Existing Use Determination and Rationale:

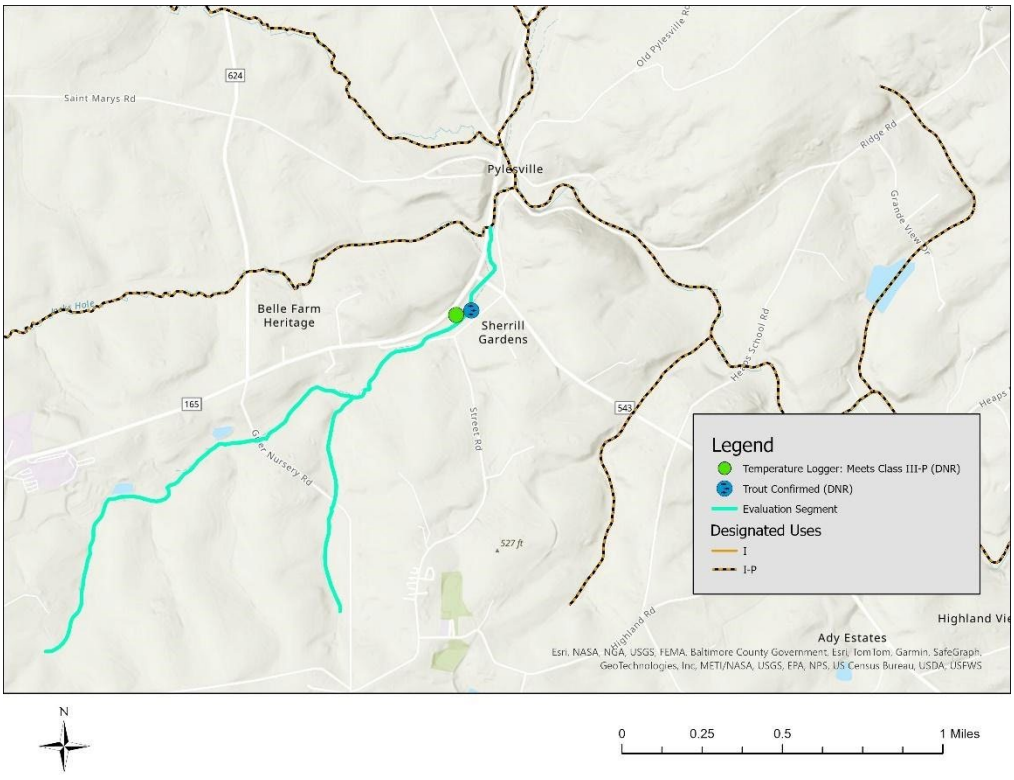
Unnamed Tributary to Jacks Hole (Harford County)

June 10, 2024

Description of Setting and Data Sources

The unnamed tributary (UT) to Jacks Hole (12-digit 021202050341) is located in the Broad Creek watershed in Pylesville, MD and west of the Susquehanna River in Harford County. The stream segment being evaluated is currently designated as Use Class I-P. In 2023, Maryland DNR Freshwater Fisheries deployed one temperature logger along UT Jacks Hole. Additionally, Maryland DNR Freshwater Fisheries conducted a quantitative electrofishing survey to determine the presence of trout. Figure 1 below shows the location of the sampling stations for temperature and biological data collection. Temperature and biological data results are provided in Tables 1 and 2.

Figure 1: Unnamed tributary to Jacks Hole



Temperature Data Summary for UT to Jacks Hole

Water temperature data were collected during one sampling event in 2023 by Maryland DNR Freshwater Fisheries.

Table 1. Jacks Hole 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	BROA-221-R-2023	UT Jacks Hole	MDDNR Freshwater Fisheries	6624	7.0%	0	17.76	22.94

*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 to Jacks Hole

Table 2. Biological Data collected in the UT to Jacks Hole

Date	Station ID	Stream	Data Submitter	Species	Count	Maturity
07/20/2023	BROA-221-R-2023	UT Jacks Hole	MDDNR Freshwater Fisheries	*Salmo trutta*	70	YOY with Multiple Adult Year Classes

The Maryland DNR Freshwater Fisheries Program conducted a Zippin Multiple Pass Electrofishing at station BROA-221-R- 2023. From sampling efforts in 2023, MD DNR Staff collected young of year (YOY) brown trout (*Salmo trutta*) and multiple adult year classes of brown trout ranging from 134 mm to 360 mm in length. MD DNR did not attempt to collect benthic macroinvertebrates in the UT Jacks Hole. The presence of YOY brown trout and multiple adult year classes represents a self-sustaining trout population and fulfills the biological requirements for an existing use determination, as specified in Maryland's Cold-Water Existing Use Determinations: Policy & Procedures[1] document.

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

Trout Stocking

In communications (May 15, 2024) with Mark Staley, Central Maryland Regional Fisheries Manager at Maryland Department of Natural Resources (MD DNR), MD DNR Freshwater Fisheries has not stocked any trout species into Broad Creek or the Broad Creek watershed in Harford County, MD since at least 1985. Records of stocking before this time may be unavailable, but the reproducing trout populations in this segment are not the result of recent stocking. Therefore, the occurrence of brown trout within UT Jacks Hole represents a naturalized population following the requirements specified in Maryland's Cold-Water Existing Use Determinations: Policy & Procedures[1] document.

Existing Use Determination and Rationale for Unnamed Tributary to Jacks Hole

Current Use Class: Class I-P

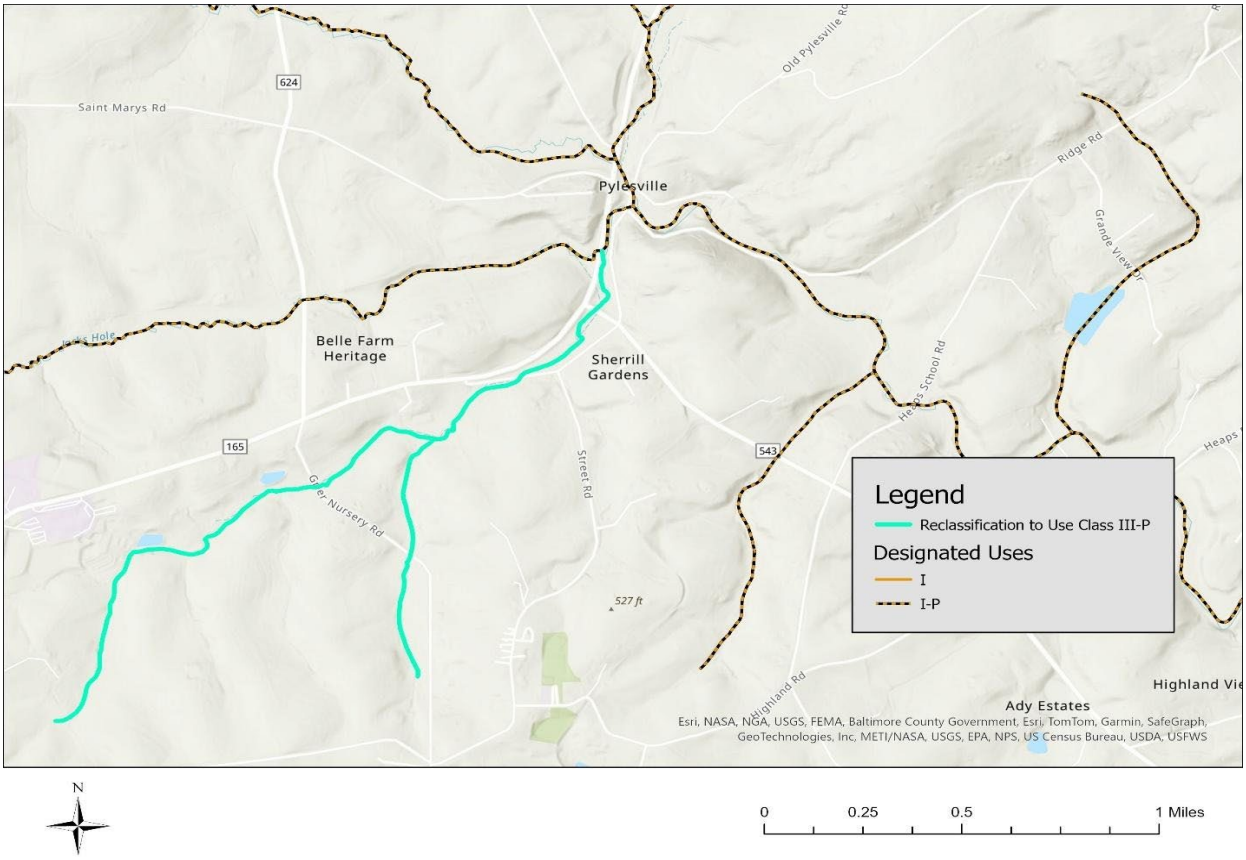
Existing Use Determination: The unnamed tributary to Jacks Hole, from the headwaters near North Harford High School to its confluence with the mainstem of Jacks Hole [39.6864751 N, -76.3748481 W] supports a naturalized, self-sustaining population of brown trout (*Salmo trutta*) and water temperatures that stay below 20 °C 93% of the time, an average daily mean below 18°C, and daily maximum below 23°C.

Is this Existing Use Determination Consistent with the Current (June 2024) Designated Use Class? **No.** The existing use of this tributary, as described above, requires that water temperatures remain significantly colder than the water quality criterion established to protect the current use class (Class I-P: Warmwater Aquatic Life) designation. As a result, the existing use of this tributary to Jacks Hole requires protections to maintain the cold-water temperatures currently found in this tributary and is different from those afforded protection by the stream segment's current use class designation of I-P.

Changes Proposed to the Currently Designated Use Class: As shown in Figure 2, the Department recommends that the unnamed tributary to Jacks Hole be redesignated to Class III-P.

Rationale for the Existing Use Determination: The unnamed tributary to Jacks Hole supports cold-water obligate species (*Salmo trutta*) and has water temperatures that meet the Use Class III-P criteria.

Figure 2. Existing Use Determination of UT Jacks Hole



Public Review Process: This existing use determination was proposed in the September 6, 2024 edition of the Maryland Register. The public review and comment period was from September 6, 2024 - December 9, 2024, and a public hearing was held December 2, 2024.

Status of Existing Use Determination: The cold water existing use determination for UT Jacks Hole has been finalized following the closure of the public comment and the Department's notice in the Maryland Register on April 17, 2026. UT Jacks Hole shall receive existing use protection for its uses and water quality, as defined within this document and in accordance with Maryland's Tier I Antidegradation Policy (COMAR 26.08.02.04-1).

The current action is not a stream redesignation. Any changes to designated uses must be made by amending Maryland's water quality standards regulations (found in Code of Maryland Regulations (COMAR) 26.08.02). Stream redesignations will be considered in a separate regulatory action not encompassed by this existing use determination's public comment period. Any proposed stream redesignations will be subject to additional public review and comment and will consider the scientific information reported within the finalized existing use determination document.