Residence Time of Clarks Mills Pond

WBIC: 73100

0.3 days

Residence time equation:

$$T_r = \frac{V}{I} * 0.504$$

where T_r is residence time in days, V is volume in acre-feet, I is inflow in cubic feet per second, and 0.504 is a conversion factor.

Volume, V

The high estimate from ROW was used. The estimate was based on a regression that uses surface area, shoreline length, and maximum depth to infer volume.

206 acre·ft

Inflow, I

The best estimate of inflow into Clarks Mills Pond originated from a SWAT model in support of the Northeast Lakeshore TMDL (expected publication in 2022) that was calibrated to a continuous streamflow monitoring at Cato Falls directly upstream of the impoundment. The average summer (months June, July, and August) inflow was estimated to be 317 cubic feet per second. The inflow includes all subbasins that contribute anywhere upstream from the dam.

$$\frac{206\ acre \cdot ft}{317\ ft^3 \cdot s^{-1}} * 0.5042 = \mathbf{0.3\ days}$$

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