Useful GIS data for prioritizing road-stream crossings for the NAACC Aquatic Passibility Assessment

The following data layers can help you locate ecologically significant areas like cold water fisheries, rare species habitat and conservation areas. The attached Critical Linkages shapefile (email contact@naacc.org to get a copy) is one of the restoration potential modelling tools created at UMass based on NAACC data. As is its predecessor, the Climate Action Tool.

Without GIS software, setting up a query in the NAACC database and displaying the map is a simple way to visualize where road-stream crossings have already been assessed. Check the "map information" to display the legend. MassGIS Oliver allows you to display data from MassGIS online for free without GIS software as well. Check the link bellow to view the layers highlighted in red.

Layers from MassGIS (seen displayed here - MassGIS OLIVER)

- Anadromous Fish Presence (March 1997)
- Coldwater Fisheries Resources (January 2017)
- Tidelands Jurisdiction Data (March 2011)
- Areas of Critical Environmental Concern (April 2009)
- Protected and Recreational Open Space (January 2019)
- NHESP Priority Habitats of Rare Species (August 2017)
- NHESP Estimated Habitats of Rare Wildlife (August 2017)
- Outstanding Resource Waters (March 2010)
- Dams (February 2012)
- Town Boundaries
- Hydrologic Connections – MassDEP Hydrography
- Major Watersheds
- MassDOT Roads (November 2018)
- Orthophotos
- ArcGIS Background Map

Map Information from Various Sources

- **Critical Linkages 2018** (attached .zip folder and project summary here)
  This tool developed by UMass provides a single layer to display the restoration potential of culverts modelled from structure prediction and pre-2018 NAACC data. The project summary recommends the model for watershed scale planning because of limitations around predictive modelling, citing that future iterations of the tool will be improved with additional NAACC data.
  - Display Field: Effect – 4 Categories
    - Crossing – effect <1132
    - Top 15% – effect <1808, >1132
    - Top 10% – effect <3490, >1808
    - Top 5% – effect >3490

- **NAACC Dataset** – Query Massachusetts Data and Download from NAACC Data Center

  Symbology > Unique Values > Value Field = Eval > Add Values
    - No Barrier – Blue
    - Insignificant Barrier – Light Blue
    - Minor Barrier – Light Green
    - Moderate Barrier – Yellow
    - Significant Barrier – Orange
    - Severe Barrier – Red
    - <all other values> - small black dots or none, these are culvert yet to be surveyed
    - No score – missing data – purple
- **UMass Dataset** – Query Massachusetts Data and Download from NAACC Data Center *(Displays similar symbol categorized from EvalNaac field)*
- **Bridges** – Download from MassDOT Open Data Portal
- **National Wild & Scenic River Layer** – Download from Rivers.gov (Note: Not updated to include segments recently included in the Nashua River designation as of 5/10/19 – Jake Lehan)

Feel free to contact Jake Lehan at jacob.lehan@state.ma.us with any questions or concerns.