

Existing Use Determination and Rationale:

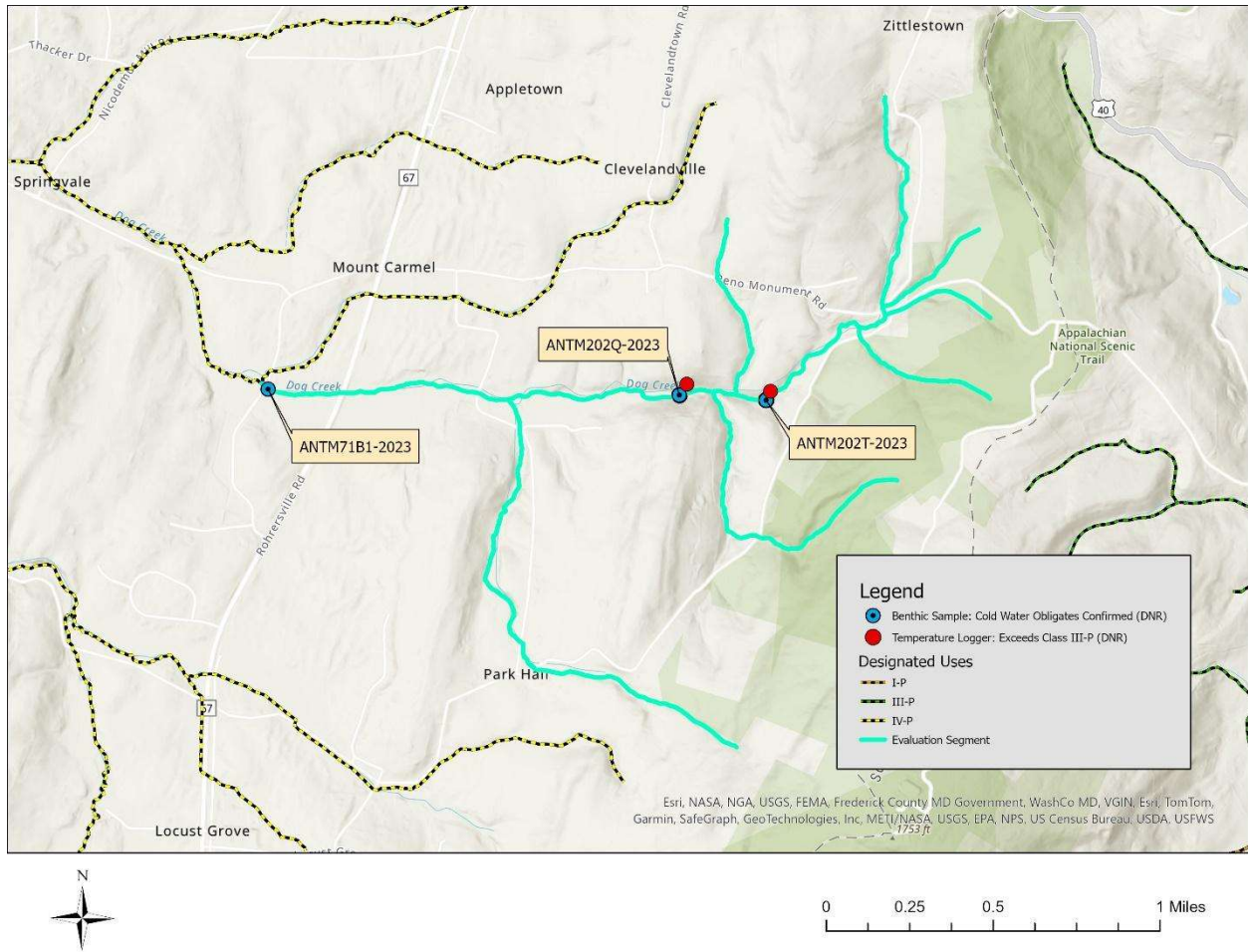
Dog Creek (Washington County)

June 10, 2024

Description of Setting and Data Sources

Dog Creek (12-digit 021405020190) is located in the Antietam Creek watershed east of Sharpsburg, MD and south of Greenbrier Lake in Washington County. The tributary is currently designated as Use Class IV-P and flows into the mainstem of Little Antietam Creek which is designated as Class IV-P. In 2023, Maryland DNR Freshwater Fisheries deployed two temperature loggers along Dog Creek. Additionally, Maryland DNR Freshwater Fisheries sampled benthic macroinvertebrates at three locations in Dog Creek. Figure 1 below shows the location of the sampling stations for the temperature and biological data collection. Temperature and biological data results are provided in Tables 1 and 2.

Figure 1: Dog Creek



Temperature Data Summary for Dog Creek

Water temperature data were collected during two sampling events in 2023 by Maryland DNR Freshwater Fisheries.

Table 1. Dog Creek Temperature Logger Data

Date	Station ID	Stream	Data Submitter	# Temp Readings	Percent>20°C	Percent>24°C	Avg Daily Mean (°C)	Daily Max (°C)
2023	ANTM202T-2023	Dog Creek - Headwaters	MDDNR Freshwater Fisheries	6624	31.85%	0%	18.54	23.59
2022	ANTM202Q-2023	Dog Creek – Upstream of Amos Reeder Rd	MDDNR Freshwater Fisheries	6624	40.61%	0%	18.83	22.2

*Water temperature logger data assessed from June 1st to August 31st. The “Daily Max” represents the maximum temperature from June 1st to August 31st.

Biological Data Summary for Dog Creek

Table 2. Dog Creek Biological Data

Date	Station ID	Stream	Data Submitter	Species	Count
5/4/2023	ANTM202T-2023	Dog Creek - Headwaters	MDDNR Freshwater Fisheries	<i>Tallaperla</i>	2
5/4/2023	ANTM202Q-2023	Dog Creek - Upstream of Amos Reeder Rd	MDDNR Freshwater Fisheries	<i>Tallaperla</i>	2
4/2/2023	ANTM71B1-2023	Dog Creek - Mount Carmel Church Road	MDDNR Freshwater Fisheries	<i>Sweltsa</i>	1

The Maryland DNR Freshwater Fisheries Program sampled benthic macroinvertebrates in Dog Creek in 2023. From sampling efforts in 2023, MD DNR Staff collected cold-water obligate benthic macroinvertebrate species, *Tallaperla* and *Sweltsa*, respectively, at three locations along the mainstem of Dog Creek. MD DNR attempted to collect trout in Dog Creek through a fish survey in 2023 at ANTM202Q, but no trout were found. The presence of the cold-water obligate benthic macroinvertebrates *Tallaperla* and *Sweltsa* fulfills the biological requirements of an existing use determination, as specified in Maryland’s [Cold-Water Existing Use Determinations: Policy & Procedures](https://mde.maryland.gov/programs/water/TMDL/WaterQualityStandards/Documents/Cold%20Water%20Existing%20Use%20Determinations%20Policy%20and%20Procedures.pdf)¹ document.

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<https://mde.maryland.gov/programs/water/TMDL/WaterQualityStandards/Documents/Cold%20Water%20Existing%20Use%20Determinations%20Policy%20and%20Procedures.pdf>

Existing Use Determination and Rationale for Dog Creek

Current Use Class: Class IV-P

Existing Use Determination: Dog Creek, from the headwaters near Reno Monument Road and Moser Road to its confluence with the unnamed tributary to Dog Creek near Amos Reeder Road [39.4671564 N, -77.6482559 W] supports cold-water benthic macroinvertebrates (*Tallaperla*) and water temperatures that stay below 20 °C 59% of the time, an average daily mean below 19°C, and daily maximum below 24°C.

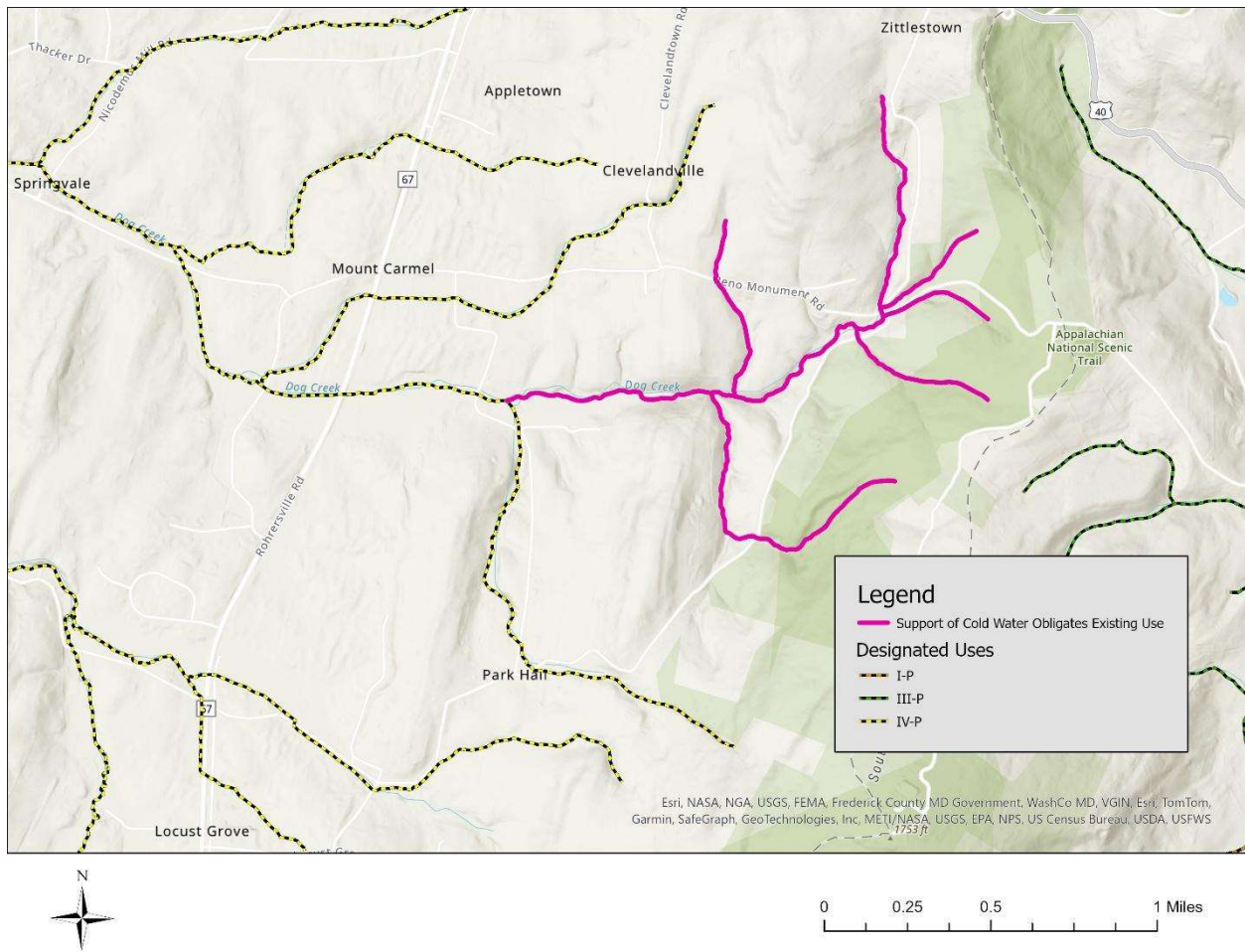
Is this Existing Use Determination Consistent with the Current (June 2024) Designated Use Class? **No.** The existing use of Dog Creek is described as having cold-water obligate benthic macroinvertebrates. This existing use is different from the definition of a Use Class IV/IV-P water body which is described as “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.” Therefore, the existing use of this section of Dog Creek requires protection to maintain the cold-water benthic macroinvertebrates found here.

Changes Proposed to the Currently Designated Use Class: Though the designated use class of this section of Dog Creek should be revised to reflect and be protective of the existing use, current temperature data do not support the re-designation of this section of Dog Creek to Class III-P without conducting a use attainability analysis (UAA). At this time, and as shown in Figure 2, the MDE will formally recognize this section of Dog Creek, from its headwaters to its confluence with the unnamed tributary to Dog Creek, as having an existing use requiring the protection of cold-water benthic macroinvertebrates.

Rationale for the Existing Use Determination: Three sampling events in 2023 revealed the presence of cold-water obligate benthic macroinvertebrates *Tallaperla* and *Sweltsa* within Dog Creek. Since none of the water temperature data collected in Dog Creek meet the Class III-P temperature criterion, the State cannot justify redesignating any portion of Dog Creek to Class III-P without further improvements in water temperature or conducting a UAA. And even though these water temperature data may support a redesignation to the conceptualized ‘cool water’ use currently being discussed, since these uses are in flux, the State prefers to protect this stream with the protections under Tier I Antidegradation Policy until those uses are properly revised and/or developed. Therefore, the existing use of Dog Creek is defined as supporting cold-water benthic macroinvertebrates and having water temperatures that stay below 20 °C 59% of the time, an average daily mean below 19°C, and daily maximum below 24°C. As no temperature data currently extends to the lower portion of Dog Creek, near station ANTM71B1, the existing use will extend from the headwaters of Dog Creek to the confluence with the unnamed tributary to Dog Creek near Amos Reeder Road [39.4671564 N, -77.6482559 W]. If new temperature data is collected along Dog Creek, the existing use of the Dog Creek segment

will be reassessed as needed to incorporate the additional data into its cool water existing use determination.

Figure 2. Existing Use Determination of Dog Creek



Public Review Process: This existing use determination went public in the September 6, 2024 edition of the Maryland Register and is undergoing public review and comment. The public comment period for this existing use determination will be open from September 6, 2024 through October 7, 2024.