Miles of Fences, Hundreds of Cows - Farmers on the Little Bear River Protect

Richard Nielsen runs a 250-cow dairy near Hyrum, Utah, in the Cache Valley. A third generation farmer, Nielsen worries about things his father and grandfather never had to think about. One such concern is water quality.

Nielsen's farm is along a canal in the Little Bear River watershed. Water in the canal is diverted from the Little Bear River just below Porcupine Reservoir. It serves several farms above Nielsen's dairy and two or three farms below his before emptying into Spring Creek. Spring Creek, in turn, eventually drains into the Little Bear River. The return of the canal to the main channel creates a potential for agricultural nonpoint source pollution that lets Nielsen and other farmers along the canal know that they must be good stewards of their resources. They are also good candidates for programs funded by section 319 grants.

Rerouting the water

"Nielsen's dairy was, in fact, contributing significant coliform to the system before we began this project," says Bob Clark of the USDA Natural Resources Conservation Service. His corral was adjacent to the canal and it had been built on a downward slope to the water. Everything drained right into the canal. The problem worsened during storms and flowed constantly during spring runoff.

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Project managers considered various alternatives before deciding to pipe the canal around the corral. Project money also helped Nielsen construct two animal waste storage facilities. Now any pollution that leaves the corral goes directly into pasture and alfalfa fields and does not leave the farm. While work was being completed at the Nielsen dairy, other section 319 projects and other types of water quality efforts were taking place upstream from Nielsen's property on the canal.

Water quality improvements

The results are significant. The Cache County Health Department took water samples above and below the canal before and after the project. Tests were run for total coliform and fecal coliform. Before Nielsen's farm was included in the section 319 project, total coliform in the canal entering his property was 10,000 colonies per 100 milliLiters (mL) of water; the fecal coliform count was 7,600 colonies per 100 mL.

At a point just below Nielsen's corral, the total and fecal coliform were too numerous to count. After the completion of Nielsen's project and other projects at farms upstream on the canal, total and fecal coliform levels fell to 350 colonies per 100 mL entering Nielsen's farm. What's more, the readings below the corral were identical. Contamination by the dairy had been completely eliminated.

Little Bear River

More projects expected

Though the project at the Nielsen dairy was only a tiny piece of the water quality puzzle, the successes are starting to mount up in the Little Bear River and other watersheds that host section 319 projects, according to Utah's Department of Agriculture. Such projects also demonstrate the value of continued water quality monitoring. The Division of Water Quality needs dependable quantitative data to document improvements and the methods used to achieve them.

An interagency workgroup has formed to monitor channel geomorphology, riparian health, and biological integrity in the Little Bear River watershed. This initiative will document the permanent effectiveness of the BMPs on several stream reaches and, in time, provide a more complete picture of stream recovery.

"Consider the miles of fences we've installed and the number of cows we've moved off the river already," says Nielsen, "and more projects are expected. Monitoring will ensure that our efforts are not in vain."