



## Section 319

# NONPOINT SOURCE PROGRAM SUCCESS STORY

# Alaska

## Community Watershed Cleanups, Stormwater Controls, and Lake Dredging Improve Water Quality and Recreation Uses

### Waterbody Improved

Swan Lake is Sitka, Alaska's "Central Park," widely used for recreational uses, providing habitat for waterfowl, ice skating in winter and historical uses going back to its Russian ownership. Years of residential growth and activity along Swan Lake and its main tributary, Wrinklneck Creek, have resulted in the accumulation of debris, solid waste, metals and plastics. Wrinklneck Creek and the north end of Swan Lake were impaired from those pollutants and listed together on Alaska's 1994, 1996 and 1998 impaired waterbody lists. Alaska's Department of Environmental Conservation (ADEC) used Clean Water Act section 319 grants over five years to fund community trash cleanups, manual harvest of noxious aquatic plants, lake dredging, water quality monitoring, educational efforts, stormwater mapping, and operations and maintenance schedules. These collaborative efforts improved water quality and resulted in Alaska removing from its 303(d) list both Wrinklneck Creek and Swan Lake for debris and solid waste in 2004.

### Problem

The Swan Lake watershed is near the downtown area of Sitka, which is on the west coast of Baranof Island fronting Sitka Sound. Baranof Island is an outer-coast island in the north-west area of southeast Alaska's Alexander Archipelago bordering the Gulf of Alaska and Pacific Ocean. The watershed is relatively small, encompassing less than five square miles. The watershed drains to the shallow, 23-acre Swan Lake through two small streams, Wrinklneck Creek and Arrowhead Creek.

ADEC and the City and Borough of Sitka (CBS) conducted three assessments in order to eliminate other anecdotal water quality concerns and confirm that solid waste/debris was a major source of impairment. The pollutants were more fully described in the 1996 list as "wood, oil tanks, waste metals and plastics." The state standard for residue and debris prohibits any deposits on streambeds, shorelines or lakes that negatively impact designated



Figure 1. Ducks enjoy the cleaner water as a result of removal of trash and debris.

uses. Water quality field investigations pointed to the need for a thorough cleanup of debris accumulations and future actions to keep the watershed clean. The effects of debris/solid waste residues on uses of Wrinklneck Creek and Swan Lake are (1) negative impacts on recreational uses within the watershed; (2) creating nuisance conditions that could attract

undesirable wildlife; and (3) potential adverse effects on resident fish habitat and their populations.

## Project Highlights

CBS, its contractor, and ADEC developed an EPA-approved Swan Lake Watershed Recovery Strategy and Total Maximum Daily Load (TMDL) during 2000.

Restoration activities in the watershed include annual community trash cleanups (Figure 2), manual harvesting of lily pads in high-use recreational areas, dredging the lake outlet channel and the Wrinklneck Creek delta, monitoring by citizens and professionals, improving hydraulic efficiency of culverts in the Arrowhead Creek/Monastery Street intersection, and completing a stormwater control strategy and a "state of the lake report" for public education. Some activities were one-time tasks; other tasks are continuing.



Figure 2. The CBS team shows off a load of trash collected during a Swan Lake cleanup.

The Swan Lake watershed restoration project continues to apply a broad number of best management practices for water quality protection. Particular emphasis is placed on stormwater collection and treatment, ranging from storm drain stenciling to greater use of vegetative swales to treat road runoff. Several tons of

trash and debris have been removed from the creek and lake over the years. During the first cleanup in 2000, volunteers collected more than 6,600 pounds of trash and debris. In 2001 volunteers collected another 1,000 pounds, including 12 metal gas cans and two large storage tanks. Each year the amount collected has decreased from the previous year.

## Results

Citizen involvement continues for the ninth consecutive Swan Lake Trash Cleanup scheduled for April 2008. This cleanup will continue to be an annual event in coordination with a citywide spring cleanup.

CBS believes the actions to date support moving the Swan Lake watershed to Category 2 in the 303(d) assessment report, which represents a waterbody that meets some designated uses but for which data is still needed to determine whether it meets all designated uses. The Swan Lake watershed team has an implemented waterbody recovery plan and an approved TMDL, which includes the annual cleanups and monitoring.

CBS has provided the documentation confirming that the TMDL continues to be implemented and that water quality standards are being met. As a result, Alaska removed Wrinklneck Creek and Swan Lake from its 2004 303(d) list of impaired waters. The success of these efforts reflects the community's commitment and the implementation of the Swan Lake Watershed Recovery Strategy.

## Partners and Funding

CBS has received a total of \$181,830 in section 319 funds from ADEC for Swan Lake and Wrinklneck Creek recovery actions. CBS has provided approximately \$121,220 in matching funds for these projects.



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