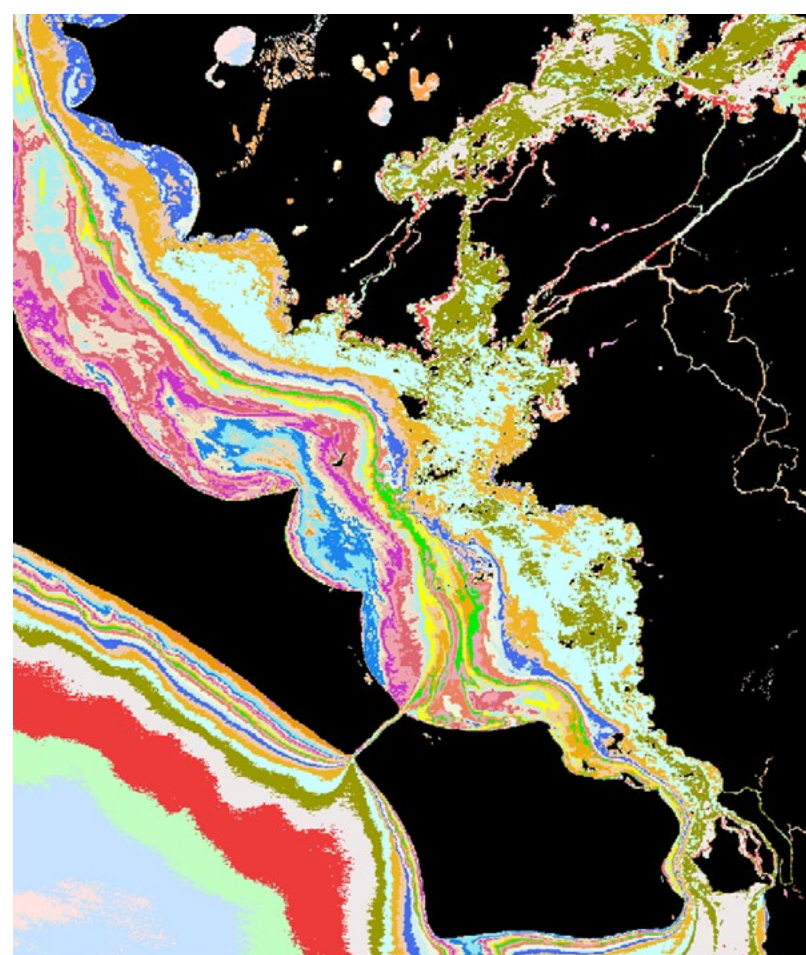




WaterWATCH

Stantec.io

WATER IS THE WORLD'S MOST VALUABLE RESOURCE AND CAN OFTEN BE TAKEN FOR GRANTED



↑ Multispectral Satellite Imagery can give much detail on the state of water properties in specific or broad areas

We need to observe it, protect it and monitor it to minimize the effects from industrial activities to the best of our ability.

Easier said than done

Waterbodies can span hundreds or thousands of kilometers, are in constant motion, have multiple properties to analyze and can be extremely remote. Satellite imagery can provide the spatial coverage, frequency of coverage and examine many water characteristics required for an essential water quality assessment everywhere on the globe.

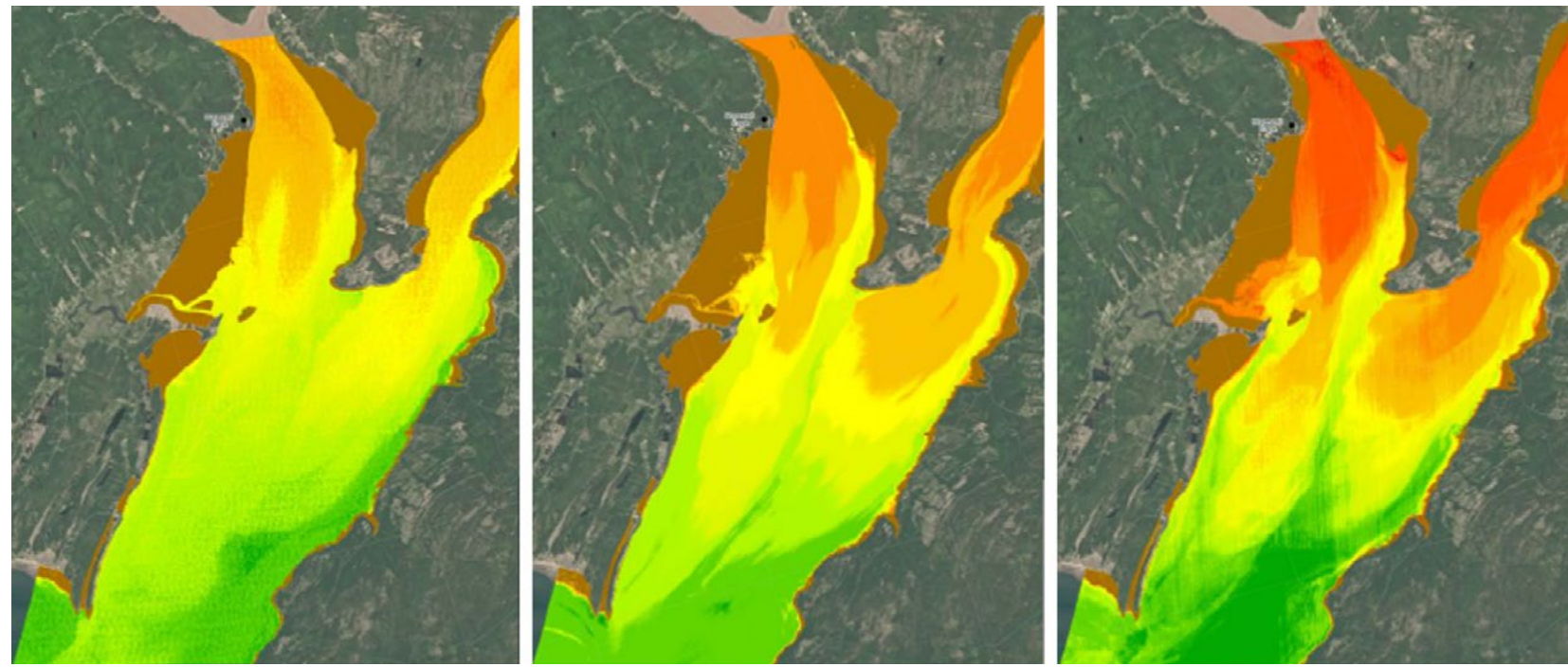
What is the benefit?

Stantec leverages a multitude of satellite image resources to delineate and quantify Total Suspended Solids (TSS) or water turbidity, surface water

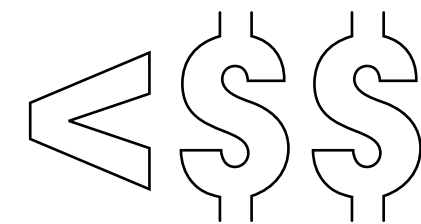
temperature and organic matter such as Chlorophyll-a among other water quality properties. Remote sensing data is available at varying resolutions, frequencies and wavelengths to meet your project needs. Best of all Stantec can perform this work from the desktop reducing health & safety risks and is very cost effective for facilities around the world.

How does it work?

Satellites are continually collecting imagery for the entire planet in a series of electromagnetic wavelengths. Each with their own unique interpretation of the sun's energy reflecting from the earth's surface. These pieces of information are entered into algorithms to derive a variety water quality attributes such as turbidity, temperature and organic material.



↑ **Figure 1.** Satellite imagery time series analysis of TSS (turbidity) increasing over time (green > 1 Mg/L, red 30+ Mg/L)

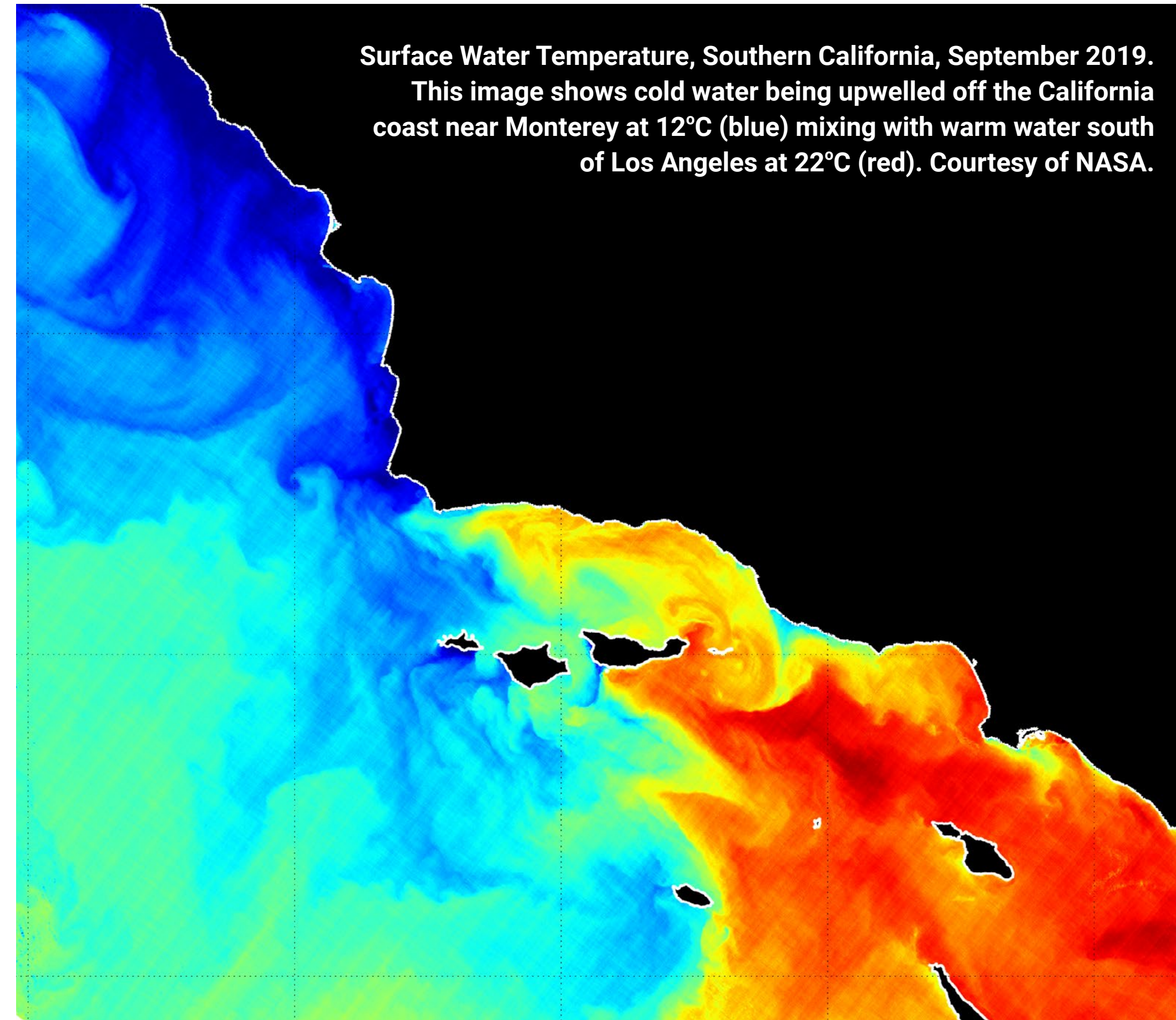


Work is performed remotely which is more cost effective and reduces health and safety risks

PROJECT EXAMPLE

Industrial activity in the Petitcodiac River near Moncton, New Brunswick necessitated a historical TSS trend analysis within the upper Bay of Fundy. Stantec's remote sensing team examined a total of 10 satellite images between 1987 and 2012. A regression analysis was calculated from water reflectance values, converted to TSS units (mg/L) and grouped into turbidity level categories. Changes in TSS class area and extent over time enabled visualization of TSS environmental concerns, such as lobster fishing grounds, important bird areas and fish spawning locations.

WE CAN HELP YOU IDENTIFY POSSIBLE SUBSIDENCE ON OR AROUND YOUR PROJECT.



Surface Water Temperature, Southern California, September 2019.
This image shows cold water being upwelled off the California coast near Monterey at 12°C (blue) mixing with warm water south of Los Angeles at 22°C (red). Courtesy of NASA.

CONTACT US

Send us an email at remotesensing@stantec.com to learn more about remote sensing and how it relates to water quality.

Our water quality Remote Sensing experts:

[Sanaz Imen](#)
[Grant Wiseman](#)
[Martha Farella](#)

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