***File:***

Municipal\_WaterWithdrawal\_GL\_GLEAM\_data.shp

***Contact:***

Dr. J.D. Allan

School of Natural Resources and Environment, University of Michigan

440 Church St. Ann Arbor, MI 48109

734-764-6553

dallan@umich.edu

***Description*:**

This data set was created as part of a larger work, the Great Lakes Environmental Assessment and Mapping (GLEAM) Project. For a full description of the GLEAM ecosystem services project, please see:

Allan, J.D., et al., 2015. Using cultural ecosystem services to inform restoration priorities in the Laurentian Great Lakes. *Frontiers in Ecology and the Environment*, 13(8): 418-424. doi:10.1890/140328

Please cite Allan et al. 2015 when using this dataset.

*Water withdrawals (Municipal*). While states and provinces are required to report water use information annually under the Great Lakes-St. Lawrence River Basin Water Resources Compact, there is no comprehensive database detailing withdrawal amounts by location of intake pipes. For the U.S., we compiled intake locations and annual (2013 or 2014) withdrawal amounts from individual state contacts and an intake/outfall database maintained by the Great Lakes Commission (B. Pearson, pers. comm.). We mapped all intake pipes drawing surface water for public water within 5km of the shoreline. We wished to exclude water withdrawals from surface and ground water within watersheds so that our database would reflect lake withdrawals exclusively. Ontario keeps records on permits to take water (OMNR 2015), but reports only locations and intake capacities, which generally are significantly higher than actual withdrawal amounts. We found a predictable relationship between capacity and withdrawal based on U.S. intakes reporting both (y=.35x; R2 = .96. N = 23), and used this to estimate public water supply withdrawals for Ontario intakes.

**References**:

Pearson, B. Project Manager, Great Lakes Commission. [bpearson@glc.org](mailto:bpearson@glc.org)

***Field map:***

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| **LATITUDE** | **Latitude (WGS 1984)** |
| **LONGITUDE** | **Longitude (WGS 1984)** |
| **Name** | **Intake name** |
| **State** | **State or province** |
| **With\_Amt** | **Annual withdrawal (one year between 2011 and 2014) in millions of gallons per year.** |
| **Capacity** | **Annual withdrawal capacity in millions of gallons per year.** |
| **Est\_With** | **Estimated withdrawal amount in millions of gallons per year from regression between capacity and withdrawal (Ontario only).** |
| **Notes** | **Notes whether withdrawal amount was estimated from capacity.** |