

Monitoring Question

Does water in Superior National Forest (SNF)-provided drinking water sources and swimming beaches meet standards of quality protective of human health and aesthetics? Are SNF facilities and recreation sites safe for employee and public use and enjoyment?

Monitoring Conducted

Drinking and Waste Water Safety

Objective. O-PH-1. Public & Non public water & wastewater systems are updated, maintained, & managed to the standards set forth in the appropriate federal guidelines and applicable state standards during this plan period. **Objective. O-PH-4.** Forest owned facilities and designated recreation sites and/or natural resource amenities are inspected and managed to ensure safe operation. **Objective. O-PH-3.** Known abandoned wells will be grouted and unused wells will be capped and maintained to prevent groundwater contamination.

Potable Water Supply Bacteria (PWSB) Monitoring: During Fiscal Year (FY) 2006, a total of approximately 368 routine monthly samples were collected and tested for total coliform (TC) and *E. coli* from drinking water supplies at 58 separate SNF-operated public and administrative facilities. Six of these routine monthly samples, representing 6 recreation facility water supplies, yielded a positive test for the presence of TC.

Potable Water Supply Nitrates (PWSN) Monitoring: Approximately 50 SNF-operated water supplies at SNF developed recreation and administrative sites were tested. All sites tested showed nitrate concentration less than 10 parts per million.

Designated Swimming Sites Bacteria (DSSB) Monitoring: Four swimming beach samples were collected and analyzed in 2006. One sample from Fenske Lake was analyzed in July and Lake Leander was sampled in August 2006.

Monitoring Question

Does hazardous material storage on the National Forest meet standards of quality protective of human health?

Hazardous Materials

Objective. O-PH-2. Hazardous materials are appropriately stored in approved facilities, and are transported safely if necessary for forest management. **Objective. O-PH-5.** Where possible, minimize use of hazardous materials. Make more frequent use of non-hazardous substitute materials; and safe use and storage of hazardous materials.

Storage, use, and transport of hazardous materials such as herbicides, tree marking paint, and fuel are reviewed to ensure compliance with the Forest Service Health & Safety Handbook, State of Minnesota, and other relevant regulations.

Evaluation and Conclusions

Drinking and Waste Water Safety

PWSB results: Six of 368 samples from SNF-operated public and administrative facilities yielded a positive test for the presence of TC. At three of these sites TC was found in only one of the monthly routine samples. At the East Bearskin No. 2, TC was found in 3 samples. In each case where TC was found in a routine monthly sample, the water supply was either (1) closed immediately to public use, treated by shock disinfection, resample, and re-opened to use when TC was found to be absent from the follow-up samples, or (2) closed to public use for the remainder of the recreation season.

PWSN results: All water supplies were found to meet the applicable standard for this constituent in drinking water.

DSSB results: Four swimming beach samples were collected and analyzed in 2006. One sample registered a bacteria presence (Lake Leander) but was below the standards for posting. A map of the designated swimming beaches on the Superior National Forest is shown in Figure 1.

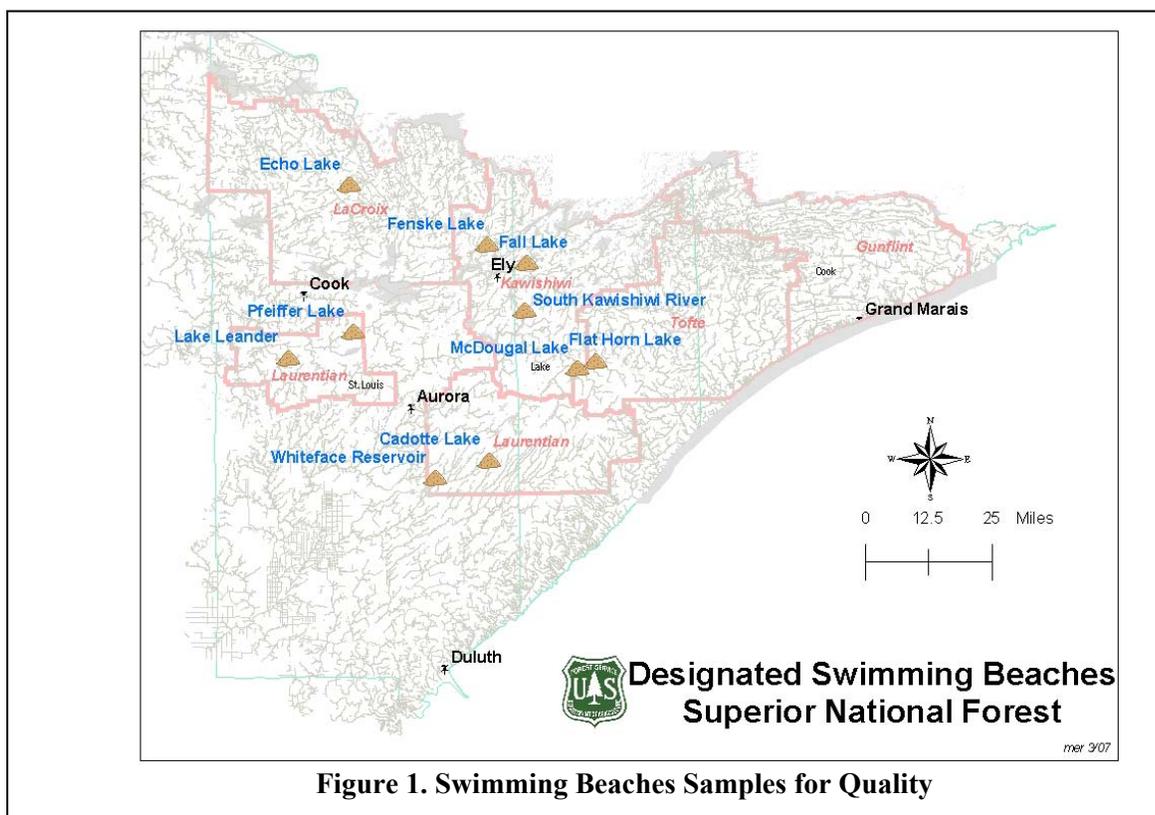


Figure 1. Swimming Beaches Samples for Quality

Hazardous Materials

Hazardous materials such herbicides, tree marking paint, and fuel were found to be properly stored and secured, used, and transported.

Standards and Guidelines

Three Standards and Guidelines (S-PH-1, S-PH-2, and G-PH-1, Forest Plan p. 2-54) apply to Public Health and all were complied with in that the activities (hazardous spills, sewage waste disposal, and treatment of contaminated soil) did not occur in 2006.

Necessary Follow-up Actions and Management Recommendations

After reviewing monitoring findings, the Forest Interdisciplinary Team identified three follow-up actions and one management recommendation to carry forward in the future.

Follow-up Actions

- * Because this monitoring is required by law/policy, all three types of water testing will continue to be carried out at the indicated locations and frequencies in future fiscal years. Procedures used in FY 2006 to follow-up on PWSB sampling results yielding positive test results for total coliform meet requirements as spelled out in the Federal and State Safe Drinking Water law and Forest Service policy. Those procedures will continue to be used in future years.
- * Improve quality control in the sample collection process for routine monthly PWSB samples. For example, make sure that employees assigned the job of sample collection are adequately trained to guard against contamination while filling the sample bottles. Modify analysis to be quantitative as opposed to presence. This will provide needed information to manage the sites. Training personnel will minimize contaminating samples. Positive test results for total coliform observed in FY 2006 (and in previous years) most likely arise from improper sample collection methods rather actual contamination of the water supply itself.
- * The method used for testing DSSB should be modified to be a quantitative analysis as opposed to a simple presence/absence test.

Management Recommendations

- * Interpret S-PH-1 language by clarifying what type of public health threat (hazardous materials, drinking water and waste water) the standard is intended to mitigate.

Collaborative Opportunities To Improve Efficiency And Quality Of Program

The SNF was involved with four partners or stakeholders to monitor public health. These groups include the Minnesota Department of Health (MDH), Minnesota Pollution Control Agency, US Geological Survey, and Lake Associations. The involvement with the MDH is particularly important in analyzing nitrate concentrations in campground drinking water.

Summary Conclusions

- * Monitoring for Potable Water bacteria and nitrates was done monthly at public and administrative facilities. All nitrate samples and over 98% of bacteria (total coliform) samples were found acceptable.
- * Four swimming beach samples were collected and analyzed in 2006. One sample registered a bacteria presence (Lake Leander) but was below the standards for posting.