



Maryland
Department of
the Environment

Maryland's Water Quality Standards for Cold / Cool Water Protections

Water Quality Standards Workshop
Albuquerque, NM

Maryland Department of the Environment
Melinda Cutler

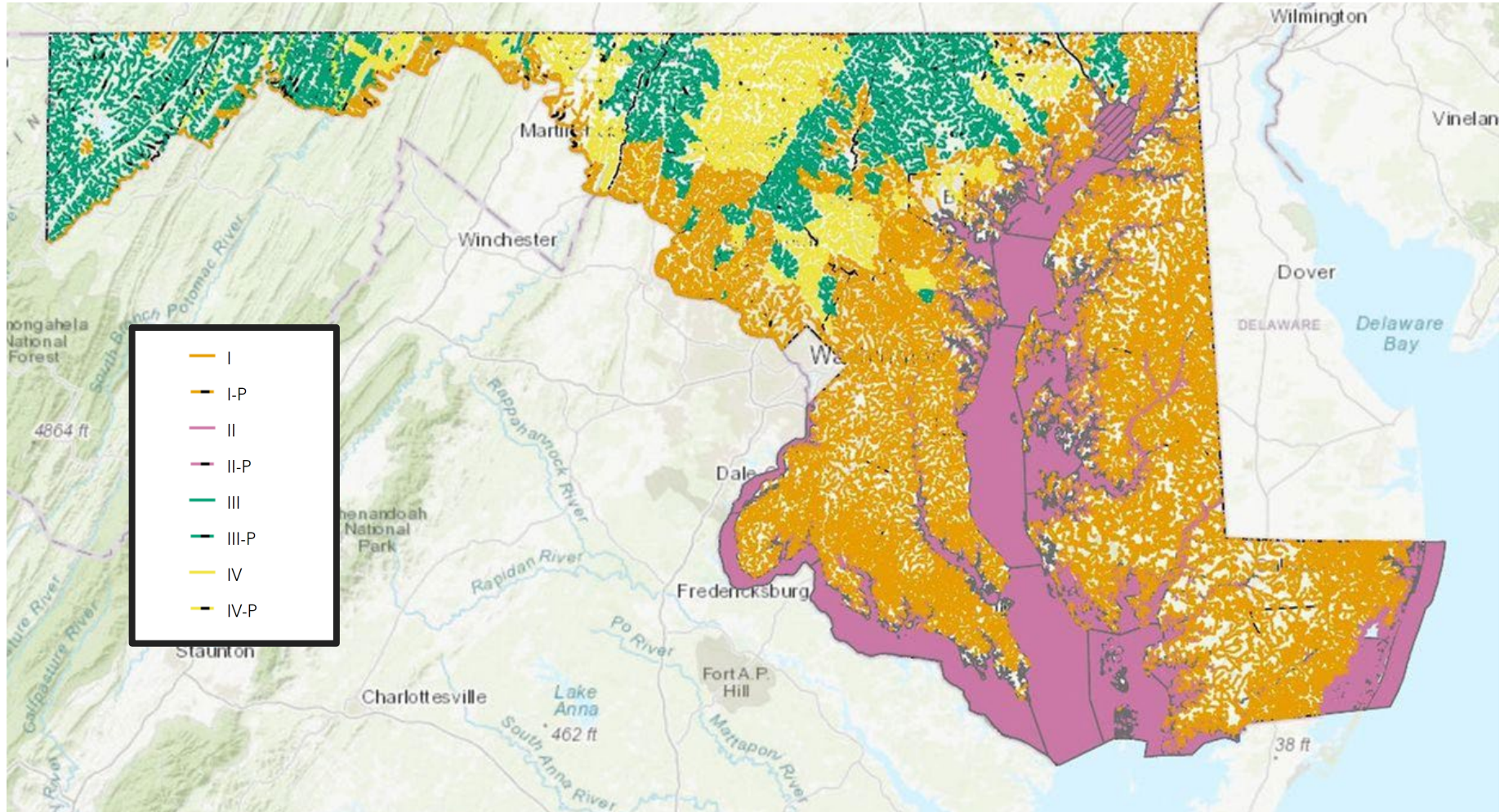


Overview

- Designated uses in Maryland
 - Class III / IV (-P)
- Antidegradation policy & Existing uses
 - Regulatory framework
 - Determination process



Maryland's Designated Use Classes



[Maryland's Designated Uses Map](#)



Definitions - Use Class III & IV

(5) **Class III: Nontidal Cold Water.** This class designation includes all uses identified for Class I and waters which have the potential for or are suitable for the growth and propagation of **self-sustaining trout populations and other coldwater obligate species including, but not limited to the stoneflies tallaperla and sweltsa.**

(7) **Class IV: Recreational Trout Waters.** This class designation includes all uses identified for Class I in cold or warm waters that have the potential for or are:

- (a) **Capable of holding or supporting adult trout for put-and-take fishing; and**
- (b) **Managed as a special fishery by periodic stocking and seasonal catching.**



Difference in Criteria Between Use Classifications

Use Classification	Description	Dissolved Oxygen	Water Temperature
I	Warmwater Aquatic Life	5 mg/L	32 °C or ambient
II	Estuarine and Marine Aquatic Life including shellfish	Unique to each water segment	32 °C or ambient
III	Nontidal Coldwater	Minimum daily average ≥ 6 mg/L and 5 mg/L at any time	20 °C or ambient
IV	Recreational Trout Waters	5 mg/L	24 °C or ambient



Regulatory Framework for Existing Uses

CWA (40 CFR 131.3) defines existing uses as “...those **uses actually attained in the water body on or after November 28, 1975**, whether or not they are included in the water quality standards”

- Existing uses serve as baseline or “floor” of water quality
- Made on a site-specific basis and can be expressed in very specific terms



Additional Regulation Language for Existing Uses

CWA (40 CFR 131.12(a)) states “at a minimum...(1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.”

- Maryland’s water quality standards (COMAR 26.08.02.04) echo the CWA stating “Waters of this State shall be protected and maintained for existing uses and the basic uses of water ...”



Existing Use: Scenario

- Stream is designated as Class I or IV
- Demonstrates self-sustaining trout / obligate populations
- Cooler temperatures present than afforded protection under the current use classes.

Cold Water Existing Use Determinations: Policy and Procedures

June 23, 2021



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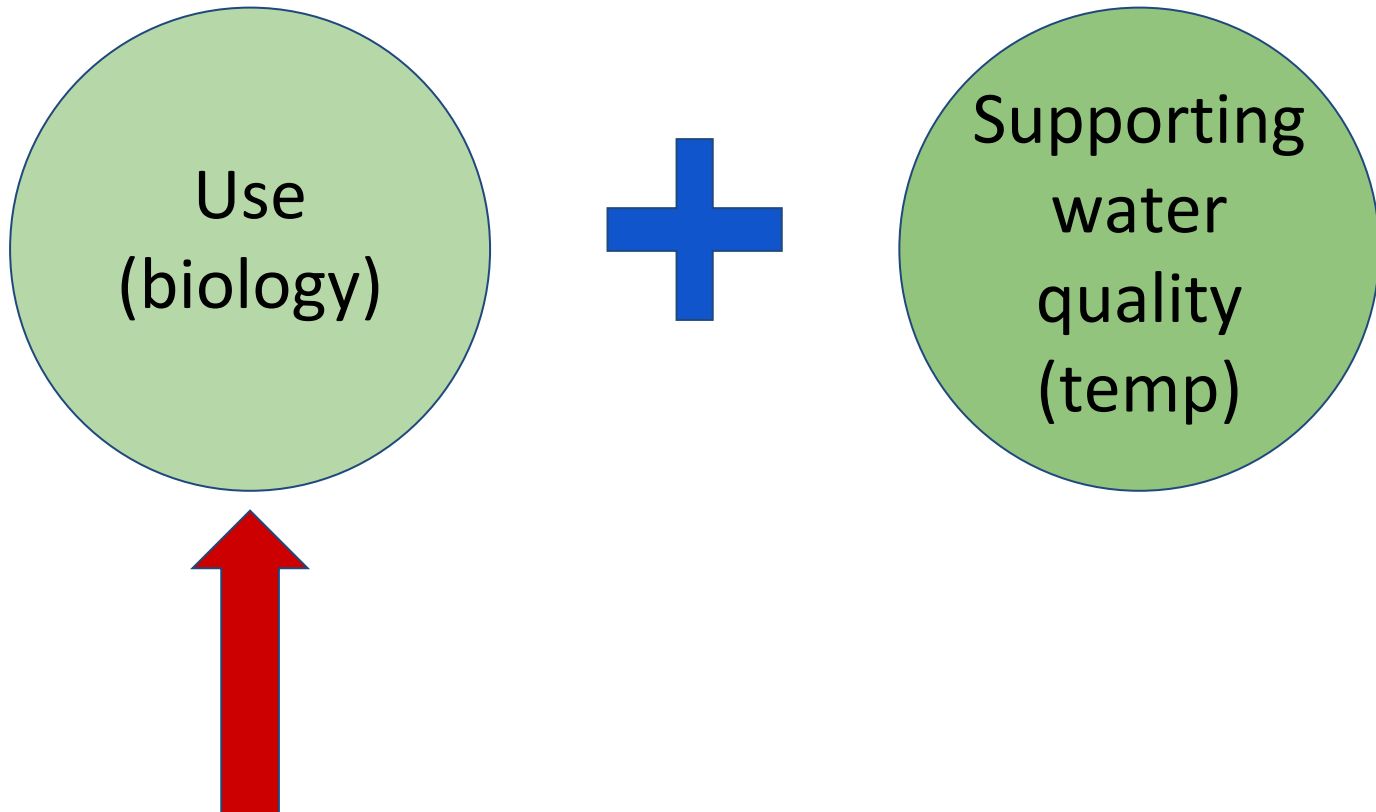
Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

Ben Grumbles, Secretary

- Maryland's Cold Water Advisory Committee - 2018
- Cold Water Existing Use Determinations: Policy and Procedures
- Define existing use to provide protection to this colder quality (Antidegradation)



Existing Use Requirements





The Use - Cold Water Obligates



Sweltsa, [Picture source](#)



Tallaperla, [Picture source](#)

- *Tallaperla* and *Sweltsa*
 - Stoneflies
- Require colder temperatures to survive
- Presence of either = cold water obligate use



Trout - Defining Self-Sustaining



Brook trout, Photo courtesy of Chesapeake Bay Program



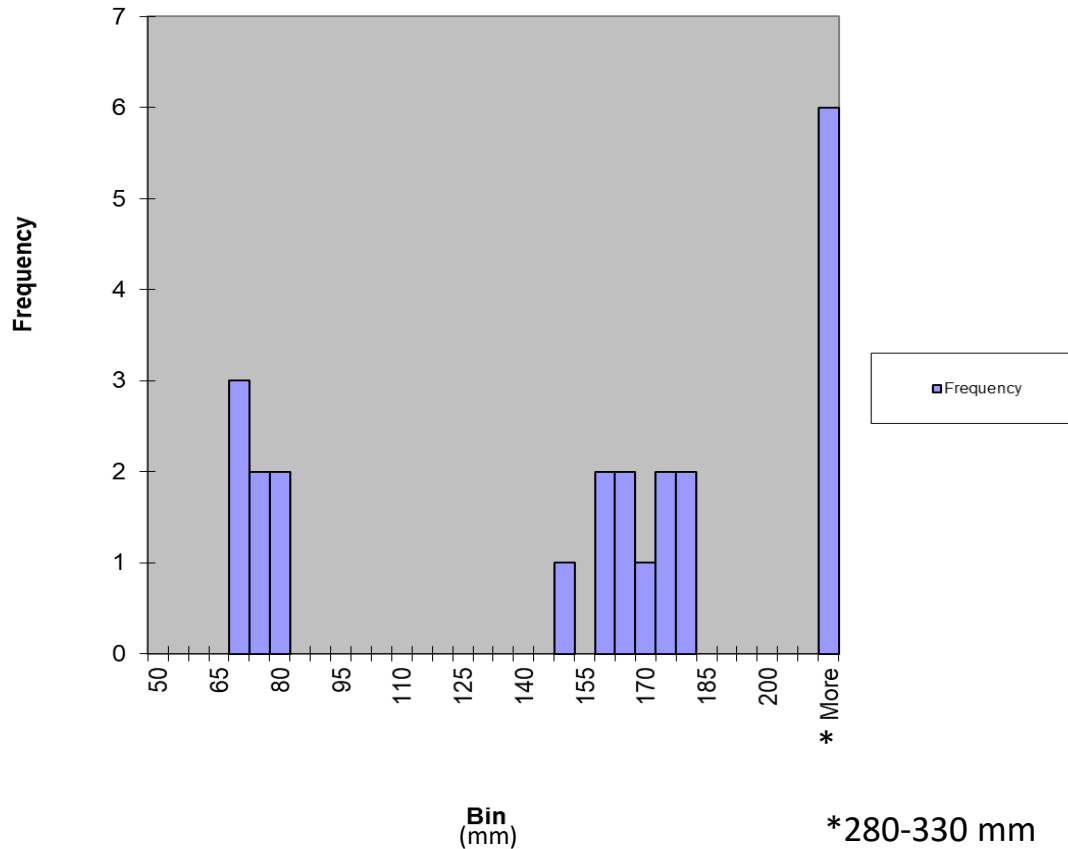
Brown trout, Emilio Concari, Maryland Biodiversity project, [Source](#)

- **Common natural / naturalized species in MD**
 - Brook trout (native)
 - Rainbow, and brown trout (stocked)
- **No stocking in last 5 years**
 - Coordinate with MD DNR + neighboring states
- **Community distribution**
 - Young of Year (YOY) presence
 - Multiple Adult year classes



Defining YOY & Multiple Year Classes

Histogram



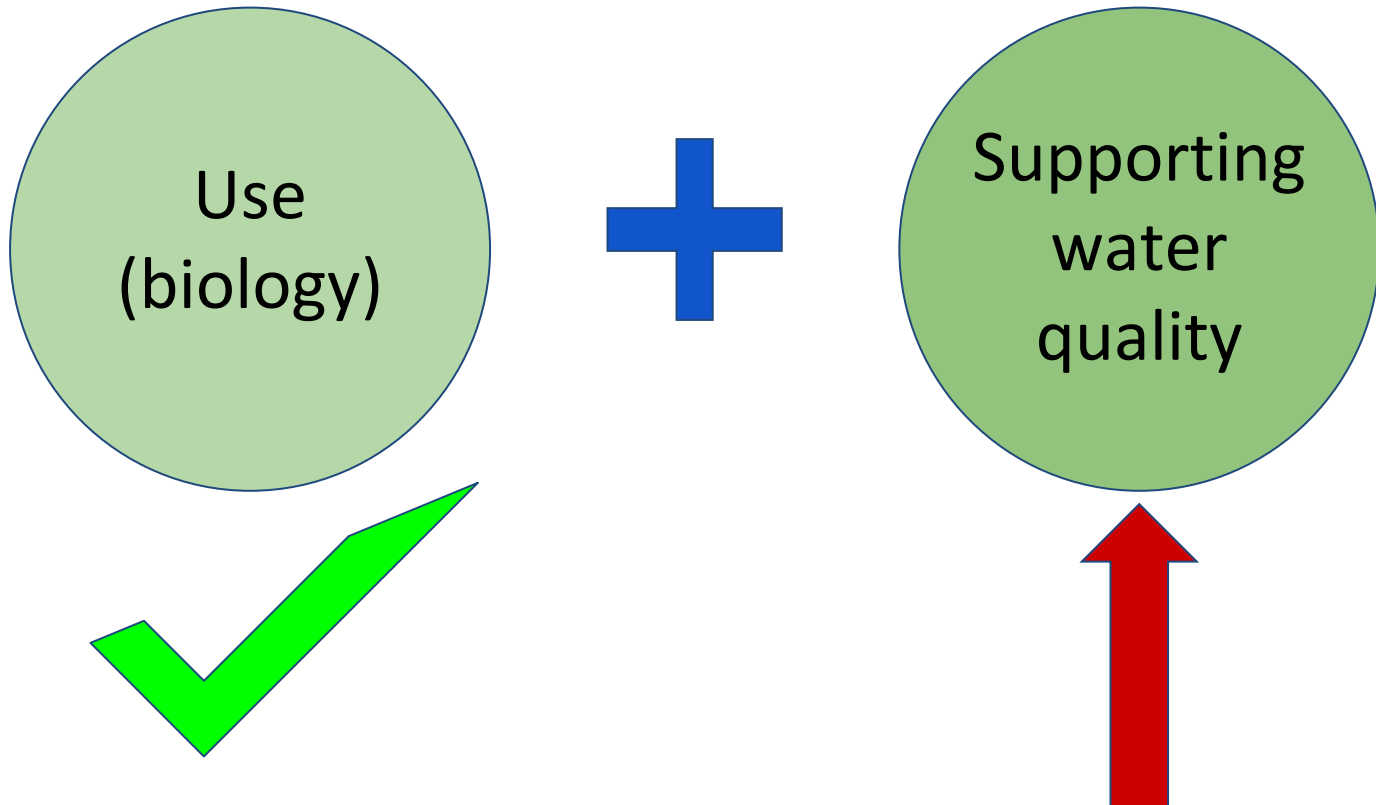
- Histogram of trout lengths
- Require YOY and at least 2 adult age classes



Rainbow Trout, Sam Stukel/USFWS, Public Domain, [Source](#)
YOY show parr marks.



Existing Use Requirements





The Water Quality - Temperature

- Continuous temperature monitoring
- Evaluation period, June 1st - August 31st
 - Critical period, time of highest temperatures
 - Need at least one year of continuous temperature data
- Common evaluated statistics
 - Average temperature
 - % above 20 C
 - % above 24 C
 - Maximum temperature



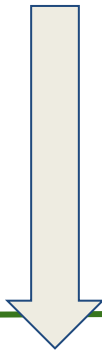
Continuous monitoring temperature logger (HOBO). [Picture source](#)



Outcomes of Existing Use Determination

Temperatures meet
Class III temperature
criteria.

Existing use \approx Class III

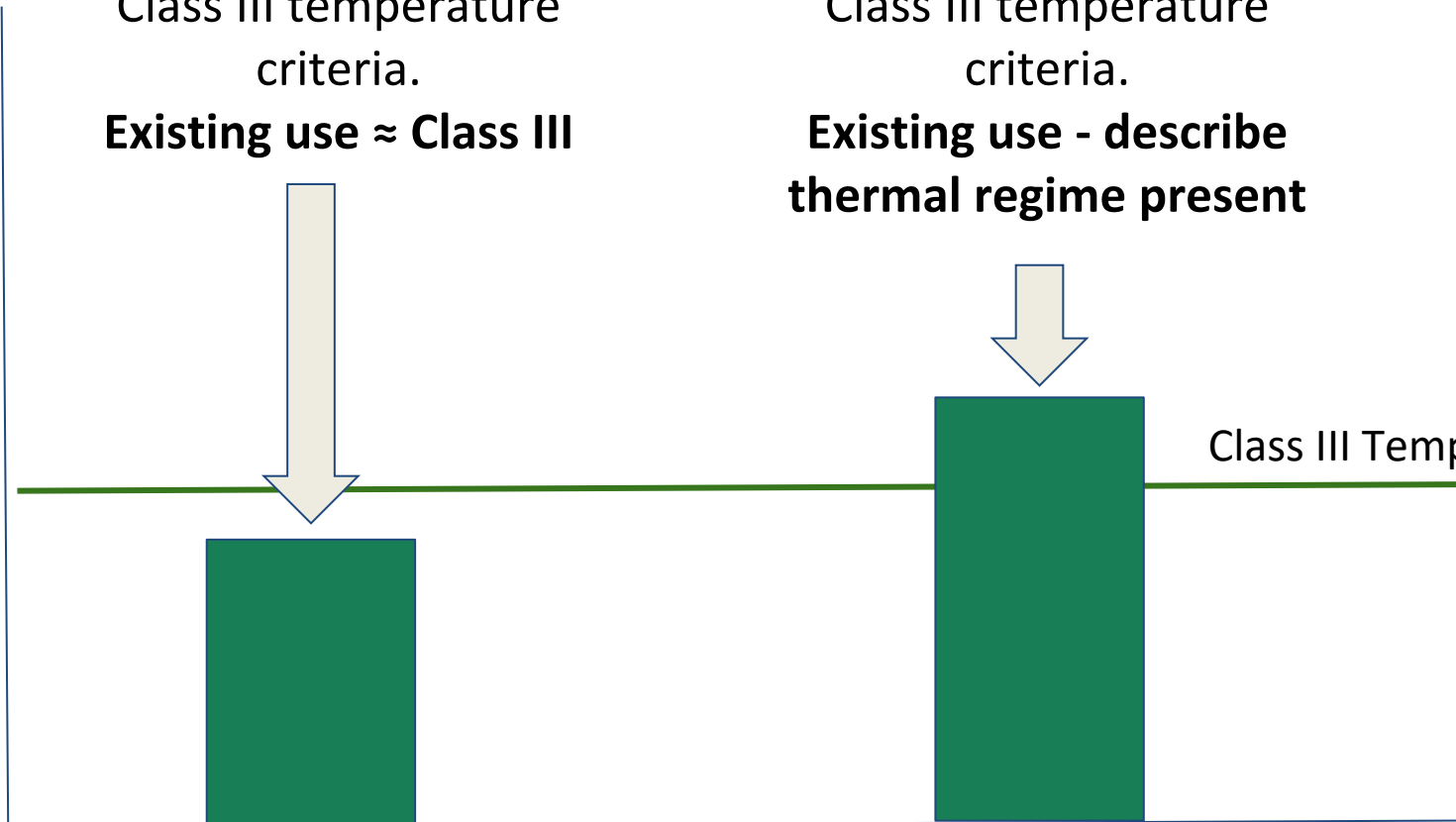


Temperatures exceed
Class III temperature
criteria.

**Existing use - describe
thermal regime present**



Class III Temperature Criteria





Outcomes of Existing Use Determination

- Redesignation to Class III
- Or specifically describe cool thermal regime
 - Excerpt: “ Board Run, from its confluence with the North Branch Patapsco River (39.522341° N, -76.875197° W) to its headwaters, supports naturalized self-sustaining brown trout (Salmo trutta) and water temperatures that have an average daily mean below 20°C, a maximum below 26°C, stay below 24°C at least 90% of the time and below 20°C at least 45% of the time”



Wrap-Up

- MD Designated Uses for Cold Water
 - Class III (Nontidal Cold Water) / IV (Recreational trout)
- Existing Use Policy
 - Standardized procedure for redesignating to Class III (Nontidal Cold Water) and assigning cool - water protections
- MD's future work
 - MD Cold Water Advisory Committee
 - Define a new "cool-water" designated use
 - UAA process to assess for Class III assignment

Questions?



Picture: Brook trout in Seneca Creek, WV., Ryan Hagerty/USFWS, Public Domain, <https://www.fws.gov/banner/brook-trout-seneca-creek-wv>



MDE Online Resources

- [Existing Use Determinations](#)
- [Cold Water Advisory Committee Homepage](#)
- [Cold Water Existing Use Determinations: Policy and Procedures](#)
- [Protecting Coldwater Resources MD Webpage](#)
- [Temperature Assessment Methodology for Use III\(-P\) Streams in Maryland](#)
- [MD DNR Quality Assurance Document for Temperature Monitoring](#)