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Northeast Aquatic Connectivty

GLOSSARY

This glossary was developed to support the interpretation of the Northeast Aquatic Connectivity project results. Please refer to http://rcngrants.org/content/northeast-aquatic-connectivity for more information on this project and to download a copy of the report.

Field Categories

Dam Descriptors
Results
Data Flags

Connectivity Status
Connectivity Improvement
Watershed and Local Condition
Ecological
Size or System Type

Additional Identifying Information

Dam Descriptors

- State
- Dam name
- Stream name (NHD)
- Town (ZIP Overlay)
- HUC12 Name

State

- Standard 2-letter abbreviation for the state in which the dam is located

Dam Name

- The name of the dam from the dam database

Stream Name (NHD)

- The name of the river or stream on which the dam is located
- Obtained from the National Hydrography Dataset (NHD) flowline on which the dam falls

Town (ZIP Overlay)

- Town which the dam is located in
- Obtained by overlaying postal ZIP-code polygons

HUC12 Name

- The name of the 12-digit Hydrologic Unit Code (HUC) watershed in which the dam is located

Results

- The result fields are the product of the weighted ranking assessment used in the NAC project. The Tiered result field is the primary result that should be used to assess dams, as described in Section 5 of the NE Aquatic Connectivity report.

- Tiered Results (5% bins)
- Overall Results Rank
- Connectivity Status
- Connectivity Improvement
- Watershed and Local Condition
- Ecological
- Size & System Type

Tiered Results (5% bins)

- Analysis results grouped into 20 bins where each bin has 5% of the dams in the analysis area.
- These are the results that should be used for dam assessments

Overall Results Rank

- The sequential list of dams produced by the analysis.
- This list should be used with extreme caution: the precision with which GIS can calculate metrics and rank dams is not necessarily indicative of ecological differences
- The Tiered Results (5% bins) should be used to assess dams for their potential ecological benefit

Connectivity Status Rank

- Sequential rank of the dam based only on those weighted metrics from the Connectivity Status category
- Categorical ranks can be used to assess what metrics are driving a dam's position in the overall rank

Connectivity Improvement Rank

- Sequential rank of the dam based only on those weighted metrics from the Connectivity Improvement category
- Categorical ranks can be used to assess what metrics are driving a dam's position in the overall rank

Watershed and Local Condition Rank

- Sequential rank of the dam based only on those weighted metrics from the Watershed and Local Condition category
- Categorical ranks can be used to assess what metrics are driving a dam's position in the overall rank

Ecological Rank

- Sequential rank of the dam based only on those weighted metrics from the Ecological category
- Categorical ranks can be used to assess what metrics are driving a dam's position in the overall rank

Size & System Type Rank

- Sequential rank of the dam based only on those weighted metrics from the Size & System Type category
- Categorical ranks can be used to assess what metrics are driving a dam's position in the overall rank

Data Flags

- Data flags can be used to filter results in the Excel spreadsheet. *They are not, however, incorporated into the ranking process.*

- # of Downstream Waterfalls
- Anadromous Fish in HUC8 Historically
- Atlantic Coast Drainage
- Dam at Waterfall
- Degree Barrier
- Primary Purpose

of Downstream Waterfalls

- The number of natural waterfalls located downstream of the dam
- Based on waterfall data compiled for the Northeast Aquatic Connectivity project

Anadromous Fish in HUC8 Historically

- Indicates whether anadromous fish were historically present in the 8-digit Hydrological Unit Code (HUC) watershed in which the dam is located.
- Can be used to exclude dams from the reuslts that are in watersheds which didn't have anadromous fish historically
- Based on data from NatureServe that was reviewed by Workgroup participants from each of the states

Atlantic Coast Drainage

- Indicates whether a dams is located in a basin which drains to the Atlantic Coast
- Used to identify dams in non-Atlantic coast drainages for data quality purposes, as described in Section 3.4 of the NE Aquatic Connectivity report

Dam at Waterfall

- Indicates if dam is located at a natural waterfall
- Can be used to identify dams whose mitigation may not improve passage due to natural barriers
- Based on waterfall data compiled for the Northeast Aquatic Connectivity project

Degree Barrier

- The degree to which a dam is expected to be a barrier to fish passage
  - Complete barrier (>=12ft)
  - Unknown, assumed complete barrier
  - Small Barrier (<12 ft)
  - Partial Breach
  - Dam with Fish Passage facility

Primary Purpose

- The primary purpose of the dam as listed in the dam database.

Connectivity Status Metrics

- Upstream Barrier Count
- Downstream Barrier Count
- Impassable Downstream Barrier Count
- Upstream Barrier Density
- Downstream Barrier Density
- Total Upstream River Length
- Distance to River Mouth
- Density of Small (1:24k) dams in Upstream Functional Network Local Watershed
- Density of Small (1:24k) dams in Downstream Functional Network Local Watershed
- Density of Road & Railroad / Small Stream Crossings in Upstream Functional Network Local Watershed
- Density of Road & Railroad / Small Stream Crossings in Downstream Functional Network Local Watershed
- Number of Hydro Dams on Downstream Flowpath
- Number of Waterfalls on Downstream Flowpath

Upstream Barrier Count

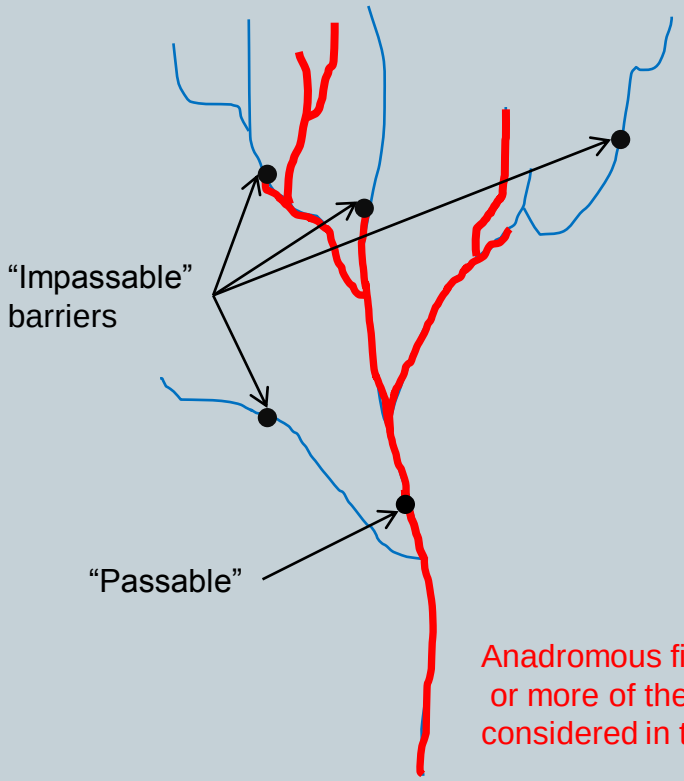
- Category: Connectivity Status
- The number of barriers upstream of a given barrier
- Does not include barriers excluded from network generation
- Unit: #

Downstream Barrier Count

- Category: Connectivity Status
- The number of barriers downstream of a given barrier
- Does not include barriers excluded from network generation
- Unit: #

Impassable Downstream Barrier Count

- Category: Connectivity Status
- The number of "impassable" barriers downstream of a given barrier.
- For the purpose of this metric, barriers are considered impassable if they are not crossed by anadromous fish habitat data. This metric attempts to compensate for the lack of comprehensive fish passage facility data. Thus, if mapped anadromous fish habitat crosses a dam, the assumption is made that some passage exists
- Unit: #



Upstream Barrier Density

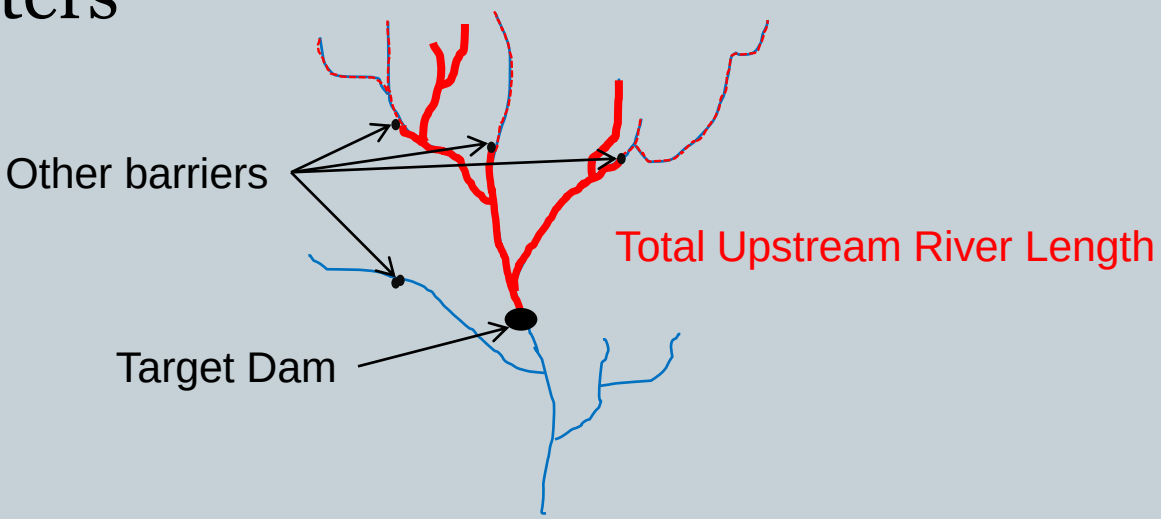
- Category: Connectivity Status
- Upstream Barrier Count divided by the total length of river upstream in meters
- Does not include barriers excluded from network generation
- Unit: # / meters

Downstream Barrier Density

- Category: Connectivity Status
- Downstream Barrier Count divided by the Distance to River Mouth in meters
- Does not include barriers excluded from network generation
- Unit: # / meters

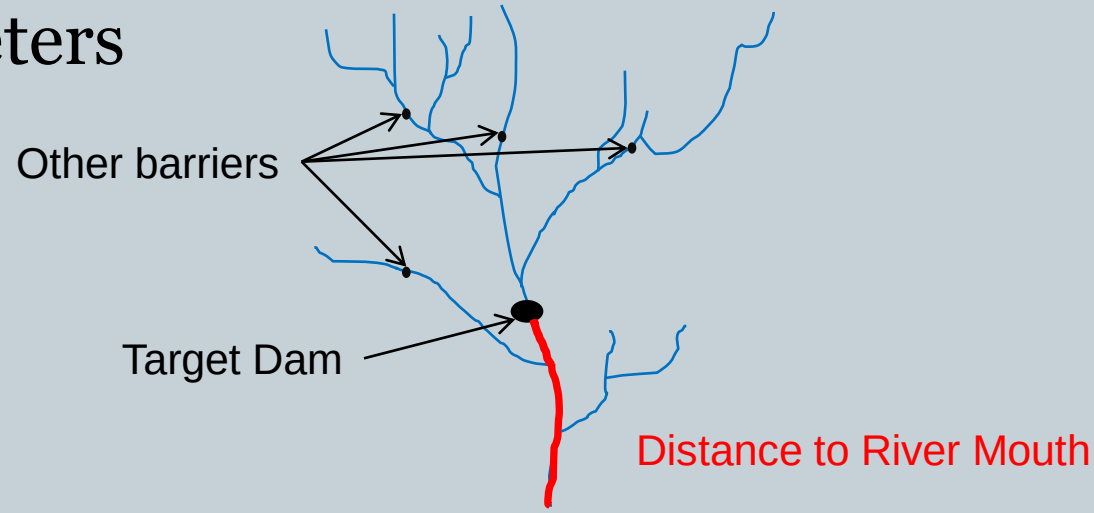
Total Upstream River Length

- Category: Connectivity Status
- Total length of river network upstream of a given barrier, regardless of any upstream barriers.
- Unit: meters



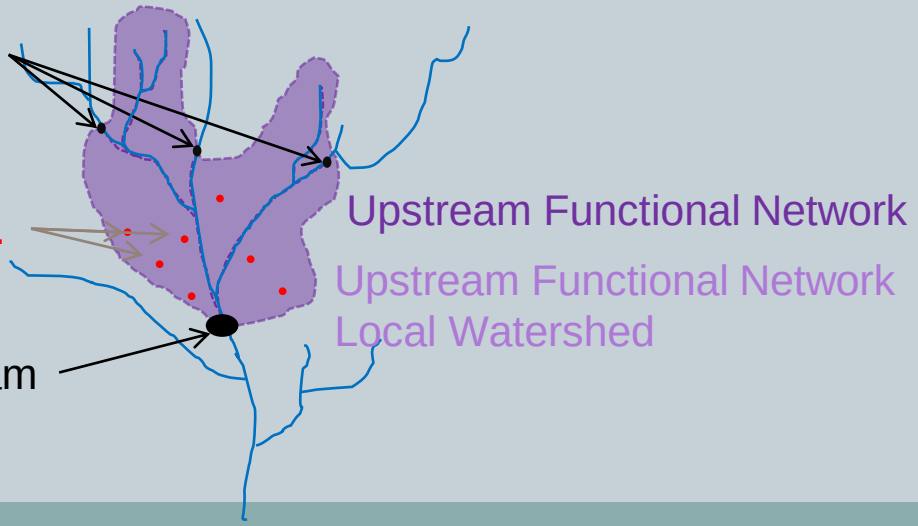
Distance to River Mouth

- Category: Connectivity Status
- Distance from each barrier to the network mouth in meters
- Unit: meters



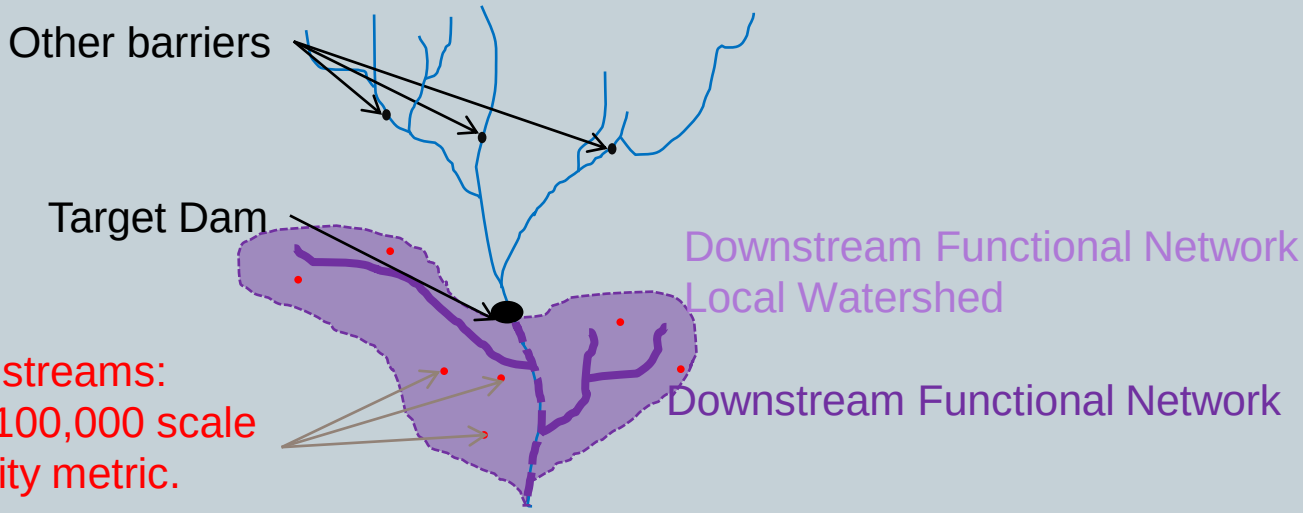
Density of Dams on Small Streams in Upstream Functional Network Local Watershed

- Category: Connectivity Status
- Number of dams on small streams (dams did not snap to analysis hydrography) within the local watershed of the upstream functional network divided by that watershed area
- Unit: # / m²



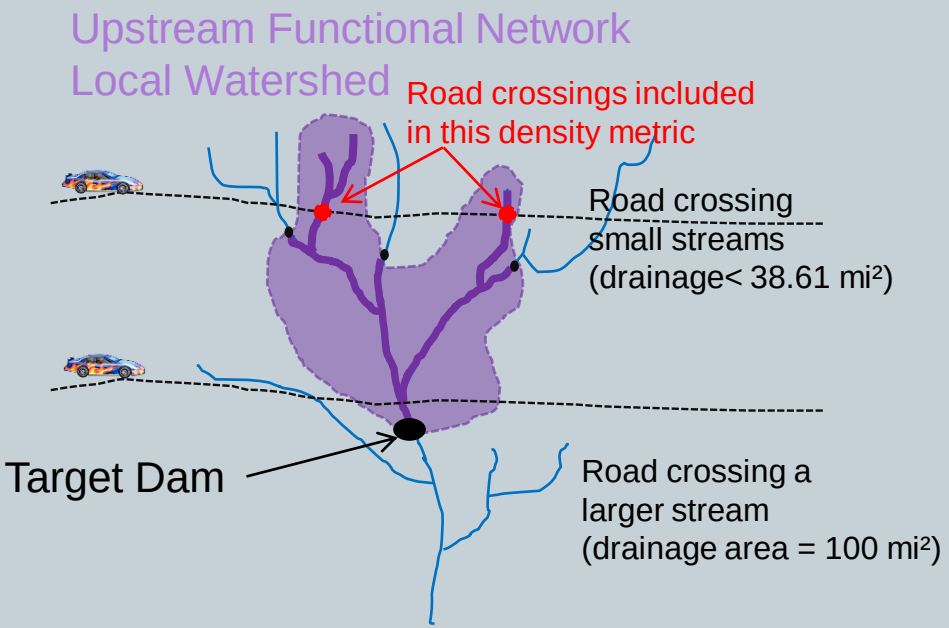
Density of Dams on Small Streams in Downstream Functional Network Local Watershed

- Category: Connectivity Status
- Number of dams on small streams (dams did not snap to analysis hydrography) within local watershed of the downstream functional network divided by that watershed area
- Unit: # / m²



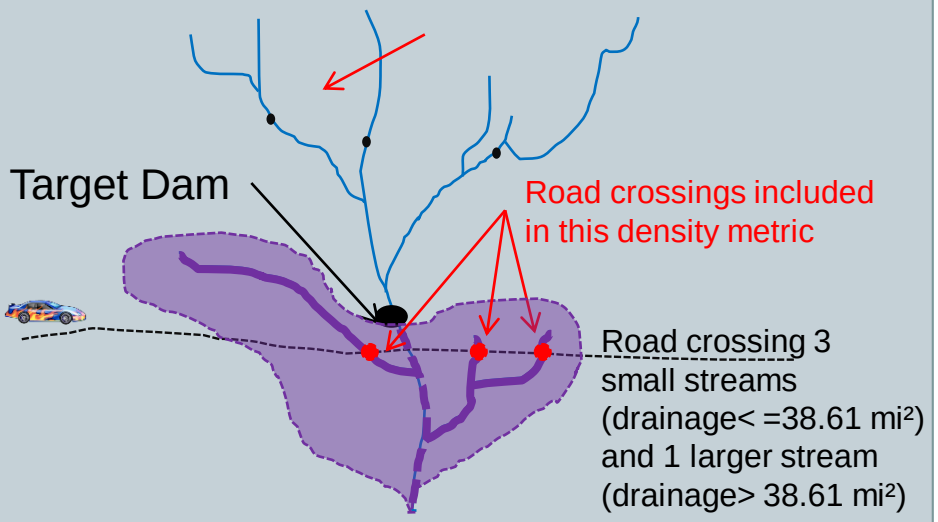
Density of Road & Railroad / Small Stream Crossings in Upstream Functional Network Local Watershed

- Category: Connectivity Status
- Number of Road/Railroad and hydrography intersections within upstream functional network local watershed divided by that watershed area. A proxy for culverts.
- Road and RR data from ESRI Streetmap USA
- Only small streams (drainage <= 38.61 mi²) are included. Larger streams more likely to have bridges.
- Unit: # / m²



Density of Road & Railroad / Small Stream Crossings in Downstream Functional Network Local Watershed

- Category: Connectivity Status
- Number of Road/Railroad and hydrography intersections within downstream functional network local watershed divided by that watershed area. A proxy for culverts.
- Road and RR data from ESRI Streetmap USA
- Only small streams (drainage <= 38.61 mi²) are included. Larger streams more likely to have bridges.
- Unit: # / m²



Number of Hydro Dams on Downstream Flowpath

- Category: Connectivity Status
- Count of hydropower dams on downstream flowpath of a barrier
- Unit: #

Number of Waterfalls on Downstream Flowpath

- Category: Connectivity Status
- Count of waterfalls on downstream flowpath of a barrier
- Unit: #

Connectivity Improvement Metrics

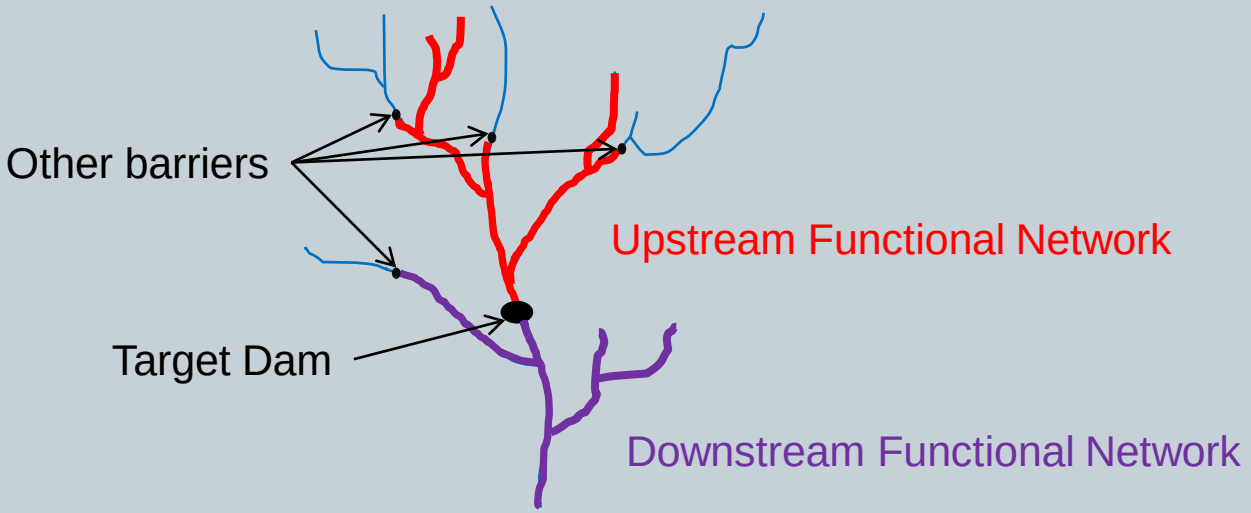
- Downstream Functional Network Size
- Upstream Functional Network Size
- The total length of upstream and downstream functional network
- Absolute Gain
- Relative Gain

Downstream Functional Network Length

- Category: Connectivity Improvement

- Length of the functional network downstream of a barrier. The functional network is defined by those sections of river that a fish could theoretically access from any other point within that functional network. Its terminal ends are barriers, headwaters, and/or the river mouth.

- Unit: meters

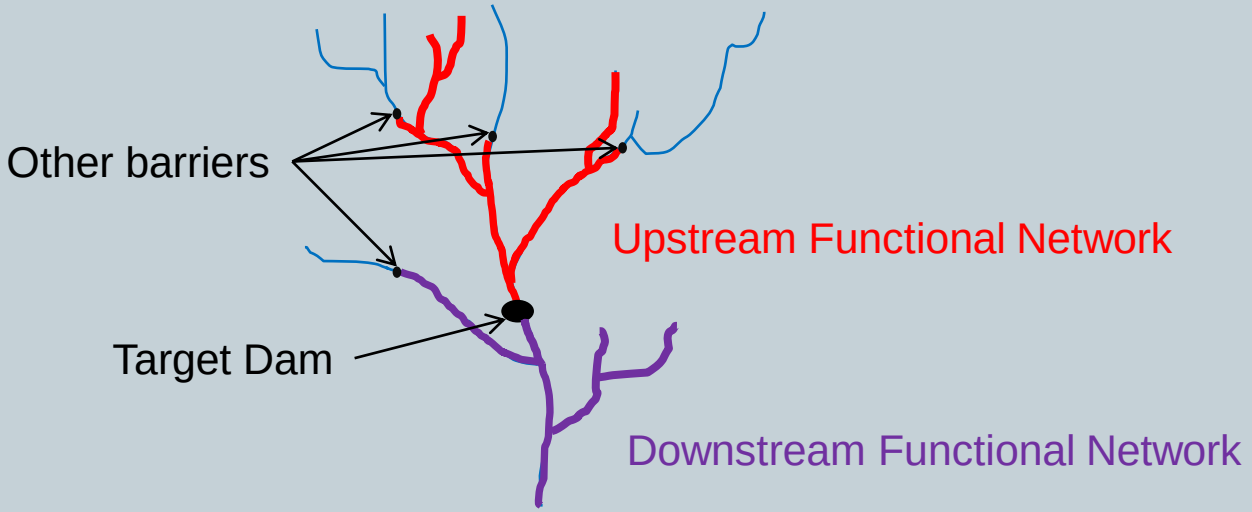


Upstream Functional Network Length

- Category: Connectivity Improvement

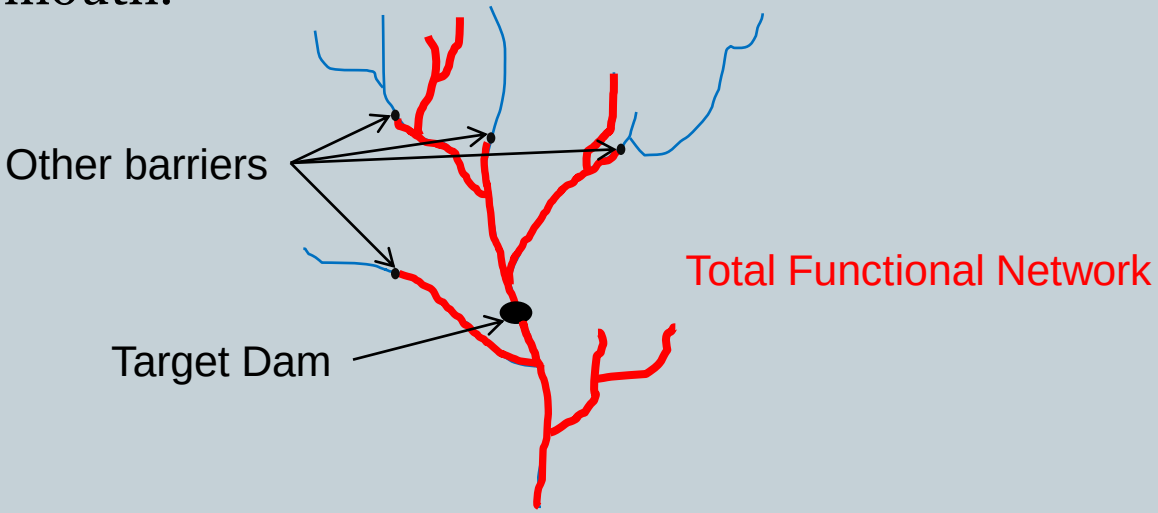
- Length of the functional network upstream of a barrier. The functional network is defined by those sections of river that a fish could theoretically access from any other point within that functional network. Its terminal ends are barriers, headwaters, and/or the river mouth.

- Unit: meters



The total length of upstream and downstream functional network

- Category: Connectivity Improvement
- Summed length of the upstream and downstream functional networks of a barrier. The functional network is defined by those sections of river that a fish could theoretically access from any other point within that functional network. Its terminal ends are barriers, headwaters, and/or the river mouth.
- Unit: meters



Absolute Gain

- Category: Connectivity Improvement
- This metric is the minimum of the two functional networks of a barrier. For example if the upstream functional network was 10 kilometers and downstream functional network was 5 kilometers, then the Absolute Gain will be 5 kilometers.
- Unit: meters

Relative Gain

- Category: Connectivity Improvement
- This metric is Absolute gain divided by the total length of upstream and downstream functional networks.
- Unit: meters

Watershed and Local Condition Metrics

- % Impervious Surface in Contributing Watershed
- % Natural LC in Contributing Watershed
- % Agricultural LC in Contributing Watershed
- % Impervious Surface in 100m Buffer of Upstream Functional Network
- % Impervious Surface in 100m Buffer of Downstream Functional Network
- % Natural LC in 100m Buffer of Upstream Functional Network
- % Natural LC in 100m Buffer of Downstream Functional Network
- % Agriculture in 100m Buffer of Upstream Functional Network
- % Agriculture in 100m Buffer of Downstream Functional Network
- % Impervious Surface in ARA of Upstream Functional Network
- % Impervious Surface in ARA of Downstream Functional Network
- % Natural LC in ARA of Upstream Functional Network
- % Natural LC in ARA of Downstream Functional Network
- % Agriculture in ARA of Upstream Functional Network
- % Agriculture in ARA of Downstream Functional Network
- Dam falls on Conserved Land
- % Conserved Land within 100m Buffer of Upstream Functional Network
- % Conserved Land within 100m Buffer of Downstream Functional Network

% Impervious Surface in Contributing Watershed

- Category: Watershed & Local Condition

- % Impervious surface in entire upstream (contributing) watershed. Calculated from National Fish Habitat Action Plan (NFHAP) Human Disturbance data linked to the stream segment (COMID) on which the dam falls.

- Unit: %

% Natural LC in Contributing Watershed

- Category: Watershed & Local Condition
- % natural landcover in entire upstream watershed. Calculated from NHDPlus Value-Added-Attribute (VAA), linked to the stream segment (COMID) on which the dam falls.
- NHDPlus data is derived from 2001 National Land Cover Database data
- Unit: %

% Agricultural LC in Contributing Watershed

- Category: Watershed & Local Condition
- % agricultural landcover in entire upstream watershed. Calculated from NHDPlus Value-Added-Attribute (VAA), linked to the stream segment (COMID) on which the dam falls.
- NHDPlus data is derived from 2001 National Land Cover Database data
- Unit: %

% Impervious Surface in 100m Buffer of Upstream Functional Network

- Category: Watershed & Local Condition
- % Impervious surface within 100m buffer of the upstream functional river network.
- National Landcover Database 2006 data
- Unit: %

% Impervious Surface in 100m Buffer of Downstream Functional Network

- Category: Watershed & Local Condition
- % Impervious surface within 100m buffer of the downstream functional river network.
- National Landcover Database 2006 data
- Unit: %

% Natural LC in 100m Buffer of Upstream Functional Network

- Category: Watershed & Local Condition
- % natural landcover within 100m buffer of the upstream functional river network.
- National Landcover Database 2006 data. Includes the following classes: open water, barren land, deciduous forest, evergreen forest, mixed forest, scrub/shrub, grassland/herbaceous, woody wetlands, emergent wetlands
- Unit: %

% Natural LC in 100m Buffer of Downstream Functional Network

- Category: Watershed & Local Condition
- % natural landcover within 100m buffer of the downstream functional river network.
- National Landcover Database 2006 data. Includes the following classes: open water, barren land, deciduous forest, evergreen forest, mixed forest, scrub/shrub, grassland/herbaceous, woody wetlands, emergent wetlands
- Unit: %

% Agriculture in 100m Buffer of Upstream Functional Network

- Category: Watershed & Local Condition
- % agricultural landcover within 100m buffer of the upstream functional river network.
- National Landcover Database 2006 data. Includes the following classes: pasture/hay, cultivated crops
- Unit: %

% Agriculture in 100m Buffer of Downstream Functional Network

- Category: Watershed & Local Condition
- % agricultural landcover within 100m buffer of the downstream functional river network.
- National Landcover Database 2006 data. Includes the following classes: pasture/hay, cultivated crops
- Unit: %

% Impervious Surface in ARA of Upstream Functional Network

- Category: Watershed & Local Condition
- % impervious landcover within Active River Area of the upstream functional river network.
- National Landcover Database 2006 data
- Unit: %

% Impervious Surface in ARA of Downstream Functional Network

- Category: Watershed & Local Condition
- % impervious landcover within Active River Area of the downstream functional river network.
- National Landcover Database 2006 data
- Unit: %

% Natural LC in ARA of Upstream Functional Network

- Category: Watershed & Local Condition
- % natural landcover within Active River Area of the upstream functional river network.
- National Landcover Database 2006 data. Includes the following classes: open water, barren land, deciduous forest, evergreen forest, mixed forest, scrub/shrub, grassland/herbaceous, woody wetlands, emergent wetlands
- Unit: %

% Natural LC in ARA of Downstream Functional Network

- Category: Watershed & Local Condition
- % natural landcover within Active River Area of the downstream functional river network.
- National Landcover Database 2006 data. Includes the following classes: open water, barren land, deciduous forest, evergreen forest, mixed forest, scrub/shrub, grassland/herbaceous, woody wetlands, emergent wetlands
- Unit: %

% Agriculture in ARA of Upstream Functional Network

- Category: Watershed & Local Condition
- % agricultural landcover within Active River Area of the upstream functional river network.
- National Landcover Database 2006 data. Includes the following classes: pasture/hay, cultivated crops
- Unit: %

% Agriculture in ARA of Downstream Functional Network

- Category: Watershed & Local Condition
- % agricultural landcover within Active River Area of the downstream functional river network.
- National Landcover Database 2006 data. Includes the following classes: pasture/hay, cultivated crops
- Unit: %

Dam falls on Conserved Land

- Category: Watershed & Local Condition
- Dam intersects 2008 secured area database (TNC)
- Unit: Boolean (true/false)

% Conserved Land within 100m Buffer of Upstream Functional Network

- Category: Watershed & Local Condition
- % of land within 100m buffer of upstream functional network that intersects 2008 secured areas database (TNC)
- Unit: %

% Conserved Land within 100m Buffer of Downstream Functional Network

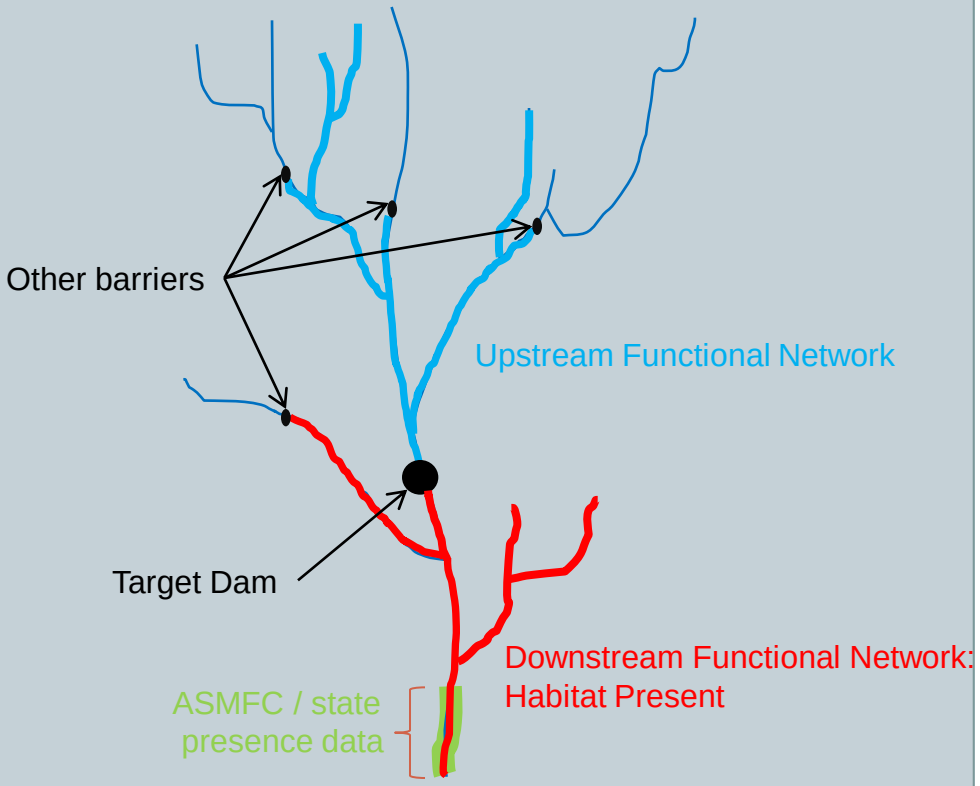
- Category: Watershed & Local Condition
- % of land within 100m buffer of downstream functional network that intersects 2008 secured areas database (TNC)
- Unit: %

Ecological Metrics

- American Shad habitat in Downstream Functional Network
- Blueback habitat in Downstream Functional Network
- Hickory Shad habitat in Downstream Functional Network
- Alewife habitat in Downstream Functional Network
- Atlantic Sturgeon habitat in Downstream Functional Network
- Striped Bass habitat in Downstream Functional Network
- Atlantic Salmon habitat in Downstream Functional Network
- Anadromous Species Habitat Presence: Current and Historical
- Anadromous Species Habitat Presence: Current Only
- Count of Anadromous Species
- Rare Fish in HUC8
- Rare Mussels in HUC8
- Rare Crayfish in HUC8
- Current Presence of Eastern Brook Trout Joint Venture Modeled dataset with upstream network
- Current Native fish species richness - HUC 8 (Max #)

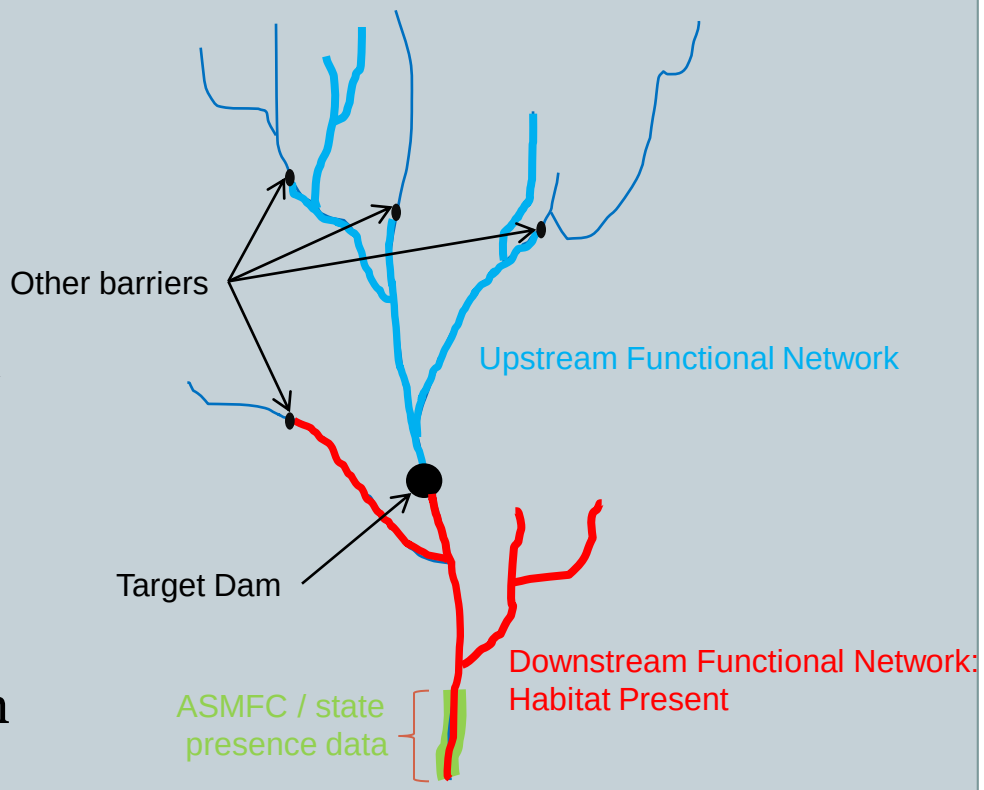
American Shad habitat in Downstream Functional Network

- Category: Ecological
- Presence of American Shad in some portion of downstream functional network
- Based on 2006 Atlantic States Marine Fisheries Commission (ASMFC) data, edited by state biologists for Northeast Aquatic Connectivity project
- Both current and historical (restoration potential)
- Unit: presence/absence for both current and historical



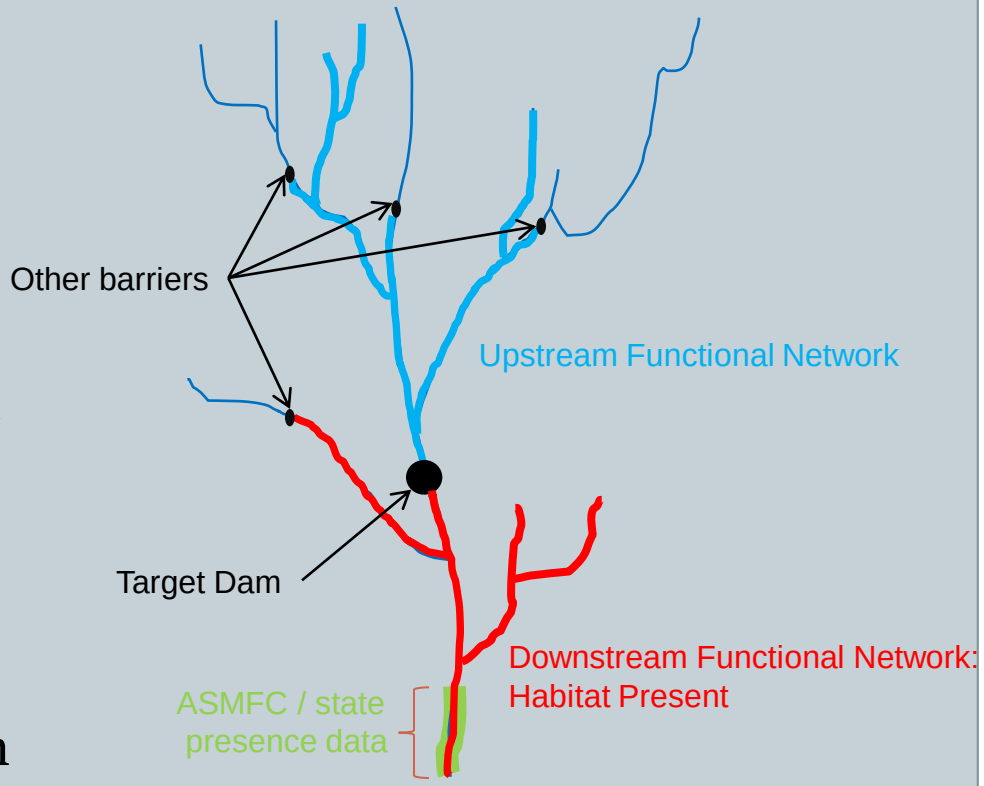
Blueback Herring habitat in Downstream Functional Network

- Category: Ecological
- Presence of Blueback Herring in some portion of downstream functional network
- Based on 2006 Atlantic States Marine Fisheries Commission (ASMFC) data, edited by state biologists for Northeast Aquatic Connectivity project
- Both current and historical (restoration potential)
- Unit: presence/absence for both current and historical



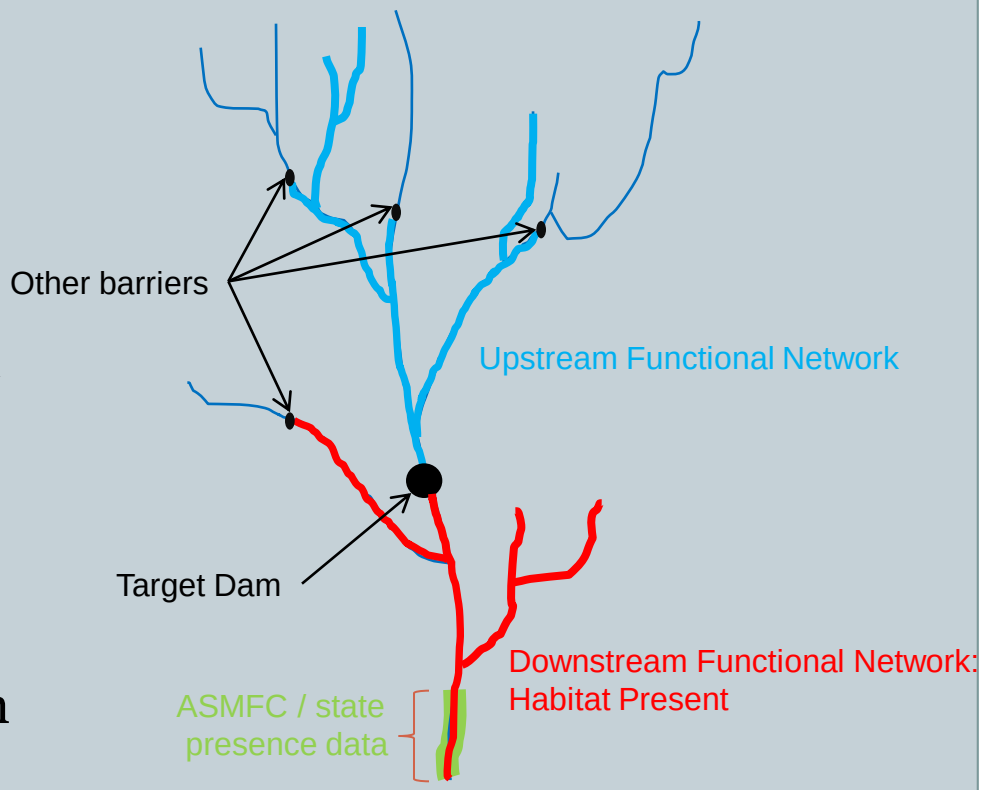
Hickory Shad habitat in Downstream Functional Network

- Category: Ecological
- Presence of hickory Shad in some portion of downstream functional network
- Based on 2006 Atlantic States Marine Fisheries Commission (ASMFC) data, edited by state biologists for Northeast Aquatic Connectivity project
- Both current and historical (restoration potential)
- Unit: presence/absence for both current and historical



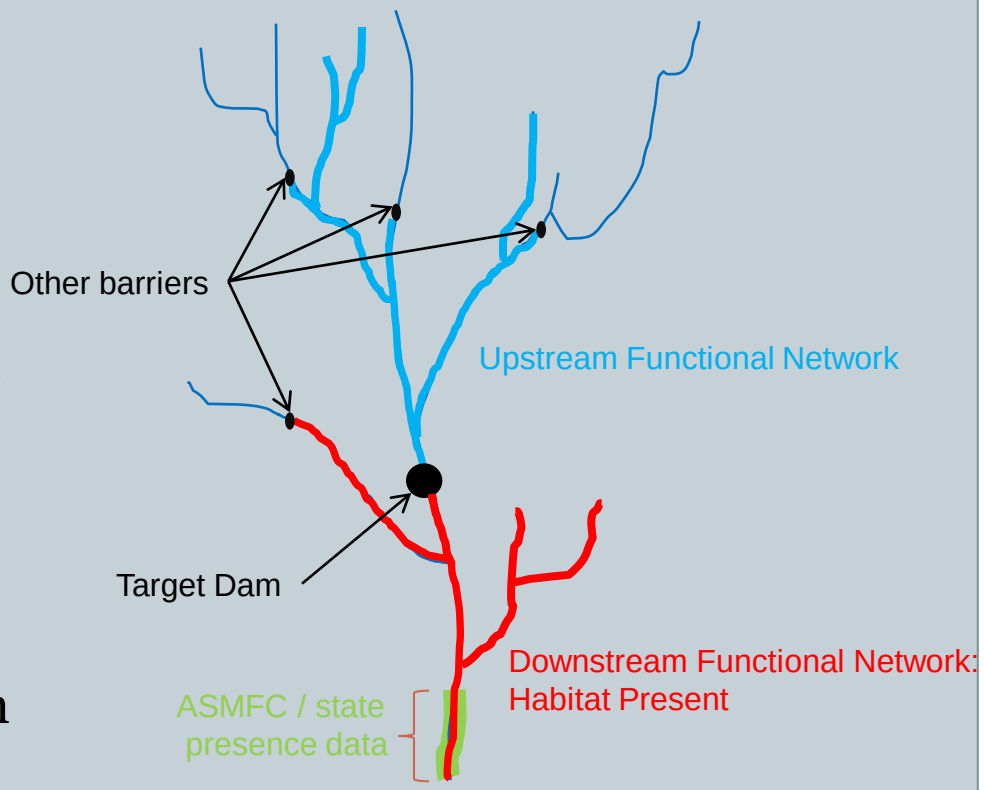
Alewife habitat in Downstream Functional Network

- Category: Ecological
- Presence of Alewife in some portion of downstream functional network
- Based on 2006 Atlantic States Marine Fisheries Commission (ASMFC) data, edited by state biologists for Northeast Aquatic Connectivity project
- Both current and historical (restoration potential)
- Unit: presence/absence for both current and historical



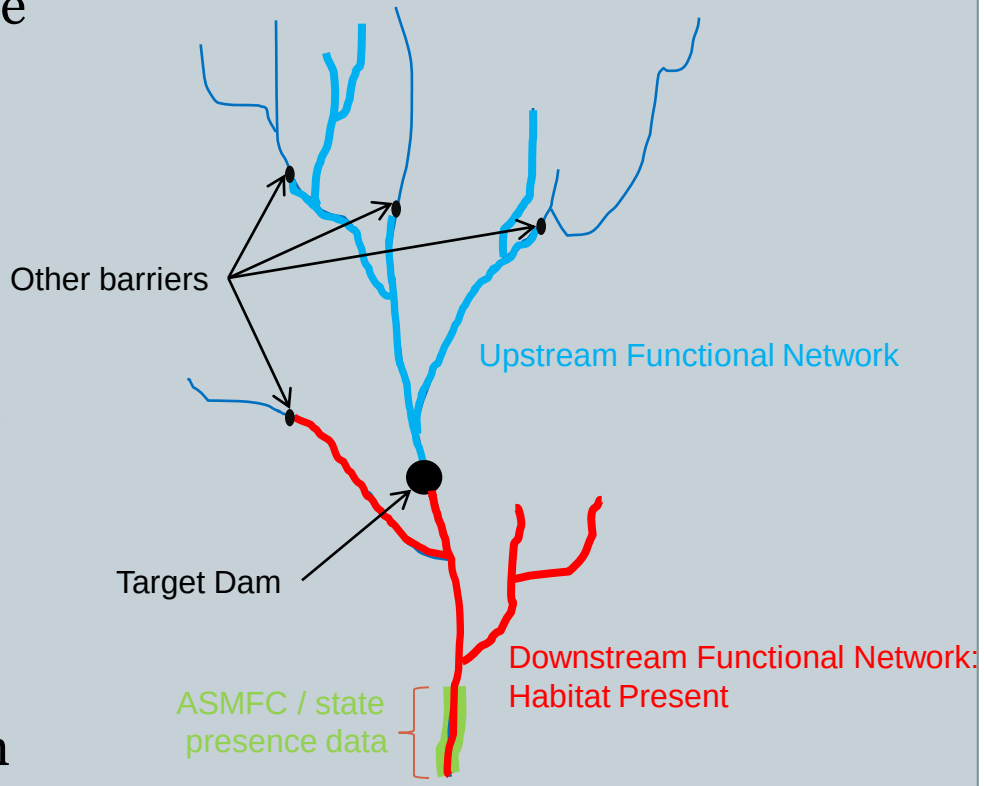
Atlantic Sturgeon habitat in Downstream Functional Network

- Category: Ecological
- Presence of Atlantic Sturgeon in some portion of downstream functional network
- Based on 2006 Atlantic States Marine Fisheries Commission (ASMFC) data, edited by state biologists for Northeast Aquatic Connectivity project
- Both current and historical (restoration potential)
- Unit: presence/absence for both current and historical



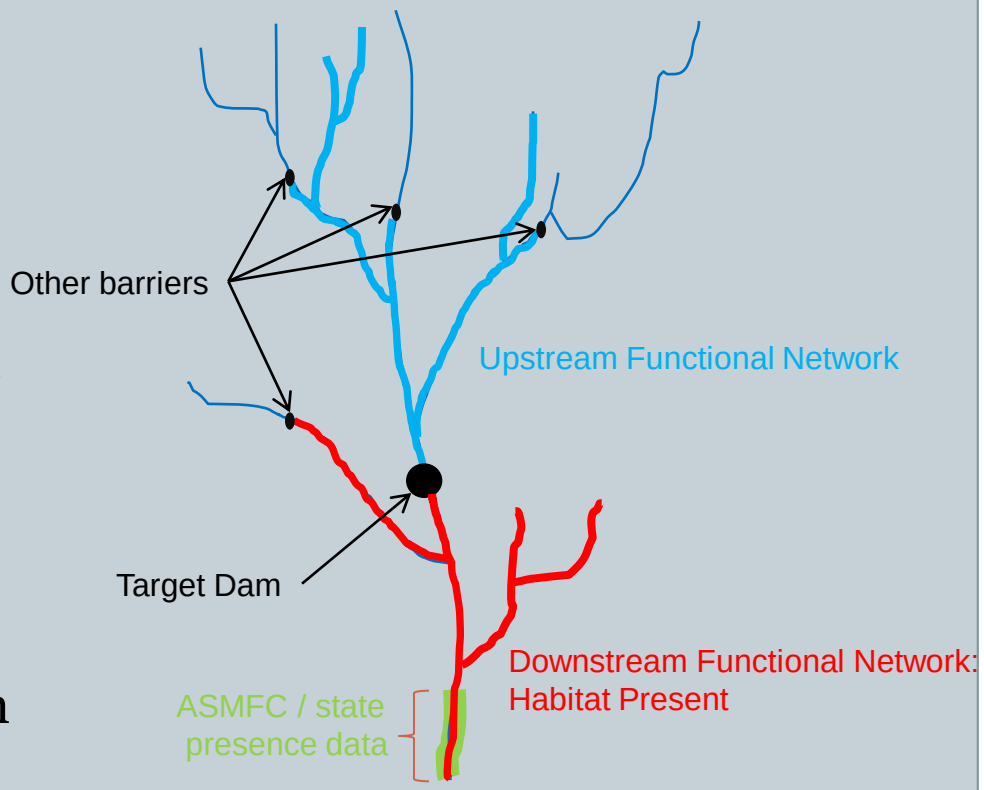
Striped Bass habitat in Downstream Functional Network

- Category: Ecological
- Presence of Striped Bass in some portion of downstream functional network
- Based on 2006 Atlantic States Marine Fisheries Commission (ASMFC) data, edited by state biologists for Northeast Aquatic Connectivity project
- Both current and historical (restoration potential)
- Unit: presence/absence for both current and historical



Atlantic Salmon habitat in Downstream Functional Network

- Category: Ecological
- Presence of Atlantic Salmon in some portion of downstream functional network
- Based on 2006 Atlantic States Marine Fisheries Commission (ASMFC) data, edited by state biologists for Northeast Aquatic Connectivity project
- Both current and historical (restoration potential)
- Unit: presence/absence for both current and historical



Anadromous Species Habitat Present: Current and Historical

- Category: Ecological
- Presence of habitat for 1 or more of the 7 anadromous species included in this analysis based on the data and methods described for each species:
  - alewife, blueback herring, American shad, hickory shad, striped bass, Atlantic salmon, Atlantic sturgeon
- Current habitat for any one or more species equates to a value of 1 for this metric
- Historical habitat for any one or more species equates to a value of 2 for this metric
- If current and historical habitat are documented in the downstream functional network for different species, the current habitat trumps the historical habitat and the dam will have a value of 1 for this metric
- Unit: presence / absence

Anadromous Species Habitat Present: Current Only

- Category: Ecological
- Presence of habitat for 1 or more of the 7 anadromous species included in this analysis based on the data and methods described for each species:
  - alewife, blueback herring, American shad, hickory shad, striped bass, Atlantic salmon, Atlantic sturgeon
- Historical habitat is not considered for this metric, only current habitat is considered
- Unit: presence / absence

Count of Anadromous Species

- Category: Ecological
- The number of anadromous species with documented habitat in the downstream functional network of each dam based on the data described for each species:
  - alewife, blueback herring, American shad, hickory shad, striped bass, Atlantic salmon, Atlantic sturgeon
- Only current habitat is considered for this metric
- Unit: #

Rare Fish in HUC8

- Category: Ecological
- Count of rare (G1-G3) fish species in the watershed within which the dam is located
- Based on NatureServe watershed (8-digit HUC) data
- Unit: #

Rare Mussels in HUC8

- Category: Ecological
- Count of rare (G1-G3) mussel species in the watershed within which the dam is located
- Based on NatureServe watershed (8-digit HUC) data
- Unit: #

Rare Crayfish in HUC8

- Category: Ecological
- Count of rare (G1-G3) crayfish species in the watershed within which the dam is located
- Based on NatureServe watershed (8-digit HUC) data
- Unit: #

Dam in Eastern Brook Trout Joint Venture "Healthy" Watershed

- Category: Ecological
- Dam is located within a watershed with "healthy" brook trout populations
- Data based on Eastern Brook Trout Joint Venture (EBTJV)watershed data.
- Survey data used where available, modeled data used where survey not available.
- Healthy is defined by the follow EBTJV categories:
  - Survey Data: Present: Intact, Present: Qualitative, Present: Reduced
  - Modeled Data (model run M3): Predicted: Intact, Predicted: Reduced

Native Fish Species Richness - HUC 8

- Category: Ecological
- Current native fish species richness in the watershed within which the dam is located
- Based on NatureServe watershed (8-digit HUC) data
- Unit: #

Size or System Type Metrics

- River Size Class
- # Upstream size classes gained by removal/bypass
- Gain in Stream Size Relative to Total Length of Reconnected Network
- Miles of Cold Water Habitat
- Upstream network # of stream sizes
- Upstream Network Miles in Headwaters
- Upstream Network Miles in Creeks
- Upstream Network Miles in Small Rivers
- Upstream Network Miles in Medium Tributary Rivers
- Upstream Network Miles in Medium Mainstem Rivers
- Upstream Network Miles in Large Rivers
- Upstream Network Miles in Great Rivers
- Total # Reconnected stream sizes
- Total Reconnected Network Miles in Headwaters
- Total Reconnected Network Miles in Creeks
- Total Reconnected Network Miles in Small Rivers
- Total Reconnected Network Miles in Medium Tributary Rivers
- Total Reconnected Network Miles in Medium Mainstem Rivers
- Total Reconnected Network Miles in Large Rivers
- Total Reconnected Network Miles in Great Rivers

River Size Class

- Category: Size or System Type
- River size class based on NE Aquatic Habitat Classification.

1a: Headwaters (<3.861 sq.mi.)

1b: Creeks (>= 3.861<38.61 sq.mi.)

2: Small River (>=38.61<200 sq. mi.)

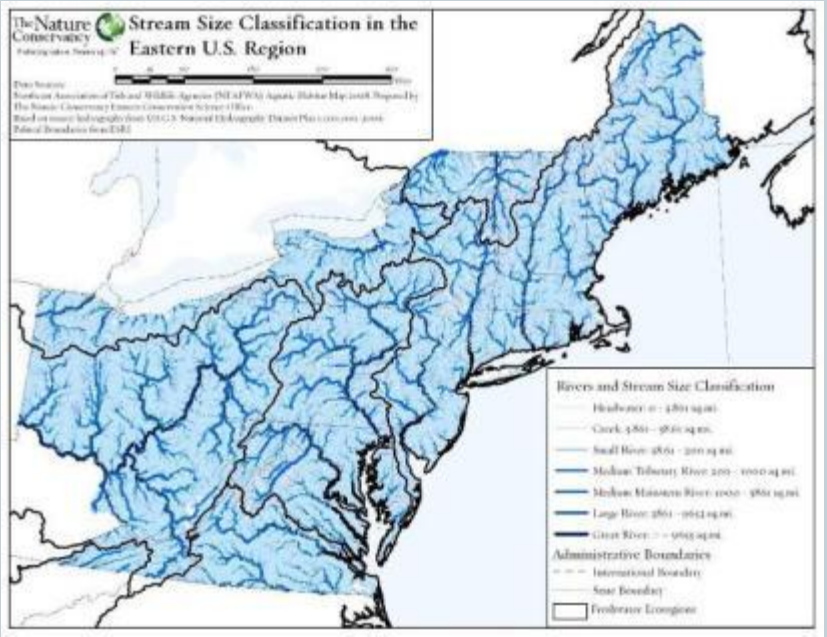
3a: Medium Tributary Rivers (>=200<1000 sq.mi.)

3b: Medium Mainstem Rivers (>=1000<3861 sq.

4: Large Rivers (>=3861 < 9653 sq.mi.)

5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)



New Upstream Size Classes Gained by Removal / Bypass

- Category: Size or System Type
- Number of upstream stream size classes gained if dam were to be removed. Stream segments must be >0.5 miles to be considered a gain and the size class must not be present in the downstream functional network.
- e.g. If a downstream functional network had small rivers (size 2) and medium tributary rivers (size 3a), while an upstream functional network had these as well as 2 miles of creek (size 1b), the gain would be 1.
- Unit: #

Gain in Stream Size Relative to Total Length of Reconnected Network

- Category: Size or System Type

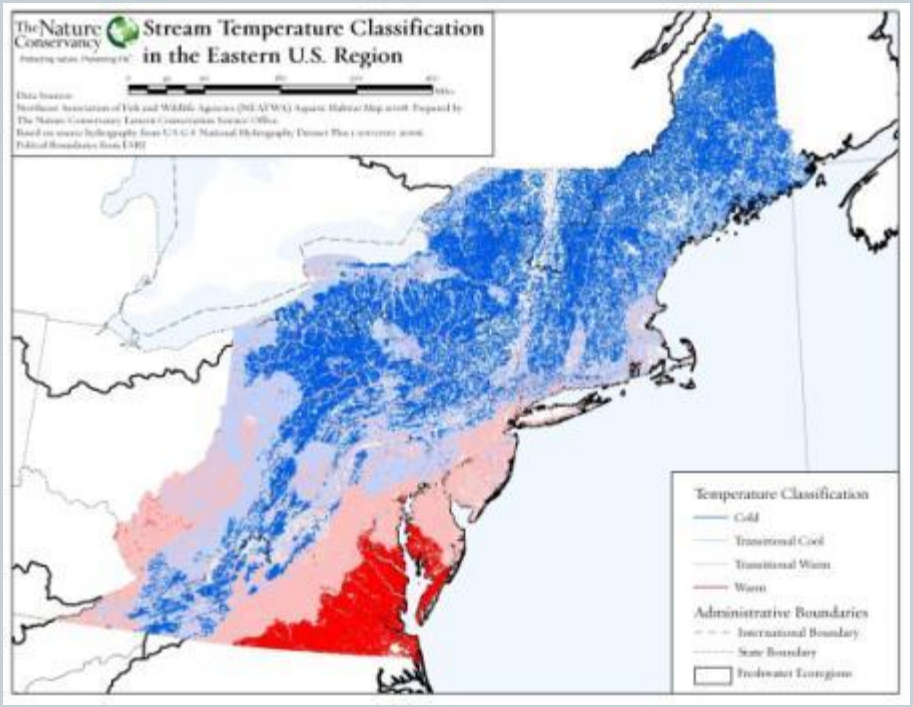
- Gain in stream size classes relative to total length of reconnected network: miles new size classes / total miles

- e.g. A downstream functional network had 2 miles of small rivers (size 2) and 2 miles medium tributary rivers (size 3a), while its upstream functional network had 1 mile of large river and 1 mile of medium tributary river, as well as 3 miles of creek (size 1b), the relative gain would be:

  3/(2+2+1+1+3)= 0.33

Miles of Cold Water Habitat

- Category: Size or System Type
- Miles of stream in the total functional river network classified as cold water habitat under natural conditions
- Based on Northeast Aquatic Habitat Classification data



Upstream network # of stream sizes >0.5 Miles

- Category: Size or System Type
- Number of unique stream size classes that are >0.5 miles in upstream functional network.
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Upstream Network Miles in Headwaters

- Category: Size or System Type
- Number of miles of headwater (size 1a) in a dam's upstream functional network
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Upstream Network Miles in Creeks

- Category: Size
- Number of miles of creeks (size 1b) in a dam's upstream functional network
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Upstream Network Miles in Small Rivers

- Category: Size or System Type
- Number of miles of small rivers (size 2) in a dam's upstream functional network
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Upstream Network Miles in Medium Tributary Rivers

- Category: Size or System Type
- Number of miles of medium tributary rivers (size 3a) in a dam's upstream functional network
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Upstream Network Miles in Medium Mainstem Rivers

- Category: Size or System Type
- Number of miles of medium mainstem rivers (size 3b) in a dam's upstream functional network
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Upstream Network Miles in Large Rivers

- Category: Size or System Type
- Number of miles of large rivers (size 4) in a dam's upstream functional network
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Upstream Network Miles in Great Rivers

- Category: Size or System Type
- Number of miles of great rivers (size 5) in a dam's upstream functional network
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Total # Reconnected Stream Size Classes >0.5 Miles(upstream + downstream)

- Category: Size or System Type
- Number of unique stream size classes >0.5 miles in total upstream and downstream functional networks
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Total Reconnected Network Miles in Headwaters

- Category: Size or System Type
- Miles of headwaters (size 1a) in total upstream and downstream functional networks
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Total Reconnected Network Miles in Creeks

- Category: Size or System Type
- Miles of creeks (size 1b) in total upstream and downstream functional networks
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Total Reconnected Network Miles in Small Rivers

- Category: Size or System Type
- Miles of small rivers (size 2) in total upstream and downstream functional networks
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Total Reconnected Network Miles in Medium Tributary Rivers

- Category: Size or System Type
- Miles of medium tributary rivers (size 3a) in total upstream and downstream functional networks
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Total Reconnected Network Miles in Medium Mainstem Rivers

- Category: Size or System Type
- Miles of medium mainstem river (size 3b) in total upstream and downstream functional networks
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Total Reconnected Network Miles in Large Rivers

- Category: Size or System Type
- Miles of large rivers (size 4) in total upstream and downstream functional networks
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Total Reconnected Network Miles in Great Rivers

- Category: Size or System Type
- Miles of great rivers (size 5) in total upstream and downstream functional networks
- Where stream size defined as:
  - 1a: Headwaters (<3.861 sq.mi.)
  - 1b: Creeks (>= 3.861<38.61 sq.mi.)
  - 2: Small River (>=38.61<200 sq. mi.)
  - 3a: Medium Tributary Rivers (>=200<1000 sq.mi.)
  - 3b: Medium Mainstem Rivers (>=1000<3861 sq.mi.)
  - 4: Large Rivers (>=3861 < 9653 sq.mi.)
  - 5: Great Rivers (>=9653 sq.mi.)

(measure = upstream drainage area)

Additional Identifying Information

- Alternate Dam Name
- NID ID
- NAC Unique ID
- State Dam ID
- Database Sort
- Latitude
- Longitude

Alternate Dam Name

- Alternative dam name, as listed in the dam database

NID ID

- US Army Corp's of Engineers National Inventory of Dams ID number

NAC Unique ID

- Unique identifier assigned by the Northeast Aquatic Connectivity project
- In most cases, these are derived from the source data identifier (e.g. state ID, NID ID)

State Dam ID

- Dam ID number from the state dam data, or other source data

Database Sort

- Unique ID corresponding to the sequential order of dam in the database

Latitude

- Latitude of the dam, North American Datum of 1983

Longitude

- Longitude of the dam, North American Datum of 1983

HUC12

- The 12-digit Hydrologic Unit Code for the watershed in which the dam is located.

Use In Results

- This is an internal flag to indicate whether the dam is included in a custom analysis.
  - A value = 1 indicates that the dam meets the filter criteria established by the user on the NCAT “Variables” tab.
  - A value = 0 indicates the dam does not meet the filter criteria established by the user on the NCAT “Variables” tab.
- This field is only included in the Northeast Aquatic Connectivity Tool (NCAT) itself, not in the spreadsheet of default anadromous and resident fish scenario results.