

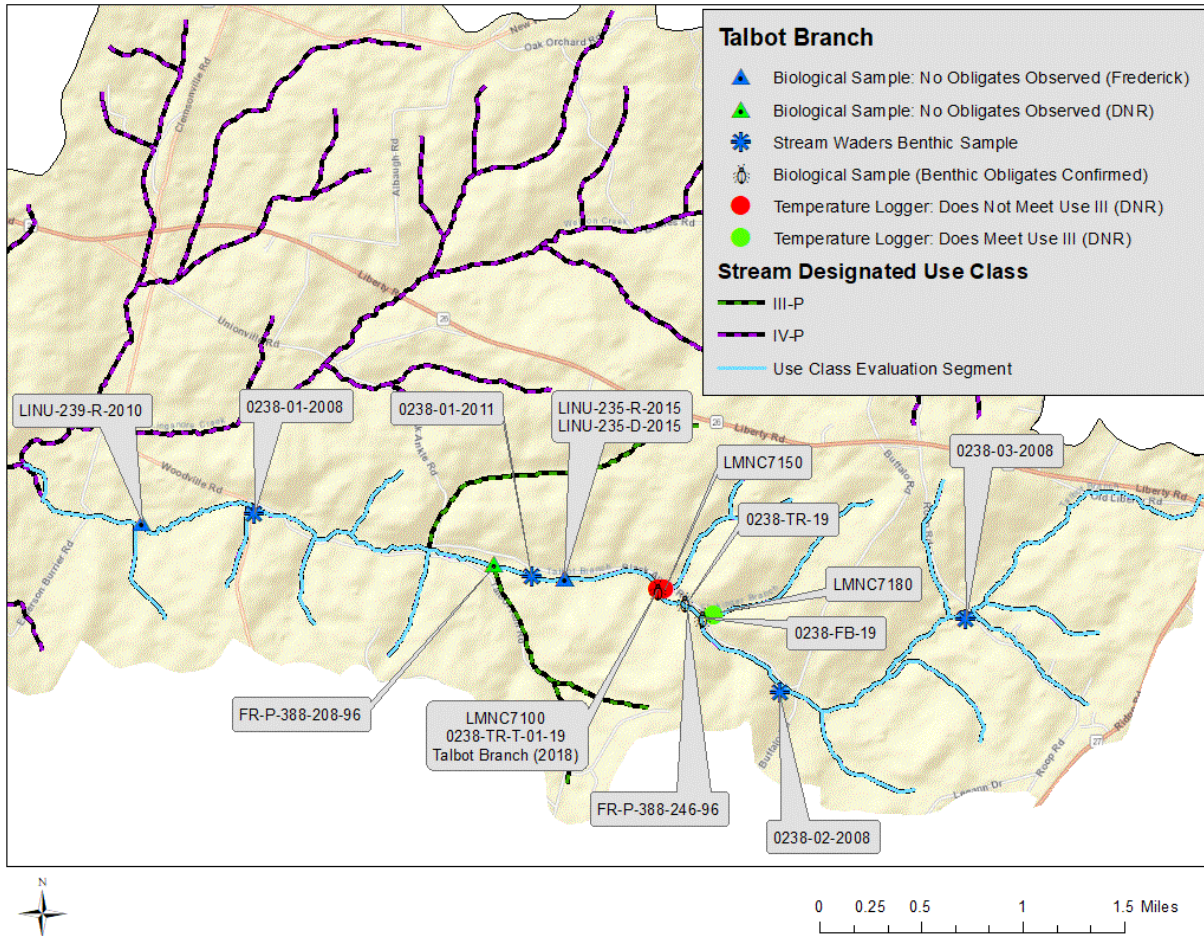
# **Existing Use Determination and Rationale: Talbot Branch and Tributaries (Frederick County)**

**August 20, 2020**

## **Description of Setting and Data Sources**

Talbot Branch (12-digit 021403020238) in the Lower Monocacy River watershed, located southwest of New Windsor in Carroll and Frederick counties, is currently designated as Use Class IV-P with the exception of two unnamed tributaries that are Class III-P. The waterbody segment may support several trout species or is a possible candidate for trout re-introduction by the MDDNR Fisheries Program. Frederick County, the MDDNR Fisheries Program, MBSS biologists, and Stream Waders volunteers conducted surveys of the waterbody segment in 1996, 2000, 2003, 2008, 2010, 2011, 2015, 2018 and 2019. Figure 1 shows the location of the sampling stations, and Tables 1 through 6 provide temperature logger and biological data results. For the purpose of determining the existing uses at an appropriate level of specificity, this document examines available data for Flickinger Branch and an unnamed tributary separately from the rest of the Talbot Branch catchment area.

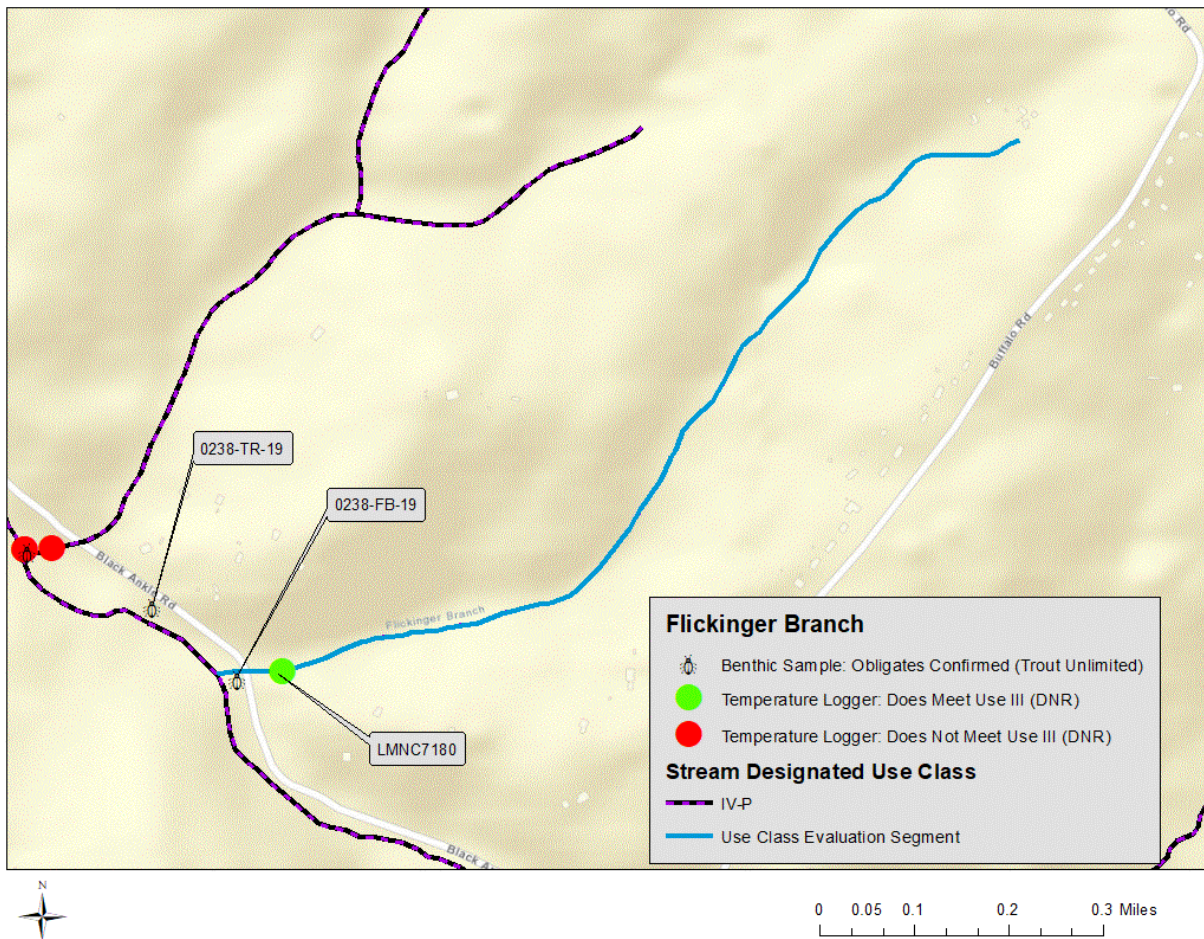
Figure 1: Talbot Branch



## Flickinger Branch Existing Use Determination

Biological and Temperature data are available for Flickinger Branch. These data suggest that Flickinger Branch is attaining Use Class III temperature criteria and supports coldwater benthic macroinvertebrates.

Figure 2: Flickinger Branch



## **Temperature Data Summary for Flickinger Branch**

Flickinger Branch water temperature data were collected in 2019 at the LMNC7180 station by DNR Fisheries. The data show that this tributary to Talbot Branch is attaining Use Class III-P temperature criteria.

Table 1: Flickinger Branch Temperature Logger Data



| Date | Station ID | Stream            | Data Submitter          | # Temp Readings | Percent>20°C | Percent>24°C | Avg Daily Mean | Daily Max |
|------|------------|-------------------|-------------------------|-----------------|--------------|--------------|----------------|-----------|
| 2018 | LMNC7180   | Flickinger Branch | MDDNR Fisheries Program | 6624            | 7.5%         | 0%           | 17.71          | 21.8      |

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

### Biological Data Summary for Flickinger Branch

Trout Unlimited conducted a benthic survey of Flickinger Branch at the 0238-FB-19 station in 2019. Both *Tallaperla* and *Sweltsa* were confirmed, although the number of individuals in the sample was not recorded.

Table 2: Flickinger Branch Biological Data Summary

| Date    | Station ID | Stream            | Data Submitter          | Species                             | Count   | Maturity |
|---------|------------|-------------------|-------------------------|-------------------------------------|---------|----------|
| 4/12/19 | 0238-FB-19 | Flickinger Branch | MDDNR Fisheries Program | <i>Tallaperla</i><br><i>Sweltsa</i> | Present | -        |

### Existing Use Determination and Rationale for Flickinger Branch

*Current Use Class:* Class IV-P

*Existing Use Determination:* Flickinger Branch, from its confluence with Talbot Branch [39.450649°N, -77.135427°W] and including all upstream surface waters, supports cold water obligates and has water temperatures that have a 90<sup>th</sup> percentile below 20°C, an average daily mean below 20°C, and daily max below 24°C.

*Is this Existing Use Determination Consistent with the Current (March 2020) Designated Use Class?* **No.** The existing use of Flickinger Branch, as described above, requires that water temperatures remain significantly colder than the water quality criterion established to protect the current use class (Class IV-P) designation. As a result, the existing use of Flickinger Branch

requires protections to maintain the cold water temperatures currently found in this tributary and different than those afforded by the current use class designation of IV-P.

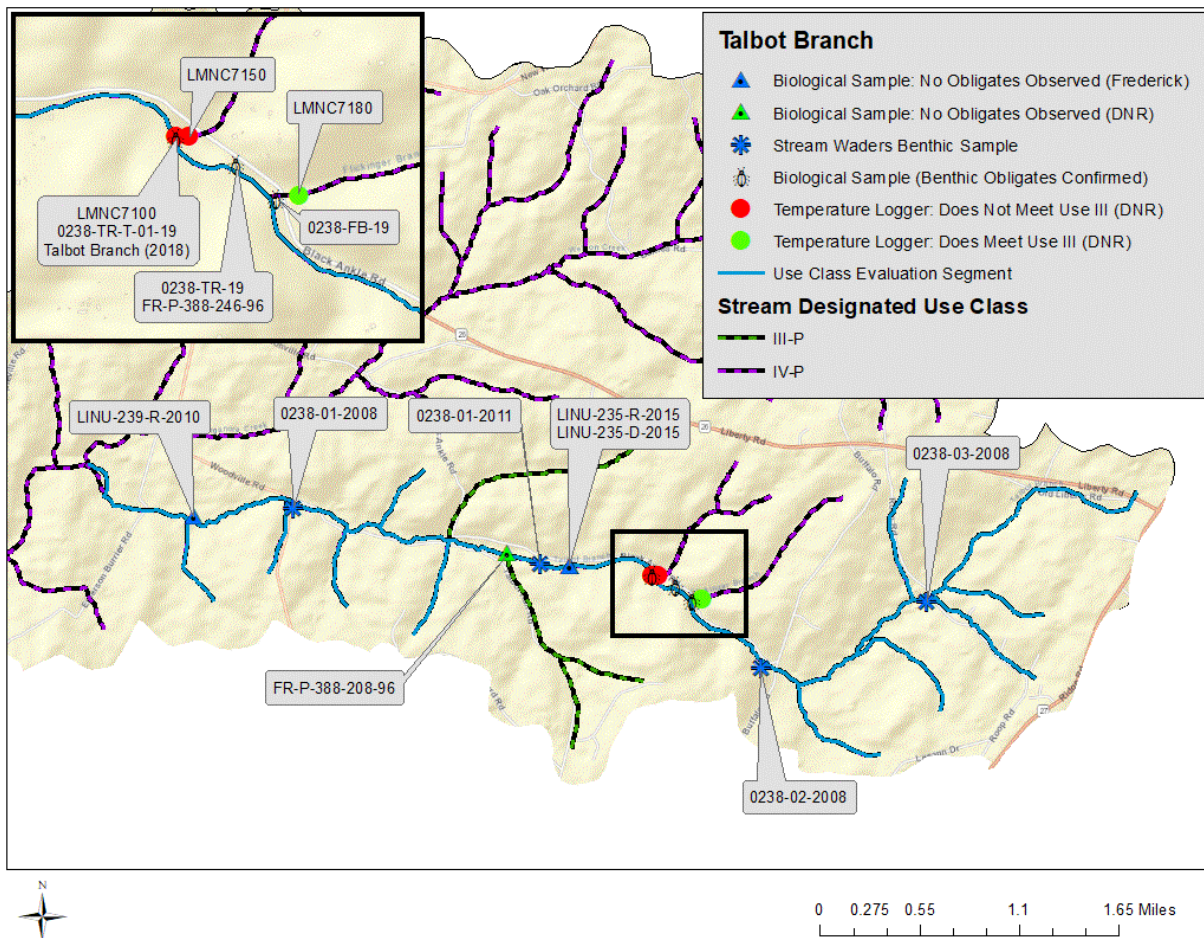
*Changes Proposed to the Currently Designated Use Class:* As shown in Figure 5, the Department recommends that Flickinger Branch be redesignated to Class III-P.

*Rationale for the Existing Use Determination:* Available data for Flickinger Branch demonstrate the presence of cold water obligate species and water temperatures that meet the Use Class III-P criteria.

## Talbot Branch Existing Use Determination

Biological and temperature data are available for Talbot Branch downstream of its confluence with Flickinger Branch. Data show that while Use Class III-P criteria are not being attained, the existing use of Talbot Branch is different from the current designated use.

Figure 3: Talbot Branch. (Please note that the following stations are not located in the Talbot Branch mainstem: LMNC7180, LMNC7150, 0238-FB-19, and 0238-TR-T-01-19. These stations are not considered in the existing use evaluation of the mainstem.)



## Temperature Data Summary for Talbot Branch

DNR fisheries deployed one temperature logger in 2019 and one in 2018. Both were located in Talbot Branch immediately downstream of the confluence with an unnamed tributary located at 39.452765°N, -77.138390°W. As shown in Table 3, Use Class III temperatures are not attained

in Talbot Branch. Furthermore, the temperature logger deployed in 2019 showed higher temperatures than the 2018 logger.

Table 3: Talbot Branch Mainstem Temperature Logger Data

| Date | Station ID    | Stream        | Data Submitter          | # Temp Readings | Percent>20°C | Percent>24°C | Avg Daily Mean | Daily Max |
|------|---------------|---------------|-------------------------|-----------------|--------------|--------------|----------------|-----------|
| 2019 | LMNC7100      | Talbot Branch | MDDNR Fisheries Program | 6624            | 41.8%        | 0%           | 19.3           | 24.2      |
| 2018 | Talbot Branch | Talbot Branch | MDDNR Fisheries Program | 6624            | 12%          | 0%           | 18.19          | 22.25     |

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

### **Biological Data Summary for Talbot Branch**

Trout Unlimited submitted benthic data from Talbot Branch (station 0238-TR-19). The presence of *Tallaperla* was confirmed in the mainstem. The number of individuals was not recorded. Currently there is no evidence that *Tallaperla* or *Sweltsa* populations extend downstream of a confluence located at [39.454179°N, -77.154314°W] or upstream of a confluence with Flickinger Branch located at [39.450649°N, -77.135427°W]. Unless otherwise noted, benthic data submitted by MDDNR Stream Waders was identified to family level.

Table 4. Talbot Branch Biological Data.

| Date      | Station ID      | Stream        | Data Submitter   | Species           | Count   | Maturity |
|-----------|-----------------|---------------|------------------|-------------------|---------|----------|
| 4/12/19   | 0238-TR-19      | Talbot Branch | Trout Unlimited  | <i>Tallaperla</i> | Present | -        |
| 4/15/2015 | LINU-235-D-2015 | Talbot Branch | Frederick County | -                 | -       | -        |
| 4/15/2015 | LINU-235-R-2015 | Talbot Branch | Frederick County | -                 | -       | -        |

| Date      | Station ID      | Stream        | Data Submitter          | Species | Count | Maturity |
|-----------|-----------------|---------------|-------------------------|---------|-------|----------|
| 3/31/2010 | LINU-239-R-2010 | Talbot Branch | Frederick County        | -       | -     | -        |
| 9/7/2018  | Talbot Branch   | Talbot Branch | MDDNR Fisheries Program | -       | -     | -        |
| 6/3/1996  | FR-P-388-208-96 | Talbot Branch | MDDNR MBSS              | -       | -     | -        |
| 6/18/1996 | FR-P-388-246-96 | Talbot Branch | MDDNR MBSS              | -       | -     | -        |
| 4/23/2011 | 0238-01-2011    | Talbot Branch | MDDNR Stream Waders     | -       | -     | -        |
| 4/26/2008 | 0238-03-2008    | Talbot Branch | MDDNR Stream Waders     | -       | -     | -        |
| 4/17/2008 | 0238-02-2008    | Talbot Branch | MDDNR Stream Waders     | -       | -     | -        |
| 4/17/2008 | 0238-01-2008    | Talbot Branch | MDDNR Stream Waders     | -       | -     | -        |

## Existing Use Determination and Rationale for Talbot Branch

*Current Use Class:* Class IV-P

*Existing Use Determination:* The mainstem of Talbot Branch, from the confluence with the unnamed tributary located at [39.452463°N, -77.139258°W], upstream to the confluence with Flickinger Branch located at [39.450649°N, -77.135427°W] supports cold water obligates and has an average daily mean temperature below 20°C, a daily maximum of less than 25°C, stays below 20°C for at least 58% of the time and stays below 24°C for at least 90% of the time.

*Is this Existing Use Determination Consistent with the Current (March 2020) Designated Use Class?* **No.** The existing use of Talbot Branch, as described above, requires that water temperatures remain significantly colder than the water quality criterion established to protect the current use class (Class IV-P) designation. As a result, the existing use of Talbot Branch requires protections to maintain the cold water temperatures currently found in these tributaries and different than those afforded by the current use class designation of IV-P.



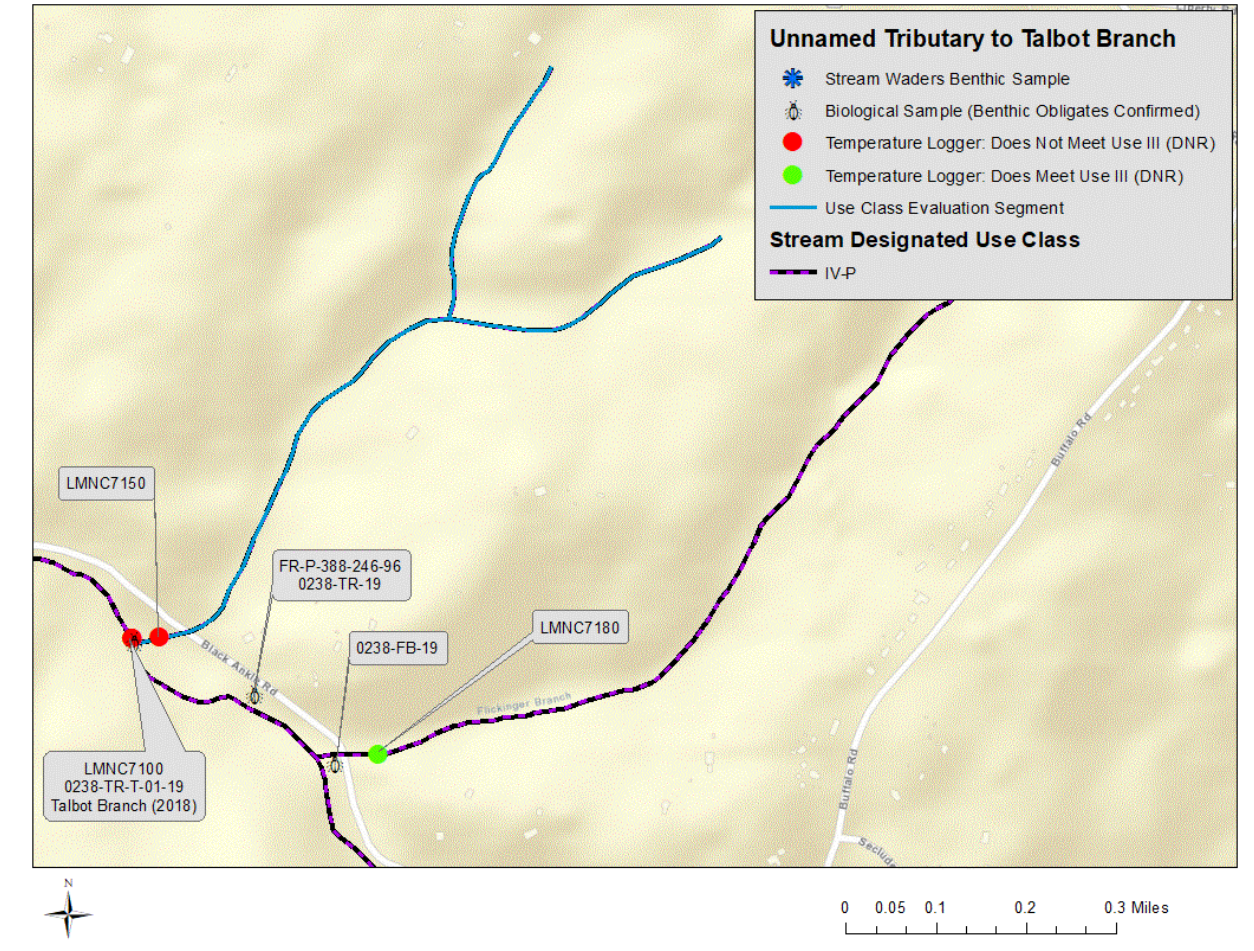
*Changes Proposed to the Currently Designated Use Class:* Though it is clear that the designated use class of Talbot Branch should be revised to reflect and be protective of the existing use, support of cold water obligates, current temperature data do not support the re-designation of this section of the unnamed tributary to Class III-P without conducting a use attainability analysis (UAA). Since Maryland is in the process of redefining Class IV (or IV-P) and potentially developing a new ‘cool water’ use class as part of the work of the Cold Water Advisory Committee, it is not prudent to redesignate Talbot Branch at this time. Instead, and until Maryland conducts either a UAA or establishes new definitions for Class IV and a cool water use class, MDE will formally recognize this section of Talbot Branch as having an existing use that is different than its current designated use class (Figure 5).

*Rationale for the Existing Use Determination:* Although specific numbers of observed cold water obligates were not recorded, the presence of any *Tallaperla* or *Sweltsa* confirm that the existing use of this waterbody is different from the designated use classification. Cold water obligates have not yet been observed downstream of the tributary located at [39.452463°N, -77.139258°W] or upstream of the confluence with Flickinger Branch located at [39.450649°N, -77.135427°W]. Therefore, the existing use will be recognized up to these locations but not beyond them. Figure 5 shows the locations of the designated use class and existing use changes.

## Unnamed Tributary to Talbot Branch (located to the west of Flickinger Branch) Existing Use Determination

Biological and temperature data are available for an unnamed tributary to Talbot Branch located to the west of Flickinger Branch. Data show that while Use Class III-P criteria are not being attained, the existing use of this tributary is different from the current designated use.

Figure 4: Unnamed Tributary to Talbot Branch



### **Temperature Data Summary for the Unnamed Tributary to Talbot Branch**

DNR fisheries deployed a temperature logger in 2019. As shown in Table 5, The logger did not attain Use Class III temperature criteria.

Table 5: Unnamed Tributary to Talbot Branch Temperature Logger Data

| Date | Station ID | Stream                             | Data Submitter          | # Temp Readings | Percent>20°C | Percent>24°C | Avg Daily Mean | Daily Max |
|------|------------|------------------------------------|-------------------------|-----------------|--------------|--------------|----------------|-----------|
| 2019 | LMNC7150   | Unnamed Tributary to Talbot Branch | MDDNR Fisheries Program | 6624            | 21.6%        | 0%           | 18.5           | 23.2      |

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

### Biological Data Summary for Unnamed Tributary to Talbot Branch

Trout Unlimited submitted benthic data for the unnamed tributary (station 0238-TR-T-01019). The presence of both *Tallaperla* and *Sweltsa* was confirmed in the unnamed tributary. The number of individuals was not recorded.

Table 6. Unnamed Tributary to Talbot Branch Biological Data.

| Date    | Station ID      | Stream           | DATA SUBMITTER  | Species                             | Count   | Maturity |
|---------|-----------------|------------------|-----------------|-------------------------------------|---------|----------|
| 4/12/19 | 0238-TR-T-01-19 | Talbot Branch UT | Trout Unlimited | <i>Tallaperla</i><br><i>Sweltsa</i> | Present | -        |

### Existing Use Determination and Rationale for Unnamed Tributary to Talbot Branch

*Current Use Class:* Class IV-P

*Existing Use Determination:* The unnamed tributary from the confluence with Talbot Run located at [39.452463°N, -77.139258°W] upstream to the first confluence [39.457721°N, -77.132696°W] supports cold water obligates and has water temperatures that have an average daily mean temperature below 20°C, a daily maximum of less than 23.2°C, stays below 20°C for at least 78.4% of the time and stays below 24°C for 90% of the time.

*Is this Existing Use Determination Consistent with the Current (March 2020) Designated Use Class?* **No.** The existing use of the unnamed tributary, as described above, requires that water temperatures remain significantly colder than the water quality criterion established to protect the current use class (Class IV-P) designation. As a result, the existing use of the unnamed tributary

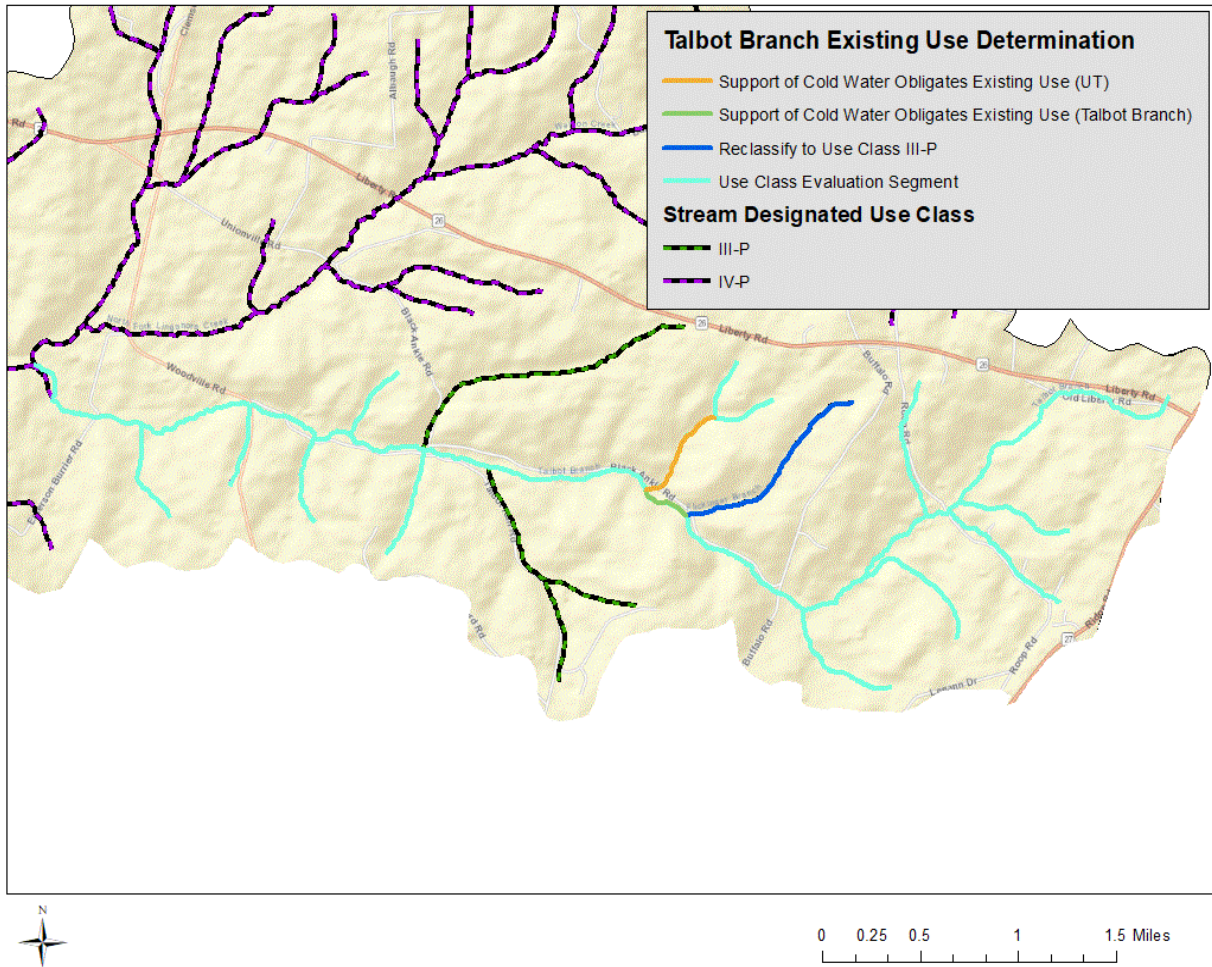
requires protections to maintain the cold water temperatures currently found in this tributary and different than those afforded by the current use class designation of IV-P.

*Changes Proposed to the Currently Designated Use Class:* Though it is clear that the designated use class of the unnamed tributary should be revised to reflect and be protective of the existing use, support of cold water obligates, current temperature data do not support the re-designation of this section of the unnamed tributary to Class III-P without conducting a use attainability analysis (UAA). Since Maryland is in the process of redefining Class IV (or IV-P) and potentially developing a new ‘cool water’ use class as part of the work of the Cold Water Advisory Committee, it is not prudent to redesignate the unnamed tributary at this time. Instead, and until Maryland conducts either a UAA or establishes new definitions for Class IV and a cool water use class, MDE will formally recognize this unnamed tributary as having an existing use that is different than its current designated use class (Figure 5).

*Rationale for the Existing Use Determination:* Although specific numbers of observed cold water obligates were not recorded, the presence of any *Tallaperla* or *Sweltsa* confirm that the existing use of this waterbody is different from the designated use classification. Figure 5 shows the locations of the designated use class and existing use changes.



Figure 5: Final Existing Use Determinations and Redesignation for portions of Talbot Branch



**Public Review Process:** These existing use determinations were provided for public review and comment with Maryland’s 2019 Triennial Review of Water Quality Standards which went public with the March 11, 2022 edition of the Maryland Register.