the Columbia River Management Act provides funding for metering and reporting of ground and surface water use. Section 6 of the Act provides authority to establish a Columbia River Water Resources Information

Comments	Discussion/EIS Section Reference
Others (continued)	
	System under which metering and reporting could be required. Additional statutory authority for metering and monitoring is provided under RCW 90.03.360 and RCW 90.44.450.
How will committee members be chosen, and who will be invited?	Since by statute, development and implementation of the Columbia River Management Program is primarily the responsibility of the Department of Ecology, the members of the Policy Advisory Committee members were appointed by the Director of that department in collaboration with the Governor's Office. In making such appointments, the director attempted to secure participation of a range of tribal and local governments, federal and state agencies, and stakeholder groups to assist Ecology in the implementation of the Act. While a primary consideration in appointing members to the group was to attempt to achieve an appropriate balance among various interests involved in implementation of the Act, consideration was also given to limiting the Policy Advisory Group to a size that would promote efficient operation of the group. See the list of Policy Advisory Committee members at http://www.ecy.wa.gov/programs/wr/cwp/crwmp_info.html
Will the Management Program be based on scientific parameters?	
Will the implementation plans for WRIA planning be addressed by the Management Program?	The EIS includes a discussion of storage projects proposed by WRIAs. See Section 3.4.1.5
Ensure county commissioners and WRIA planning units are involved in planning and implementation.	Following the enactment of the Columbia River Management Act, Ecology met with eastern Washington county commissioners to discuss the most appropriate venue for their participation in the development and implementation of the Columbia River Management Program. As a result of those discussions, the County Commissioners Policy Advisory Group has been established by the Washington State Association of Counties in cooperation with Ecology. This group has established a charter and is consulting with Ecology on an ongoing basis. Ecology also created the Columbia River Water Resources Management Program Policy Advisory Group (PAG) facilitate gathering of input from a range of tribal and local governments, federal and state agencies, and stakeholder groups regarding the implementation of the Act. County commissioners currently have 3 representatives on the Policy Advisory Group. Other local governments, including irrigation districts, cities, and public utility districts are also represented.
Will an agreement be signed between Ecology and the counties, similar to that with Colville Tribe?	No "agreements" between Ecology and counties are contemplated at this time, but the legislation does not foreclose on such agreements as a future option.
PEIS and rulemaking should provide basic guidance on acceptable mitigation practices.	Appropriate mitigation measures for project impacts are described in Chapters 4 and 5. Mitigation for instream flows are discussed in Chapter 6.
Regulations by Ecology, like agricultural burning and spray buffers, are driving farmers off their land. This is leading to "trophy cabins" and big box stores, which are harder on the land than farming. Further regulation will lead to property rights initiatives. If water is not available, there will be more farmers forced off, which will mean more development.	Comment noted.

**Appendix C.
Notice of Adoption of the Final Environmental Impact
Statement for Watershed Planning Under Chapter
90.82 RCW**

**NOTICE OF ADOPTION OF EXISTING
ENVIRONMENTAL DOCUMENT**

Description of current proposal: Columbia River Management Program Draft and Final Programmatic Environmental Impact Statement (EIS)

Proponent: Washington State Department of Ecology

Location of current proposal: Columbia River Basin, State of Washington

Title of document being adopted: Final Environmental Impact Statement for Watershed Planning under Chapter 90.82 RCW

Date adopted document was prepared: July 18, 2003

Description of document (or portion) being adopted: The portions of the document being adopted include Section 1.5 - Watershed Planning Process; Section 1.6 - State Rule-making Process; Chapter 3.0 - Laws, Regulations and Programs Related to Watershed Planning; Chapter 4 - Affected Environment; Section 5 - Alternatives; and Section 6 – Impacts and Mitigation Measures.

If the document being adopted has been challenged (WAC 197-11-630), please describe:
N/A

The document is available to be read at (place/time): The Final Environmental Impact Statement for Watershed Planning under Chapter 90.82 RCW was distributed to agencies with jurisdiction, Tribes, and other interested parties in July 2003. The document may be viewed by at Department of Ecology offices during normal business hours (8:00 a.m. to 5 p.m., Monday – Friday) at the following locations:

Department of Ecology Headquarters
300 Desmond Drive
Lacey, WA 98503

Department of Ecology Central Regional Office
15 West Yakima Ave -- Suite 200
Yakima, WA 98902-3452

Department of Ecology Eastern Regional Office
N. 4601 Monroe
Spokane, WA 99205-1295

EIS REQUIRED: The lead agency has determined the Columbia River Management Program proposal is likely to have a significant adverse impact on the environment. To meet the requirements of RCW 43.21C.030(2)(c), the lead agency is adopting the portions of document described above, in addition to preparing a stand-alone Draft and Final EIS for the proposal, to fulfill its requirements under SEPA.

The lead agency has determined that this document is appropriate for this proposal and will accompany the proposal to decision makers.

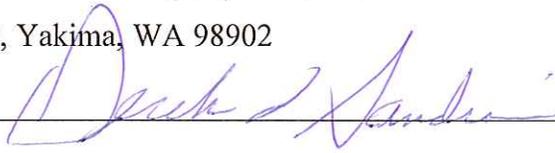
Name of agency adopting document: Washington State Department of Ecology

Responsible Official: Derek I. Sandison

Position/title: Central Regional Director **Phone:** (509) 457-7120

Address: 15 W Yakima Avenue #200, Yakima, WA 98902

Date: October 5, 2005 **Signature:** _____



Appendix D. Water Rights Summary

Water Rights Summary

Within the Columbia River Basin, three major groups of water rights will affect any decisions on future water plans: state-based water rights, federal tribal reserved water rights, and non-tribal federal reserved water rights.¹ This section describes state-based water rights, federal tribal reserved water rights, along with the special water rights issues that affect the Columbia River Basin, including non-tribal federal reserved rights. In making decisions regarding new sources of water in the basin, it is important to understand how these various water rights were and are created and the relationship between them. The guiding principles are that rights “first-in-time are first-in-right” and water right decisions may not result in impairment of existing rights.

State-Based Water Rights

Establishing a Water Right

Prior to enactment of the Surface Water Code in 1917 and the Ground Water Code in 1945, water rights could be acquired by simply putting water to beneficial use or by posting a notice near the point of diversion, and perhaps filing a copy with the county auditor, and then beginning construction on project works. Riparian rights were acquired on the basis of ownership of land adjacent to or traversed by a watercourse. Riparian rights that were not beneficially used by 1932 were lost (*Ecology v. Abbott* 103 Wn.2d 686 (1985)). The key to preserving pre-code water rights, besides continuing to beneficially use the water through the years, was to file a water right claim under the Claims Registration Act (RCW 90.14.041). The claims registration was first opened in 1974 and again, most recently, in 1997-1998 (RCW 90.14.068). If a person holding a pre-code water right failed to file a claim to that water, the right was lost. A water right claim is not the same as a water right. The claim preserves whatever right may exist, but the final validity of the claim may only be determined in an adjudication by the court.

Since adoption of the Surface Water Code, in order to receive a new water right, a person must first file an application with Ecology to appropriate waters of the state. Ecology shall issue a permit if it makes the following four findings: (1) the proposed use of water is for a beneficial purpose; (2) there is water available for appropriation; (3) the proposed use would not impair existing water rights; and (4) the proposed use would be in the public interest (RCW 90.03.290).

Beneficial uses include such things as stock watering; industrial, commercial, agricultural, and domestic use; irrigation; and fish and wildlife maintenance (RCW 90.54.020(1)). Water availability has both a technical and a legal meaning. Technically, there must be water physically available from the source to meet the uses or needs proposed for the requested quantity of water. Legally, there is water available only if it can be appropriated without impairing existing water rights, either by reducing the quantity available to satisfy those rights or by reducing the quality of the water available. When the facilities have been constructed and the water has been put to beneficial use, the water right is said to have been perfected. Ecology then issues a water right certificate for the purpose of use, place of use, point of diversion or withdrawal, period of use, and quantity of water that has been put to beneficial use.

¹ The Reclamation holds a large quantity of water rights for the Columbia Basin Reclamation Project. Water rights held by Reclamation are state-based water rights (Chapter 90.40 RCW).

Maintaining a Water Right

With few exceptions, when a water right is perfected, it must continue to be used or it will be considered lost through abandonment or relinquishment (commonly referred to as the “use-it-or-lose-it” provision). Abandonment is a common law doctrine that requires an extended period of non-use and the intent to abandon the water right. Relinquishment is a statutory mechanism for forfeiting a water right that was enacted in 1967. No intent is required. A water right is subject to relinquishment when all or a portion of a water right is not used for five successive years, unless there is a sufficient cause for the non-use or the right is exempt from relinquishment (RCW 90.14.160-180, RCW 90.14.140, Ecology 2005a).

The state legislature has defined sufficient cause to include, but not be limited to, the following circumstances: drought or other unavailability of water, operation of legal proceedings that prevent the use of water, and federal or state leases/option to buy land or water rights that preclude or reduce the use of the right by the owner of the water right (RCW 90.14.140(1)). The Surface Water Code also includes several sufficient causes for non-use that apply specifically to irrigation water rights, including temporary reductions in water use due to varying weather conditions, temporary reliance on return flow instead of withdrawal from the primary source when the return flows are measured or reliably estimated, and reductions in water use due to crop rotation (RCW 90.14.140(1)).

In addition to the “sufficient causes” for not using water, the statute exempts the following water rights from relinquishment: water rights claimed for power development, water rights used for standby or reserve water supply, water claimed for a determined future development, municipal water rights, water rights satisfied by the use of reclaimed agricultural industrial process water, and trust water rights (RCW 90.14.140).

Changing or Transferring a Water Right

With sources of “new” water becoming increasingly scarce, transfers of or changes to existing water rights offer opportunities to obtain additional water without applying for a new water right.² RCW 90.03.380 and RCW 90.44.100 provide that any existing surface water or ground water right that has been applied to a beneficial use(s) is eligible for a change in the point of diversion or withdrawal, place of use, or purpose of use, provided the change will not result in impairment to existing water rights. All changes require approval by Ecology, except in cases of direct property transfer where the water right is appurtenant to the land and none of the water right characteristics are modified (RCW 90.03.380, Ecology 2003b).

In making a decision on a change application, Ecology must make a tentative determination of the validity and extent of the water right, whether all or part of the right has been lost due to non-use, and whether the change would impair any other right (RCW 90.03.380 or RCW 90.44.100). In contrast to an application for a new water right, Ecology is not required to consider potential impairment of pending applications for water rights when it makes a decision on a change application. When acting on surface water change applications, Ecology may not deny the

² Historically, a water right change referred to a change in certain characteristics of a water right, for example, point of diversion, place of use, or purpose of use; while a water right transfer referred to a transfer of ownership of a water right from one person to another. For purposes of this discussion, the term “change” will encompass both changes and transfers.

application based upon public interest considerations (*Public Utility District No. 1 of Pend Oreille County v. Ecology*, 146 Wn.2d 778, 51 P.3d 744 (2002)).

A frequently requested type of change is from seasonal irrigation to year-round domestic or municipal supply. Such a change is acceptable as long as other water rights will not be impaired. In *R. D. Merrill Co. v. PCHB*, 137 Wn.2d 118 (1999), the state Supreme Court upheld a change from a seasonal to a year-round right:

However, as with other changes under RCW 90.03.380, a change in time of use may not be made which is detrimental to other appropriators' rights. If a change from seasonal to year-round use would cause injury, approval of a change in time of use should be denied or conditioned to protect other water rights holders by, for example, limiting the use for new purposes to the same season as the historical use (137 Wn.2d at 128-9).

To speed up the process of making decisions on change requests, the state legislature created county water conservancy boards to make initial decisions on such applications (Chapter 90.80 RCW). A water conservancy board applies the same standards as Ecology and sends its record of decision to Ecology. Ecology may affirm, reverse, or modify the action of a board within 45 days (which may be extended by 30 days) of receipt of the record of decision. If Ecology does not act within the prescribed time period, the decision of the board becomes Ecology's decision (RCW 90.80.080).

Exempt Ground Water Rights

One exception to the requirement to obtain a permit from Ecology is the legislatively created exemption for the withdrawal of ground water. Under the exemption, a well can be constructed and water withdrawn from an aquifer without a permit if the water will be used for (1) stock watering; (2) lawn or non-commercial garden watering in an area not exceeding one-half acre; (3) single or group domestic uses not exceeding 5,000 gallons a day; or (4) an industrial purpose not exceeding 5,000 gallons a day (RCW 90.44.050). This section of the RCW is commonly referred to as the "ground water exemption," and wells developed meeting the use requirements listed above are known as "exempt wells." An exempt well that is "regularly used beneficially, shall be entitled to a right equal to that established by a permit" (RCW 90.44.050). The use of an exempt well may be regulated to prevent impairment of senior rights.

Although it was a longstanding interpretation that use of an exempt well for stock water was limited to 5,000 gallons per day, a recent opinion of the Attorney General is that the statute does not limit the quantity of water that may be used for stock watering (AGO 2005 No. 17).

Storage Rights

One of the primary components of the Management Program is development of new storage facilities and issuance of new rights from storage. Construction and operation of new storage facilities would require obtaining a reservoir permit from Ecology (RCW 90.03.370). Applications for reservoir permits are subject to the permitting requirements in RCW 90.03.250 through RCW 90.03.320, and require Ecology to make the same four findings as for new surface water diversionary rights or ground water rights. The Surface Water Code sets forth

requirements for both storage reservoir permits and for secondary permits—the latter being permits for beneficial use of the water stored in reservoirs (RCW 90.03.370). The construction or modification of a dam or controlling works for storage of 10 acre-feet or more requires Ecology's approval of plans and specifications for the project (RCW 90.03.350). The Water Code considers underground geologic formations used for aquifer storage and recovery (ASR) projects to be “reservoirs,” and provides for permitting of such projects under the reservoir permit provisions of the code (RCW 90.03.360).

Instream Flow Rights

Chapter 90.22 RCW specifically authorizes Ecology to “establish minimum water flows or levels for streams, lakes, or other public waters [waters of the state] for purposes of protecting fish, game, birds, or other wildlife resources, or recreational or aesthetic values of said public waters whenever it appears to be in the public interest to establish the same” (RCW 90.22.010). Chapter 90.03 RCW stipulates that setting minimum flows by rule for a water body constitutes an appropriation of water. The priority date for such an appropriation is the effective date of the rule, unless otherwise specified in statute (RCW 90.03.345) (*Postema v. PCHB*, 142 Wn.2d 68, 81 (2000)). Therefore, any permits issued by Ecology for appropriation of water from a stream for which minimum flows have been adopted must be conditioned to protect the minimum flows (RCW 90.03.247).

Under Chapter 90.22 RCW, the authority of Ecology to establish minimum flows does not extend to water artificially stored in existing reservoirs or to the rights associated with the use of such waters. However, in granting storage permits under Chapter 90.03 RCW, Ecology is required to give “full recognition” to any minimum flows that have been established for stream reaches below a storage facility. In addition, Ecology is precluded from issuing rights to divert or store waters of the state that would conflict with a rule adopted as set forth in Chapter 90.22 RCW (RCW 90.22.010, RCW 90.22.030).

As such, the instream flow rights are subordinate to “existing water rights, riparian, appropriate, or otherwise, existing on the effective date of this chapter, including existing rights relating to the operation of any navigation, hydroelectric, or water storage reservoir, or related facilities” (WAC 173-563-020(3)). The instream flow rights are also subordinate to any water withdrawal at the request of Reclamation for the complete development of the Columbia Basin Project (RCW 90.40.030, RCW 90.40.100). Approximately one-half of the Columbia Basin Project-authorized lands are not yet irrigated, and any water diverted for these new lands in the project area would also be senior to the mainstem instream flow rights. The instream flow rights are also subordinate to any federal agency or tribal reserved water right established before 1980. Thus, this collection of various rights (existing pre-1980 rights, pre-1980 reserved water rights, and additional water withdrawn for the Columbia Basin Project) are essentially senior to the instream flow rights. They are also referred to as “uninterruptible water rights” (NRC 2004).

Municipal Water Rights

In 2003, the state legislature enacted the Municipal Water Supply-Efficiency Requirements Act (Municipal Water Law), which made changes to water resources statutes and Department of Health (DOH) statutes pertaining to municipal water rights and public water systems. The

legislation clarified the definition of municipal water supply and authorized the use of a municipal water right for environmental purposes (such as fish and wildlife, water quality, or habitat values) and to implement watershed plans, habitat conservation plans, and Federal Energy Regulatory Commission (FERC) licenses (RCW 90.03.015, RCW 90.03.550).³ The law also established that the place of use of a municipal water right is the service area in a water system plan approved by DOH. An expansion in the place of use may be created through approval of water system plans, small water system management programs, coordinated water system plans, and engineering documents (RCW 90.03.386(2)). Unperfected surface water rights for municipal water supply purposes may be changed or transferred subject to conditions including compliance with the supplier's water system plan (RCW 90.03.570).

Trust Water Rights

A “trust water right” is a right or a portion of a right acquired by the state for management in the Trust Water Right Program (Trust Program) (RCW 90.42.020(3)). The state may acquire all or portions of water rights by purchase, lease, or donation, and may acquire trust water rights on a permanent or a temporary basis (RCW 90.42.080(3), RCW 90.42.080(1)(a)). A trust water right retains the same priority date as the original water right and, importantly, is not subject to relinquishment while in the Trust Program (RCW 90.42.040(3), (6)). For a water right transferred to trust on a temporary basis, “the full quantity of water diverted or withdrawn to exercise the right before the donation or acquisition” reverts to the donor when the temporary trust period ends (RCW 90.42.080(9)).⁴ Although trust water rights are most commonly acquired for purposes of instream flow, trust water rights may in fact also be authorized for other beneficial uses including “irrigation, municipal, or other beneficial uses consistent with applicable regional plans for pilot planning areas, or to resolve critical water supply problems” (RCW 90.42.040(1)).

Under the Management Program, net water savings from conservation actions will be placed into the Trust Program in proportion to the amount of funding provided by the state (ESSHB 2860, Section 2(4)).

Federal Tribal Reserved Water Rights

Federal tribal reserved water rights are primarily based on the Winters doctrine established by the U. S. Supreme Court in *Winters v. United States*, 207 U.S. 564 (1908). The doctrine established that when the United States creates reservations, it implies the reservation of water in an amount necessary to fulfill the purposes of the reservation. The priority date of the water right is the date the reservation was created. Courts have generally held that agriculture was the purpose of tribal reservations created in the nineteenth century. Creation of a tribal reservation may also imply the use of water for long-established aboriginal uses such as fishing and hunting. The priority date for water for such aboriginal uses is time immemorial (Ecology 2005c).

³ Municipal water supply is defined to include (1) water supplied to 15 or more residential connections, (2) water used for governmental purposes (by counties, cities, towns, public utility districts, and water and sewer districts), and (3) other beneficial uses generally associated with water use within a municipality (for example, fire flow, park irrigation, industrial/commercial, system maintenance, etc.) (RCW 90.03.015).

⁴ Ecology interprets the phrase “to exercise the right” as putting the right to its authorized beneficial use. An instream flow right is exercised when it is protected based upon its priority date from any reduction by use of junior water rights.

Significantly, federal tribal reserved water rights are not subject to relinquishment or abandonment for non-use. The rights are for potential future use as well as historic use. The future water right for agriculture is defined by the practicably irrigable acres (PIA) standard, and includes the number of acres currently irrigated and the number of irrigable acres that may be developed at a reasonable cost in the future.

**Appendix E.
Instream Flows Set by WAC 173-563 and the 2004
Biological Opinion**

Instream Flows Set by WAC 173-563 and the 2004 Biological Opinion

Date	Chief Joseph		Wells & Rocky Reach		Rock Island & Wanapum		Priest Rapids			McNary			John Day		Bonneville	The Dalles	
	WAC 173-563		WAC 173-563		WAC 173-563		WAC 173-563		2004 BiOp	WAC 173-563		2004 BiOp	WAC 173-563		2004 BiOp	WAC 173-563	
	Min. Qi (kcfs)	Min. Avg. Weekly Flows (kcfs)	Min. Qi (kcfs)	Min. Avg. Weekly Flows (kcfs)	Min. Qi (kcfs)	Min. Avg. Weekly Flows (kcfs)	Min. Qi (kcfs)	Min. Avg. Weekly Flows (kcfs)	Flow Objective (kcfs)	Min. Qi (kcfs)	Min. Avg. Weekly Flows (kcfs)	Flow Objective (kcfs)	Min. Qi (kcfs)	Min. Avg. Weekly Flows (kcfs)	Flow Objective (kcfs)	Min. Qi (kcfs)	Min. Avg. Weekly Flows (kcfs)
Jan	10	30	10	30	10	30	50	70	--	20	60	--	20	60	? ^b	20	60
Feb	10	30	10	30	10	30	50	70	--	20	60	--	20	60	? ^b	20	60
Mar	10	30	10	30	10	30	50	70	--	50	60	--	50	60	? ^b	50	60
Apr 1-2	20	50	20	50	20	60	50	70	--	50	100	--	50	100	? ^b	70	120
3-9	20	50	20	50	20	60	50	70	--	50	100	--	50	100	? ^b	70	120
10-15	20	50	20	50	20	60	50	70	135	50	100	220-260 ^a	50	100	? ^b	70	120
16-25	20	60	30	60	30	60	50	70	135	70	150	220-260 ^a	70	150	? ^b	70	160
26-30	20	90	50	100	50	110	50	110	135	70	200	220-260 ^a	70	200	? ^b	70	200
May	20	100	50	115	50	130	50	130	135	70	220	220-260 ^a	70	220	? ^b	70	220
Jun 1-15	20	80	50	110	50	110	50	110	135	70	200	220-260 ^a	70	200	? ^b	70	200
16-20	10	60	20	80	20	80	50	80	135	50	120	220-260 ^a	50	120	? ^b	50	120
21-30	10	60	20	80	20	80	50	80	135	50	120	220-260 ^a	50	120	? ^b	50	120
Jul 1-15	10	60	20	80	20	80	50	80	--	50	120	200	50	120	--	50	120
16-31	10	90	50	100	50	110	50	110	--	50	140	200	50	140	--	50	140
Aug	10	85	50	90	50	95	50	95	--	50	120	200	50	120	--	50	120
Sep	10	40	20	40	20	40	36	40	--	50	60	--	50	85	--	50	90
Oct 1-15	10	30	20	35	20	40	36	40	--	50	60	--	50	85	--	50	90
16-31	10	30	20	35	20	40	50	70	--	50	60	--	50	85	--	50	90
Nov	10	30	10	30	10	30	50	70	--	50	60	--	50	60	125-160 ^b	50	60
Dec	10	30	10	30	10	30	50	70	--	20	60	--	20	60	? ^b	20	60

NOTES:

Abbreviations: Min = Minimum; Qi = instantaneous flow; Avg. = Average; WAC = Washington State Administrative Code; kcfs = thousand cubic feet per second

- Objective varies according to water volume forecasts.
- Objective varies based on actual and forecasted water conditions. The dates to which this flow objective applies include 11/1 to emergence (spring season) which may vary each year.
- The 2004 Biological Opinion was issued by NMFS regarding the Federal Columbia River Power System (FCRPS). The data in the table is from Bureau of Reclamation, Bonneville Power Administration, and U.S. Army Corps of Engineers (Action Agencies). 2004. Final Updated Proposed Action for the FCRPS Biological Opinion Remand. November 24, 2004.

**Appendix F.
Water Storage Opportunities in Water Resource
Inventory Areas (WRIAs)**

WATER STORAGE OPPORTUNITIES IN WRIAS

The following is a summary of water storage opportunities that have been identified in watershed assessments in WRIAs in the Columbia River Basin. There is no WRIA level information available on storage opportunities in WRIAs 28, 29, 33, 34, 36, 40 to 42, 47, 49, 51 to 54, 58, and 60 to 62 at this time.

WRIA 30 (Klickitat Basin)

Two storage assessment reports have been completed for WRIA 30. The *WRIA 30 Multipurpose Water Storage Screening Assessment Report* and the *Addendum to WRIA 30 Multipurpose Water Storage Screening Assessment Report* evaluated off-channel and on-channel impoundments and aquifer storage in the Swale Creek and Little Klickitat Subbasins (Watershed Professionals Network and Aspect Consulting 2005).

WRIA 31 (Rock/Glade Basin)

The WRIA 31 storage assessment includes an evaluation of the feasibility of applying ASR within the Kennewick and Glade/Fourmile Subbasins (Aspect 2004).

WRIA 32 (Walla Walla Basin)

The Candidate SASR Sites Hydrogeology memo, Locher Road and Hall-Wentland SAR site work plans and Multi-Purpose Storage Assessment were completed to identify and evaluate storage opportunities. The Candidate SASR Sites Hydrogeology memo identified four shallow aquifer storage sites: East Little Walla Walla River, Locher Road gravel pit, Lower Yellowhawk Creek and Cottonwood Creek (Kennedy/Jenks 2003). The Hall Wentland site was tested in early 2006 and the Locher Road site has been characterized, but no testing has begun at this time. In addition, the City of Walla Walla received a grant from Ecology to study shallow aquifer recharge near their water treatment plant.

WRIA 35 (Middle Snake Basin)

A multi-purpose storage assessment is being prepared in conjunction with the WRIA 35 watershed plan, but is not yet completed. The study is evaluating two aquifer storage sites in the Asotin Creek drainage and one wetland storage site in the Tucannon River Basin (HDR 2006).

WRIAs 37, 38, and 39 (Yakima Basin)

In June 2006, the *Yakima River Basin Storage Alternatives Appraisal Assessment* was completed and released to the public. This report analyzed the Bumping Lake Enlargement, Keechelus to Kachess Pipeline, and Wymer Dam alternatives to determine their viability and capability to meet storage goals. In February 2005, the *Appraisal Assessment of the Black Rock Alternative* was completed and released to the public (Reclamation 2006).

Reclamation is currently in the process of completing a feasibility study for water storage projects within the Yakima River Basin. The goals of the storage projects are to provide a more normal flow condition for fish, more reliable water supply for current water users, and additional

water supplies for future demands. The feasibility studies are evaluating at two alternatives, the Black Rock Alternative and Wymer Dam Alternative, which were determined to be technically viable and meet the needs of the Storage Study. The feasibility studies are expected to be completed by the end of 2008 (Reclamation 2006).

The City of Yakima is investigating the use of ASR in the Ahtanum-Moxee subbasin of the Yakima Watershed where conditions are favorable for groundwater storage. The City of Yakima completed an ASR pilot test in 2001 and 2002 to evaluate groundwater storage as described in the *Naches Basin (WRIA 38) Storage Assessment, Application of Aquifer Storage and Recovery Report* (Golder 2002). The City used the Kissel Well, completed in Ellensburg Formation sand and gravel overlying Columbia River Basalt, as an ASR well, and recharge water was supplied from the City's treatment plant on the Naches River. About 45 million gallons (139 acre-feet) were recharged, stored, and then recovered. The results of the pilot testing were successful. A groundwater flow model developed as part of the project indicated that storage of 2,400 acre-feet was feasible.

Evaluations of geologic conditions in other areas of the Yakima Basin suggest that ground water storage may be feasible near the City of Ellensburg, where geologic conditions are similar to those near Yakima, and in areas of the lower Yakima Valley.

WRIA 45 (Wenatchee Basin)

The *Multi-Purpose Water Storage Assessment in the Wenatchee River Watershed* was recently completed (MWG 2006). The study identifies and reviews many potential water storage strategies such as new reservoirs, ground water recharge, enlarging existing lakes, optimizing existing reservoirs and stream restoration that would improve stream flow and water supply in WRIA 45. Eighteen potential water storage opportunities were identified in basins with the greatest water supply and instream flow issues and were reviewed in greater detail. This report is part of a preliminary phase. Feasibility studies have yet to be completed for any of these strategies.

WRIA 46 (Entiat Basin)

The Report to WRIA 46 (Entiat) Storage Sub-committee Step A Water Storage Assessment provides storage options for further evaluation in the Step B assessment (Golder 2006). Storage options include off-channel reservoirs (18 sites), small impoundments, expanding the storage capacity of existing lakes (Myrtle Lake and Lake Creek basin), storage tanks (City of Entiat, Ardenvoir, near smaller communities in the Entiat Valley), floodplain storage (above the Potato Creek moraine), and passive storage projects (conjunctive use of surface and ground water, side channel construction and floodplain management, snow fences and vegetation management) (Golder 2006).

WRIAs 44 and 50 (Douglas County)

The *WRIA 44/50 Storage Assessment and Feasibility Study* evaluates storage options within Douglas County. Small storage opportunities such as check dams on the East Fork Foster Creek, a small instream reservoir on Douglas Creek and infiltration of surface water during winter and

spring to augment groundwater were analyzed. Additional review of the ground water recharge alternative is being conducted to determine its feasibility.

WRIA 48 (Methow Basin)

In WRIA 48, Reclamation and the USGS analyzed seven alternatives for storing additional runoff. The alternatives include operational changes to two existing storage facilities—the Uphill Reservoir and Elbow Coulee and Dead Horse Reservoirs (Methow Basin Planning Unit 2005). Ground water storage was not included as an option for this watershed.

WRIs 55 and 57 (Little and Middle Spokane Basins)

The *Storage Assessment: Little and Middle Spokane Watersheds* investigated storage alternatives for enhancing existing streamflow, preventing future decreases in low summer flows that may occur due to increased water use, increasing water supply reliability, and meeting future demand. Three options were identified that required further evaluation including ASR in the lower Little Spokane Watershed, evaluating surface storage potential on Beaver and Buck Creeks, and restoring the Saltese Flats (Little Spokane River and Middle Spokane River Planning Unit 2006).

WRIA 56 (Hangman Basin)

The *Draft Multi-Purpose Storage Assessment for Hangman (Latah) Creek Watershed Report* evaluates storage options in WRIA 56. Options that were evaluated include wetland restoration, developing catchment basins and ponds to catch and store runoff, constructing dams (two sites), reforestation and land management practices (beaver ponds, snow fences, spreader structures, vegetated filter strips, no till/direct seed, water conservation, other agricultural best management practices) (The Hangman (Latah) Creek Watershed Planning Unit WRIA 56 2005).

WRIA 59 (Colville Basin)

In the Colville Watershed, the *Assessment of Multi-Purpose Water Storage Opportunities* evaluated storage options. The assessment focused on potential opportunities for storing excess flow and identified possible locations and methods (GeoEngineers 2004).

**Appendix G.
Lake Roosevelt Drawdown – Water Quality
Related Studies**

Lake Roosevelt Drawdown – Water Quality Related Studies

- Bortleson, G.C., Cox, S.E., Munn, M.D., Schumacker, R.J., Block, E.K., Lucy, and Cornelius, S.B., 1994, Sediment-quality assessment of Franklin D. Roosevelt Lake and upstream reach of the Columbia River, Washington, 1992: U.S. Geological Survey Open-File Report 94-315, 130 p.
- Bortleson, G.C., Cox, S.E., Munn, M.D., Shumaker, R.J., and Block, E.K., 2001, Sediment-quality assessment of Franklin D. Roosevelt Lake and upstream reach of the Columbia River, Washington, 1992: U.S. Geological Survey Water-Supply Paper 2496, 130 p.
- Cox, S.E., Bell, P.R., Lowther, J.S., VanMetre, P.C., 2003, The occurrence of trace elements and metallurgical slag in sediment cores from Lake Roosevelt, Washington State: 2003 Seattle Annual Meeting, The Geological Society of America, November 2-5, 2003, Seattle Washington, Paper no. 59-4.
- Cox, S.E., Bell, Peter, Lowther, Stewart, and VanMetre, P.C., 2004, Occurrence of trace elements and metallurgical slag in sediment cores from Lake Roosevelt, Washington [poster]: U.S. Geological Survey Western Region Science Symposium, Henderson, Nevada, March 15-19, 2004. (PDF, 1.43 MB)
- Cox, S.E., Bell, P.R., Lowther, J.S., and vanMetre, P.C., 2005, Trace-element concentrations and occurrence of metallurgical slag particles in bed sediment cores from Lake Roosevelt, Washington: Presentation by the U.S. Geological Survey at the 5th Washington Hydrogeology Symposium, Tacoma, Washington, April 12-14, 2005, 20 p. (PDF, 16.77 MB)
- Cox, S.E., Bell, P.R., Lowther, J.S., VanMetre, P.C., 2005, Vertical distribution of trace element concentrations and occurrence of metallurgical slag particles accumulated bed sediments of Lake Roosevelt, Washington, September 2002: U.S. Geological Survey Scientific Investigations Report 2004-5090, 70 p.
- Cox, S.E., Bell, P.R., Lowther, J.S., and vanMetre, P.C., 2005, Trace-element concentrations and occurrence of metallurgical slag particles in bed sediment cores from Lake Roosevelt, Washington [abs.]: 5th Washington Hydrogeology Symposium, Tacoma, Washington, April 12-14, 2005, Program, p. 49. (PDF, 2.13 MB)
- Erwin, M.L., and Munn, M.D., 1997, Are walleye from Lake Roosevelt contaminated with mercury?: U.S. Geological Survey Fact Sheet FS-102-97, 4 p.
- Kahle, S.C., and Majewski, M.S., 2003, Trace Elements in Lake Roosevelt Air: Presentation by the U.S. Geological Survey at the Lake Water Quality Council Meeting, Spokane, WA, December 4, 2003. (PDF, 717 KB)
- Kahle, S. C. and Majewski, M.S., 2004, Trace elements in air at Lake Roosevelt, Washington: Presentation by the U.S. Geological Survey at the Lake Roosevelt Natural Resources Management Meeting, Davenport, WA, March 16, 2004. (PDF, 611 KB)
- Majewski, Michael, Kahle, Sue, 2003, Occurrence and Distribution of Trace Elements in Lake Roosevelt Beach and Bed Sediments, and Air: 4th Symposium on the Hydrogeology of Washington State, April 8-10, 2003, Tacoma, Washington, (6.2 MB PDF)

- Majewski, M.S., Kahle, S.C., Ebbert, J.C., and Josberger, E.G., 2003, Concentrations and distribution of slag-related trace elements and mercury in fine - grained beach and bed sediments of Lake Roosevelt, Washington, April-May 2001: U.S. Geological Survey Water-Resources Investigations Report 03-4170, 29 p.
- Majewski, M.S., and Kahle, S.C., 2003, Occurrence and distribution of trace elements in Lake Roosevelt beach and bed sediments and air (abs.): 4th Symposium on the Hydrogeology of Washington State, April 8-10, 2003, Tacoma, Washington, Program, p. 19.
- Majewski, M.S., and Kahle, S.C., 2005, Occurrence and distribution of trace elements in Lake Roosevelt Beach, bed sediments, and air [abs.]: 5th Washington Hydrogeology Symposium, Tacoma, Washington, April 12-14, 2005, Program, p. 86. (PDF, 2.13 MB)
- Majewski, M.S., and Kahle, S.C., 2005, Occurrence and distribution of trace elements in Lake Roosevelt beach, bed sediments, and air [poster.]: 5th Washington Hydrogeology Symposium, Tacoma, Washington, April 12-14, 2005. (PDF, 2.23 MB)
- Munn, M.D., Cox, S.E., and Dean, C.J., 1995, Concentrations of mercury and other trace elements in walleye, smallmouth bass and rainbow trout in Franklin D. Roosevelt lake and the upper Columbia River, Washington, 1994: U.S. Geological Survey Open-File Report 95-195, 35 p.
- Munn, M.D., and Short, T.M., 1997, Spatial heterogeneity of mercury bioaccumulation by walleye in Franklin D. Roosevelt Lake and upper Columbia River, Washington: Transactions of the American Fisheries Society, v. 126, p. 477 - 487.
- Munn, M.D., 2000, Contaminant trends in sport fish from Lake Roosevelt and upper Columbia River, Washington, 1994 - 1998: U.S. Geological Survey Water-Resources Investigations Report 00-4024, 13 p.
- Paulson, A.J., Moran, P.W., and Wagner, R.J., 2004, The effects of trace elements on water quality and biological health in the Lake Roosevelt National Recreational Area, Columbia River, Washington: Presentation by the U.S. Geological Survey Lake Roosevelt Water Quality Council Meeting, Tacoma, Washington, May 7, 2004. (PDF 930 KB).

**Appendix H.
Select List of Freshwater Fish Species
of the Columbia Basin**

Select List of Freshwater Fish Species of the Columbia Basin.

Family	Latin Name	English Name	Status
Acipenseridae	<i>Acipenser transmontanus</i>	White Sturgeon	Native
Cyprinidae	<i>Acrocheilus alutaceus</i>	Chiselmouth	Native
Cyprinidae	<i>Carassius auratus</i>	Goldfish	Introduced
Cyprinidae	<i>Couesius plumbeus</i>	Lake Chub	Native
Cyprinidae	<i>Cyprinus carpio</i>	Carp	Introduced
Cyprinidae	<i>Mylocheilus caurinus</i>	Peamouth Chub	Native
Cyprinidae	<i>Ptychocheilus oregonesis</i>	Northern pikeminnow	Native
Cyprinidae	<i>Rhinichthys cataractae</i>	Longnose Dace	Native
Cyprinidae	<i>Rhinichthys falcatus</i>	Leopard Dace	Native
Cyprinidae	<i>Rhinichthys osculus</i>	Speckled Dace	Native
Cyprinidae	<i>Rhinichthys umatilla</i>	Umatilla Dace	Native
Cyprinidae	<i>Richardsonius balteatus</i>	Redside Shiner	Native
Cyprinidae	<i>Tinca tinca</i>	Tench	Introduced
Catostomidae	<i>Catostomus catostomus</i>	Longnose Sucker	Native
Catostomidae	<i>Catostomus macrocheilus</i>	Largescale Sucker	Native
Catostomidae	<i>Catostomus platyrhynchus</i>	Mountain Sucker	Native
Catostomidae	<i>Catostomus columbianus</i>	White Sucker	Native
Ictaluridae	<i>Ameiurus melas</i>	Black Catfish	Introduced
Ictaluridae	<i>Ameiurus nebulosus</i>	Brown Catfish	Introduced
Salmonidae	<i>Oncorhynchus clarki lewisi</i>	Cutthroat Trout	Native
Salmonidae	<i>Oncorhynchus nerka</i>	Sockeye (Kokanee) salmon	Native
Salmonidae	<i>Oncorhynchus mykiss</i>	Steelhead (Rainbow) Trout	Native
Salmonidae	<i>Oncorhynchus tshawytscha</i>	Chinook Salmon	Native
Salmonidae	<i>Oncorhynchus kisutch</i>	Coho Salmon	Native
Salmonidae	<i>Oncorhynchus keta</i>	Chum Salmon	Native
Salmonidae	<i>Salmo trutta</i>	Brown Trout	Introduced
Salmonidae	<i>Salvelinus confluentus</i>	Bull Trout	Native
Salmonidae	<i>Salvelinus fontinalis</i>	Brook Trout	Introduced
Salmonidae	<i>Salvelinus namaycush</i>	Lake Trout	Introduced
Salmonidae: Thymalinae	<i>Thymallus arcticus</i>	Arctic Grayling	Introduced
Salmonidae: Coregoninae	<i>Coregonus clupeaformis</i>	Lake Whitefish	Introduced
Salmonidae Coregoninae	<i>Prosopium williamsoni</i>	Mountain Whitefish	Native
Salmonidae Coregoninae	<i>Prosopium coulteri</i>	Pygmy Whitefish	Native
Gadidae	<i>Lota lota</i>	Burbot	Native
Cottidae	<i>Cottus asper</i>	Prickly Sculpin	Native

Family	Latin Name	English Name	Status
Cottidae	<i>Cottus bairdi</i>	Mottled Sculpin	Native
Cottidae	<i>Cottus cognatus</i>	Slimy Sculpin	Native
Cottidae	<i>Cottus confusus</i>	Shorthead Sculpin	Native
Cottidae	<i>Cottus rhotheus</i>	Torrent Sculpin	Native
Centrarchidae	<i>Lepomis gibbosus</i>	Pumpkinseed	Introduced
Centrarchidae	<i>Micropterus dolomieu</i>	Smallmouth Bass	Introduced
Centrarchidae	<i>Micropterus salmoides</i>	Largemouth Bass	Introduced
Centrarchidae	<i>Promoxis nigromaculatus</i>	Black Crappie	Introduced
Percidae	<i>Perca flavescens</i>	Yellow Perch	Introduced
Percidae	<i>Stizostedion vitreum</i>	Walleye	Introduced
Percidae	<i>Alosa sapidissima</i>	American Shad	Introduced
Osmeridae	<i>Thaleichthys pacificus</i>	Smelt (eulachon)	Native

Appendix I.
State Listed Plant and Wildlife Species

State Listed Plant Species

COMMON NAME	SCIENTIFIC NAME	STATE STATUS	FEDERAL STATUS	HABITAT
Ames' Milk-vetch	<i>Astragalus pulsiferae</i> var. <i>suksdorfii</i>	Endangered	Species of Concern	Open Ponderosa Pine forest
Bradshaw's Lomatium	<i>Lomatium bradshawii</i>	Endangered	Endangered	Wet prairie/ grassland
Broad-fruit Mariposa	<i>Calochortus nitidus</i>	Endangered	Species of Concern	Grassland / moist swales
Chelan Rockmat	<i>Petrophyton cinerascens</i>	Endangered	Species of Concern	Basalt cliffs
Columbia Crazyweed	<i>Oxytropis campestris</i> var. <i>columbiana</i>	Endangered		Rock – river and lakeshore
Douglas' Clover	<i>Trifolium douglasii</i>	Endangered		Forested wetland / wet meadow
Golden Paintbrush	<i>Castilleja levisecta</i>	Endangered	Threatened	Open grassland – Puget Trough
Hairy-stemmed Checker-mallow	<i>Sidalcea hirtipes</i>	Endangered		Prairie – Puget Trough
Jessica's Aster	<i>Aster jessicae</i>	Endangered	Species of Concern	Palouse grassland
Kalm's Lobelia	<i>Lobelia kalmii</i>	Endangered		Marl/peat bog / shoreline
Kellogg's Rush	<i>Juncus kelloggii</i>	Endangered		Wet meadow
Least Phacelia	<i>Phacelia minutissima</i>	Endangered	Species of Concern	Wet meadow
Nelson's Checker-mallow	<i>Sidalcea nelsoniana</i>	Endangered	Threatened	Open grassland / moist areas
Northern Wormwood	<i>Artemisia campestris</i> ssp. <i>borealis</i> var. <i>wormskioldii</i>	Endangered	Candidate	Shrub-steppe
Northwest Raspberry	<i>Rubus nigerrimus</i>	Endangered	Species of Concern	Wet meadow / drainages
Obscure Buttercup	<i>Ranunculus reconditus</i>	Endangered	Species of Concern	Meadow-steppe
Oregon Sullivantia	<i>Sullivantia oregana</i>	Endangered	Species of Concern	Moist cliffs
Persistentsepal Yellowcress	<i>Rorippa columbiae</i>	Endangered	Species of Concern	Near water
Piper's Milk-vetch	<i>Astragalus riparius</i>	Endangered		Prairie / dry bluffs / canyon bank
Ross' Avens	<i>Geum rossii</i> var. <i>depressum</i>	Endangered		Talus slopes / rock crevices
Rosy Owl-clover	<i>Orthocarpus bracteosus</i>	Endangered		Moist meadow

COMMON NAME	SCIENTIFIC NAME	STATE STATUS	FEDERAL STATUS	HABITAT
Sabin's Lupine	<i>Lupinus sabinii</i>	Endangered		Coniferous forest / transition grassland
Sagebrush Mariposa-lily	<i>Calochortus macrocarpus</i> var. <i>maculosus</i>	Endangered		Grassland
Showy Stickseed	<i>Hackelia venusta</i>	Endangered	Endangered	Granite / talus
Smooth Goldfields	<i>Lasthenia glaberrima</i>	Endangered		Wet stream banks / vernal pools
Squaw Currant	<i>Ribes cereum</i> var. <i>colubrinum</i>	Endangered		Dry, rocky slopes / along streams – Snake River drainage
Twayblade	<i>Liparis loeselii</i>	Endangered		Springs/bogs / wet and sunny areas
Umtanum Desert Buckwheat	<i>Eriogonum codium</i>	Endangered	Candidate	Basalt cliffs
Ute Ladies' Tresses	<i>Spiranthes diluvialis</i>	Endangered	Threatened	Intermontane valley plains
Wanapum Crazyweed	<i>Oxytropis campestris</i> var. <i>wanapum</i>	Endangered	Species of Concern	Open grassland / shrubland
Wenatchee Mountain Checker-mallow	<i>Sidalcea oregana</i> var. <i>calva</i>	Endangered	Endangered	Moist meadow
Whited's Milk-vetch	<i>Astragalus sinuatus</i>	Endangered	Species of Concern	Rocky hillsides
Adder's-tongue	<i>Ophioglossum pusillum</i>	Threatened		Pastures / disturbed areas
Alpine Azalea	<i>Loiseleuria procumbens</i>	Threatened		Dry alpine areas
American Pillwort	<i>Pilularia americana</i>	Threatened		Vernal pools
Austin's Knotweed	<i>Polygonum austiniiae</i>	Threatened		Sagebrush plain / Ponderosa Pine
Awned Halfchaff Sedge	<i>Lipocarpa aristulata</i>	Threatened		Shorelines below high water
Barrett's Beardtongue	<i>Penstemon barrettiae</i>	Threatened	Species of Concern	Basalt cliffs / talus / other rocky areas
Basalt Daisy	<i>Erigeron basalticus</i>	Threatened	Candidate	Basalt cliffs
Beaked Cryptantha	<i>Cryptantha rostellata</i>	Threatened		Dry drainages
Blue Mountain Onion	<i>Allium dictuon</i>	Threatened	Species of Concern	Steep slopes, gravelly soil
Brewer's Cinquefoil	<i>Potentilla breweri</i>	Threatened		Alpine – moist meadows / riparian

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Bronze Sedge	<i>Carex foenea</i>	Threatened		Standing water / very moist ground
Canyon Bog-orchid	<i>Platanthera sparsiflora</i>	Threatened		Open, wet areas / seeps / bogs
Cross-haired Rockcress	<i>Arabis crucisetosa</i>	Threatened		Smooth sumac grass community
Cusick Monkeyflower	<i>Mimulus cusickii</i>	Threatened		Moist areas / scree
Davis' Milkweed	<i>Asclepias cryptoceras ssp. davisii</i>	Threatened		Heavy clay / basalt soil
Dense Sedge	<i>Carex densa</i>	Threatened		Intertidal marshes
Desert Dodder	<i>Cuscuta denticulata</i>	Threatened		Desert
Diffuse Stickseed	<i>Hackelia diffusa var. diffusa</i>	Threatened		Cliffs / talus / wooded flats
Douglas' Draba	<i>Cusickiella douglasii</i>	Threatened		Open, rocky areas
Dwarf Rush	<i>Juncus hemiendytus var. hemiendytus</i>	Threatened		Vernal pools / vernal meadows
Fee's Lip-fern	<i>Cheilanthes feei</i>	Threatened		Rocky areas
Five-leaved Cinquefoil	<i>Potentilla quinquefolia</i>	Threatened		High elevation – meadows, river bars
Fremont's Combleaf	<i>Polyctenium fremontii var. fremontii</i>	Threatened		Moist areas in sagebrush desert
Fringed Grass-of-parnassus	<i>Parnassia fimbriata var. hoodiana</i>	Threatened		Wet areas – high elevation
Fringed Waterplantain	<i>Damasonium californicum</i>	Threatened		Wet areas – low elevation
Geyer's Milk-vetch	<i>Astragalus geyeri</i>	Threatened		Dry, arid valleys
Gorge Daisy	<i>Erigeron oreganus</i>	Threatened	Species of Concern	Basalt cliffs
Grand Redstem	<i>Ammannia robusta</i>	Threatened		Riparian mudflat wetlands
Great Basin Gilia	<i>Gilia leptomeria</i>	Threatened		Dry, rocky areas
Great Polemonium	<i>Polemonium carneum</i>	Threatened		Open forest / meadow / prairie / fencelines
Hall's Aster	<i>Aster hallii</i>	Threatened		Dry, open valleys and plains
Hoary Willow	<i>Salix candida</i>	Threatened		Bogs / fens / swamps
Hoover's Tauschia	<i>Tauschia hooveri</i>	Threatened	Species of Concern	Shrub-steppe

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Hot-rock Penstemon	<i>Penstemon deustus</i> var. <i>variabilis</i>	Threatened		Dry foothills / lowlands over thin soil
Howellia	<i>Howellia aquatilis</i>	Threatened	Threatened	Seasonally dry areas of wetlands
Howell's Daisy	<i>Erigeron howellii</i>	Threatened	Species of Concern	Thin soils, steep slope
Howell's Rush	<i>Juncus howellii</i>	Threatened		Mountain riparian
Large-awn Sedge	<i>Carex macrochaeta</i>	Threatened		Basalt cliffs near water
Little Bluestem	<i>Schizachyrium scoparium</i> var. <i>scoparium</i>	Threatened		Gravel bars near high water mark
Loeflingia	<i>Loeflingia squarrosa</i> var. <i>squarrosa</i>	Threatened		Low swales within sandy areas
Lowland Toothcup	<i>Rotala ramosior</i>	Threatened		Damp areas
Marigold Navarretia	<i>Navarretia tagetina</i>	Threatened		Seasonally moist areas
Meadow Pussy-toes	<i>Antennaria corymbosa</i>	Threatened		Moist areas
Nagoonberry	<i>Rubus acaulis</i>	Threatened		Damp spruce forest
Northwestern Yellowflax	<i>Sclerolinon digynum</i>	Threatened		Grassland vernal pools
Nuttall's Sandwort	<i>Minuartia nuttallii</i> ssp. <i>fragilis</i>	Threatened		Dry, rocky areas at elevation
Oregon Coyote-thistle	<i>Eryngium petiolatum</i>	Threatened		Wet prairies / low ground
Oregon Goldenaster	<i>Heterotheca oregona</i>	Threatened		Gravel / sandbars along rivers
Pale Blue-eyed Grass	<i>Sisyrinchium sarmentosum</i>	Threatened	Species of Concern	Seasonally moist meadows
Palouse Goldenweed	<i>Haplopappus liatriformis</i>	Threatened	Species of Concern	Grasslands
Palouse Milk-vetch	<i>Astragalus arrectus</i>	Threatened		Grassland / sagebrush / open forest
Parry's Knotweed	<i>Polygonum parryi</i>	Threatened		Vernally moist areas
Pasqueflower	<i>Anemone nuttalliana</i>	Threatened		Prairies / wet meadows / alpine
Plumed Clover	<i>Trifolium plumosum</i> var. <i>plumosum</i>	Threatened		Dry hillsides / meadows
Red Poverty-weed	<i>Monolepis pusilla</i>	Threatened		Desert – alkaline or saline soils
Rocky Mountain Bulrush	<i>Scirpus saximontanus</i>	Threatened		Damp and seasonally moist areas

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Rocky Mountain Rockmat	<i>Petrophyton caespitosum</i> var. <i>caespitosum</i>	Threatened		Limestone cliffs / ledges
Rollins' Desert-parsley	<i>Lomatium rollinsii</i>	Threatened		Canyon grasslands
Rosy Pussypaws	<i>Calyptridium roseum</i>	Threatened		Sagebrush shrubland
Rough Stickseed	<i>Hackelia hispida</i> var. <i>hispida</i>	Threatened		Cliffs / talus / disturbed areas
Rush Aster	<i>Aster borealis</i>	Threatened		Marshes / bogs / fens / lakesides
Sierra Onion	<i>Allium campanulatum</i>	Threatened		Medium to high elevation – dry soils
Siskiyou False-hellebore	<i>Veratrum insolitum</i>	Threatened		Open, rocky slopes
Skinny Moonwort	<i>Botrychium lineare</i>	Threatened	Candidate	Forest floodplain
Smoky Mountain Sedge	<i>Carex proposita</i>	Threatened		Talus / rocky areas – high elevation
Smooth Desert-parsley	<i>Lomatium laevigatum</i>	Threatened		Basalt cliffs / rocky slopes
Spalding's Silene	<i>Silene spaldingii</i>	Threatened	Threatened	Open grasslands
Sparse-leaved Sedge	<i>Carex tenuiflora</i>	Threatened		Marshes / bogs
Stalk-leaved Monkeyflower	<i>Mimulus patulus</i>	Threatened		Seasonally wet grasslands / seeps
Sticky Phacelia	<i>Phacelia lenta</i>	Threatened	Species of Concern	Basalt cliffs
Strawberry Saxifrage	<i>Saxifragopsis fragarioides</i>	Threatened		Rock outcrops / cliffs
Strict Blue-eyed-grass	<i>Sisyrinchium montanum</i>	Threatened		Moist meadows in shrub-steppe
Thompson's Clover	<i>Trifolium thompsonii</i>	Threatened	Species of Concern	Open coniferous forest / grassland
Tiehm's Rush	<i>Juncus tiehmii</i>	Threatened		Moist areas – shrub-steppe
Torrey's Peavine	<i>Lathyrus torreyi</i>	Threatened	Species of Concern	Info not available
Tufted Evening-primrose	<i>Oenothera caespitosa</i> ssp. <i>marginata</i>	Threatened		Desert / open areas / wooded areas
Two-spiked Moonwort	<i>Botrychium paradoxum</i>	Threatened	Species of Concern	Forest floodplain / stream terraces
Washington Polemonium	<i>Polemonium pectinatum</i>	Threatened	Species of Concern	Sagebrush

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Wenatchee Larkspur	<i>Delphinium viridescens</i>	Threatened	Species of Concern	Moist meadows – open areas
Western Moonwort	<i>Botrychium hesperium</i>	Threatened		Sagebrush shrubland
Western Wahoo	<i>Euonymus occidentalis</i>	Threatened		Forest – shaded draws and ravines
Western Yellow Oxalis	<i>Oxalis suksdorfii</i>	Threatened		Meadows / moist woods
White Bluffs Bladderpod	<i>Lesquerella tuplashensis</i>	Threatened	Candidate	Sagebrush – highly alkaline/dry soil
White Eatonella	<i>Eatonella nivea</i>	Threatened		Shrub-steppe
White Meconella	<i>Meconella oregana</i>	Threatened	Species of Concern	Open grassland
Yellow Lady's-slipper	<i>Cypripedium parviflorum</i>	Threatened		Bogs / wet forest
Alice's Fleabane	<i>Erigeron aliceeae</i>	Sensitive		Sub-alpine
Arctic Aster	<i>Aster sibiricus var. meritus</i>	Sensitive		Open, rocky – high elevation
Arrow Thelypody	<i>Thelypodium sagittatum ssp. sagittatum</i>	Sensitive		Shrub-steppe – moist swales
Arthur's Milk-vetch	<i>Astragalus arthurii</i>	Sensitive		Grassy hills / stony meadows
Baker's Linanthus	<i>Linanthus bolanderi</i>	Sensitive		Dry, rocky soils / open slopes
Beaked Sedge	<i>Carex rostrata</i>	Sensitive		Lake shorelines
Beaked Spike-rush	<i>Eleocharis rostellata</i>	Sensitive		Riparian areas – can be alkaline/salt
Black Snake-root	<i>Sanicula marilandica</i>	Sensitive		Meadow / riparian
Blue-eyed Grass	<i>Sisyrinchium septentrionale</i>	Sensitive		Open, wet meadow
Bog Clubmoss	<i>Lycopodiella inundata</i>	Sensitive		Moist, sandy areas
Bolandra	<i>Bolandra oregana</i>	Sensitive		Riparian / rocky
Branching Montia	<i>Montia diffusa</i>	Sensitive		Moist, open forest
Brewer's Cliff-brake	<i>Pellaea breweri</i>	Sensitive		Rocky – alpine
Bristle-flowered Collomia	<i>Collomia macrocalyx</i>	Sensitive		Talus, rock outcrops
Bristly Sedge	<i>Carex comosa</i>	Sensitive		Marshes, lake shores, wet meadows

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Bulb-bearing Water-hemlock	<i>Cicuta bulbifera</i>	Sensitive		Wetlands
Canadian Single-spike Sedge	<i>Carex scirpoidea</i> var. <i>scirpoidea</i>	Sensitive		Moist meadows / streambanks – high elevation
Canadian St. John's-wort	<i>Hypericum majus</i>	Sensitive		Riparian
Cespitose Evening-primrose	<i>Oenothera caespitosa</i> ssp. <i>caespitosa</i>	Sensitive		Talus / rocky slopes on Columbia River
Clackamas Corydalis	<i>Corydalis aquae-gelidae</i>	Sensitive	Species of Concern	Coniferous forest – riparian
Clustered Lady's-slipper	<i>Cypripedium fasciculatum</i>	Sensitive	Species of Concern	Coniferous forest
Columbia Milk-vetch	<i>Astragalus columbianus</i>	Sensitive	Species of Concern	Shrub-steppe
Common Blue-cup	<i>Githopsis specularioides</i>	Sensitive		Open areas – rocky, gravelly soils
Common Twinpod	<i>Physaria didymocarpa</i> var. <i>didymocarpa</i>	Sensitive		Gravelly soil
Constricted Douglas' Onion	<i>Allium constrictum</i>	Sensitive		Vernally moist areas
Cordroot Sedge	<i>Carex chordorrhiza</i>	Sensitive		Wetlands / other riparian
Coyote Tobacco	<i>Nicotiana attenuata</i>	Sensitive		Dry, open areas / sandy / rocky soils
Creeping Snowberry	<i>Gaultheria hispidula</i>	Sensitive		Sphagnum bogs / forest
Crenulate Moonwort	<i>Botrychium crenulatum</i>	Sensitive	Species of Concern	Moist areas – coniferous forest
Crested Shield-fern	<i>Dryopteris cristata</i>	Sensitive		Wetlands / wet meadows
Curved Woodrush	<i>Luzula arcuata</i>	Sensitive		Glacial moraines – high elevation
Cusick's Milk-vetch	<i>Astragalus cusickii</i> var. <i>cusickii</i>	Sensitive		Basalt cliffs / roadcuts / talus / sagebrush plains
Diverse-leaved Cinquefoil	<i>Potentilla diversifolia</i> var. <i>perdissecta</i>	Sensitive		High elevation – gullies / ridge tops / wet meadow
Dwarf Evening-primrose	<i>Camissonia pygmaea</i>	Sensitive		Talus / dry wash / banks / roadcuts
Dwarf Phacelia	<i>Phacelia tetramera</i>	Sensitive		Alkaline soils – vernal-moist wetlands, shrub-steppe
Few-flowered Collinsia	<i>Collinsia sparsiflora</i> var. <i>bruceae</i>	Sensitive		Open areas – thin soils
Few-flowered Sedge	<i>Carex pauciflora</i>	Sensitive		Wet, acidic environments

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Flat-leaved Bladderwort	<i>Utricularia intermedia</i>	Sensitive		Shallow ponds / slow-moving streams / wet sedge/rush meadows
Floating Water Pennywort	<i>Hydrocotyle ranunculoides</i>	Sensitive		Shallow freshwater
Fuzzytongue Penstemon	<i>Penstemon eriantherus var. whitedii</i>	Sensitive		Dry, open – plains / valleys / foothills
Glaucous Gentian	<i>Gentiana glauca</i>	Sensitive		Sub-alpine and alpine wet meadows
Glaucous Willow	<i>Salix glauca</i>	Sensitive		High elevation
Golden Chinquapin	<i>Chrysolepis chrysophylla</i>	Sensitive		Dry, open sites / thick coniferous forest
Golden Draba	<i>Draba aurea</i>	Sensitive		Forested slopes / alpine meadows
Gooseberry-leaved Alumroot	<i>Heuchera grossulariifolia var. tenuifolia</i>	Sensitive		Basalt cliffs / steep, moist slopes
Gray Cryptantha	<i>Cryptantha leucophaea</i>	Sensitive	Species of Concern	Sandy soils – Columbia riparian
Gray Stickseed	<i>Hackelia cinerea</i>	Sensitive		Basalt cliffs / talus
Green Keeled Cotton-grass	<i>Eriophorum viridicarinum</i>	Sensitive		High elevation – swamps / bogs
Hair-like Sedge	<i>Carex capillaris</i>	Sensitive		Riparian / wet meadows
Hoover's Desert-parsley	<i>Lomatium tuberosum</i>	Sensitive	Species of Concern	Loose talus
Idaho Gooseberry	<i>Ribes oxycanthoides ssp. irriguum</i>	Sensitive		Riparian – coniferous forest
Inch-high Rush	<i>Juncus uncialis</i>	Sensitive		Vernal pools
Kidney-leaved Violet	<i>Viola renifolia</i>	Sensitive		Moist, forested areas / riparian
Kotzebue's Grass-of-parnassus	<i>Parnassia kotzebuei</i>	Sensitive		Moist sub-alpine
Lance-leaved Draba	<i>Draba cana</i>	Sensitive		Sub-alpine/alpine meadows
Least Bladdery Milk-vetch	<i>Astragalus microcystis</i>	Sensitive		Riparian / open woods – sandy to gravelly soils
Long-bearded Segó Lily	<i>Calochortus longebarbatus var. longebarbatus</i>	Sensitive	Species of Concern	Coniferous forest
Longsepal Globemallow	<i>Iliamna longisepala</i>	Sensitive		Shrub-steppe / coniferous forest

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Loose-flowered Bluegrass	<i>Poa laxiflora</i>	Sensitive		Moist woods / rocky, open slopes
Maccall's Willow	<i>Salix maccalliana</i>	Sensitive		Bogs, fens, swamps, marshes
Many-headed Sedge	<i>Carex sychnocephala</i>	Sensitive		Marshes / lakeshores
Marsh Muhly	<i>Muhlenbergia glomerata</i>	Sensitive		Riparian
Miner's Candle	<i>Cryptantha scoparia</i>	Sensitive		Talus / canyons
Mountain Buttercup	<i>Ranunculus populago</i>	Sensitive		Moist meadows / riparian
Mousetail	<i>Myosurus clavicaulis</i>	Sensitive		Vernal pools
Mt. Rainier Lousewort	<i>Pedicularis rainierensis</i>	Sensitive		Info not available
Naked-stemmed Evening-primrose	<i>Camissonia scapoidea</i>	Sensitive		Sagebrush desert
Narrow-leaved Sedge	<i>Carex eleocharis</i>	Sensitive		Dry plains / gravelly soils
Narrow-stem Cryptantha	<i>Cryptantha gracilis</i>	Sensitive		Talus / pockets of silt
Nodding Saxifrage	<i>Saxifraga cernua</i>	Sensitive		Seepage areas / moist crevices / along streambanks
Northern Bentgrass	<i>Agrostis borealis</i>	Sensitive		Alpine talus slopes
Northern Golden-carpet	<i>Chrysosplenium tetrandrum</i>	Sensitive		Open, wet areas – seeps, crevices
Northern Microseris	<i>Microseris borealis</i>	Sensitive		Wet meadows / sphagnum bogs
Nuttall's Pussy-toes	<i>Antennaria parvifolia</i>	Sensitive		Ponderosa pine forests – sandy or gravelly soils
Nuttall's Quillwort	<i>Isoetes nuttallii</i>	Sensitive		Wet ground, seepages, mud near vernal pools
Obscure Indian-paintbrush	<i>Castilleja cryptantha</i>	Sensitive	Species of Concern	Sub-alpine meadows / parklands – Mt. Rainier Nat'l Park
Pale Alpine-forget-me-not	<i>Eritrichium nanum var. elongatum</i>	Sensitive		High elevation – open and rocky
Pauper Milk-vetch	<i>Astragalus misellus var. pauper</i>	Sensitive		Open ridgetops, upper slopes
Pink Fawn-lily	<i>Erythronium revolutum</i>	Sensitive		Swampy, coniferous forest
Piper's Daisy	<i>Erigeron piperianus</i>	Sensitive		Dry, open areas / sagebrush

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Poor Sedge	<i>Carex magellanica ssp. irrigua</i>	Sensitive		High elevation – wet areas
Prairie Cordgrass	<i>Spartina pectinata</i>	Sensitive		Wet areas – salt and freshwater
Pulsifer's Monkey-flower	<i>Mimulus pulsiferae</i>	Sensitive		Seasonally wet, open areas
Purple Meadowrue	<i>Thalictrum dasycarpum</i>	Sensitive		Deciduous riparian woods
Pygmy Saxifrage	<i>Saxifraga rivularis</i>	Sensitive		Talus / damp cliffs / alpine slopes
Sagebrush Stickseed	<i>Hackelia hispida var. disjuncta</i>	Sensitive		Rocky talus
Salish Fleabane	<i>Erigeron salishii</i>	Sensitive		Alpine – talus / scree
Scandinavian Sedge	<i>Carex norvegica</i>	Sensitive		Riparian / moist meadows
Scribner-grass	<i>Scribneria bolanderi</i>	Sensitive		Grasslands / along roadsides
Seely's Silene	<i>Silene seelyi</i>	Sensitive	Species of Concern	Basalt cliffs / talus
Sierra Cliff-brake	<i>Pellaea brachyptera</i>	Sensitive		Sparse conifer forest, rocky/dry soil
Skunk Polemonium	<i>Polemonium viscosum</i>	Sensitive		High elevation – talus / rocky areas
Slender Crazyweed	<i>Oxytropis campestris var. gracilis</i>	Sensitive		Prairie / mountain meadow / open woodland
Slender Gentian	<i>Gentianella tenella</i>	Sensitive		Sub-alpine / alpine meadows
Small Northern Bog-orchid	<i>Platanthera obtusata</i>	Sensitive		Wet forest / riparian areas
Small-flower Evening-primrose	<i>Camissonia minor</i>	Sensitive		Gravelly basalt / sand / cryptogamic crust
Small-flowered Trillium	<i>Trillium parviflorum</i>	Sensitive		Upland edge of riparian zones
Snake Canyon Desert-parsley	<i>Lomatium serpentinum</i>	Sensitive		Basalt cliffs / talus
Snake River Cryptantha	<i>Cryptantha spiculifera</i>	Sensitive		Dry, open areas in stony soils
Snow Cinquefoil	<i>Potentilla nivea</i>	Sensitive		Alpine meadows – rocky substrates
Soft-leaved Willow	<i>Salix sessilifolia</i>	Sensitive		Riparian forest / silty soils
Stalked Moonwort	<i>Botrychium pedunculosum</i>	Sensitive	Species of Concern	Meadow / perennial streams / coniferous forest

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Steller's Rockbrake	<i>Cryptogramma stelleri</i>	Sensitive		Limestone cliffs / rocky soils
Suksdorf's Desert-parsley	<i>Lomatium suksdorfii</i>	Sensitive	Species of Concern	Rocky hillsides – moderate to steep slopes
Suksdorf's Monkey-flower	<i>Mimulus suksdorfii</i>	Sensitive		Sagebrush steppe – moist areas
Swamp Gentian	<i>Gentiana douglasiana</i>	Sensitive		Moist to wet meadows
Tall Agoseris	<i>Agoseris elata</i>	Sensitive		Meadows / open woods / exposed ridges
Tall Bitter Fleabane	<i>Trimorpha elata</i>	Sensitive		Wet, swampy areas / along creeks
Tall Bugbane	<i>Cimicifuga elata</i>	Sensitive	Species of Concern	Coniferous forest
Thompson's Chaenactis	<i>Chaenactis thompsonii</i>	Sensitive		Dry, rocky slopes – elevation
Treelike Clubmoss	<i>Lycopodium dendroideum</i>	Sensitive		Rock outcrops / talus / boulder fields
Triangular-lobed Moonwort	<i>Botrychium ascendens</i>	Sensitive	Species of Concern	Coniferous forest / meadows / ravines
Tweedy's Willow	<i>Salix tweedyi</i>	Sensitive		Wet areas – high elevation
Valley Sedge	<i>Carex vallicola</i>	Sensitive		Sagebrush type
Velvet-leaf Blueberry	<i>Vaccinium myrtilloides</i>	Sensitive		Open forest
Water Avens	<i>Geum rivale</i>	Sensitive		Moist areas
Water-pimpernel	<i>Samolus parviflorus</i>	Sensitive		Moist soils / riparian / marshes
Western Hedysarum	<i>Hedysarum occidentale</i>	Sensitive		Meadows / boulder fields / talus
Western Ladies-tresses	<i>Spiranthes porrifolia</i>	Sensitive		Wet meadows / other moist areas
Wheeler's Bluegrass	<i>Poa nervosa</i>	Sensitive		Rock outcrops / talus
White-top Aster	<i>Aster curtus</i>	Sensitive	Species of Concern	Open grassland
Wilcox's Penstemon	<i>Penstemon wilcoxii</i>	Sensitive		Shrubby areas / forest / rocky hills
Yellow Bog Sedge	<i>Carex dioica</i>	Sensitive		Wet, marshy areas
Yellow Mountain-avens	<i>Dryas drummondii</i>	Sensitive		Cliffs / limestone / other rocky areas

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Yellow Sedge	<i>Carex flava</i>	Sensitive		Riparian / wet meadows
Cusick's Desert-parsley	<i>Lomatium cusickii</i>	Extinct?		Open, rocky areas
Jointed Coyote-thistle	<i>Eryngium articulatum</i>	Extinct?		Riparian areas / dry streambeds
Leiberg's Tauschia	<i>Tauschia tenuissima</i>	Extinct?		Grassy openings – moist habitats
Liverwort Monkey-flower	<i>Mimulus jungermannioides</i>	Extinct?	Species of Concern	Basalt cliffs
Long-tubed Evening-primrose	<i>Oenothera flava</i>	Extinct?		Riparian
Newberry Cinquefoil	<i>Potentilla newberryi</i>	Extinct?		Receding shoreline of Columbia River
Pale Bugseed	<i>Corispermum pallidum</i>	Extinct?		Sandy sagebrush plain
Rock Willow	<i>Salix vestita var. erecta</i>	Extinct?		High elevation – near springs
Snap-dragon Skullcap	<i>Scutellaria antirrhinoides</i>	Extinct?		Mixed conifer / oak woodlands
Washington Monkey-flower	<i>Mimulus washingtonensis</i>	Extinct?		No info available

State Listings, as determined by the Washington Natural Heritage Program:

- Endangered = In danger of becoming extinct or extirpated from Washington.
- Threatened = Likely to become Endangered in Washington.
- Sensitive = Vulnerable or declining and could become Endangered or Threatened in the state.
- Extinct? = Possibly extinct or Extirpated from Washington.

Federal Listings, under the Endangered Species Act – as published in the Federal Register:

- Endangered = Listed Endangered. In danger of extinction.
- Threatened = Listed Threatened. Likely to become endangered.
- Candidate = Candidate species. Sufficient information exists to support listing as Endangered or Threatened.
- Species of Concern = An unofficial status. The species appears to be in jeopardy, but insufficient information exists to support listing.

Appendix J.
Washington Department of Fish and Wildlife
Mitigation Policy

Department of Fish and Wildlife POL-M5002

POLICY TITLE: Requiring or Recommending Mitigation

Replaces:

See Also: WDW POL 3000, 3001 and 3002,
all dated 10/1/92; WDW POL 3003,
dated 9/16/92; WDF Policy 410,
dated 9/10/90; and WDF Policy 404,
dated 5/1/87
Commission Policies

POL-M5002 REQUIRING OR RECOMMENDING MITIGATION

This policy applies to all habitat protection assignments where the Washington Department of Fish and Wildlife (WDFW) is issuing or commenting on environmental protection permits, documents, or violation settlements; or when seeking commensurate compensation for impacts to fish and wildlife resources resulting from oil or other toxic spills.

1. Goal is to achieve no loss of habitat functions and values. The goal of WDFW is to maintain the functions and values of fish and wildlife habitat in the state. We strive to protect the productive capacity and opportunities reasonably expected of a site in the future. In the long-term, WDFW shall seek a net gain in productive capacity of habitat through restoration, creation, and enhancement.

Mitigation credits and debits shall be based on a scientifically valid measure of habitat function, value, and area. Ratios shall be greater than 1:1 to compensate for temporal losses, uncertainty of performance, and differences in functions and values.

2. WDFW uses the following definition of mitigation; avoiding impacts is the highest mitigation priority.

"Mitigation" means actions that shall be required or recommended to avoid or compensate for impacts to fish, wildlife, or habitat from the proposed project activity. The type(s) of mitigation required shall be considered and implemented, where feasible, in the following sequential order of preference:

-  Avoiding the impact altogether by not taking a certain action or parts of an action.
-  Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
-  Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
-  Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
-  Compensating for the impact by replacing or providing substitute resources or environments.
-  Monitoring the impact and taking appropriate corrective measures to achieve the identified goal.

3. WDFW requires mitigation when issuing environmental permits or documents.

4. WDFW recommends mitigation on permits or documents issued by other agencies.
5. Complete mitigation ensures no loss of habitat functions or values, or populations. Complete mitigation is achieved when mitigation elements in number 2 (A-F) ensures no loss of habitat functions or values, or fish and wildlife populations. Habitat loss and mitigation success shall be measured with the Habitat Evaluation Procedure (HEP) or other method acceptable to WDFW.
6. On-site in-kind mitigation is the highest priority. WDFW priorities for mitigation location and type, in the following sequential order of preference, are:

- On-site, in-kind.
- Off-site, in-kind.
- On-site, out-of-kind.
- Off-site, out-of-kind.

For off-site mitigation to be accepted, the project proponent must demonstrate to WDFW's satisfaction that greater habitat function and value can be achieved off-site than on-site. Combination of the four types may be accepted. "On-site" means on or adjacent to the project impact site. "In-kind" means the same species or habitat that was impacted.

Out-of-kind mitigation is not acceptable for impacts to priority habitats and species, with two exceptions: (1) priority habitats and species that are at greater risk can be substituted for impacted priority habitats and species; and (2) for hydraulic projects, WDFW shall consider off-site and/or out-of-kind mitigation where equal or better biological functions and values are provided (see number 8 below). Priority habitats, and habitats of priority species, may be replaced at a level greater than the impacts of the project on those habitats and species.

7. For off-site fish mitigation, mitigation must occur in the same Water Resource Inventory Area (WRIA) as the impacts. Exceptions to the above must be approved by the director. For federal endangered or threatened species, mitigation must occur within the habitat supporting the same Evolutionary Significant Unit (ESU).
8. WDFW may not limit mitigation to on-site, in-kind mitigation when making decisions on hydraulic project approvals for infrastructure development projects.

The State Legislature has declared that it is the policy of the state to authorize innovative mitigation measures by requiring state regulatory agencies to consider mitigation proposals for infrastructure projects that are timed, designed, and located in a manner to provide equal or better biological functions and values compared to traditional on-site, in-kind mitigation proposals. For these types of projects, WDFW may not limit the scope of options in a mitigation plan to areas on or near the project site, or to habitat types of the same type as contained on a project site. When making a permit decision, WDFW shall consider whether the mitigation plan provides equal or better biological functions and values, compared to the

existing conditions, for the target resources or species identified in the mitigation plan. The factors WDFW must consider in making this decision are identified in RCW 90.74.020 (3).

Also see RCW 75.20.098 and Chapter 90.74 RCW.

9. When WDFW is issuing a Hydraulic Project Approval in relation to state or federal cleanup sites, and WDFW is the sole decision-maker, WDFW can only require mitigation if the sediment dredging or capping actions do not result in a cleaner aquatic environment and equal or better habitat functions and values.

When other agencies are decision-makers, recommendations for mitigation may be made under other state or federal authority to protect habitat functions and values.

10. When WDFW is issuing a Hydraulic Project Approval and is the sole decision-maker, WDFW can request, but cannot require "habitat mitigation" for maintenance dredging of existing navigable channels and berthing areas.

The phrase, "habitat mitigation" is analogous to compensatory mitigation. See RCW 75.20.325. When other agencies are decision-makers, recommendations for mitigation may be made under other state or federal authority to protect habitat functions and values.

11. Preserving at-risk, high quality priority habitat may be considered as part of an acceptable mitigation plan.

When high quality areas of priority habitats or habitats of priority species are at risk, preservation of those habitats may be accepted as part of a mitigation plan, as long as there is no loss of habitat function.

12. Habitat replacement is preferred to hatcheries for fish mitigation.

Commission policy directs WDFW to give priority to natural production rather than hatchery production, within habitat capabilities.

13. Mitigation game fish may be purchased from aquatic farmers.

If WDFW requires, as part of a mitigation agreement, that resident hatchery game fish be stocked, RCW 77.18.020 requires that WDFW notify the project proponent that the fish may be purchased from a private aquatic farmer. WDFW shall specify fish health requirements, pounds or numbers, species, stock, and/or race of the fish to be provided.

14. Where authority exists, strive to maintain recreational and harvest opportunities.

15. Approved habitat mitigation measures shall be based on best available science.

16. Mitigation plans shall be required for a project with significant impacts. Mitigation plans shall include the following:

- ✎ Baseline data
- ✎ Estimate of impacts
- ✎ Mitigation measures
- ✎ Goals and objectives
- ✎ Detailed implementation plan
- ✎ Adequate replacement ratio
- ✎ Performance standards to measure whether goals are being reached
- ✎ Maps and drawings of proposal
- ✎ As-built drawings
- ✎ Operation and maintenance plans (including who will perform)
- ✎ Monitoring and evaluation plans (including schedules)
- ✎ Contingency plans, including corrective actions that will be taken if mitigation developments do not meet goals and objectives
- ✎ Any agreements on performance bonds or other guarantees that the proponent will fulfill mitigation, operation and maintenance, monitoring, and contingency plan.

17. Proven mitigation techniques must be used.

Experimental mitigation techniques are allowable only if advance mitigation is being performed and will be fully functional prior to the project impacts.

18. Mitigation shall proceed along with project construction. Mitigation measures are an integral part of a construction project and shall be completed before or during project construction, except projects with impacts that have no proven mitigation techniques.

Those projects require advance mitigation.

19. Delayed mitigation shall include replacement that is greater than losses.

Mitigation that is implemented after project construction, or that requires a long time to reach replacement value, shall include additional habitat value (over and above replacement value) equal to the loss through time.

20. WDFW shall determine impacts and mitigation.

WDFW shall determine the project impact, significance of impact, amount of mitigation required, and amount of mitigation achieved, based on the best available information, including the applicant's plans and specifications.

For large projects with potentially significant impacts, this will be based on review of studies approved by WDFW.

21. Cumulative impacts of projects shall be considered.

Cumulative impacts of projects shall be considered and appropriate measures taken to avoid or minimize those impacts.

22. Project proponent pays mitigation costs.

Mitigation costs may include but are not limited to:

-  Studies to determine impacts and mitigation needs.
-  Alteration of project design.
-  Planning, design, and construction of mitigation features.
-  Operation and maintenance of mitigation measures for duration of project (including personnel).
-  Monitoring of mitigation measures and fish and wildlife response.
-  All WDFW costs including engineering analysis and input.

23. Performance bond or other monetary assurance may be accepted.

A performance bond, letter of credit, escrow account, or other written financial guarantee may be accepted to ensure that the project proponent will fulfill mitigation requirements, operation and maintenance, monitoring, and contingency plans. The amount of the bond should cover the costs plus 10 percent.

24. Mitigation site shall be protected for the life of the project.

The mitigation site shall be protected permanently, or at a minimum, for the life of the project. This protection shall be through conservation easement, deed restriction, donation to WDFW, or other legally binding method.

25. WDFW shall seek mitigation for unmitigated projects.

WDFW shall seek mitigation for unmitigated or undermitigated existing projects. Criteria for prioritizing unmitigated projects are:

-  Fish and wildlife losses from the project.
-  Potential gains of fish and wildlife.
-  Likelihood of achieving mitigation.
-  Time required to achieve mitigation.
-  Support from other agencies and tribes.
-  Presence of priority habitats and species.
-  Cost to WDFW.

26. Compliance monitoring shall be performed as funding allows.

27. Mitigation banking may be an acceptable form of mitigation.

The term "mitigation bank" as used here refers to a habitat creation, restoration, or enhancement project undertaken by a project proponent to act as a bank of credits to compensate for habitat impacts from future development projects. Credits and debits shall be based on area or a scientifically valid measure of habitat function and value acceptable to

WDFW, such as the Habitat Evaluation Procedure (HEP). The use of credits from a mitigation bank as a form of compensation shall occur only after the standard sequencing of mitigation negotiations (avoid, minimize, rectify, reduce, and then compensate). Habitat units may be traded or sold.

28. Terms of mitigation must be documented.

A mitigation contract is necessary to document the terms of the mitigation. Mitigation contracts may take several forms:

-  Mitigation agreement (must be approved by Office of Attorney General).
-  Federal Energy Regulatory Commission (FERC) order.
-  Conditions on an environmental permit.
-  Statements in a final environmental impact statement.
-  Conservation easement.
-  Energy Facility Site Evaluation Council (EFSEC) site certification.
-  Landowner Landscape Plan.

29. Habitat and Lands Services Program coordinates all mitigation projects except Columbia and Snake River mainstem fish mitigation projects that are coordinated by the Intergovernmental Fisheries Program.

The program that coordinates the mitigation projects is responsible for coordinating with all other programs and regions that have interest or involvement in the project.

30. Facilities shall be transferred to the appropriate program for management.

When mitigation planning is completed, responsibility for any facilities (land, fish cultural facility, etc.) shall be transferred to the appropriate program and region. During the latter stages of planning, the managing program shall be phased into the process.

31. Managing programs shall follow the mitigation contract.

The program and region managing a mitigation facility or project shall follow the terms of the mitigation contract at all times. No deviations shall be made from the mitigation contract unless approved by the program that negotiated the contract.