Habitat GIT: Culvert Assessments for Fish Passage in the Opequon Watershed of West Virginia

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Supports the following outcomes:

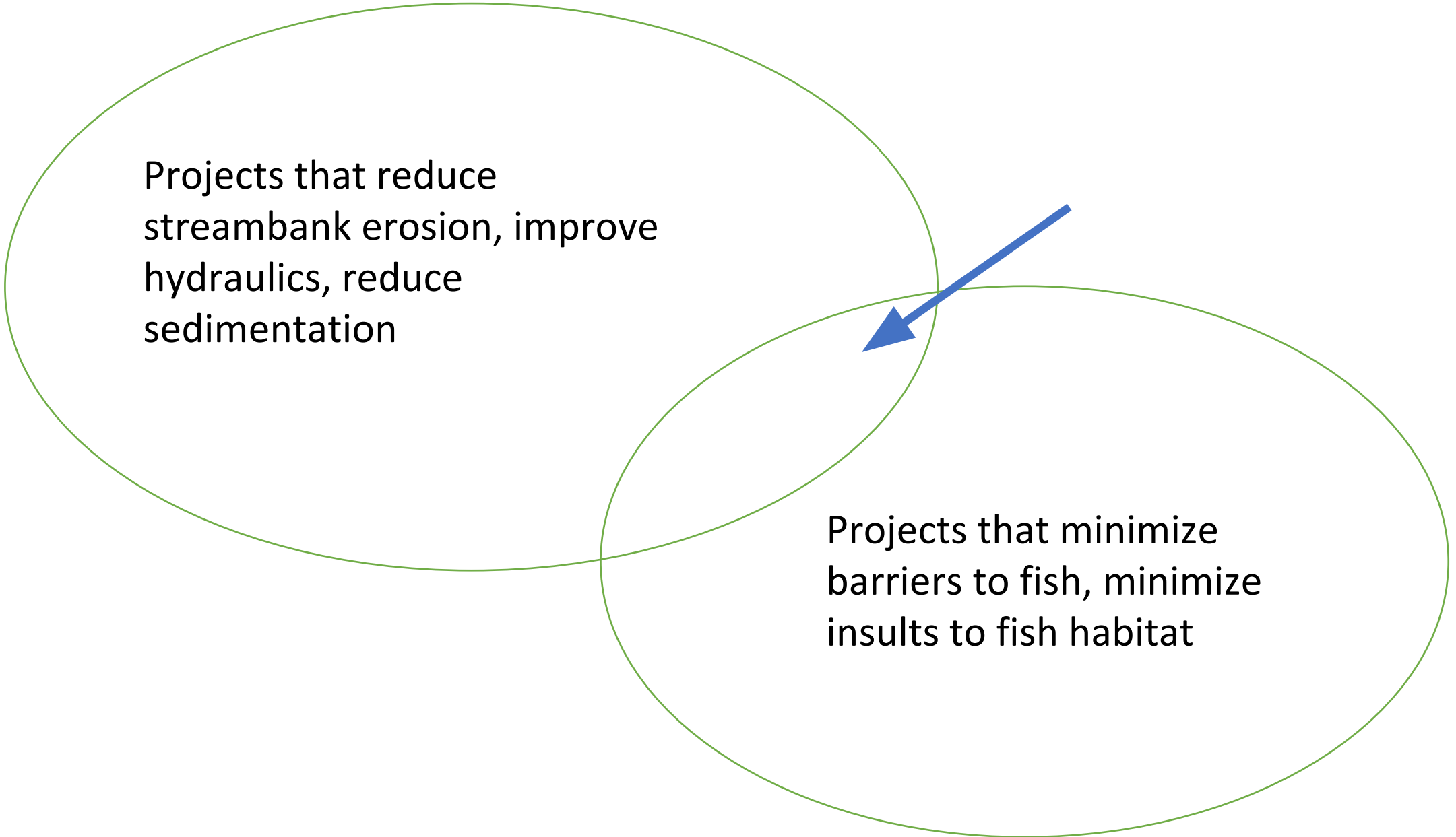
- **Fish Passage Outcome** - Create a pipeline of high priority fish passage projects allowing the FPWG to increase the number of reconnected high-quality river segments for brook trout in the Opequon Watershed of WV.
- **Brook Trout Outcome:** Culvert assessments for brook trout in a priority watershed will be completed and used to prioritize restoration efforts on the ground
- **Stream Health Outcome**
- **Climate Resiliency Goals**
- **Water Quality Goals**

Consists of:

- $50,000
- 4 individuals will be hired for 12 weeks to conduct culvert assessment in one priority watershed in WV using the protocol developed by the North Atlantic Aquatic Connectivity Collaborative (NAACC). Assessment will be conducted in the Opequon Watershed of WV.

In more detail:

- Develop a Quality Assurance plan for the data
- Training individuals in the NAACC method
- Culvert assessments for two watersheds
- Culvert assessments entered into regional database
- Identification of future fish passage projects with recommendations for Best Management Practices
- Prepare a lessons-learned document to help other stakeholders, e.g. state highway agencies


Projects that reduce streambank erosion, improve hydraulics, reduce sedimentation
Projects that minimize barriers to fish, minimize insults to fish habitat

AQUATIC CONNECTIVITY

Stream Crossing Survey

DATA FORM

DATABASE ENTRY BY _____ ENTRY DATE _____

DATA ENTRY REVIEWED BY _____ REVIEW DATE _____

CROSSING DATA

Crossing Code _____ **Local ID** (Optional) _____

Date Observed (00/00/0000) _____ **Lead Observer** _____

Town/County _____ **Stream** _____

Road _____ **Type** ☐ MULTILANE ☐ PAVED ☐ UNPAVED ☐ DRIVEWAY ☐ TRAIL ☐ RAILROAD

GPS Coordinates (Decimal degrees) ☐☐.☐☐☐☐☐ °N Latitude — ☐☐.☐☐☐☐☐ °W Longitude

Location Description

Crossing Type ☐ BRIDGE ☐ CULVERT ☐ MULTIPLE CULVERT ☐ FORD ☐ NO CROSSING ☐ REMOVED CROSSING ☐ BURIED STREAM ☐ INACCESSIBLE ☐ PARTIALLY INACCESSIBLE ☐ NO UPSTREAM CHANNEL ☐ BRIDGE ADEQUATE

Number of Culverts/ Bridge Cells _____

Photo IDs INLET _____ OUTLET _____ UPSTREAM _____ DOWNSTREAM _____ OTHER _____

Flow Condition ☐ NO FLOW ☐ TYPICAL-LOW ☐ MODERATE ☐ HIGH

Crossing Condition ☐ OK ☐ POOR ☐ NEW ☐ UNKNOWN

Tidal Site ☐ YES ☐ NO ☐ UNKNOWN

Alignment ☐ FLOW-ALIGNED ☐ SKEWED (>45°)

Road Fill Height (Top of culvert to road surface; bridge = 0) _____

Bankfull Width (Optional) _____ **Confidence** ☐ HIGH ☐ LOW/ESTIMATED

Constriction ☐ SEVERE ☐ MODERATE ☐ SPANS ONLY BANKFULL/ ACTIVE CHANNEL ☐ SPANS FULL CHANNEL & BANKS

Tailwater Scour Pool ☐ NONE ☐ SMALL ☐ LARGE

Crossing Comments

STRUCTURE 1

Structure Material ☐ METAL ☐ CONCRETE ☐ PLASTIC ☐ WOOD ☐ ROCK/STONE ☐ FIBERGLASS ☐ COMBINATION

OUTLET

Outlet Shape ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ FORD ☐ UNKNOWN ☐ REMOVED

Outlet Armoring ☐ NONE ☐ NOT EXTENSIVE ☐ EXTENSIVE

Outlet Grade (Pick one) ☐ AT STREAM GRADE ☐ FREE FALL ☐ CASCADE ☐ FREE FALL ONTO CASCADE ☐ CLOGGED/COLLAPSED/SUBMERGED ☐ UNKNOWN

Outlet Dimensions A. Width _____.__ B. Height _____.__ C. Substrate/Water Width _____.__ D. Water Depth _____.__

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Outlet Dimensions **A. Width**_____ **B. Height**_____ **C. Substrate/Water Width**_____ **D. Water Depth**_____

Outlet Drop to Water Surface_____ **Outlet Drop to Stream Bottom**_____ **E. Abutment Height** (Type 7 bridges only)_____

L. Structure Length (Overall length from inlet to outlet)_____

INLET

Inlet Shape ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ FORD ☐ UNKNOWN ☐ REMOVED

Inlet Type ☐ PROJECTING ☐ HEADWALL ☐ WINGWALLS ☐ HEADWALL & WINGWALLS ☐ MITERED TO SLOPE ☐ OTHER ☐ NONE

Inlet Grade (Pick one) ☐ AT STREAM GRADE ☐ INLET DROP ☐ PERCHED ☐ CLOGGED/COLLAPSED/SUBMERGED ☐ UNKNOWN

Inlet Dimensions **A. Width**_____ **B. Height**_____ **C. Substrate/Water Width**_____ **D. Water Depth**_____

ADDITIONAL CONDITIONS

Slope % (Optional)_____ **Slope Confidence** ☐ HIGH ☐ LOW | **Internal Structures** ☐ NONE ☐ BAFFLES/WEIRS ☐ SUPPORTS ☐ OTHER_____

Structure Substrate Matches Stream ☐ NONE ☐ COMPARABLE ☐ CONTRASTING ☐ NOT APPROPRIATE ☐ UNKNOWN

Structure Substrate Type (Pick one) ☐ NONE ☐ SILT ☐ SAND ☐ GRAVEL ☐ COBBLE ☐ BOULDER ☐ BEDROCK ☐ UNKNOWN

Structure Substrate Coverage ☐ NONE ☐ 25% ☐ 50% ☐ 75% ☐ 100% ☐ UNKNOWN

Physical Barriers (Pick all that apply) ☐ NONE ☐ DEBRIS/SEDIMENT/ROCK ☐ DEFORMATION ☐ FREE FALL ☐ FENCING ☐ DRY ☐ OTHER

Severity (Choose carefully based on barrier type(s) above) ☐ NONE ☐ MINOR ☐ MODERATE ☐ SEVERE

Water Depth Matches Stream ☐ YES ☐ NO-SHALLOWER ☐ NO-DEEPER ☐ UNKNOWN ☐ DRY

Water Velocity Matches Stream ☐ YES ☐ NO-FASTER ☐ NO-SLOWER ☐ UNKNOWN ☐ DRY

https://www.streamcontinuity.org/cdb2/naacc_search_map.cfm - Google Chrome

https://www.streamcontinuity.org/cdb2/naacc_search_map.cfm

Welcome to our search results mapping page. Please be patient when mapping large data sets.

(Note that 9 of 9 surveyed records in your search results have been mapped. Only surveyed records having valid xy crossing codes or GPS information can be mapped. Only one record of records with duplicate crossing codes will be mapped.)

Map information Click to show/hide map information

Map | Satellite

NAACC (after 6/1/2015) - Google Chrome

https://www.streamcontinuity.org/cdb2/naacc_display_crossing.cfm?naaccCrossId=416...

North Atlantic Aquatic Connectivity Collaborative

NAACC

Menu

Data Set: NAACC (after 6/1/2015)

Survey Id: 41629 Crossing Code: xy3879628078861800 (approved)

AOP Coarse Screen: Reduced AOP

NAACC Aquatic Passability Score: 0.98

Data checked and accurate by Callie McMunigal on 12-16-2016

xy387962807886 1800(downstream)10-27-2016.jpg

xy3879628078861800(inlet)10-27-2016.jpg

xy3879628078861800(other1)10-27-2016.jpg

xy3879628078861800(other2)10-27-

xy3879628078861800(outlet)10-27-

Jerome

Bryce Resort

Basye

Orkney Springs

WEST VIRGINIA

VIRGINIA

https://www.streamcontinuity.org/cdb2/naacc_search_crossing.cfm

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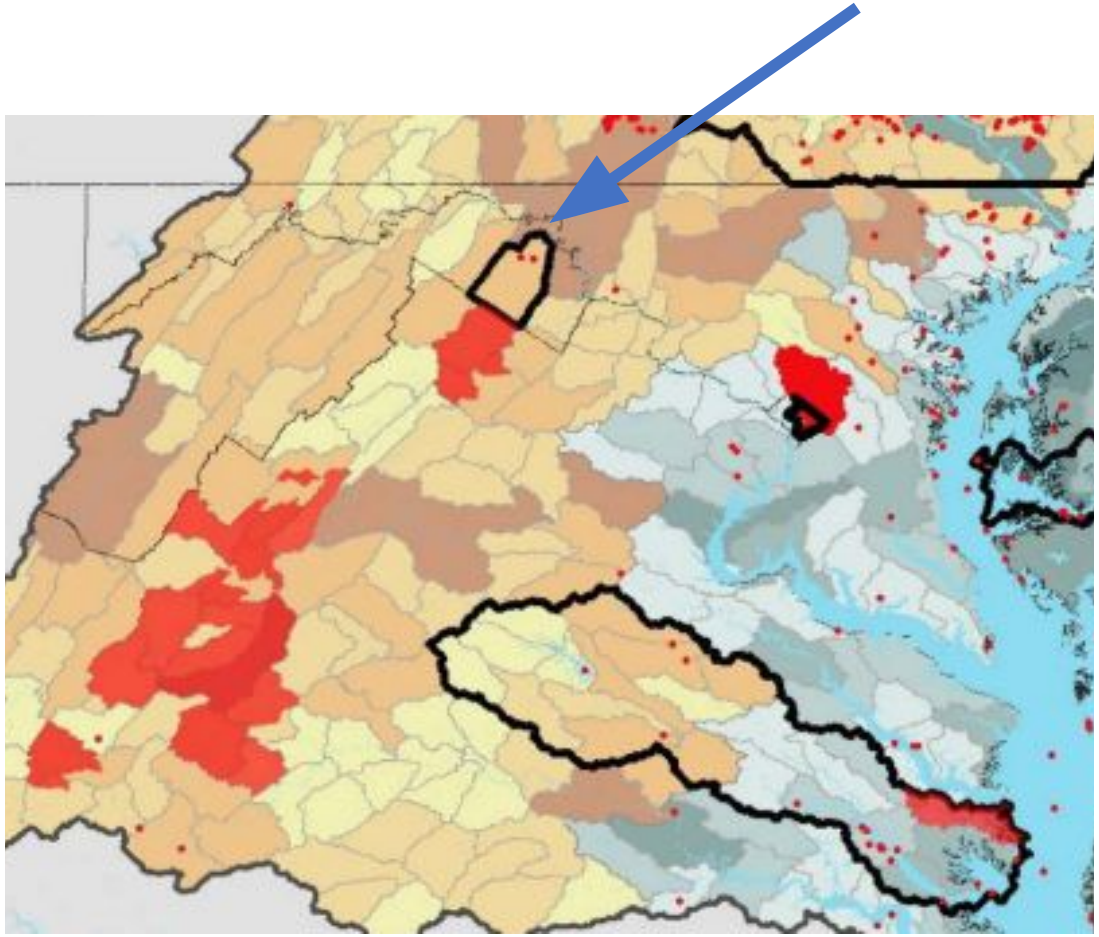
Opequon watershed of West Virginia

- Is a priority watershed we identified for the Army Corps of Engineers' Chesapeake Bay Comprehensive Plan
- Includes two sub-watersheds with 319 grants (nonpoint source pollution reduction projects – bacteria and sediment TMDLs) – dirt roads were analyzed for sediment contributions to streams (PA center's "dirty dozen")
- Is experiencing rapid growth along the I-81 corridor




TONEY CREEK