

## CENTRAL SANDS LAKES STUDY

The Central Sands Region spans portions of Adams, Marathon, Marquette, Portage, Shawano, Waupaca, Waushara and Wood Counties. The DNR defines the Central Sands as a contiguous area east of the Wisconsin River with sand and gravel deposits greater than 50 feet deep. These deposits create a productive aquifer that is used for irrigation, public and private water supplies, industry, and commercial uses. The Central Sands region also contains over 300 lakes and thousands of miles of streams.

Over the past 60 years, we have observed low water levels in lakes and streams in Wisconsin's Central Sands Region. Various researchers have studied the relationship between land use and impacts to water resources in the Central Sands Region. Their work has shown that the two main causes of water level changes are weather and the pumping of high capacity wells. Weather varies considerably from place to place and from year to year. The number of high capacity wells in the Central Sands Region have increased over the past few decades, which has raised concerns about pumping of groundwater and the impacts on water levels. In response to these concerns, the DNR evaluated and modeled Pleasant, Long, and Plainfield Lakes in Waushara County to determine whether groundwater withdrawals cause a significant reduction in lake levels below their average seasonal levels, as directed by the Wisconsin State Legislature, specifically Wis. Stat. § 281.34(7m)(2017 Wisconsin Act 10).

The DNR, in collaboration with the Wisconsin Geological and Natural History Survey (WGNHS), United States Geological Survey (USGS) and the University of Wisconsin System, completed the \$887,000 Central Sands Lakes Study using an approach that involved data collection and groundwater flow modeling.

The key findings are that groundwater withdrawals cause reductions in Pleasant, Long, and Plainfield Lakes. The reductions are significant and impact the lakes' ecosystems in Long and Plainfield Lakes. The study findings show that the reduction caused by groundwater withdrawals to study lake levels are a result of the collective impact from many high-capacity wells rather than any specific high-capacity well. The DNR recommends a regional framework, such as a water use district, for addressing impacts to water resources from high-capacity well pumping.

Additional information on the study is available through the [study reports, appendices and recorded presentations](#). The DNR held a public hearing and comment period in Spring 2021 and submitted their findings and recommendations to the Wisconsin Legislature on May 27, 2021.

