

Effectiveness of Public Education and Outreach Programs for Reducing Impacts of Stormwater on Rivers and Streams

Key Findings

- People in Puget Sound are very aware of stormwater issues and how they relate to the health of Puget Sound. Many are willing to do more and pay more to protect Puget Sound.
- Public education and behavior change programs work: behaviors can be changed and pollutants can be reduced.
- Education programs are more successful when they focus on the barriers to behavior change rather than increasing public awareness.
- Behavior change programs are more successful when they target specific behaviors and audiences.
- Connecting a change in human behavior with a reduction in pollutants or an increase in stream health is difficult to do. Interim measures of observed behavior change and the impact on receiving waters are needed.
- The Puget Sound Partnership and King County have developed and implemented indexes that identify target audiences and measure behavior change.

Answering Questions from the Stormwater Work Group

3. Does public education decrease pollutants in stormwater?

The effectiveness of public education campaigns is typically measured in terms of self-reported behavior change, e.g., through interviews or phone surveys. Measuring a change in stormwater pollutants or in stream health is much more difficult to connect with public education. A few studies have documented reduction of nutrients in stormwater as a result of a lawn owner behavior change program. In Puget Sound, significant changes in behavior (as reported in phone surveys) have been documented for proper disposal of dog waste, reduction of fertilizer and pesticide use, and prevention and reporting of spills. These wide-scale changes in behavior have very likely decreased pollutants, but the change has not been quantified.

For lawn care, public education has been effective. A 2012 survey of 2000 Puget Sound residents found that a majority seldom or never use pesticides (78%) or weed killer (65%). A related study found a significant decline in pesticide concentrations in an urban stream in Seattle; although the change was not related to a specific education campaign. In King County, a 2011 survey of residents found a dramatic decline in reported use of chemical lawn fertilizer, with 84% of respondents saying they never use chemical lawn fertilizer compared to 11% in 2005. Similarly, a survey of Kitsap County residents found a dramatic decline in pesticide use from 74% in 2008 to 16% in 2011. Public education changes behavior.

9. Does public education increase awareness and change behavior?

The answer is yes. The peer-reviewed literature and local studies broadly support the idea that public education is effective. As an example, a 2012 survey of 2000 Puget Sound residents found that 96% of respondents never flush chemicals such as paint thinner down the drain; and 94% never flush prescription drugs. Past education campaigns for these issues were obviously effective.

Residents of Puget Sound are also highly aware of stormwater problems and how they threaten the health of Puget Sound. A majority of respondents know that lawn chemicals (89%), car washing on the street (77%), weed and feed (77%), and leaving dog waste (63%) are all harmful to Puget Sound.

A recent regional survey in Puget Sound identified a group of respondents described as “ready and willing.” They represented 50% of respondents and agree that Puget Sound is in poor condition and it’s going to get worse. Furthermore, 83% of respondents agreed with the statement that one person’s actions can make a difference. These are the people who could be asked to do more.

The challenge for effectiveness monitoring of public education programs is to determine 1) whether self-reporting of behavior change is true, and 2) whether the behavior change is improving the condition of lakes, stream, and rivers. Research is needed here to identify intermediate measures of behavior change that can be observed, e.g., are charity car washes catching effluent before it goes down the storm drain. Studies are also needed to quantify the impact of behavior change on pollutant levels.

Regional Connections – Groups Working on Behavior Change

The Stormwater Outreach for Regional Municipalities (STORM) is a coalition of city and county governments working with Puget Sound Partnership to design and manage behavior change programs.

The Puget Sound Partnership supports ECO Net (Education, Communication and Outreach Network) which is a Sound-wide network devoted to strengthening relationships among organizations committed to enhancing public awareness, involvement and environmental education.

The Puget Sound Partnership has developed a Sound Behavior Index and a Social Capital Index to measure change in behavior and attitudes every two years. The Sound Behavior Index measures 29 behaviors related to yard care, vehicles, home maintenance, pet waste, septic, livestock and boats.

Recommendations

1. Recognize the importance of public education and its potential impact at a regional scale when a small behavior change is made by a large number of people. This is source control.
2. Partner with existing public education programs to evaluate the effectiveness of ongoing education programs. What methods work best? Identify ways to directly measure the impact of behavior change other than self-reporting, e.g., use of pet waste bags, number of leaking cars in parking lots, and sales of lawn care products.
3. Where possible, use the Sound Behavior Index to assess changes in attitudes and behavior.
4. Currently education is aimed at pet waste, lawn care, and care leaks; confirm that these are the most important threats in stormwater. Consider expanding the list beyond water quality to include other harmful behaviors associated with stormwater.