

Year 2004 Report
on
Activities to Implement
**Washington State's Water Quality Plan
to Control
Nonpoint Source Pollution**

February 2005



Department of Ecology
Publication # 05-10-022

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Washington's
Water Quality Management Plan
to Control
Nonpoint Source Pollution

William A. Hashim

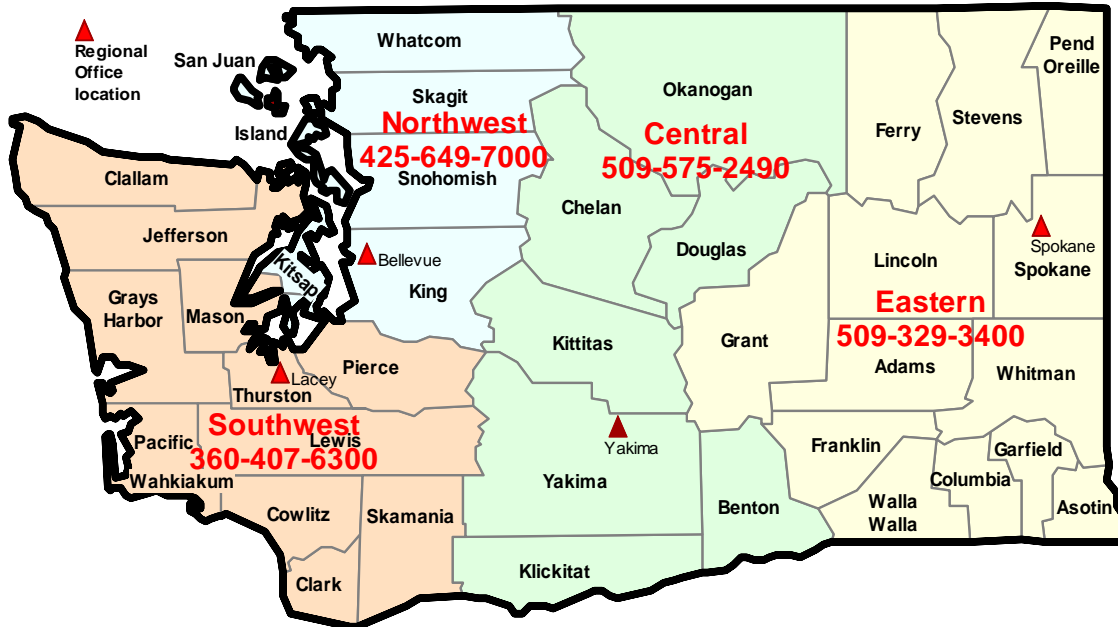
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Acknowledgements

This **Nonpoint Plan Report** has been a cooperative effort between the following agencies:

Department of Agriculture (Agriculture)
Department of Community Development (OCD)
Conservation Commission (CC)
Washington State University, Cooperative Extension (WSU)
Department of Ecology (Ecology)
Department of Fish and Wildlife (F&W)
Department of Health (Health)
Department of Natural Resources (DNR)
Parks and Recreation Commission (Parks)
Puget Sound Water Quality Action Team (PSWQAT)
Department of Transportation (DOT)

A large part of the success of plan implementation and reporting has been through the state agency nonpoint workgroup. During 2003, the following workgroup members were particularly helpful: Kirk Cook (Agriculture), Chris Parsons (OCD), Stu Trefry (CC), Bob Simmons (WSU), John Carleton (F&W), Selden Hall (Health), Carol Walters (DNR), Chris Regan (Parks), Harriet Beale (PSWQAT), and Tim Hilliard (DOT).

Thanks for your help.

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Executive Summary

Washington State's Water Quality Management Plan for Controlling Nonpoint Source Pollution

Washington's citizens have been working for years to protect our clean waters and to clean up polluted ones. The work has yielded significant successes. Pollution from industrial sources and from municipal wastewater treatment plants has been significantly reduced. The water quality of many watersheds has improved through the development and implementation of local watershed plans.

What we are now finding is that pollution generated by the everyday activities of all of us – from spraying chemicals in our yards to letting car washing water run down storm drains – is having a devastating effect on the quality of our water. Almost everything that each one of us does when we're at home, at work, or at play, has the potential to cause pollution. These nonpoint sources of pollution are very difficult to identify and control. They are generated by a wide variety of land uses and activities, many of which do not seem to have any connection to water pollution. Moreover, many different land uses produce the same kinds of pollution. For instance, excess sediments may come from farming, cutting trees, construction, or clearing stream banks of vegetation.

According to the 1996 Report on Water Quality in Washington State, only 22 percent of the problems in streams that do not meet water quality standards can be traced to point sources. Most of the polluted streams are being harmed by nonpoint sources.

Creating healthy riparian areas will help solve the array of pollution problems in Washington streams that are caused by nonpoint pollution—sediment, nitrogen, temperature, dissolved oxygen, and bacteria. We have found that focusing on the activities (management practices) to improve these areas resonates with people. They can understand the goal of clean, healthy streams and move toward implementing these practices in their watersheds. This can be more effective in some communities than the more regulatory framework of the TMDL model.

Local people have the knowledge about their watersheds that helps to identify specific pollution sources and the best management practices most likely to work. Local people care about their watersheds, and most are willing to do the work required to clean up their water. Because the solutions identified for a nonpoint pollution problem require action on the part of many people in a watershed, public participation in watershed planning is extremely important. Citizens in the watershed often have valuable knowledge to share about what works and what doesn't, and their input helps to tailor water quality management plans to the specific environmental, economic, and social conditions in that watershed.

By working together to produce plans to improve water quality and identify solutions, citizens in the watershed come to own the plan and have a stake in its successful implementation. Without good science and the support of the local community, a plan will not be implemented and the water will not be improved.

To assure successful outcomes, we must take the time to work collaboratively with citizens and interested groups. Since individuals' action in their own backyards are a significant contribution to water pollution problems, any plan to manage water quality must engage whole communities in order to achieve success. We have learned that this process requires a significant initial commitment of time and energy to ensure local involvement for the future. These first five years represent a major investment of resources, and have resulted in some significant successes.

- Formation of partnerships with businesses, agencies, and tribes that are interested in producing water quality management plans for the watersheds they live and work in.
- Formation of the state nonpoint work group, which coordinates the work of state agencies to address nonpoint pollution.
- Development of local work groups and advisory committees throughout the state working on TMDLs, all helping to improve water quality in their communities.
- Citizens who are more aware of how their actions affect water quality.

We believe these initial investments will mean more effective on-the-ground actions and improved water quality for the long term. Local involvement in identifying and solving water quality problems is critical. When citizens are included and involved in the process, they are more willing to recognize the problem and contribute to its solution.

We have observed that most people care deeply about the health of their watersheds and value clean water. Washington's nonpoint efforts must draw upon the energy, expertise, and commitment of local communities to create innovative partnerships and solutions. The state's principal role is to support communities with our technical resources, and our capacity to coordinate the effort of all participants in the process. To accomplish this, we have found that we need to give communities time to understand the issues and processes, to learn to trust us, and ultimately to decide to join efforts to improve the quality of our waters.

In addition, we recognize that Ecology alone cannot perform sufficient follow-up to ensure water quality is maintained, or continues to improve over time. Communities need to take responsibility for the health of their watersheds. Local work groups and advisory committees can play this role over the long term. They can also work with citizens in their own communities to support actions that are working and to look for alternative strategies where needed.

We are continuing to develop an effectiveness-monitoring program that will help track the effectiveness of TMDLs, other watershed-based plans, and specific best management practices.

Part 1

Washington's Nonpoint Source Program

This report fulfills requirements under section 319 of the Clean Water Act, but it goes beyond that by reporting on other nonpoint activities in Washington State. The target audiences for this report include water quality managers, federal, state and local decision makers, landowners, and others interested in improving water quality.

During this fifth year of implementing Washington's Water Quality Plan to Control Nonpoint Source Pollution, we took the opportunity to reflect on our accomplishments and experiences in order to develop the next five-year agenda.

Improved communication and cooperation among state agencies, local government involvement, and increased monitoring and enforcement were hallmarks this year.

Citizens of Washington have made a tremendous effort to control nonpoint sources of pollution. The initial plan was built, as much as possible, on capturing and documenting the many programs and activities already going on. The plan was designed to accelerate the implementation of these programs and activities through:

- Seeking opportunities for synergism between various state programs through increased inter-agency coordination,
- Providing opportunities for technology transfer of various successful methodologies between appropriate agencies and groups,
- Developing necessary infrastructure to streamline service delivery of programs to reduce nonpoint pollution,
- Supporting efforts for water quality improvement at the watershed level.

These four areas of implementation are as pertinent now as they were five years ago.

Goal of the 2005 Nonpoint Plan

The goal of this water quality plan is to protect and restore water quality by creating a culture in Washington State that values ecosystem health and biodiversity.

Ecology staff interviewed various special interest districts, state and local governments, and Ecology regional office staff to document accomplishments, develop goals and objectives for the future. There were abundant ideas on ways to achieve clean water because it was clear that was our common goal. Therefore, this plan will identify both technical fixes for those things that are broken, and educational opportunities to teach people about their connections to the land, and why ordinary things they do every day affect water quality. When natural systems are properly functioning, they have the ability to filter contaminants, stop contamination from entering a water body, and then restore themselves. For example, a properly functioning wetland will filter

contamination before releasing water to either surface or ground sources. This ability of nature, when given a chance, becomes the impetus for developing the following set of objectives. The objectives of this water quality plan are:

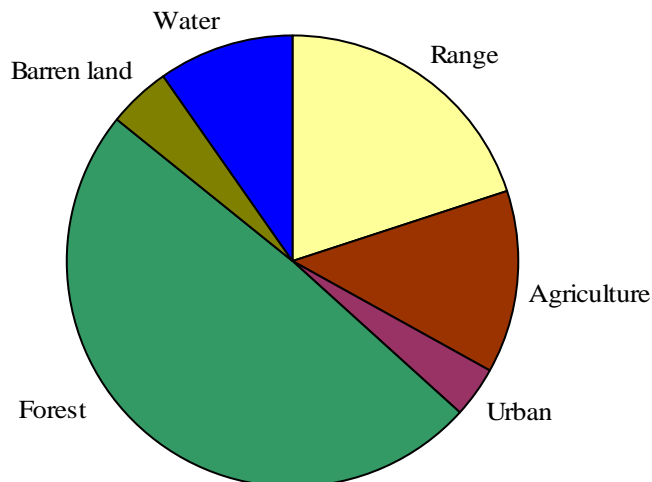
- Restore degraded systems/habitats
- Create sustainable human communities
- Sustain biodiversity
- Preserve natural ecosystems
- Focus funding on most effective strategies
- Teach about connections between individual actions and clean water

The activities undertaken this past year to reach clean water are described throughout this report. Activities include continuing to coordinate activities with other state agencies (especially those responsible for controlling stormwater runoff), protecting critical areas, restoring riparian areas, and expanding our water quality monitoring efforts.

The Way We Use the Land

Let us first look at how land use practices lead to water quality impairments. The following chart shows the geographic extent of the different land uses in Washington State.

Land Use Categories



By far, the largest land use category is forestry. State and privately-owned forest lands, as a land use, are regulated by the Forest Practices Act. Federal forest lands are managed through the Northwest Forest Plan. The new forest practices rules provide a higher level of protection than the old rules. To ensure the rules achieve the intended goals, compliance monitoring and more technical assistance to small forest landowners are needed.

The second largest land use category, agriculture (which includes rangelands), has no legislation that has an overarching control over the industry such as exists on forestlands. Six years ago, the 1998 Washington State Legislature passed the Dairy Nutrient Management Act, which mandated a planning and implementation process to address pollution from dairy operations. The act is making good strides in controlling runoff from dairies. However, there is no legislation to control problems from other types of agriculture, including irrigated agriculture, dryland agriculture, and grazing. The federal government did pass regulations that required all concentrated feeding operations to be covered under a general permit.

The land use that had the largest growth in the last five years is urban use. Even though it has the smallest land base, urban uses cause great impacts. It has been evident for some time that urban and suburban development cause serious water pollution problems. These effects alone warrant our attention. However, we are now realizing that sprawling development affects water *supplies* as well. Problems of impervious surfaces and other land uses are addressed in our updated plan.

There is still concern with recreational activities (especially boats and marinas) as contributors to water quality impairment, as well as concern with the loss of aquatic habitat. Intact riparian areas and wetlands are keys to treating stormwater runoff before it enters a water body.

Part 2

Nonpoint Source Activities and Accomplishments

Washington State Agency Nonpoint Workgroup

Management and control of nonpoint pollution is a multi-agency effort. In Washington State, there are eleven key agencies that have primary responsibility for programs that are identified in the nonpoint plan. It is important to convene the agencies responsible for implementing nonpoint programs, to coordinate activities, to determine collectively the effectiveness of the implementation activities as outlined in the nonpoint plan.

Membership in the state agency nonpoint workgroup is primarily from within Washington State government, and secondarily from other federal, state, and local governments managing nonpoint source pollution.

Agencies represented --as of December 31, 2004

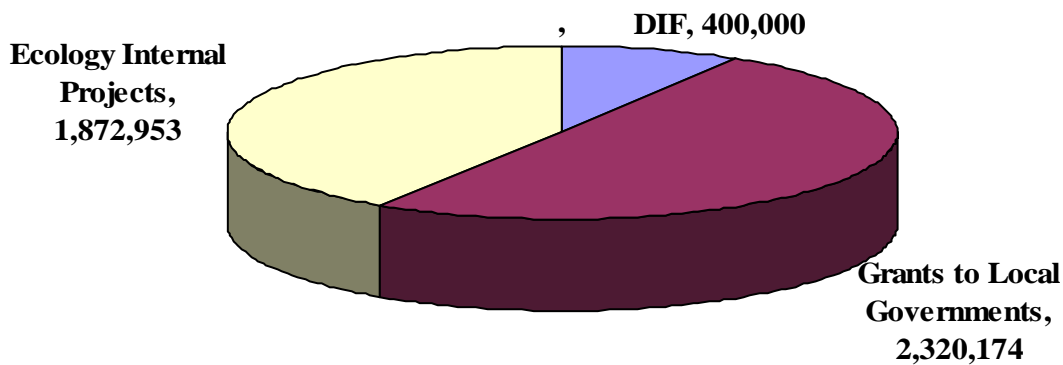
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Conservation Commission
Office of Community Trade and Economic Development
Cooperative Extension
Ecology
Fish and Wildlife
Health
Natural Resources
Parks and Recreation Commission
Puget Sound Action Team
Transportation

The nonpoint plan outlined the role of the nonpoint workgroup. The state agency nonpoint workgroup will meet annually to accomplish the following.

1. Review progress on implementation commitments (Volume 3, Chapter 5)
2. Collaborate on new ideas for solving nonpoint source pollution
3. Advise Ecology on changes needed to the nonpoint plan
4. Oversee the use of the Direct Implementation Fund (A description of DIF projects can be found in this report.)

The workgroup met recently to review the draft nonpoint plan for the next five years. The nonpoint workgroup identified ways to increase coordination among members, and committed to new innovative actions in the plan. The result is an updated actions table, Table 5.1 found at the end of this report. 319 funding may be used only for activities listed there.

It is likely that commitments in the plan will need to be revisited throughout the plan implementation period (five years). Many of the commitments are actions that have a high likelihood of being carried out because the program already exists and the funding sources are relatively assured. In a number of cases, actions identified in the plan are limited by funding or by the need for many entities to participate in the outcome. In these cases, the progress will be difficult to predict. Annual reviews will be important to make sure the overall plan direction is maintained.



Some key highlights of the programs in the Nonpoint Plan are presented below:

EPA’s 2004 319 Grant to Washington State

There are three major workplan elements.

Local Grant and Loan Funding—Money was allocated and disbursed under the current water quality grant program as competitive grants to local governments, tribes, special purpose districts, and not-for-profit groups during this last year. The application process for the Centennial Clean Water Fund, SRF, and 319 funding cycle is administered by the Financial Assistance Section of the Water Quality Program. Applicants requesting grants and loans for nonpoint projects must implement plans and programs identified in Volume 1 of the Nonpoint Plan.

Direct Implement Fund—Through its Enhanced Benefit Status, Ecology has developed the Direct Implementation Fund (DIF). This fund is only available to state agencies for projects that would assist in implementing program development projects clearly described in the work plans and which implement actions identified in Table 5.1 of the Nonpoint Plan.

Water Quality’s Nonpoint Program Support Projects—Ecology staff is funded for projects that directly support the state’s nonpoint program.

Element 1. Ecology’s Grant and Loan Program

Ecology’s Water Quality program administers three major funding programs that provide grants and low-interest loans for projects that protect and improve water quality in Washington State. Ecology acts in partnership with state agencies, local governments, and Indian tribes by providing financial and administrative support for their water quality efforts. As much as possible, Ecology manages the three programs as one; there is one funding cycle, application form, and offer list. The three programs share guidelines, a single application, and a common funding cycle.

Volume 1 of the nonpoint plan provides a series of summaries that profile each major watershed in Washington State. The information contained in these watershed summaries can be used to

better understand the relationships between demographics, land-use activities, and water quality problem areas. Data from the summaries can be used to help support watershed-based planning efforts and subsequently those local water quality plans that are incorporated into Volume 1 will be adopted by reference as part of Washington State's overall water quality plan.

In order to be eligible for grants or loans to control nonpoint source pollution, an applicant has to address one of three elements in Volume 1: 1. A 303(d) listed problem area; 2. An impacted beneficial use; and 3. An existing plan or program.

- **The Centennial Clean Water Fund (CCWF)**

CCWF provides grants and low interest loans to fund related activities to reduce nonpoint source pollution. In 2004, a total of 15 projects were funded to control nonpoint sources of pollution, or to restore habitats degraded by improper land use practices.

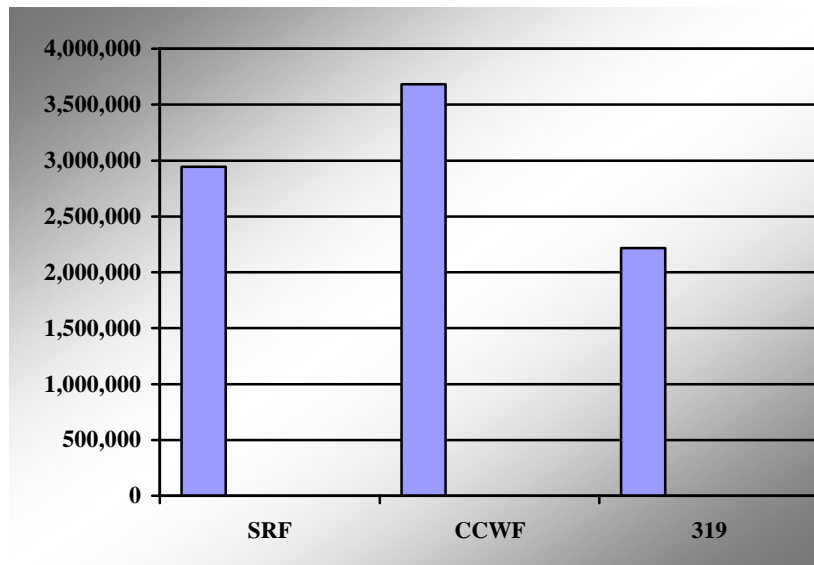
- **The State Revolving Fund**

SRF provides low-interest loans for treatment facilities and activities to reduce nonpoint sources of water pollution. In 2004, a total of 3 applicants asked for and received loan funds to implement nonpoint programs.

- **Section 319**

319 grants provide funds to reduce nonpoint sources of water pollution. In 2004, a total of 11 projects were funded with 319 funds.

The 2004 funding cycle provided the following totals for Washington's Nonpoint grants and loans



Project descriptions for all three categories follow:

**Projects funded through Ecology's Water Quality Grants and Loans Program
State Fiscal Year 2004**

Applicant Name	Project Title	Funding Offered:		
		CCWF	Section 319 Funds	SRF
Kittitas Reclamation District	Kittitas TMDL Implementation & Compliance Monitoring- The Kittitas County Water Purveyors (KCWP), a Kittitas Reclamation District entity, will support water quality goals of the Upper Yakima River Watershed TMDLs (sediment/turbidity/pesticide, bacteria & temperature). KCWP will apply appropriate TMDL recommendations (BMP)s, conduct WQ monitoring, conservation planning, technical assistance, irrigator outreach/education, & support the KCWP water compliance policy.		\$224,036	
Whatcom Conservation District	Ten Mile Watershed Restoration - Phase III The Ten Mile Creek watershed has experienced water quality and quantity degradation from agricultural land use practices. This project will provide education and support to implement Phase III of citizen-based stewardship actions to re-vegetate riparian corridors, increase environmental awareness, and facilitate behavioral changes to meet water quality and quantity goals.	\$250,000		
Chelan County Conservation District	WRIA 45 TMDL/Early Implementation-- Chelan County Conservation District will partner with Ecology and Wenatchee Planning Unit on Wenatchee River TMDL activities, including: fulfilling water quality component, Wenatchee WRIA 45 Watershed Plan; Water quality monitoring; Early implementation activities; developing supplemental implementation strategy (SIS)/EPA submittal; developing detailed implementation plan (DIP).	\$250,000		
Nooksack Salmon Enhancement Association	Tenmile Creek Watershed Restoration Project-- NSEA will improve water quality and salmon habitat in the Tenmile Creek Watershed by re-establishing riparian buffers along and placing LWD within streams degraded by a century of agricultural land use. 35-50 foot riparian buffers will be planted and 30 LWD structures will be constructed along 5000 feet of stream.		\$180,000	
Seattle Public Utilities	Venema Creek Natural Drainage System-- The Venema Creek Natural Drainage System project will use low impact development techniques to reduce urban stormwater runoff and achieve TMDL implementation objectives in the most important subbasin of Seattle's Piper's Creek. The project will significantly benefit water quality, wet weather flow reduction, and salmon survival in the watershed.			\$2,293,696
King Conservation District	Snoqualmie Watershed Ag Assistance Team (SWAAT)-- The King Conservation District (KCD) will provide small farm owners with education and technical assistance to improve water quality and fish habitat within the Patterson, Griffin, Harris and Ames Creek Watersheds. The KCD will provide workshops, farm tours, site visits, and develop farm plans and educational materials to address management of nutrients, sediment, and riparian zones.		\$249,000	

Applicant Name	Project Title	Funding Offered:		
		CCWF	Section 319 Funds	SRF
Stevens County Conservation District (SCCD)	Colville River TMDL Implementation --This project will support the Colville River Watershed TMDL by conducting water quality and bacteria source monitoring, working with septic system owners, providing education on bacteria sources and control, and providing technical assistance and cost-share for implementing BMPs.	\$250,000		
Pierce Conservation District	South Prairie Creek Recovery Monitoring --This project will produce highly trained volunteers and use them to monitor the recovery of South Prairie Creek from fecal coliform and temperature contaminants, and provide a data set for use in adaptive management decisions for recovery as recommended by the South Prairie Creek TMDL submittal report.	\$86,739		
Skagit Conservation District	Samish Clean Water Implementation --Program implementation in the Samish Basin will protect, restore, and enhance water quality, and fish and wildlife habitat. An updated watershed assessment will target project activities when coupled with extensive stakeholder outreach/education. Conservation plans will be developed and implemented. Educational opportunities will train volunteers for on-going monitoring activities and implementation.	\$249,375		
San Juan County Conservation District	Low Impact Development Plus --This project implements an expanded low impact development model that, through education and technical assistance for landowners, will result in a) more effective local compliance with stormwater management requirements and b) application of wide range of voluntary conservation and stewardship practices to complement mandated BMPs. The project is preventive and intended to mitigate detrimental water quality impacts of rapid growth and land conversion/development.	\$161,789		
Pomeroy Conservation District	Garfield County Riparian Restoration Project --This project will significantly improve water quality in the Garfield County by implementing agricultural best management practices (BMPs) that include off-stream watering, fencing, and riparian plantings. At least 18 miles of riparian buffer will be created. We will also conduct water quality effectiveness monitoring and provide photo-documentation of improving riparian health.		\$236,250	
Skagit Fisheries Enhancement Group	Nookachamps Basin Riparian Restoration --The Nookachamps basin will be targeted for implementation of temperature reduction measures on select water bodies cited in the Lower Skagit River Tributaries Temperature TMDL. Activities include project site inventory, planting streamside vegetation, installing livestock fencing to reduce erosion and sedimentation, altering channel geometry using LWD, and public outreach and education.		\$246,317	
Stevens County Conservation District (SCCD)	Thomason Creek Adoption Program --This project seeks to remove the excessive aquatic vegetation from the downstream reach of Thomason Creek and identify upstream nutrient sources, increasing levels of dissolved oxygen and lowering sedimentation. By assisting the local school district with a stream adoption program, it also enhances the environmental education and student involvement.		\$80,000	

Applicant Name	Project Title	Funding Offered:		
		CCWF	Section 319 Funds	SRF
Chehalis River Council	Chehalis Basin Education Consortium Project --The Lewis County Conservation District will monitor water quality and complete salmon habitat assessments in the Dillenbaugh Creek Watershed. In addition, we will educate and work with stakeholders to restore and protect the water quality in the system. Stakeholders include the city of Chehalis, Lewis County, businesses, schools and residents.		\$236,812	
Thurston County Environmental Health Division	On-Site Financial Assistance Program --This project will continue Thurston County's local loan fund, which makes long term, low interest funding available to repair failing on-site sewage systems and allow connection to sewer for properties with failing on-site systems where sewer is available. Lack of low cost funding often discourages or prevents citizens from repairing on-site sewage systems, which contribute to pollution of ground and surface waters in Thurston County.			\$200,000
Chehalis Basin Conservation District Alliance	Upper Chehalis TMDL BMP Implementation --In response to the Upper Chehalis TMDLs: Assess riparian habitat for the purpose of future improvement. Restore riparian habitat in identified locations. Provide technical assistance to implement best management practices recommended by more than 30 conservation plans and prepare 12 additional plans. Educate landowners in conservation practices and BMPs.	\$248,885		
Skagit Conservation District	Nookachamps TMDL Implementation --TMDL implementation of the Nookachamps Basin will protect, restore, and enhance water quality and fish and wildlife habitat. An updated watershed assessment will target project activities when coupled with extensive stakeholder outreach. Farm plans will be developed and implemented. Educational opportunities will train volunteers for on-going monitoring activities and implementation.	\$249,375		
Whatcom County	Watershed-Friendly Gardening Education --The project will expand an existing and successful lake-friendly gardening education program to residents of the Lake Whatcom and Lake Samish watersheds in Whatcom County. To convey and reinforce key messages, activities will use several different approaches, including print materials, videos, training of landscapers and retailers, and a demonstration landscape.		\$130,053	
Kitsap County Health District	Dyes Inlet Restoration/ Protection Project --This project implements early action for Sinclair/Dyes Inlet Total Maximum Daily Load for fecal coliform. It will improve/maintain Dyes Inlet water quality to protect the recent shellfish classification upgrade to conditionally approved. The project identifies and corrects fecal coliform nonpoint sources including failing septic systems and urban stormwater.	\$394,444		
Clark Conservation District	Small Farms for Clean Water --Clark Conservation District proposes to give small acreage landowners the knowledge and skills necessary to implement best management practices that will reduce pollution of surface waters. Our project provides educational workshops, technical assistance, and cost-share to support small farms in improving water quality in the Salmon Creek watershed.		\$197,700	

Applicant Name	Project Title	Funding Offered:		
		CCWF	Section 319 Funds	SRF
Bellingham City of	Bellingham Salmon Habitat Restoration and TMDL --The Bellingham Salmon Habitat Restoration and TMDL proposal will restore or create a total of 2.0 linear miles of salmon habitat, implement a Whatcom Creek TMDL, and conduct a public education campaign to prevent non-point source pollution and improve water quality, salmon habitat, and recreational uses in three Bellingham streams.	\$500,000		
Skagit County Health Department	Skagit Septic System Improvement Project --The Skagit Septic System Improvement Project will increase awareness and promote access to allow monitoring, maintenance, and upgrades to enhance performance of septic systems in areas that have documented water quality threats or impairments, and have public health concerns.	\$152,976		
Clark Conservation District	Salmon Creek Mile 10.5 Restoration --Salmon Creek has experienced gradual water quality degradation from land use practices and urbanization. This proposal will restore water quality and stream habitat through streambank protection, restoration, and revegetation practices. These established practices will reduce erosion, turbidity levels, and improve overall water quality in Salmon Creek.	\$247,500		
Stillaguamish Tribe	Steelhead Haven Landslide Remediation Project --The ultimate goal of this project is to reduce the largest source of sediment in the North Fork Stillaguamish. This proposal would eliminate the river undercutting of the Steelhead Haven landslide. A log revetment would be constructed approximately 500 ft. from the slide to isolate it from the river.	\$180,483	\$316,517	
Hood Canal Coordinating Council	Reducing Hood Canal Nutrient Loading --Inputs from on-site septic systems are contributing to hypoxic conditions and shellfish closures in lower Hood Canal. This project will assess new ways to improve onsite sewage treatment, including new technologies, economic incentives and economy-of-scale studies, and management structures. Three communities will be targeted for implementation after the feasibility studies.		\$120,392	
Bainbridge Island City of	Bainbridge Island Water Quality Monitoring Program --The proposed project is to design and test a comprehensive, long-term surface and nearshore water quality monitoring program for a rapidly urbanizing area. Benefits include monitoring program development and initiation, identification of thresholds for adaptive management actions, public education, and distribution of water quality data to regional and state entities.	\$198,640		
Okanogan Conservation District	Okanogan Conservation Technical Assistance --The district will work with NRCS to implement agricultural BMPs under the EQIP program that protect, enhance, and restore water quality such as riparian plantings, livestock fencing, and irrigation system improvements. In addition water quality samples will be taken to determine the status of water quality in area streams.	\$263,127		

Applicant Name	Project Title	Funding Offered:		
		CCWF	Section 319 Funds	SRF
San Juan County Health and Community Services	San Juan On-site Failure Repair --This project will continue to provide revolving loan funds to property owners in San Juan County for the repair of failing on-site septic systems. Eligible recipients will be identified through marketing and through education of on-site septic system contractors (designers, installers, pumpers, O&M).			\$450,000

Element 2. Direct Implementation Fund (DIF)

At the start of calendar year 2001, Ecology developed a funding program only available to state agencies for projects that would assist in implementing program development projects clearly identified in the nonpoint plan. Activities must be beyond the current responsibilities of the agency as mandated by the Legislature. State agencies submit applications for activities for which they are designated as lead in the plan. Projects are identified and prioritized by the State Agency Nonpoint Workgroup, and a recommended funding list presented to the Water Quality Program Management Team for approval. There is a total of \$400,000 available for DIF projects. DIF is funded through our 319 grant.

This is only the third round of DIF projects. However, the expectations are high that they will continue to yield tremendous benefits to water quality through the development of new programs, educational activities, model ordinances, and increased communication and cooperation among state agencies.

Direct Implementation Fund 2004

State Agency	Project Title	DIF Request	DIF Offer	Running Total
Ecology	Basin wide student monitoring in two watersheds	50,000	50,000	\$50,000
Ecology/Community Trade and Economic Development	Integrating Landscape Principles into Local Land Use Planning	74,000	74,000	\$124,000
Washington State University	Addressing Nutrient Loading in Hood Canal at the Source	50,000	50,000	\$174,000
Department of Fish and Wildlife	Protecting Puget Sound from Invasive Plants	45,357	45,357	\$219,357
Department of Natural Resources	Educational Outreach for Small Forest Landowners	17,300	17,300	\$236,657
Conservation Commission	Cultural Resource Protection	50,000	50,000	\$286,657
Puget Sound Action Team	Low Impact Development Local Grants	45,000	45,000	\$331,657
Washington State University	Water Quality Education for AFO/CAFOs	67,912	\$50,000	\$381,657
WDFW	Stream Restoration Guidelines	50,000	18,343	\$400,000

Element 3. Work Plan Descriptions for Water Quality's Program Support Projects

- **Nonpoint Policy and Plan Coordination 2004 (2 FTE)** -- Ecology is responsible for overseeing and coordinating overall plan implementation activities. Part of that role entails compiling progress reports, and reporting back to EPA; taking the lead in coordinating with other Ecology programs; facilitating the state agency nonpoint workgroup; and performing technical outreach about the plan with local governments, tribes, and special purpose districts. In addition, Ecology is responsible for statewide nonpoint policy and planning. Any changes in plan activities and the reason for those changes will be coordinated through Ecology's Water Quality Program.

Cost of this work plan component – \$ 201,306

- **Financial Administration 2004 (1.3 FTEs)** -- Staff of the Water Quality Program's Financial Management Section administer and manage all Section 319 grant funds passed through to state agencies, local governments, Indian tribes, and public not-for-profit groups. Staff ensures that funds are allocated to highest priority projects, funds are spent in a fiscally responsible manner, and projects are adequately tracked from initiation to completion.

Cost of this work plan component – \$ 81,143

- **TMDL Nonpoint Education and Outreach 2004 (1 FTE)** -- Ecology significantly improved the interaction with affected and interested parties in areas where TMDLs are being considered or undertaken. Efforts to involve key nonpoint source contacts in implementing the nonpoint plan increased. Integration of the agency watershed approach with nonpoint and TMDL development was improved. Better information was provided to key decision-makers regarding our efforts to comply with the TDML MOA and our plan for integrating monitoring efforts.

Cost of this work plan component – \$ 63,366

- **TMDL Development and Implementation 2004 (8 FTEs)**
The primary job of a TMDL lead is developing the TMDL and supporting documents for successful submission to and approval by the U.S. EPA. This element includes knowledge of TMDL concepts and procedures, and the ability to work effectively with diverse groups within and outside Ecology. During the calendar year 2004, 36 TMDLs were submitted to EPA for their approval. Other products required from this work element include development of a summary implementation strategy (SIS), a TMDL submittal report, and a detailed implementation plan (DIP).

Cost of this work plan component – \$ 689,227

- **Water Quality Technical Assistance and TMDL Implementation 2004 (3 FTEs)**
The purpose of this work plan element was to provide technical assistance to federal, state, local agencies, tribes, and special purpose districts on whether

their activities, projects, and programs meet state water quality laws and regulations. This work plan element applied in watersheds that implement nonpoint TMDLs, or in watersheds with plans that focus on protection of threatened waters or implementation activities to clean up waters.

Cost of this work plan component – \$ 272,776

- **TMDL Technical Study 2004 (2.5 FTEs)**

This work plan element requires designing and conducting nonpoint source monitoring and modeling studies to establish TMDLs in selected watersheds. The technical study involves an initial assessment of the water quality problems and a technical analysis to determine how much pollution must be reduced to protect the water.

Cost of this work plan component – \$ 252,665

- **TMDL and BMP Effectiveness Monitoring 2004 (3 FTEs)**

Post TMDL monitoring is conducted to verify that the pollutant controls result in the water body meeting water quality standards. It also tests the effectiveness of the management programs carried out as a part of the implementation plan. An adequate monitoring program tracks implementation of BMPs or other controls, water quality improvements, and progress toward meeting water quality standards.

Cost of this work plan component – \$ 288,612

State Nonpoint Programs

Agriculture

1. Pesticide Residue Monitoring Program

Washington State Department(s) of Ecology and Agriculture have been working together on a multi-year monitoring effort to evaluate pesticide concentrations in salmon-bearing streams. This is the second of the three-year study and includes sampling surface water in two index watersheds. The monitoring study is designed to assess salmonid exposure to pesticides from agricultural and urban sources. The data are compiled and analyzed to assess water quality in terms of trends across years. This study will be useful in developing salmonid exposure assessments for pesticides in Washington State surface waters. It will also be helpful in evaluating mitigation measures implemented to reduce pesticide transport to surface waters.

The data collected will allow WSDA, the U.S. Environmental Protection Agency (EPA), and the National Atmospheric and Oceanic Administration (NOAA) - Fisheries to refine exposure assessments for pesticides registered for use in Washington State. Understanding the fate and transport of pesticides used in Washington allows regulators to make appropriate decisions to protect endangered species while minimizing the economic impacts to agriculture.

Ecology's Environmental Assessment Program (EAP) conducts the sampling program and laboratory analyses. A wide range of pesticides, including organochlorines, organophosphates, and carbamates, as well as various herbicides and breakdown products are analyzed over the project term. The samples are analyzed at or through Ecology's Manchester Laboratory. EAP will also enter the data into [Ecology's Environmental Information Management database](#).

A fact sheet on the program can be found at:

<http://agr.wa.gov/PestFert/EnvResources/docs/SWM/FactSheet.pdf>

2. Integrated Pest Management

Integrated Pest Management (IPM) is a coordinated decision-making and action process that uses the most appropriate pest control methods and strategy in an environmentally and economically sound manner to meet agency programmatic pest management objectives. The Washington State IPM Coordinating Committee includes members from institutions of higher education as well as representation from those state agencies responsible for addressing pest control problems. The IPM Coordinating Committee provides integrated pest management training, and has developed a handbook that can be used to help implement an IPM program at any location.

3. Dairy Nutrient Management

Nutrients from dairies and other livestock operations are regulated through livestock nutrient management programs that are currently co-administered by the Washington Department(s) of Agriculture and Ecology. These programs work to protect water quality from livestock nutrient discharges through the combination of clear guidance, education, and technical assistance, as well as through coordination with related agencies, industry, and other stakeholders.

Both point and nonpoint sources of water pollution from livestock are controlled through permitting processes, and implementation of educational and outreach efforts. The Department of Ecology is writing the National Pollution Discharge Elimination System (NPDES) and state waste discharge general permits to address Concentrated Animal Feeding Operations (CAFO). The CAFO permit is designed to meet the current Environmental Protection Agency CAFO rules as well as state law. For example, the permit requires CAFOs to manage manure to avoid polluting rivers, lakes, and underground aquifers. Under new federal rules, animal producers are required to develop and implement plans for managing manure, and submit reports annually to the state. Operators must show that they have an adequate amount of storage for manure. They also must keep animals out of surface water and assure that manure used as fertilizer is applied appropriately to avoid pollution.

Since the Department of Agriculture does not yet have authority delegated by the federal government to write this permit, the two agencies are working to develop a permit that they can both support. The two issues currently being debated between the agencies are the need to share nutrient management plans (these are the foundation for the permit), and the need to look at soil information to make sure ground water will not be impacted. The federal regulations do not require the protection of ground water (although state laws do) and are silent about sharing nutrient management plans.

Forest Practices

1. Forest Practices Habitat Conservation Plan

As a result of the Forests and Fish Report, the Department of Natural Resources, on behalf of the state of Washington, is now actively engaged in a collaborative process with the U.S. Fish and Wildlife Service, the Environmental Protection Agency, and the National Oceanic and Atmospheric Administration – Fisheries (collectively known as the Services) to obtain assurances that these ground breaking rules comply with the Endangered Species Act and the Clean Water Act. The state is seeking an Incidental Take Permit from the Services for a period of fifty years through the implementation of a plan known as the Forest Practices Habitat Conservation Plan (FPHCP).

Given the geographic scope of lands covered by the forest practice act and rules (approximately 9.1 million acres of forestland in Washington), the large number of landowners involved, and the multiple species for which coverage is being sought, the state has developed the FPHCP as a programmatic plan. Whereas most habitat conservation plans approved to date are agreements between the federal government and an individual landowner, the programmatic nature of the FPHCP provides ESA coverage for forest landowners through the state's forest practices program.

Forest practices activities covered by the FPHCP include road and skid trail construction, road maintenance and abandonment, final and intermediate harvesting, pre-commercial thinning, reforestation, salvage of trees, and brush control. In addition, adaptive management research and monitoring activities are also covered by the plan. The FPHCP includes protection measures to monitor, minimize and mitigate any impacts caused by these activities.

3. Statewide RMAP Workshops

Because of House Bill 1095, an act relating to assisting small forest landowners with the forest road maintenance and abandonment plan (RMAP) elements of the forest practices rules, the Small Forest Landowner Office conducted several statewide workshops in 2004. The workshops were an opportunity for small forest landowners to learn about road maintenance standards. In addition, information was presented about technical and financial resources that are available to assist landowners, including a cost share program for replacing or removing fish-blocking culverts.

4. Small Forest Landowner Database Completed

In response to the legislative request for a report on small forest landowner demographics, the Small Forest Landowner Office (SFLO) embarked on the first effort in Washington State to systematically collect comprehensive and detailed statewide demographics on all small forest landowners and the land base they manage. The SFLO, in conjunction with the Rural Technology Initiative (a cooperative program with the University of Washington and Washington State University Cooperative Extension) began developing this database by collecting tabular tax parcel records from each of the 35 timbered counties in the state. Each county has special tax classifications for parcels of land greater than five acres that are managed as forests. The small forest landowner

database quantifies the number of landowners statewide who own forested parcels ranging from 5 to 5,000 acres that are enrolled in a forest use tax classification.

Urban/Rural Growth

1. Clearing and Grading Model Ordinance

During 2004, the Office of Community Trade and Economic Development (CTED) received a DIF grant to develop a Model Clearing and Grading Ordinance. Clearing of vegetation and grading of soils for construction activities is known to affect the normal flow and infiltration of rainfall, potentially causing the loss of topsoil and sedimentation of our rivers and streams. Other impacts of land disturbance activities may be a loss of vegetation cover and forest canopy that result in increased runoff volumes and frequency, increased soil erosion, and the invasion of non-native plant species on the subject property, if not properly and promptly re-vegetated. Avoiding or minimizing the impacts of clearing and grading activities to adjacent and downstream public or private property and fish and wildlife habitat is one of the goals for regulating clearing and grading activities.

This model ordinance is just one example of a comprehensive approach to managing clearing and grading activities and is developed to provide local jurisdictions with a model they can use when developing or updating their clearing and grading regulations. The model ordinance (and supporting technical guidance document) is not a state regulation.

The model ordinance was developed by reviewing and integrating examples from other adopted city and county ordinances, resource information for clearing and grading provided on the Municipal Research Services Center website, the Washington Department of Community Trade and Economic Development's (CTED) Critical Areas Assistance Handbook (2003), and the Washington Department of Ecology's Stormwater Management Manual for Western Washington (2001). Specific western Washington ordinances borrowed from in the development of this example code include the cities of Anacortes, Bellevue, Lake Forest Park, Redmond, and Olympia, and the counties of Jefferson, King, Whatcom, and Klickitat. As a result, the model ordinance captures ways in which a number of different jurisdictions in western Washington have approached various aspects of clearing and grading within their codes while leaving room for jurisdictions to include local preferences. The model ordinance and supporting technical guidance document emphasize the use of techniques to limit land disturbances from clearing and grading, and are designed to be adapted to local needs and conditions.

2. Background and Development of the Stormwater Management Manual for Eastern Washington

Many guidance manuals for on-site stormwater management have been written to address national, regional, and local characteristics and management needs. In Washington, several guidance manuals have been prepared, used, and updated to address regional and local requirements. Ecology published the *Stormwater Management Manual for Western Washington* in August 2001 as an update to a predecessor manual prepared in 1992. Eastern Washington representatives requested that Ecology create a separate manual for

the eastern portion of the state. Based upon these requests and upon recognition of the significantly different climate, hydrology and geology of eastern Washington, Ecology agreed to create a separate manual.

The final *Model Municipal Stormwater Program for Eastern Washington* was published in September 2003. The Model Program is available at this website: www.ecy.wa.gov/biblio/0310076.html. The final *Stormwater Management Manual for Eastern Washington*, was published in October 2004, and is available at this website: <http://www.ecy.wa.gov/biblio/0410076.html>.

3. Onsite Sewage Systems

The Department of Health (DOH) has developed Draft Onsite Sewage Rules to replace the current rules that have been in place since 1995. These rules, when adopted, will cover systems up to 3500 gallons per day (gpd). The anticipated effective date is mid 2005. DOH has also begun work on revising the rules that apply to onsite sewage systems between 3500 gpd and 14,500 gpd and on rules that apply to sewage tanks.

Health partnered with Puget Sound Action Team and others to survey the capacity of local health jurisdictions in the Puget Sound Basin to manage the data on their onsite system inventory. Facilitating and ensuring that monitoring and maintenance occur on onsite systems is the underlying purpose for this project. In addition, the team developed and put on a workshop for onsite program and computer support staff from Puget Sound counties. This workshop provides an opportunity for them to share their progress, successes, challenges, as well as visions and possibilities for local health as they set up these databases. Follow up efforts from this project are already under way.

Habitat Alteration

1. Riparian Restoration

Riparian restoration activities have increased in Washington State in 2004. Part of the reason is the realization that a key to controlling nonpoint sources of pollution is through preserving and restoring riparian areas. For too long, riparian areas were open corridors for cattle grazing, conduits for forest practices, paved over for housing developments, and generally disregarded as an essential environmental amenity.

A few success stories are noted in Appendix B.

Hydropower projects

Seventeen dams in Washington will begin the federal (FERC) re-licensing process in the next ten years. Many of these are large private dams on the Columbia River. Most of these dams were built 35-50 years ago. When a dam operator requests a license, Ecology works with the utility, reviews studies, analyses and plans to make sure the facility will meet the state's Water Quality Standards. If Ecology determines that Water Quality Standards are attainable, a water quality certification (401 certification) is issued with conditions to ensure the standards will be met. Many of the existing dams will have difficulty meeting the standards. Ecology developed a specific provision in the new Water Quality Standards to define a pathway that would allow us to issue water quality certifications for dams that already exist. Ecology is also working with the

Northwest Hydropower Association to develop a guidance document for relicensing. The purpose of the document is to assist utilities, resource agencies, tribes, other stakeholders and the public to understand Ecology's roles and responsibilities. Certifying these dams is lengthy, technically complex, and difficult from a regulatory perspective. It represents a significant workload for Ecology for which there is no fee base. Ecology is currently working on the following dams:

- Rocky Reach dam – owned by Chelan PUD.
- Priest Rapids and Wanapum dams – owned by Grant PUD.
- Spokane River Dams – owned by Avista Corporation.

TMDLs

The TMDL agreement between EPA and Ecology set out some interim goals for completing the 1566 TMDLs required by the 1996 303(d) list. By the end of year five, which ended on June 30, 2004, Ecology was to have completed 249 TMDLs. The number actually completed is 339. Ecology exceeded the initial goal because of the partnerships that were made with local governments, conservation districts, local landowners, and the U.S. Forest Service who are assuming more responsibility for their watersheds.

	Cumulative By Fiscal Year 2004	Cumulative By Fiscal Year 2008	Cumulative By Year 2013
The number of TMDLs required through the original settlement agreement	249	552	1566
The number of TMDLs required by May 2001 Work load model update	398	766	1200

Part 3

Are Programs Effective?

Determining improvements in waters degraded by nonpoint sources of pollution is expensive and time consuming. It may take years of implementation activities before water quality improves, and even then, land use activities outside the realm of a clean up plan may hamper clean up efforts. In July 2003, Washington's Final Report under the National Monitoring Program revealed just that conclusion.

The EPA 319-funded monitoring-program goal was to determine the effectiveness of watershed-scale, nonpoint source pollution management programs in improving water quality. After ten years of implementation and monitoring for fecal coliform bacteria, results were mixed. All streams monitored violated state water quality standards at some time during the study after BMPs were implemented.

Realizing the difficult nature of defining and controlling nonpoint source pollution, the state has developed monitoring strategies that will help in the overall management of our nonpoint program.

Is Water Quality Improving? This question will be answered over time by using information from six sources:

1. Comprehensive Monitoring Strategy
2. Effectiveness Monitoring Program
3. Water Quality Assessment
4. Water Quality Index
5. Success Stories

The effect of management practices on water quality won't be known for some time. Our ambient and effectiveness monitoring programs may not give us answers for some time. In the meantime, we will report on individual successes as they are reported to us. To capture success stories, Ecology created a nonpoint website and requested success stories from local governments. We have been overwhelmed with submittals. A few are noted in Appendix B. A separate publication dedicated to showcasing success stories will be completed in early spring of 2005.

Washington's Statewide Monitoring Strategy

The 2001 Washington State Legislature passed [Substitute Senate Bill 5637](#) requiring the development of a comprehensive strategy and action plan for measuring our success in recovering salmon and maintaining watershed health. The plan is completed and the initial stages of implementation have started.

Monitoring is a required element of any salmon recovery plan submitted to the federal government for approval. While numerous agencies and citizen organizations are engaged in

monitoring a wide range of salmon recovery activities, there is a greater need for coordination of these efforts.

Effectiveness-Monitoring Program

During this next year Ecology will work with EPA to determine how to move forward with a monitoring strategy that will help us assess the effectiveness of our nonpoint programs. We have identified some tasks to accomplish before we can design a monitoring strategy:

- Identify the priority questions we need answered
- Identify the resources it will take to answer those questions
- Determine whether we can use research done by others to answer some of our priority questions. For instance, there is published work on the effectiveness of some BMPs; Oregon may have done effectiveness-monitoring in basins similar to ones in Washington.
- Develop a set of recommendations for the monitoring strategies (current or future) that Ecology will invest in to meet its Clean Water Act Requirements

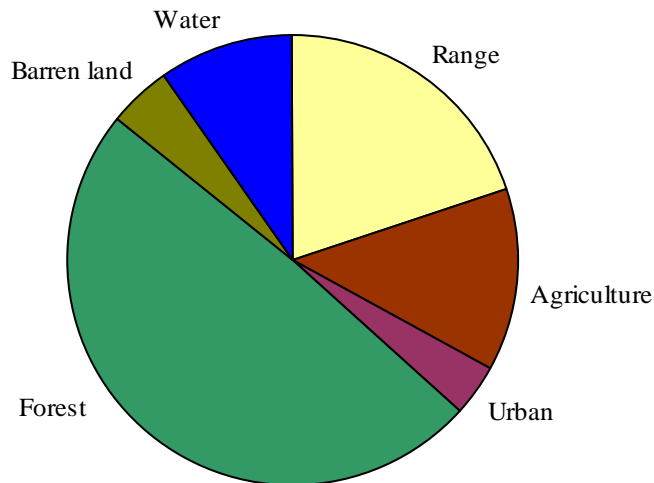
Water Quality Assessment

Ecology's primary means of reporting on the status of water quality is through the development of an integrated water quality monitoring and assessment report, based on EPA's 2002 *Integrated Water Quality Monitoring and Assessment Report Guidance* (November 2001). *Washington State's Water Quality Assessment* satisfies Clean Water Act requirements for both Section 305(b) water quality reports and Section 303(d) lists. Ecology's Water Quality Program has adopted Policy 1-11 that describes the methods used for assessing information to evaluate attainment of water quality standards. The policy includes criteria for compiling, analyzing, and integrating data on ambient conditions with project implementation information. The policy describes how the state integrates data from numerous sources, collected for a variety of purposes under a variety of quality control practices. *Washington State's Water Quality Assessment* assigns waterbody segments into one of five categories. All waters in Washington State (except on reservation lands) fall into one of the five categories that describe the status of water, from clean to polluted. *Washington State's Water Quality Assessment* can be found on Ecology's website (<http://www.ecy.wa.gov/programs/wq/303d/2002/2002-index.html>).

Ecology's Water Quality Index

Ecology's stream monitoring Water Quality Index (WQI) attempts to answer non-technical questions about water quality by creating a long-term trend analysis at a regional scale. The index represents both point and nonpoint sources of pollution. It is a unitless number ranging from 1 to 100; a higher number is indicative of better water quality relative to expectations. In general, stations scoring 80 and above met expectations for water quality and are of "lowest concern," scores 40 to 80 indicate "marginal concern," and water quality at stations with scores below 40 did not meet expectations and are of "highest concern." The WQI may not be consistent with Ecology's 303(d) listing because the WQI and the 303(d) analyses use different data sources, assess different constituents (pollutants), occur during different time periods, and use different evaluation techniques.

Water Quality Index Status of Washington State Waters, 2004



The Water Quality Index (WQI), by design, contains less information than the raw data that it summarizes; many kinds of water quality data cannot be described with an index. The WQI is most useful for comparative purposes (what stations have particularly poor water quality compared to expectation and for general questions (how is water quality in my stream?). By design, the WQI indicates how well water quality at a station meets expectations, not how good the absolute quality is. Comparing WQIs for different stations does not indicate which station has the better absolute water quality unless expectations for both stations were the same.

So what is the overall status of water quality in Washington State? The best answer is that it's variable—the state's water is clean in some places and is less clean in others places, but all water is threatened by nonpoint sources of pollution.

Success Stories

Success stories are a great way to describe how water quality improvement can happen in a particular place. Ecology has developed a nonpoint source website where success stories are showcased from all over the state. The website address is:

http://www.ecologydev/programs/wq/nonpoint/new_website/success/success.html

We have identified the sources of funding for successful projects, but not the amounts. In almost all cases, projects have been ongoing for years, and in almost all of those cases, the total cost of these projects, including funds from grants, local sources, assessments, and individual landowners, have been lost to the archives. 319 funds leverage all of our nonpoint work, both within Ecology and as pass-through to other state and local agencies. **Without 319 funds, important TMDL work and implementation activities would not be accomplished.** Successfully controlling nonpoint source pollution does not happen overnight; these are not end-of-the-pipe fixes, rather, they are long-term efforts on many fronts.

The success stories in Appendix B of this document are samples of those that have been received through an active solicitation to local governments, tribes, and special purpose districts. These success stories were collected during 2004.

Concluding thoughts on water quality

Documenting water quality improvements is an essential ingredient for any environmental management program. The state's nonpoint plan requires review, analysis, and change if that is needed to improve program effectiveness. However, because of the very nature of nonpoint source pollution, identifying water quality improvements and connecting it to nonpoint source controls is extremely difficult.

Part 4

Future directions - What Changes in Strategy are Needed to Improve Effectiveness

To determine changes in strategy requires time and information. During this fourth year of plan implementation, we have seen successful implementation of individual actions. However, in many cases, we need more time to determine if actions implemented have resulted in cleaner water.

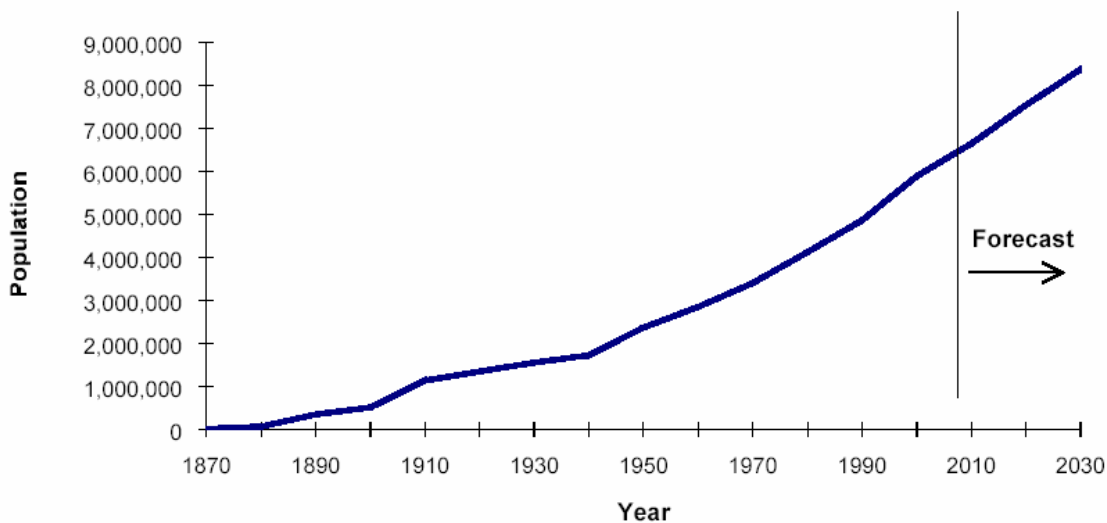
What Are the Challenging Issues for 2005

Population Growth and Impervious Surfaces

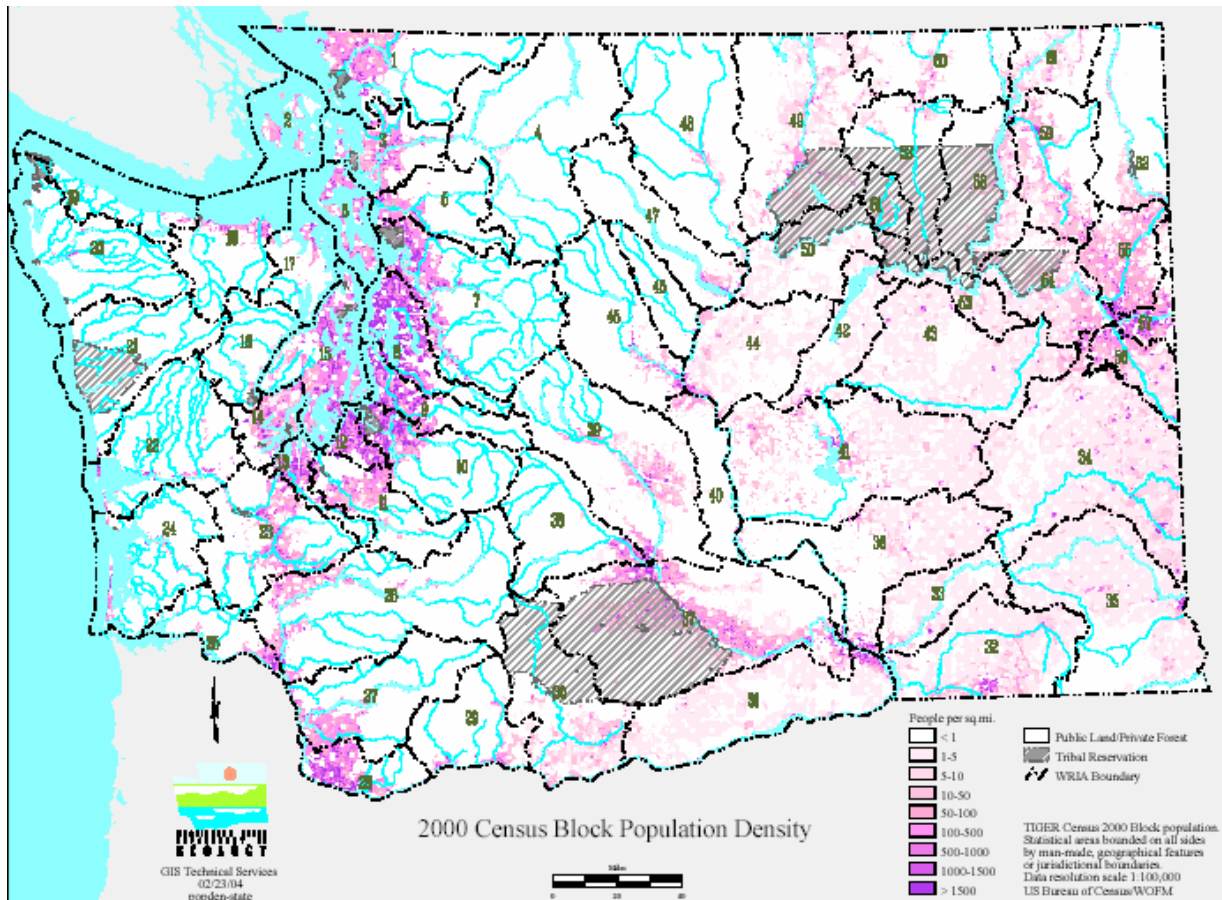
The most startling change in demographics is the growth in population in the last five years. The largest change from 1990 to 2004 is the growth of urban areas, particularly along major highways.

Washington State Population Trend¹

Washington State shows strong historical population growth.
Forecast growth is in line with historical experience



2000 Census Block Population Density of Washington State²



What does population growth have to do with nonpoint source pollution? Simply stated, growth causes an increase of impervious surfaces associated with increases in housing, roads, and business areas. An impervious surface does not allow stormwater to infiltrate through to groundwater or be taken up by soil and plant processes. Stormwater runoff carries a large number of pollutants into rivers and streams.

Influencing Local Land Uses

The Office of Community Trade and Economic Development offers a series of educational programs for local jurisdictions, including the “Short Course on Local Planning.” Courses are offered throughout the state whenever requested by local communities. It usually takes a minimum of four weeks to set up a course, since all speakers at the course are volunteers. This year the Department of Ecology will prepare materials in order to introduce a water quality element to the short course curriculum.

The sponsoring local agency or community arranges for the course site, often at city hall or county courthouse. Traditionally, an informal dinner precedes the course at a local restaurant, so that speakers can meet off the record with local elected and appointed officials and staff members. The sponsoring community's only course-related expenses are hosting the three speakers at this informal dinner, and providing a mid-evening coffee break.

The speakers usually include a land use attorney and two planning directors or senior planners. Topics covered include an overview of land use law in Washington State, updating your comprehensive plan (and involving citizens in the process), and implementing your comprehensive plan. The course also focuses on the importance of maintaining good working relationships with the planning commission, local elected officials, and professional staff. Special topics can be covered as well, depending on your needs: full three-hour courses have been presented on topics as diverse as "How to prepare and analyze a community survey" to "Planning for water and sewer districts." Ecology plans to use this as an avenue to reach communities as they plan for growth and development.

Outcome Performance Measures

Washington Nonpoint Source Control Management Plan will focus primary attention on attaining the following national targets set by EPA for attaining water quality.

- Reduction in sediment, measured in tons
- Reduction in nitrogen, measured in pounds
- Reduction in phosphorus, measured in pounds

In addition to the national targets, Washington decided to track a key state measurement of success – miles of riparian areas restored. Our state agency partners and regional office staff agreed that this outcome is an important and relevant measure that communities can commit to.

These performance measures can be achieved using the nonpoint source control programs and activities identified in this plan. Each activity in the Nonpoint Plan's Table 5.1 lists a measurable outcome.

We will also use other performance measures that are less directly linked to water quality improvement; but that we still think are an important part of getting us to clean water.

- Number of people attending water quality education events
- Number of people receiving technical assistance training
- Number of meaningful relationships created and sustained
- Number of high priority water quality projects funded

Tracking these performance measures will occur through grant reports, agency reports, case studies, success stories and monitoring activities.

Striving for Success

The actions identified in the plan will require a long-term commitment from federal, tribal, state, local and private resources. There is no quick fix to pollution that is as endemic as nonpoint pollution. Although Table 5.1 identifies actions to be taken within a relatively short time frame, the efforts embodied in the plan will continue many more years. During the first five years of this plan, the focus of many agencies was to develop the necessary programs to implement the actions in the plan. Each agency determines its own timeline for the actions, and reports the timeline to the state agency workgroup. Ecology tracks these timelines and project completions for the workgroup. The workgroup also coordinates the timing of inter-related actions.

As programs are developed, they will be implemented on the ground by the appropriate groups. For example, as landowners put BMPs in place, agencies provide technical and financial assistance when possible. In the meantime, water quality monitoring programs will help us assess the overall improvement to water quality from these nonpoint source control measures. Meaningful improvements take years. The various planning processes such as TMDLs, local watershed plans under chapter 90.82 RCW, salmon recovery limiting factor analyses under the Salmon Recovery Act, and Puget Sound Watershed Plans under chapter 400-12 WAC (or their equivalent outside the Puget Sound area) continue to investigate and identify water quality problems across the state. This plan provides a toolbox of programs to be used in these areas to address the identified problem. The plan also provides a mechanism through the consistent review process and other feedback in order to develop programs to address unmet needs that may arise.

We have good processes set up, and we've built strong partnerships that work well. Our citizens are concerned, knowledgeable, and generally support efforts to preserve and improve water quality.

Our challenge in the next five years will be to continue our on-going efforts to strengthen partnerships, improve measuring the effects of our efforts, and telling the story of the successes we have achieved.

Appendices

Appendix A – List of Cooperators

Appendix B – Success Stories

Appendix C – Table 5.1 (Nonpoint Plan Action Table for 2005)

South Fork Crab Creek

Replace these 2 stories with updated versions from booklet.

Project Purpose:

To improve and protect the riparian area around a spring on South Fork Crab Creek that has suffered from years of heavy use by cattle. The water from the spring is the main water supply for a home located on the property, but is no longer used to supply drinking water. Another reason for implementing the project was to decrease sedimentation of the creek.

A riparian restoration project along South Fork Crab Creek using agricultural best management practices.



A one acre fenced enclosure was created around the spring

Project Description:

A one acre fenced enclosure was created around the spring. Trees and shrubs were planted within the enclosure to protect the

stream banks and to rehabilitate the riparian corridor. Two metal water troughs were installed away from the creek to act as the primary water supply for grazing cattle. An armored water gap was also created as a backup source of water should the pumps to the troughs fail. The water gap was designed so that cows could access it from either pasture. Native grasses were seeded in the fall on those areas within the enclosure and grazed pasture where bare soil was exposed.

Project Results:

Approximately 900 feet of fence was installed and 128 trees and shrubs were planted. Up to one foot of sediment was removed before uncovering the original stream gravels from the location of the water gap, which has resulted in the restoration of a small section of the creek to its original form with riffles and a gravel streambed. Periodic water monitoring for parameters such as fecal coliform bacteria, dissolved oxygen and temperature will be conducted and compared to pre-project data to measure success. Water quality will likely improve since cattle have limited access to the creek thereby reducing the amount of bacteria and sediment that enters the water. Moreover, the planted trees and shrubs, once established, will filter pollutants from any overland surface flow or flood water.

Partnering Locally to Implement Agricultural BMPs in Eastern Washington**Project Purpose:**

The work to improve water quality requires the implementation of BMPs on private property using a variety of different funding sources. When addressing agricultural issues, this can mean fencing waterways, providing alternative water, relocating animal feeding areas, building livestock crossings, and creating riparian buffers. Riparian buffers are zones of protective native vegetation along streams that are necessary to keep water clean and provide quality habitat for fish.

Project Description:

Partnerships between conservation districts, local governments, and landowners throughout Southeast Washington have resulted in the implementation of BMPs at nearly 100 sites where water quality and fish habitat issues exist. Additional sites are in the planning stages. The partners are using a strategy that recognizes both the economic importance of livestock operations as well as the need to comply with state water quality law.

Ecology has combined resources with conservation districts in Spokane, Adams, Asotin, Whitman, and Garfield, counties to fund a Washington Conservation Corp (WCC) crew.

**Project Results:**

As part of this effort, riparian buffers have been shown to slow bank erosion by holding soil in place during periods of high water; reduce flood damage and sedimentation by slowing run-off and capturing the sediment that would otherwise be carried downstream help keep water cool in the summer by shading the stream and protecting fish habitat; and improve water quality by reducing sediment, nutrients, pesticides, pathogens and other pollutants from reaching the stream.



Photo documentation has shown improvements in habitat. In many cases, actual water quality improvements have been documented through an active water quality monitoring program undertaken by program partners.

Appendix A -- List of Cooperators

Active participation with Washington State's Nonpoint Plan

1. Federal Agencies

Environmental Protection Agency
Natural Resource Conservation Service
United States Forest Service

2. State Lead Agency

Washington State Department of Ecology

3. Other State Agencies

Washington State Department of Agriculture
Washington State Conservation Commission
Office of Community, Trade, and Economic Development
Washington State University Cooperative Extension
Washington State Fish and Wildlife
Washington State Department of Health
Department of Natural Resources
Parks and Recreation Commission
Puget Sound Action Team
Washington State Department of Transportation

4. Local Agencies

Washington Association of Conservation Districts
Local Health Districts
Local Planning Departments
Local Public Work Departments
Special purpose districts