



# Water Quality Monitoring: A Guide for Informed Decision Making

## Remote Sensing

### About

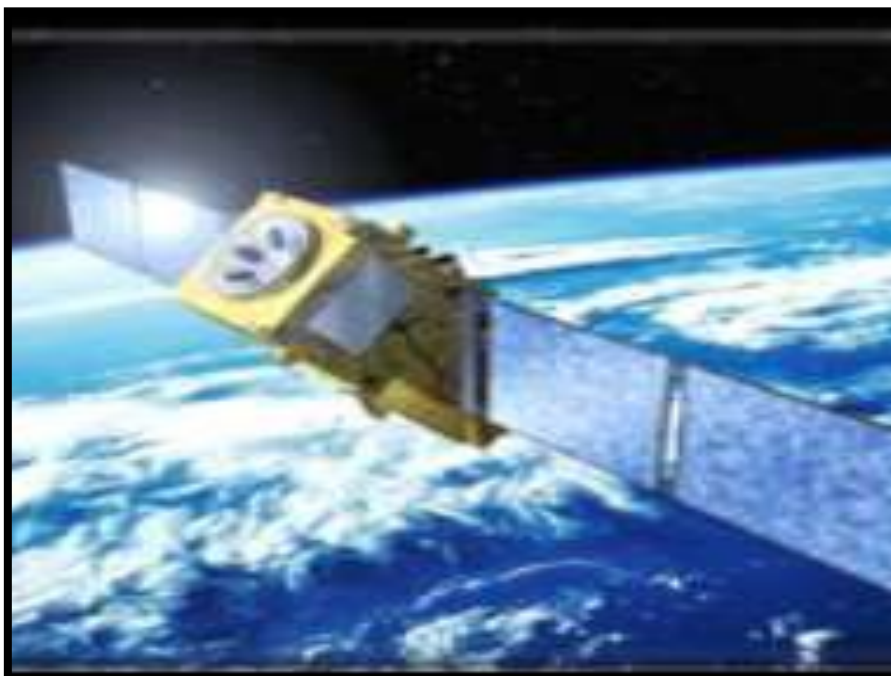
Remote Sensing is the use of satellites, world imagery, and light refraction off the earth to obtain information about the earth and the environment. Radiant light emitted from objects on the ground and in the water can be used to characterize land use, elevation gradients, temperature

profiles, flow pathways, vegetation characteristics, chlorophyll production and much more.

### What you need to know

This approach is cost efficient because there are many free data sources such as Landsat8 imagery that can be used to identify areas for potential water quality issues and can help alleviate

some monitoring costs. It also can be used to determine the effectiveness of water quality best management practices. However, this approach does require staff expertise to conduct the complex analyses that remote sensing requires. A strong data management strategy is required because the datasets using remote sensing data are typically large and may require dedicated servers to house and maintain the information. This approach is limited by the data resolution and the data used to calibrate the models which are used to make the water quality decisions. This is a modeled analysis and therefore does not replace monitoring but can help an organization prioritize their monitoring or support their water quality decisions.



### Remote Sensing Summary

Strengths	Limitations	Questions Addressed
Can help determine water quality issues for large areas	Requires data management	Modelled water quality to inform on-the-ground monitoring
Cost efficient by helping alleviate monitoring costs	Requires technical staff expertise	How changes in land use affect water quality
	The resolution is not always adequate and thus limits the analysis	Changes in stream temperature
		Effectiveness of BMPs, such as buffer strips and green infrastructure management practices.
		Algal bloom frequency

Table 1: The above table outlines the strengths, limitation, and products produced by remote sensing