NONPOINT SOURCE SUCCESS STORY

Connecticut

Sasco Brook Improves Due to Bacteria Source Reductions

Waterbody Improved

Connecticut's Sasco Brook has been restored to meet recreational water quality standards. The six-mile-long coastal stream in the Southwest Coast Basin of Connecticut is an important tributary to Long Island Sound. Its waters feed valued shellfishing grounds and bathing beaches. High bacteria levels caused the Connecticut Department of Energy and Environmental Protection (DEEP) to add the brook to the Clean Water Act (CWA) section 303(d) list in 1998. The Sasco Brook Water Pollution Abatement Committee (SBWPAC) and its partners, specifically Fairfield County Hunt Club, Harbor Watch, DEEP, and the towns of Westport and Fairfield, collaborated to mitigate the largest sources of bacteria to the stream, which allowed DEEP to remove Sasco Brook segment 01 from the 2018 list of impaired waters for bacteria.

Problem

DEEP added Sasco Brook segment CT 7109-00_01 to the CWA section 303(d) list of impaired waters in 1998 (Figure 1). Testing showed that it failed to meet the bacteria water quality standards (WQS) for recreation, which require that the *Escherichia coli (E. coli)* bacteria geometric mean values not exceed 126 colony-forming units (cfu) per 100 milliliters (mL). DEEP completed a total maximum daily load (TMDL) analysis in 1999 (revised in 2005), which established that bacteria loads in segment 01 must be reduced by 58 percent to meet WQS for recreational use.

Sasco Brook's water quality is influenced by runoff from commercial and residential development, livestock and wildlife, and septic systems. Stormwater flows in the area of the Fairfield County Hunt Club were suspected as one of several likely sources of bacteria in runoff. Large horse shows are typically held twice during each summer season at the facility. Rainfall events during large horse shows have resulted in spikes in *E. coli* counts in Sasco Brook.

Story Highlights

The Town of Westport and DEEP have worked with the Fairfield County Hunt Club for over 20 years to reduce bacteria loads to Sasco Brook. Projects have included installing new septic systems for the facility, educating staff and clients about the problems, adding infiltration and catch basins, and improving manure management and horse washing practices.

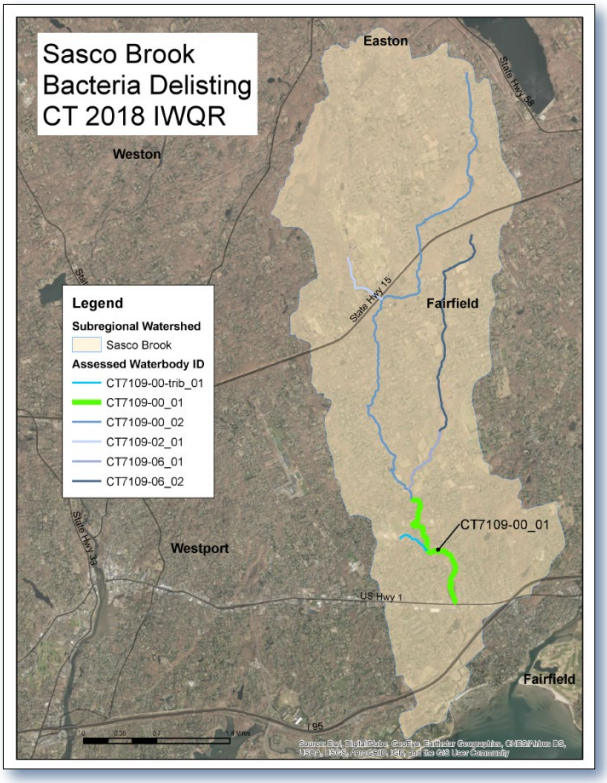

Figure 1. Map of Sasco Brook watershed showing location of segment 01.

A 300-foot-long infiltration basin constructed in 2012 collects, treats and infiltrates surface runoff (Figure 2). Sanitary wastewater, including from horse washing, is directed to infiltration system. Manure is picked up daily and placed in sealed containers. Extra staff have

Figure 2. A stormwater runoff infiltration swale system was installed in 2012.

been hired to rigidly monitor and enforce guidelines, provide outreach materials, and implement new procedures year round, but especially during large horse shows. The Hunt Club enacted an events management plan, which is strictly enforced. Procedures include reviewing procedures with staff and clients to minimize polluted runoff, posting signs and labeling containers "For Manure Only," prohibiting wetlands encroachment and erecting silt fences to protect wetlands, placing hay bales around catch basins, and developing and monitoring drainage controls for temporary use areas.

Using CWA section 319 funds, the SBWPAC collaborated with stakeholders to develop a watershed-based plan for Sasco Brook. Water quality updates are provided at meetings, and timely action is taken to address identified problems and prevent new problems. Education and outreach activities related to the plan included both a student-run, door-to-door nonpoint source (NPS) pollution survey of homeowners and a video to educate watershed residents about NPS water pollution problems. Students have also participated in Harbor Watch monitoring activities.

Results

As a result of management actions, data collected in 2018 showed a mean *E. coli* level of 104 cfu/100 mL in segment 01, indicating that the segment now meets WQS and the TMDL target for *E. coli* bacteria, and is fully supporting its designated use of contact recreation. As a result, DEEP removed it from Connecticut's 2018 list of impaired waters. Long-term commitment by SBWPAC members has shown that collaborative partnerships can solve NPS pollution problems.

Partners and Funding

The watershed has been targeted for a collaborative water quality restoration partnership for over 20 years between the U.S. Environmental Protection Agency (EPA), DEEP, U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS), and municipal NPS programs as an example of a mixed urbanized watershed without point source discharges. The Fairfield County Hunt Club has voluntarily spent over $1.5 million to implement pollution prevention measures at their facility. They have attended SBWPAC Committee meetings, and have consistently demonstrated eagerness to improve operations to prevent water pollution. Their leadership on proper manure management has provided valuable outreach and education to clients, neighboring horse facilities, and horse owners regionally.

Westport has played a key role in maintaining focus on restoring water quality in Sasco Brook through the SBWPAC's activities. Prominent long-term partners that have met regularly for over 20 years include the towns of Westport and Fairfield, Fairfield County Hunt Club, DEEP, NRCS, Westport-Weston Health District, Harbor Watch, Connecticut Department of Agriculture (Aquaculture), the Southwest Conservation District and concerned citizens.

Harbor Watch at EarthPlace has conducted ambient water quality monitoring and pollution source track-down work in the Sasco Brook watershed, as needed, for 18 years. DEEP CWA section 319 and Westport have contributed funding to sustain the monitoring and track-down program. The towns of Westport and Fairfield have conducted follow-up with property owners to remove pollution sources in areas found to have high *E. coli* counts.

DEEP has provided CWA section 319 funds for two projects since 2008 in the watershed: a Watershed Based Plan and a Microbial Source Tracking Project. CWA 319 grants plus DEEP staff time have amounted to roughly $86,000. Local and private match has been over $1.6 million—a leveraging of approximately $1 of federal funding per $18 of local and private funds.

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