

Michigan's Water Withdrawal Assessment Process and Internet Screening Tool

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Abstract.—Michigan's Water Withdrawal Assessment Process is used to regulate new or increased large quantity withdrawals (more than 100,000 gallons of water per day) from any source. The purpose of the regulation is to prevent Adverse Resource Impacts on streams. The Water Withdrawal Assessment Process is ecologically based, built around a stream classification system and expected fish communities for those classifications. Every stream in the state is classified as one of eleven habitat types. Fish community responses were modeled as an outcome of changes in streamflow for each stream type. Through a legislative process, the resulting fish response models were used to determine and define in statute the maximum withdrawals allowed for each stream type as a percentage of an Index Flow. To facilitate decision making, an Internet-based Screening Tool was developed to estimate the impact of withdrawing water on the nearby stream ecosystems. The Screening Tool processes data about factors such as stream flows, pumping frequency, well depth, watershed areas, soil types, and the flow needs of the characteristic fish community. The Screening Tool uses these data to estimate how much water will be depleted from the nearby streams and determine if the withdrawal is likely to cause an adverse impact on the stream ecosystem. If the Screening Tool determines the withdrawal is not likely to cause an adverse impact, the user may register their withdrawal through the Screening Tool and proceed with the withdrawal without any additional contact with the Department of Environmental Quality (DEQ). If the proposed withdrawal is in a sensitive stream, or the Screening Tool evaluation indicates there is an increased likelihood of an adverse impact, the user is referred to the DEQ for a site-specific review. DEQ staff will further use any information available to refine the understanding of the local hydrology, hydrogeology, and stream classification. The DEQ will consider the refined information in combination with the legislatively determined maximum withdrawals to determine the likelihood of an Adverse Resource Impact occurring. Use of the Screening Tool avoids the cost of having every withdrawal individually evaluated by professional staff as would happen in a conventional permitting program. Locations with abundant water supply relative to the proposed withdrawal, and where the withdrawal might adversely affect the environment are identified through use of the Screening Tool. The goal of this report is to document the Water Withdrawal Assessment Process, including an explanation of how the Screening Tool operates.

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