

**MAINE PUBLIC DRINKING WATER  
SOURCE WATER ASSESSMENT PROGRAM  
OUTWARD BOUND SCHOOL  
HURRICANE ISLAND, MAINE**

**APRIL 2002**



**PREPARED BY**

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## **Introduction**

The Maine Drinking Water Program, a state agency within the Department of Human Services, Bureau of Health, has completed an assessment of the susceptibility to contamination of the water supply serving the Outward Bound School, a transient surface water supply located on Hurricane Island, Maine. The assessment is a requirement of the Federal Safe Drinking Water Act, a law originally passed in 1974 in an effort to ensure the safety of public water supplies. The Transient Water Supplier (TWS) has voluntarily cooperated with the Drinking Water Program in completing this assessment. In the following sections, maps of the source location are provided which show the island and intake area. The water system and source are described and a photo of the source is included. The risk of contamination of the source is evaluated, and recommendations for action on the part of the water supplier are provided.

## **Maps of the Source**

See Figures 1 and 2 in the back of the report.

## **Water System Description**

PWSID #: 919

Water System Name: Outward Bound School

Water System Location: Hurricane Island, Maine

Source Name: Granite Quarry

Source size: 1.405 acres

Source perimeter: 328 meters or  $\sim 1/5^{\text{th}}$  of a mile

Island Size: 99.097 acres

Island Perimeter: 2.34 miles

Water System Type: Transient non-community

Operating Season: June 1-September 30

Population served:  $\sim 75$

Number of Intakes: 1

Location of quarry in relation to any adjacent property: southeast end of the island.

Approximate distance of intake from the quarry shoreline:  $\sim 35$  feet

Approximate depth of the intake: 8 feet

Approximate distance of the intake from the bottom: 12 feet

The intake is suspended from a floating Styrofoam billet, there are no signs around the quarry shoreline identifying the drinking water supply or that swimming is not allowed in the area.

Number of Individuals served daily:  $\sim 75$

Number of Ground Water Sources: 0

Number of Surface Water Sources: 1

The water from the quarry is not combined with any other sources.

Treatment:

Disinfection: Post hypo chlorination

Filtration: Yes

Estimated Daily Water Use:  $\sim 2,000$ - $3,000$  gallons per day, ( $\sim 300,000$  gallons over 100 days).

## **Potential Risk of Contamination to the Source**

Transient water systems are regulated by the Drinking Water Program for pathogens and nitrate/nitrite since the individuals consuming the water are not the same ones from one day to the next. In general, no individual consumes the water for an extended period of time and therefore contaminants, which pose a long-term health risk, are not significant. For this reason, evaluation only of the intake zone was completed. However the report does include a map of Hurricane Island and a map of the shoreline adjacent to the intake.

## **Assessment Zones**

Watershed: Coastal islands have small areas that directly contribute rainwater or runoff to surface water bodies that may exist within the shoreline boundaries of an island. Hurricane Island does not have a delineated watershed boundary but the entire island does not contribute to the surface quarry. The area that does contribute to the quarry is not to be determined by the Maine Drinking Water Program. The contributing watershed boundary could be determined by having a professional land survey of the island conducted. The island has a 2.34-mile perimeter and is 99.10 acres. Upon review of the Maine Department of Environmental Protection (MDEP) "Threats to Groundwater" database, there are no potential threats identified on Hurricane Island.

Immediate Shore land: The shoreline of the pond follows an east-west orientation. The quarry is set down below the surrounding land and a steep sloping bank meets a rough granite shoreline. A lot of the property immediate to the intake is forested and there are high granite outcroppings. Near the quarry there are areas where large blow downs have occurred in the past year and left behind open spaces. The island includes many walking paths and some of them terminate at the granite quarry. The island has very shallow soils and where there is soil, there tends to be well-established vegetation. There appears to be very low potential for erosion problems due to the small size of the contributing area, the surrounding granite composition and the limited availability of soil.

Intake (1,000 ft. radius): The intake is ~35 feet from the shoreline in ~20 feet of water. The intake is ~8 feet below the surface and ~12 feet off the bottom of the quarry. The intake is protected by a screen and is suspended from a floating Styrofoam billet. The water system has emergency shut off valves located at the pump house (which is close to the quarry) and at the water storage tanks that are up on a hill. There are no buoys marking the intake and there are no signs identifying the quarry as a drinking water source. Swimming is not allowed in the quarry but there are no signs stating so. The visitors are simply told to stay out of the water. There are no conditions that are currently affecting the water quality. The quarry is a popular spot for the local gulls but their guano does not appear to be affecting the water quality. Turbidity levels drop as the summer progresses and it has not been a problem in the past. To the South of the intake is an area where food is composted and scrap wood is burned after the water system is shut down for the season. To the north of the quarry there is a large fuel tank, which supplies fuel for the island boats and generator that supplies the island with electricity.

**SWAP Ranking:**

The SWAP assessment factors indicate that the overall susceptibility of the water quality in the Granite Quarry is **low**. This conclusion is based on the general conditions observed around the intake and shore land zone, the absence of any threats in the DEP database and the relatively small watershed on the island.

**Discussion and Recommendations**

The susceptibility of the Hurricane Island water source to be impaired by any of the potential threats identified during the site visit is very low. The fuel tank and generator do not appear to be a threat to the quarry water supply because there is significant granite, soil and tree barriers separating them. The compost material does not pose a threat and the burning of scrap wood is done in the off-season. Although the intake area is not marked by buoys or signs, the island visitors are told that the quarry is used as the drinking water supply and to stay out of the water. The island is privately owned and the land is leased to the Outward Bound School. There are very few buildings on the island and the potential for future development is very low. Many of the existing buildings have been in place since 1964.