

**Bonneville Power Administration Power Administration  
Fish and Wildlife Program FY99 Proposal Form**

# McKenzie Watershed Habitat Assessment and Project Prioritization

**Bonneville project number, if an ongoing project** 9036

**Business name of agency, institution or organization requesting funding**  
McKenzie River Focus Watershed Council

**Business acronym (if appropriate)** \_\_\_\_\_

**Proposal contact person or principal investigator:**

Name	John Runyon, Coordinator
Mailing Address	P.O. Box 1025
City, ST Zip	Corvallis, OR 97330
Phone	541-758-0947
Fax	541-766-8336
Email address	runyon@proaxis.com

**Subcontractors.**

List one subcontractor per row; to add more rows, press Alt-Insert from within this table

Organization	Mailing Address	City, ST Zip	Contact Name

**NPPC Program Measure Number(s) which this project addresses.** Refer to 1994 Fish and Wildlife Program as amended in 1995; NPPC staff will proof this field and correct if necessary; separate multiple measure numbers with commas.  
2.2, 2.4A.3, 6.1C.1, 6.5

**NMFS Biological Opinion Number(s) which this project addresses.**

**Other planning document references.**

Habitat assessment and improvement needs are referenced in the McKenzie Watershed Council=s Action Plan for Water Quality and Fish and Wildlife Habitat (1996), the Willamette Basin Task Force Recommendations (1998), the Draft Revisions to the

Oregon Department of Fish and Wildlife=s McKenzie Sub-basin Fish Management Plan (1998), and the Clinton Administration=s Northwest Forest Plan (1993). This assessment is supported by the McKenzie Watershed Council and member organizations, including (see attached letters of support) Oregon Department of Fish and Wildlife, U.S.D.I. Bureau of Land Management, U.S.D.A. Forest Service, and Weyerhaeuser Corporation.

**Subbasin.**

Willamette

**Short description.**

Complete an assessment of the McKenzie Watershed by synthesizing recent assessments/studies and gathering new information where necessary. The project will provide a basin-wide context for establishing fish/wildlife habitat protection, restoration, and monitoring strategies and projects.

**Section 2. Key words**

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish		Construction	X	Watershed
+	Resident fish		O & M	+	Biodiversity/genetics
+	Wildlife		Production	+	Population dynamics
	Oceans/estuaries	+	Research	+	Ecosystems
	Climate	+	Monitoring/eval.		Flow/survival
	Other	+	Resource mgmt		Fish disease
		X	Planning/admin.		Supplementation
			Enforcement	+	Wildlife habitat en-
		+	Acquisitions		hancement/restoration

**Other keywords.**

Watershed Assessment, GIS database development

**Section 3. Relationships to other Bonneville projects**

Project #	Project title/description	Nature of relationship
9206800	Willamette Basin Acquisition	Targets acquisition of critical fish and wildlife habitat in the Upper Willamette Basin. The proposed project will assist with identifying and prioritizing land acquisitions in the McKenzie Watershed/ Willamette River confluence area

9405300	Bull Trout Assessment Project	Monitors the distribution, population trends, and habitat use of bull trout populations in the Upper Willamette Basin. The proposed project will assist with identifying high-quality bull trout habitat for protection and restoration.
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## Section 4. Objectives, tasks and schedules

### *Objectives and tasks*

Obj 1,2,3	Objective	Task a,b,c	Task
1	Synthesize the current state of knowledge on present and historic fish and wildlife habitat and population conditions throughout the watershed and identify information gaps	a	Collect and organize completed sub-watershed analyses and other studies
		b	Identify and assess the status and trends of key human (e.g., dam regulation of flows) and natural characteristics (e.g. degree of channel confinement) and processes of the watershed and how they function and interact
		c	Assess types, extent and locations of terrestrial and riparian-aquatic habitat modifications and existing high-quality habitat
		d	Identify the target species, the status of those species, and important habitat attributes for maintaining or improving populations
		e	Work with Fish and Wildlife Task Group/Watershed Council to identify information gaps

2	Where gaps exist, assess types, extent, and locations of habitat modifications and existing high-quality habitat	a	Describe and quantify current terrestrial and riparian-aquatic habitat conditions, including high-quality habitat
		b	Assess habitat conditions through time using historical maps and photographs
		c	Determine the location, nature, and extent of habitat changes
		d	Develop a chronology of habitat change and describe the natural and human-caused disturbance events that influence the direction of the changes
3	Delineate locations for potential habitat protection and restoration and describe benefits to fish and wildlife	a	Identify important terrestrial and riparian-aquatic habitat refuges or areas sensitive to management activities
		b	Identify areas that most directly affect riparian-aquatic habitat function (e.g., wetlands, side channels, and flood plains) or terrestrial habitat quality (e.g., multi-layered forest stands)
		c	Work with Fish and Wildlife Task Group/Watershed Council to identify habitat protection and restoration goals and objectives
		d	Identify areas that may be easily restored to provide more refuges and/or connect productive habitat types
		e	Identify how site-specific protection or restoration measures will maintain or improve populations
4	Prioritize locations for habitat restoration and protection	a	Provide recommendations on site-specific terrestrial and riparian-aquatic protection and restoration projects

		b	Work with Fish and Wildlife Task Group/Watershed Council to identify protection and restoration project priorities, including land acquisitions
5	Develop watershed-wide habitat GIS database	a	Develop GIS data layers with locations and information on historic and current terrestrial and riparian-aquatic habitat quality
		b	Develop GIS data layers with locations and information on habitat protection and restoration sites and priorities
6	Develop habitat/biological monitoring and evaluation plan for the watershed	a	Determine watershed indicators to monitor changes in biological or physical states and assess influences of human and natural disturbances and restoration activities
		b	Link the monitoring and evaluation plan back to the protection and restoration goals and objectives
		c	Work with Fish and Wildlife Managers/Watershed Council to determine monitoring plan=s institutional and financial commitments and time lines

**Objective schedules and costs**

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	09/1998	01/1999	25
2	01/1999	05/1999	25
3	05/1999	07/1999	20
4&5	06/1999	08/1999	20
6	08/1999	09/1999	10

**Schedule constraints.** Identify any constraints that may cause schedule changes. Describe major milestones if necessary.

**Completion date.** Enter the last year that the project is expected to require funding.

One year project -- End fiscal year 1999

## Section 5. Budget

### *FY99 budget by line item*

<b>Item</b>	<b>Note</b>	<b>FY99</b>
Personnel		
Fringe benefits		
Supplies, materials, non-expendable property		
Operations & maintenance	Contract management by McKenzie Watershed Council	10,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel		
Indirect costs	Administrative charge for fiscal management/accounting services through Cascade Pacific R. C. and D. (@5%)	7,000
Subcontracts	Subcontract assessment; contractor determined by RFP	130,000
Other		
<b>TOTAL</b>		<b>\$147,000</b>

### *Outyear costs*

<b>Outyear costs</b>	<b>FY2000</b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>
Total budget	0	0	0	0
O&M as % of total	0	0	0	0

## Section 6. Abstract

The proposed assessment will synthesize existing information on McKenzie Watershed fish and wildlife habitat, including historical change and current status. Where there are gaps in the habitat knowledge base, the assessment will collect new information. The comprehensive assessment will inventory the extent and types of habitat modifications that have occurred, historical and current high-quality habitat locations, and potential sites for habitat protection and restoration. The fish and wildlife habitat information will be site-specific and maintained in the Council's GIS database. The assessment will require one year (FY1999) to complete. Information generated by this project will be used, in consultation with landowners, fish and wildlife managers and the Council, to prioritize specific areas for habitat protection and restoration. The project will conclude with recommendations for projects/land acquisitions and a habitat/biological watershed monitoring and evaluation plan.

## **Section 7. Project description**

### **a. Technical and/or scientific background.**

The McKenzie Watershed encompasses an area of approximately 1,300 square miles, occupying about 12 percent of Oregon's Willamette Basin. Bounded on the east by the crest of the Cascade Mountains, the McKenzie Watershed generally drains westward, joining the Willamette River just north of the Eugene-Springfield metropolitan area.

The status of the McKenzie Watershed has regional significance. The McKenzie River produces the highest water quality of any river in the Willamette Basin and is the sole source of drinking water to over 200,000 residents of Lane County (DEQ 1997). The McKenzie Watershed supports anadromous and resident fish species, including spring chinook and bull trout. Willamette Basin spring chinook and bull trout populations have declined to the point that federal listings are under consideration (Miller et al. 1997). Historical data show that the McKenzie River produced an estimated 40% of the run of spring chinook above Willamette Falls, but these runs have dramatically declined (Howell et al. 1988). Currently, bull trout are proposed for federal listing and listed a sensitive species by the state of Oregon. The Upper McKenzie Watershed is the last major refuge of wild bull trout in the Willamette Basin and now is considered the most important remaining area for the production of native spring chinook (Ratliff and Howell 1992; Howell et al. 1988).

The McKenzie Watershed represents the best opportunity in the Willamette Basin for the long-term persistence of native fish and wildlife assemblages. The watershed supports continuous blocks of high-quality fish and wildlife habitat. Nearly seventy percent of the watershed is in federal ownership, primarily concentrated in the upper portions of the drainage. In a recent survey, the quantity and quality of existing spring chinook spawning habitat in the upper watershed was found to be good, with little change from what was found historically (Sedell et al. 1992). Maintaining and expanding the connectivity of these areas is important to protect habitats that are large and well dispersed enough to be resilient in the face of large-scale catastrophic disturbance.

There has been loss of fish and wildlife habitat in the McKenzie Watershed over time, with most habitat degradation concentrated in the riparian areas and the lower basin. Reduced availability of some mainstem side channel habitats and moderate channelization due to dam-related reductions in sediment and peak flows, near-channel roads, and riprapped banks has been observed in the upper forested portions of the watershed (Minear 1994).

The lower McKenzie River valley (beginning at RM 40) is increasingly in urban, residential, and agricultural land uses. Historically, this portion of the watershed was characterized by an unconfined valley, dynamic channel shifts, and abundant side-channel areas. Dikes and riprapping have confined large portions of the lower river to a set channel, with dramatic decreases in hydraulic complexity, loss of large areas of side-channel habitat, and over a fifty percent reduction in mid-channel islands (Ligon 1991). Loss of channel habitat structure, side channels, and islands reduces habitat important to chinook salmon rearing and wildlife (McKenzie Watershed Council 1996). The majority of the riparian area along the river's mainstem, including the upper watershed, is privately owned and becoming increasingly fragmented through timber harvest, roads, and residential development (Minear 1994). Much of the floodplain area in the lower valley is occupied by residences and disconnected from the active river channel due to extensive diking and riprapping.

To address these challenges to watershed health, the McKenzie Watershed Council (Council) was convened and initiated by Lane County and the Eugene Water & Electric Board (EWEB) in 1993. The Council acts as an advisory body with the purpose of helping to address management issues in the watershed and to provide a framework for coordination and cooperation among key interests. The mission of the 20-member council is to foster stewardship of McKenzie Watershed resources, deal with issues in advance of resource degradation, and ensure sustainable watershed health, function, and uses.

The Council developed a watershed planning framework to guide its future activities. Watershed analyses and other studies have been completed in sub-watersheds covering over three-quarters of the watershed, including all federal lands and the large portion of the industrial forest land base under Weyerhaeuser ownership (Attachment A). Information from these assessments, and the scientific data and expertise gathered at the H.J. Andrews Experimental Forest, provide a rich store of information and expertise for guiding management strategies in the McKenzie Watershed. This knowledge base and advice from the Aquatic Habitat/Water Quality Task Group (Attachment B) served as the foundation for the development of general action plans. The Council is developing a coordinated strategy for re-establishing the historic mosaic of habitats in the watershed by protecting existing high quality habitats and restoring watershed structure and function in areas where it is degraded.

There is a need for a McKenzie Watershed-wide assessment that can be used to guide project selection by the Council. While assessments have been completed for many sub-

watersheds and portions of the mainstem, this information has not been synthesized into a comprehensive watershed context that can be used to prioritize site-specific projects and land acquisitions. The completed studies and sub-watershed assessments provide a fragmented picture of the watershed. Many of the assessments concentrated on tributary streams and did not focus on habitat in the mainstem. The studies completed on mainstem geomorphology (i.e., Minear 1994 and Ligon 1991) do not provide site-specific information on fish and wildlife habitat attributes. In addition, the assessments completed on Weyerhaeuser lands do not provide information on wildlife habitat. The Aquatic Habitat Task Group, based on completed studies and professional judgement, has targeted habitat protection and restoration in the general area of the lower river valley where there has been the greatest losses of side-channel habitat and riparian function. This prioritization, however, is not site-specific and does not provide a watershed-wide context for fish and wildlife habitat in the entire basin.

**b. Proposal objectives.**

- 1) Synthesize the current knowledge on present and historical fish and wildlife habitat and population conditions throughout the watershed and identify information gaps.
- 2) Where gaps exist, assess types, extent and locations of habitat modifications and existing high-quality habitat.
- 3) Delineate locations for potential habitat protection and restoration and describe benefits to fish and wildlife.
- 4) Prioritize locations for habitat restoration and protection.
- 5) Develop watershed-wide habitat GIS database.
- 6) Develop habitat/biological monitoring and evaluation plan for the watershed.

**c. Rationale and significance to Regional Programs.**

A completed assessment of fish and wildlife habitat for the entire McKenzie Watershed will be used by the Council to develop project priorities and target land acquisitions. This process will complement the BPA-sponsored Willamette Basin land acquisition program and other conservation programs now underway through state agencies and land trusts.

There is currently a great deal of interest in restoring floodplain and side-channel function to the area around the confluence of the McKenzie and Willamette rivers. The confluence area was historically productive fish and wildlife habitat, characterized by a wandering channel pattern with numerous side channels and extensive bottomland forests (Benner and Sedell 1997). There has been extensive loss of channels and off-channel complexity in this area, disrupting the interconnections between the channel and the flood plain (Attachment C). The assessment will provide information that can be used to target

land acquisition and restoration efforts in the confluence area with the goal of protecting remnants of the historical riverine landscape and restoring this river-floodplain system.

**d. Project history** (for continuing projects).

**e. Methods.**

The assessment will account for all fish and wildlife values and needs in the watershed, including resident fish and wildlife, and anadromous fish. The assessment will synthesize existing information on McKenzie Watershed fish and wildlife habitat, including historical change and current status. Where there are gaps in the habitat knowledge base, the assessment will collect new information. The comprehensive assessment will inventory the extent and types of habitat modifications that have occurred, historical and current high-quality habitat locations, and potential sites for habitat protection and restoration.

The fish and wildlife habitat information will be site-specific and maintained in the Council's GIS database. Information generated by this project will be used, in consultation with the Council, to develop priorities on specific areas for habitat protection and restoration. The assessment and the selection of areas to target for habitat protection will be coordinated with a Council Task Group consisting of public and private landowners, fish and wildlife managers, and the local land trust (McKenzie River Trust). The project will conclude with recommendations for land acquisitions and a watershed-wide monitoring and evaluation plan.

The assessment will identify the desired future conditions over the watershed that are relevant to anadromous and resident fish life cycles. The assessment will divide the watershed into environmentally distinct reaches based upon channel geomorphology, flow patterns, thermal cycles, connectivity of habitats, and other factors. This project will be integrated with other studies in the watershed, including information gained from the spring chinook life history-habitat study that is proposed for BPA funding. The assessment will focus on determining aquatic habitat restoration strategies that are geomorphically appropriate and sensitive to life history needs. The life history-habitat research and the assessment will generate complementary information that will be used by the McKenzie Watershed Council to develop watershed-wide management strategies and to target properties for habitat protection and restoration.

The assessment will be conducted by a contractor or several contractors. The contractor(s) will be selected by the McKenzie Watershed Council's Fish and Wildlife Task Group through a request for proposals process. The Council's coordinator will provide project management and coordination.

**Specific tasks associated with the objectives:**

***Objective 1 - Task a:***

Collect and organize completed sub-watershed analyses and other studies.

***Objective 1 - Task b:***

Identify and assess the status and trends of key human (e.g., dam regulation of flows) and natural characteristics (e.g. degree of channel confinement) and processes of the watershed and how they function and interact.

***Objective 1 - Task c:***

Assess types, extent, and locations of terrestrial riparian-aquatic habitat modifications and existing high-quality habitat.

***Objective 1 - Task d:***

Identify the target species, the status of those species, and important habitat attributes for maintaining or improving populations

***Objective 1 - Task e:***

Work with Fish and Wildlife Task Group/Watershed Council to identify information gaps

***Objective 2 - Task a:***

Describe and quantify current terrestrial and riparian-aquatic habitat conditions, including high-quality habitat.

***Objective 2 - Task b:***

Assess habitat conditions through time using historical maps and photographs.

***Objective 2 - Task c:***

Determine the location, nature, and extent of habitat changes.

***Objective 2 - Task d:***

Develop a chronology of habitat change and describe the natural and human-caused disturbance events/processes that influence the direction of the changes.

***Objective 3 - Task a:***

Identify important terrestrial and riparian-aquatic habitat refuges or areas sensitive to management activities.

***Objective 3 - Task b:***

Identify areas that most directly affect riparian-aquatic habitat function (e.g., wetlands, side channels, and flood plains) or terrestrial habitat quality (e.g., wetlands and multi-layered forest stands).

***Objective 3 - Task c:***

Work with Fish and Wildlife Task Group/Watershed Council to identify habitat protection and restoration goals and objectives.

***Objective 3 - Task d:***

Identify areas that may be more easily restored to provide refuges and/or connect productive habitat types.

***Objective 3 - Task e:***

Identify how site-specific protection and restoration measures will maintain or improve key fish and wildlife populations.

***Objective 4 - Task a:***

Provide recommendations on site-specific terrestrial and riparian-aquatic protection and restoration areas and projects

***Objective 4 - Task b:***

Work with Fish and Wildlife Task Group/Watershed Council to identify habitat protection and restoration project priorities, including land acquisitions.

***Objective 5 - Task a:***

Develop GIS data layers with locations and information on historic and current terrestrial and riparian-aquatic habitat quality.

***Objective 5 - Task b:***

Develop GIS data layers with locations and information on habitat protection and restoration sites and priorities.

***Objective 6 - Task a:***

Determine watershed indicators to monitor changes in biological or physical states and assess influences of human and natural disturbances and restoration activities.

***Objective 6 - Task b:***

Link the monitoring and evaluation plan back to the protection and restoration goals and objectives.

***Objective 6 - Task c:***

Work with Fish and Wildlife Task Group/Watershed Council to determine the monitoring plan's institutional and financial commitments and time lines.

The final products from the assessment will be a report and maps of present and historic fish and wildlife habitats, and priority acquisition and restoration sites. The project will also develop GIS data layers that will be maintained in the Council's GIS database.

**f. Facilities and equipment.**

The contractor will be required to demonstrate facilities and equipment that are adequate to complete the assessment, including photo interpretation and GIS capabilities.

**g. References.**

Benner P. A., and J. R. Sedell. 1997. Upper Willamette River landscape: A historic perspective. Pages 23-45 in A. Laenen and D.A. Dunnette, editors. River Quality: Dynamics and Restoration. Lewis, New York.

Department of Environmental Quality. 1997. The McKenzie Basin Water Quality Report. Oregon Department of Environmental Quality, Laboratory Division, Portland, OR.

Howell, P., J. Hutchinson, and R. Hooton. 1988. McKenzie Subbasin Fish Management Plan. Oregon Department of Fish and Wildlife, Springfield, OR.

Ligon, F. 1991. The Fluvial Geomorphology of the Lower McKenzie River. EA Engineering, Science and Technology, 41 Lafayette Circle, Lafayette, CA.

McKenzie Watershed Council. 1996. Technical Report for Water Quality and Fish and Wildlife Habitat. Lane Council of Governments, Eugene, OR.

Miller, J.D., and others. 1997. Willamette Basin Task Force: Recommendations to Governor John Kitzhaber.

Minear, P.J. 1994. Historical Change in Channel Form and Riparian Vegetation of the McKenzie River Oregon. M.S. Thesis, Oregon State University, Corvallis, OR.

Ratliff, D.E., and P.J. Howell. 1992. The status of bull trout populations in Oregon. Pages 10-17 in Howell, P.J. and D.V. Buchanan, editors. Proceedings of the Gearhart Mountain Bull Trout Workshop. Oregon Chapter of the American Fisheries Society, Corvallis, OR.

Sedell, J.R., B.A. McIntosh, and P.J. Minear. 1992. Evaluation of past and present stream habitat conditions for the McKenzie River temperature control study. Pacific Northwest Research Station, Corvallis, OR.

## **Section 8. Relationships to other projects**

This project will be integrated with three McKenzie Focus Watershed projects that are proposed for BPA FY 1999 funding: 1) Evaluate Spring Chinook Life History-Habitat Relationships in the McKenzie Watershed; 2) McKenzie River Focus Watershed Coordination; and 3) Acquisition of Fish and Wildlife Habitat in the McKenzie Watershed. In addition, the assessment will complement federal projects implemented within the scope of the Northwest Forest Plan's aquatic conservation strategy and the the BPA-sponsored Willamette Basin Acquisition and Bull Trout Assessment projects. The assessment process will coordinate with state and federal personnel involved in these programs and projects. Personnel representing state and federal programs in the watershed will assist in shaping and guiding the assessment project. Information developed through the assessment will aid in identifying bull trout and other fish and wildlife habitat protection needs in the McKenzie Basin.

## **Section 9. Key personnel**

John Runyon, the McKenzie Watershed Coordinator, will be responsible for managing this project and providing coordination between the contractor and the Fish and Wildlife Task Group/McKenzie Watershed Council.

Mr. Runyon is has been employed as the Council Coordinator since March 1997 and his duties include coordinated project planning and management. Mr. Runyon has considerable expertise in planning and managing complex ecosystem research, assessment and monitoring projects.

### **JOHN R. RUNYON McKenzie Focus Watershed Coordinator**

#### **EDUCATION**

*M.S.*, Forest Ecology, Oregon State University, 1992

*M.S.*, Political Science, University of Oregon, Eugene, 1988

*B.S.*, Environmental Biology, Oregon State University, Corvallis, 1983

#### **CURRENT POSITION AND DUTIES**

*Coordinator*, McKenzie Focus Watershed

Responsible for overall project management and coordination for the McKenzie Watershed Council. Duties include project planning, coordinated implementation, and monitoring; proposal preparation; fiscal management; public outreach and communication of council activities.

#### **EMPLOYMENT HISTORY**

*Watershed Analysis Consultant*, Corvallis, OR, 5/95 to 5/97

*Senior Scientist*, Dynamac, Inc., and ManTech Environmental Technology, Inc., research contractor for the US Environmental Protection Agency, Corvallis, OR, 5/95 to 7/96

*Resource Monitoring Coordinator*, Oregon Dept. of Forestry, Salem, OR, 7/92 to 5/95

*Faculty Research Assistant*, Forest Science Dept., Ore. St. Univ., 7/90 to 7/92

#### **EXPERTISE**

Mr. Runyon has expertise in planning and managing complex ecosystem research, assessment and monitoring projects. Mr. Runyon has experience in projects involving watershed analysis, stream habitat inventories, riparian assessments, and water quality monitoring.

#### **SELECTED RECENT PUBLICATIONS / DOCUMENTS**

Runyon, J.R. and K. Mattson. 1997. *Stream Habitat, Riparian and Fish Use Survey Summaries for Selected Streams in the Siuslaw, Alsea and Nestucca River Basins*, Final Report for the Siuslaw National Forest, Corvallis, OR.

Runyon, J.R., C. Andrus, and K. Mattson. 1996. *Mercer / Berry Watershed Analysis*, Final Report for the Siuslaw National Forest, Corvallis, OR.

Runyon, J.R. 1995. *Monitoring Forest Stream Enhancement Projects*. Oregon Departments of Forestry and Fish and Wildlife, Salem, OR.

Runyon, J.R., R.H. Waring, S.N. Goward, and J. Welles. 1994. *Environmental limits on net primary productivity and light-use efficiency across the Oregon transect*. *Ecological Applications* 4: 226-237.

Runyon, J.R. 1994. *Forest Practices Monitoring Program Strategic Plan*. Oregon Department of Forestry, Salem, OR.

## **Section 10. Information/technology transfer**

Information obtained from the McKenzie Watershed assessment will be disseminated through a number of mechanisms. The project will conclude with a report and GIS database. The assessment information, GIS graphics, and conclusions will be shared through the Watershed Council's extensive public outreach program, including citizen workshops, press releases, newsletters and reports.

All information generated through McKenzie Focus Watershed projects will continue to be shared through:

- 1) Participation in the Willamette Basin coordination process;
- 2) Production of monitoring and project reports;
- 3) Participation in Columbia Basin technical groups and review processes;
- 4) Presentations at conferences; and
- 5) Publications in peer-reviewed and other journals.