

Update on West Virginia's Nutrient/Algae Monitoring and Assessment

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Water Quality Standards Program

WV Dept. of Environmental Protection



Background/History

- Regulation states **algae blooms** or concentrations of bacteria which may impair or interfere with the designated uses of affected waters = Condition Not Allowable (47CSR2-3.2.g)
- Impairment assessment methodology
Impairment = Yes, if:
 - 1. If >40% cover at any point (Regardless of length)**
 - 2. (Filamentous) algae cover is >20% for 3 times the river width or**
 - 3. Special considerations - if adjacent to public access point/dwellings/etc... >20% can be considered impaired**
- 303(d) Listed - Greenbrier/Cacapon/South Branch Potomac



Greenbrier River – Impaired due to Algae Blooms

- Major Nutrients of concern:
 - Phosphorous and Nitrogen
- Point Source Issue-STP
- Upgrades have been made to Sewage Treatment Plants:
 - White Sulphur Springs (upgraded, more upgrades to come)
 - Ronceverte (to be upgraded)
 - Alderson (to be upgraded)



Greenbrier River Restoration Plan

- Monitor / Assess May through October 2013 through 2020 to see if narrative standard achieved, if not TMDL to be completed by 2023
- 10 water chemistry sample (algae measurement) locations
- 7 observations points (algae measurements)
- Longitudinal Survey(s)- float by boat

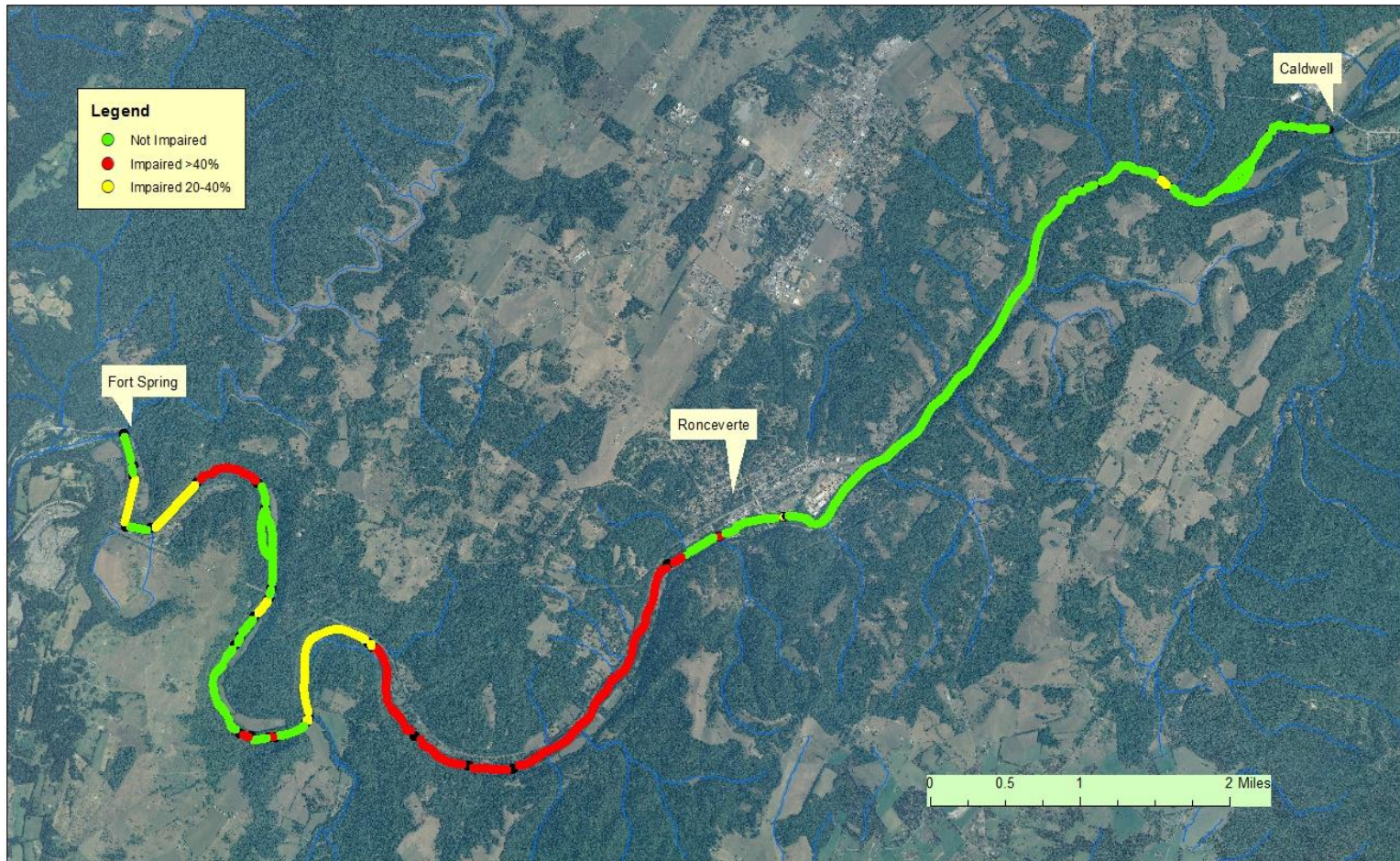


Greenbrier River Restoration Plan

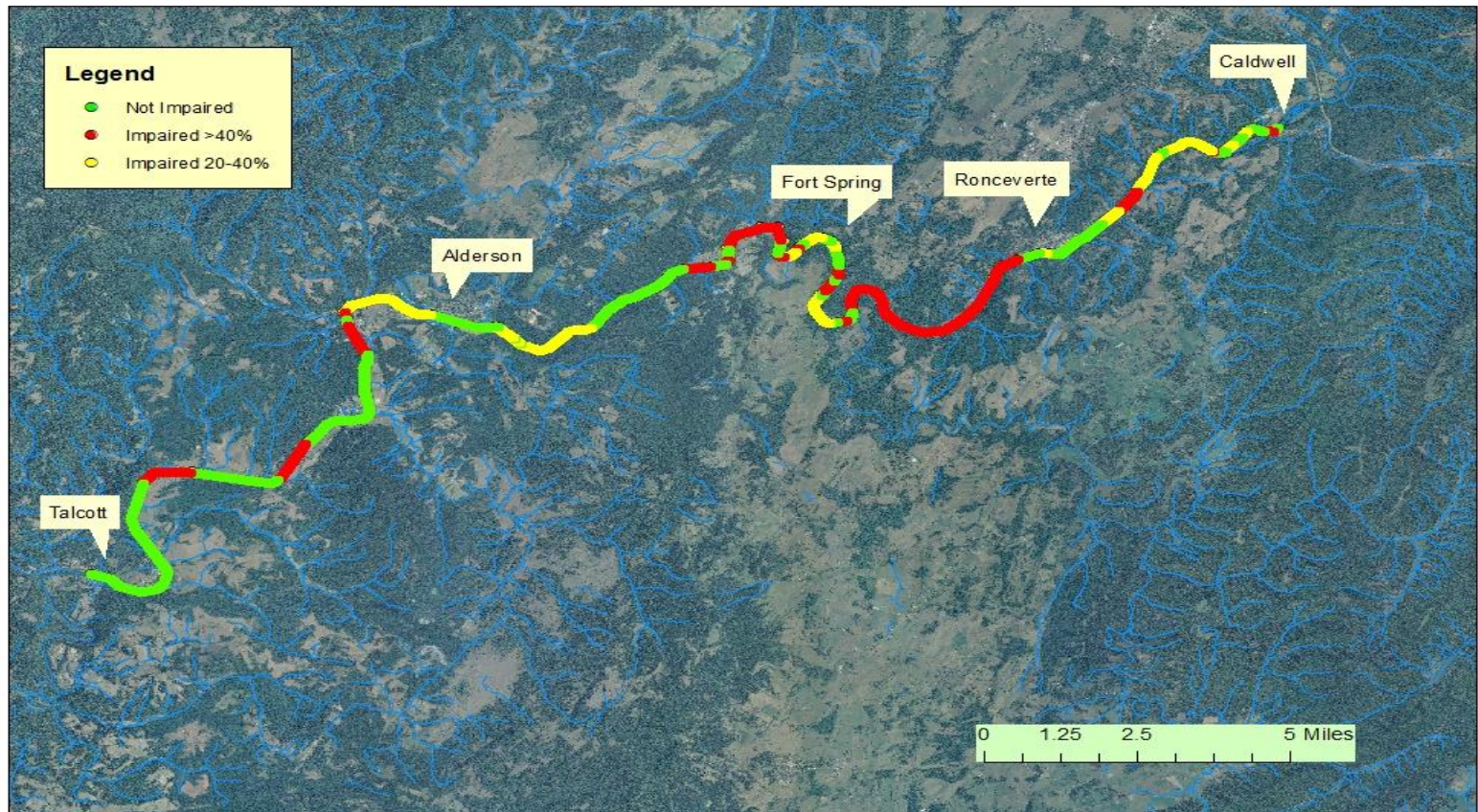
- 2014 – Just below Ronceverte and Rockland Road designated monitoring locations with highest impairment
- Highest P/N concentration Howard Creek



2014 Longitudinal Surveys – Greenbrier River (August)



2014 Longitudinal Survey – Greenbrier River (September)



Greenbrier River-Algae Impairment

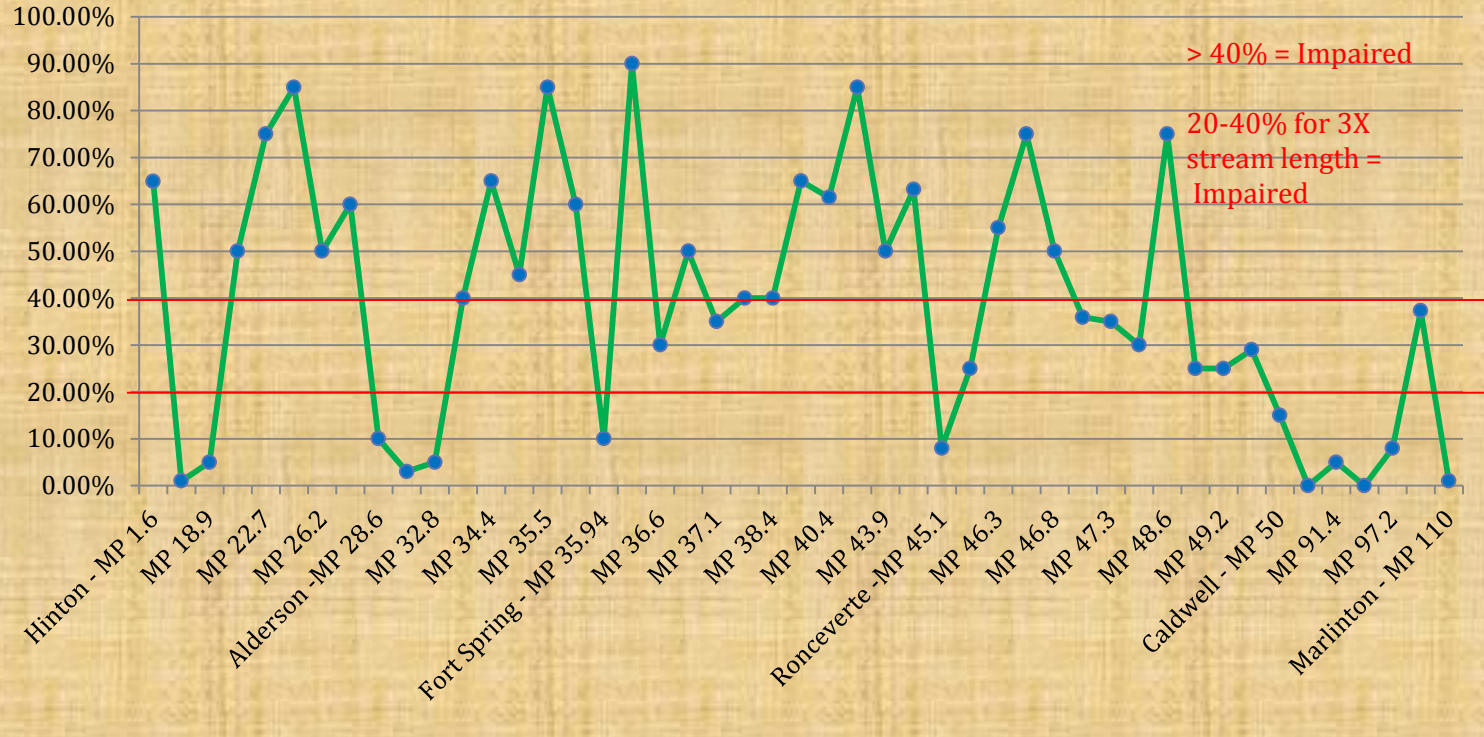
Below Ronceverte Discharge



Between Fort Spring / Alderson



Peak % Algae Coverage



Other Streams to consider

- Cacapon River– ICPRB (Interstate Commission on the Potomac River Basin) monitoring
- South Branch of Potomac River– ICPRB
- Tygart Valley River-Impairment Elkins
- Buckhannon River
- New River
- Bluestone River
- North Fork Hughes River



Conclusions

- Will continue to monitor the Greenbrier River to see if STP past/future upgrades have an affect on nutrients/algae blooms
- Will continue to monitor other streams for nutrients and possible 303(d) listing OR
- Alternative TMDL Restoration Plan

- **Questions??**

