Prioritizing Management Actions in Sub-watersheds with Resilient SAV Beds using Chesapeake Bay Geographic Isolation Runs

Management Board

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Assessment Method

Chesapeake Bay Geographic Isolation Runs - Chlorophyll a

Open Water Response to Geographic Nutrient Loads

Method:

- 5 million lbs of N or 0.5 Mlbs/yr P added each year by an annual coefficient to the loads in that CBSEG
- Separate PS and NPS runs
- Change in Chlorophyll concentration to the depth of the long-term surface mixed layer average
- June through September
- Multiply by watershed delivery

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Assessment Limitations

- Assessment of SAV substrate influence is unavailable.
- Assessment of SAV community effects are absent.
- Assessment of sediment loads is unavailable.
- *Zostera (eelgrass)* temperature sensitivity is unaddressed.

Link to tool here:
https://gis.chesapeakebay.net/modeling/geoisoruns/

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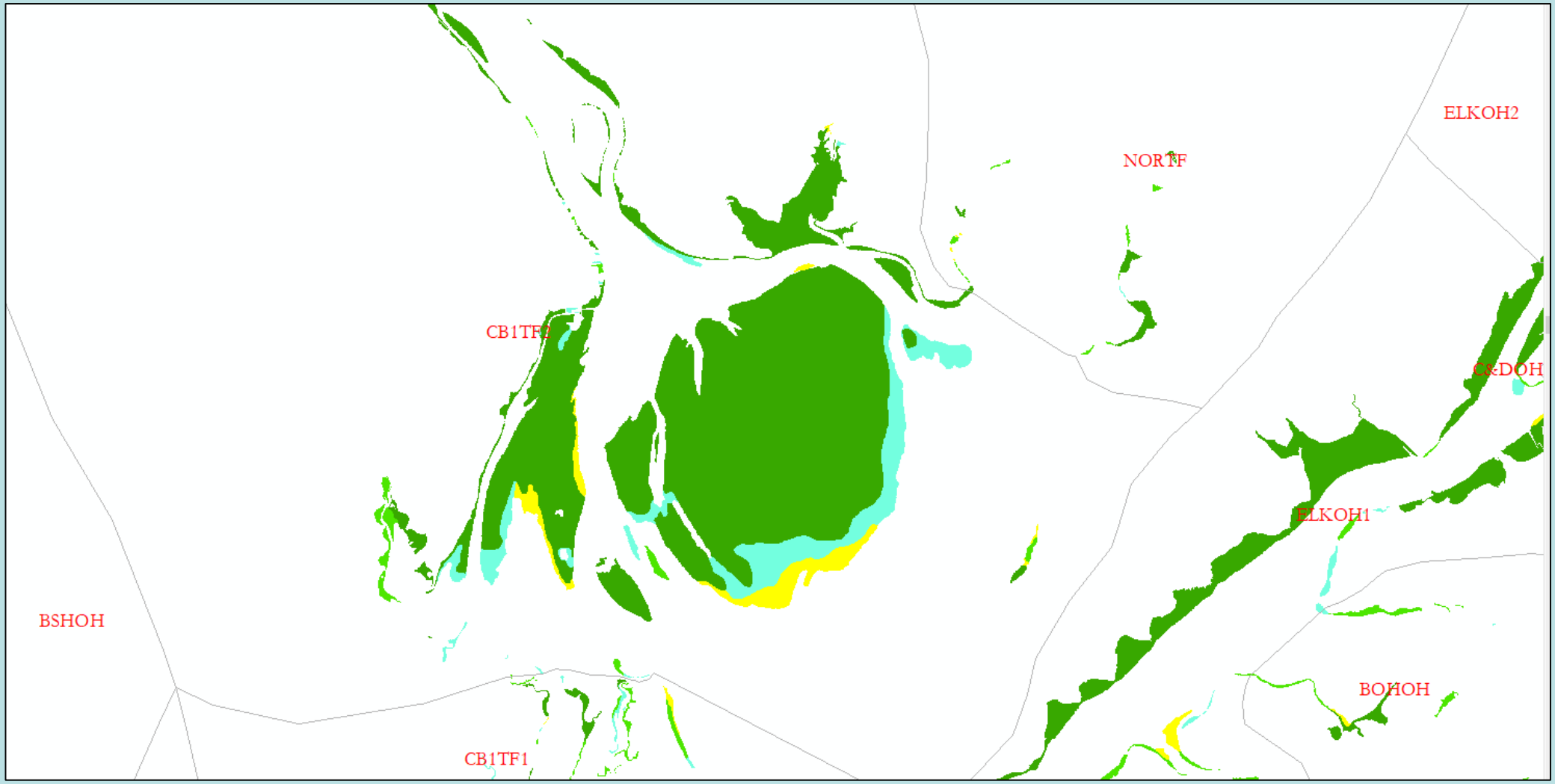
Watershed influence on the Susquehanna Flats

SAV on the Susquehanna Flats (CB1TF2, 2017 data)



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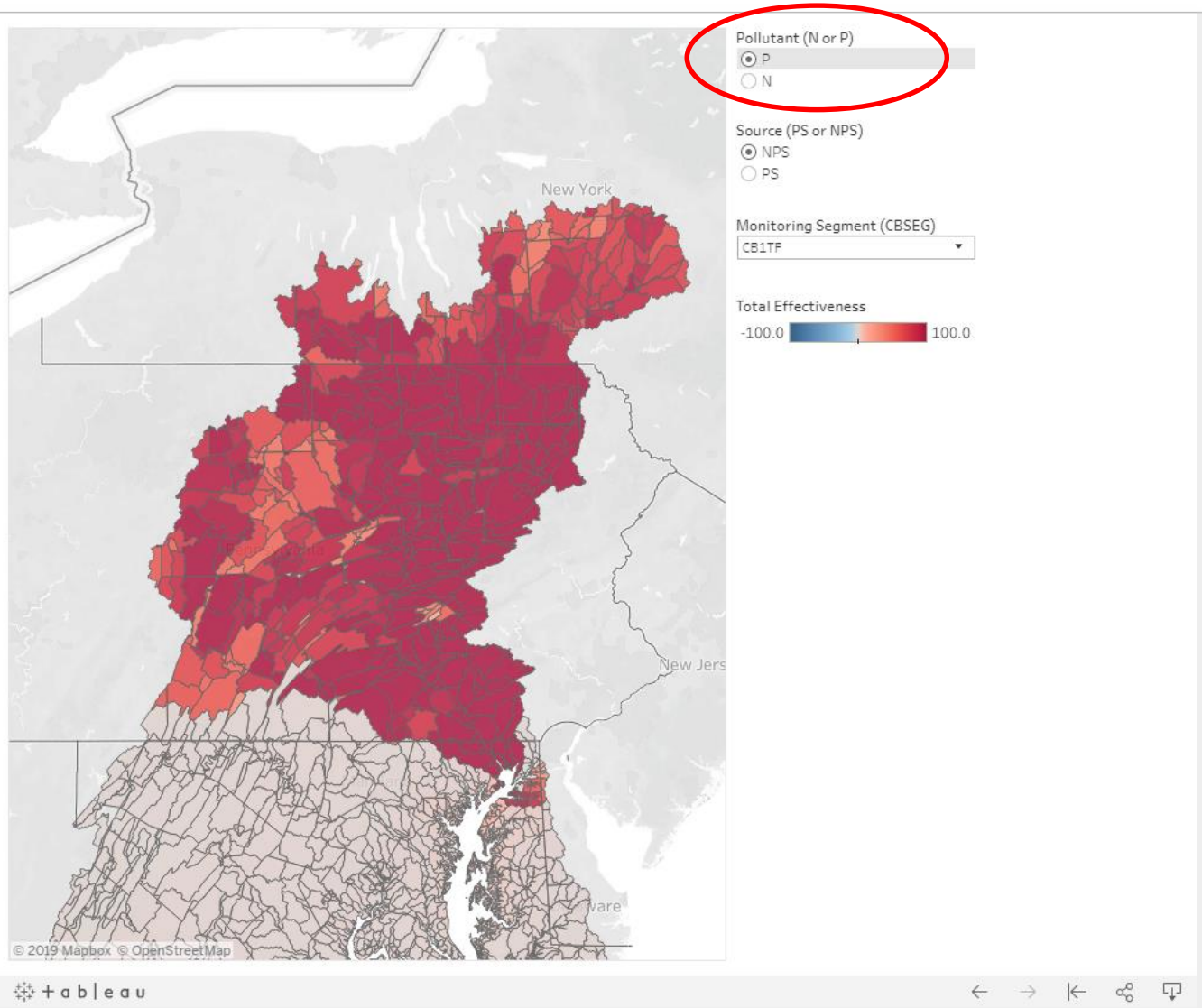

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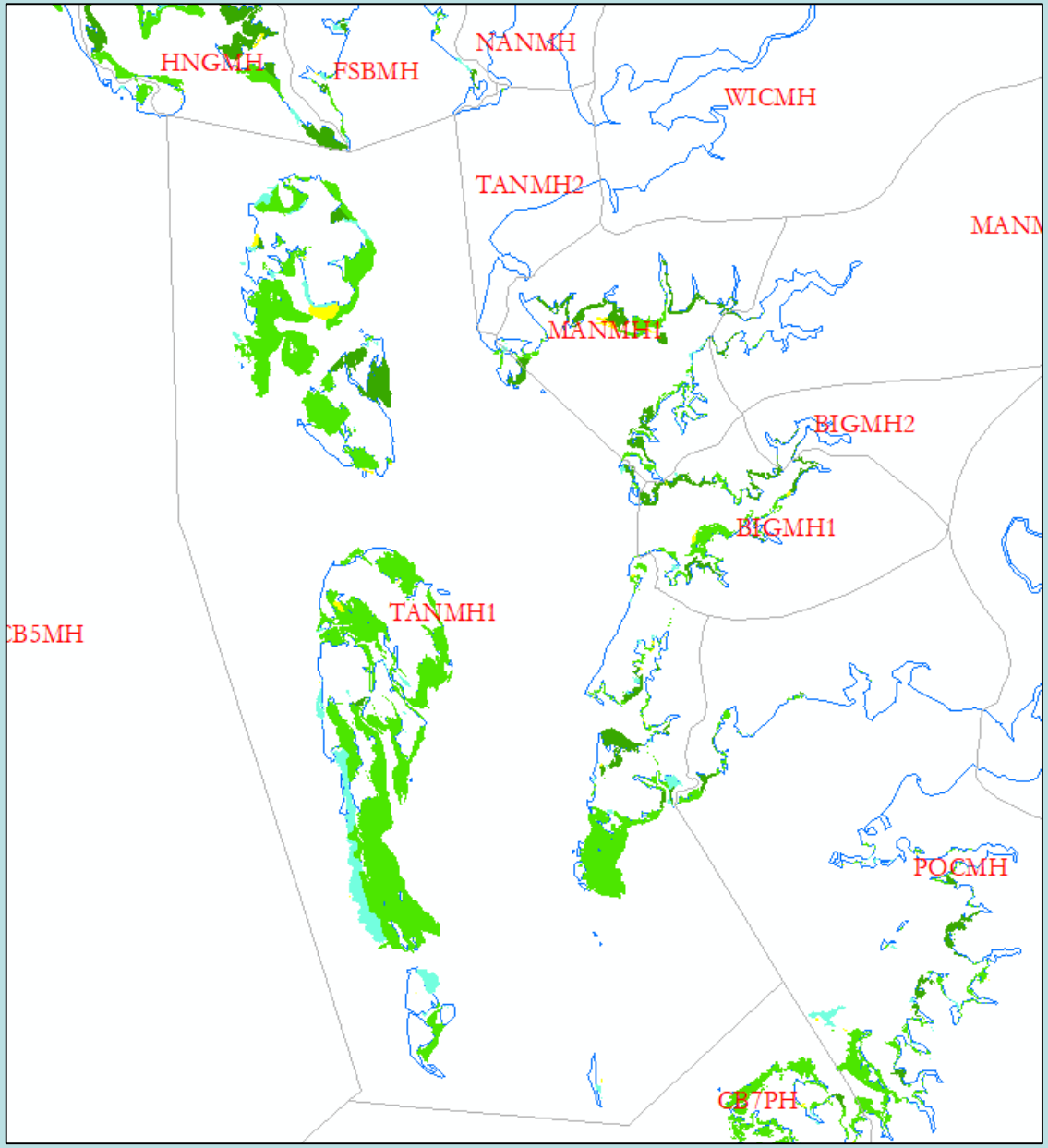
Watershed influence on Tangier Sound

SAV in Tangier Sound (TAMMH1, 2017 data)



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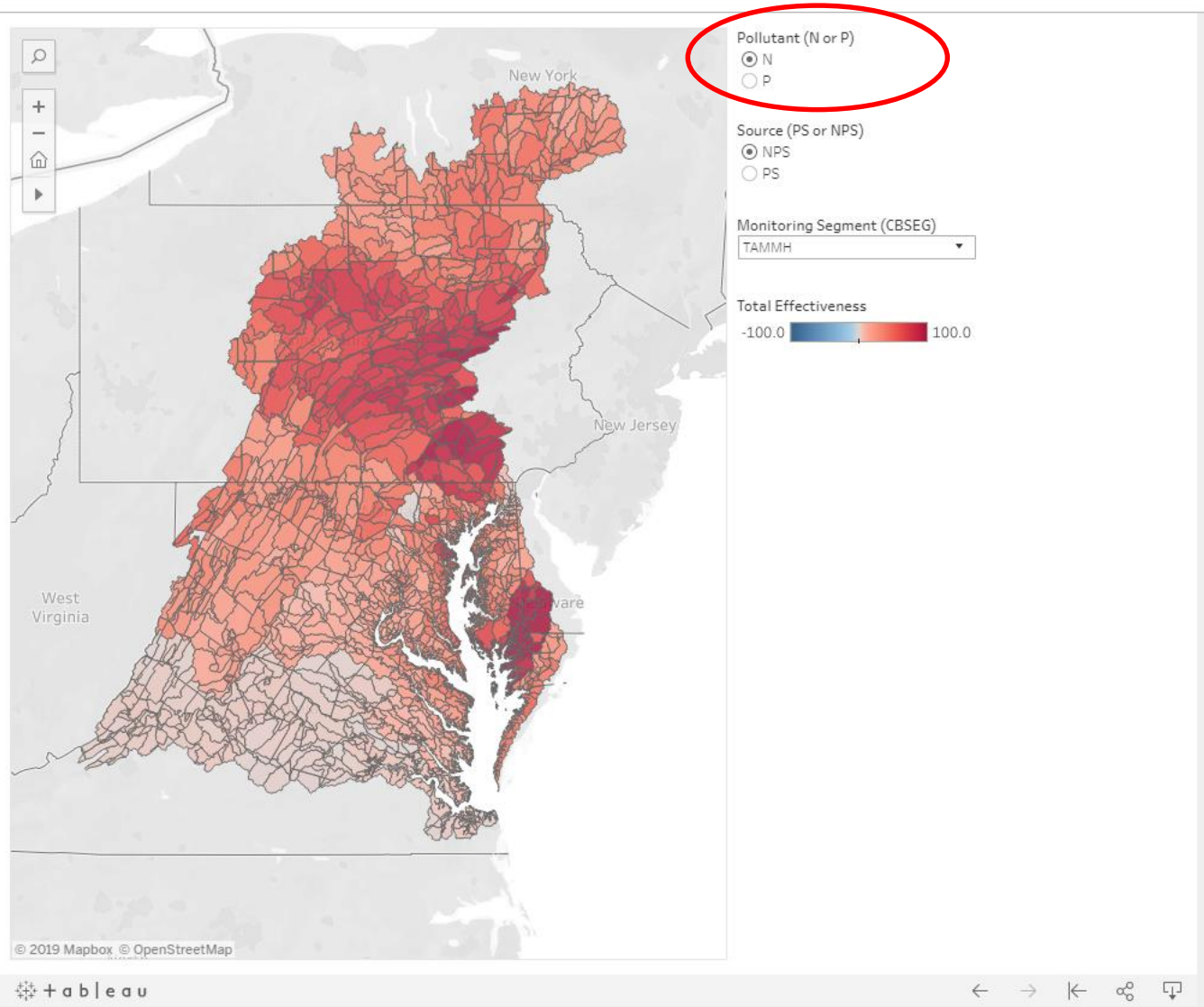

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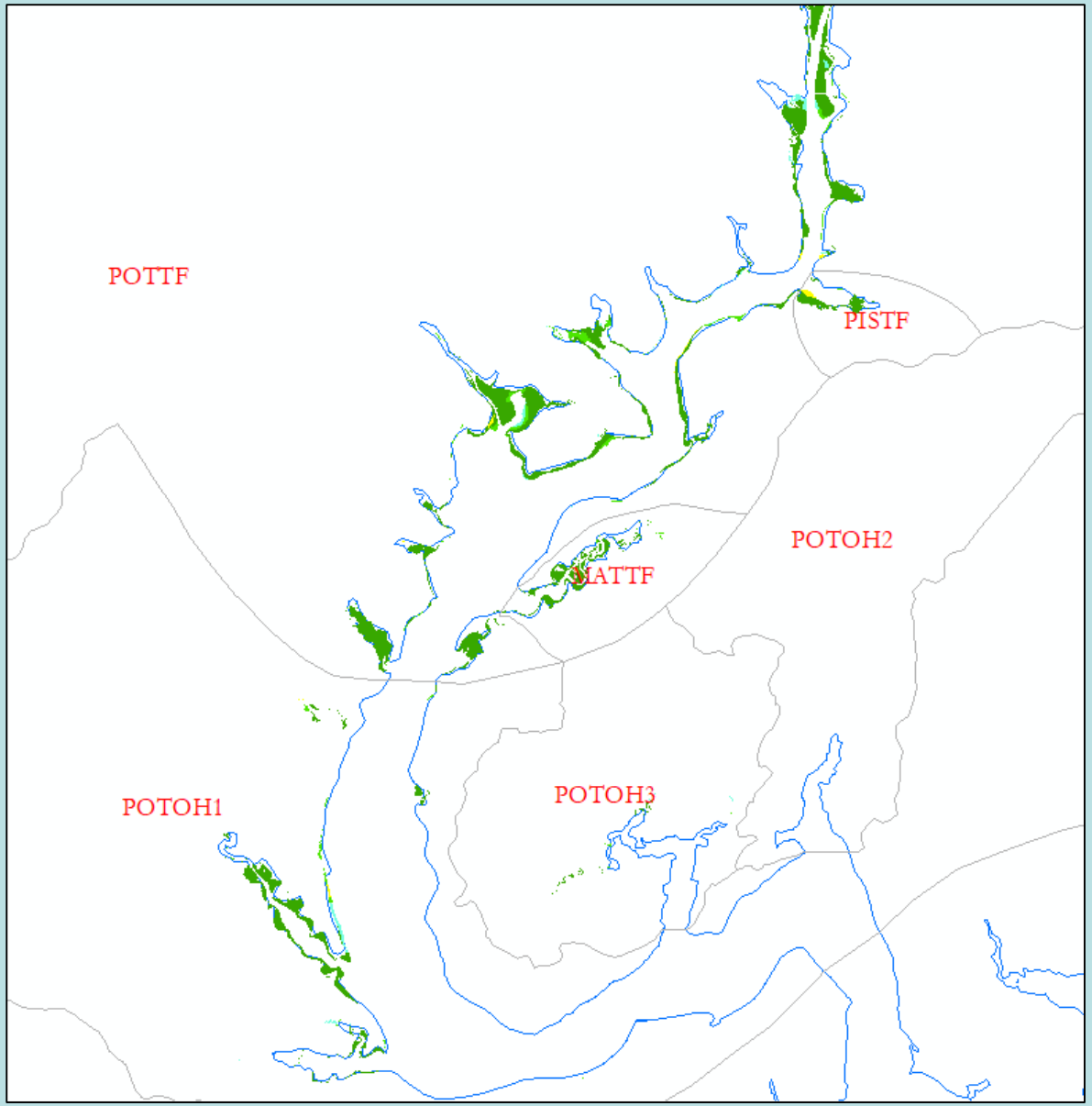
Watershed influence on the Oligohaline Potomac

SAV in Potomac Oligohaline (POVOH, 2017 data)



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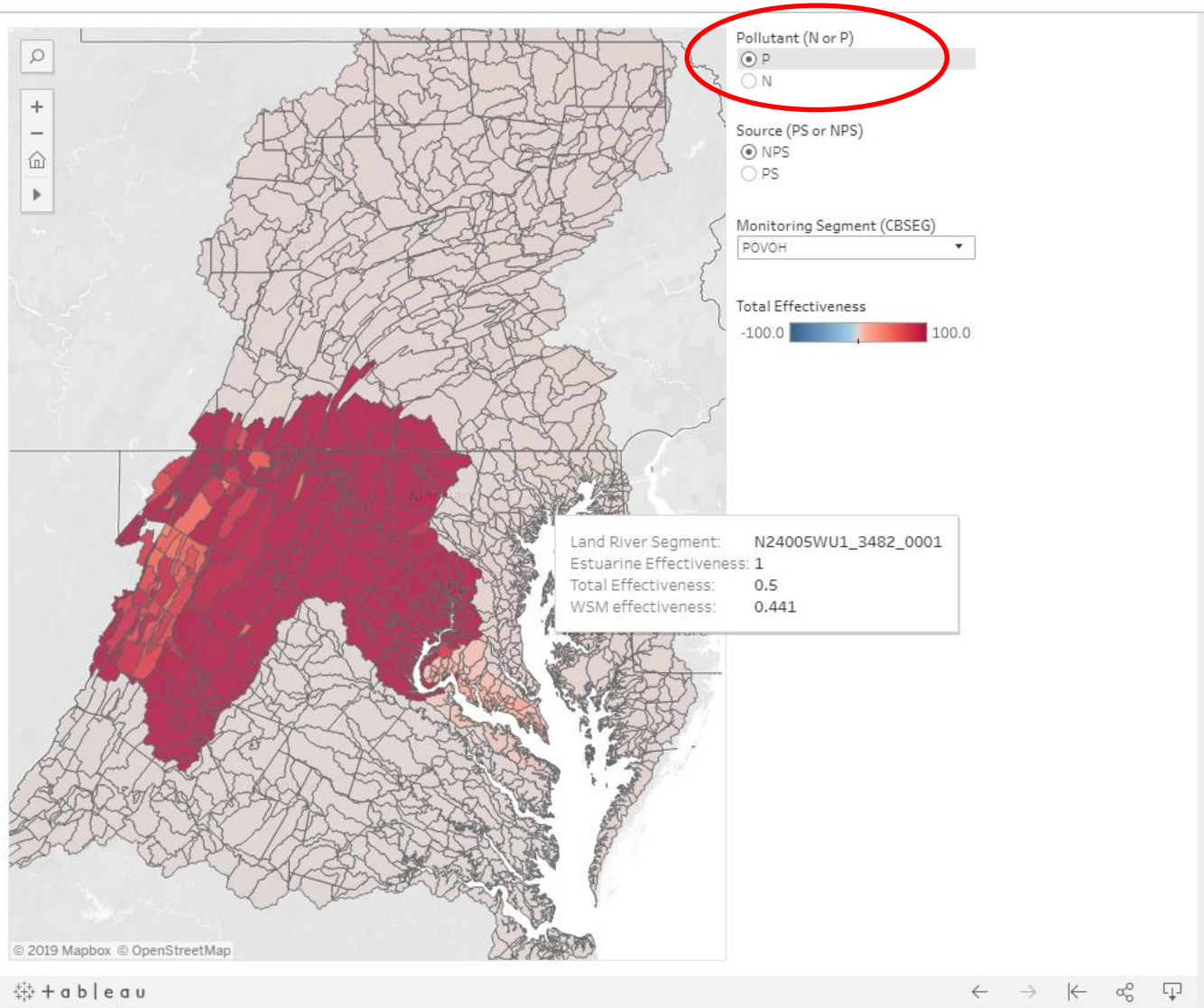

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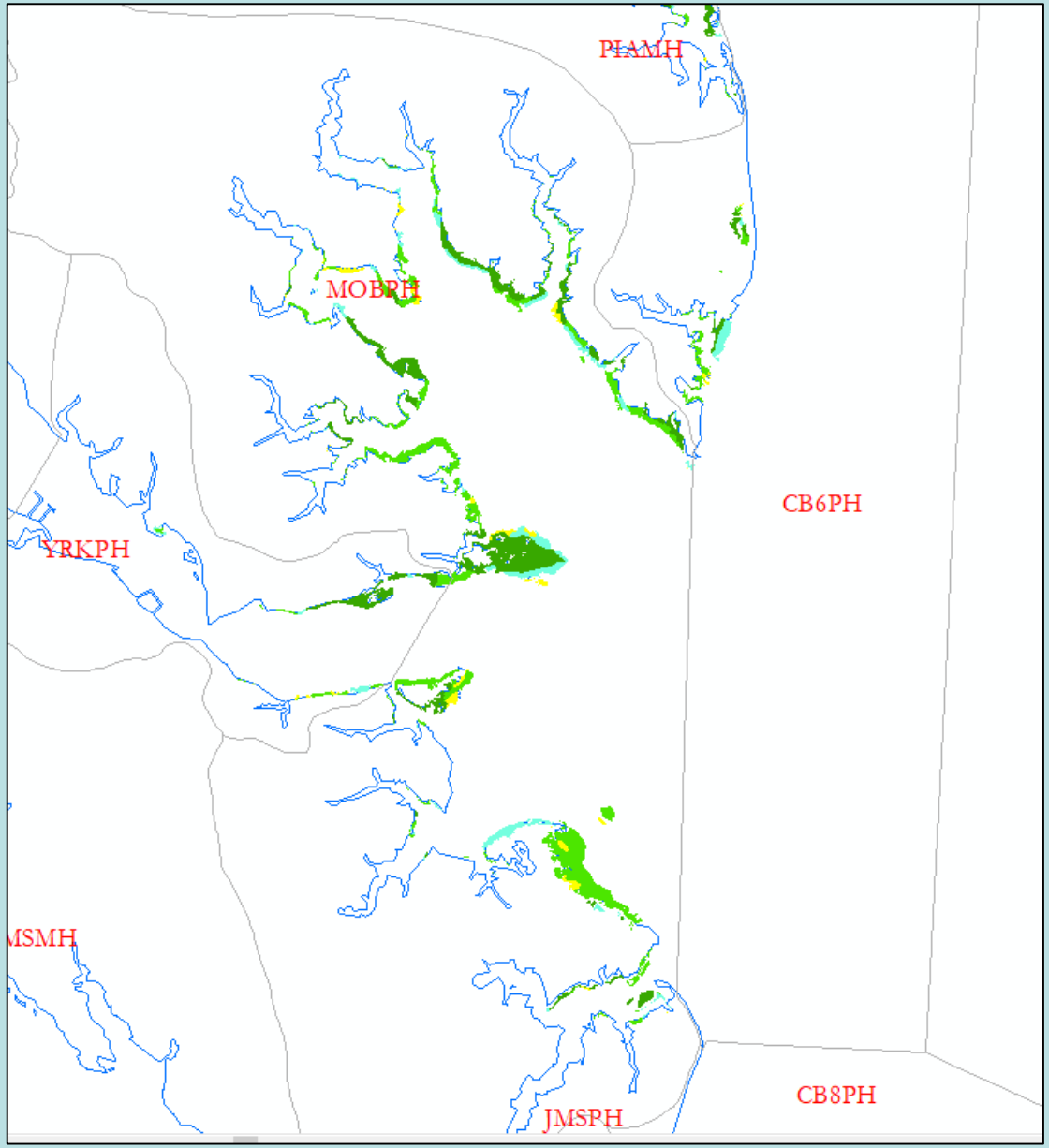
Watershed Influence on Mobjack Bay

SAV in Mobjack Bay (MOBPH, 2017 data)



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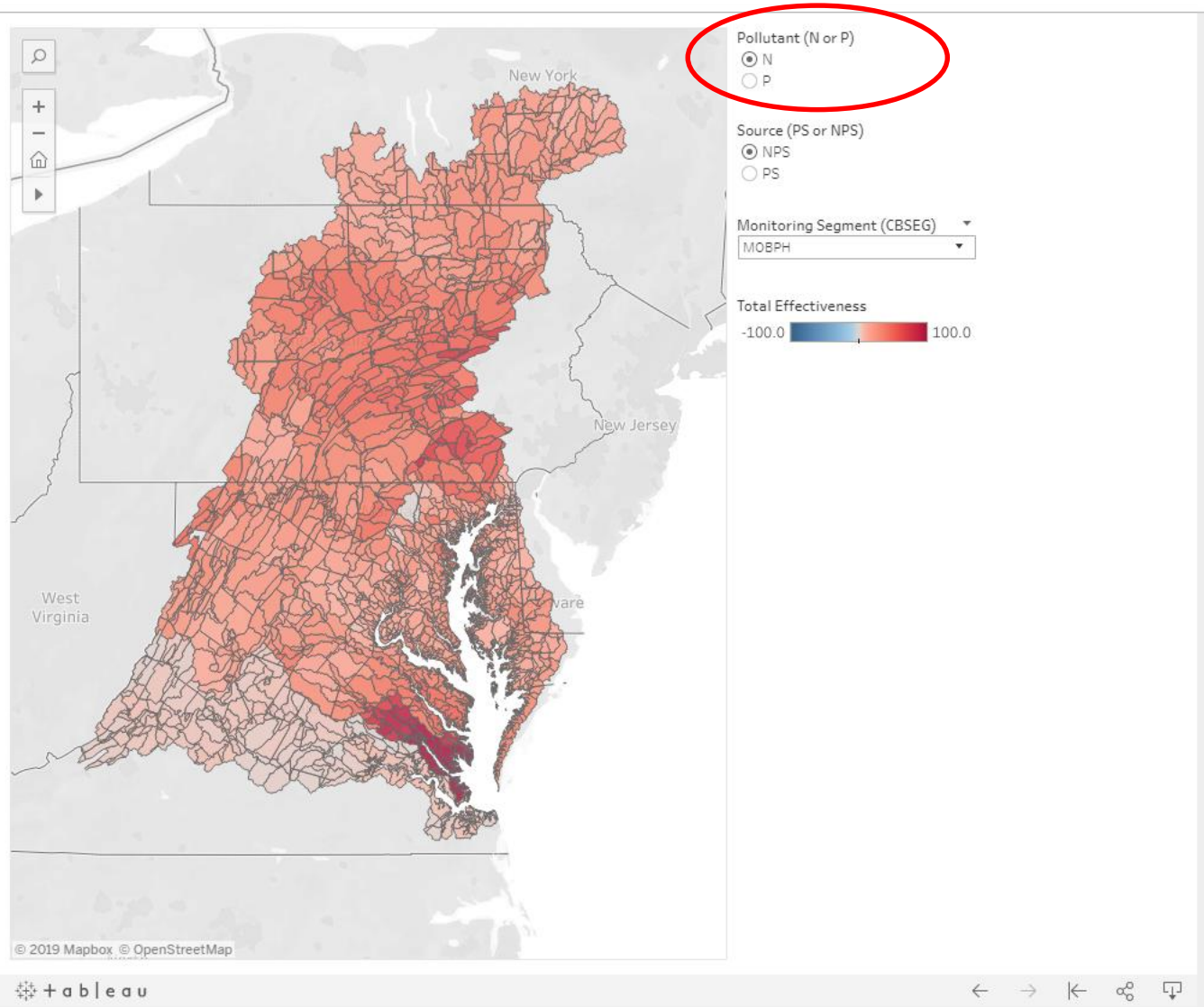

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Conclusions

1. SAV is affected by both watershed level influences (N, P, TSS loading) and local influences (shoreline alteration, shallow water habitat conflicts, etc).

2. This assessment method yields broad-scale influences that may not be useful in a local, targeted management exercise.

3. This assessment method does, however, identify broad areas where BMP implementation could be prioritized to more effectively protect important SAV beds/regions as climate change and other factors affect our ability to reach SAV restoration targets.

4. A more effective assessment for local, targeted management efforts may be consideration of shoreline impacts using LandSat data to map shoreline conditions and nearshore habitat uses (aquaculture).