

Birch Bay Watershed & Aquatic Resources Management District 2012 Annual Report



Introduction

The Birch Bay Watershed and Aquatic Resources Management (BBWARM) District was established to address citizen concerns about water quality, localized flooding, and the loss of aquatic habitat in the Birch Bay watershed.

Mission

BBWARM promotes actions that reduce the impacts of stormwater runoff by decreasing the threat of flooding to private and public property and by improving and protecting water quality, aquatic habitat, and the quality of life that a healthy watershed provides.

BBWARM Stormwater Program Goals

- Improve and protect water quality.
- Increase citizen participation in watershed stewardship.
- Reduce impacts from stormwater flooding.
- Use public funds effectively to achieve desired outcomes.
- Provide open communication about program actions.
- Improve stormwater retention time and capacity in the watershed.



BBWARM District location.

Summary of 2012 Accomplishments

- Increased public awareness of BBWARM programs and projects through monthly email announcements, a newsletter, press releases, and special events.
- Collaborated with partnering agencies and organizations to implement BBWARM work plan priorities.
- Partnered with the Whatcom Conservation District on a four-year EPA grant in the amount of \$772,570 with \$260,127 match provided by BBWARM to fund the Terrell Creek Landowner Incentive Program and Central North Subwatershed Master Plan.
- Substantially completed the Central North Subwatershed Master Plan with updated capital project ranking criteria.
- Completed stormwater improvements at Hogan Drive in partnership with Whatcom County Public Works Maintenance and Operations (M&O).
- Initiated a targeted neighborhood outreach effort in Cottonwood to address water quality and drainage problems.
- Substantially completed engineering design for Cottonwood Neighborhood drainage and water quality improvement projects.
- Hosted three rain barrel workshops in partnership with the Birch Bay Water and Sewer District.
- Participated in monthly water quality sampling and follow-up sampling.
- Responded to citizen reports of stormwater problems.
- Coordinated with Whatcom County Public Works M&O to increase routine maintenance of stormwater facilities.
- Staffed and held 10 public BBWARM Citizen Advisory Committee meetings.
- For more information please visit www.bbwarm.whatcomcounty.org.

Advisory Committee

BBWARM has an advisory committee with five members appointed for four-year terms by the Whatcom County Flood Control Zone District Board of Supervisors. Its purpose is to ensure community interests are represented in BBWARM activities. The committee is integrally involved in setting strategic goals, developing work plans and budgets, and prioritizing capital improvement projects. Public advisory committee meetings are held on the third Wednesday of the month. Current meeting information is posted on the BBWARM website at www.bbwarm.whatcomcounty.org.

BBWARM Advisory Committee Members

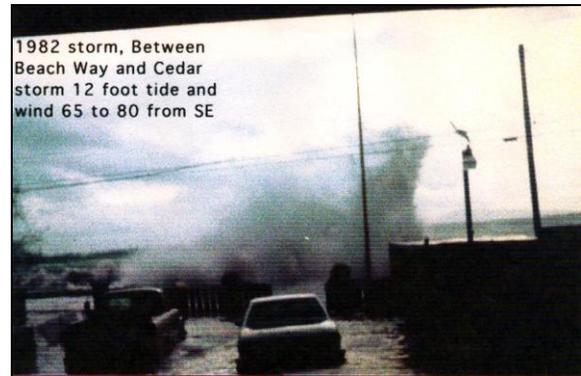
Keats Garman (Birch Point), Vice Chair
Scott Hulse (Point Whitehorn)
Scott Inloes (British Petroleum), Chair
LeRoy Smith (Birch Bay Leisure Park)
Peter Winterfeld (Birch Bay Village)

History & Governance

BBWARM is the product of a community-initiated effort to protect and restore water resources in Birch Bay. Community groups organized and wrote the *Birch Bay Community Plan* which was adopted by the Whatcom County Council in 2004. The *Birch Bay Community Plan* documented citizen concerns with the rapid rate of development in the watershed and its associated increase in stormwater runoff and water quality problems. This led to a collaborative planning effort between citizens and Whatcom County resulting in the *Birch Bay Comprehensive Stormwater Plan* in 2006.

The *Birch Bay Comprehensive Stormwater Plan* recommended the creation of a stormwater management district for the watershed. BBWARM was established as a subzone of the Whatcom County Flood Control Zone District (FCZD) in March 2007 to function as this stormwater management district. Supervision of BBWARM is the responsibility of the Whatcom County FCZD Board of Supervisors.

Whatcom County Council members, by virtue of their office, comprise the Whatcom County FCZD Board of Supervisors.



A storm in 1982 caused significant flooding and damage to Birch Bay Drive.

BBWARM Stormwater Program

The BBWARM stormwater program, based on recommendations from the *Birch Bay Comprehensive Stormwater Plan*, addresses three general types of stormwater issues:

- Water quantity problems (flooding).
- Water quality problems (pollution).
- Loss of aquatic habitat.

The BBWARM Advisory Committee worked with Whatcom County Public Works staff to develop an initial work plan for 2009 - 2012 that focused on the following areas:

- Capital improvement projects.
- Maintenance and operation of stormwater facilities.
- Water quality monitoring.
- Stormwater education and outreach.
- Program development, management, and administration.

To use existing resources efficiently, BBWARM has actively developed collaborative partnerships with other agencies and organizations. A summary of program activities, accomplishments, and partnership efforts in 2012 follows.

2012 Activities & Accomplishments

Capital Improvement Projects

BBWARM is currently working on engineering design and construction of priority capital improvement projects (CIPs) selected from the 2006 *Birch Bay Comprehensive Stormwater Plan*. Additional areas for CIP scoping are being identified through stormwater incident reports and subwatershed master planning (see Program Development section).

Capital improvement program accomplishments in 2012 are listed below. The project identification number from the *Birch Bay Comprehensive Stormwater Plan* is noted in parentheses.

- Completed the Hogan Drive Outlet Maintenance and Repair project in cooperation with Whatcom County Public Works M&O (BR-05 B). BBWARM and Whatcom County collaborated and shared costs on upgrades to the stormwater system from Semiahmoo Drive to Hogan Drive on Birch Point.



New stormwater pipe and catch basin system installed to carry stormwater flow from Semiahmoo Drive to Hogan Drive.

- Monitored the Charel Terrace Stormwater System Improvements project installed in 2011. This new stormwater system functioned well during major winter storms

without the flooding or high maintenance costs common prior to project completion. Project monitoring is on-going. Additional planting and maintenance will be completed as needed.

- Substantially completed final design for the Cottonwood Neighborhood Drainage and Water Quality Improvements projects (CT-06 A&B) and submitted permit applications. A public meeting was held for Cottonwood Neighborhood residents to review construction projects planned for 2013, discuss water quality and drainage problems, and begin a coordinated outreach effort regarding water quality problems and stormwater system improvement needs.



Boring holes for ground water monitoring wells in the Cottonwood project area.

- Completed preliminary design and cost estimates for the Richmond Park Drainage Improvements Project (CT-01).
- Completed preliminary design for the Fern Street Storm Drain Improvements Project.
- Identified new CIP areas in the Central North Subwatershed Master Plan.
- Expanded and improved the BBWARM capital improvement project ranking system as part of the Central North Subwatershed Master Plan.
- High tide/flood crest data was collected by volunteers from Birch Bay Village at Roger's Slough from November 2011 to April 2012. This data is being collected again for the 2012 – 2013 season and will be used to

evaluate flooding problems and potential capital solutions.

Maintenance and Operations

BBWARM works with Whatcom County Public Works Maintenance and Operations (M&O) to maintain publicly owned stormwater drainage facilities. Keeping these facilities in proper working condition reduces water pollution and the risk of damage from flooding. Activities completed by M&O crews on behalf of the BBWARM program in 2012 included the following.

- Completed annual fall inspection and cleaning of all stormwater outfalls entering Birch Bay and Terrell Creek from county roads. This included cleaning catch basins and cross culverts carrying stormwater under Birch Bay Drive.
- Cleaned approximately 320 catch basins throughout the central and north Birch Bay area.
- M&O staff responded to seven stormwater system problems along county roads from BBWARM stormwater incident reports.



M&O staff cleaning a stormwater outfall pipe in Birch Bay.

Water Quality Monitoring

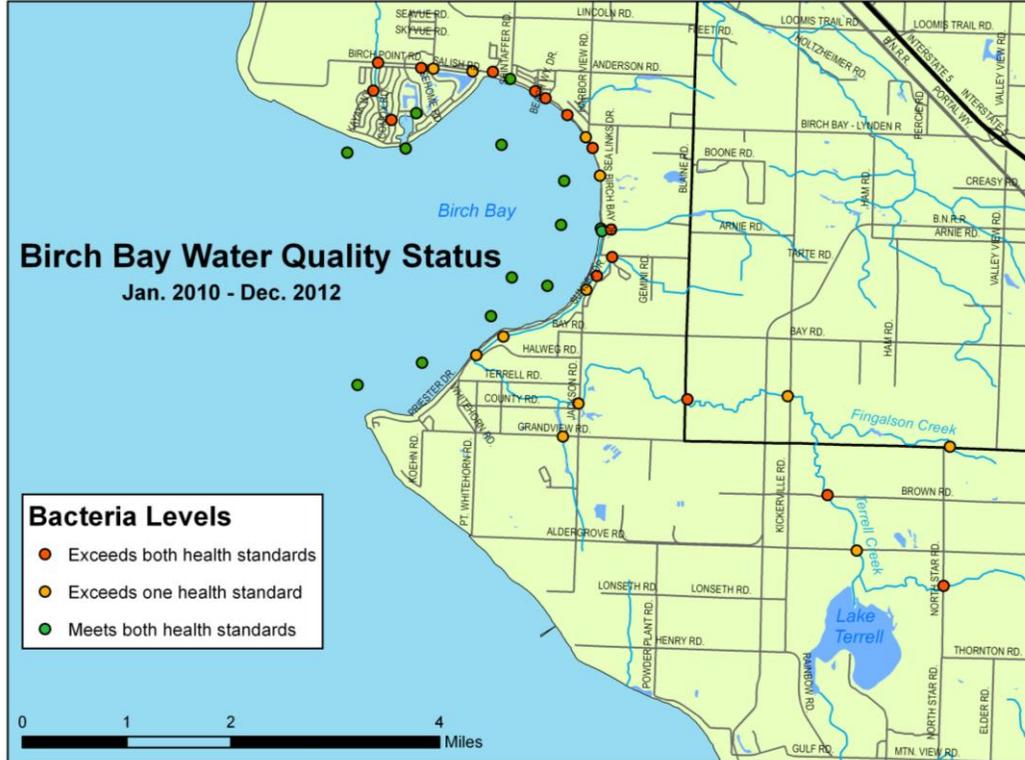
BBWARM works with a group of partners to monitor and improve water quality. Current monitoring efforts are part of a comprehensive water quality monitoring program for the Birch Bay watershed initiated by Whatcom County Public Works Natural Resources in 2010. This effort builds on prior monitoring programs in

the watershed. Current collaborating partners include the following entities with partial funding from the Environmental Protection Agency (EPA):

- Whatcom County Public Works Natural Resources
- BBWARM
- Birch Bay Shellfish Protection District
- Whatcom County Marine Resources Committee
- Whatcom Conservation District
- Nooksack Salmon Enhancement Association

Monitoring provides information on water quality trends and baseline bacteria concentrations, identifies priority areas for water quality improvement, and informs capital and education project planning. Monitoring focuses on fecal coliform bacteria. Marine water quality in the bay is monitored by the Washington State Department of Health and consistently meets water quality standards with low levels of bacteria. Freshwater streams entering the bay have variable levels of bacteria and often do not meet water quality standards. Water quality monitoring activities in the Birch Bay watershed during 2012 are listed below.

- Collected bi-monthly samples at 16 sites throughout the Terrell Creek watershed.
- Collected monthly samples at 18 coastal drainages.
- Conducted follow-up sampling when regular monitoring sites had high bacterial counts.
- Used monitoring data to identify priority areas in the Cottonwood Neighborhood for outreach efforts and stormwater treatment facility projects.
- Initiated water quality improvement outreach to the Cottonwood area community in a neighborhood-focused public meeting.



Education & Outreach

BBWARM’s stormwater education and outreach program seeks to increase public awareness of stormwater problems and to promote voluntary actions that help protect water quality, aquatic habitat, and stormwater systems. Education and outreach activities in 2012 are summarized below by targeted audience.

General Education

- Partnered with the Birch Bay Water and Sewer District to host free rain barrel workshops for Birch Bay and Blaine area residents. This is the third year these popular workshops have been offered. Three workshops were held in 2012 with 58 participating households and 20 households installing their first barrel in time to receive a second incentive barrel.



Painted rain barrel installed by 2012 workshop participant.

- Collaborated with the Birch Bay Water and Sewer District, Whatcom County Marine Resources Committee, and Nooksack Salmon Enhancement Association on a joint education booth at Birch Bay Discovery Days. The booth had hands-on kids activities and information about each partners’ program in Birch Bay.



BBWARM display at Birch Bay Discovery Days.

- Produced and mailed an informational newsletter to all BBWARM District rate payers.
- Sent monthly BBWARM meeting and event email notices to approximately 150 interested citizens.
- Maintained www.bbwarm.whatcomcounty.org as a tool to provide current information on the BBWARM program and related community events.

Pet Waste

- Supplied bags for nine Mutt Mitt pet waste stations along Birch Bay Drive maintained by community volunteers.

Private Stormwater Systems

- Responded to requests for information from owners of private stormwater systems.

Terrell Creek Landowner Incentive Program

BBWARM is partnering with the Whatcom Conservation District on the Clean Terrell Campaign and Landowner Incentive Program (formerly called the Terrell Creek Rural Initiative Project). This program is funded through a grant from the EPA with match funding provided by BBWARM capital improvement projects. This social marketing campaign is designed to help willing upper Terrell Creek watershed landowners adopt good stewardship practices that protect or improve water quality

and aquatic habitat. Specific actions promoted through this program include:

- Proper inspection and maintenance of septic systems.
- Using a farm plan to manage rural properties.
- Planting native trees and shrubs along waterways.

Activities and accomplishments completed by the Whatcom Conservation District and the Nooksack Salmon Enhancement Association during 2012 are summarized below. For more information visit www.chumsofterrellcreek.org.

- Developed and distributed outreach materials to all upper watershed landowners.
- Installed watershed steward signs (see below) at restoration sites.
- Conducted targeted outreach with over 300 individual landowners and the local drainage district.
- Coordinated social marketing program with other restoration projects on Terrell Creek.
- Facilitated OSS inspections, farm plans and checklists, and riparian restoration projects.



Terrell Creek Watershed Steward sign marking a stream restoration project completed through the Terrell Creek Landowner Incentive Program.

Program Development, Management and Administration

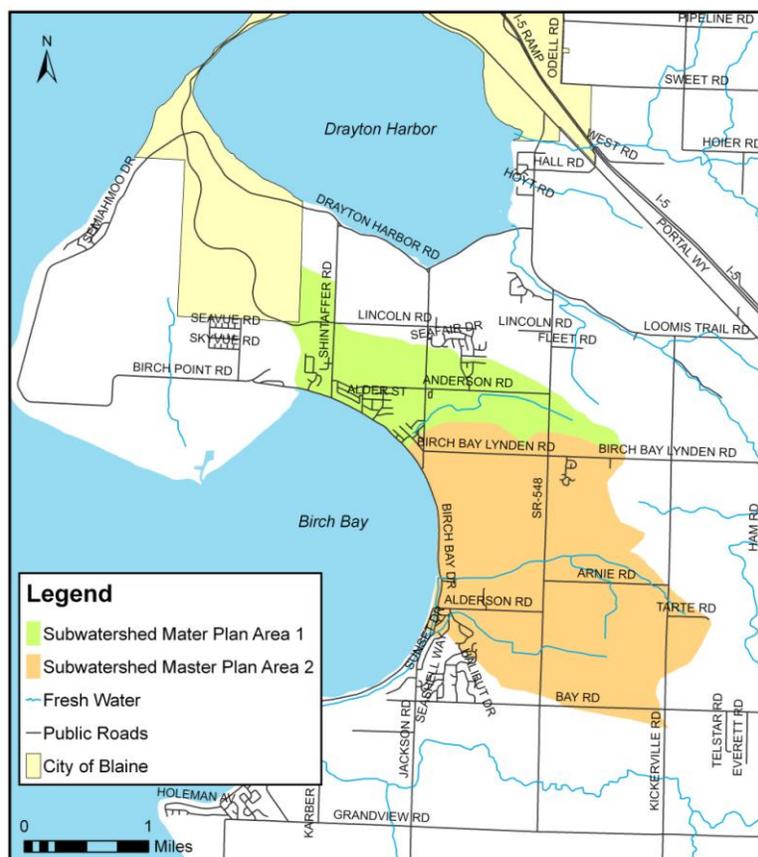
BBWARM continues to develop and improve its stormwater program for the Birch Bay watershed. Program development, planning efforts, and administrative work completed in 2012 are summarized below.

Subwatershed Master Planning

BBWARM is developing subwatershed master plans for urbanized subbasins. This planning process includes a detailed survey and inventory of public stormwater facilities to determine stormwater flow paths, conduct hydrologic modeling, and identify maintenance and capital project needs. The final plans will include a list of prioritized capital projects for the subwatershed and information needed to accurately plan and prioritize stormwater

retrofit projects. Subwatershed master planning accomplishments in 2012 included the following:

- Completed a draft master plan for the Central North subbasins (area 1) including updated capital project ranking criteria and a rating method that will be used to rank and prioritize all BBWARM CIPs. This initial planning effort is funded through a grant from the EPA.
- Initiated a second subwatershed master plan in the Central Uplands subbasins (area 2). This project will include detailed inventory and inspection of all public stormwater facilities.



Subwatershed Master Plan areas: area 1 is the Central North subbasins; area 2 is the Central Uplands subbasins.

BBWARM Program Management and Administration

Other activities completed in 2012 in support of the BBWARM stormwater program include:

- Investigated 35 citizen reports of stormwater-related problems.
- Improved the automated fee roll development process using a Geographic Information System (GIS) database.
- Responded to rate adjustment requests.

Funding

The BBWARM stormwater program is funded through a stormwater service charge based on the percentage of each parcel covered by impervious surfaces like roofs and pavement. These funds are dedicated to the BBWARM program and can be leveraged for additional grant monies. BBWARM expenditures on capital projects in the Cottonwood area are currently being used as match for a \$772,570 grant from the EPA for subwatershed master

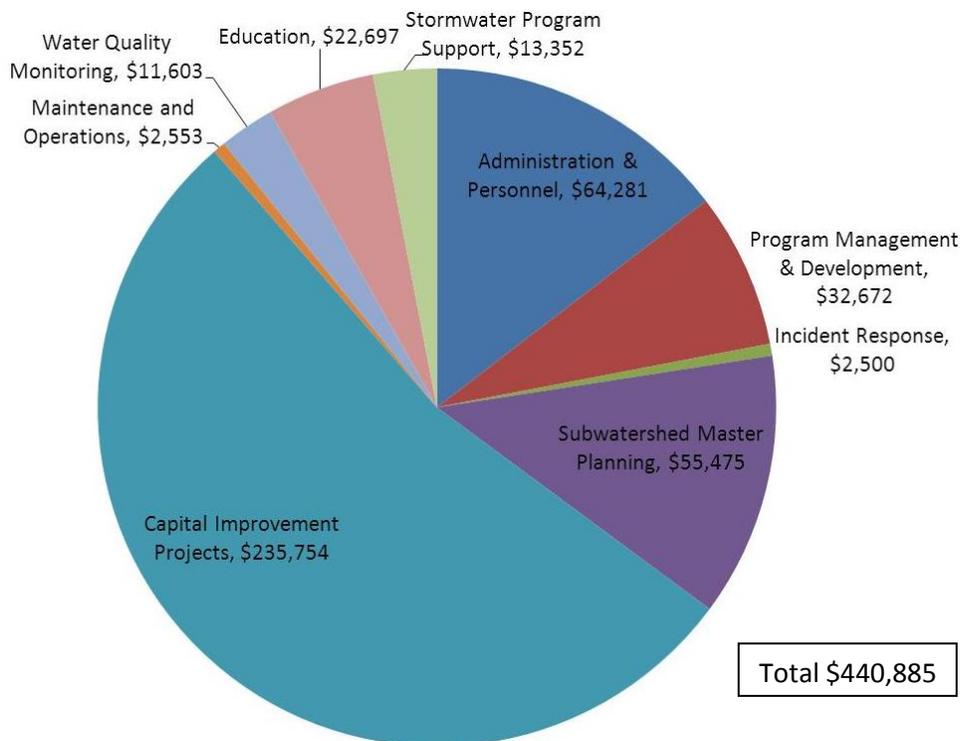
planning and the Terrell Creek Landowner Incentive Program.

In 2012, \$742,784 was collected in service charge fees and \$440,885 was spent on the Birch Bay stormwater program. Fund savings will be used to pay for future capital projects. Expenditures by program area for 2012 are shown below. For more information on BBWARM fund revenue and expenditures please see the BWARM 2012 Financial Report.

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2012 BBWARM Expenditures