

Existing Use Determination and Rationale:

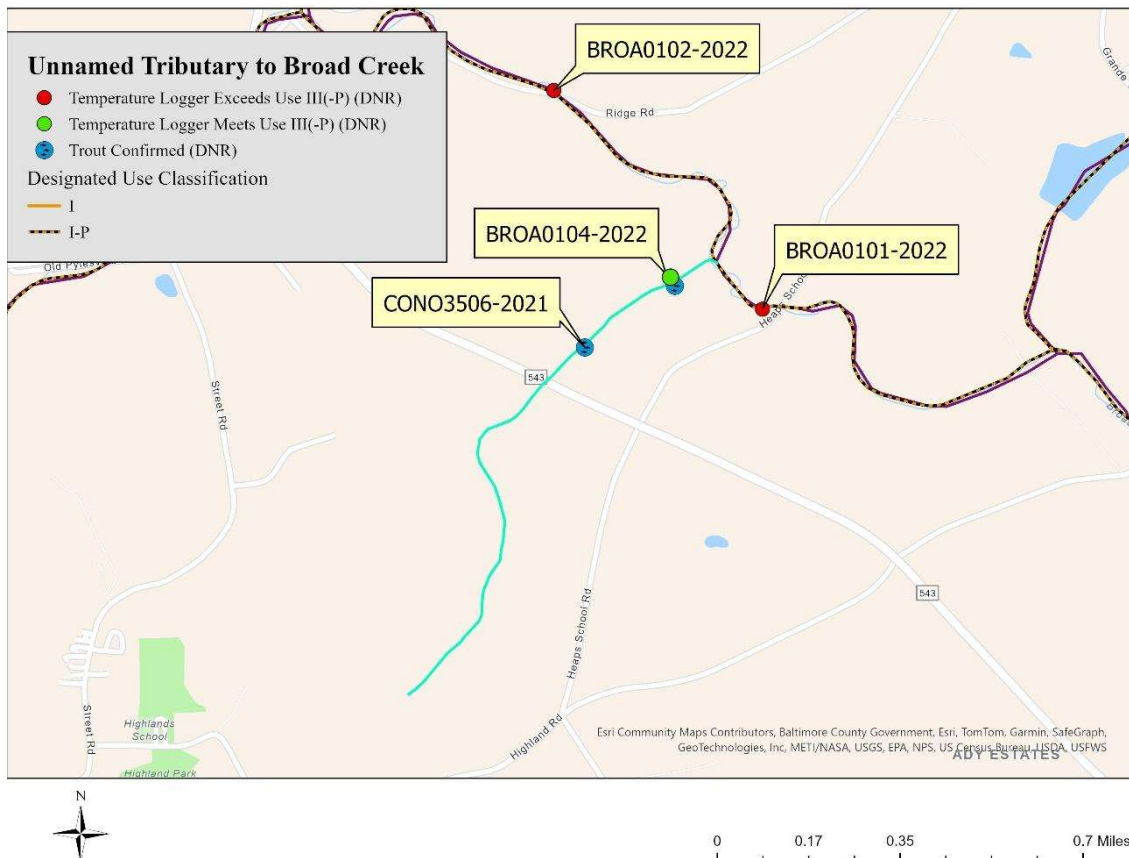
Unnamed tributary (UT) to Broad Creek (Harford County) near Heaps School Road

July 15, 2024

Description of Setting and Data Sources

This unnamed tributary (UT) to Broad Creek (12-digit 021202050339) near Heaps School Road is in the Broad Creek watershed, located south of the Pennsylvania and Maryland border and west of the Conowingo Reservoir in Harford County. The unnamed tributary is currently designated as Use Class I-P. In 2022, Maryland DNR Fisheries deployed a temperature logger to one location of the unnamed tributary and two temperature loggers along the Broad Creek mainstem, above and below the unnamed tributary. Additionally, Maryland DNR Fisheries conducted electrofishing surveys in 2021 and 2022 in the unnamed tributary. The figure below shows the location of the sampling stations. Temperature and biological data results are provided in Tables 1 and 2.

Figure 1: UT Broad Creek



Temperature Data Summary for UT Broad Creek and Broad Creek (mainstem)

In 2022, Maryland DNR Freshwater Fisheries collected water temperature data at three separate locations with one being upstream of the UT to Broad Creek, one downstream of UT to Broad Creek, and one in the UT to Broad Creek itself. Recorded water temperatures in the unnamed tributary to Broad Creek attained Class III(-P) criteria.

Table 1. UT Broad Creek and Broad Creek (mainstem) Temperature Logger Data

Date	Station ID	Stream	Data Submitter	# Temp Readings	Percent>20°C	Percent>24°C	Avg Daily Mean (°C)	Daily Max (°C)
2022	BROA0104-2022	UT Broad Creek	MDDNR Fisheries	6624	4.73%	0%	17.36	21.39
2022	BROA0102-2022	Broad Creek	MDDNR Fisheries	6624	61.01%	3.85%	20.46	25.70
2022	BROA0101-2022	Broad Creek	MDDNR Fisheries	6624	66.14%	4.95%	20.71	26.16

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

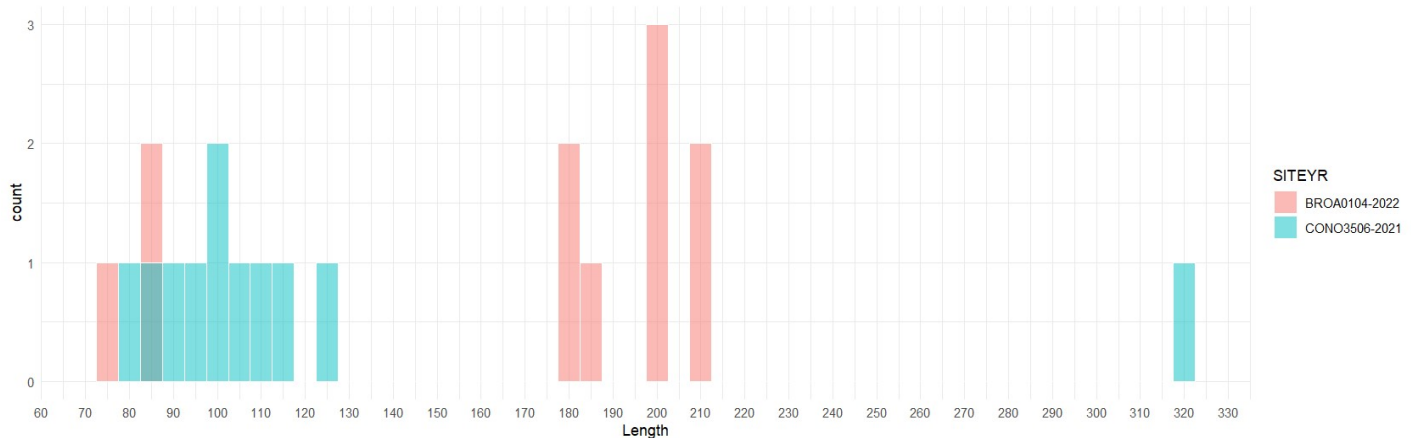
Biological Data Summary for UT Broad Creek

The Maryland DNR Fisheries Program conducted two electrofishing surveys in the unnamed tributary to Broad Creek, one survey in 2021 at station CONO3506 and another in 2022 at station BROA0104. The BROA0104 and CONO3506 trout data from 2022 and 2021 collectively show multiple young-of-year (YOY) brown trout and multiple year classes of brown trout adults. The Maryland DNR Fisheries Program did not attempt to collect cold-water obligate benthic macroinvertebrate species.

Table 2. UT Broad Creek Biological Data

Date	Station ID	Stream	Data Submitter	Species	Count	Maturity
8/31/2021	CONO3506-2021	UT Broad Creek	MDDNR Fisheries	Brown trout	11	YOY and Two Adult Year Classes
8/11/2022	BROA0104-2022	UT Broad Creek	MDDNR Fisheries	Brown trout	11	YOY and one Adult Class

Figure 2: Histogram of brown trout lengths collected at BROA0104-2022 and CONO3506-2021



DNR Fish Stocking

In personal communications with Mark Staley, the MD DNR Central Region Fisheries manager, the Broad Creek watershed has not been stocked with any trout species since 2014.

Trout Data Considerations

There is no trout stocking activity within the segment being evaluated, nor within any hydrologically connected streams to the evaluation segment. The finding of multiple adult year

classes and YOY brown trout within the unnamed tributary to Broad Creek fulfills the requirements for demonstrating a self-sustaining brown trout population as defined in the [Coldwater Existing Use Policy and Procedures](#)¹.

Existing Use Determination and Rationale

Current Use Class: Class I-P

Existing Use Determination: The unnamed tributary to Broad Creek, from the headwaters near Highland Rd [39.6694398° N, -76.3703806° W] downstream to its confluence with the Broad Creek mainstem [39.6813615° N, -76.3618549° W] supports a naturalized self-sustaining brown trout (*Salmo trutta*) population and water temperatures that have a 90th percentile below 20 °C, an average daily mean below 18°C, and daily maximum below 22°C.

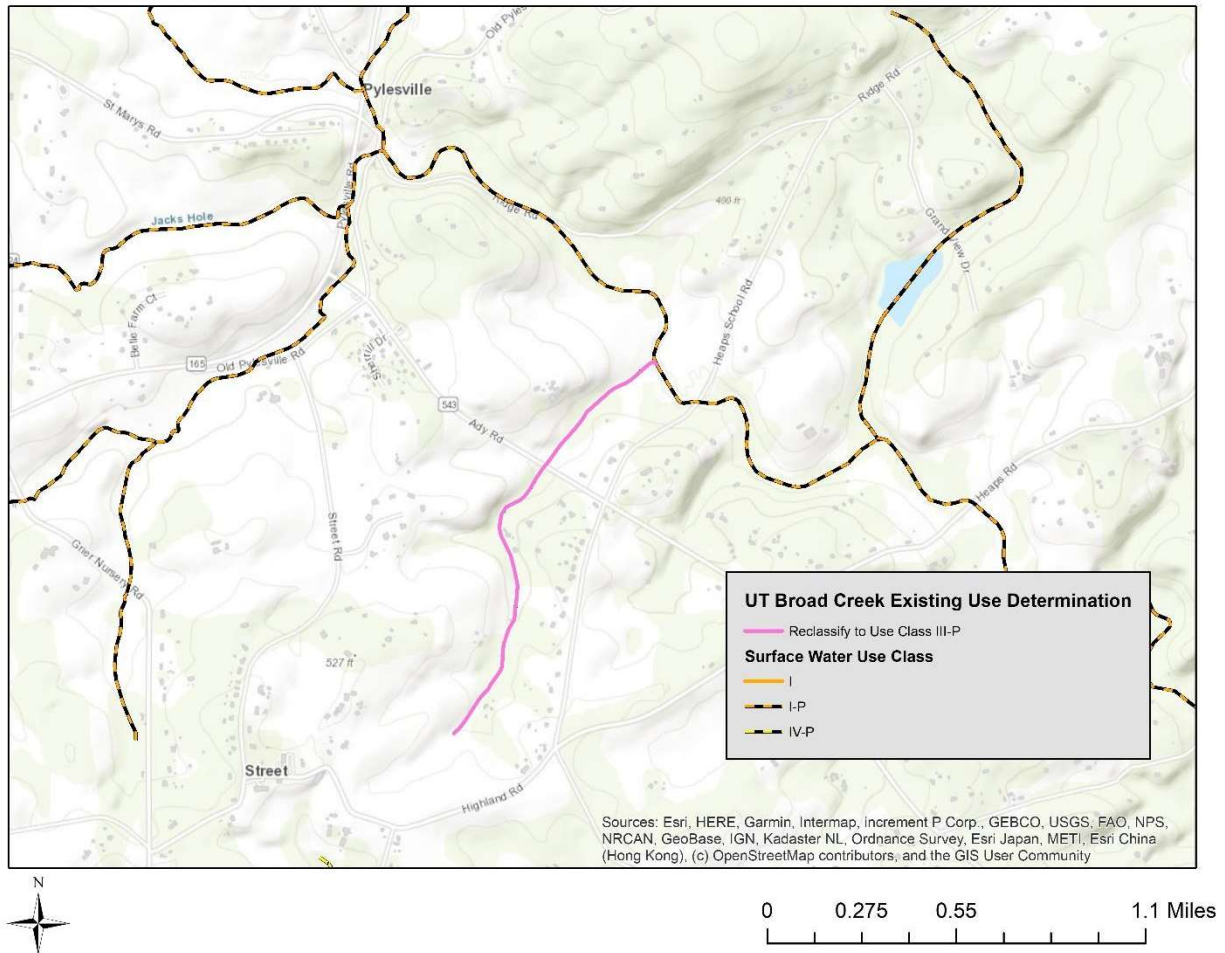
Is this Existing Use Determination Consistent with the Current (July 2024) Designated Use Class? **No.** The existing use of the unnamed tributary to Broad Creek is described as having a naturalized self-sustaining brown trout population. This existing use is different from the definition of a Use Class I-P water body which is described as “waters that are suitable for ...the growth and propagation of fish (other than trout)”. The existing use described above requires that water temperatures remain significantly colder than the water quality criterion established to protect the current use class (Class I-P) designation. Therefore, the existing use of the unnamed tributary to Broad Creek requires protection to maintain the cold-water temperatures and naturalized self-sustaining brown trout population found here. These are both different from those afforded by the segment’s current Use Class designation of I-P.

Changes Proposed to the Currently Designated Use Class: As shown in Figure 3, the Department recommends that the unnamed tributary to Broad Creek, from its headwaters to its confluence with the mainstem of Broad Creek, be redesignated to Class III-P.

Rationale for the Existing Use Determination: The unnamed tributary to Broad Creek supports a self-sustaining brown trout population and has water temperatures that meet the Use Class III-P criteria. Therefore, the Department has determined that this unnamed tributary has an existing use consistent with Use Class III-P.

¹<https://mde.maryland.gov/programs/Regulations/HB1124/Documents/Cold%20Water%20Existing%20Use%20Determinations%20Policy%20and%20Procedures.pdf>

Figure 3: Existing Use Determination of UT Broad 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.