

# **Birch Bay Shellfish Growing Area**

## **Initial Closure Response Strategy – May 2009**

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### **Background**

The warm shallow waters and extensive mudflats of Birch Bay provide excellent conditions for shellfish. It is the largest recreational shellfish harvesting area in Whatcom County, and one of the largest in the state. However, it is also the fastest-urbanizing part of the county, and development is creating more sources of water pollution as well as impairing the natural ecosystem's ability to filter and absorb those sources.

The Washington State Department of Health (DOH) regularly evaluates shellfish growing areas in the state to ensure that the shellfish are safe to eat. The main concern is fecal coliform bacteria, which indicate the presence of animal waste that can contaminate shellfish.

There have been concerns about fecal coliform in Birch Bay for over a decade. In 1996, DOH issued the first sanitary survey—a three-part review of potential sources of fecal coliform bacteria—for Birch Bay. The report recommended a closure at the mouth of Terrell Creek. In 2005, DOH added Birch Bay to its list of shellfish areas threatened by fecal contamination. A 2007 shoreline survey (one of the parts of a sanitary survey) again recommended a closure around the mouth of Terrell Creek. In October 2008, DOH closed a 670-yard radius around the mouth of Terrell Creek to commercial shellfish harvest. (DOH also recommends against recreational harvest at the site.)

By state law (RCW 90.72), the Whatcom County Council must establish a shellfish protection district and adopt a shellfish protection program within 180 days of a closure.

### **Pollution Sources and Strategies**

In the 2007 Birch Bay Shoreline Survey, DOH identified two key bacteria sources of concern in the Birch Bay watershed: wastewater collection/disposal and agricultural activities. Other potential sources of bacteria are domestic animals and urban wildlife.

#### ***Wastewater Collection and Disposal***

The Birch Bay watershed has both a community sewer system (operated by Birch Bay Water and Sewer District) and individual on-site sewage systems.

#### **Community Sewer System**

The Birch Bay Water and Sewer District provides wastewater services in the Birch Bay area, with its treatment plant and other operations located at the southern tip of the bay. Wastewater is conveyed primarily through a gravity system, although there is a force main along a segment of Birch Bay Drive, which parallels a reach of Terrell Creek that runs along the shoreline. As the

majority of the system is below the water table, and below the creek's streambed, the District is confident that exfiltration is not occurring. As the District is also the main purveyor of drinking water in the area, it is able to monitor water consumption as well as wastewater volume; wastewater volume is greater than water consumption, indicating that inflow and infiltration are more significant issues than exfiltration. The District regularly maintains and inspects its facilities, per its NPDES permit requirements.

There are a number of private sewer systems serving trailer and RV parks that connect to the District's sewer lines, but which do not fall under the District's jurisdiction and which may not be properly maintained or operated.

Future development may present concerns, as well. The County is considering various code and zoning changes as part of urban growth area review and the update to the Comprehensive Plan; any modifications should be made with water quality and shellfish concerns in mind.

Recommendations:

1. Coordinate with the Whatcom County Health Department to identify ways to bring private sewer systems into compliance with county operations and maintenance standards.
2. Coordinate with Whatcom County Planning and Development Services on potential changes to county code.

### **On-Site Sewage Systems (OSS)**

There are 500-600 OSS in the Terrell Creek watershed. With the 2007 revisions of Whatcom County regulations, which require conventional systems to be inspected every three years and other systems annually, the Whatcom County Health Department has created an OSS operations and maintenance program. The program is designed to notify OSS owners of the new inspection requirements, beginning with the coastal areas of the county, and to request the submittal of a Report of System Status, which indicates the result of an OSS inspection. The first step of the program is to send out letters to OSS owners, drainage by drainage; Birch Bay is scheduled to begin receiving its first round of letters in the summer of 2009.

Recommendations:

3. Request regular reporting from the county health department. Each year, the shellfish district will report recovery activities to the Washington State Department of Health (DOH). Key actions will include steps that were taken to identify and remedy failing OSSs. It would also be helpful for County Health to include the annual number of Reports of System Status that were submitted as a result of property transfers, in order to assess public outreach needs.
4. Request the half-time County Health employee, who will be concentrating on OSS outreach and compliance work, to dedicate a level of effort to priority subdrainages of Terrell Creek, as identified through water quality monitoring.

## ***Agricultural Activities***

A potentially significant source of fecal coliform bacteria can be livestock manure. Livestock can contaminate streams and wetlands with their manure, as well as erode streambanks by trampling. Farm plans allow agricultural activities to occur near critical areas and their buffers, by putting protective measures in place such as filter strips, managing roof water, and composting manure.

Recommendation:

5. Contract with the Whatcom Conservation District to provide pro-active outreach and technical assistance to small farms in the Terrell Creek watershed. Investigate the possibility of a cost-share program for installing best management practices, using lessons learned from the pilot cost-share program in the Drayton Harbor watershed. Conduct follow-up monitoring to evaluate effectiveness.

## ***Domestic Animals***

Pet waste is a potentially substantial source of pathogens. For instance, a gram of dog feces contains roughly the same amount as a gram of human feces, and can carry pathogens (giardia, salmonella, etc.) that pose a risk to human health. A 1999 study in the Lake Whatcom watershed by Applied Research Northwest estimated 0.54 dogs per household; similar numbers may also apply in Birch Bay.

Birch Bay already has a number of “mutt mitt” stations, which dispense bags for collecting dog waste and provide garbage cans for disposal. The stations are maintained by Birch Bay State Park and private citizens, with the Birch Bay Watershed and Aquatic Resources Management District to take over maintenance of some stations in 2009.

Recommendation:

6. Support increased educational signage regarding pet waste and how it can pollute water and shellfish beds. Evaluate maintenance of existing stations, and the need for additional stations.

## ***Wildlife***

The headwaters of Terrell Creek, Lake Terrell, are part of a state wildlife area that is used extensively by waterfowl. Seabirds use the marine shoreline, as well. These animals are potential sources of pathogens.

Recommendation:

7. Identify any structures near the closure area that may encourage roosting, and research methods for making them less attractive to birds.

## **Closure Response Process**

The County's response to the closure in Birch Bay will consist of several tasks: establishing a shellfish protection district, implementing the recommendations from the previous section, monitoring water quality, and tracking progress. All activities will initially focus on the Terrell Creek sub-watershed.

### ***Task 1: Establish a Shellfish Protection District***

By state law (RCW 90.72), the Whatcom County Council is required to establish a shellfish protection district for the closure area. This designation will make recovery projects more competitive for state and local funding.

In 2007, the Whatcom County Council established the Birch Bay Watershed and Aquatic Resources Management District (BBWARM), a subzone of the countywide flood control zone district. The following year, the Council appointed a five-member citizen advisory committee to advise on stormwater and related issues. Since this committee is already closely involved in water issues in Birch Bay, it would be efficient and effective for the Council to appoint the members of this group to the advisory committee for the shellfish protection district, with the addition of tribal representatives and shellfish interests.

The Birch Bay Shellfish Protection District advisory committee would be responsible for advising on developing and implementing a recovery plan. Since the Birch Bay stormwater plan already includes recommendations on infiltration and illicit discharges, the committee would likely focus on on-site sewage system and agricultural issues. As these issues are already being addressed through expanded programs in the County's planning and health departments, they should be relatively simple for the committee to review.

The Shellfish Protection District will match the BBWARM boundary. Matching the sub-zone district would leverage existing programs and projects to improve water quality. It would also have the advantage of not needing to make any administrative changes if the closure area is expanded in the future.

### ***Task 2: Implement Recommendations***

The previous section of the strategy listed seven recommendations. Implementation of each can begin immediately.

This task would also include a public education and involvement program, to inform citizens of the causes of bacterial pollution and to engage them to reduce these sources. The program would fill in any gaps not currently addressed by the Conservation Program on Agricultural Lands, OSS, or BBWARM programs.

### ***Task 3: Monitoring***

There are a variety of monitoring projects occurring in the Terrell Creek drainage and the larger Birch Bay watershed. The County is developing a new program focused on the major subdrainages of Terrell Creek, similar to the program that is collecting data for the Drayton Harbor TMDL. This program will help to identify priority drainages for actions such as OSS repair and maintenance, CPAL compliance, and public education. Over time, it will also aid in measuring progress towards reducing sources of bacteria.

Monitoring results will be summarized in a simple, easy-to-understand format, uploaded to the Birch Bay shellfish web page, and distributed via other means.

### ***Task 4: Tracking Progress***

The County will report to DOH on progress made toward shellfish recovery on an annual basis. The report will be given to BBWARM and other interested parties, and will be made available to the general public via the County's marine resources web site (<http://whatcom-mrc.whatcomcounty.org>).

## Timeline

The following tasks will begin in 2009. Some tasks, such as monitoring, are expected to extend into the foreseeable future. If applicable, expected completion dates are listed.

<i>Task</i>	<i>Implementing agency</i>	<i>Funding source</i>	<i>Completion date</i>
Convene advisory committee	Whatcom County Public Works (WCPW)	County budget	2009
Coordinate with the Whatcom County Health Department to identify ways to bring private sewer systems into compliance with county operations and maintenance standards.	WCPW, Whatcom County Health	County budget	2010
Begin expanded monitoring program.	WCPW	County budget	2009
Track and report progress to Washington State Dept of Health	WCPW	County budget	Ongoing
Coordinate with Whatcom County Planning and Development Services (PDS) on potential changes to county code.	WCPW, Whatcom County PDS	County budget	2010
Request regular reporting from County Health on status of OSS operations and maintenance program outreach in Birch Bay.	WCPW, Whatcom County Health	County budget	Ongoing
Request County Health staff to include Birch Bay as focus area for OSS compliance work.	WCPW, Whatcom County Health	County budget	2009
Contract with the Whatcom Conservation District to provide pro-active outreach and technical assistance to small farms in the Terrell Creek watershed.	WCPW	TBD	2009
Support pet waste outreach program	WCPW, Birch Bay Watershed and Aquatic Resources Management District	TBD	2010
Explore potential for deterring bird use of structures near closure area	WCPW	TBD	2010