



Maine Companies Partner to Protect Aquatic Life with YSI Integrated Systems

The Gulf Island Pond Oxygenation Project in Maine uses a YSI environmental monitoring system to record real-time data for regulation and historical purposes.

The project was started when a Maine power company and several paper companies along the Androscoggin River formed a partnership to improve oxygen levels, thus benefiting aquatic life in the Gulf Island Pond.

In the early part of the century, a hydropower dam was built on the river. The dam caused a significant impoundment to form, named Gulf Island Pond. Over the years, legal discharges, point and non-point sources of pollution, and the natural and physical conditions created by the existence of the impoundment caused dissolved oxygen (DO) levels to decline.

The partnership constructed the oxygenation facility to increase DO conditions, benefiting aquatic life and addressing the minimum requirements for Class C waters, as defined by the Maine Department of Environmental Protection. The Gulf Island Project is the only water oxygenation facility in Maine that uses a diffuser system. When this project went on-line in 1992, it was the largest water oxygenation facility in the U.S.

Pure liquid oxygen is delivered and stored on-site in two 13,000-gallon tanks. The liquid oxygen is passed through a bank of vaporizers that converts it into a gas. This gas then passes through an underground pipeline that extends from the oxygen storage area to an underground diffuser system in the river. The system is located approximately 30 feet below the water surface and extends approximately 560 feet from the riverbank. Since the project began in 1992, the DO levels have consistently increased.

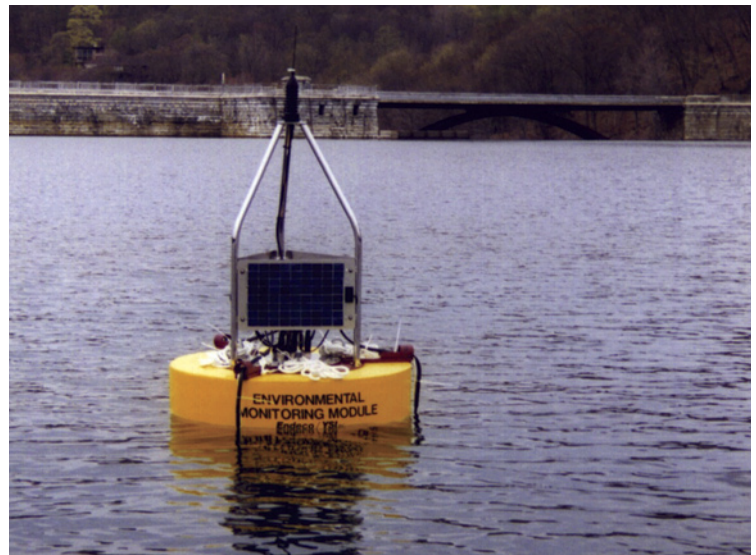
YSI instruments ensure compliance

Since 1994, three YSI multiparameter sondes have been recording DO using YSI's Rapid Pulse stirring-independent dissolved oxygen sensors, temperature and specific conductance. The YSI sondes systems connectivity allows remote access of the real-time data via modem. In 1998, the project began to use YSI 600XL and 6920 sondes. The 6920 sonde is deployed in the deepest hole of the pond and records DO and temperature data that helps to understand how the diffuser system is affecting DO levels in the deepest part of the pond. The four sondes are deployed below a YSI EMM550 buoy at 5, 20, 35 and 50-foot depths, located 300 feet above the dam. These sondes collect DO and temperature data that are used to verify the data collected by the other YSI multiparameter sondes and to validate water quality models used to manage operations of the oxygen diffuser system.

Calibration and maintenance of the sondes are done on-site using a YSI 650 multiparameter display system. Before the sondes are retrieved, a YSI 600R sonde and YSI 650 are used to verify the data readings of each deployed sonde. Calibration is completed using a laptop computer and YSI software.

Data is retrieved daily by Water Monitoring Services, who then charts the data and checks it for quality assurance and quality control issues. Water Monitoring Services also operates and maintains the monitoring system.

By using a YSI environmental monitoring system the project is able to keep accurate records in order to comply with the Maine Department of Environmental Protection's permits and licensing agreements.



YSI EMM550 buoy provides powerful abilities to access data remotely and provide real-time readings.

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