


VERMONT DAM SCREENING TOOL– QUICK START GUIDE

This sheet provides quick instructions for accessing basic information about each dam.

1. **Click the check box at the bottom of the opening screen** to accept terms of use and access the map screen.
2. **Click the layers icon**  in the left sidebar to see the list of available data.

3. **Click on the Dams by Ecological Impact layer name** to make the first data set and its symbology visible.

Dams by Ecological Impact

4. **Click the three dots** after the data layer name, then choose **Enable Pop-up**.

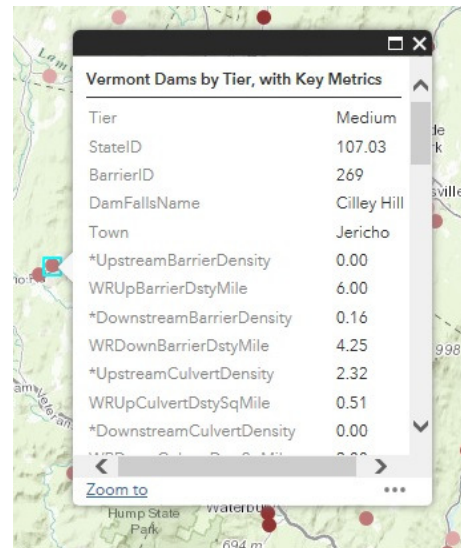


5. **Zoom to an area of interest** by using the Zoom tools in the upper left corner of the map or by double-clicking on the map to zoom in and click-and-drag to pan around the map.

6. **Click on a dam to see a Pop-up** displaying its Tier (from very low to very high) in the Dam Screen, plus other detailed information.

7. **See following pages of this document** for brief descriptions of each attribute in the Pop-up.

8. **Click the link to Detailed Instructions** at the top banner of the Tool for more information about using the Tool.



Attribute (Metrics marked *)	Definition (for details, see descriptions in webmap)
Tier	The dam tier is generated by the screening tool that is part of the BAT toolkit. Tiers (very high, high, medium, low, and very low) are five equal-interval classes based on CombScore, which is the sum of weighted ranks (WR) for all metrics.
StateID	Rank is a number from 1 to 405 indicating highest to lowest ecological values associated with each dam.
BarrierID	Unique identifier for each barrier by the Barrier Analysis Tool (BAT)
DamName	Vermont Dam Inventory identification number
Town	Vermont Dam Inventory
*UpstreamBarrierDensity	Number of barriers upstream (BatCountUS) divided by the total available length of river upstream (BatLenUS). BAT
WRUpBarrierDstyMile	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*DownstreamBarrierDensity	Number of barriers downstream (BatCountDS) divided by the distance from barrier to river mouth (Dis2Mth). BAT
WRDownBarrierDstyMile	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*UpstreamCulvertDensity	Culverts per square mile in upstream local watershed. VT DEC culvert inventory.
WRUpCulvertDstySqMile	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*DownstreamCulvertDensity	Culverts per square mile in downstream local watershed. VT DEC culvert inventory.
WRDownCulvertDstySqMile	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*DownstreamHydroDams	Hydro dams downstream of each Vermont dam, dams counted manually.
WRDwnStrmHydro	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*UpstreamNetworkLength	Upstream functional river network length in meters. BAT
WRUpstreamNetworkLength	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*AbsoluteGainNetworkLength	Smaller of upstream or downstream functional network length in meters (addition to total network size if dam is removed). BAT
WRAbsoluteGainNetworkLength	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*PercentDeveloped	Percent of upstream contributing watershed (entire area draining to dam) in developed land cover (proxy for impermeable). NLCD 2011 land cover.
WRPercentDeveloped	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*PercentNatural	Percent of upstream contributing watershed (entire area draining to dam) in natural land cover. NLCD 2011 land cover.
WRPercentNatural	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*PercentAgriculture	Percent of upstream contributing watershed (entire area draining to dam) in agricultural land cover. NLCD 2011 land cover.
WRPercentAgriculture	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).

Attribute (Metrics marked *)	Definition (for details, see descriptions in webmap)
*PercentConserved	Percent of upstream contributing watershed (entire area draining to dam) in conserved status (GAP 1, 2, 3). Conserved lands from TNC secured areas database.
WRPercentConserved	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*MigratoryFishSpecies	Data from Rich Langdon, Vermont Fish and Wildlife Department, 10-11-16. This metric notes presence of migratory fish species downstream AND potential habitat upstream AND no natural barriers (below fall line). Species are numbered SP1 through SP11. Codes are: P=present, L=low probability, N=not present or no habitat or obstacles exist), C=Cluster (a group of dams must all be removed to improve connectivity), Null if dam is above fall line and no metric was assigned. MigFish metric is the number of species present.
WRMigratoryFishSpecies	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*TroutScore	Percent of downstream network overlapping an Eastern Brook Trout Join Venture catchment with presence or potential presence of brook trout or rainbow/brown trout. Only values of more than 5% were used. Formula is brook trout percent (in decimals) plus 0.5 times rainbow/brown trout percent, for a maximum value of 1.5.
WRTroutScore	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*FishRichness	Total number of native fish species present in downstream functional network. Species locations from fish sample data provided by VT FWD and from Natural Heritage data.
WRFishRichness	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*RTEUFishScore	Number of rare, threatened, endangered or uncommon fish species present in downstream functional network, weighted by status (Endangered = 3 points, Threatened = 2 points, In Vermont Natural Heritage database, but not threatened or endangered = 1 point.
*WRRTEUFishScore	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*MusselsScore	Number of mussels species present in downstream functional network, weighted by status (Endangered = 4 points, Threatened = 3 points, In Vermont Natural Heritage database, but not threatened or endangered = 2 point, not in VT Natural Heritage database = 1 point. Species locations from 1995 Fichtel & Smith mussels survey and Vermont Natural Heritage database.
WRMusselsScore	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
*WeightedNewUpstreamOrders	New upstream orders (see below) weighted by downstream functional network length. Dams with very short downstream networks typically have high upstream order scores, but these are of little value. We split unique BatFuncDS lengths into 7 quantiles and assigned weights of 0, 0, 1/5, 2/5, 3/5, 4/5, and 1 to barriers in each group. Barriers with downstream network including Lake Champlain received a weight of 1.
WRNewUpstreamOrders	Weighted rank for above metric (points contributing to total combined score, based on rank for this metric times weight).
OperatingHydroDam	Current hydroelectric use as identified by advisors.
FallLine	Location above or below Lake Champlain fall line, assistance from Rich Langdon.

Attribute (Metrics marked *)	Definition (for details, see descriptions in webmap)
Elevation	Elevation in feet, from 10-meter DEM, ElevationDEM_VTHYDRODEM at http://maps.vcgi.org/gisdata/metadata/archived/ElevationDEM_VTHYDRODEM.htm , archived.
StreamOrderAtDam	Order of stream above dam location. From National Hydrography Dataset modified by VCGI, MDDELCC for Canada, manual delineations for NY.
NewUpstreamOrders	Number of distinct stream orders with >0.5 miles of stream that exist above a barrier but not below it. Order is used as a proxy for stream size.
UpstreamBarriers	Number of barriers upstream. BAT
DownstreamBarriers	Number of barriers on downstream flowpath. BAT
USRiverLength	Total available length of river upstream of each barrier in meters. BAT
DistanceToMouth	Meters from barrier to river mouth. BAT
DownstreamNetworkLength	Length of downstream functional network in meters. BAT
TotalUSDSNetworkLength	Total of upstream and downstream functional river network lengths in meters. BAT
RelativeGainNetworkLength	Absolute network gain divided by total upstream and downstream network length. BAT
BatUSNetworkID	Number identifying upstream functional network. BAT
BatDSNeworkID	Number identifying downstream functional network. BAT
BatUSBarrierID	BarrierID number for next upstream barrier. BAT
BatDSBarrierID	BarrierID number for next downstream barrier. BAT
Stream	The VDI stream name. "TR" indicates the dam is on an unnamed trib of the stream, "OS" indicates the dam is off-stream. Vermont Dam Inventory
BasinName	The basin name used by DEC. Some basins have been combined for planning purposes in the last few years. Vermont Dam Inventory
OwnerType	F - Federal, S - State, L - Local government, U - Public utility, P - Private, X - Not listed. Vermont Dam Inventory
DamStatus	Removed, deleted and not in use were omitted from screen. Categories are: [blank] – Status is unknown, no field information available (DEC may make global change to "Unknown"); Breached – Dam does not impound water, but remnants of the dam may remain in the channel. Should not impound water during a Q100 event. Breach may be a consequence of deterioration or deliberate action; Breached (Partial) – Enough of the dam remains that it still impounds some water, although at a lower level than when it was originally constructed. Breach may be a consequence of deterioration or deliberate action; Deleted – Record exists in database, town is identified but there are no location coordinates. Field or file investigation indicates dam may be gone or have never existed; Drained – Dam is in place and largely intact, but the water level has been lowered to the invert of the low-level outlet for dam safety or other reasons. Depending on the capacity of the outlet structure, the impoundment may stage up during high flow periods; In Service – Dam is intact and impounding water. The dam may or may not receive regular maintenance and its condition can range from good to poor; Not in Use – Off-stream structure that still exists, but no longer serves a purpose. The reservoir has been or is in the process of being filled in; Removed – Dam is known to have existed but has been removed. Some remnants may remain. Removal may be a consequence of deterioration or deliberate action. Vermont Dam Inventory.

Attribute (Metrics marked *)	Definition (for details, see descriptions in webmap)
DamHazardClass	The potential loss of human life, property damage, and economic loss that would occur in the event of the failure of a dam. The categories are: High hazard potential – Failure would result in probable loss of life, major damage to habitable structures or excessive economic loss; Significant hazard potential – Failure would result in possible loss of life, minor damage to habitable structures or appreciable economic loss; Low hazard potential – Failure would result in no loss of life, no damage to habitable structures or minimal economic loss. Vermont Dam Inventory