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Case Study Summary: Toa Vaca Reservoir, Puerto Rico

Background

Toa Vaca Reservoir is over 850 acres and up to 170 feet (51m) deep. The reservoir was hyper-eutrophic. When water was drawn from the upper levels it was so full of algae that filters clogged up and chemical usage was so high that compliance for TTHMs could not be achieved. When water was drawn from deeper down it was foul tasting and smelling due to geosmins and hydrogen sulfide and laundry was discolored due to high levels of manganese.

Results

Desired improvements in all relevant parameters were achieved. The improvements resulted in a 50% reduction in treatment chemicals used at the Toa Vaca and Vieja purification plants on the Toa Vaca reservoir. During this same period, treatment chemical costs at the Sergio Cuevo treatment plant on the nearby Carraizo reservoir increased 300%.

The reduction in treatment chemical usage resulted in compliance for TTHMs being achieved at Toa Vaca and Vieja purification plants. This has not been possible at Sergio Cuevo plant.

Fish numbers improved so much that the fish eagles increased from one pair to five and pelicans increased from 5 to 28. The reservoir's popularity with anglers increased tremendously too.