ATTACHMENT 5

PNDI AND AGENCY COORDINATION

CONFIDENTIAL

NOTE: Permanent access road 5 (PAR 5) was changed to a temporary access road (TAR 10A) and had a slight route realignment after submittal of the PNDI request; however, the new alignment is closer to the proposed pipeline and is included in the "Buffered Project Boundary" generated in the PNDI search.

1. PROJECT INFORMATION

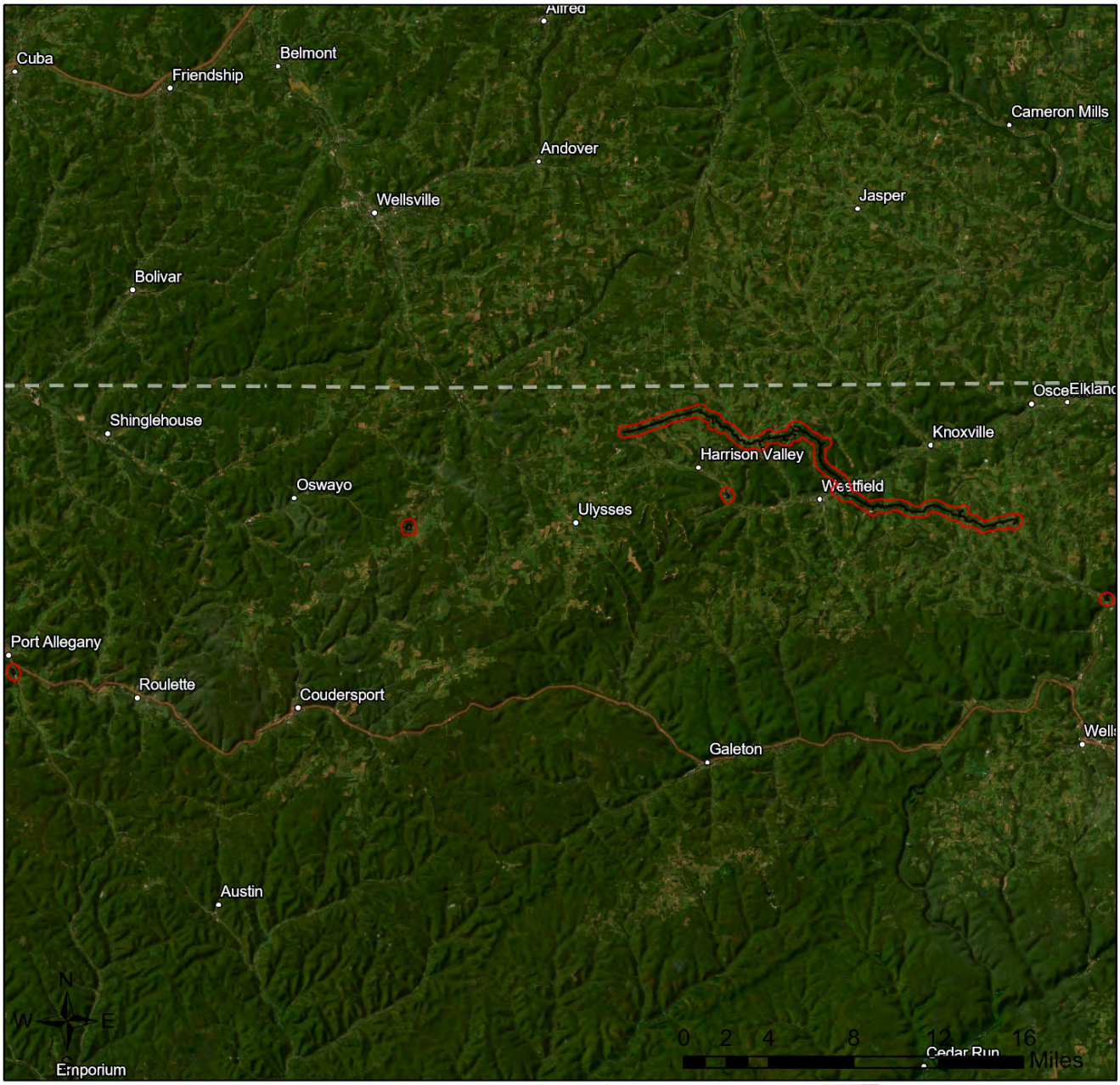
Project Name: **Tioga Pathway Project**
Date of Review: **5/21/2024 11:34:12 AM**
Project Category: **Energy Storage, Production, and Transfer, Energy Transfer, Pipeline (e.g., gas, oil) -- NEW (construction of new line in a new location)**
Project Area: **358.13 acres**
County(s): **McKean; Potter; Tioga**
Watersheds HUC 8: **Tioga; Upper Allegheny; Upper Genesee**
Watersheds HUC 12: **Allegheny Portage Creek; Card Creek-Allegheny River; Headwaters Cowanesque River; Jemison Creek; Losey Creek; MIddle Cowanesque River; Middle Crooked Creek; North Fork; Upper Cowanesque River; Upper Crooked Creek; West Branch Genesee River**
Decimal Degrees: **41.946769, -77.538654**
Degrees Minutes Seconds: **41° 56' 48.3681" N, 77° 32' 19.1546" W**

2. SEARCH RESULTS - LARGE PROJECT

Agency	Results	Response
PA Game Commission	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
PA Department of Conservation and Natural Resources	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
PA Fish and Boat Commission	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
U.S. Fish and Wildlife Service	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**

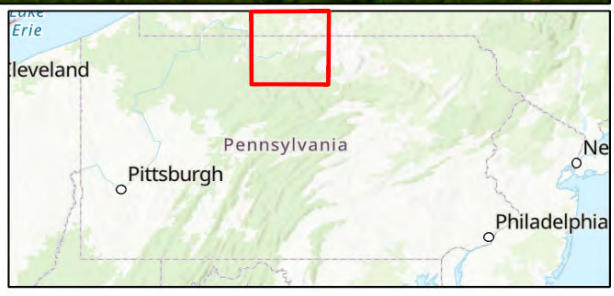
Large Project. The project area is greater than 10 miles and/or 5,165 acres and therefore is categorized as a Large Project, and is not analyzed by the PNDI tool. Coordination is therefore required with the four jurisdictional agencies to determine if potential impacts to threatened and endangered and/or special concern species and resources within the project area. Please see the DEP Information section of the receipt if a PA Department of Environmental Protection Permit is required.

Tioga Pathway Project



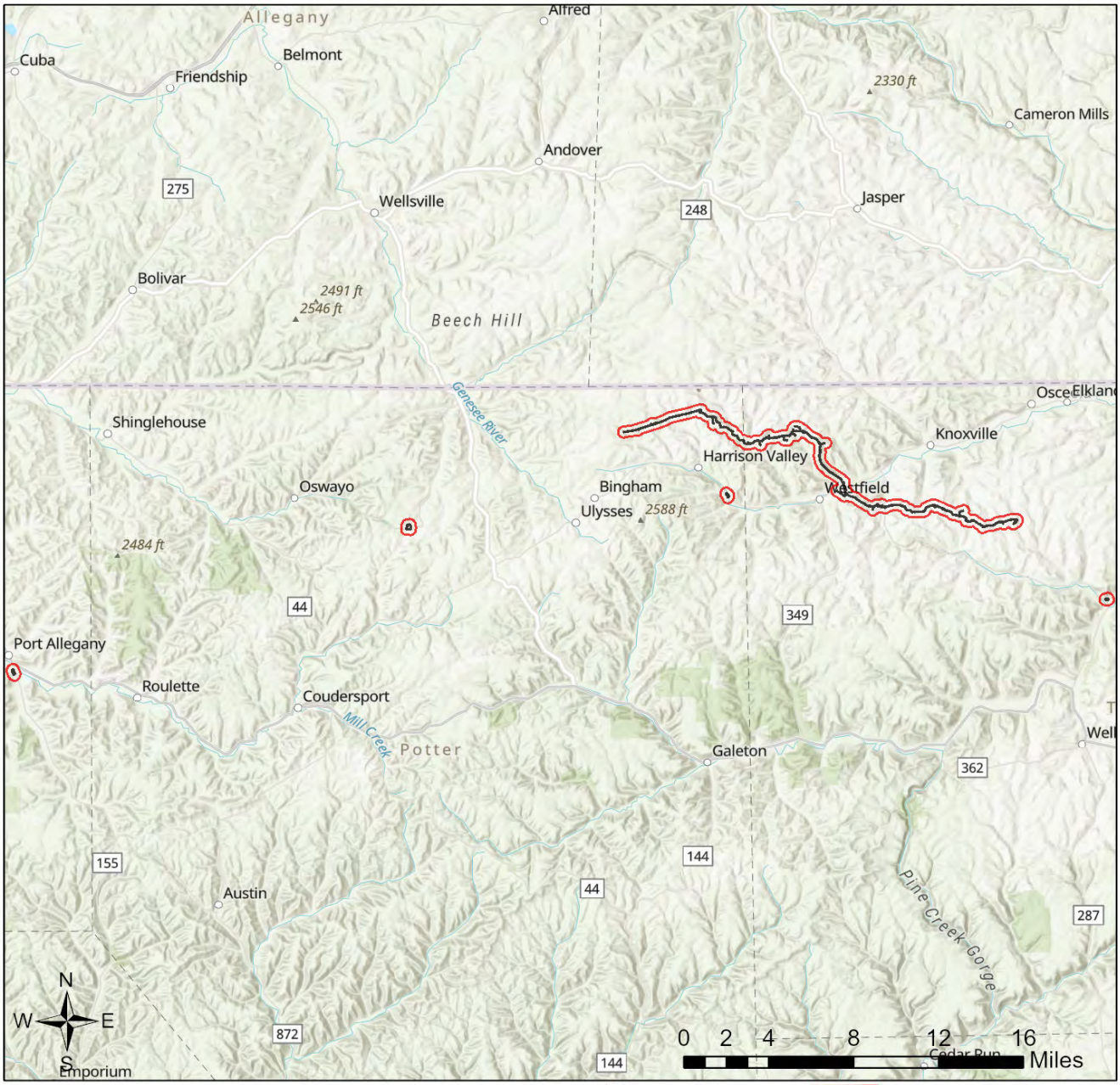
Buffered Project Boundary

Project Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Tioga Pathway Project



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PA Department of Conservation and Natural Resources

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PA Fish and Boat Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

U.S. Fish and Wildlife Service

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email the following information to the agency(s) (see AGENCY CONTACT INFORMATION). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies (but not USFWS).
*If information was requested by USFWS, applicants must email, or mail, project information to IR1_ESPenn@fws.gov to initiate a review. USFWS will not accept uploaded project materials.

Check-list of Minimum Materials to be submitted:
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
____**SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

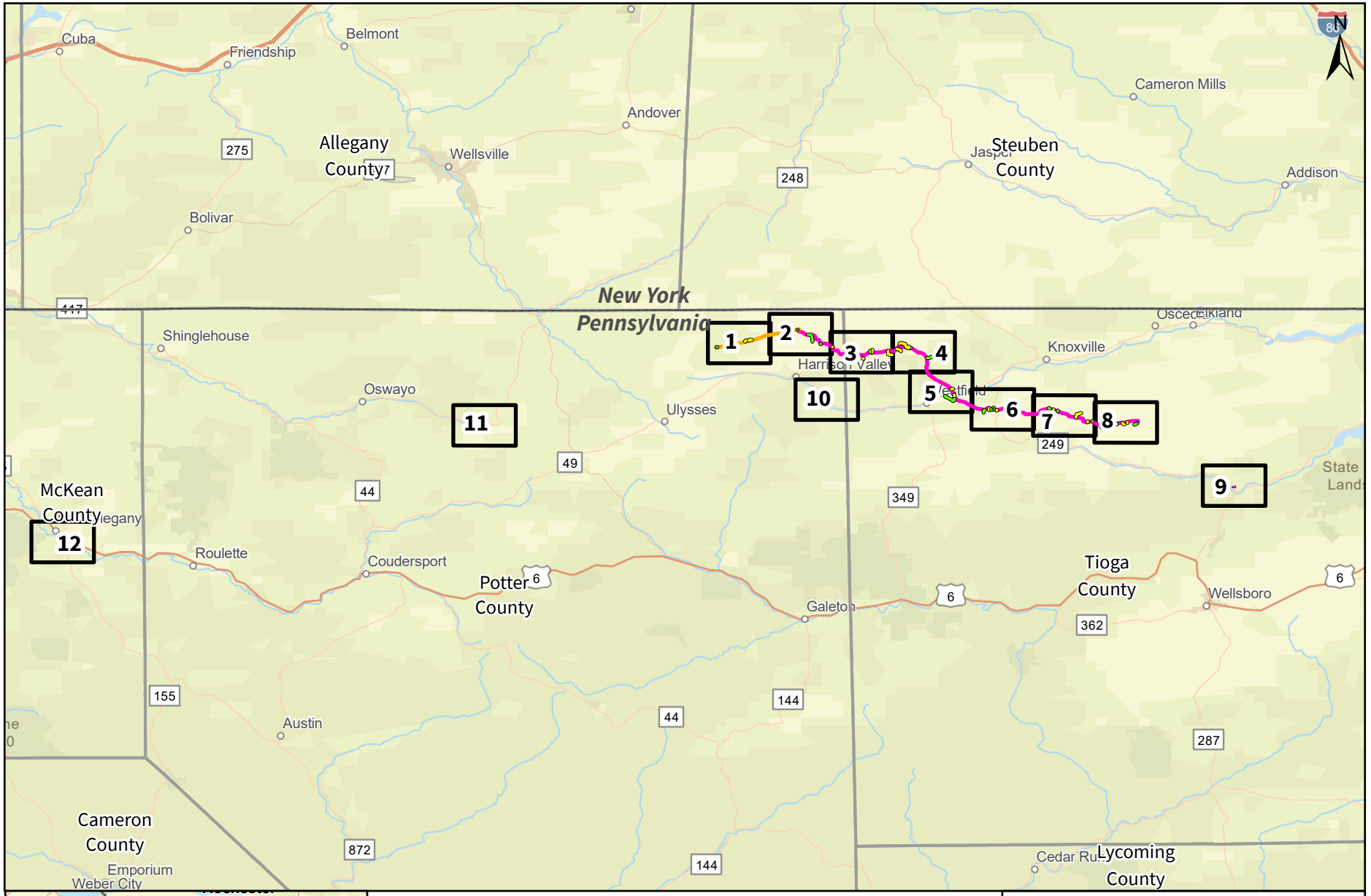
7. PROJECT CONTACT INFORMATION

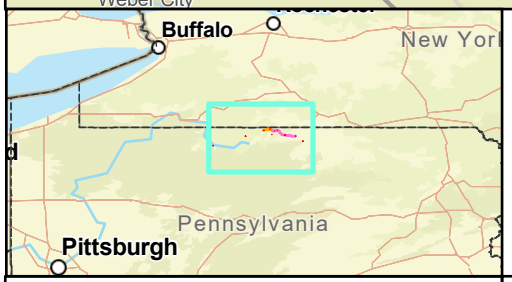
Name:_Robin Dingle_____
Company/Business Name:_Tetra Tech, Inc._____
Address:__301 Ellicott Street_____
City, State, Zip:_Buffalo, New York, 14203_____
Phone:(_484____)_541-8077_____
Email:_robin.dingle@tetratech.com_____

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Robin Dingle _____ 8/23/2024_____
applicant/project proponent signature date





Legend

- Proposed Z20 Pipeline
- Proposed YM59 Pipeline
- YM59 - HDD BORE
- Permanent Access Rd
- Temporary Access Rd
- Project Facility
- Sheet Boundary
- State Boundary
- County Boundary

Tioga Pathway Project
Sheet Key
USGS Project Location Map
McKean, Potter and Tioga Counties, PA

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Miles
0 1.5 3 6 9 12

Basemap: ESRI, Street Map

Kilometers
0 2.5 5 10

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

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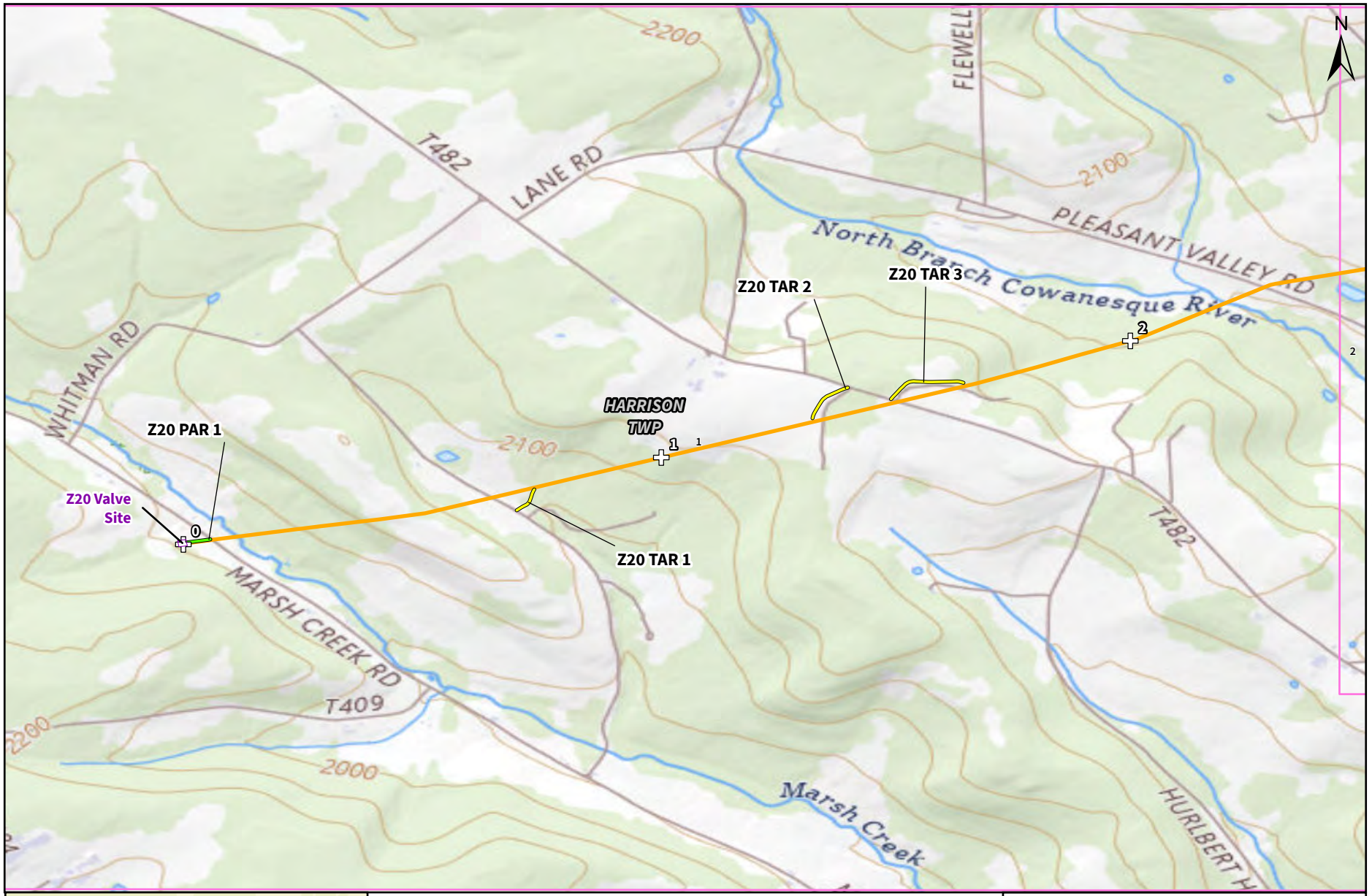

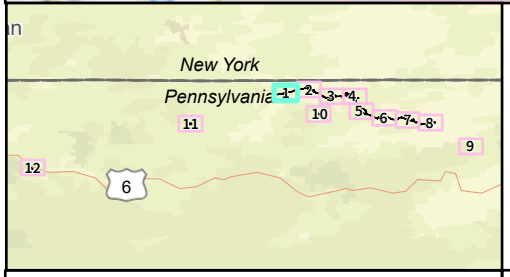

Legend

- Proposed Z20 Pipeline
- Permanent Access Rd
- Temporary Access Rd
- Milepost
- Project Facility
- Muncipality Boundary
- Sheet Boundary

Sheet 1 of 12

Tioga Pathway Project
USGS Project Location Map
Potter County, PA

Prepared For: NF
Prepared By: TETRA TECH

Feet: 0, 1,000, 2,000, 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters: 0, 500, 1,000

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

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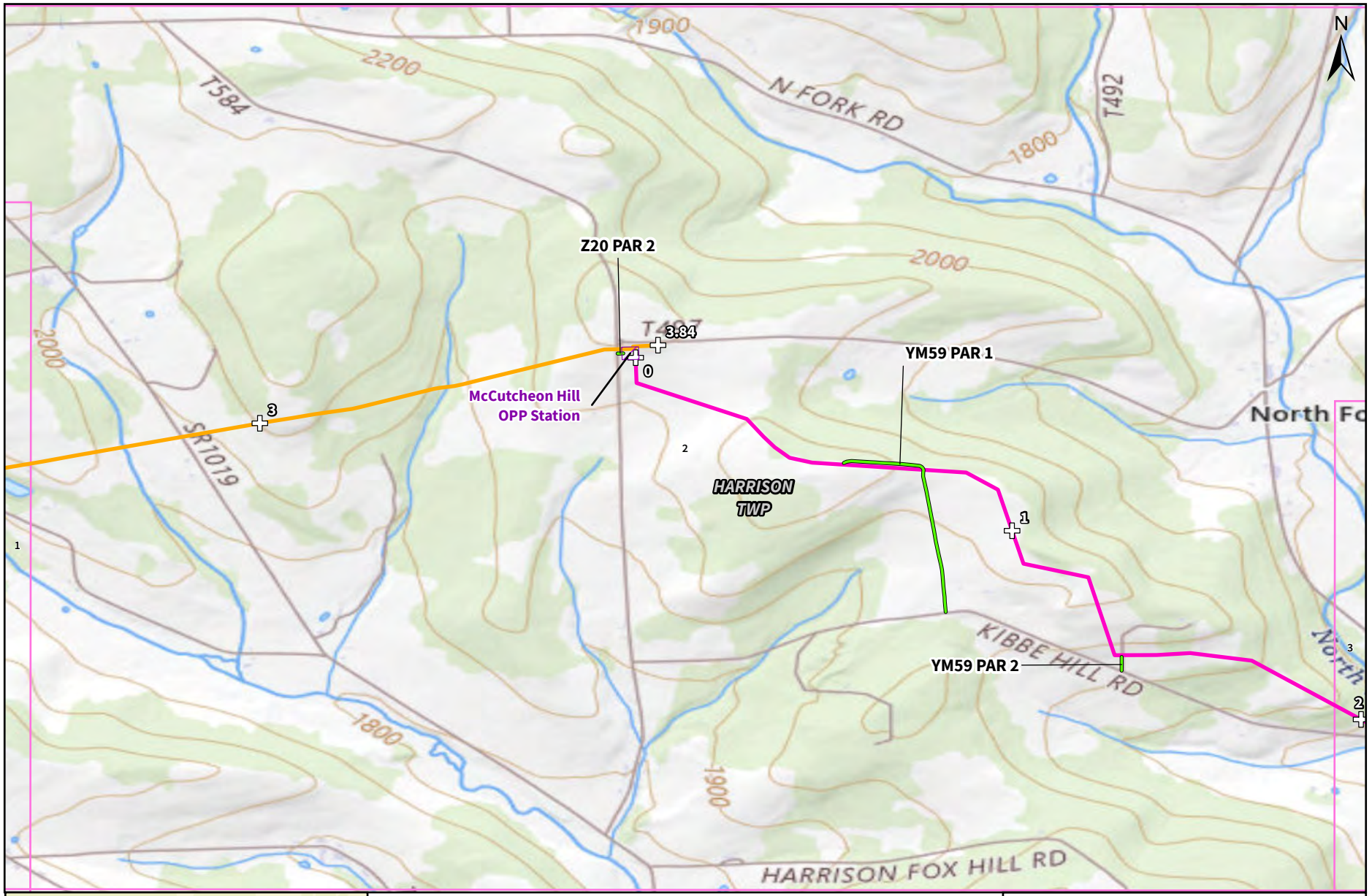

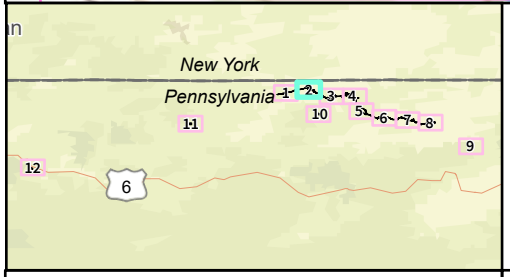

Legend

- Proposed Z20 Pipeline
- Proposed YM59 Pipeline
- Permanent Access Rd
- Milepost
- Milepost
- Project Facility
- Muncipality Boundary
- Sheet Boundary

Sheet 2 of 12

Tioga Pathway Project
USGS Project Location Map
Potter County, PA

Prepared For: NF
Prepared By: TETRA TECH

Feet
0 1,000 2,000 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters
0 500 1,000

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

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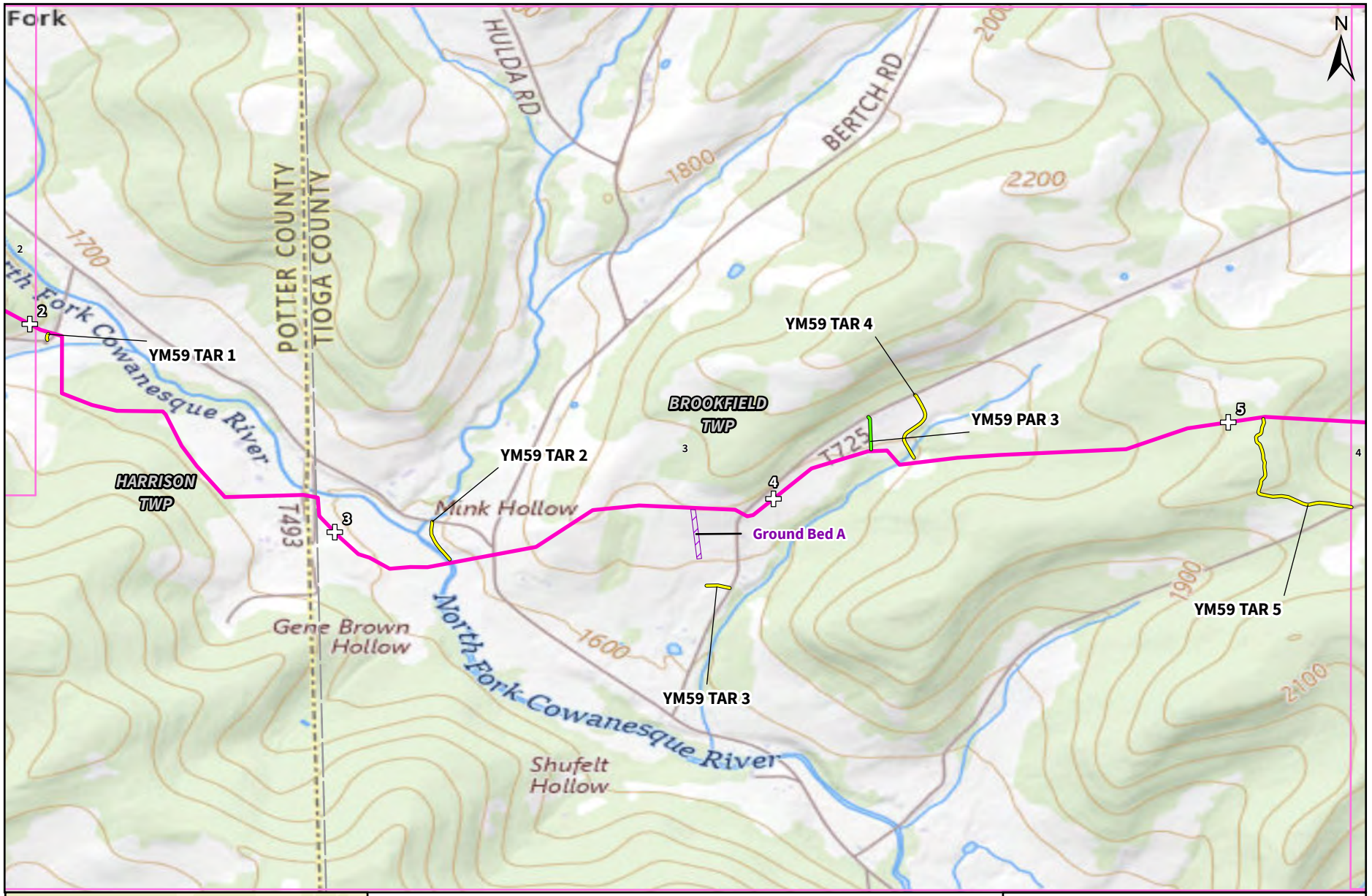

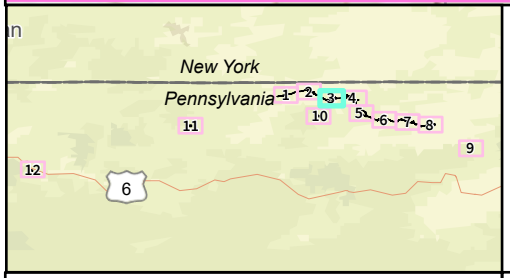

Legend

- Proposed YM59 Pipeline
- Permanent Access Rd
- Temporary Access Rd
- Milepost
- Project Facility
- Muncipality Boundary
- Sheet Boundary

Sheet 3 of 12

Tioga Pathway Project
USGS Project Location Map
Potter and Tioga County, PA

Prepared For: NF
Prepared By: TETRA TECH

Feet
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Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters
0 500 1,000

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

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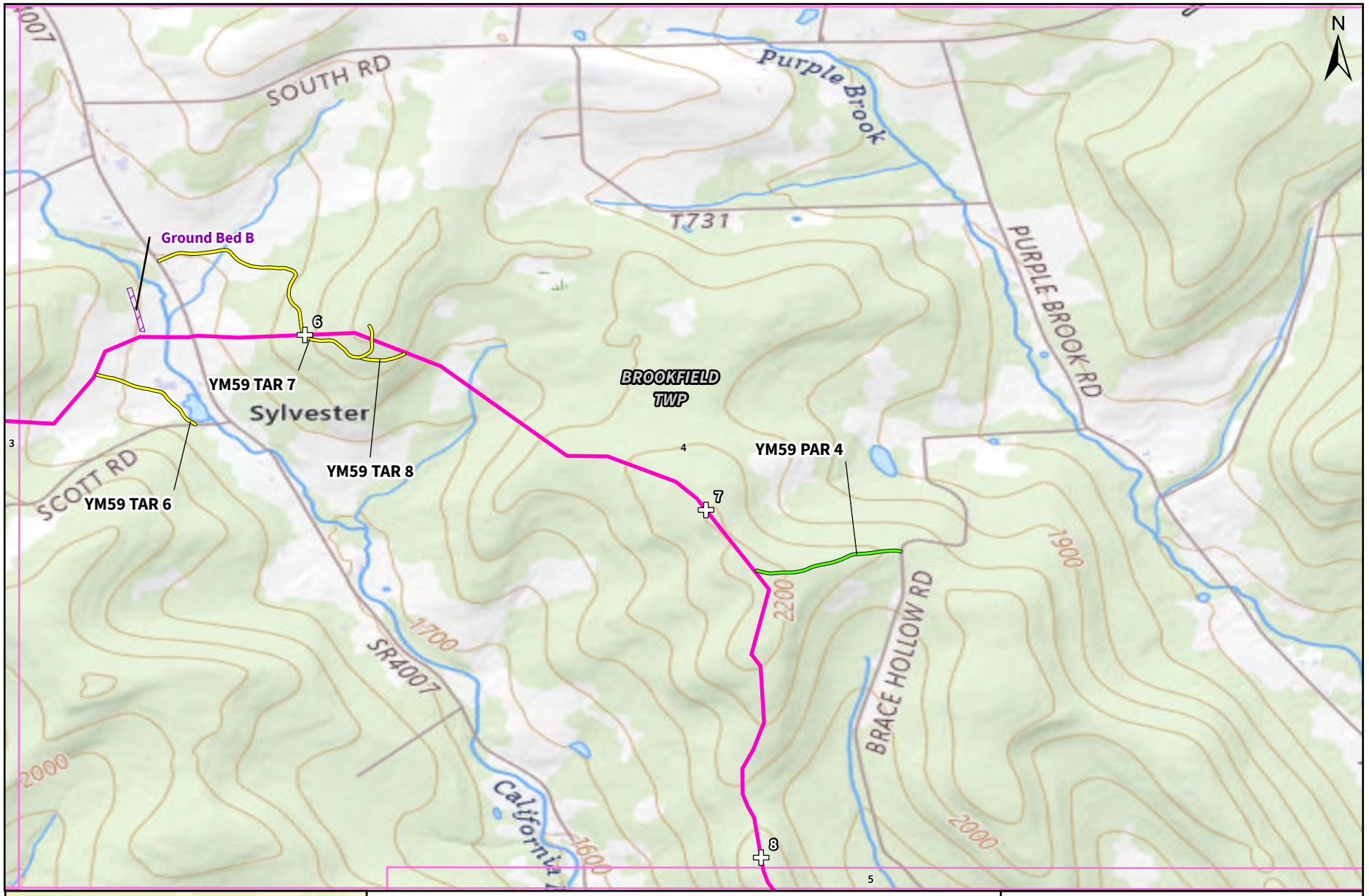

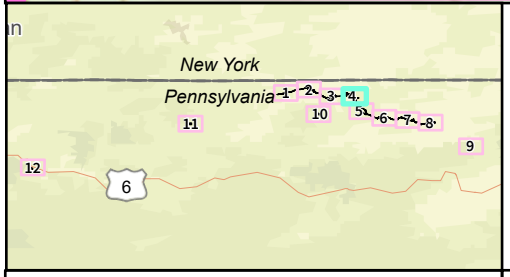

Legend

- Proposed YM59 Pipeline
- Permanent Access Rd
- Temporary Access Rd
- Milepost
- Project Facility
- Muncipality Boundary
- Sheet Boundary

Sheet 4 of 12

Tioga Pathway Project
USGS Project Location Map
Tioga County, PA

Prepared For:
NF
Prepared By:
TETRA TECH

Feet
0 1,000 2,000 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters
0 500 1,000

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

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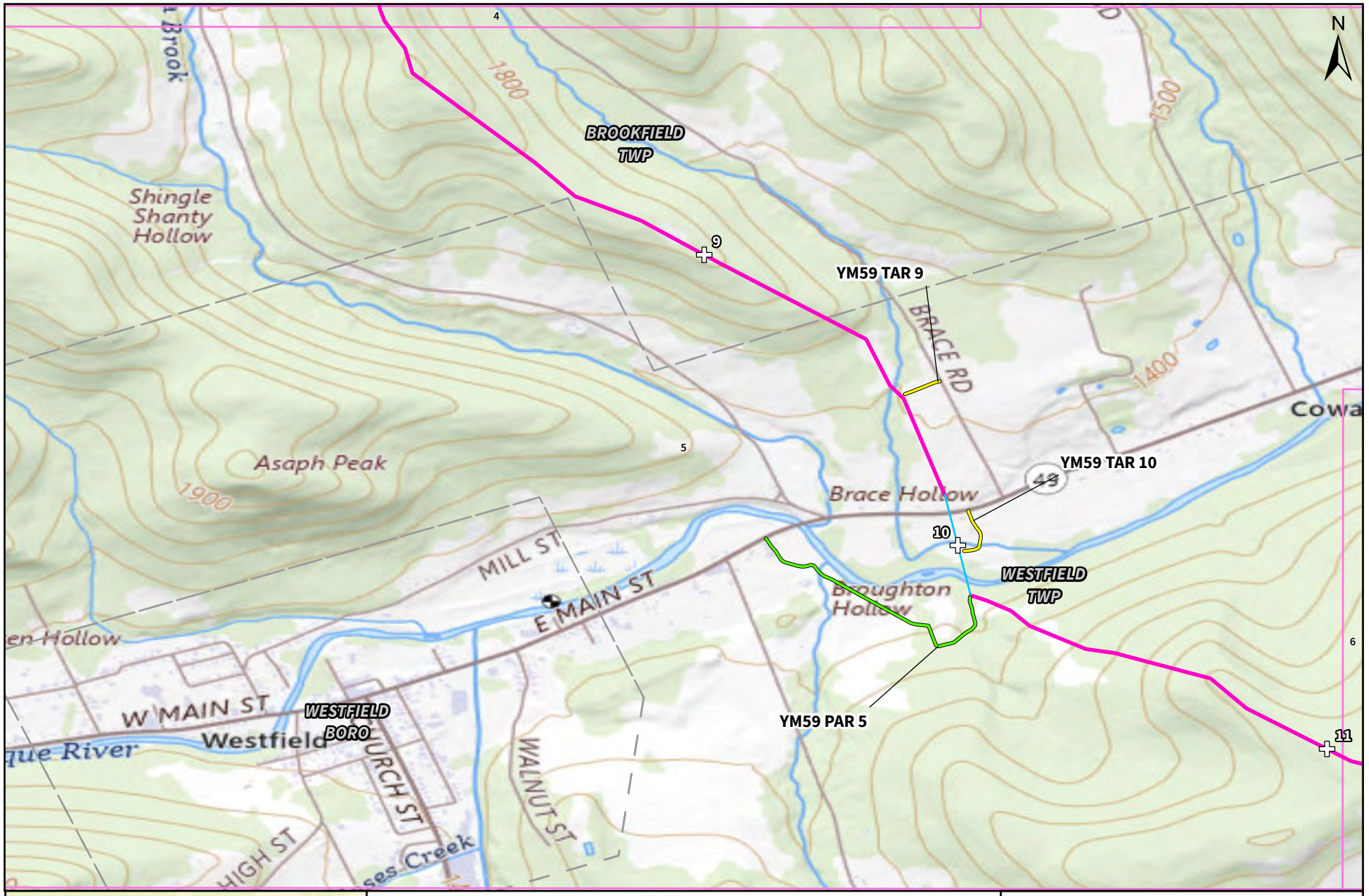

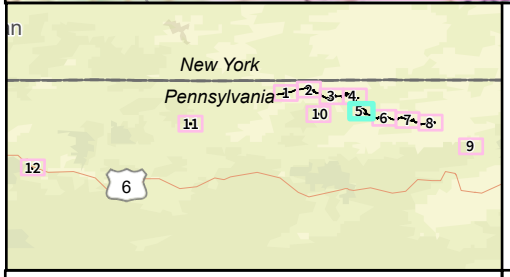

Legend

- Proposed YM59 Pipeline
- YM59 - HDD BORE
- Permanent Access Rd
- Temporary Access Rd
- Milepost
- Project Facility
- Muncipality Boundary
- Sheet Boundary

Sheet 5 of 12

Tioga Pathway Project
USGS Project Location Map
Tioga County, PA

Prepared For: NF
Prepared By: TETRA TECH

Feet: 0, 1,000, 2,000, 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters: 0, 500, 1,000

Cartographer: jen.laslovich

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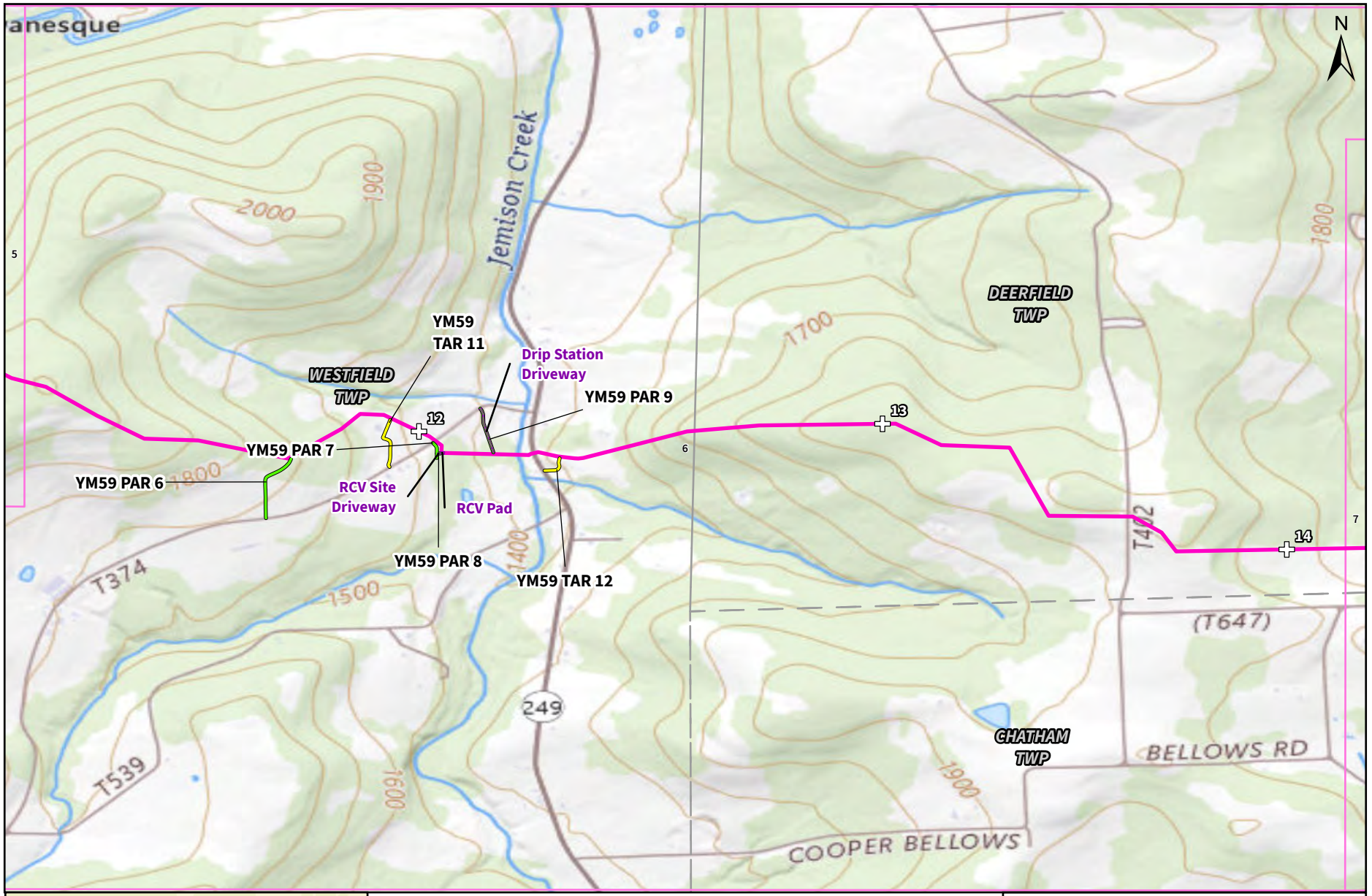

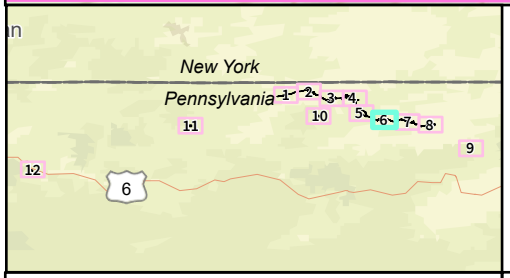

Legend

- Proposed YM59 Pipeline
- Permanent Access Rd
- Temporary Access Rd
- Milepost
- Project Facility
- Muncipality Boundary
- Sheet Boundary

Sheet 6 of 12

Tioga Pathway Project
USGS Project Location Map
Tioga County, PA

Prepared For: NF
Prepared By: TETRA TECH

Feet: 0, 1,000, 2,000, 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters: 0, 500, 1,000

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

Date: 5/24/2024 11:36 AM

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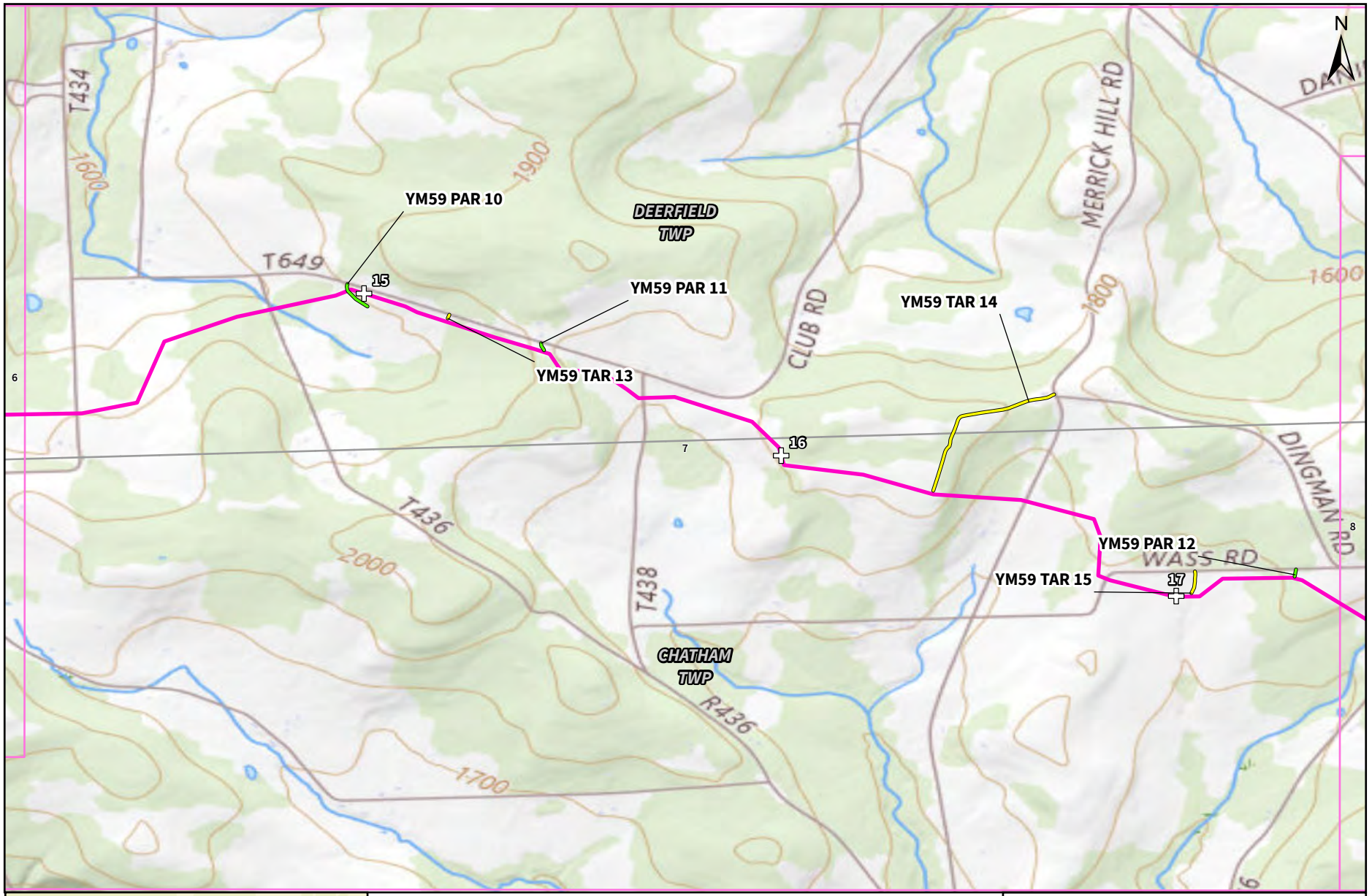

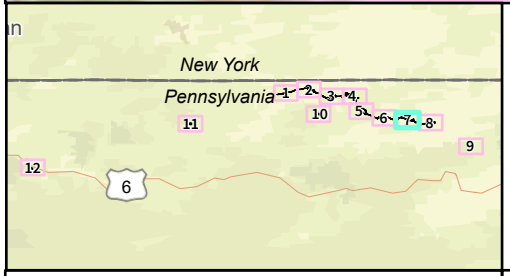

Legend

- Proposed YM59 Pipeline
- Permanent Access Rd
- Temporary Access Rd
- Milepost
- Project Facility
- Muncipality Boundary
- Sheet Boundary

Sheet 7 of 12

Tioga Pathway Project
USGS Project Location Map
Tioga County, PA

Prepared For: NF
Prepared By: TETRA TECH

Feet
0 1,000 2,000 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters
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Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

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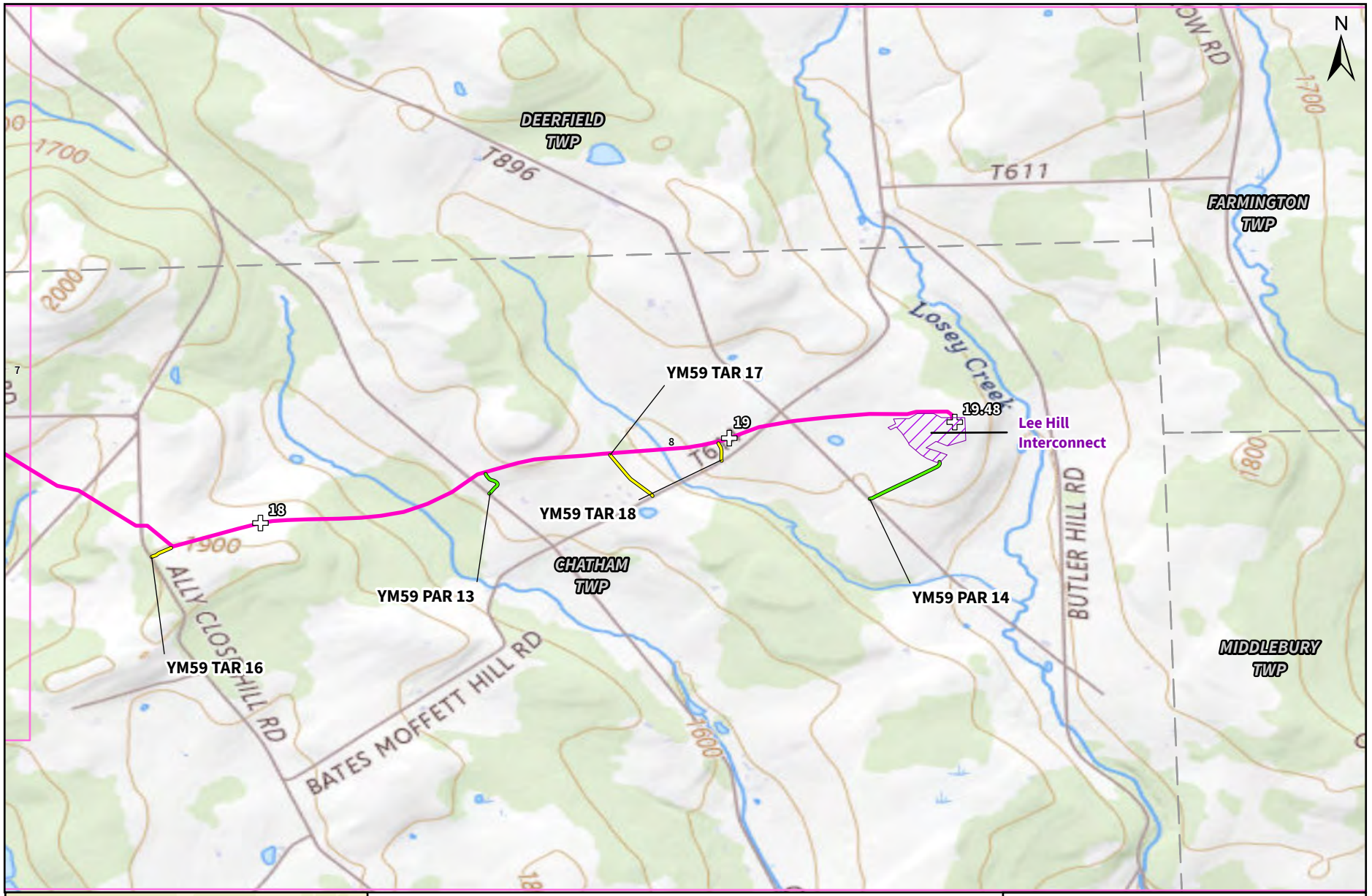

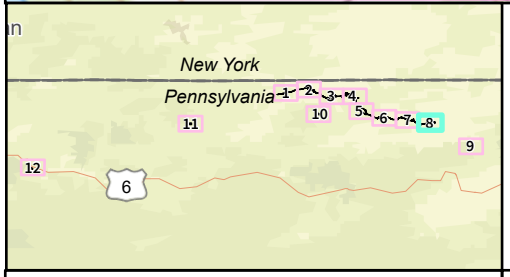

Legend

- Proposed YM59 Pipeline
- Permanent Access Rd
- Temporary Access Rd
- Milepost
- Project Facility
- Muncipality Boundary
- Sheet Boundary

Sheet 8 of 12

Tioga Pathway Project
USGS Project Location Map
Tioga County, PA

Prepared For: NF
Prepared By: TETRA TECH

Feet: 0, 1,000, 2,000, 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters: 0, 500, 1,000

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

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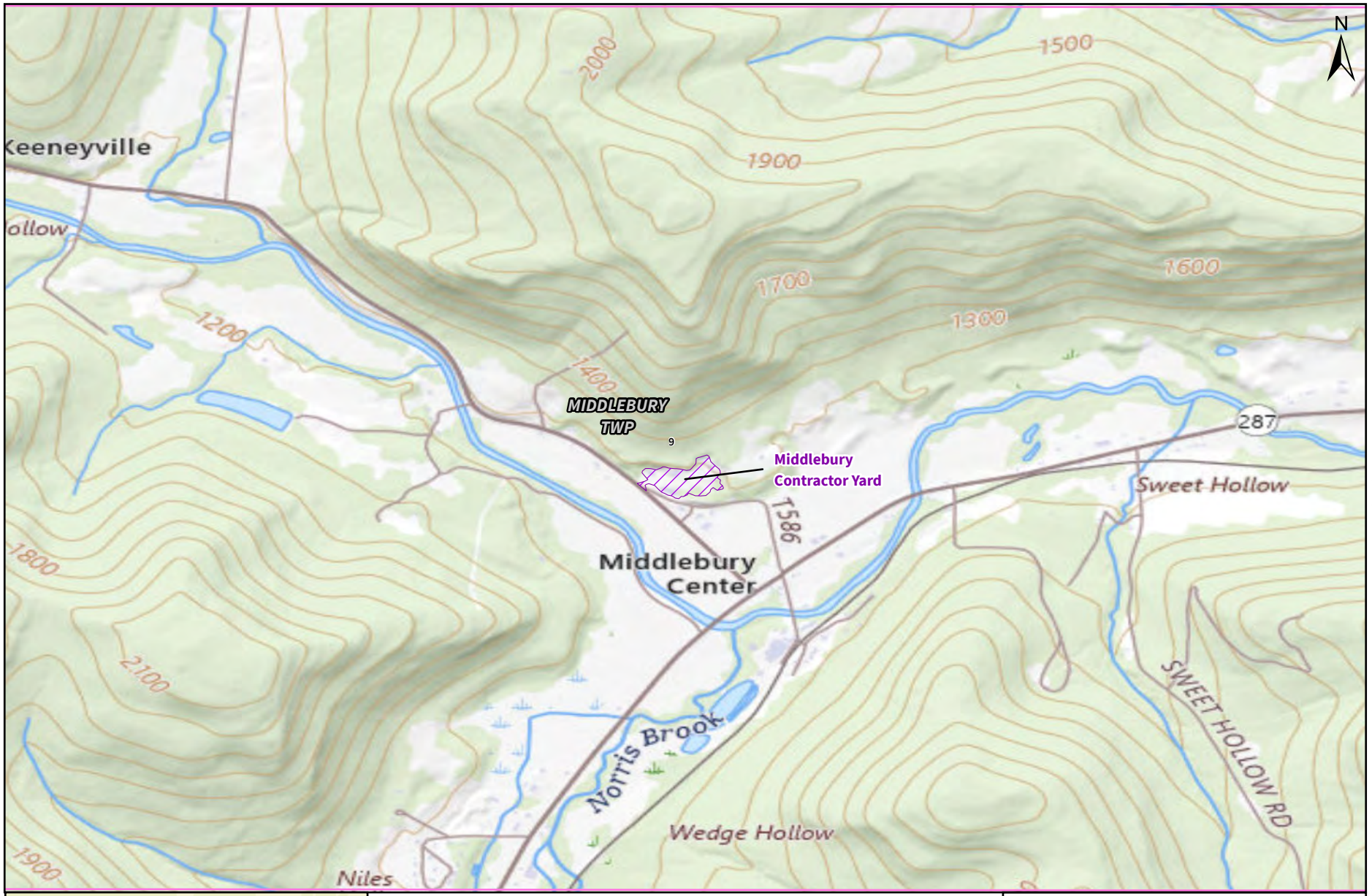
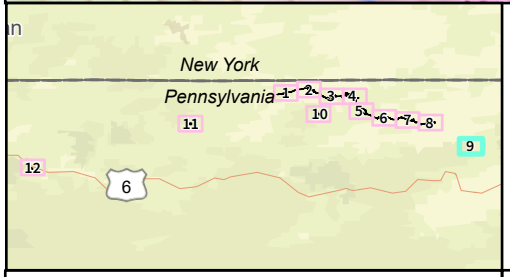




Legend

Project Facility

Muncipality Boundary

Sheet Boundary

Sheet 9 of 12

Tioga Pathway Project

USGS Project Location Map

Tioga County, PA

Prepared For:
NF

Prepared By:
TETRA TECH

Feet
0 1,000 2,000 4,000

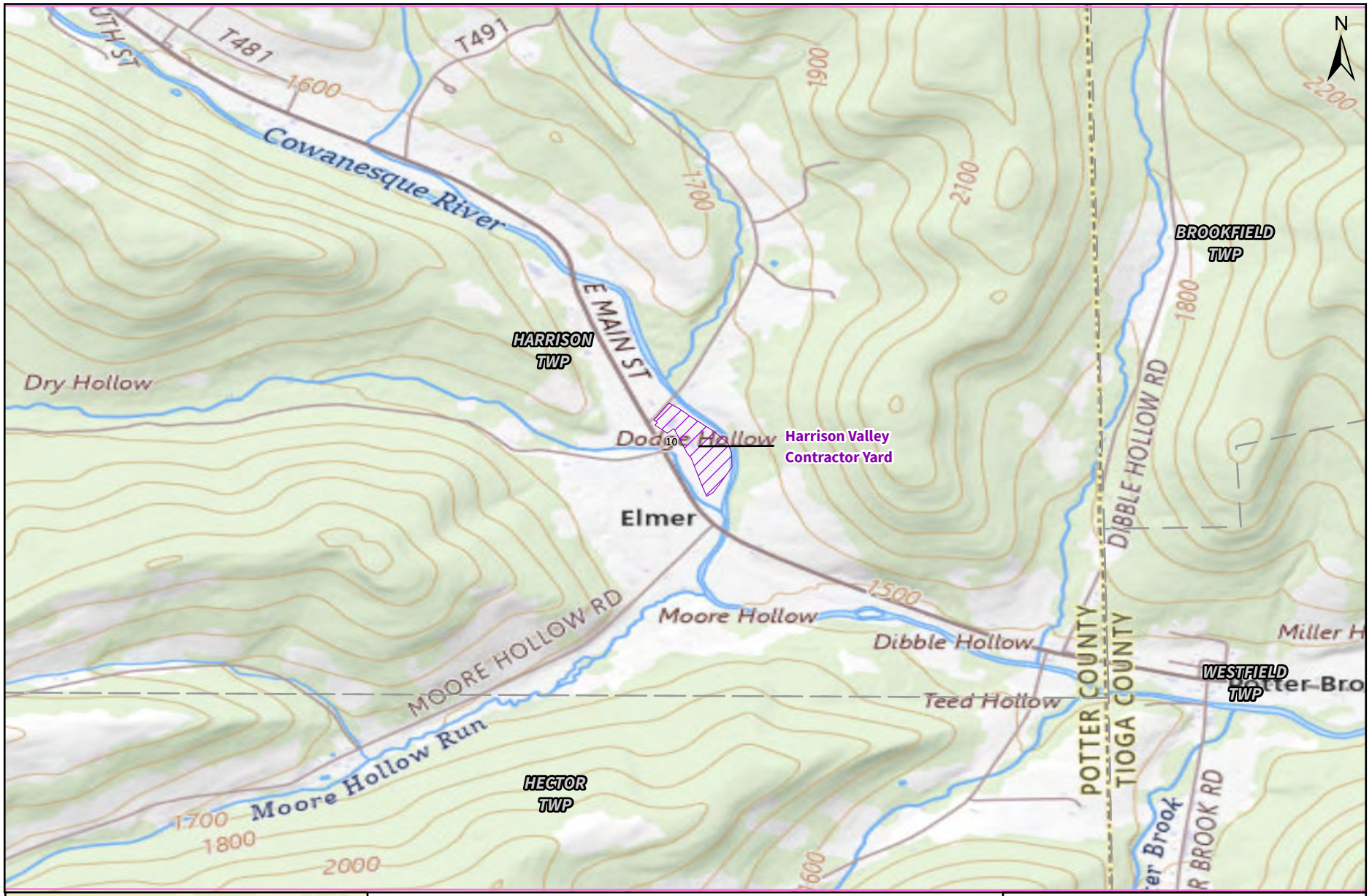
Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

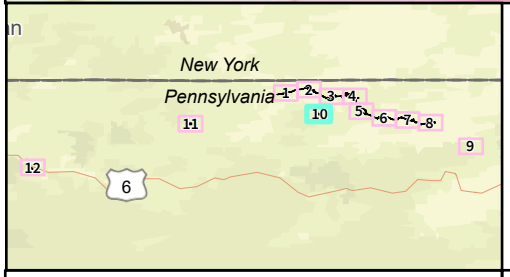
Meters
0 500 1,000

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

Date: 5/24/2024 11:37 AM





Legend

Project Facility

Muncipality Boundary

Sheet Boundary

Sheet 10 of 12

Tioga Pathway Project

USGS Project Location Map

Tioga County, PA

Prepared For:
NF

Prepared By:
TETRA TECH

Feet
0 1,000 2,000 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters
0 500 1,000

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

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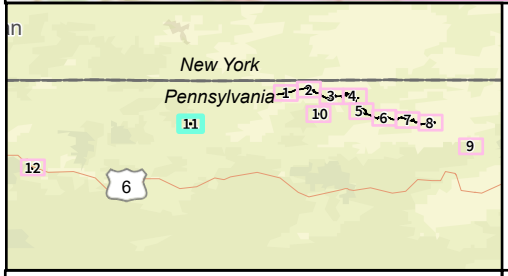


Legend

Project Facility

Muncipality Boundary

Sheet Boundary

Sheet 11 of 12

Tioga Pathway Project

USGS Project Location Map

Tioga County, PA

Prepared For: NF

Prepared By: TETRA TECH

Feet: 0, 1,000, 2,000, 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

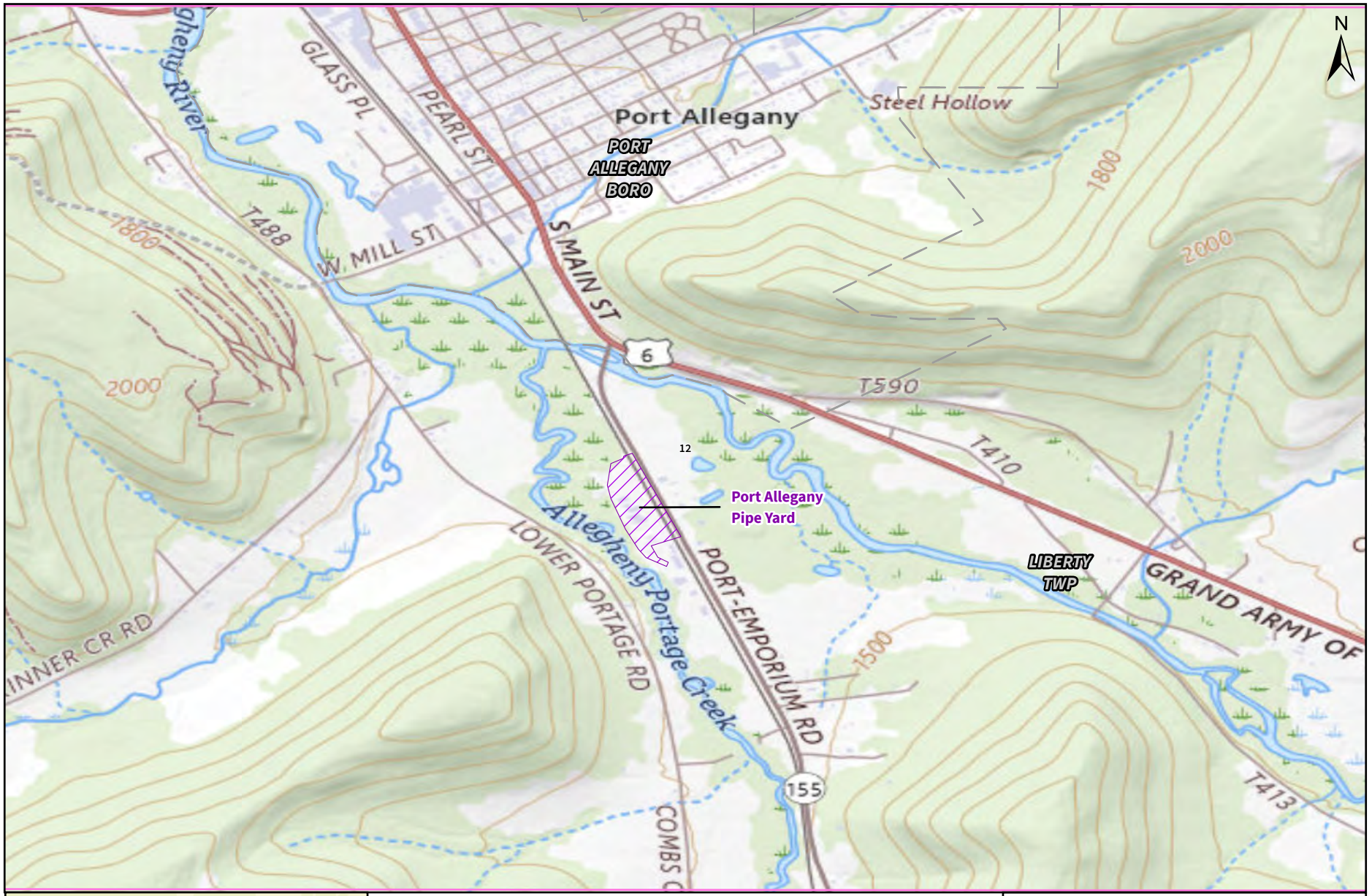
Meters: 0, 500, 1,000

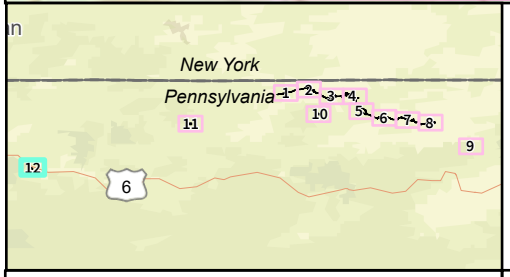
Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

Date: 5/24/2024 11:37 AM

Document Path: C:\Users\jen.laslovich\Tetra Tech, Inc\My Data Science - Documents\My GIS Project\21ZC-BF-00495 Tioga Pathway\2_Permitting\FERC Resource Reports\RR Figures.aprx





Legend

Project Facility

Muncipality Boundary

Sheet Boundary

Sheet 12 of 12

Tioga Pathway Project

USGS Project Location Map

Tioga County, PA

Prepared For:
NF

Prepared By:
TETRA TECH

Feet
0 1,000 2,000 4,000

Basemap: ESRI, USGS Topographic (2023)
USGS Quad , PA

Meters
0 500 1,000

Cartographer: jen.laslovich

NOT FOR CONSTRUCTION

Date: 5/24/2024 11:37 AM

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Department of Conservation and Natural Resources

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

May 23, 2024

PNDI Number: 797684
Version: Final_2; 5/21/24

Skyler Susnick
Tetra Tech
301 Ellicott Street
Buffalo, NY 14203
Email: skyler.susnick@tetratech.com (hard copy will not follow)

Re: UPDATE - Tioga Pathway Project
McKean, Potter, and Tioga Counties, PA

Dear Skyler,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number **797684 (Final_2)** for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

No Impact Anticipated

PNDI records indicate that no known occurrences of species or resources under DCNR's jurisdiction occur in the vicinity of the project. Therefore, the project referenced above is not expected to impact plants, terrestrial invertebrates, natural communities, and geologic features of concern. No further coordination with DCNR is needed for this project.

Recommended Best Management Practices:

- Use a conservative approach to project design that minimizes permanent and temporary disturbances to soil and native vegetation. This will conserve habitat and limit opportunities for invasive plants.
- Clean boot treads, tools, construction equipment, and vehicles thoroughly (especially the undercarriage and wheels) before they are brought on site. This will remove invasive plant seeds and invasive earthworms/cocoons that may have been picked up at other worksites.
- Use clean project materials (e.g., weed-free straw) or materials native to the worksite to avoid introducing invasive species from contaminated sources.
- Revegetate or cover disturbed soil and stockpiles quickly to discourage the germination of invasive plants. Implement proper erosion control practices to stabilize soil and reduce runoff.
- Do not use seed mixes that include invasive species. More information about invasive plants in Pennsylvania can be found at the following link: http://www.dcnr.pa.gov/Conservation/WildPlants/InvasivePlants/Pages/default.aspx
- Use habitat appropriate seed mixes. For example, use a riparian seed mix when reseeding along a waterway. The Bureau of Forestry Planting & Seeding Guidelines can be found at the following link for recommendations: http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20031083.pdf

- Use native plants for landscaping, revegetation, and stormwater management. Do not use nonnative invasive species. Reduce the area of lawn and impermeable surfaces to the fullest extent practicable in favor of native gardens or habitat restoration (e.g., forest, meadow, wetland, etc.). More information about lawn conversion can be found at the following link: https://www.dcnr.pa.gov/Conservation/Water/LawnConversion/Pages/default.aspx

- Plant forest buffers where trees were historically present along streams, wetlands, and bodies of water. Buffers should be a minimum of 35 feet in width (ideally at least 100 feet in width). Where trees are not appropriate (e.g., powerline rights-of-way), buffer with native shrubs and herbaceous plants. More information about riparian buffers can be found at the following link: https://www.dcnr.pa.gov/Conservation/Water/RiparianBuffers/Pages/default.aspx

- Manage road/utility rights-of-way, median strips, edges, and other green spaces for diverse native plant communities and wildlife (e.g., monarch butterfly). In seed mixes, include wildflowers that have overlapping bloom periods and provide forage for pollinators throughout the growing season. Avoid blanket herbicide applications; instead, spot-treat undesirable tall woody vegetation and invasive weeds. Where mowing is necessary, reduce frequency to once every few years during the dormant season (i.e., after first frost in late fall and before bird nesting in early spring), leaving some refugia for overwintering wildlife.

- Monitor for invasive plants before, during, and after project activities and promptly control any identified infestations. Frequent monitoring allows for early detection and rapid response.

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter and a permit has not been acquired, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative, description of project changes and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Jason Ryndock, Ecological Information Specialist, by phone (717-705-2822) or via email (c-jryndock@pa.gov).

Sincerely,

Greg Podniesinski, Section Chief
Natural Heritage Section

Fish and Boat Commission

TETRA TECH

May 31, 2024

Via E-Mail: JorAllison@pa.gov

Pennsylvania Fish and Boat Commission
595 East Rolling Ridge Drive
Bellefonte, Pennsylvania 16823

RE: SIR# 59034
PNDI Receipt-797684 Update
Tioga Pathway Project
National Fuel Gas Supply Corporation
Tioga and Potter Counties, PA

Dear Mr. Allison,

As follow-up to your correspondence dated December 18, 2023, there have been some additions and modifications to the alignment and workspaces of National Fuel Gas Supply Corporation's (National Fuel's) proposed Tioga Pathway Project (Project) and we are requesting an updated review of potential impacts to threatened and endangered and/or special concern species within the Project area. Specifically, a Pennsylvania Natural Diversity Inventory ("PNDI") query was generated on October 20, 2023, and updated on May 21, 2024. PNDI receipt No. 797684 indicates that as a "Large Project" and additional coordination is required.

The overall Project remains generally the same and will replace approximately 4.1 miles of 20-inch-diameter steel pipeline, install approximately 19.3 miles of 20-inch-diameter steel pipeline, construct a new over-pressure-protection (OPP) station where the new 20-inch-diameter pipeline begins, and install one new cathodic ground bed, with two areas being considered as an alternative sites, modify the existing Ellisburg station and Z20 valve setting, and install a valve setting on the new 20-inch-diameter pipeline. The location of the proposed Project is shown on U.S. Geological Survey ("USGS") 7.5-minute quadrangle maps in Figure 1 (enclosed).

Construction will involve pipeline installation via open trench excavation methods and the construction of the new OPP station, interconnect facility, and cathodic protection ground beds. Additionally, the existing Z20 pipeline will be replaced (by removal or abandoned in place where necessary). Tree clearing will be required for the Project and is proposed to occur entirely in the winter. To support construction, National Fuel will use approximately 6 miles of temporary and permanent access roads and three previously used pipe/contractor yards.

Approximately 355 acres will be impacted by the Project. Construction of the Project will include wetland and stream crossings, including but not limited to Marsh Creek, North Branch and North Fork of the Cowanesque River, California Brook, Cowanesque River, Jemison Creek, and Boatman Brook. The entire Project area has been surveyed for aquatic resources and the results are provided in the accompanying kmz-format file. Please let us know if you require the data in a different file format.

Tetra Tech Inc.
301 Ellicott Street, Buffalo, New York 14203
Tel 716.849.9419 Fax 716.849.9420 tetratech.com

A copy of this letter and mapping will be uploaded to the Pennsylvania Conservation Explorer PNDI website (PNDI No. 797684) to ensure the system files are complete and up-to-date.

National Fuel appreciates your timely review of this request. Please contact Robin Dingle at 484-541-8077 or via email at Robin.Dingle@tetratech.com, or Ms. Lauren McMillan, National Fuel Project Manager, at 814-706-4781 or via email at McMillanL@natfuel.com with questions regarding this request.

Sincerely,
Tetra Tech Inc.

Robin Dingle, PWS, PMP
Deputy Project Manager

Enclosures: Figure 1 - Project Location
Project and Field Surveyed Aquatic Resources kmz file

cc: Lauren McMillan (National Fuel Gas Supply Corporation)
Sandy Lare (Tetra Tech, Inc.)
Skyler Susnick (Tetra Tech, Inc.)

pennsylvania
FISH AND BOAT COMMISSION

July 1, 2024

IN REPLY REFER TO
SIR# 59034

Tetra Tech
Skyler Susnick
301 Ellicott Street
Buffalo, New York 14203

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No. 797684_2
Tioga Pathway Project
MCKEAN County - POTTER County - TIOGA County

Dear Skyler Susnick:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish and Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish and Boat Code (Chapter 75), or the Wildlife Code.

An element occurrence of a rare, candidate, threatened, or endangered species under our jurisdiction is known from the vicinity of the proposed project. However, given the nature of the proposed project, the immediate location, or the current status of the nearby element occurrence(s), no adverse impacts are expected to the species of special concern.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Jordan R. Allison at 814-359-5236 or jorallison@pa.gov and refer to the SIR # 59034. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Jordan R. Allison, Chief
Resource Extraction Section

/JRA/dn

Game Commission

TETRA TECH

May 31, 2024

Via E-Mail: SuGuers@pa.gov

Pennsylvania Game Commission
2001 Elmerton Avenue
Harrisburg, Pennsylvania 17110

RE: PGC ID Number: 202312150301
PNDI Receipt-797684 Update
Tioga Pathway Project
National Fuel Gas Supply Corporation
Tioga and Potter Counties, PA

Dear Ms. Guers,

As follow-up to your correspondence dated January 9, 2024 there have been some additions and modifications to the alignment and workspaces of National Fuel Gas Supply Corporation's (National Fuel's) proposed Tioga Pathway Project (Project) and we are requesting an updated review of potential impacts to threatened and endangered and/or special concern species within the Project area. Specifically, a Pennsylvania Natural Diversity Inventory ("PNDI") query was generated on October 20, 2023, and updated on May 21, 2024. PNDI receipt No. 797684 indicates that as a "Large Project" and additional coordination is required.

The overall Project remains generally the same and will replace approximately 4.1 miles of 20-inch-diameter steel pipeline, install approximately 19.3 miles of 20-inch-diameter steel pipeline, construct a new over-pressure-protection (OPP) station where the new 20-inch-diameter pipeline begins, and install one new cathodic ground bed, with two areas being considered as an alternative sites, modify the existing Ellisburg station and Z20 valve setting, and install a valve setting on the new 20-inch-diameter pipeline. The location of the proposed Project is shown on U.S. Geological Survey ("USGS") 7.5-minute quadrangle maps in Figure 1 (enclosed).

Construction will involve pipeline installation via open trench excavation methods and the construction of the new OPP station, interconnect facility, and cathodic protection ground beds. Additionally, the existing Z20 pipeline will be replaced (by removal or abandoned in place where necessary). Tree clearing will be required for the Project and is proposed to occur entirely in the winter. To support construction, National Fuel will use approximately 6 miles of temporary and permanent access roads and three previously used pipe/contractor yards.

Approximately 355 acres will be impacted by the Project. Construction of the Project will include wetland and stream crossings, including but not limited to Marsh Creek, North Branch and North Fork of the Cowanesque River, California Brook, Cowanesque River, Jemison Creek, and Boatman Brook. The entire Project area has been surveyed for aquatic resources and the results

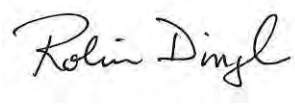
Tetra Tech Inc.
301 Ellicott Street, Buffalo, New York 14203
Tel 716.849.9419 Fax 716.849.9420 tetratech.com

are provided in the accompanying kmz-format file. Please let us know if you require the data in a different file format.

A copy of this letter and mapping will be uploaded to the Pennsylvania Conservation Explorer PNDI website (PNDI No. 797684) to ensure the system files are complete and up-to-date.

National Fuel appreciates your timely review of this request. Please contact Robin Dingle at 484-541-8077 or via email at Robin.Dingle@tetratech.com, or Ms. Lauren McMillan, National Fuel Project Manager, at 814-706-4781 or via email at McMillanL@natfuel.com with questions regarding this request.

Sincerely,
Tetra Tech Inc.



Robin Dingle, PWS, PMP
Deputy Project Manager

Enclosures: Figure 1 - Project Location
Field Surveyed Aquatic Resource kmz File

cc: Lauren McMillan (National Fuel Gas Supply Corporation)
Sandy Lare (Tetra Tech, Inc.)
Skyler Susnick (Tetra Tech, Inc.)

PENNSYLVANIA GAME COMMISSION
BUREAU OF WILDLIFE MANAGEMENT
2001 ELMERTON AVENUE HARRISBURG, PA 17110-9797 | (717) 787-5529

June 3, 2024 **PGC ID Number: 202312150301**

Skyler Susnick
Tetra Tech
301 Ellicott Street
Buffalo, New York 14203
skyler.susnick@tetratech.com

Re: *National Fuel Supply Corporation*— Tioga Pathway Project
PNDI Receipt File: *project_receipt_tioga_pathway_project_797684_FINAL_2.pdf*
Multiple Townships and Municipalities, McKean, Potter and Tioga County, PA

Dear Skyler Susnick,

Thank you for submitting the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt File *project_receipt_tioga_pathway_project_797684_FINAL_2.pdf* for review. The Pennsylvania Game Commission (PGC) screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

No Impact Anticipated – PNDI Species

PNDI records indicate species or resources of concern are located within the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, the PGC has determined that no impact is likely. Therefore, no further PNDI coordination with the PGC will be necessary for this project at this time.

This response represents the most up-to-date summary of the PNDI data files and is valid for two (2) years from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements under this agency for two additional years.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Please be sure to include the above-referenced PGC ID Number on any future correspondence with the PGC regarding this project.

Sincerely,

Sue Guers
Wildlife Biologist / Environmental Review Lead
Bureau of Wildlife Management
Phone: 717-787-4250, Extension 73412
Fax: 717-787-6957
E-mail: suguers@pa.gov

A PNHP Partner

Pennsylvania Natural Heritage Program

SLG/slg

H:\OIL&GAS_PNDI_Reviews\Northcentral Region

United States Fish and Wildlife Service

December 27, 2023

Via E-Mail IR1_ESPenn@fws.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office 110 Radnor Rd; Suite 101
State College, Pennsylvania 16801

RE: PNDI Receipt-797684
Tioga Pathway Project
National Fuel Gas Supply Corporation
Tioga and Potter Counties, PA

US Fish and Wildlife Service Representative:

Tetra Tech, Inc. (Tetra Tech) has been contracted by National Fuel Gas Supply Corporation (National Fuel) to provide environmental consulting services as part of the planned Tioga Pathway Project (Project). National Fuel is proposing to replace approximately 4.1 miles of 20-inch-diameter steel pipeline, install approximately 19.3 miles of 16-inch-diameter steel pipeline, construct a new over-pressure-protection (OPP) station where the new 16-inch-diameter pipeline begins, and install a new cathodic ground bed at a location to be determined. The location of the proposed Project is shown on U.S. Geological Survey (USGS) 7.5-minute quadrangle maps in Figure 1 (enclosed).

Construction will involve pipeline installation via open trench excavation methods and the construction of the new OPP station and cathodic ground bed. Additionally, the existing Z20 pipeline will be replaced, (by removal or abandoned in place where necessary). Tree-clearing will be required for the Project and is proposed to occur entirely in the winter. To support construction, National Fuel estimates that up to 15 miles of temporary access roads and three previously used staging areas will be used to store materials and equipment, totaling approximately 35 acres.

The final construction limit-of-disturbance (LOD), including additional temporary workspace areas and reduced LOD widths at resource crossings, has not yet been finalized; however, assuming a standard construction LOD width of 75 feet for the entire length of the Project, approximately 214 acres will be impacted by the Project. Construction of the Project will include wetland and stream crossings, including but not limited to Marsh Creek, North Branch and North Fork of the Cowanesque River, California Brook, Purple Brook, Cowanesque River, and Boatman Brook. National Wetland Inventory (NWI) resources and National Hydrography Dataset (NHD) mapped streams crossed by the Project are shown on the enclosed Figure 2. A field delineation of aquatic resources within the Project area has been initiated.

The location of the proposed Project facilities and the associated survey area are shown on the Geographic Information System (GIS) shape file of the Project area, which has been uploaded to the USFWS Information, Planning, and Conservation (IPaC) site as part of Project review – IPaC Project Code 2024-0027866 (dated December 21, 2023). Specifically, as part of the

Tetra Tech Inc.
301 Ellicott Street, Buffalo, New York 14203
Tel 716.849.9419 Fax 716.849.9420 tetratech.com

environmental review and permitting process, National Fuel reviewed the Project area using USFWS's IPaC module to generate a Project-specific species list that identifies threatened, endangered, proposed and candidate species that may be impacted by Project construction. Based on the Project location uploaded to the IPaC, the following four (4) species were identified:

- Northern long-eared bat, *Myotis septentrionalis* (Endangered);
- Northeastern bulrush, *Scirpus ancistrochaetus* (Endangered);
- Tricolored bat, *Perimyotis subflavus* (Proposed Endangered); and,
- Monarch butterfly, *Danaus plexippus* (Candidate).

Through a review of aerial imagery and an ongoing habitat assessment/survey, Tetra Tech has determined that the current land use in the Project area includes existing pipeline right-of-way (ROW) as well as forested and agricultural areas/habitats where new ROW will be developed. In addition, three previously disturbed staging areas, primarily consisting of gravel and open dirt/sand, will continue to be used as staging areas for this Project.

As part of the Project, approximately 130 acres of tree clearing will be required. National Fuel will adhere to the appropriate time of year restrictions for tree clearing activities – no tree clearing will be conducted between March 31 and October 1 – to avoid potential impacts to bats and nesting birds.

As part of Tetra Tech's ongoing wetland delineation, suitable habitat for northeastern bulrush, including wetlands, wet depressions, and the edges of small ponds and seasonal pools, will be identified. Assuming potentially suitable emergent wetland habitat will be identified within the Project area, National Fuel will hire a professional certified expert to conduct on-site surveys for the species. If northeastern bulrush is identified within the Project area and it cannot be avoided, National Fuel will coordinate with the USFWS to develop an appropriate mitigation plan.

During the ongoing habitat survey, forage plants for the monarch butterfly (milkweed species [*Aseclepias* spp.]) were identified within the Project area. Any areas containing suitable monarch butterfly habitat will be avoided to the extent practicable. In areas where avoidance is not possible, National Fuel will reseed with native seed mixtures that contain milkweed and nectar plants similar to National Fuels' Monarch CCAA program mixes, in order to restore the habitat and provide increased conservation for the species.

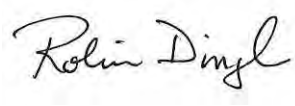
Additionally, as part of National Fuel's environmental review of the Project, a Pennsylvania Natural Diversity Inventory (PNDI) query was generated on October 20, 2023, and updated on December 15, 2023, to identify potential impacts to threatened and endangered and/or special concern species and resources within and nearby the Project. PNDI receipt No. 797684 indicates that further review of the project is necessary by U.S. Fish and Wildlife Service to resolve potential impacts.

To assist U.S. Fish and Wildlife Service with review of this request, National Fuel is providing the appropriate materials required by U.S. Fish and Wildlife Service to expedite the review. Specifically, National Fuel is providing a Project narrative describing construction activities and site characteristics (presented herein), Project mapping (Figures 1 and 2), and a signed copy of the Final Project Environmental Review Receipt (Attachment 1).

National Fuel appreciates your timely review of this request. Please contact Robin Dingle at 484-541-8077 or via email at Robin.Dingle@tetratech.com, or Ms. Lauren McMillan, National Fuel

Project Manager, at 814-706-4781 or via email at McMillanL@natfuel.com with questions regarding this request.

Sincerely,
Tetra Tech Inc.



Robin Dingle, PWS, PMP
Deputy Project Manager

Enclosures: Figure 1 – Project Location
Figure 2 – Mapped National Hydrography Dataset (NHD) and National Wetlands Inventory (NWI) Resources
Attachment 1 – PNDI Receipt

cc: Lauren McMillan (National Fuel Gas Supply Corporation)
Sandy Lare (Tetra Tech, Inc.)
Skyler Susnick (Tetra Tech, Inc.)

From:	Susnick, Skyler
To:	IR1_ESPenn@fws.gov
Cc:	Dingle, Robin; Lare, Sandy; Lauren McMillan
Subject:	IPaC Project 2024-0027866 Follow Up
Date:	Monday, March 11, 2024 11:23:00 AM
Attachments:	image001.png

Good morning,

I am reaching out to follow up on the progress of your review of IPaC Project 2024-0027866 (PNDI receipt No. 797684), the planned Tioga Pathway Project, submitted on December 27th 2023. Is there any additional information we can provide to help you complete your review? Additionally, do you have a time line as to when a response may be issued?

Thank you,

Skyler Susnick | Biologist |he/him/his
Direct **(716) 541-9234** | Business **(716) 849-9419** | Fax **(716) 849-9420** | skyler.susnick@tetratech.com

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301 Ellicott Street | Buffalo, NY 14203 | tetratech.com

From:	Shellenberger, Pamela
To:	Susnick, Skyler
Cc:	Lare, Sandy; Dingle, Robin; Lauren McMillan
Subject:	Re: [EXTERNAL] RE: NFG Tioga Pathway Gas Pipeline - USFWS #2024-0027866
Date:	Wednesday, March 13, 2024 2:25:58 PM
Attachments:	image001.png image002.png Outlook-myvn1rev.png

Yes, we are recommending this.

Thank you,

_____

Pamela Shellenberger (she/her)
U.S. Fish and Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, PA 16801
814-234-4090 x7459
https://www.fws.gov/office/pennsylvania-ecological-services

FWS VALUES
STEWARDSHIP – INTEGRITY – RESPECT – COLLABORATION – INNOVATION

From: Susnick, Skyler <SKYLER.SUSNICK@tetratech.com>
Sent: Wednesday, March 13, 2024 12:49 PM
To: Shellenberger, Pamela <pamela_shellenberger@fws.gov>
Cc: Lare, Sandy <Sandy.Lare@tetratech.com>; Dingle, Robin <Robin.Dingle@tetratech.com>; Lauren McMillan <McMillanL@natfuel.com>
Subject: [EXTERNAL] RE: NFG Tioga Pathway Gas Pipeline - USFWS #2024-0027866

Good afternoon,

National Fuel will conduct northeastern bulrush surveys in areas of suitable habitat if recommended by USFWS. Surveys will be conducted by a qualified botanist and scheduled in the late summer to

coincide with best seasonal species identification.

Thanks,

Skyler Susnick | Biologist |he/him/his
Direct **(716) 541-9234** | Business **(716) 849-9419** | Fax **(716) 849-9420** | skyler.susnick@tetratech.com

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301 Ellicott Street | Buffalo, NY 14203 | tetratech.com

From: Shellenberger, Pamela <pamela_shellenberger@fws.gov>
Sent: Wednesday, March 13, 2024 11:12 AM
To: Susnick, Skyler <SKYLER.SUSNICK@tetratech.com>
Subject: NFG Tioga Pathway Gas Pipeline - USFWS #2024-0027866

Hello - Thank you for submitted project information associated with this project. In order to minimize impacts to bats that may be using the forest in the project area in the summer, you are proposing to remove trees between October 1 and March 31. Are you planning a survey for northeastern bulrush?

Thank you,

_____

Pamela Shellenberger (she/her)
U.S. Fish and Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, PA 16801
814-234-4090 x7459
https://www.fws.gov/office/pennsylvania-ecological-services

TETRA TECH

May 31, 2024

Via E-Mail: pamela_shellenberger@fws.gov

Fish and Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

RE: Update - IPaC Project Code 2024-0027866
Tioga Pathway Project
National Fuel Gas Supply Corporation
Tioga and Potter Counties, PA

Dear Ms. Shellenberger,

On behalf of National Fuel Gas Supply Corporation, I'm writing to inform you that there have been some additions and modifications to the alignment and workspaces of the proposed Tioga Pathway Project (Project) and we are requesting an updated review of potential impacts to threatened and endangered and/or special concern species within the Project area. Overall, the Project remains the same and will replace approximately 4.1 miles of 20-inch-diameter steel pipeline, install approximately 19.3 miles of 20-inch-diameter steel pipeline, construct a new over-pressure-protection (OPP) station where the new 20-inch-diameter pipeline begins, and install one new cathodic ground bed, with two areas being considered as an alternative sites, modify the existing Ellisburg station and Z20 valve setting, and install a valve setting on the new 20-inch-diameter pipeline. The location of the proposed Project is shown on U.S. Geological Survey ("USGS") 7.5-minute quadrangle maps in Figure 1 (enclosed).

In order to ensure the Project data is up-to-date, the Information, Planning, and Conservation ("IPaC") query generated on December 21, 2023 was updated on May 23, 2024. IPaC Project Code 2024-0027866 identified the same four species that may be impacted by the Project: Northern long-eared bat, *Myotis septentrionalis* (Endangered), Tricolored bat, *Perimyotis subflavus* (Proposed Endangered), Northeastern bulrush, *Scirpus ancistrochaetus* (Endangered), and Monarch butterfly, *Danaus plexippus* (Candidate). Additionally, a Pennsylvania Natural Diversity Inventory ("PNDI") query was generated on October 20, 2023, and updated on May 21, 2024. PNDI receipt No. 797684 indicates that as a "Large Project" and additional coordination is required.

Bats

As part of the Project, approximately 67 acres of tree clearing will be required. Tree clearing is proposed to occur between January and March 2026 to avoid potential impacts to bats and nesting birds. Additionally, in the event there are any delays in the Project schedule that could impact their proposed tree clearing schedule, National Fuel is proactively conducting acoustic bat surveys in June 2024.

Tetra Tech Inc.
301 Ellicott Street, Buffalo, New York 14203
Tel 716.849.9419 Fax 716.849.9420 tetratech.com

Northeastern Bulrush

In response to your email dated March 13, 2024, National Fuel has contracted Greg Short of AllStar Ecology to conduct on-site surveys for northeastern bulrush in late July 2024. If northeastern bulrush is identified within the Project area and it cannot be avoided, National Fuel will coordinate with the USFWS to develop an appropriate mitigation plan.

Monarch Butterfly

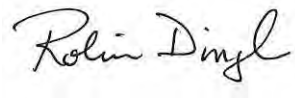
During the habitat survey, forage plants for the monarch butterfly (milkweed species [*Aseclepias* spp.]) were identified within the Project area. Any areas containing suitable monarch butterfly habitat will be avoided to the extent practicable. In areas where avoidance is not possible, National Fuel will reseed with native seed mixtures that contain milkweed and nectar plants similar to National Fuels' Monarch CCAA program mixes, in order to restore the habitat and provide increased conservation for the species.

Since our previous correspondence, the entire Project area has been surveyed for aquatic resources and the results are provided in the accompanying kmz file. Please let us know if you require the data in a different file format.

National Fuel acknowledges and understands that the USFWS review of the Project is on hold pending the completion of the northeastern bulrush survey; however, in light of the update to the Project area, we would like to verify there are no changes to the recommended approach regarding federal threatened or endangered species.

National Fuel appreciates your timely review of this request. Please contact me at 484-541-8077 or via email at Robin.Dingle@tetratech.com, or Ms. Lauren McMillan, National Fuel Project Manager, at 814-706-4781 or via email at McMillanL@natfuel.com with questions regarding this request.

Sincerely,
Tetra Tech Inc.



Robin Dingle, PWS, PMP
Deputy Project Manager

Enclosures: Figure 1 - Project Location
Field Surveyed Aquatic Resource kmz File

cc: Lauren McMillan (National Fuel Gas Supply Corporation)
Sandy Lare (Tetra Tech, Inc.)
Skyler Susnick (Tetra Tech, Inc.)

From:	Susnick, Skyler
To:	Shellenberger, Pamela
Cc:	Lare, Sandy; Dingle, Robin; Lauren McMillan
Subject:	RE: [EXTERNAL] RE: NFG Tioga Pathway Gas Pipeline - USFWS #2024-0027866
Date:	Friday, August 30, 2024 11:49:22 AM
Attachments:	image003.png image004.png image005.png image008.png image009.png image001.png

Good morning Pam,

We are pleased to report that the northeastern bulrush survey for Tioga Pathway Project was completed in July 2024. Results: Although some low-quality northeastern bulrush habitat was present in portions of the Project survey area, no individuals were located during the survey. No northeastern bulrush or other federally listed plant species were found during the July 2024 botanical survey.

Due to large file size, I will upload the report to Tetra Tech's FTP site. Please look for a separate email with a link enabling you to download the report.

We appreciate your review of the report and look forward to your response.

Skyler Susnick | Biologist
Pronouns: he/him/his
Direct **+1 (716) 541-9234** | Business **+1 (716) 849-9419** | skyler.susnick@tetratech.com
Time Zone: EST (UTC -4)

Tetra Tech | *Leading with Science®*
301 Ellicott Street | Buffalo, NY 14203 | tetratech.com

From: Shellenberger, Pamela <pamela_shellenberger@fws.gov>
Sent: Wednesday, March 13, 2024 2:25 PM
To: Susnick, Skyler <SKYLER.SUSNICK@tetratech.com>
Cc: Lare, Sandy <Sandy.Lare@tetratech.com>; Dingle, Robin <Robin.Dingle@tetratech.com>; Lauren McMillan <McMillanL@natfuel.com>
Subject: Re: [EXTERNAL] RE: NFG Tioga Pathway Gas Pipeline - USFWS #2024-0027866

BOTANICAL SURVEY REPORT
FOR THE
TIOGA PATHWAY PROJECT

MCKEAN, POTTER, AND TIOGA COUNTIES, PENNSYLVANIA

PREPARED BY:

ALLSTAR ECOLOGY
Natural Resource Specialists

AllStar Ecology LLC
1582 Meadowdale Road
Fairmont, WV 26554

August 2024

Table of Contents

List of Figures

List of Appendices

1. Introduction

1.1. Overview

On behalf of Tetra Tech, Inc (Tetra Tech), a botanical field survey was conducted by AllStar Ecology LLC (ASE) for the Tioga Pathway Project in McKean, Potter, and Tioga Counties, Pennsylvania (PA) to document rare, threatened, and endangered (RTE) plant species in the project area of interest (AOI) (Figure 1). The botanical survey was conducted by Dylan Fowler, Justin DeVault, Aaron Nemeyer, and Patrick Spollen of ASE on July 22-25 and 30-31, 2024.

The US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) report from July 2024, indicated that northeastern bulrush (*Scirpus ancistrochaetus*) was the only federally listed plant species with the potential to occur within the proposed AOI.

During the survey, no federally listed or state-listed plant species were located within the AOI, including northeastern bulrush. The contents of this report include botanical findings from the 2024 botanical field survey.

1.2. Threatened and Endangered Species

Endangered species are defined in the Endangered Species Act (ESA) as "any species which is in danger of extinction throughout all or a significant portion of its range other than species of the Class Insecta as determined by the Secretary to constitute a pest whose protection under the provisions of the ESA would present an overwhelming and overriding risk to man." A threatened species is "any species which is likely to become an endangered species in the foreseeable future throughout all or a significant portion of its range." The term species, as defined in the ESA includes "subspecies of fish or wildlife or plants, and any distinct population of vertebrate fish or wildlife which interbreeds when mature."

1.3. Federally Listed Plant Species

The USFWS IPaC report (Appendix C) from July 2024 indicated that one federally listed plant species could potentially occur within the AOI: northeastern bulrush (G3 – Vulnerable, S3 – Vulnerable). Northeastern bulrush is a federally endangered species found in PA in open, herb-dominated wetlands and sinkhole wetlands. The species often grows along the water's edge or in shallow water. Field surveys were focused in and around previously delineated wetlands within the project AOI that had the potential to contain suitable habitat for northeastern bulrush.

2. Methodology

2.1. Desktop Analysis and Background Research

Prior to conducting the field survey, a desktop analysis was conducted to determine potential habitats within the AOI which could support northeastern bulrush. Resources utilized in this analysis included delineation shapefiles provided by the Tetra Tech, Esri aerial imagery, a United States Geological Survey (USGS) topographic map, the USFWS National Wetlands Inventory (NWI) shapefile, the Natural Resources Conservation Services (NRCS) National Hydrography Dataset (NHD) stream layer, and narrative habitat descriptions compiled by the USFWS and natureserve.org.

2.2. Field Surveys

The field survey utilized visual reconnaissance and meandering methodologies to adequately cover the survey area. These methodologies were used to cover areas that appeared likely to harbor rare plants, based on the habitat and experience of the surveyor. These areas were restricted to wetland habitats. This survey method was useful in difficult terrain and involved the investigator walking through the site and recording each new species observation. Surveys focused more heavily on habitat areas with high potential for RTE plant species and included sampling within each visible habitat type. Trimble Geo 7X GPS units were used to actively record the survey routes and ensured adequate coverage of each habitat within the AOI.

Documentation included GPS points, descriptions of specific habitats, as well as GPS tracts of the meandering survey routes using Trimble GPS units capable of sub-meter accuracy. A comprehensive list of all woody and non-woody vascular plant species was compiled during the field survey. Plants were identified to species level when possible; however, some were identified only to genus because they lacked the diagnostic characteristics required for species-level identification. Crew leads who performed the survey are on the USFWS (PA Field Office) approved surveyor list for northeastern bulrush.

Botanical references utilized for the project included *FloraQuest: Northern Tier* mobile application, by Alan Weakley and the Southeastern Flora Team, *Flora of Virginia* mobile application, by A.S. Weakley, J.C. Ludwig, J.F. Townsend, and G.P. Fleming, *Manual of the Vascular Plants of Northeastern United States and Adjacent Canada, Second Edition*, by Henry A. Gleason and Arthur Cronquist, *Flora of North America*, online at www.eFloras.com, *Flora of West Virginia, Second Edition*, by P.D. Strausbaugh and Earl L. Core, and Pennsylvania Wildflowers mobile application by wildflowersearch.org.

2.3. Scientific Names and Conservation Statuses

The scientific names used for vascular plants in this report follow the USDA NRCS checklist (USDA 2024). All state and federal conservation statuses are referenced to the most recent version of NatureServe (NatureServe 2024).

3. Results

3.1. Survey Dates

A field survey was conducted to detect RTE plant species, with a focus on northeastern bulrush, within the AOI on July 22-25 and 30-31, 2024. The field survey was within the USFWS acceptable survey period of June 1 through September 30 for northeastern bulrush.

3.2. Federally Listed Plant Species

One federally listed plant species, northeastern bulrush, was triggered by the USFWS IPaC (Appendix C) to potentially occur within the AOI. The target species was not located within the AOI. No other federally listed plant species were found within the AOI.

3.3. State-Listed Plant Species

No state-listed plant species were found within the AOI during the 2024 botanical survey. Previous coordination with the Pennsylvania Natural Diversity Inventory (PNDI) indicated that no impacts were anticipated resulting from the project (PNDI Number: 797684) (Appendix D).

3.4. Other Vascular Plants

A comprehensive list of all woody and non-woody vascular plant species encountered during the botanical survey was compiled during the field survey. A total of 203 species of vascular plants were documented during the 2024 botanical survey (Appendix B).

3.5 Community Descriptions

The survey areas within the AOI consisted of previously delineated wetlands. Wetlands were categorized using the Cowardin classification system and included palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and palustrine unconsolidated bottom (PUB)/pond habitat. Although potentially suitable habitat for northeastern bulrush was found within the AOI, no northeastern bulrush was identified during the field survey. Other members of the *Scirpus* genus were encountered during the surveys but were readily determined to not be northeastern bulrush.

PEM Wetlands: The majority of the wetlands surveyed within the AOI consisted of PEM communities. PEM wetlands were generally associated with depressional areas and often near a stream or bottomland. Many of these wetlands were in pastures or dominated by invasive species, namely reed canary grass (*Phalaris arundinacea*). These communities were dominated by herbaceous vegetation including rice cutgrass (*Leersia oryzoides*), sensitive fern (*Onoclea sensibilis*), reed canary grass, swamp verbena (*Verbena hastata*), smaller forget-me-not (*Myosotis laxa*), woolgrass (*Scirpus cyperinus*), shallow sedge (*Carex lurida*), orange jewelweed (*Impatiens capensis*), common boneset (*Eupatorium perfoliatum*), common velvet grass (*Holcus lanatus*), and goldenrod (*Solidago* spp.).

PSS Wetlands: These areas were dominated by woody vegetation in the shrub layer intermixed with emergent vegetation in the herbaceous layer. Common shrubs in this community included silky willow (*Salix sericea*), black willow (*Salix nigra*), white meadowsweet (*Spiraea alba*), arrowwood viburnum (*Viburnum dentatum*), American hornbeam (*Carpinus caroliniana*), and silky dogwood (*Cornus amomum*). The herbaceous layers of these wetlands consisted of rice cutgrass, goldenrod, reed canary grass, sensitive fern, and common velvet grass.

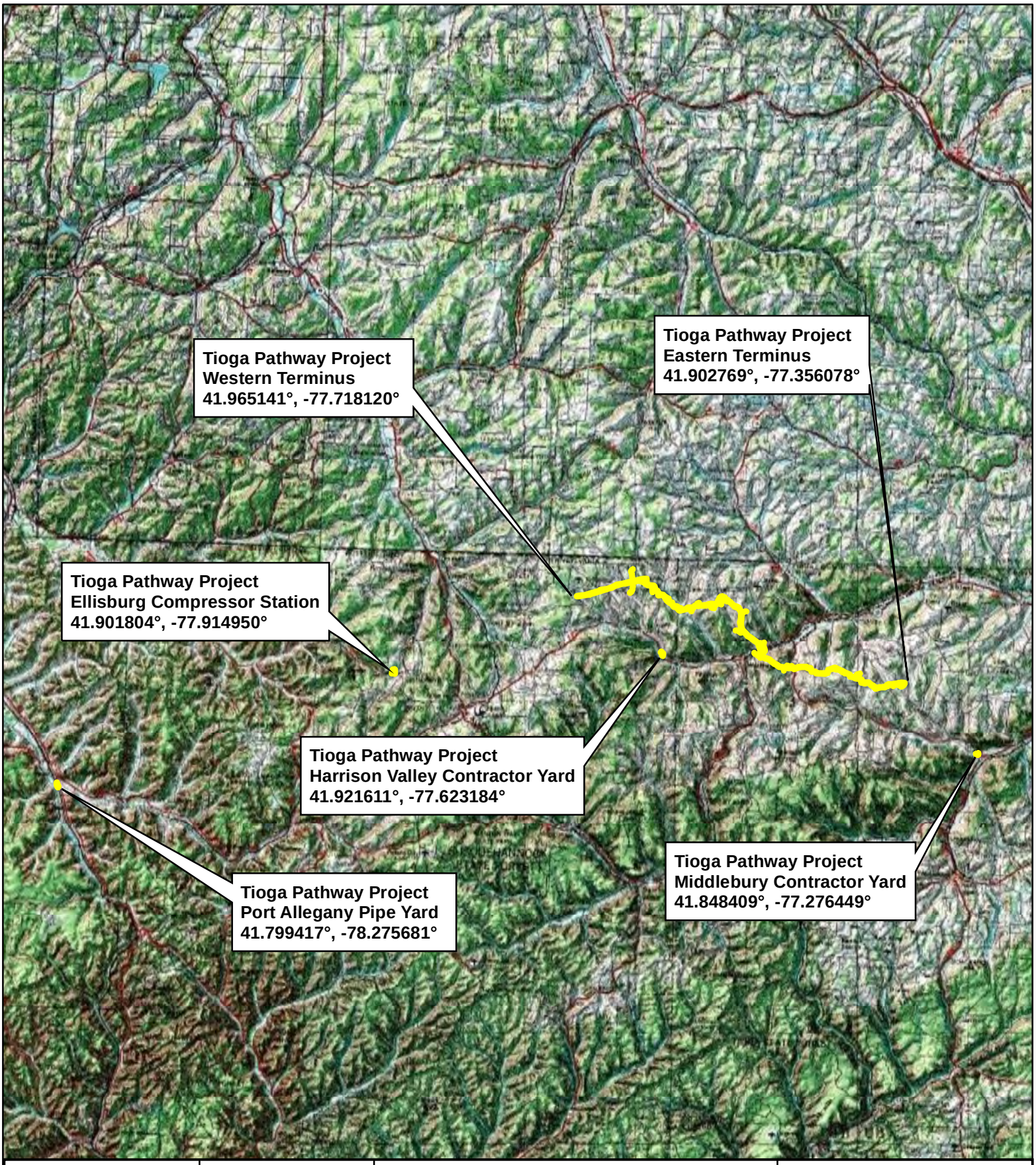
PFO Wetlands: These wetlands were dominated by a forested canopy consisting of eastern hemlock (*Tsuga canadensis*), quaking aspen (*Populus tremuloides*), red maple (*Acer rubrum*), and green ash (*Fraxinus pennsylvanica*). The understories of these wetlands were dominated by woody regeneration, orange jewelweed, sensitive fern, woolgrass, and bladder sedge (*Carex intumescens*).

PUB/Pond Wetlands: These areas were man-made ponds which were permanently inundated. The margins of these areas were dominated by common herbaceous vegetation listed above. Inundated areas were dominated by broadleaf cattail (*Typha latifolia*), pondweed (*Potamogeton* sp.), bladderwort (*Utricularia* sp.), common duckweed (*Lemna minor*), and marsh seedbox (*Ludwigia palustris*).

4. Conclusion

No federally listed plant species were found during the July 2024 botanical survey, including northeastern bulrush. In addition, no state-listed/tracked species were identified within the survey area. Although some low-quality northeastern bulrush habitat was present in portions of the AOI, no individuals were located during the survey.

Figure 1. Vicinity Map



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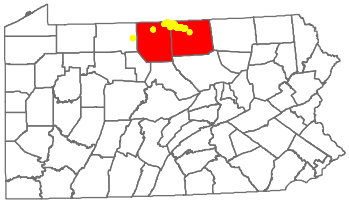

McKean,
Potter & Tioga
Counties, PA

Tetra Tech, Inc.

Figure 1
Vicinity Map
Tioga Pathway Project

Date: 08/15/2024

Version: #1

Figure 2. Survey Map

Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6
Sheet 7
Sheet 8
Sheet 9
Sheet 10
Sheet 11
Sheet 12
Sheet 13
Sheet 14
Sheet 15
Sheet 16
Sheet 17
Sheet 18
Sheet 19
Sheet 20
Sheet 21
Sheet 22

McKean County

Potter County

Tioga County

Notes:
1. Background is Esri aerial imagery.
2. Botanical survey was conducted by AllStar Ecology LLC on July 22-25 and 30-31, 2024.
3. Botanical survey was limited to previously delineated wetlands using shapefiles provided by Tetra Tech, Inc.
4. Wetlands within Parcel 135 were not surveyed due to access restrictions.
5. Northeastern bulrush was not located during the survey.

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McKean, Potter & Tioga Counties, PA

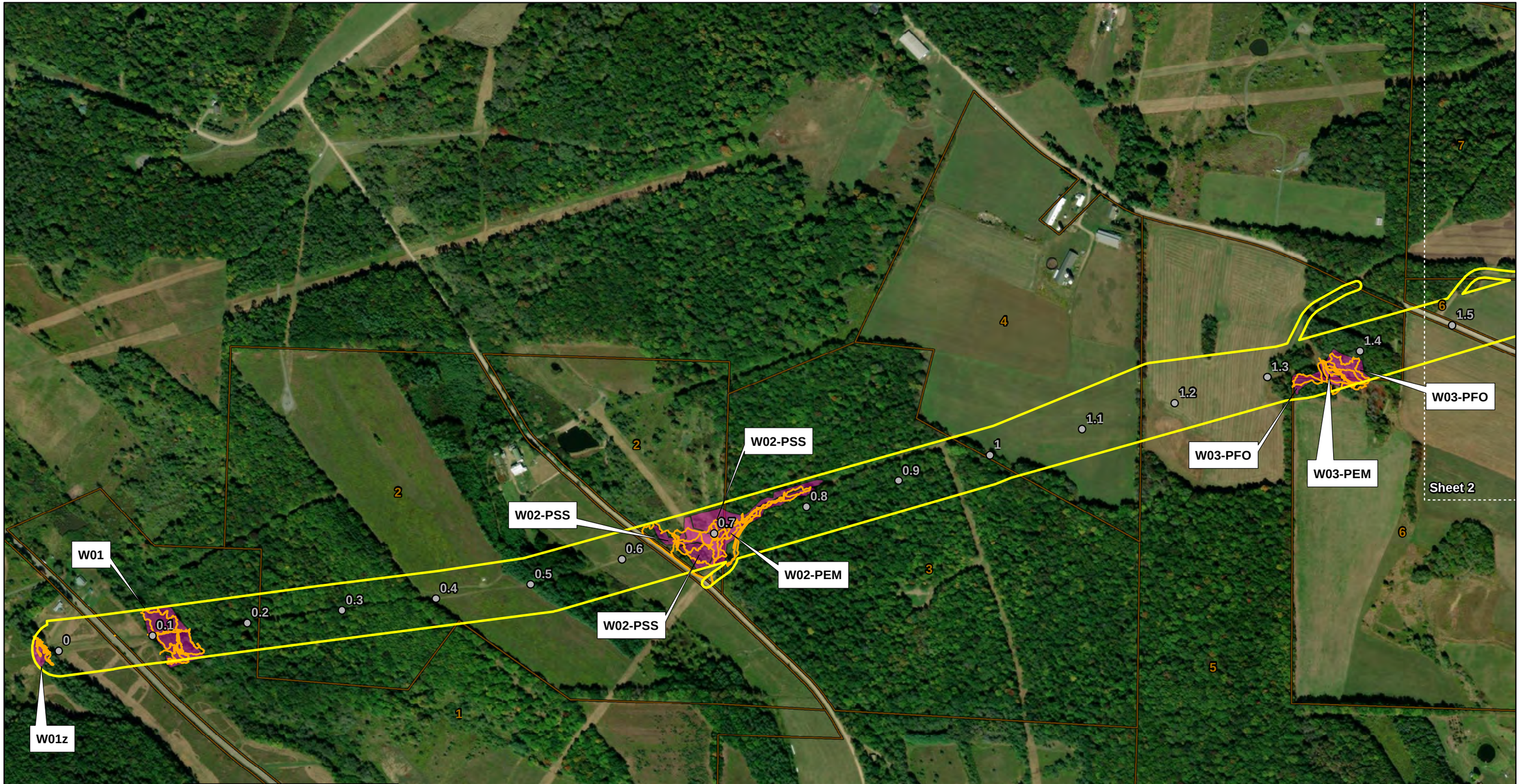
AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/31/2024

Index



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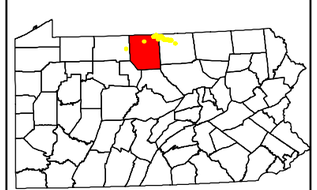


Potter County, PA

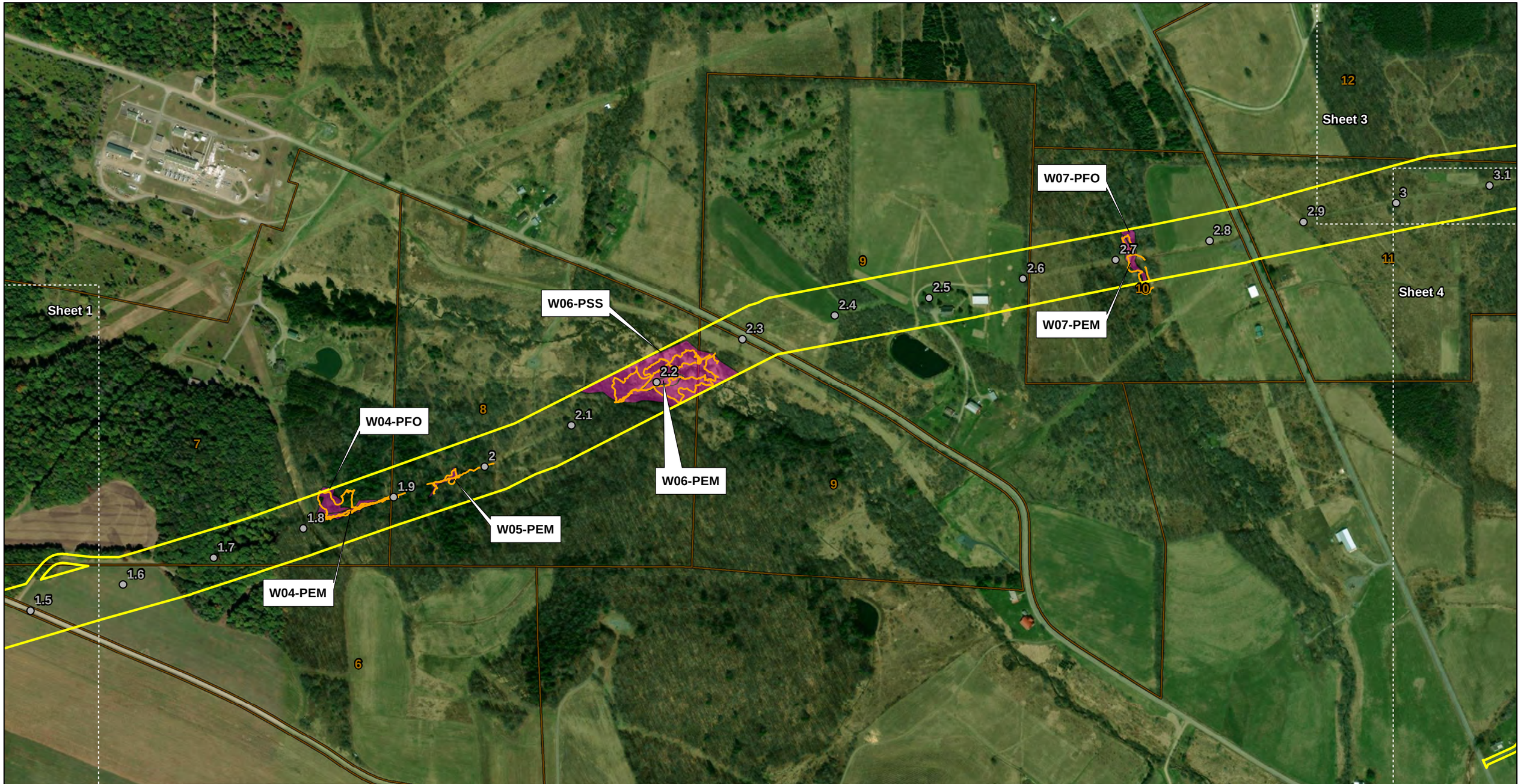
AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 1



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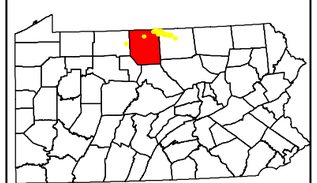

Potter County, PA

AOI
PARCEL
WETLAND
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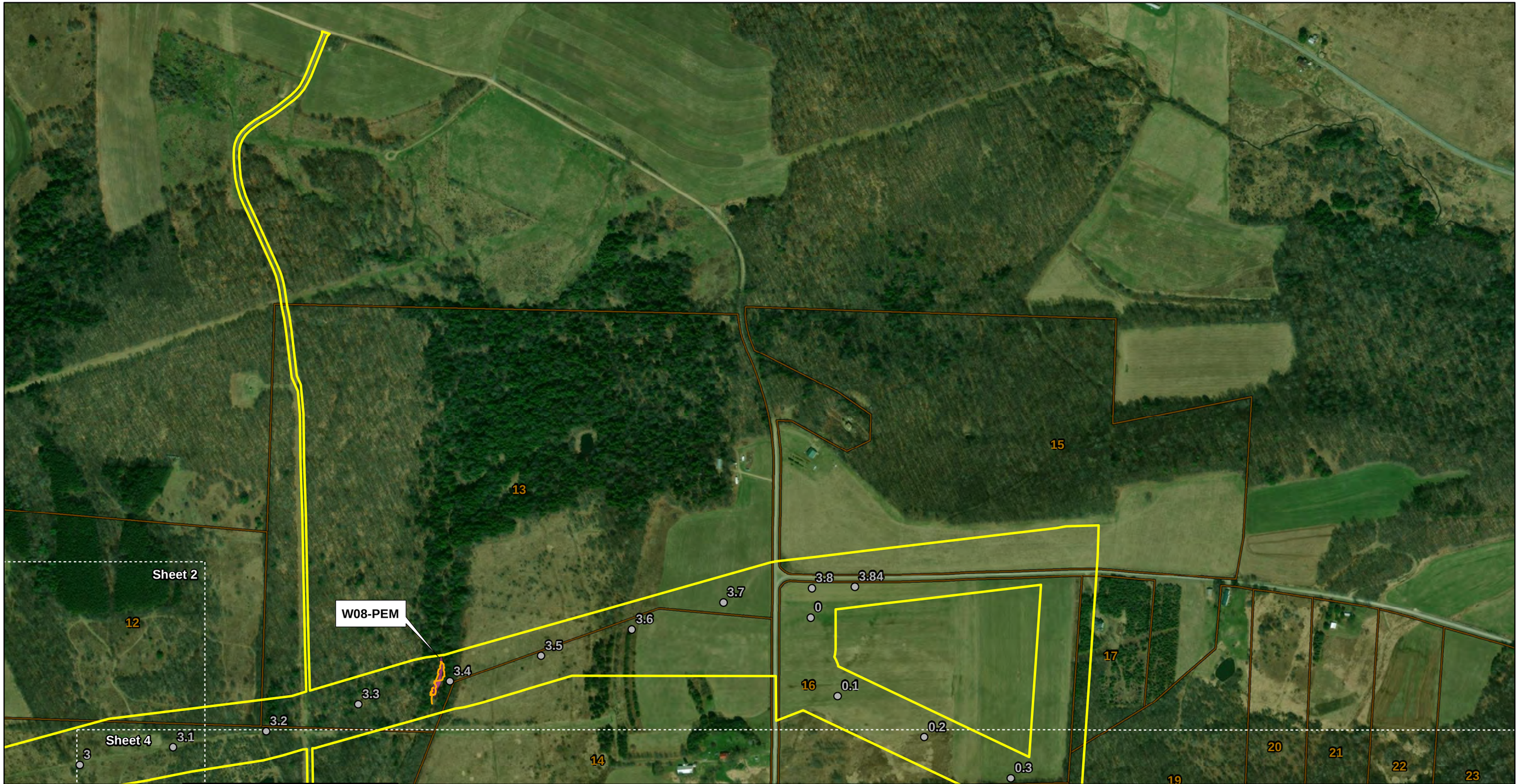
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 2



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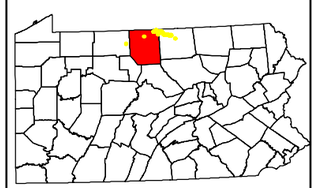

Potter County, PA

AOI
PARCEL
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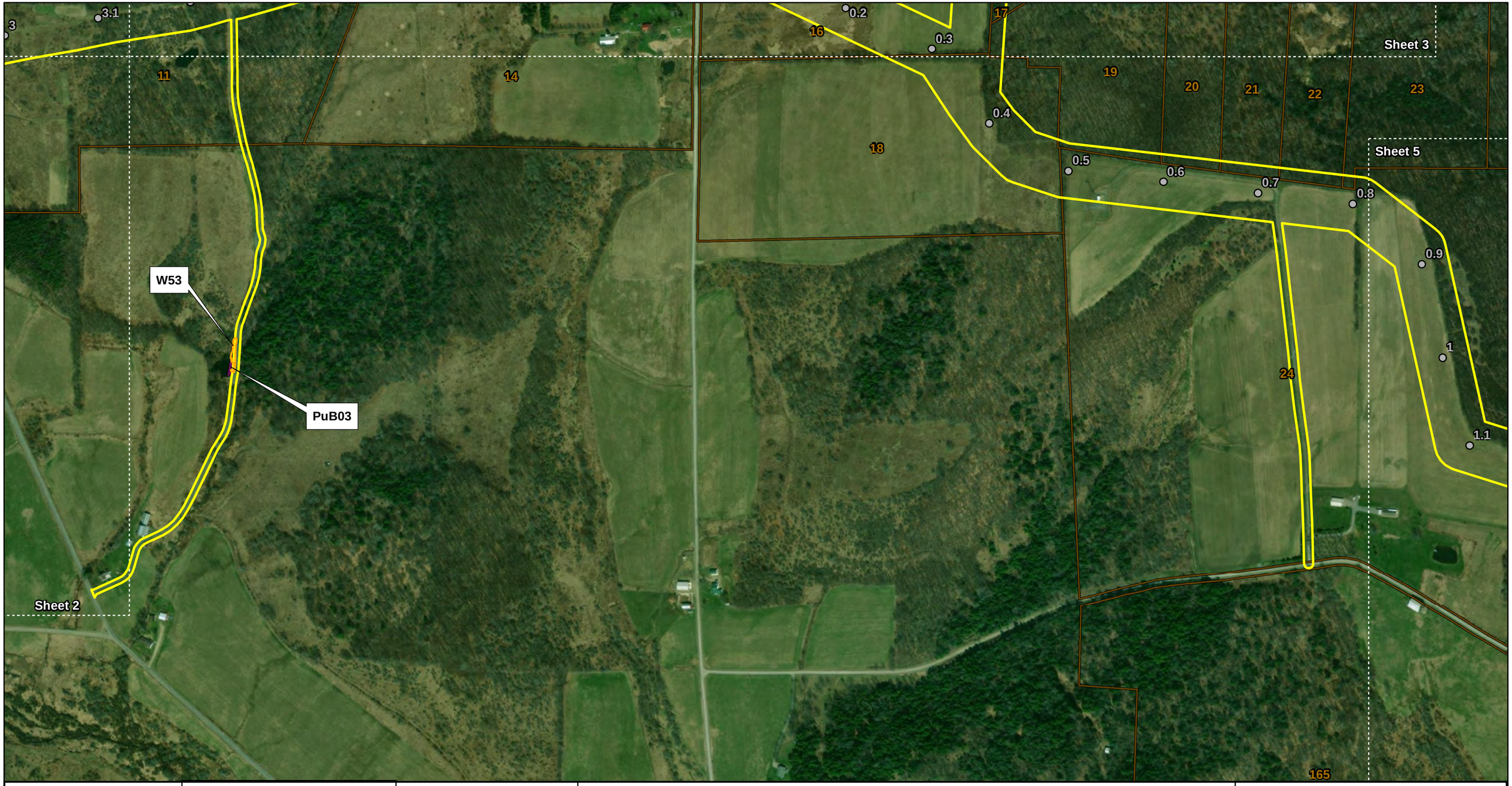
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 08/15/2024

Sheet 3



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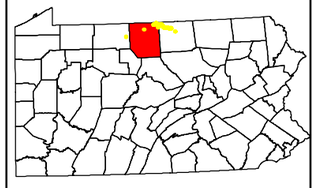


Potter County, PA

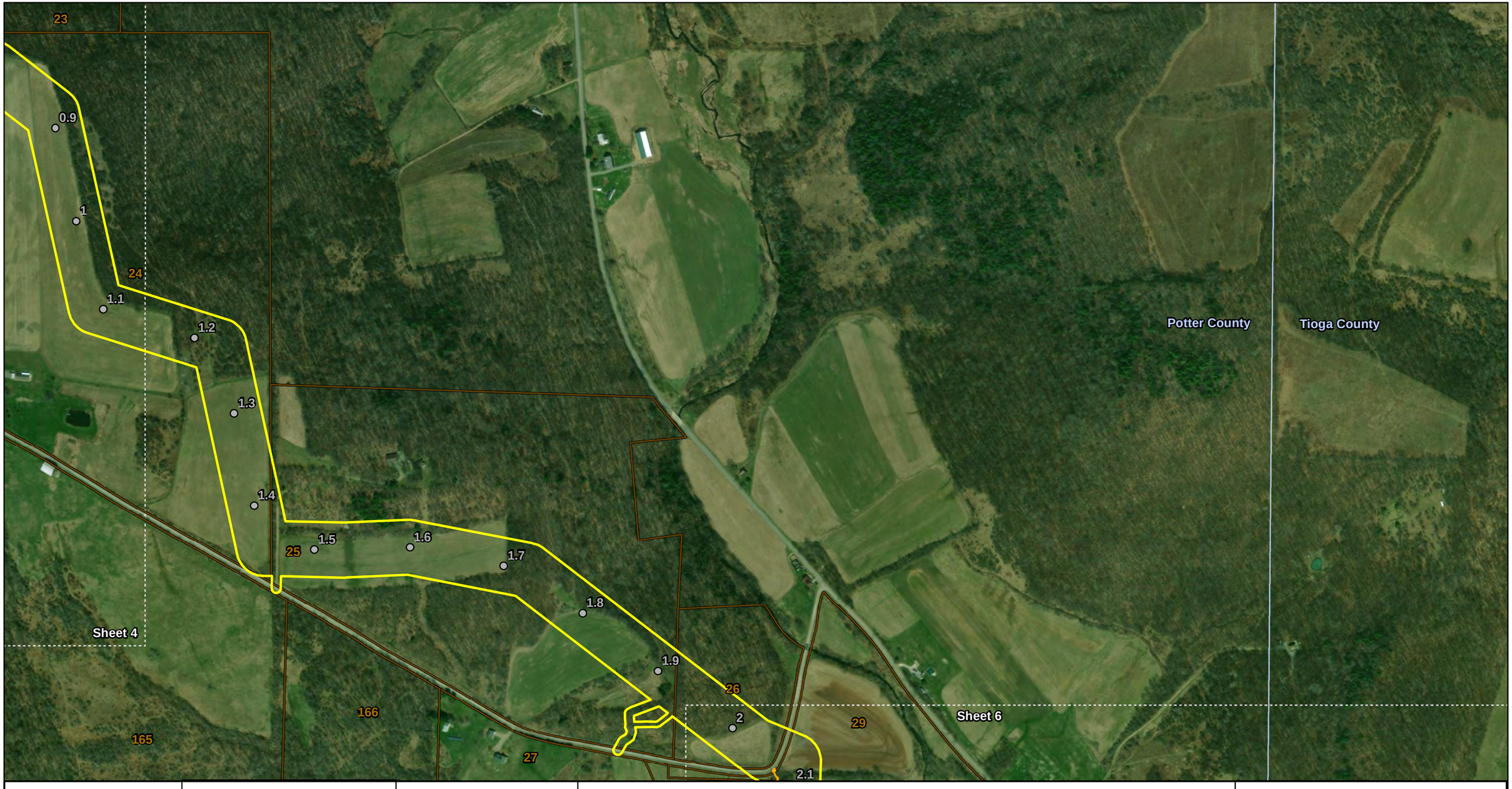
AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 4



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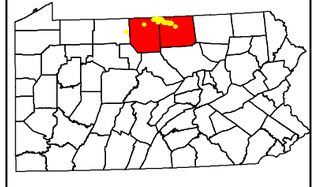

Potter & Tioga Counties, PA

AOI
PARCEL
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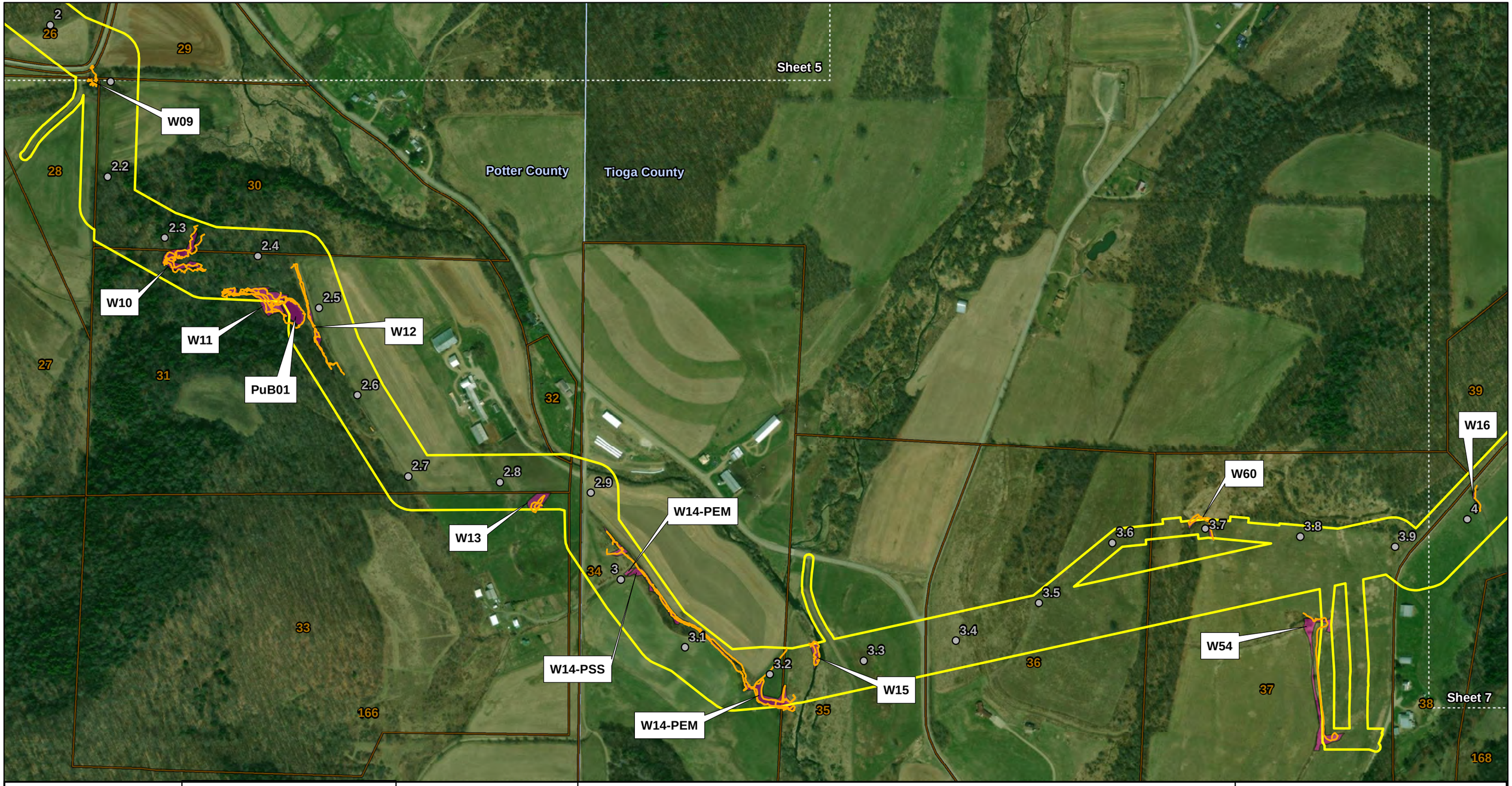
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 5



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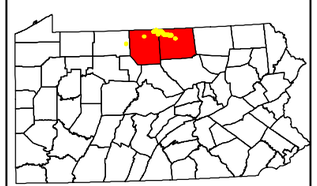

Potter & Tioga Counties, PA

AOI
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SURVEY ROUTE
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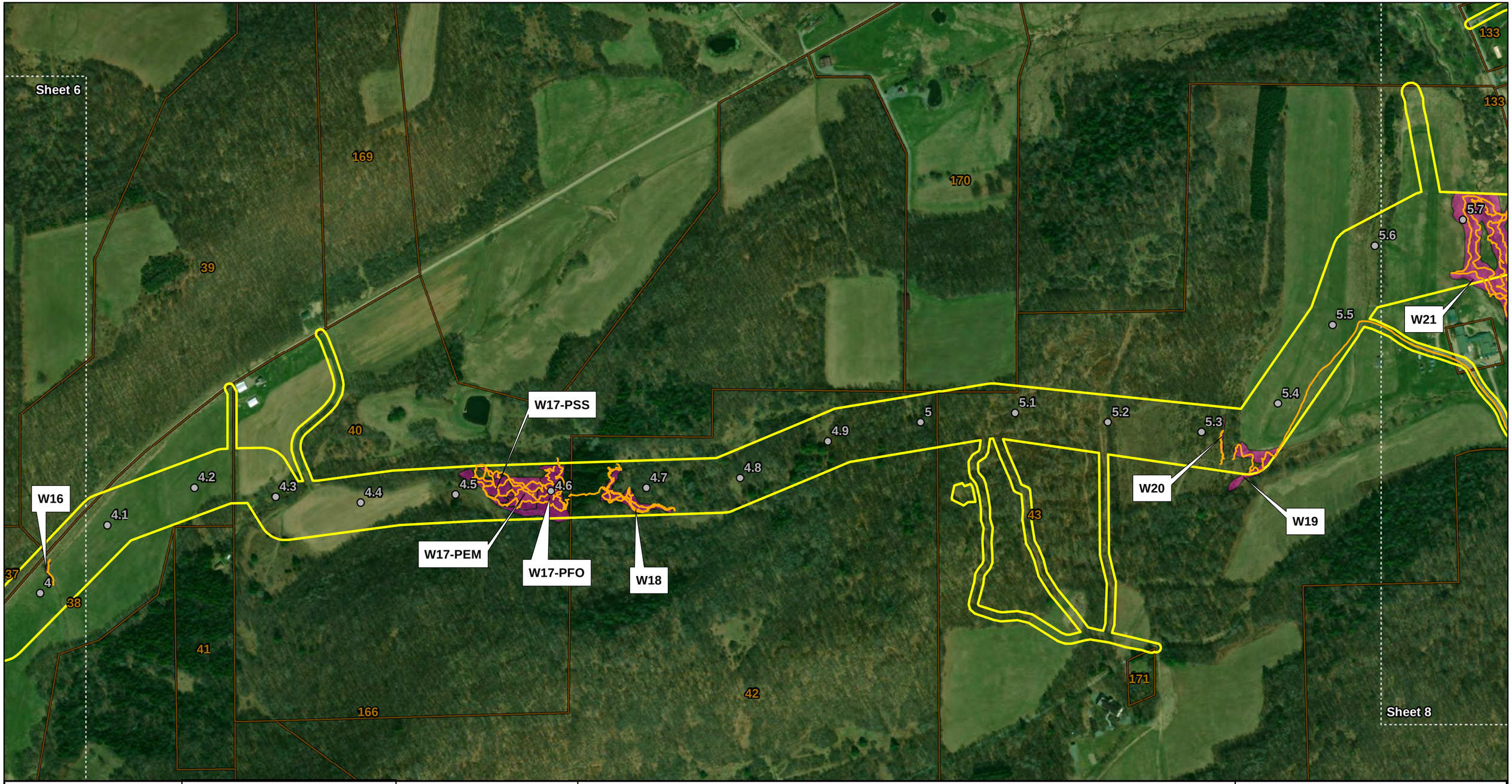
Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 6



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Natural Resource Specialists

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Tioga County, PA

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WETLAND
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MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 7

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Natural Resource Specialists

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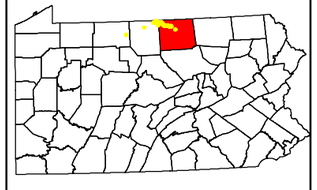

Tioga County, PA

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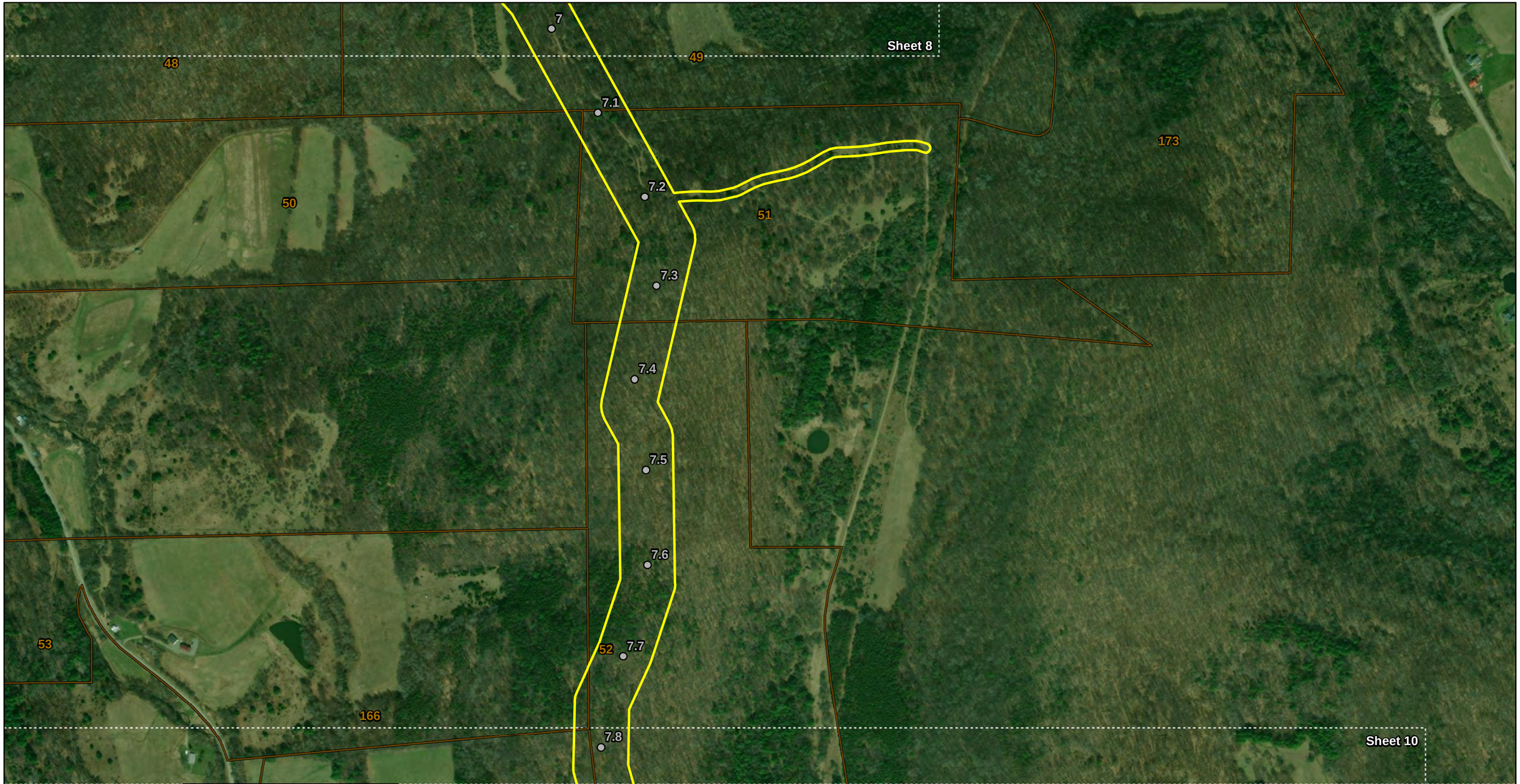
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 8



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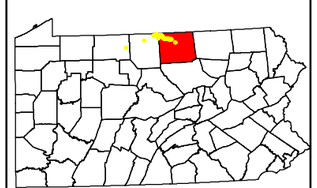

Tioga County, PA

AOI
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MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
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Tioga Pathway Project

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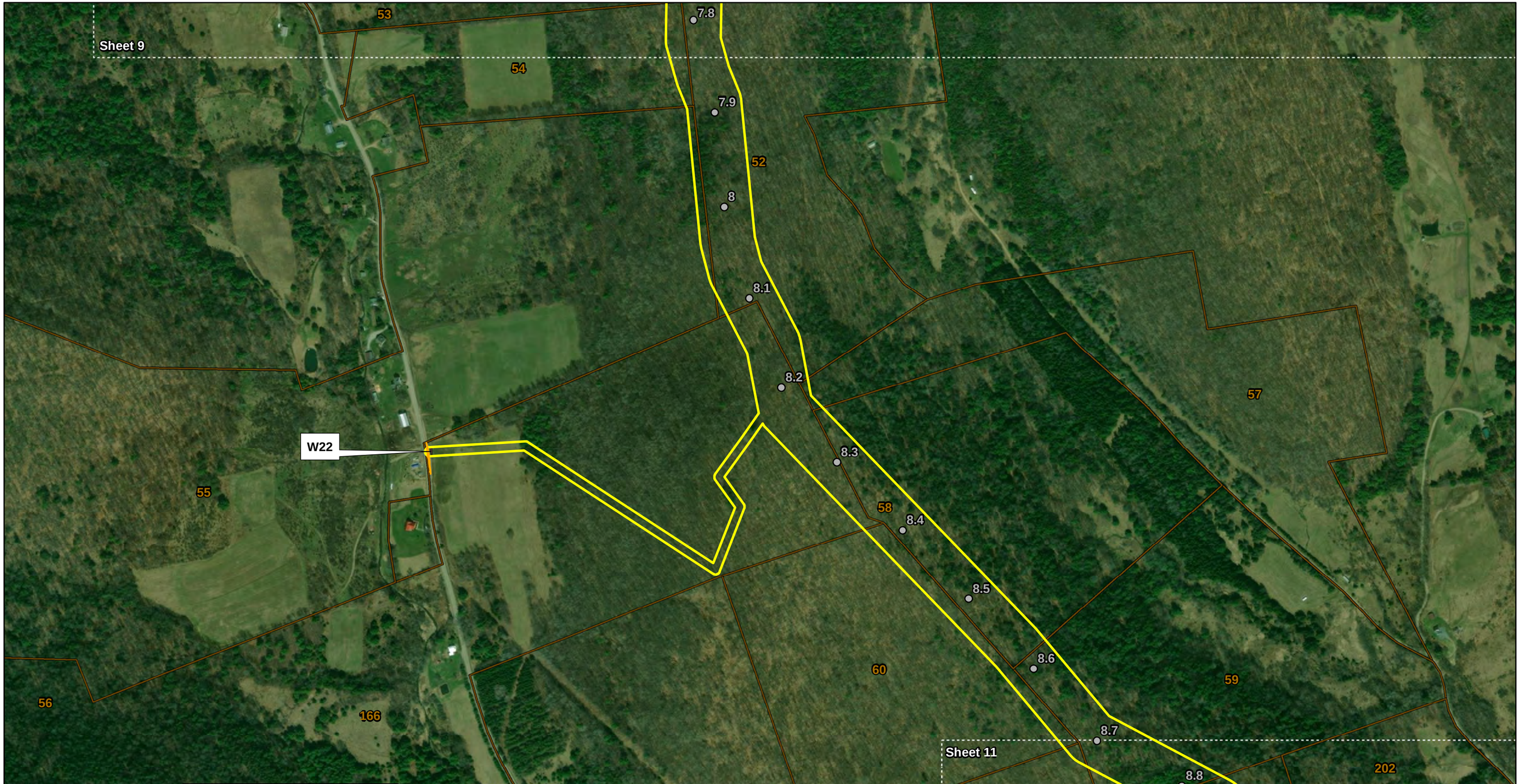
Sheet 9



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Natural Resource Specialists

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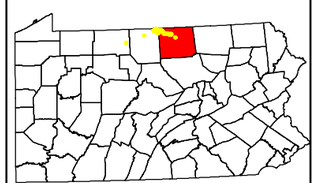


Tioga County, PA

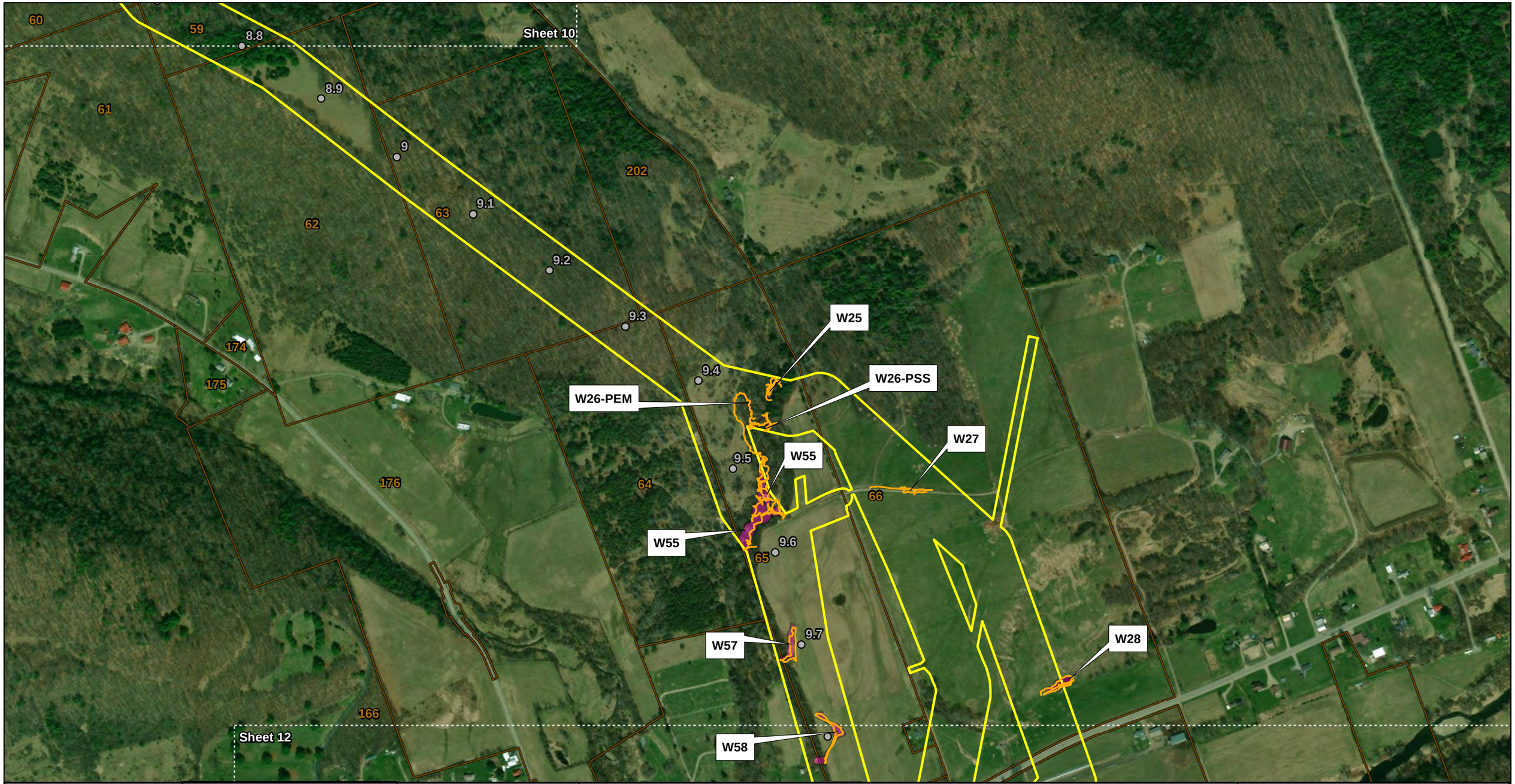
AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 10



ALLSTAR ECOLOGY
Natural Resource Specialists

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Tioga County, PA

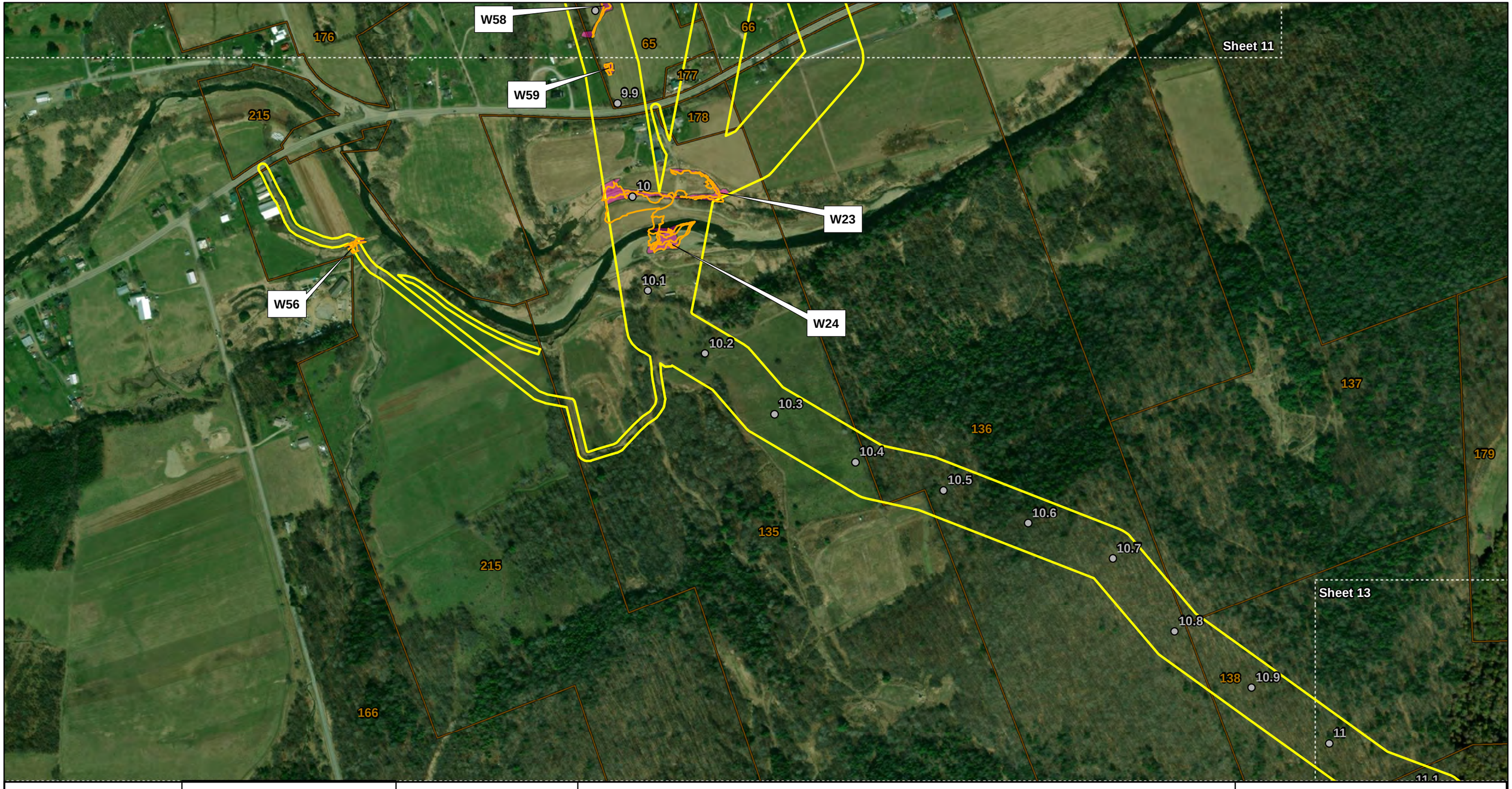
AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 11



ALLSTAR ECOLOGY
Natural Resource Specialists

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Tioga County, PA

AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/31/2024

Sheet 12

Sheet 12

Sheet 14

179

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ALLSTAR ECOLOGY
Natural Resource Specialists

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0 250 500 1,000 ft

Tioga County, PA

AOI

PARCEL

WETLAND

SURVEY ROUTE

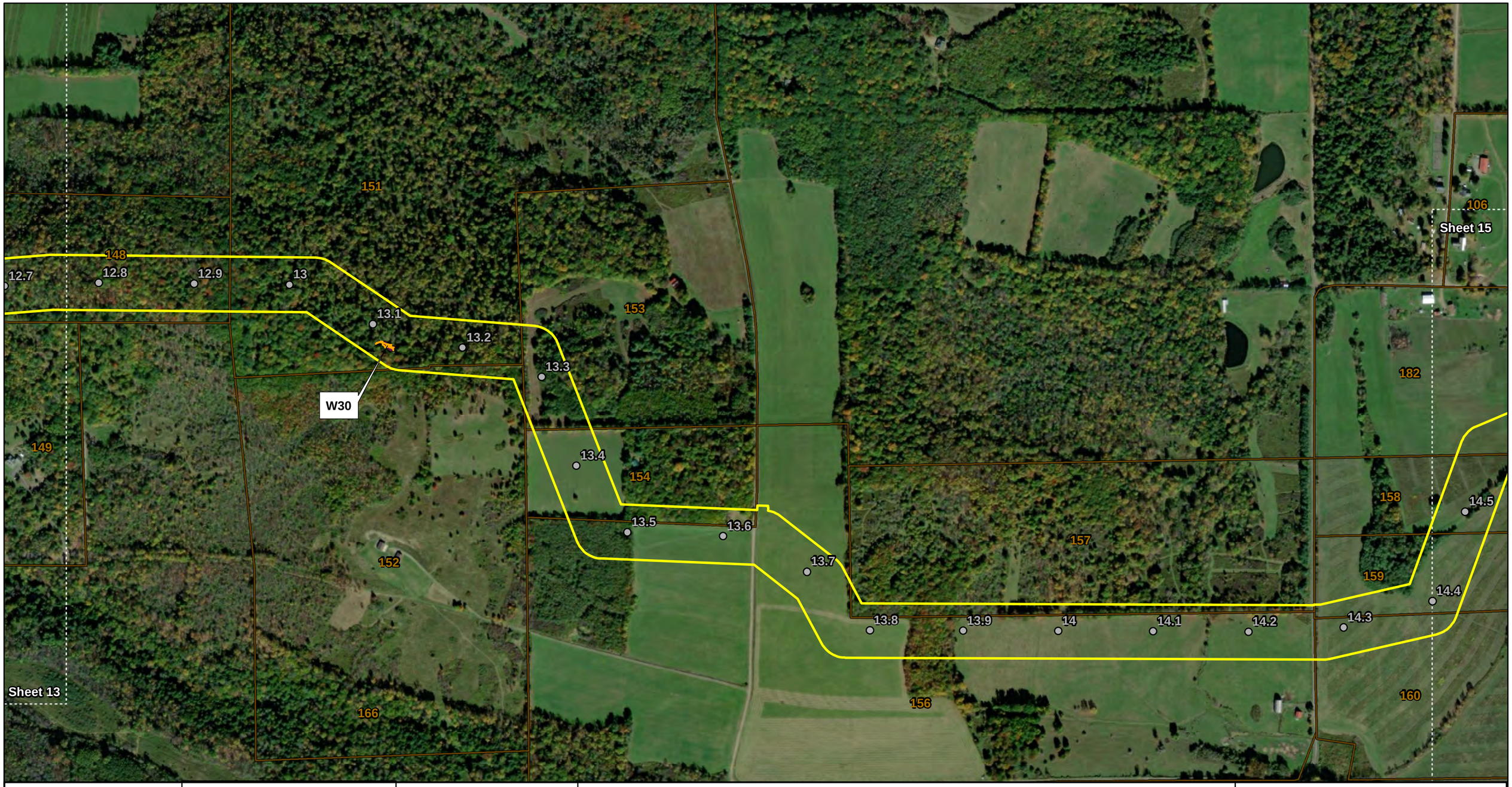
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 13



ALLSTAR ECOLOGY
Natural Resource Specialists

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Tioga County, PA

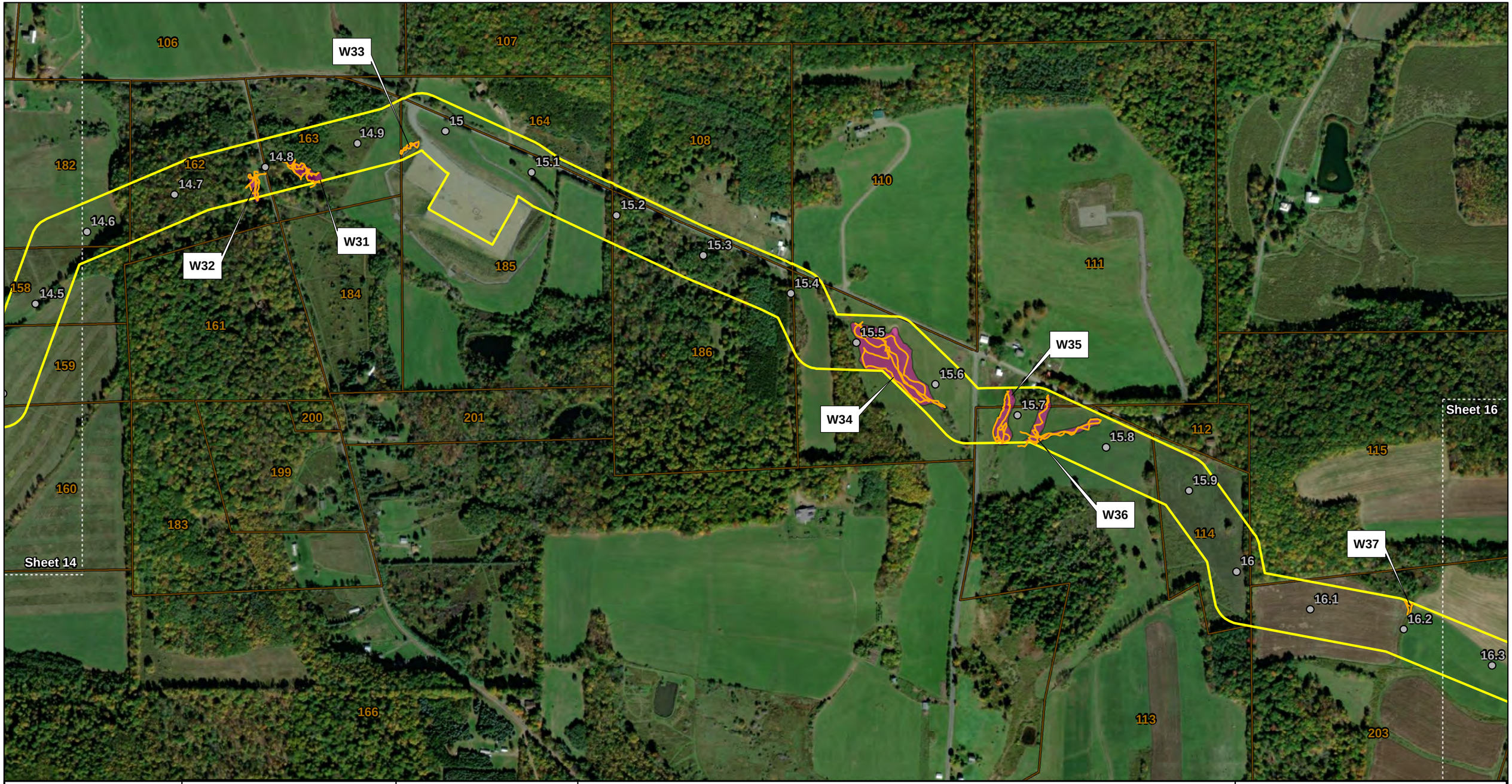
AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 14



ALLSTAR ECOLOGY
Natural Resource Specialists

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Tioga County, PA

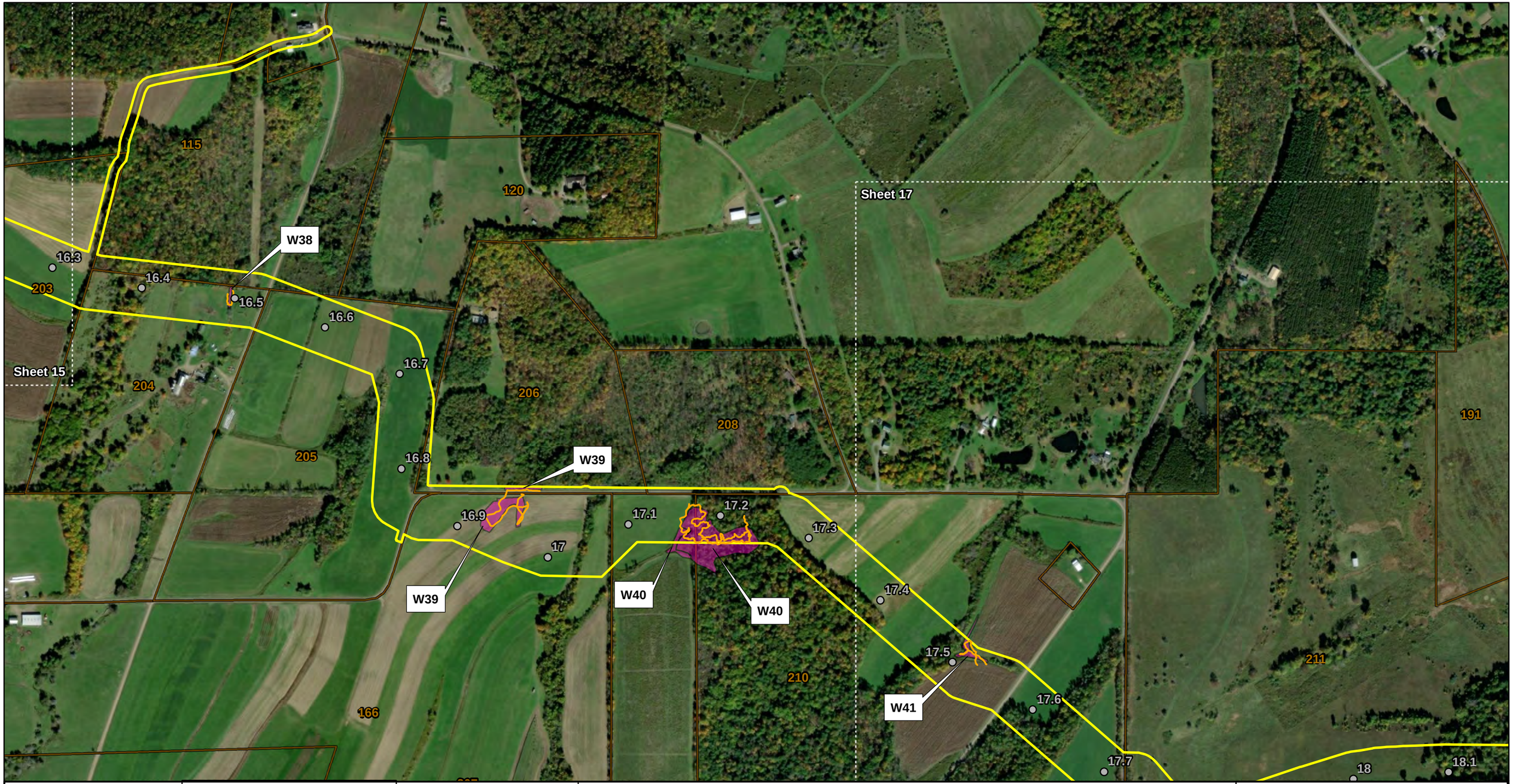
AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 15



ALLSTAR ECOLOGY
Natural Resource Specialists

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Tioga County, PA

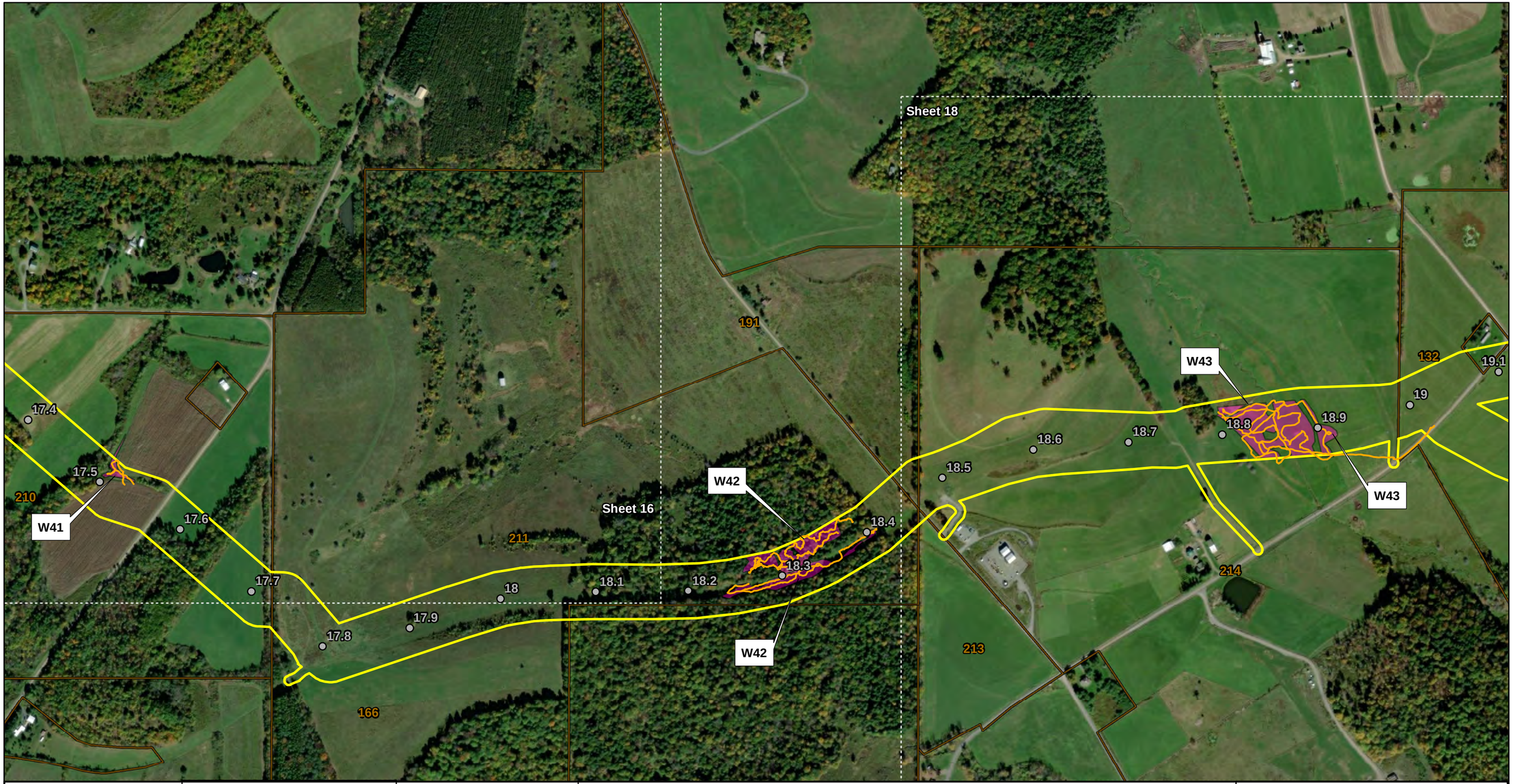
AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 16



ALLSTAR ECOLOGY
Natural Resource Specialists

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Tioga County, PA

AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

Sheet 17

W43
W44
W43
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Sheet 17
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ALLSTAR ECOLOGY
Natural Resource Specialists

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Tioga County, PA

AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 07/29/2024

W49

W48

W50

W51

W52

Tioga Pathway Project
Port Allegany Pipe Yard

166

ALLSTAR ECOLOGY
Natural Resource Specialists

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McKean County, PA

AOI

PARCEL

WETLAND

SURVEY ROUTE

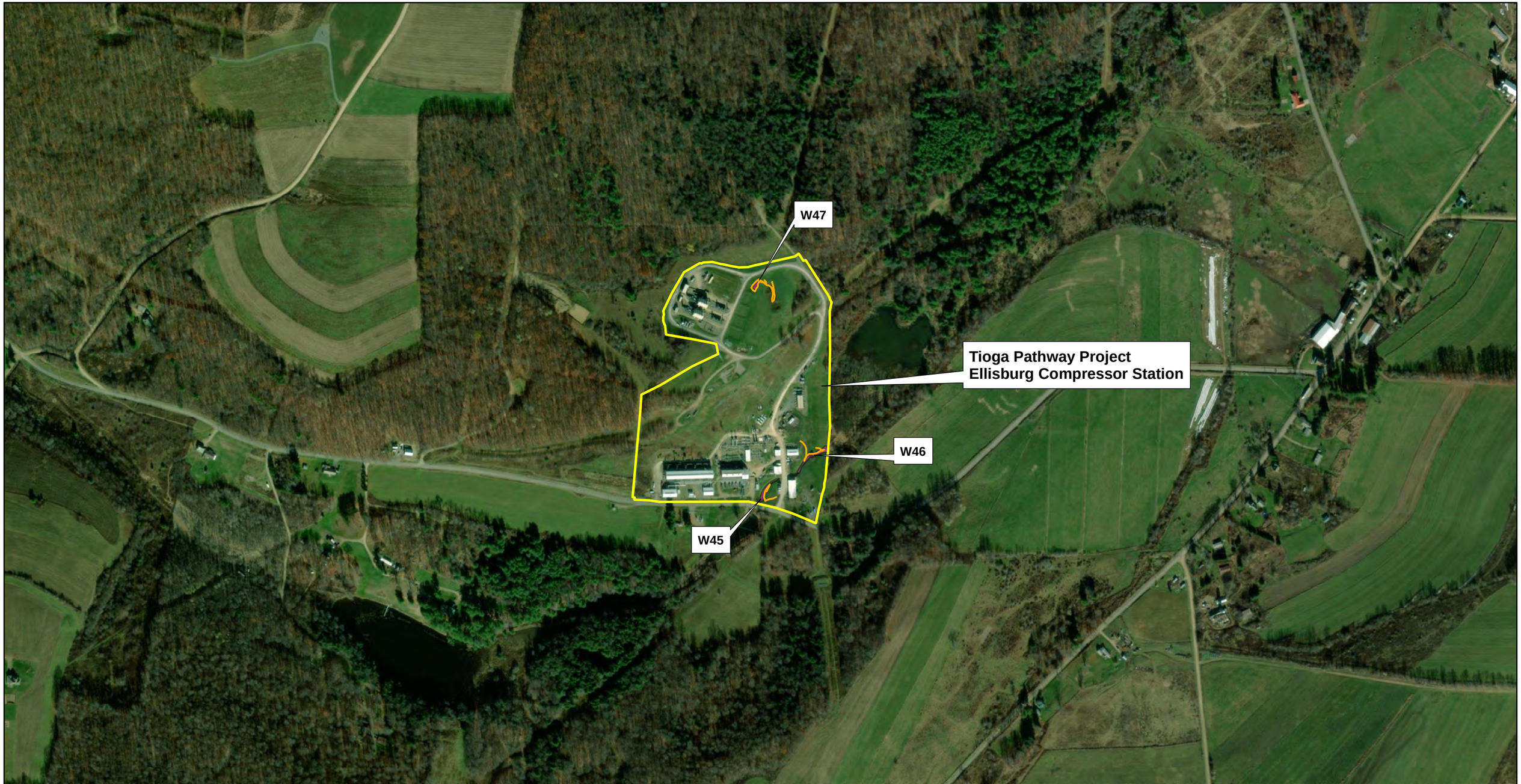
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 08/15/2024

Sheet 19



ALLSTAR ECOLOGY
Natural Resource Specialists

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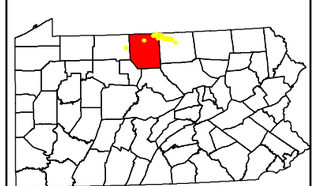

Potter County, PA

AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 08/15/2024

Sheet 20

Tioga Pathway Project
Harrison Valley Contractor Yard

ALLSTAR ECOLOGY
Natural Resource Specialists

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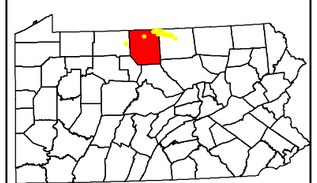

Potter County, PA

AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 08/15/2024

Sheet 21

Tioga Pathway Project
Middlebury Contractor Yard

ALLSTAR ECOLOGY
Natural Resource Specialists

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Potter County, PA

AOI
PARCEL
WETLAND
SURVEY ROUTE
MILEPOST (MP)

Tetra Tech, Inc.

Figure 2
Botanical Survey Map
Tioga Pathway Project

Date: 08/15/2024

Sheet 22

Appendix A. Photo Exhibit

Tioga Pathway Project
Botanical Field Survey Photo Exhibit

Photo 1. View of PEM community within the project AOI.

Photo 2. View of PEM community within the project AOI.

Photo 3. View of PSS community within the project AOI.

Photo 4. View of PSS community within the project AOI.

Tioga Pathway Project
Botanical Field Survey Photo Exhibit

Photo 5. View of PFO community within the project AOI.

Photo 6. View of PFO community within the project AOI.

Photo 7. View of PUB/Pond community within the project AOI.

Photo 8. View of PUB/Pond community within the project AOI.

Appendix B. Comprehensive Species List

Scientific Name	Common Name
Acer negundo	Box Elder
Acer rubrum	Red Maple
Achillea millefolium	Common Yarrow
Acorus calamus	Sweetflag
Agrimonia parviflora	Harvest-Lice
Alisma subcordatum	American Water-Plantain
Alliaria petiolata	Garlic Mustard
Alnus glutinosa	European Alder
Ambrosia artemisiifolia	Annual Ragweed
Amelanchier arborea	Common Serviceberry
Anthoxanthum odoratum	Sweet Vernal Grass
Arctium minus	Lesser Burdock
Arnoglossum atriplicifolium	Pale Indian-Plantain
Artemisia vulgaris	Common Wormwood
Asclepias syriaca	Common Milkweed
Aster	Aster
Betula alleghaniensis	Yellow Birch
Bidens cernua	Nodding Beggarticks
Bidens frondosa	Devil's Pitchfork
Cardamine	Bittercress, Toothwort
Carex baileyi	Bailey's Sedge
Carex comosa	Longhair Sedge
Carex crinita	Fringed Sedge
Carex debilis	White-Edge Sedge
Carex frankii	Frank's Sedge
Carex intumescens	Greater Bladder Sedge
Carex lupulina	Hop Sedge
Carex lurida	Sallow Sedge
Carex scoparia	Broom Sedge
Carex stipata	Stalk-Grain Sedge
Carex swanii	Swan's Sedge
Carex tribuloides	Blunt Broom Sedge
Carex vulpinoidea	Fox Sedge
Carpinus caroliniana	American Hornbeam
Carya ovata	Shagbark Hickory
Centaurea jacea	Brown Knapweed
Ceratophyllum demersum	Coontail
Cercis canadensis	Eastern Redbud
Chelone glabra	White Turtlehead
Cicuta maculata	Spotted Water Hemlock
Circaea lutetiana ssp. *canadensis*	Broadleaf Enchanter's-Nightshade
Clematis virginiana	Virgin's-Bower
Clinopodium vulgare	Wild Basil

Scientific Name	Common Name
Convolvulus sepium	European Bindweed
Cornus amomum	Silky Dogwood
Crataegus	Hawthorn
Cuscuta	Dodder
Cyperus esculentus	Yellow Nutsedge
Daucus carota	Queen Anne's-Lace
Dipsacus fullonum	Fuller's Teasel
Doellingeria umbellata	Parasol Whitetop
Dryopteris intermedia	Intermediate Woodfern
Echinochloa crus-galli	Large Barnyard Grass
Echinocystis lobata	Wild Cucumber
Elaeagnus umbellata	Autumn Olive
Eleocharis obtusa	Blunt Spikerush
Eleocharis tenuis	Slender Spikerush
Elodea nutallii	Free-Flowered Waterweed
Elymus repens	Creeping Wild Rye
Epilobium ciliatum	Fringed Willowherb
Epilobium coloratum	Purpleleaf Willowherb
Epilobium hirsutum	Hairy Willow-Herb
Epipactis helleborine	Helleborine
Equisetum arvense	Field Horsetail
Equisetum sylvaticum	Woodland Horsetail
Erigeron annuus	Eastern Daisy Fleabane
Erigeron canadensis	Common Horseweed
Eupatorium perfoliatum	Common Boneset
Eurybia divaricata	White Wood-Aster
Euthamia graminifolia	Flat-Top Goldentop
Eutrochium fistulosum	Trumpetweed
Eutrochium purpureum	Sweetscented Joe Pye Weed
Fagus grandifolia	American Beech
Fragaria virginiana	Virginia Strawberry
Fraxinus americana	White Ash
Fraxinus pennsylvanica	Green Ash
Galeopsis tetrahit	Brittlestem Hempnettle
Galinsoga parviflora	Smooth Galinsoga
Galium	Bedstraw
Galium mollugo	False Baby's-Breath
Geum canadense	White Avens
Glyceria grandis	American Mannagrass
Glyceria striata	Fowl Mannagrass
Gymnocarpium dryopteris	Northern Oak Fern
Hackelia virginiana	Virginia Stickseed
Hamamelis virginiana	American Witch-Hazel

Scientific Name	Common Name
Hepatica nobilis var. *acuta*	Sharp-Lobe Liverleaf
Hesperis matronalis	Mother-Of-The-Evening
Hieracium paniculatum	Allegheny Hawkweed
Holcus lanatus	Common Velvetgrass
Hypericum punctatum	Spotted St. John's-Wort
Impatiens capensis	Orange Jewelweed
Inula helenium	Elecampane
Iris	Blueflag, Iris
Iris pseudacorus	Yellow Iris
Juncus	Rush
Juncus canadensis	Canadian Rush
Juncus effusus	Soft Rush
Lapsana communis	Nipplewort
Larix decidua	European Larch
Leersia oryzoides	Rice Cutgrass
Lemna minor	Lesser Duckweed
Leonurus cardiaca	Common Motherwort
Leucanthemum vulgare	Oxeye Daisy
Lilium	Lilium
Lolium perenne	Perennial Ryegrass
Lonicera morrowii	Morrow's Honeysuckle
Lonicera xylosteum	European Fly Honeysuckle
Lotus corniculatus	Garden Bird's-Foot-Trefoil
Ludwigia palustris	Marsh Seedbox
Lycopus uniflorus	Northern Bugleweed
Lycopus virginicus	Virginia Water-Horehound
Lysimachia ciliata	Fringed Loosestrife
Lysimachia nummularia	Creeping Jenny
Lysimachia quadriflora	Four-Flower Loosestrife
Lythrum salicaria	Purple Loosestrife
Mentha ×piperita	Peppermint
Mentha arvensis	Wild Mint
Mentha spicata	Spearmint
Mimulus ringens	Allegheny Monkeyflower
Myosotis laxa	Smaller Forget-Me-Not
Myosotis scorpioides	True Forget-Me-Not
Oenothera biennis	King's-Cureall
Onoclea sensibilis	Sensitive Fern
Osmorhiza longistylis	Aniseroot
Osmunda cinnamomea	Cinnamon Fern
Osmunda claytoniana	Interrupted Fern
Ostrya virginiana	Hophornbeam
Oxalis montana	Mountain Wood Sorrel

Scientific Name	Common Name
Oxalis stricta	Common Yellow Wood Sorrel
Pastinaca sativa	Parsnip
Penthorum sedoides	Ditch-Stonecrop
Persicaria hydropiper	Marshpepper Knotweed
Phalaris arundinacea	Reed Canarygrass
Phleum pratense	Timothy
Plantago lanceolata	Narrowleaf Plantain
Plantago rugelii	Blackseed Plantain
Poa	Bluegrass
Podophyllum peltatum	Mayapple
Polygonum	Smartweed, Knotweed
Polygonum cuspidatum	Japanese Knotweed
Polygonum pensylvanicum	Pennsylvania Smartweed
Polygonum sagittatum	Arrowleaf Tearthumb
Polygonum virginianum	Jumpseed
Populus tremuloides	Quaking Aspen
Populus grandidentata	Bigtooth Aspen
Potamogeton	Pondweed
Potentilla recta	Sulphur Cinquefoil
Prunella vulgaris	Common Self-Heal
Prunus	Plum, Cherry
Prunus serotina	Black Cherry
Pteridium aquilinum	Bracken Fern
Ranunculus	Buttercup, Spearwort, Water Crowfoot
Ranunculus septentrionalis	Hispid Buttercup. Swamp Buttercup
Ribes	Gooseberry
Rosa multiflora	Multiflora Rose
Rubus	Blackberry
Rubus occidentalis	Black Raspberry
Rubus strigosus	American Red Raspberry
Rumex crispus	Curly Dock
Salix nigra	Black Willow
Salix sericea	Silky Willow
Sambucus nigra	Black Elderberry
Schedonorus pratensis	Meadow Fescue
Schoenoplectus tabernaemontani	Softstem Bulrush
Scirpus atrovirens	Green Bulrush
Scirpus cyperinus	Woolgrass Bulrush
Scirpus polyphyllus	Leafy Bulrush
Securigera varia	Purple Crown-Vetch
Setaria verticillata	Bristly Foxtail
Sisymbrium officinale	Hedge Mustard
Solanum dulcamara	Climbing Nightshade

Scientific Name	Common Name
Solidago	Goldenrod
Solidago canadensis	Canada Goldenrod
Solidago rugosa	Wrinkleleaf Goldenrod
Sparganium	Bur-Reed
Sparganium americanum	American Bur-Reed
Spiraea alba	White Meadowsweet
Stachys pilosa	Marsh Woundwort
Symphoricarpos orbiculatus	Coralberry
Symphyotrichum prenanthoides	Crooked-Stem Aster
Taraxacum officinale	Common Dandelion
Trifolium hybridum	Alsike Clover
Trifolium pratense	Red Clover
Trifolium repens	White Clover
Tsuga canadensis	Eastern Hemlock
Tussilago farfara	Colt's-Foot
Typha angustifolia	Narrowleaf Cattail
Typha latifolia	Broadleaf Cattail
Urtica dioica	Stinging Nettle
Urtica gracilis ssp. *gracillis*	American Stinging Nettle
Utricularia	Bladderwort
Veratrum viride	American False Hellebore
Verbascum blattaria	Moth Mullein
Verbascum thapsus	Great Mullein
Verbena hastata	Swamp Verbena
Verbena urticifolia	White Vervain
Veronica	Speedwell
Veronica americana	American Brooklime
Veronica anagallis-aquatica	Water Speedwell
Veronica officinalis	Common Gypsyweed
Viburnum dentatum	Southern Arrowwood
Vicia hirsuta	Vetch

Appendix C. IPaC Report

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

McKean , Potter , and Tioga counties, Pennsylvania

Local office

Pennsylvania Ecological Services Field Office

(814) 234-4090
(814) 234-0748

MAILING ADDRESS

110 Radnor Road Suite 101
State College, PA 16801-7987

PHYSICAL ADDRESS

110 Radnor Road
Suite 101}
State College, PA 16801-7987

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Northeastern Bulrush Scirpus ancistrochaetus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6715	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31

Golden Eagle Aquila chrysaetos — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

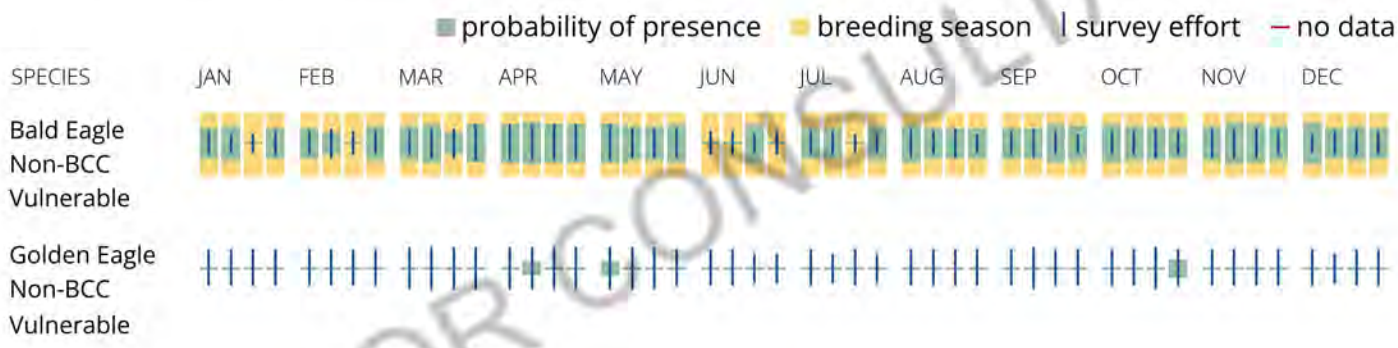
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid

cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around

your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Black-capped Chickadee *Poecile atricapillus practicus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 10 to Jul 31
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Cerulean Warbler *Setophaga cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 27 to Jul 20

Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler Vermivora chrysoptera This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Northern Saw-whet Owl Aegolius acadicus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Jul 31
Prairie Warbler Setophaga discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

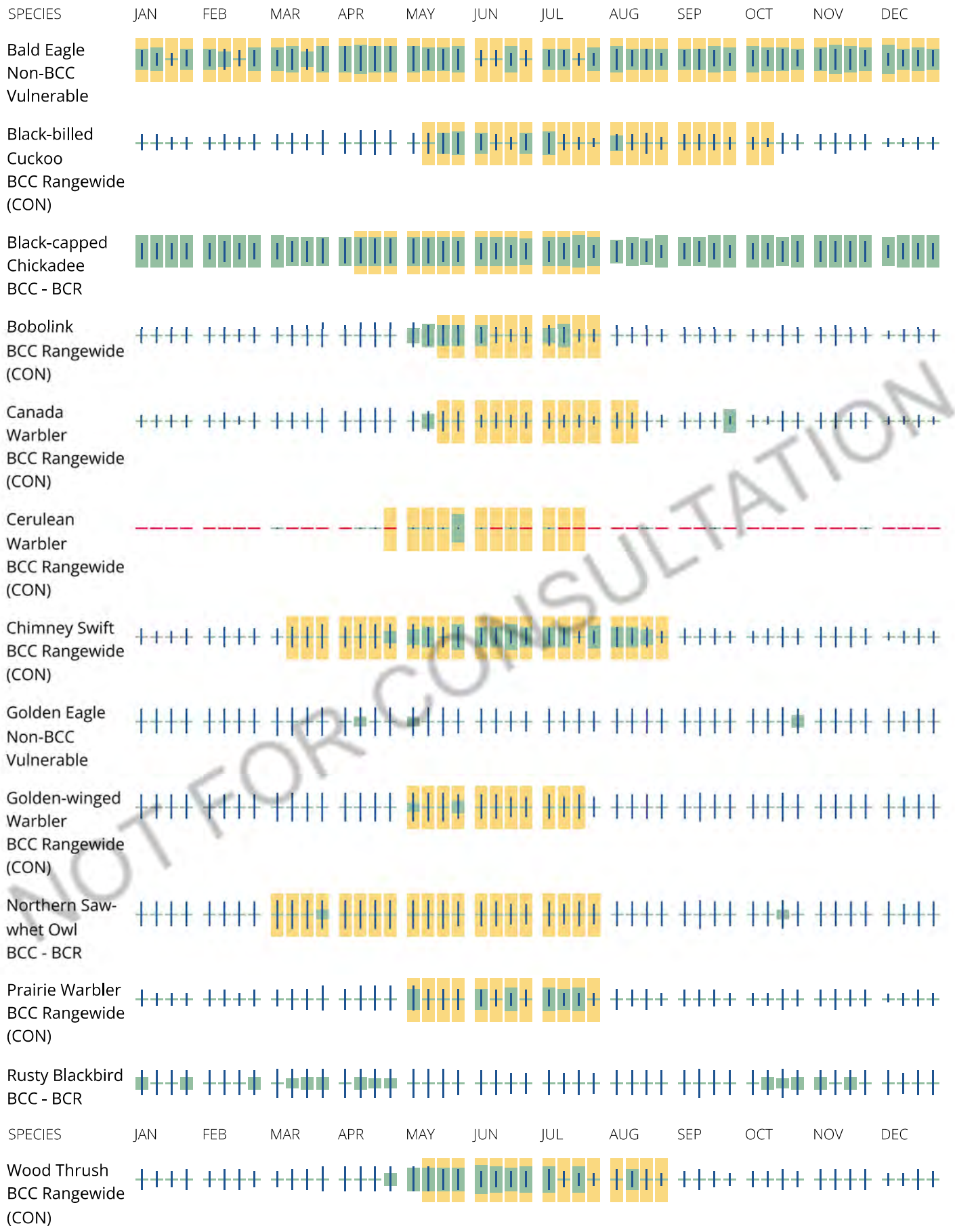
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

probability of presence breeding season survey effort no data



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

- PEM1C
- PEM1A

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1A
- PSS1E

FRESHWATER POND

PUBHh

RIVERINE

R2UBH
R3UBH
R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix D. PNDI Review

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

December 18, 2023

PNDI Number: 797684
Version: Final_1; 12/15/23

Skyler Susnick
Tetra Tech
301 Ellicott Street
Buffalo, NY 14203
Email: skyler.susnick@tetratech.com (hard copy will not follow)

Re: Tioga Pathway Project
McKean, Potter, and Tioga Counties, PA

Dear Skyler,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number **797684 (Final_1)** for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

No Impact Anticipated

PNDI records indicate that no known occurrences of species or resources under DCNR's jurisdiction occur in the vicinity of the project. Therefore, the project referenced above is not expected to impact plants, terrestrial invertebrates, natural communities, and geologic features of concern. No further coordination with DCNR is needed for this project.

Recommended Best Management Practices:

- Use a conservative approach to project design that minimizes permanent and temporary disturbances to soil and native vegetation. This will conserve habitat and limit opportunities for invasive plants.
- Clean boot treads, tools, construction equipment, and vehicles thoroughly (especially the undercarriage and wheels) before they are brought on site. This will remove invasive plant seeds and invasive earthworms/cocoons that may have been picked up at other worksites.
- Use clean project materials (e.g., weed-free straw) or materials native to the worksite to avoid introducing invasive species from contaminated sources.
- Revegetate or cover disturbed soil and stockpiles quickly to discourage the germination of invasive plants. Implement proper erosion control practices to stabilize soil and reduce runoff.
- Do not use seed mixes that include invasive species. More information about invasive plants in Pennsylvania can be found at the following link: http://www.dcnr.pa.gov/Conservation/WildPlants/InvasivePlants/Pages/default.aspx
- Use habitat appropriate seed mixes. For example, use a riparian seed mix when reseeding along a waterway. The Bureau of Forestry Planting & Seeding Guidelines can be found at the following link for recommendations: http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20031083.pdf

- Use native plants for landscaping, revegetation, and stormwater management. Do not use nonnative invasive species. Reduce the area of lawn and impermeable surfaces to the fullest extent practicable in favor of native gardens or habitat restoration (e.g., forest, meadow, wetland, etc.). More information about lawn conversion can be found at the following link: https://www.dcnr.pa.gov/Conservation/Water/LawnConversion/Pages/default.aspx

- Plant forest buffers where trees were historically present along streams, wetlands, and bodies of water. Buffers should be a minimum of 35 feet in width (ideally at least 100 feet in width). Where trees are not appropriate (e.g., powerline rights-of-way), buffer with native shrubs and herbaceous plants. More information about riparian buffers can be found at the following link: https://www.dcnr.pa.gov/Conservation/Water/RiparianBuffers/Pages/default.aspx

- Manage road/utility rights-of-way, median strips, edges, and other green spaces for diverse native plant communities and wildlife (e.g., monarch butterfly). In seed mixes, include wildflowers that have overlapping bloom periods and provide forage for pollinators throughout the growing season. Avoid blanket herbicide applications; instead, spot-treat undesirable tall woody vegetation and invasive weeds. Where mowing is necessary, reduce frequency to once every few years during the dormant season (i.e., after first frost in late fall and before bird nesting in early spring), leaving some refugia for overwintering wildlife.

- Monitor for invasive plants before, during, and after project activities and promptly control any identified infestations. Frequent monitoring allows for early detection and rapid response.

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter and a permit has not been acquired, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative, description of project changes and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Jason Ryndock, Ecological Information Specialist, by phone (717-705-2822) or via email (c-jryndock@pa.gov).

Sincerely,

Greg Podniesinski, Section Chief
Natural Heritage Section

From:	Shellenberger, Pamela
To:	Susnick, Skyler
Cc:	mcmillanl@natfuel.com; Lare, Sandy; Dingle, Robin
Subject:	Re: [EXTERNAL] Tetra Tech MFT: NFG Tioga Pathway Gas Pipeline - USFWS #2024-0027866
Date:	Wednesday, October 9, 2024 12:27:12 PM
Attachments:	Outlook-uu1ycvef.png Outlook-3sqpwyca.png Outlook-x4bh0yeo.png

Thank you for the NEBR survey results. I had a note to file that said we should be expecting bat acoustic survey results. Were those completed?

Thank you,

_____

Pamela Shellenberger (she/her)
U.S. Fish and Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, PA 16801
814-234-4090 x7459
https://www.fws.gov/office/pennsylvania-ecological-services

FWS VALUES
STEWARDSHIP – INTEGRITY – RESPECT – COLLABORATION – INNOVATION

From: Susnick, Skyler <donotreply@tetratech.com>
Sent: Friday, August 30, 2024 11:49 AM
To: Shellenberger, Pamela <pamela_shellenberger@fws.gov>
Cc: mcmillanl@natfuel.com <mcmillanl@natfuel.com>; sandy.lare@tetratech.com <sandy.lare@tetratech.com>; robin.dingle@tetratech.com <robin.dingle@tetratech.com>
Subject: [EXTERNAL] Tetra Tech MFT: NFG Tioga Pathway Gas Pipeline - USFWS #2024-0027866

Tetra Tech Managed File Transfer

New Secure File Package is Available to Download until

Saturday, 14 September

Hello Pam,

Please see the attached link for the Tioga Pathway Project northeastern bulrush survey mentioned in my previous email.

Thank you,

Skyler Susnick

This link will work for anyone. The secure file package is available until: **Saturday, 14 September.** After this date contact the sender.

Files attached to this message

Filename	Size
TiogaPathway_BotanicalReport_20240815.pdf	71.2 MB

Download Files

Logon to reply to this message

From: Lare, Sandy
To: pamela_shellenberger@fws.gov
Cc: Susnick, Skyler; mcmillanl@natfuel.com; Dingle, Robin
Subject: Tetra Tech MFT: Bat Survey Report - Tioga Pathway Project (USFWS #2024-0027866)
Date: Wednesday, October 9, 2024 3:28:49 PM

Tetra Tech Managed File Transfer

New Secure File Package is Available to Download until

Wednesday, 30 October

Dear Pam --

Please see the links for the Bat Survey Report for surveys conducted along the proposed Tioga Pathway Project (USFWS #2024-0027866).

Please let me know if you have any difficulty accessing these files, or have any questions or discussion.

Thanks! **Hope you have a great day and an enjoyable week!**

Sandy Lare | Senior Environmental Planner/Project Manager

Direct **+1 (716) 541-9221** | Business **+1 (716) 849-9419, Ext. 9221** | Mobile **+1 (207) 409-6003** | sandy.lare@tetratech.com

Tetra Tech | *Leading with ScienceÂ®*

This link will work for anyone. The secure file package is available until: **Wednesday, 30 October.** After this date contact the sender.

Files attached to this message

Filename	Size
TiogaPathways_BCMReport_20240923.pdf	21.2 MB
AppendixBTiogaPathwaysMASTERID20240821.xlsx	2.76 MB

Download Files

TIOGA PATHWAYS

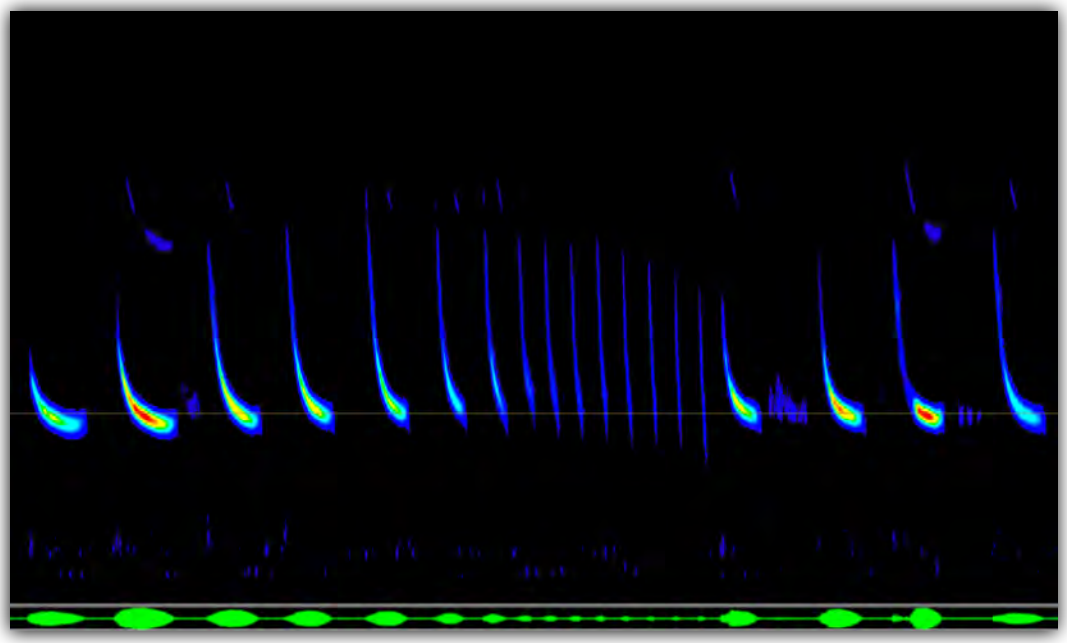
BAT ACOUSTIC SURVEY

Tioga & Potter County, PA • June 11 - June 20, 2024

Prepared by:

BAT Conservation & Management

1263 Claremont Road, Carlisle, Pennsylvania 17015
(717) 241-2228 • (814) 442-4246
www.batmanagement.com



Biologists:
John Chenger
Lori Chenger
David Riggs

Project Principal &
Qualitative Analysis of Calls:
John Chenger

Report Prepared by:
John Chenger
Andrea Rygel

Summary

Bat Conservation and Management, Inc. (BCM) conducted an acoustic bat survey at the Tioga Pathway Project in Tioga and Potter County, Pennsylvania. The total area of the proposed work is approximately 39km of linear alignment, with an additional 2km of forested access roads distributed in three distinct areas. The goal of the survey was to determine the presence or probable absence of the federally endangered Indiana bat (*Myotis sodalis*) and/or Northern long-eared bat (*Myotis septentrionalis*). The survey was conducted following the 2024 protocols outlined within the U. S. Fish and Wildlife Service (USFWS) *Range-Wide Indiana Bat Summer Survey Guidelines*. Forty two passive acoustic monitoring stations deployed from June 11, 2024 though June 15, 2024 were distributed in likely bat habitat throughout the Project Area. A total of 178 monitoring nights under acceptable weather conditions were completed and over 17,000 recordings were analyzed to determine species present at time of survey. The USFWS accepted auto-classifier program (Kaleidoscope Pro) determined that the presence of the Indiana bat was unlikely using the by night at each site analysis, however presence of the Northern long-eared bat was supported. Qualitative (manual) review of 590 acoustic recordings classified by Kaleidoscope Pro as a Myotis species determined that no recordings definitively could be classified solely as an Indiana bat. From the results of this analysis and with the limitations of acoustic monitoring, the determination of probable presence of the Indiana bat cannot be supported, and absence of the species may be assumed. Manual review of 269 recordings can support the presence of Northern long-eared bats within the project area, and presence of this species may be assumed. Kaleidoscope Pro also identified the candidate species Tricolored bat *(Perimyotis subflavus)* 193 times across half the Project Area; none of which passed our manual review and cannot be considered present.

We have prepared this survey report for the use of our client's office for planning purposes in accordance with generally accepted bat acoustic monitoring practices, certain U.S. Fish and Wildlife Service guidelines, and the project specific scope of work. No other warranties, either expressed or implied, are made as to the professional services included in this report. This report may be considered void without the electronic attachments originally accompanying this document.

Methods

Acoustic Survey

A bat acoustic monitoring survey presence or probable absence was conducted in accordance with the USFWS 2024 *Range-wide Indiana Bat Summer Survey Guidelines document* (USFWS Guidelines). The survey goal was to determine presence or probable absence of any bat species commonly found in the Northeast, including the Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*). The minimum level of acoustic survey effort for a linear project in Pennsylvania is 4 valid detector sample nights per 1km. A valid night is one monitoring device placed at one location and set to activate from sundown to sunrise during a night that is within the weather parameters of the USFWS Guidelines. Bat Conservation and Management, Inc. (BCM) deployed 42 monitoring stations consisting of full-spectrum Pettersson, model D500x, bat detectors (Pettersson Elektronik; Uppsala, Sweden) or full-spectrum Titley, Ranger bat detectors (Titley Scientific; Columbia, Missouri, USA) on June 11, 2024 through June 15, 2024 (Figure 1). BCM was contracted to conduct stationary point acoustic surveys with a minimum of 168 total nights recorded from the 39 monitoring stations for the main alignment and three monitoring stations for each of the three district proposed forested access roads. The survey ended after the morning of June 20, 2024, and all monitoring stations were removed. Device settings, placement, and other metadata can be found on the Acoustic Site Data Sheets (Appendix A).

Aerial photographs were used to place acoustic monitoring sites in probable bat flyways and foraging areas within the Project Area. Sites were adjusted in the field as needed to accommodate onsite conditions before the detectors were deployed (Figure 1, Table 1). Each detector was equipped with an extension cable and an external directional microphone mounted horizontally on a pole at least 3 m above ground. The detectors were programmed to passively record individual 4-9 second recordings of echolocation calls in standard .WAV audio format from sunset to sunrise each night. The individual bat recordings usually represent a single “pass” (fly by) from a single bat.

Each detector was tested prior to deployment to ensure they were functioning properly. This included testing the microphone and cable by producing ultrasound it should be able to detect. The D500x and Titley Ranger have an ultrasound decibel meter that confirmed whether or not the mic and mic cable were functioning. This test was repeated just prior to being armed during deployment and when the detectors were removed at the end of the survey. The detectors were programmed to record an extended “Log File” that listed the settings, battery voltage, and logged any failures due to low power and/or full memory that may have occurred. Metadata from the survey site was collected, which included all pertinent details about the deployment. The site-specific data was added to each recorded file during data management post-processing. More details about detector settings, placement, and site metadata can be found on the Acoustic Site Data Sheets (Appendix A).

Acoustic Data Analysis

Bat recordings were analyzed in their original full spectrum form using Kaleidoscope Pro (KaPRO), version 5.4.8 (Wildlife Acoustics, Inc., Maynard, MA). As per USFWS requirements, signal parameters for the KaPRO “AutoID for Bats North America 5.4.0” analysis were set at -1 liberal sensitivity and considered all signals between 8 and 120 kHz in frequency, between 2-500 ms in duration, having a maximum inter-syllable gap of 500 ms, and sequences with a minimum of 2 echolocation call pulses. KaPRO uses analysis algorithms to weigh the pulse-level classifications and provide a sequence-level species identification. The state classifier used was Pennsylvania and included the following species considered for analysis: big brown bat (*Eptesicus fuscus*), Eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), Eastern small-footed bat (*Myotis leibii*), little brown

bat (*Myotis lucifugus*), Northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), evening bat (*Nycticeius humeralis*), and tricolored bat (*Perimyotis subflavus*).

All recordings were also classified in their original full spectrum form using the software program SonoBat (version 30, Joe Szewczak, Arcata CA). SonoBat output provides a "file-level" species classification for every recording considered in the data set ("Species Accepted" column result in Appendix B: Acoustic Data, Attached Electronic Document). The SonoBat auto-classifier used was Northeastern North America which included the following species considered for analysis: big brown bat (*Eptesicus fuscus*), Eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), Eastern small-footed bat (*Myotis leibii*), little brown bat (*Myotis lucifugus*), Northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), evening bat (*Nycticeius humeralis*), Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), and tricolored bat (*Perimyotis subflavus*). Auto-classification parameters were set to 0.60 and above for acceptable call quality and the sequence decision threshold was set to 0.90 and above for classification decisions.

Any recordings auto-classified as a Myotis species or tricolored bat, and representative recordings of all other species, were manually reviewed (qualitative analysis) to confirm or reject the initial software classification. The qualitative analysis was conducted by viewing the full-spectrum echolocation call sequences using the SonoBat30 spectrogram viewer. All recordings were both auto-classified and qualitatively analyzed by a qualified bat biologist (Appendix C). The MasterID spreadsheet included in Appendix B contains a record for each recording containing identifiable bat calls, Kaleidoscope Pro's species decision, SonoBat's species decision, and BCM manual review decision. While it is desirable to have all three sources match, the BCM manual review represents the final decision on the recording.

Weather Data

Nightly temperature, wind, and precipitation data was reviewed from an automated weather station located nearby in Knoxville, PA (Elevation 1224 ft, 41.955° N, 77.429° W) https://www.wunderground.com/dashboard/pws/KPAKNOXV2?cm_ven=localwx_pwsdash. The following weather conditions preclude a valid survey night if they occur within the first 5 hours of the survey period; temperatures fall below 50°F (10°C); precipitation, including rain and/or fog, that lasts greater than 30 minutes or continues intermittently; and/or sustained wind speeds greater than 9 miles/hour (4 meters/second; 3 on Beaufort scale) that continues for 30 minutes or more.

Results

Level of Effort and Weather

Detectors operated until they were serviced. All nights, except for June 15, 2024, remained above the recommended 10.0C temperature for the duration of the survey. No rain or wind exceeding guidelines was recorded during the survey period. All files recorded at all monitoring stations during all nights were included in the species occupancy analysis. Of the possible 221 detector nights for the Tioga Pathways project, 178 nights were successful, which exceeded the required sample effort of 168 nights (Table 1). All files recorded at all monitoring stations during all nights were included in the species occupancy analysis. Detailed weather data from the nearby weather monitoring station on survey nights can be found in Table 2.

Species Occupancy

As per USFWS Guidelines, KaPRO was used to generate the Maximum Likelihood Estimate (MLE) number to determine presence on a by site and by night basis. Results of this analysis indicate these species present: big brown bat (*Eptesicus fuscus*), Eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), little brown bat (*Myotis lucifugus*), and target species, Northern long-eared bat (*Myotis septentrionalis*). The other target species, Indiana bat (*Myotis sodalis*) were not present by the MLE analysis during any night at any site (Table 3). The MLE is a statistical probability based on the composition of species auto-classified by KaPRO. Species often mis-identified with each other (i.e. all Myotis species in the Northeast US) require a higher number of samples in order to return an MLE that indicates presence. KaPRO did classify a low number of recordings as tricolored bat (*Perimyotis subflavus*), but not enough to become a statistically significant MLE, and was ultimately determined to be other species in the manual review process described below.

KaPRO classified 16,785 files to ten species which included the big brown bat, Eastern red bat, hoary bat, silver-haired bat (*Lasionycteris noctivagans*), evening bat (*Nycticeius humeralis*), tricolored bat, Eastern small-footed bat (*Myotis leibii*), little brown bat, Northern long-eared bat, and Indiana bat. Recordings that included bat calls but did not contain enough high-quality call pulses to meet the parameters for auto-classification to species were categorized as no identification (NoID) by Kaleidoscope PRO.

SonoBat auto-classified 11,862 files to nine species which included the big brown bat, Eastern red bat, hoary bat, silver-haired bat, evening bat, Eastern small-footed bat, little brown bat, Northern long-eared bat, and Indiana bat. (Table 4; AppendixB: Acoustic Data, Attached Electronic Document). If the numbers of pulses in a call attributed to a species exceeds a certain threshold, SonoBat will report a decision in the SppAccp (Species Accepted) column, along with numbers of pulses matching the decision as a further gauge of confidence (columns #Maj and #Accp, higher is better). However, SonoBat leaves the SppAccp column blank for files that did not contain enough high-quality call pulses to meet the parameters for auto-classification. SonoBat reports up to four species of bat call types that it detects in a recording with results located in spreadsheet output columns 1st, 2nd, 3rd, and 4th. Often there are references to bat species in the 1st-4th columns which do not have enough call pulses to raise the classification to the more confident SppAccp level; this includes all of the NOID recordings. (Appendix B).

Interpretation of Manual Review

All files recorded that KaPRO and/or SonoBat auto-classified as Myotis species or tricolored bat (*Perimyotis subflavus*) were manually vetted (qualitative analysis) to confirm or reject the classification. KaPRO classified 19 files as Indiana bat (*Myotis sodalis*), 10 files as Eastern Small footed bat (*Myotis leibii*), 262 as little brown bat (*Myotis lucifugus*), and 195 as tricolored bat (*Perimyotis subflavus*). All of these files were manually reclassified as either Eastern red bat, big brown bat, or were ambiguous high frequency bat calls, low frequency bat calls, call fragments, or a Myotis species call that did not have enough defining characteristics to confidentially be classified to a specific Myotis species. Of the 269 recordings KaPRO auto classified as Northern long-eared bat (*Myotis septentrionalis*), 155 were manually confirmed to be Northern long-eared bat calls. Additionally, 32 calls that were auto-classified as Eastern small-footed or little brown bats were manually vetted and reclassified as Northern-long eared bats. (Tables 4 and 5; Appendix B: Acoustic Data, Attached Electronic Document).

No files were manually reviewed as little brown bat, Indiana bat, Eastern small-footed bat, or tricolored bat; these species should be considered absent from the dataset.

Acoustic Bias

The auto-classification tallies of the recordings gives a sense of species prevalence. However, it should be noted that bat acoustic monitoring is heavily biased towards species that are easy to record and easy to identify (Table 2; Appendix B-Acoustic Data: Attached Electronic Document). Different species of bats are highly variable in their probability of being both recorded and also identified using acoustic methods. The bats that have the highest probability in these two categories are bats that produce loud, low frequency calls with unique characteristics. Low frequency calls can travel longer distances as compared to high frequency calls because of the lower attenuation rate of the sounds, meaning that a bat can be farther away from the microphone and still be recorded. The bats that are the most difficult to record through acoustic monitoring are bats that produce quiet, high frequency calls that provide no uniquely identifiable characteristics. Bats that fall under this category must produce sound much closer to the microphone in order to be recorded, and if they are recorded, the lack of unique characteristics in the call can deem the recording ambiguous with other species. Low quality recordings, social calls, birds, insects, and anthropogenic sounds all contain some sound data qualities that may overlap with bats in the data space of call measurements. Each of these problems is offset by the large number of microphones within the project area, a longer than required deployment length, and selecting only higher quality recordings for classifications. Software when used at the analysis settings required by the USFWS is expected to report false positives with the assumption that all species will be manually reviewed to confirm presence.

Figures

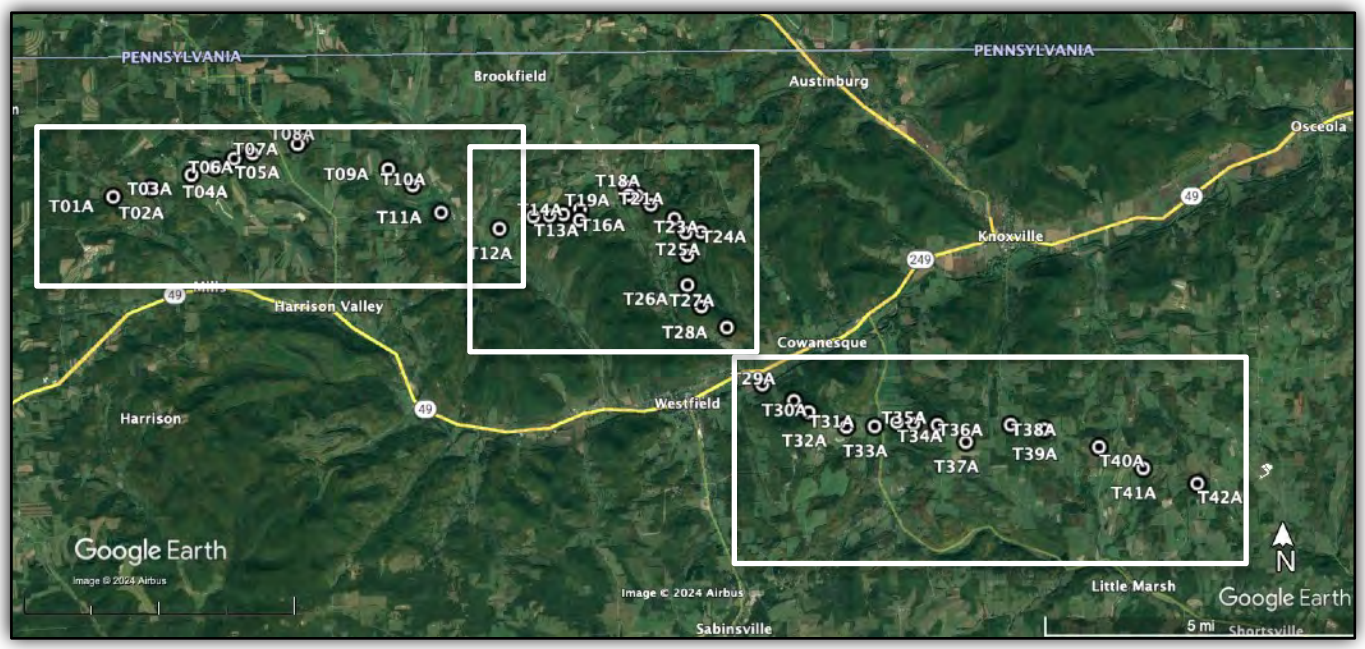


Figure 1. Monitoring Station Locations

The white rectangles along the proposed linear project are representations of the following sections of the project shown in greater detail, which have been broken up into three sections. Figures 2-4 show these sections in more detail.

Figure 2. Monitoring Stations: T01A-T12A

Figure 3: Monitoring Stations: T13A-T28A

Figure 4: Monitoring Stations: T29A-T42A

Tables

Table 1. Monitoring station survey effort.

Site	Nights Deployed	Invalid Nights			Total Valid Nights Sampled
		Tech	Weather	Below 50°F at 1:20 AM	
T01A	5	0	0	1	4
T02A	5	0	0	1	4
T03A	5	0	0	1	4
T04A	5	0	0	1	4
T05A	7	2	0	1	4
T06A	9	3	0	1	5
T07A	5	0	0	1	4
T08A	5	0	0	1	4
T09A	5	0	0	1	4
T10A	5	0	0	1	4
T11A	5	0	0	1	4
T12A	5	0	0	1	4
T13A	5	0	0	1	4
T14A	5	0	0	1	4
T15A	5	0	0	1	4
T16A	5	0	0	1	4
T17A	5	0	0	1	4
T18A	5	0	0	1	4
T19A	5	0	0	1	4
T20A	5	0	0	1	4
T21A	5	0	0	1	4
T22A	5	0	0	1	4
T24A	5	0	0	1	4
T25A	5	0	0	1	4
T26A	5	0	0	1	4
T27A	5	0	0	1	4
T28A	5	0	0	1	4
T29A	8	0	0	1	7
T29B	3	0	0	0	3
T30A	5	0	0	1	4
T31A	5	0	0	1	4
T32A	5	0	0	1	4
T33A	7	0	0	0	7
T33B	3	0	0	0	3
T34A	5	0	0	1	4
T35A	6	0	0	1	5
T36A	4	0	0	0	4
T37A	4	0	0	0	4
T38A	9	4	0	1	4
T39A	4	0	0	0	4
T40A	4	0	0	0	4
T41A	4	0	0	0	4
T42A	4	0	0	0	4
Total	**221**	**9**	**0**	**34**	**178**

Table 2. Weather data for the Knoxville, PA area during the survey period.

Weather Station	Night	Temperature at ~ 20:50 (°F)	Temperature at ~ 01:50 (°F)	Rain Summary (Time Span)
KPAKNOXV2	6/11/24	58.5	54.2	None
	6/12/24	65.4	50.0	None
	6/13/24	73.7	59.5	None
	6/14/24	69.1	54.1	None
	6/15/24	65.4	49.6	None
	6/16/24	72.7	56.9	None
	6/17/24	68.5	63.9	0.01" rain 20:50 - 21:23
	6/18/24	79.9	71.2	None
	6/19/24	81.1	69.0	None

Table 3. Maximum Likelihood Estimate (MLE) by site and by night from Kaleidoscope PRO

MLE <0.05 **by night** (highlighted in green for any species present) suggest presence according to *U.S. Fish and Wildlife Service Range-wide Indiana Bat Survey Guidelines* (2024). Target species, MYOSOD did not pass this analysis threshold, however, target species MYOSEP, did pass this analysis threshold. The MLE analysis does not take any manual review of bat call recordings into account. Species Key: EPTFUS = *Eptesicus fuscus* (big brown bat), LASBOR = *Lasiurus borealis* (Eastern red bat), LASCIN = *Lasiurus cinereus* (hoary bat), LASNOC = *Lasionycteris noctivagans* (silver-haired bat), MYOLEI = *Myotis leibii* (Eastern small-footed bat), MYOLUC = *Myotis lucifugus* (little brown bat), MYOSEP = *Myotis septentrionalis* (Northern long-eared bat), MYOSOD = *Myotis sodalis* (Indiana bat), NYCMHU = *Nycticeius humeralis* (evening bat), PERSUB = *Perimyotis subflavus* (tricolored bat).

		EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	MYOSOD	NYCHUM	PERSUB
* (all sites)	* (all nights)	0	0	0	1	1	0	0	1	1	1
T01A	* (all nights)	0.5743718	0.1141513	0.0000054	0.0851975	1	0.9203109	1	0.4524499	0.9828529	0.5691042
	20240613	1	0.1784216	0.0134842	0.839999	1	1	1	1	1	1
	20240614	0.0448232	1	0.4319376	1	1	1	1	0.1447922	0.3958971	1
	20240615	1	1	0.175076	0.6140755	1	1	1	1	1	1
	20240616	0.9986439	0.3802707	0.0027462	0.0536267	1	0.7738189	1	1	0.9944453	0.2895897
T02A	* (all nights)	0	0.001293	0.307367	1	1	0.9750166	1	1	1	0.9998097
	20240613	0.2782208	1	0.2766412	1	1	0.2593213	1	1	1	0.1839733
	20240614	0.1688468	1	1	1	1	1	1	1	1	1
	20240616	0.0000195	0.0145162	0.8888217	1	1	1	1	1	1	1
	20240617	0.0237906	0.1783358	0.5805213	0.9921811	1	1	1	1	1	1
T03A	* (all nights)	0	0	1	1	1	0.000037	0.0575185	1	1	1
	20240613	0	0.6826696	1	1	1	0.258027	0.0123766	1	0.4703017	0.8160795
	20240614	0	0.0196445	1	1	1	0.3523658	0.0823512	1	1	1
	20240615	0	0.0000013	1	1	1	0.0000887	1	1	1	1
	20240616	0	0.0814026	1	0.9716588	1	1	1	1	1	1
	20240617	0	1	1	1	1	1	1	1	1	1
T04A	* (all nights)	0	0	0	1	1	1	1	1	0.0000106	1
	20240613	0	0	0	1	0.5890147	1	1	1	1	1
	20240614	0	0	0	1	1	1	1	1	0.0000001	1
	20240615	0	0	0	1	1	1	1	1	0.0000856	1
	20240616	0	0	0	1	1	1	1	1	0.9997378	1
	20240617	0	0	0	1	1	1	1	1	1	1
T05A	* (all nights)	0	0	0.904591	0.7010144	1	0	0.5790561	1	1	0.1206698
	20240613	0.0001692	0	0.5208584	0.6205616	1	0.0000355	0.475949	1	1	1
	20240614	0.0000031	0.0000238	1	1	1	0.0009235	0.9950704	1	1	0.0091765
	20240616	1	1	1	1	1	1	1	1	1	1
	20240617	1	1	1	0.2108455	1	1	1	1	1	1
T05A	* (all nights)	0	0	0.0183992	1	1	0.0615456	1	0.9995707	1	1
	20240618	0	0.0017298	0.0687736	1	1	0.0303299	1	0.995629	0.9693888	1
	20240619	0.0000005	0	0.2688686	1	1	0.6258633	0.8401545	1	1	1
T07A	* (all nights)	0	0	0	1	1	1	1	1	1	1
	20240613	0	0.0001804	0.2881644	0.039042	1	1	1	1	1	1
	20240614	0	0.1783316	0.5233135	1	1	1	1	1	1	1
	20240615	0	0.0813956	0.6363635	1	1	1	1	1	1	1
	20240616	0	0.0056708	0.3192239	1	1	1	1	1	1	1
	20240617	0	0.4126176	0	1	1	1	1	1	0.9039575	1
T08A	* (all nights)	0.3075673	1	0	0.9950286	1	1	0.0769423	1	1	1
	20240613	0.8842694	1	0.0000002	1	1	1	1	1	1	1
	20240614	0.717736	1	0.4061746	0.3283372	1	1	1	1	1	1
	20240615	0.5204269	1	0.3309426	0.799403	1	1	0.0769422	1	1	1
	20240616	1	1	0.0059932	1	1	1	1	1	1	1
T09A	* (all nights)	0	0	0	1	1	0.4934802	1	1	1	1
	20240615	0	0	1	1	1	0.606255	1	1	1	1
	20240616	0	0.2721827	0.0000001	1	1	0.4075693	1	1	1	1
	20240618	0	0.0025888	0	1	1	1	1	1	1	1
	20240619	0	0.0069311	0	1	1	0.7564121	1	1	1	1
T10A	* (all nights)	0	0	0	1	1	0.0816463	1	1	1	1
	20240615	0	0.0000561	0.3799371	1	1	1	1	1	1	1
	20240616	0	0.1740952	0	1	1	0.4075737	1	1	1	1
	20240617	0	0.1783331	0.000004	1	1	1	1	1	1	1

		EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	MYOSOD	NYCHUM	PERSUB
	20240618	0	0.0124935	0	1	1	0.6515932	1	1	0.9790626	1
	20240619	0	0	0	1	1	0.1126245	1	1	1	1
T11A	* (all nights)	0	1	0	1	1	1	1	1	0.0738151	0.425447
	20240615	0	1	0.1297067	1	1	1	1	1	0.3906908	1
	20240616	0	1	0.0007731	1	1	1	1	1	1	1
	20240618	0	1	0.0000495	1	1	1	1	1	0.3906814	1
	20240619	0	1	0.0000363	1	1	1	1	1	0.1117546	0.1524935
T13A	* (all nights)	0.4098407	1	0.0168765	0	1	1	1	1	1	1
	20240613	1	1	0.6462625	0	1	1	1	1	1	1
	20240614	0.717736	1	0.4061746	0.3283372	1	1	1	1	1	1
	20240615	1	1	0.175076	0.6140755	1	1	1	1	1	1
	20240616	0.0691395	1	0.1356844	0.0350992	1	1	1	1	1	1
T14A	* (all nights)	0	0.0025891	0	0.3549402	1	1	1	1	1	1
	20240613	0.0000349	0.4126472	0.0000007	0.1240962	1	1	1	1	0.9039285	1
	20240614	0.0077906	1	0.0001201	0.8055135	1	1	1	1	1	1
	20240615	1	0.1783507	0.0000048	0.0703007	1	1	1	1	1	1
	20240616	0	0.0318007	0.0000001	1	1	1	1	1	1	1
	20240617	0	1	0.000013	0.9996134	1	1	1	1	1	1
T15A	* (all nights)	0	0.0301812	0	1	1	1	1	1	1	0.7522841
	20240613	0.1160731	1	0	0.9477963	1	1	1	1	1	1
	20240614	0.0102086	1	0.0004347	0.2085429	1	1	1	1	1	1
	20240615	0.0001062	0.0317974	0.0000007	1	1	1	1	1	1	1
	20240616	0	1	0	1	1	1	1	1	1	0.161773
T16A	* (all nights)	0.1688468	1	1	1	1	0	0.9309772	1	1	1
	20240613	1	1	1	1	1	1	1	1	1	1
	20240614	1	1	1	1	1	0.0019129	1	1	1	1
	20240615	1	1	1	1	1	0.0000235	0.7620918	1	1	1
	20240616	1	1	1	1	1	1	1	1	1	1
	20240617	0.1688468	1	1	1	1	1	1	1	1	1
T17A	* (all nights)	0	0.2721867	0.2536836	1	1	0.4075632	1	1	1	1
	20240613	0	1	0.980661	1	1	1	1	1	1	1
	20240614	0	1	0.6904979	1	1	1	1	1	1	1
	20240615	0.0001126	1	0.1149795	1	1	1	1	1	1	1
	20240616	0	0.1783349	0.8279074	0.8050523	1	1	1	1	1	1
	20240617	0.0001057	1	1	1	1	0.1242006	1	1	1	1
T18A	* (all nights)	0	1	0	0.3721944	1	1	1	1	1	1
	20240615	0.2782024	1	0.2766429	1	1	1	1	1	1	1
	20240616	0	1	0.8744168	1	1	1	1	1	1	1
	20240618	0.0000001	1	0.0000294	0.1501154	1	1	1	1	1	1
	20240619	0.0010385	1	0.0000374	0.034102	1	1	1	1	1	1
T20A	* (all nights)	0	0.0001112	0	1	1	0.3997439	0.6502802	0.3746606	1	1
	20240615	0.0285092	1	1	1	1	1	1	1	1	1
	20240616	0.0210384	0.1783319	1	0.9562526	1	1	1	1	1	1
	20240618	0.0000006	0.0140074	0.0000026	0.7171472	1	0.8467144	1	0.4517592	1	1
	20240619	0.0000001	0.0410111	0	1	1	0.3971803	0.4989181	0.7372161	0.9985371	1
T21A	* (all nights)	0	0.013228	0.1763214	1	1	0.6148443	0.0771815	1	0.9775276	1
	20240615	0.0000178	1	1	1	1	0.0153347	0.4362416	1	1	1
	20240616	0	0.0147752	0.9909731	1	1	1	0.1224601	1	0.9060802	1
	20240618	0	1	0.035766	1	1	1	1	1	1	1
	20240619	0.0000131	1	0.4597698	1	1	1	1	1	1	1
T22A	* (all nights)	0	1	0.2762406	0.773845	1	1	1	1	1	1
	20240612	0.014894	1	0.3432138	0.3425432	1	1	1	1	1	1
	20240613	0	1	0.6184207	1	1	1	1	1	1	1
	20240614	0	1	0.6956697	1	1	1	1	1	1	1
	20240615	0.0209924	1	1	0.9562722	1	1	1	1	1	1
	20240616	0.9273569	1	1	0.0126984	1	1	1	1	1	1
T23A	* (all nights)	1	1	0.0059932	1	1	1	1	1	1	1
	20240614	1	1	0.0774158	1	1	1	1	1	1	1
	20240615	1	1	0.0774158	1	1	1	1	1	1	1

		EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	MYOSOD	NYCHUM	PERSUB
T24A	* (all nights)	0	0.0893014	1	1	1	0.002219	1	1	1	0.8100683
	20240612	0	0.272166	0.1860077	1	1	0.4075912	1	1	1	1
	20240613	0	1	0.5587537	1	1	0.1241957	1	1	1	1
	20240614	0	1	1	1	1	0.052779	1	1	1	1
	20240615	0	0.1908016	1	1	1	1	1	1	1	0.528696
	20240616	0	1	1	1	1	0.1242008	1	1	1	1
T26A	* (all nights)	0.0048137	1	1	1	1	1	1	1	1	1
	20240614	0.1688468	1	1	1	1	1	1	1	1	1
	20240615	0.1688468	1	1	1	1	1	1	1	1	1
	20240616	0.1688468	1	1	1	1	1	1	1	1	1
T27A	* (all nights)	0.1285224	0.7629442	0.0103395	1	1	1	1	1	0.255153	1
	20240612	1	1	0.000464	1	1	1	1	1	1	1
	20240614	0.1688468	1	1	1	1	1	1	1	1	1
	20240616	0.1696301	0.7641501	1	1	1	1	1	1	0.2556062	1
T28A	* (all nights)	0	0	1	1	1	0.0000036	0.0492986	1	1	1
	20240612	0	1	1	1	1	0.000021	1	1	0.5425682	1
	20240613	0	0	1	1	1	1	0.2401794	1	1	1
	20240614	0	0	1	1	1	1	1	0.4303921	1	1
	20240615	0	0	1	1	1	0.0064859	0.1217669	1	1	1
	20240616	0	0.0078865	1	1	1	0.0085772	0.2751943	1	1	0.9829413
T29A	* (all nights)	0	0.00684	0	0	1	0.1664544	0.0000054	1	0.9550812	0.2486426
	20240612	0.0429598	1	0.0000035	0.048197	1	1	0.0868669	1	0.2121986	0.0783609
	20240613	0	0.1411154	0.000402	0	1	0.0298748	0.5906654	1	1	1
	20240614	0	0.5182711	0	0.0765221	1	0.7081185	0.0382232	1	0.7511933	0.7878801
	20240615	0	0.1898356	0	0.1230955	1	1	0.0077727	1	1	0.5296016
	20240616	0.0000236	0.3686101	0.0218695	0	1	0.7050309	0.038501	1	0.9908533	0.7570122
T29A	* (all nights)	0	0	0	0	1	0.7971399	1	0.8907774	1	1
	20240617	0	0.0014505	0	0	1	0.425872	0.4369069	1	1	0.9806964
	20240618	0	0.0000059	0.0001021	0.3158136	1	1	1	0.3285282	1	1
	20240619	0	0.0183295	0	0.897082	1	0.3717731	1	1	1	1
T29B	* (all nights)	0	0.0066277	0	0.5028196	1	1	1	1	1	1
	20240617	0	0.0318033	0	0.0013071	1	1	1	1	1	1
	20240618	0	0.6150057	0	0.78487	1	1	1	1	0.5262909	1
	20240619	0	0.1783375	0	1	1	1	1	1	1	1
T30A	* (all nights)	0	0.0233494	1	1	1	0	0	1	1	0.9796068
	20240612	0	1	1	1	1	0	0	1	1	1
	20240613	0	0.0025433	1	1	1	0.0349564	0	1	1	1
	20240614	0.0000039	0.2941352	1	1	1	0.0025165	0	1	1	0.7937706
	20240615	0.1688468	1	1	1	1	0.1196911	0	1	1	1
	20240616	0.02857	0.8202141	1	1	0.7147101	0.0007547	0	1	1	0.5788196
T31A	* (all nights)	0.0285092	1	1	1	1	1	1	1	1	1
	20240615	0.1688468	1	1	1	1	1	1	1	1	1
	20240616	0.1688468	1	1	1	1	1	1	1	1	1
T32A	* (all nights)	0	0	1	1	1	0	1	1	1	0.0000092
	20240612	0	0	0.5405652	1	1	0.0000527	1	1	1	0.5253372
	20240613	0	0.0002383	1	1	1	0.0005752	1	1	1	0.1269594
	20240614	0	0.0000935	1	1	1	0.0048156	1	1	1	0.4461694
	20240615	0	0	1	0.6153062	1	0.0021902	1	1	1	0.7673509
	20240616	0	0	1	1	1	0.0000006	1	1	1	0.0000841
T33A	* (all nights)	0	0	0.044334	0.6343287	1	1	0.3039103	1	1	0.7295421
	20240611	0	0.0314495	0.0475369	1	1	1	0.094607	1	1	1
	20240612	0.000315	0.0056711	1	0.0195119	1	1	1	1	1	1
	20240613	0	0.0002933	0.4666038	0.4632522	1	1	1	1	1	0.3753807
	20240614	0	0.0103857	0.4407796	1	1	1	1	1	1	0.9628342
T33A	* (all nights)	0	0	1	1	0.9655153	0.0000001	1	1	1	0.9797856
	20240617	0	0.0005545	1	1	1	0.2765189	1	0.8161462	1	0.8257509
	20240618	0	0	1	0.9072185	1	0.640604	1	1	1	1
	20240619	0	0.0039101	0.8470868	1	0.4440233	0.0000002	1	1	0.9325754	0.2927728
T33B	* (all nights)	0	0	0.0902637	1	1	0.9665724	1	1	1	0.9133586
	20240618	0	0.1313833	0.8809329	0.9791478	1	0.5041002	1	1	0.9831398	0.5753068

		EPTFUS	LASBOR	LASCIN	LASNOC	MYOLEI	MYOLUC	MYOSEP	MYOSOD	NYCHUM	PERSUB
	20240619	0	0	0.0529964	1	1	1	1	1	1	1
T34A	* (all nights)	0	1	1	1	1	0.0000252	0.0021136	1	0.4438051	1
	20240614	0	1	1	1	1	0.0153354	0.4362416	1	1	1
	20240615	0	1	1	1	1	0.1329375	0.2796669	1	1	1
	20240616	0	1	0.987106	1	1	0.0154251	1	1	1	1
	20240617	0	1	1	1	1	0.2060871	0.2846951	1	0.4498262	1
	20240618	0	1	1	1	1	1	0.0059201	1	1	1
T35A	* (all nights)	0	1	1	1	1	1	1	1	1	1
	20240614	0	1	1	1	1	1	1	1	1	1
	20240615	0.0285092	1	1	1	1	1	1	1	1	1
	20240616	0.1688468	1	1	1	1	1	1	1	1	1
T36A	* (all nights)	0	0.0044672	0	1	1	1	1	1	1	1
	20240611	0.0141339	1	0	1	1	1	1	1	1	1
	20240612	0	1	0	1	1	1	1	1	1	1
	20240613	0	0.178337	0	1	1	1	1	1	1	1
	20240614	0.0000001	1	0	1	1	1	1	1	1	1
T37A	* (all nights)	0	0.0000012	0	1	0.1815317	0.2441176	0.6337367	0.9241495	1	0.9572521
	20240611	0	1	0	1	1	0.2593219	1	1	1	0.1839675
	20240612	0	0.0793999	0	1	0.0602995	0.3765523	1	1	1	0.4376377
	20240613	0	1	0	1	1	0.1245159	1	1	1	1
	20240614	0	0.000069	0	1	1	1	0.1731534	0.4114191	1	1
T38A	* (all nights)	0.0285887	0.1783127	1	1	1	1	1	1	1	1
	20240615	0.1688468	1	1	1	1	1	1	1	1	1
	20240616	1	0.1784158	1	1	1	1	1	1	1	1
	20240619	0.1688468	1	1	1	1	1	1	1	1	1
T39A	* (all nights)	0	0.0056708	0	1	1	1	1	1	1	1
	20240611	0.000138	0.0317945	1	1	1	1	1	1	1	1
	20240612	0	0.1783222	0.0014293	1	1	1	1	1	1	1
	20240613	0.0262087	1	0.0004734	0.6600826	1	1	1	1	1	1
	20240614	0.0000003	1	0.003171	1	1	1	1	1	1	1
T40A	* (all nights)	0.0000001	1	0.9588629	1	1	1	1	1	1	1
	20240612	0.0048137	1	1	1	1	1	1	1	1	1
	20240613	0.0068038	1	0.5613758	1	1	1	1	1	1	1
	20240614	0.0048137	1	1	1	1	1	1	1	1	1
T41A	* (all nights)	0	0.0021927	0	1	1	0.9332708	1	1	1	1
	20240611	0	1	0	0.9727384	1	1	1	1	1	1
	20240612	0	0.0145145	0	1	1	1	1	1	1	1
	20240613	0	0.2721901	0	1	1	0.4075813	1	1	1	1
	20240614	0.0000002	1	0	1	1	1	1	1	1	1
T42A	* (all nights)	1	1	0.0000002	1	1	1	1	1	1	1
	20240613	1	1	0.0000359	1	1	1	1	1	1	1
	20240614	1	1	0.0059932	1	1	1	1	1	1	1

Note: All sites were successfully monitored a minimum of 4 nights; Kaleidoscope Pro does not generate a spreadsheet line output for a night when no bats were recorded.

Table 4. Summary of bat acoustic auto-ID classifications by site and by software, versus manual review.

KP = Kaleidoscope Pro v 5.4.8; SB = SonoBat 30 NE. Species Key: EPTFUS = *Eptesicus fuscus* (big brown bat), LASBOR = *Lasiurus borealis* (Eastern red bat), LASCIN = *Lasiurus cinereus* (hoary bat), LASNOC = *Lasionycteris noctivagans* (silver-haired bat), MYOLEI = *Myotis leibii* (Eastern small-footed bat), MYOLUC = *Myotis lucifugus* (little brown bat), MYOSEP = *Myotis septentrionalis* (Northern long-eared bat), MYOSOD = *Myotis sodalis* (Indiana bat), NYCHUM = *Nycticeius humeralis* (evening bat), PERSUB = *Perimyotis subflavus* (tricolored bat).

Site	Files Confidently Auto-Classified to Species by Site and Software																					
	EPTFUS		LASBOR		LASCIN		LASNOC		MYOLEI		MYOLUC		MYOSEP		MYOSOD		NYCHUM		PERSUB		Total	
	KP	SB	KP	SB	KP	SB	KP	SB	KP	SB	KP	SB	KP	SB	KP	SB	KP	SB	KP	SB	KP	SB
T01A	3	4	2		8	2	7				1				1		2		2		26	6
T02A	12	12	4	4	3		2				1						1		1		24	16
T03A	213	89	16	6	3		27	7			14	1	5	10	1		5		2		286	113
T04A	665	494	463	174	1382	497	57	12	1		13						388	6	75		3044	1183
T05A	49	51	58	58	11	2	12	3		2	39		5		3		28	1	21		226	117
T06A	150	127	50	26	111	30	71	1			15				1		50		13		461	184
T07A	157	165	12	1	45	1	35	11									2	2			251	180
T08A	3	6			11	6	3	3					1	1							18	16
T09A	376	501	25	15	139	13	53	6			6	1					1				600	536
T10A	653	853	38	11	209	35	109	7			14						12	5	2		1037	911
T11A	1130	1222		2	177	46	61	1									3		1		1372	1271
T13A	8	15			7		28	2													43	17
T14A	66	100	4	3	55	16	34	11									1				160	130
T15A	51	95	2	3	61	6	18	7											1		133	111
T16A	1										8		1								10	0
T17A	49	40	1		8	2	9	3			1										68	45
T18A	68	67			27	5	28	5													123	77
T20A	38	65	7	1	44	1	15				3		1		2		3	2			113	69
T21A	154	154	4	2	20	4	7				2		2				3	1			192	161
T22A	40	36			7	1	13	9													60	46
T23A					2																2	0
T24A	1009	981	2	2	45	19	25	10			4								1		1086	1012
T26A	3	3																			3	3
T27A	2	1	1		3												3				9	1
T28A	515	440	56	61	4	1	2	1		1	25		7	8	3		3	1	4		619	513
T29A	310	347	20	17	163	8	244	64			9		9	7	1	2	8		6		770	445
T29B	114	219	4	2	114	3	57	9									2	1			291	234
T30A	45	33	8						7	5	34		229	100	4	9		1	2		329	148
T31A	2	2										4									2	6
T32A	459	383	74	55	20	4	47	29			66		1		1		5		42		715	471
T33A	275	249	37	31	27	10	60	36	1	2	23		2	1	1		13	1	13		452	330
T33B	53	51	13	6	10	2	9	8			3						3	2	4		95	69
T34A	831	693		2	34	2	87	4			6		5	2			1				964	703
T35A	15	14																			15	14
T36A	255	265	1		855	743	32	10						1							1143	1019
T37A	795	770	8	6	670	562	86	15	1		4		1		1		2		3		1571	1353
T38A	2	2	1															1			3	3
T39A	32	32	3		19	9	5	4													59	45
T40A	9	6			1																10	6
T41A	138	185	4		210	94	40	17			1						1	1			394	297
T42A					6	1															6	1
Total	8750	8772	918	488	4511	2125	1283	295	10	10	292	6	269	130	19	11	540	25	193	0	16785	11862
BCM	YES		YES		YES		YES		NO		NO		YES		NO		NO		NO			

Table 5. Comparison of files KaPro auto-classified as Myotis spp. and Tricolored bat with SonoBat and Manual ID results

All recordings initially assigned a confident classification by software may be reclassified upon careful manual review. In addition, a *subset* of all AutoID software classifications was reviewed to confirm or reject presence of all species. Recordings that included bat calls but did not contain enough high-quality call pulses to meet the parameters for auto-classification to species were categorized as no identification (NoID)

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T04A_RANG-20240613_221133_000-LABO.wav	T04A	LABO	MYOLEI		Myle	Myle			
PAS_TIOGAP_T30A_RANG-20240614_213827_000-MYSE.wav	T30A	MYSE	MYOLEI		Myse/Myle/Myso	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240613_033603_000-MYSE.wav	T30A	MYSE	MYOLEI		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240617_022911_000-MYSE.wav	T30A	MYSE	MYOLEI		Myse	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240617_045635_000-MYSE.wav	T30A	MYSE	MYOLEI		Myse/Myle/Mylu/Myso	Myse	Myle	Mylu	Myso
PAS_TIOGAP_T30A_RANG-20240616_211021_000-MYSE.wav	T30A	MYSE	MYOLEI		Myle	Myle	Myse	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_213821_000-MYSE.wav	T30A	MYSE	MYOLEI		Myse	Myse	Myle	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_213559_000-MYSE.wav	T30A	MYSE	MYOLEI		Myse/Myle/Nyhu	Myle	Myse	Nyhu	
PAS_TIOGAP_T33A_RANG-20240619_231158_000-40KMYO.wav	T33A	40KMYO	MYOLEI		Myle/Myse/Myso/Mylu	Myle	Myse	Myso	Mylu
PAS_TIOGAP_T37A_D500-20240613_024152_000-LABO.wav	T37A	LABO	MYOLEI		Labo/	Labo			
PAS_TIOGAP_T01A_RANG-20240616_213914_000-LABO.wav	T01A	LABO	MYOLUC		Labo	Labo	Myle	Mylu	
PAS_TIOGAP_T02A_RANG-20240614_021611_000-LABO.wav	T02A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T03A_RANG-20240614_044409_000-LABO.wav	T03A	LABO	MYOLUC	Labo		Labo	Myse	Pesu	
PAS_TIOGAP_T03A_RANG-20240614_023118_000-LABO.wav	T03A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T03A_RANG-20240615_000602_000-LABO.wav	T03A	LABO	MYOLUC		Nyhu	Nyhu	Labo	Mylu	
PAS_TIOGAP_T03A_RANG-20240615_225518_000-LABO.wav	T03A	LABO	MYOLUC		Labo/Myse/Myso/Pesu	Myse	Labo	Myso	Pesu
PAS_TIOGAP_T03A_RANG-20240615_032334_000-LABO.wav	T03A	LABO	MYOLUC		Nyhu/Mylu/Labo	Nyhu	Mylu	Labo	
PAS_TIOGAP_T03A_RANG-20240615_234856_000-LABO.wav	T03A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T03A_RANG-20240615_233407_000-LABO.wav	T03A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T03A_RANG-20240616_044541_000-LABO.wav	T03A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T03A_RANG-20240615_225324_000-LABO.wav	T03A	LABO	MYOLUC		Myso	Myso	Labo		
PAS_TIOGAP_T03A_RANG-20240615_235932_000-LABO.wav	T03A	LABO	MYOLUC		Labo/Pesu	Labo	Pesu		
PAS_TIOGAP_T03A_RANG-20240616_015308_000-LABO.wav	T03A	LABO	MYOLUC		Labo	Labo	Myle		
PAS_TIOGAP_T03A_RANG-20240615_225655_000-LABO.wav	T03A	LABO	MYOLUC		Labo/Pesu/Nyhu	Pesu	Labo	Nyhu	
PAS_TIOGAP_T03A_RANG-20240615_233748_000-LABO.wav	T03A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T03A_RANG-20240615_233421_000-LABO.wav	T03A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240618_001205_000-LABO.wav	T04A	LABO	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T04A_RANG-20240616_002413_000-LABO.wav	T04A	LABO	MYOLUC		Labo	Labo	Mylu	Nyhu	Myso
PAS_TIOGAP_T04A_RANG-20240617_022156_000-LABO.wav	T04A	LABO	MYOLUC		Labo	Labo	Pesu	Myle	Myse
PAS_TIOGAP_T04A_RANG-20240614_044500_000-LABO.wav	T04A	LABO	MYOLUC		Nyhu/Labo/Pesu	Labo	Nyhu	Pesu	
PAS_TIOGAP_T04A_RANG-20240615_025038_000-LABO.wav	T04A	LABO	MYOLUC		Labo/Mylu/Nyhu	Mylu	Labo	Nyhu	
PAS_TIOGAP_T04A_RANG-20240615_005709_000-LABO.wav	T04A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240615_012158_000-LABO.wav	T04A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240618_043848_000-LABO.wav	T04A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T04A_RANG-20240613_221546_000-LABO.wav	T04A	LABO	MYOLUC		Labo/	Labo			
PAS_TIOGAP_T04A_RANG-20240615_220109_000-LABO.wav	T04A	LABO	MYOLUC		Nyhu/Labo	Labo	Nyhu		
PAS_TIOGAP_T04A_RANG-20240616_002411_000-LABO.wav	T04A	LABO	MYOLUC		Labo	Labo	Cora		
PAS_TIOGAP_T04A_RANG-20240613_214532_000-LABO.wav	T04A	LABO	MYOLUC						
PAS_TIOGAP_T04A_RANG-20240615_003019_000-LABO.wav	T04A	LABO	MYOLUC						
PAS_TIOGAP_T05A_RANG-20240614_050205_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo	Myso	Mylu	Pesu
PAS_TIOGAP_T05A_RANG-20240614_034000_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo	Myse	Mylu	Nyhu
PAS_TIOGAP_T05A_RANG-20240615_025031_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo	Mylu	Pesu	
PAS_TIOGAP_T05A_RANG-20240614_033934_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T05A_RANG-20240614_033809_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo	Mylu	Pesu	
PAS_TIOGAP_T05A_RANG-20240614_235001_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T05A_RANG-20240614_043452_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo	Myle	Myso	Pesu
PAS_TIOGAP_T05A_RANG-20240614_034325_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T05A_RANG-20240619_042723_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T05A_RANG-20240619_014727_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T05A_RANG-20240614_034906_000-LABO.wav	T05A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T05A_RANG-20240620_030805_000-LABO.wav	T05A	LABO	MYOLUC	Myle		Myle	Labo	Pesu	
PAS_TIOGAP_T05A_RANG-20240614_045300_000-LABO.wav	T05A	LABO	MYOLUC		Myse	Myse	Mylu	Labo	Myso
PAS_TIOGAP_T05A_RANG-20240620_044442_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Nyhu	Pesu	Myso
PAS_TIOGAP_T05A_RANG-20240614_011823_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Myle	Pesu	Mylu
PAS_TIOGAP_T05A_RANG-20240614_222231_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Mylu	Nyhu	Myso
PAS_TIOGAP_T05A_RANG-20240620_010726_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Myso	Myle	Nyhu
PAS_TIOGAP_T05A_RANG-20240615_031327_000-LABO.wav	T05A	LABO	MYOLUC		Labo/Pesu/Mylu	Labo	Pesu	Mylu	
PAS_TIOGAP_T05A_RANG-20240619_024751_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Myso	Epfu	Myse
PAS_TIOGAP_T05A_RANG-20240620_030544_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Myle	Myse	
PAS_TIOGAP_T05A_RANG-20240619_010016_000-LABO.wav	T05A	LABO	MYOLUC		Mylu/Myse/Labo/Nyhu	Mylu	Myse	Labo	Nyhu
PAS_TIOGAP_T05A_RANG-20240619_042051_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T05A_RANG-20240614_232049_000-LABO.wav	T05A	LABO	MYOLUC		Labo/Nyhu/Myle	Labo	Nyhu	Myle	
PAS_TIOGAP_T05A_RANG-20240615_002913_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Myle	Nyhu	
PAS_TIOGAP_T05A_RANG-20240614_033747_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Mylu	Pesu	

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T05A_RANG-20240615_042318_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Myle	Pesu	
PAS_TIOGAP_T05A_RANG-20240614_033948_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T05A_RANG-20240619_042846_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo	Nyhu		
PAS_TIOGAP_T05A_RANG-20240620_042452_000-LABO.wav	T05A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T05A_RANG-20240614_232113_000-LABO.wav	T05A	LABO	MYOLUC		Pesu	Pesu			
PAS_TIOGAP_T05A_RANG-20240614_033859_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T05A_RANG-20240620_031252_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T05A_RANG-20240615_000151_000-LABO.wav	T05A	LABO	MYOLUC		Myse/Labo	Myse	Labo		
PAS_TIOGAP_T05A_RANG-20240615_035009_000-LABO.wav	T05A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T05A_RANG-20240615_003551_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T05A_RANG-20240614_033907_000-LABO.wav	T05A	LABO	MYOLUC		Labo/	Labo			
PAS_TIOGAP_T05A_RANG-20240614_033647_000-LABO.wav	T05A	LABO	MYOLUC		Nyhu/	Nyhu			
PAS_TIOGAP_T05A_RANG-20240614_045627_000-LABO.wav	T05A	LABO	MYOLUC		Labo/	Labo			
PAS_TIOGAP_T05A_RANG-20240620_031344_000-LABO.wav	T05A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T06A_RANG-20240620_001348_000-LABO.wav	T06A	LABO	MYOLUC	Labo		Labo	Myso	Mylu	
PAS_TIOGAP_T06A_RANG-20240622_222937_000-HIFRAG.wav	T06A	HIFRAG	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T06A_RANG-20240619_033942_000-LABO.wav	T06A	LABO	MYOLUC		Labo	Labo	Pesu	Myle	Myse
PAS_TIOGAP_T06A_RANG-20240620_000619_000-LABO.wav	T06A	LABO	MYOLUC		Labo	Labo	Myso	Mylu	
PAS_TIOGAP_T06A_RANG-20240621_042815_000-LABO.wav	T06A	LABO	MYOLUC		Labo	Labo	Mylu	Pesu	
PAS_TIOGAP_T06A_RANG-20240623_014841_000-HIFRAG.wav	T06A	HIFRAG	MYOLUC		Labo	Labo	Mylu	Pesu	
PAS_TIOGAP_T06A_RANG-20240620_040455_000-LABO.wav	T06A	LABO	MYOLUC		Labo/Pesu/Nyhu	Pesu	Labo	Nyhu	
PAS_TIOGAP_T06A_RANG-20240622_044712_000-HIFRAG.wav	T06A	HIFRAG	MYOLUC		Labo/Pesu/Nyhu	Pesu	Labo	Nyhu	
PAS_TIOGAP_T06A_RANG-20240619_044245_000-LABO.wav	T06A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T06A_RANG-20240621_213732_000-HIFRAG.wav	T06A	HIFRAG	MYOLUC		Labo	Labo			
PAS_TIOGAP_T06A_RANG-20240623_042111_000-HIFRAG.wav	T06A	HIFRAG	MYOLUC		Labo	Labo			
PAS_TIOGAP_T06A_RANG-20240622_212805_000-HIFRAG.wav	T06A	HIFRAG	MYOLUC		Labo	Labo			
PAS_TIOGAP_T06A_RANG-20240622_221611_000-HIFRAG.wav	T06A	HIFRAG	MYOLUC		Labo/Pesu	Pesu	Labo		
PAS_TIOGAP_T06A_RANG-20240623_034006_000-LABO.wav	T06A	LABO	MYOLUC		Labo/Myso	Myso	Labo		
PAS_TIOGAP_T06A_RANG-20240623_035717_000-HIFRAG.wav	T06A	HIFRAG	MYOLUC		Pesu	Pesu			
PAS_TIOGAP_T09A_D500-20240616_032629_000-LABO.wav	T09A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T09A_D500-20240616_034249_000-LABO.wav	T09A	LABO	MYOLUC	Labo		Labo	Mylu		
PAS_TIOGAP_T09A_D500-20240616_044817_000-LABO.wav	T09A	LABO	MYOLUC		Labo	Labo	Nyhu		
PAS_TIOGAP_T09A_D500-20240616_230219_000-LABO.wav	T09A	LABO	MYOLUC		Nyhu/Labo/Myso	Labo	Nyhu	Myso	
PAS_TIOGAP_T09A_D500-20240615_212414_000-LABO.wav	T09A	LABO	MYOLUC		Labo/	Labo			
PAS_TIOGAP_T09A_D500-20240620_005155_000-LABO.wav	T09A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T10A_D500-20240620_025012_000-LABO.wav	T10A	LABO	MYOLUC	Labo		Labo	Mylu		
PAS_TIOGAP_T10A_D500-20240617_020120_000-LABO.wav	T10A	LABO	MYOLUC	Labo		Labo	Myso		
PAS_TIOGAP_T10A_D500-20240620_040756_000-LABO.wav	T10A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T10A_D500-20240620_014615_000-LABO.wav	T10A	LABO	MYOLUC	Luso		Mylu	Myso	Labo	Nyhu
PAS_TIOGAP_T10A_D500-20240620_041343_000-LABO.wav	T10A	LABO	MYOLUC	Luso		Mylu	Myso	Nyhu	Laci
PAS_TIOGAP_T10A_D500-20240620_014447_000-LABO.wav	T10A	LABO	MYOLUC	Mylu		Mylu	Myse	Nyhu	Myso
PAS_TIOGAP_T10A_D500-20240619_034615_000-HIFRAG.wav	T10A	HIFRAG	MYOLUC		Nyhu	Nyhu	Labo	Myse	Mylu
PAS_TIOGAP_T10A_D500-20240620_020029_000-LABO.wav	T10A	LABO	MYOLUC		Labo	Labo	Nyhu	Mylu	Myso
PAS_TIOGAP_T10A_D500-20240620_033132_000-LABO.wav	T10A	LABO	MYOLUC		Labo	Labo	Nyhu	Mylu	
PAS_TIOGAP_T10A_D500-20240620_020646_000-LABO.wav	T10A	LABO	MYOLUC		Labo	Labo	Mylu	Nyhu	
PAS_TIOGAP_T10A_D500-20240615_233222_000-LABO.wav	T10A	LABO	MYOLUC		Labo	Labo	Nyhu		
PAS_TIOGAP_T10A_D500-20240619_033537_000-LABO.wav	T10A	LABO	MYOLUC		Mylu/Labo	Mylu	Labo		
PAS_TIOGAP_T10A_D500-20240620_015058_000-LABO.wav	T10A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T10A_D500-20240620_015237_000-LABO.wav	T10A	LABO	MYOLUC		Epfu	Epfu			
PAS_TIOGAP_T16A_RANG-20240615_024104_000-LABO.wav	T16A	LABO	MYOLUC		Labo	Labo	Myso	Nyhu	
PAS_TIOGAP_T16A_RANG-20240615_022634_000-HIFRAG.wav	T16A	HIFRAG	MYOLUC		Mylu/Pesu/Labo/Nyhu	Mylu	Pesu	Labo	Nyhu
PAS_TIOGAP_T16A_RANG-20240615_235143_000-LABO.wav	T16A	LABO	MYOLUC		Labo	Labo	Myso		
PAS_TIOGAP_T16A_RANG-20240615_022450_000-HIFRAG.wav	T16A	HIFRAG	MYOLUC		Labo/Myse/Nyhu	Myse	Labo	Nyhu	
PAS_TIOGAP_T16A_RANG-20240615_235946_000-LABO.wav	T16A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T16A_RANG-20240615_233124_000-HIFRAG.wav	T16A	HIFRAG	MYOLUC		Labo	Labo	Myso		
PAS_TIOGAP_T16A_RANG-20240615_230412_000-HIFRAG.wav	T16A	HIFRAG	MYOLUC		Labo/	Labo			
PAS_TIOGAP_T16A_RANG-20240615_234006_000-HIFRAG.wav	T16A	HIFRAG	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T17A_RANG-20240618_041152_000-LABO.wav	T17A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T20A_D500-20240619_214034_000-LABO.wav	T20A	LABO	MYOLUC	Nyhu		Nyhu	Labo	Mylu	
PAS_TIOGAP_T20A_D500-20240619_213343_000-HIFRAG.wav	T20A	HIFRAG	MYOLUC		Nyhu	Nyhu	Labo		
PAS_TIOGAP_T20A_D500-20240619_040636_000-LABO.wav	T20A	LABO	MYOLUC		Labo	Labo	Nyhu	Mylu	
PAS_TIOGAP_T21A_D500-20240615_222126_000-LABO.wav	T21A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T21A_D500-20240615_220146_000-LABO.wav	T21A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T24A_D500-20240615_021340_000-LABO.wav	T24A	LABO	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T24A_D500-20240617_032159_000-LABO.wav	T24A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T24A_D500-20240614_023144_000-LABO.wav	T24A	LABO	MYOLUC		Myse/Myle/Mylu/Labo	Myse	Myle	Mylu	Labo
PAS_TIOGAP_T24A_D500-20240612_235150_000-LABO.wav	T24A	LABO	MYOLUC		Labo	Labo	Myle	Pesu	
PAS_TIOGAP_T28A_RANG-20240615_210830_000-LABO.wav	T28A	LABO	MYOLUC	Labo		Labo	Mylu		
PAS_TIOGAP_T28A_RANG-20240613_044040_000-LABO.wav	T28A	LABO	MYOLUC	Labo		Labo	Pesu	Epfu	Myso
PAS_TIOGAP_T28A_RANG-20240615_222705_000-LABO.wav	T28A	LABO	MYOLUC	Labo		Labo	Myso		
PAS_TIOGAP_T28A_RANG-20240617_044227_000-LABO.wav	T28A	LABO	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T28A_RANG-20240615_222647_000-LABO.wav	T28A	LABO	MYOLUC	Labo		Labo	Mylu	Pesu	

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T28A_RANG-20240615_211232_000-LABO.wav	T28A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T28A_RANG-20240617_031010_000-LABO.wav	T28A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T28A_RANG-20240616_043822_000-LABO.wav	T28A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T28A_RANG-20240617_030959_000-LABO.wav	T28A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T28A_RANG-20240615_211132_000-LABO.wav	T28A	LABO	MYOLUC		Labo/Myse/Nyhu	Myse	Labo	Nyhu	Epfu
PAS_TIOGAP_T28A_RANG-20240613_051313_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo	Nyhu	Myso	Pesu
PAS_TIOGAP_T28A_RANG-20240615_211745_000-LABO.wav	T28A	LABO	MYOLUC		Nyhu/Labo/Myso	Nyhu	Labo	Myso	
PAS_TIOGAP_T28A_RANG-20240615_230235_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo	Myle	Pesu	
PAS_TIOGAP_T28A_RANG-20240617_031142_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo	Mylu	Pesu	
PAS_TIOGAP_T28A_RANG-20240613_032205_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo	Myle	Nyhu	
PAS_TIOGAP_T28A_RANG-20240613_020217_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo	Myso		
PAS_TIOGAP_T28A_RANG-20240617_031003_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo	Mylu	Nyhu	
PAS_TIOGAP_T28A_RANG-20240613_210404_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo	Nyhu		
PAS_TIOGAP_T28A_RANG-20240616_010409_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo	Myle		
PAS_TIOGAP_T28A_RANG-20240613_011902_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T28A_RANG-20240613_015347_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T28A_RANG-20240615_012754_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T28A_RANG-20240616_010214_000-LABO.wav	T28A	LABO	MYOLUC		Labo/Myle	Labo	Myle	Cora	
PAS_TIOGAP_T28A_RANG-20240616_043008_000-LABO.wav	T28A	LABO	MYOLUC		Labo	Labo	Myle		
PAS_TIOGAP_T28A_RANG-20240616_004946_000-LABO.wav	T28A	LABO	MYOLUC		Pesu/Myle/Labo	Cora	Myle	Pesu	Labo
PAS_TIOGAP_T29A_RANG-20240614_212231_000-LABO.wav	T29A	LABO	MYOLUC	Labo		Labo	Myle	Myso	
PAS_TIOGAP_T29A_RANG-20240620_001857_000-LABO.wav	T29A	LABO	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T29A_RANG-20240617_023003_000-LABO.wav	T29A	LABO	MYOLUC	Labo		Labo	Myso		
PAS_TIOGAP_T29A_RANG-20240620_035937_000-LABO.wav	T29A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T29A_RANG-20240613_234128_000-LABO.wav	T29A	LABO	MYOLUC		Labo	Labo	Myle	Myso	Mylu
PAS_TIOGAP_T29A_RANG-20240613_213942_000-LABO.wav	T29A	LABO	MYOLUC		Labo	Labo	Myle	Myso	Nyhu
PAS_TIOGAP_T29A_RANG-20240614_010851_000-LABO.wav	T29A	LABO	MYOLUC		Labo	Labo	Myle	Myse	Pesu
PAS_TIOGAP_T29A_RANG-20240617_225733_000-LABO.wav	T29A	LABO	MYOLUC		Mylu/Labo	Mylu	Labo		
PAS_TIOGAP_T29A_RANG-20240618_033121_000-HIFRAG.wav	T29A	HIFRAG	MYOLUC						
PAS_TIOGAP_T30A_RANG-20240616_211013_000-MYSE.wav	T30A	MYSE	MYOLUC	Myle		Myle	Myse	Myso	
PAS_TIOGAP_T30A_RANG-20240616_211402_000-MYSE.wav	T30A	MYSE	MYOLUC	Myle		Myle	Myse	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_225001_000-MYSE.wav	T30A	MYSE	MYOLUC	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_225011_000-MYSE.wav	T30A	MYSE	MYOLUC	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240616_213010_000-MYSE.wav	T30A	MYSE	MYOLUC	Myse		Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_214951_000-MYSE.wav	T30A	MYSE	MYOLUC	Myse		Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240615_213327_000-MYSE.wav	T30A	MYSE	MYOLUC	Myse		Myse	Myle	Mylu	Myso
PAS_TIOGAP_T30A_RANG-20240614_212350_000-MYSE.wav	T30A	MYSE	MYOLUC	Myse		Myse	Myso		
PAS_TIOGAP_T30A_RANG-20240612_225021_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240616_213420_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240612_224928_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240612_215626_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myso	Myle	Nyhu
PAS_TIOGAP_T30A_RANG-20240614_011903_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myle	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240617_044704_000-MYSE.wav	T30A	MYSE	MYOLUC		Myle	Myle	Myse	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240613_214718_000-40KMYO.wav	T30A	40KMYO	MYOLUC		Myse	Myse	Myle	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_215759_000-MYSE.wav	T30A	MYSE	MYOLUC		Myso	Myso	Myse	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240612_214054_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_220721_000-MYSE.wav	T30A	MYSE	MYOLUC		Myso	Myso	Myse	Myle	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_214406_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240615_213319_000-40KMYO.wav	T30A	40KMYO	MYOLUC		Myse	Myse	Myso	Nyhu	Myle
PAS_TIOGAP_T30A_RANG-20240614_212211_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240612_212850_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_034036_000-MYSE.wav	T30A	MYSE	MYOLUC		Myso/Myle/Myse/Mylu	Myle	Myso	Myse	Mylu
PAS_TIOGAP_T30A_RANG-20240613_214834_000-40KMYO.wav	T30A	40KMYO	MYOLUC		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240612_213108_000-40KMYO.wav	T30A	40KMYO	MYOLUC		Myle	Myle	Mylu	Myso	Luso
PAS_TIOGAP_T30A_RANG-20240614_214750_000-40KMYO.wav	T30A	40KMYO	MYOLUC		Myle	Myle	Myse	Nyhu	Myso
PAS_TIOGAP_T30A_RANG-20240614_213602_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_213149_000-40KMYO.wav	T30A	40KMYO	MYOLUC		Myle	Myle	Myse	Mylu	
PAS_TIOGAP_T30A_RANG-20240614_213211_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse	Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240616_213403_000-MYSE.wav	T30A	MYSE	MYOLUC		Myse/Myle/Mylu	Myse	Myle	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_212303_000-40KMYO.wav	T30A	40KMYO	MYOLUC		Myso/Myse/Nyhu	Myso	Myse	Nyhu	
PAS_TIOGAP_T30A_RANG-20240613_215103_000-40KMYO.wav	T30A	40KMYO	MYOLUC		Myle	Myle	Myse	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240616_211505_000-MYSE.wav	T30A	MYSE	MYOLUC		Myso	Myso	Myse		
PAS_TIOGAP_T30A_RANG-20240614_213836_000-HIFRAG.wav	T30A	HIFRAG	MYOLUC		Myso/Myse/Mylu/Nyhu	Myse	Myso	Mylu	Nyhu
PAS_TIOGAP_T32A_RANG-20240617_014028_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Mylu	Pesu	
PAS_TIOGAP_T32A_RANG-20240615_222415_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Mylu	Myso	
PAS_TIOGAP_T32A_RANG-20240615_222524_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240617_013845_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T32A_RANG-20240617_021108_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240617_023848_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T32A_RANG-20240617_014604_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Pesu	Cora	
PAS_TIOGAP_T32A_RANG-20240617_021258_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Myso		
PAS_TIOGAP_T32A_RANG-20240617_010249_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Pesu		

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T32A_RANG-20240617_024630_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240617_011453_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T32A_RANG-20240617_032943_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T32A_RANG-20240617_034420_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T32A_RANG-20240613_004550_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T32A_RANG-20240615_015908_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T32A_RANG-20240617_024624_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T32A_RANG-20240613_001959_000-LABO.wav	T32A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T32A_RANG-20240617_022526_000-40KMYO.wav	T32A	40KMYO	MYOLUC	Mylu		Mylu	Nyhu	Pesu	
PAS_TIOGAP_T32A_RANG-20240613_233017_000-LABO.wav	T32A	LABO	MYOLUC	Mylu		Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240612_225657_000-40KMYO.wav	T32A	40KMYO	MYOLUC		Myso/Myle/Mylu/Myse	Myle	Myso	Mylu	Myse
PAS_TIOGAP_T32A_RANG-20240616_231258_000-LABO.wav	T32A	LABO	MYOLUC		Myse/Labo/Nyhu/Myso	Myse	Labo	Nyhu	Myso
PAS_TIOGAP_T32A_RANG-20240617_013050_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Myle	Mylu	Pesu
PAS_TIOGAP_T32A_RANG-20240615_213237_000-HIFRAG.wav	T32A	HIFRAG	MYOLUC		Mylu	Mylu	Nyhu	Myso	Labo
PAS_TIOGAP_T32A_RANG-20240613_000101_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Myso	Mylu	Myle
PAS_TIOGAP_T32A_RANG-20240616_004646_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Myso	Mylu	
PAS_TIOGAP_T32A_RANG-20240615_224115_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Myle	Myse	Pesu
PAS_TIOGAP_T32A_RANG-20240617_015934_000-LABO.wav	T32A	LABO	MYOLUC		Labo/Pesu	Labo	Pesu		
PAS_TIOGAP_T32A_RANG-20240613_231053_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240613_000129_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240613_002416_000-LABO.wav	T32A	LABO	MYOLUC		Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240613_001824_000-LABO.wav	T32A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240615_003056_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Mylu	Myso	
PAS_TIOGAP_T32A_RANG-20240615_220405_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Mylu	Myse	
PAS_TIOGAP_T32A_RANG-20240612_221345_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Myso		
PAS_TIOGAP_T32A_RANG-20240615_013402_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Mylu	Nyhu	
PAS_TIOGAP_T32A_RANG-20240615_013511_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240614_002111_000-LABO.wav	T32A	LABO	MYOLUC		Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240615_021603_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Nyhu		
PAS_TIOGAP_T32A_RANG-20240612_225946_000-LABO.wav	T32A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240613_002432_000-LABO.wav	T32A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240615_225111_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240615_232702_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240617_023530_000-LABO.wav	T32A	LABO	MYOLUC		Labo/Pesu	Pesu	Labo		
PAS_TIOGAP_T32A_RANG-20240617_025520_000-LABO.wav	T32A	LABO	MYOLUC		Myso	Myso	Mylu	Pesu	
PAS_TIOGAP_T32A_RANG-20240615_030239_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240616_231404_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240613_000345_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240613_001910_000-LABO.wav	T32A	LABO	MYOLUC		Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240613_025359_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Nyhu		
PAS_TIOGAP_T32A_RANG-20240613_233043_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240615_234825_000-LABO.wav	T32A	LABO	MYOLUC		Mylu/Labo	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240617_012009_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo	Myle		
PAS_TIOGAP_T32A_RANG-20240613_222453_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240615_010630_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_034718_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240614_013238_000-LABO.wav	T32A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240614_013310_000-LABO.wav	T32A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240614_025405_000-LABO.wav	T32A	LABO	MYOLUC		Nyhu/Labo	Labo	Nyhu		
PAS_TIOGAP_T32A_RANG-20240615_231816_000-LABO.wav	T32A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240617_011809_000-LABO.wav	T32A	LABO	MYOLUC		Pesu	Pesu			
PAS_TIOGAP_T32A_RANG-20240617_012951_000-LABO.wav	T32A	LABO	MYOLUC		Labo/Pesu	Pesu	Labo		
PAS_TIOGAP_T32A_RANG-20240613_000407_000-LABO.wav	T32A	LABO	MYOLUC		Mylu/	Mylu			
PAS_TIOGAP_T32A_RANG-20240615_002916_000-LABO.wav	T32A	LABO	MYOLUC		Mylu	Mylu			
PAS_TIOGAP_T32A_RANG-20240616_231444_000-LABO.wav	T32A	LABO	MYOLUC		Myso/	Myso			
PAS_TIOGAP_T32A_RANG-20240617_010728_000-LABO.wav	T32A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240613_231016_000-LABO.wav	T32A	LABO	MYOLUC						
PAS_TIOGAP_T33A_RANG-20240620_024037_000-LABO.wav	T33A	LABO	MYOLUC	Labo		Labo	Mylu		
PAS_TIOGAP_T33A_RANG-20240620_014005_000-LABO.wav	T33A	LABO	MYOLUC	Labo		Labo	Pesu		
PAS_TIOGAP_T33A_RANG-20240620_012824_000-LABO.wav	T33A	LABO	MYOLUC	Labo		Labo	Mylu		
PAS_TIOGAP_T33A_RANG-20240620_033451_000-LABO.wav	T33A	LABO	MYOLUC	Labo		Labo	Mylu		
PAS_TIOGAP_T33A_RANG-20240619_221823_000-LABO.wav	T33A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T33A_RANG-20240620_015409_000-LABO.wav	T33A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T33A_RANG-20240618_230611_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo	Mylu	Myse	Myso
PAS_TIOGAP_T33A_RANG-20240619_011638_000-LABO.wav	T33A	LABO	MYOLUC		Myle	Myle	Myso	Labo	Myse
PAS_TIOGAP_T33A_RANG-20240619_215326_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo	Pesu	Myle	Myse
PAS_TIOGAP_T33A_RANG-20240620_031216_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo	Myso	Mylu	
PAS_TIOGAP_T33A_RANG-20240620_024529_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T33A_RANG-20240620_030129_000-HIFRAG.wav	T33A	HIFRAG	MYOLUC		Myse/Myle/Pesu/Labo	Myle	Myse	Pesu	Labo
PAS_TIOGAP_T33A_RANG-20240620_011136_000-LABO.wav	T33A	LABO	MYOLUC		Mylu	Mylu	Labo	Nyhu	
PAS_TIOGAP_T33A_RANG-20240618_042123_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Mylu	Labo	Myse	
PAS_TIOGAP_T33A_RANG-20240619_215323_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo			

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T33A_RANG-20240618_045032_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T33A_RANG-20240619_015237_000-LABO.wav	T33A	LABO	MYOLUC		Mylu/Labo	Mylu	Labo		
PAS_TIOGAP_T33A_RANG-20240620_015700_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T33A_RANG-20240620_015637_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T33A_RANG-20240617_213613_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T33A_RANG-20240620_020248_000-LABO.wav	T33A	LABO	MYOLUC		HiF	Cora			
PAS_TIOGAP_T33A_RANG-20240620_024447_000-LABO.wav	T33A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T33A_RANG-20240620_043047_000-LABO.wav	T33A	LABO	MYOLUC						
PAS_TIOGAP_T33B_D500-20240620_015652_000-LABO.wav	T33B	LABO	MYOLUC		Labo	Labo	Pesu	Myso	
PAS_TIOGAP_T33B_D500-20240619_014905_000-LABO.wav	T33B	LABO	MYOLUC		Nyhu/Mylu/Labo	Mylu	Nyhu	Labo	
PAS_TIOGAP_T33B_D500-20240619_031530_000-LABO.wav	T33B	LABO	MYOLUC		Labo	Labo	Mylu		
PAS_TIOGAP_T34A_RANG-20240617_013906_000-LABO.wav	T34A	LABO	MYOLUC	Labo		Labo	Epfu	Myle	Myso
PAS_TIOGAP_T34A_RANG-20240615_021059_000-LABO.wav	T34A	LABO	MYOLUC	Labo		Labo	Myso		
PAS_TIOGAP_T34A_RANG-20240617_213059_000-LABO.wav	T34A	LABO	MYOLUC		Labo	Labo	Nyhu	Myso	Pesu
PAS_TIOGAP_T34A_RANG-20240617_013913_000-EPFU.wav	T34A	EPFU	MYOLUC		Labo	Labo	Epfu	Nyhu	
PAS_TIOGAP_T34A_RANG-20240615_021510_000-LABO.wav	T34A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T34A_RANG-20240616_000905_000-LABO.wav	T34A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T37A_D500-20240614_014756_000-LABO.wav	T37A	LABO	MYOLUC	Labo		Labo	Epfu	Myle	
PAS_TIOGAP_T37A_D500-20240612_031257_000-LABO.wav	T37A	LABO	MYOLUC	Labo		Labo			
PAS_TIOGAP_T37A_D500-20240613_022536_000-LABO.wav	T37A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T37A_D500-20240613_022647_000-LABO.wav	T37A	LABO	MYOLUC		Labo	Labo			
PAS_TIOGAP_T41A_D500-20240614_022019_000-LABO.wav	T41A	LABO	MYOLUC		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T03A_RANG-20240615_031731_000-MYSE.wav	T03A	MYSE	MYOSEP	Myse		Myse	Mylu	Nyhu	
PAS_TIOGAP_T03A_RANG-20240614_041127_000-MYSE.wav	T03A	MYSE	MYOSEP	Myse		Myse	Nyhu		
PAS_TIOGAP_T03A_RANG-20240614_042504_000-MYSE.wav	T03A	MYSE	MYOSEP	Myse		Myse	Mylu		
PAS_TIOGAP_T03A_RANG-20240615_031659_000-40KMYO.wav	T03A	40KMYO	MYOSEP	Myse		Myse	Myso	Luso	
PAS_TIOGAP_T03A_RANG-20240614_041132_000-HIF.wav	T03A	HIF	MYOSEP	Myse		Myse	Epfu		
PAS_TIOGAP_T05A_RANG-20240619_212229_000-LABO.wav	T05A	LABO	MYOSEP	Labo		Labo	Nyhu		
PAS_TIOGAP_T05A_RANG-20240614_005344_000-HIFRAG.wav	T05A	HIFRAG	MYOSEP	Myle		Myle	Pesu		
PAS_TIOGAP_T05A_RANG-20240614_214634_000-LABO.wav	T05A	LABO	MYOSEP	Nyhu		Nyhu	Pesu		
PAS_TIOGAP_T05A_RANG-20240614_033639_000-HIF.wav	T05A	HIF	MYOSEP		Myse	Myse	Labo	Mylu	Nyhu
PAS_TIOGAP_T05A_RANG-20240614_013549_000-HIF.wav	T05A	HIF	MYOSEP		Nyhu	Nyhu	Labo		
PAS_TIOGAP_T08A_D500-20240615_222359_000-MYSE$.wav	T08A	MYSE	MYOSEP	Myse		Myse	Myso		
PAS_TIOGAP_T16A_RANG-20240615_230434_000-40KMYO.wav	T16A	40KMYO	MYOSEP		Nyhu	Nyhu	Myse	Labo	
PAS_TIOGAP_T20A_D500-20240620_020444_000-HIFRAG.wav	T20A	HIFRAG	MYOSEP		Myse	Myse	Epfu	Nyhu	
PAS_TIOGAP_T21A_D500-20240617_033630_000-HIFRAG.wav	T21A	HIFRAG	MYOSEP		Nyhu	Nyhu			
PAS_TIOGAP_T21A_D500-20240615_213341_000-HIFRAG.wav	T21A	HIFRAG	MYOSEP		Nyhu/Myse	Myse	Nyhu		
PAS_TIOGAP_T28A_RANG-20240615_211855_000-HIFRAG.wav	T28A	HIFRAG	MYOSEP	Epfu		Epfu	Myse	Nyhu	
PAS_TIOGAP_T28A_RANG-20240615_212246_000-EPFU.wav	T28A	EPFU	MYOSEP	Epfu		Epfu	Myse	Nyhu	
PAS_TIOGAP_T28A_RANG-20240617_025059_000-HIFRAG.wav	T28A	HIFRAG	MYOSEP	Epfu		Epfu	Myse		
PAS_TIOGAP_T28A_RANG-20240615_213209_000-HIFRAG.wav	T28A	HIFRAG	MYOSEP	Myse		Myse	Epfu		
PAS_TIOGAP_T28A_RANG-20240617_025248_000-HIFRAG.wav	T28A	HIFRAG	MYOSEP	Myse		Myse	Nyhu	Epfu	
PAS_TIOGAP_T28A_RANG-20240614_024100_000-HIF.wav	T28A	HIF	MYOSEP	Myse		Myse	Epfu	Nyhu	Cora
PAS_TIOGAP_T28A_RANG-20240615_213637_000-HIFRAG.wav	T28A	HIFRAG	MYOSEP		HiF	Cora	Epfu		
PAS_TIOGAP_T29A_RANG-20240614_035615_000-40KMYO.wav	T29A	40KMYO	MYOSEP	Myse		Myse	Myso	Mylu	Nyhu
PAS_TIOGAP_T29A_RANG-20240617_024839_000-MYSE.wav	T29A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	Epfu
PAS_TIOGAP_T29A_RANG-20240617_005233_000-MYSE.wav	T29A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T29A_RANG-20240617_225824_000-MYSE.wav	T29A	MYSE	MYOSEP	Myse		Myse	Myle	Myso	
PAS_TIOGAP_T29A_RANG-20240615_010401_000-MYSE.wav	T29A	MYSE	MYOSEP	Myse		Myse	Nyhu		
PAS_TIOGAP_T29A_RANG-20240612_221238_000-MYSE.wav	T29A	MYSE	MYOSEP	Myse		Myse			
PAS_TIOGAP_T29A_RANG-20240616_004520_000-MYSE.wav	T29A	MYSE	MYOSEP	Myso		Myso	Nyhu	Mylu	Myse
PAS_TIOGAP_T29A_RANG-20240615_022859_000-MYSE.wav	T29A	MYSE	MYOSEP	Myso		Myso	Nyhu	Myse	Mylu
PAS_TIOGAP_T29A_RANG-20240615_224100_000-40KMYO.wav	T29A	40KMYO	MYOSEP		Myse	Myse	Nyhu	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_040548_000-40KMYO.wav	T30A	40KMYO	MYOSEP	Luso		Myso	Mylu	Myse	
PAS_TIOGAP_T30A_RANG-20240616_032152_000-40KMYO.wav	T30A	40KMYO	MYOSEP	Luso		Myso	Mylu	Myse	Nyhu
PAS_TIOGAP_T30A_RANG-20240614_011848_000-40KMYO.wav	T30A	40KMYO	MYOSEP	Luso		Mylu	Myso	Nyhu	
PAS_TIOGAP_T30A_RANG-20240616_211128_000-40KMYO.wav	T30A	40KMYO	MYOSEP	Myle		Myle	Myse	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_222718_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse			
PAS_TIOGAP_T30A_RANG-20240612_220657_000-HIFRAG.wav	T30A	HIFRAG	MYOSEP	Myse		Myse	Mylu	Labo	
PAS_TIOGAP_T30A_RANG-20240613_222708_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_220617_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Nyhu	Luso
PAS_TIOGAP_T30A_RANG-20240613_222648_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse			
PAS_TIOGAP_T30A_RANG-20240612_220532_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu		
PAS_TIOGAP_T30A_RANG-20240613_222638_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Luso	Mylu	Myso
PAS_TIOGAP_T30A_RANG-20240612_220602_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Luso	
PAS_TIOGAP_T30A_RANG-20240612_220459_000-MYLE.wav	T30A	MYLE	MYOSEP	Myse		Myse	Mylu	Luso	Myso
PAS_TIOGAP_T30A_RANG-20240612_225101_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_214434_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Luso	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_220647_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Luso	Myso
PAS_TIOGAP_T30A_RANG-20240612_220627_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Luso	Myso
PAS_TIOGAP_T30A_RANG-20240612_220512_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Luso	Myso
PAS_TIOGAP_T30A_RANG-20240612_220522_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Luso	

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T30A_RANG-20240612_225031_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_225041_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_225051_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_215302_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Nyhu	
PAS_TIOGAP_T30A_RANG-20240612_220637_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Luso	
PAS_TIOGAP_T30A_RANG-20240616_032135_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240613_215222_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Nyhu		
PAS_TIOGAP_T30A_RANG-20240612_220707_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	Luso
PAS_TIOGAP_T30A_RANG-20240613_222658_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_215232_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso		
PAS_TIOGAP_T30A_RANG-20240612_220449_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Luso	
PAS_TIOGAP_T30A_RANG-20240612_220542_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Myso	
PAS_TIOGAP_T30A_RANG-20240612_220552_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Luso	
PAS_TIOGAP_T30A_RANG-20240613_040237_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_215242_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Nyhu	Mylu
PAS_TIOGAP_T30A_RANG-20240612_225111_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_215252_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_220607_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Epfu	Myso
PAS_TIOGAP_T30A_RANG-20240613_222731_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240613_214445_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Lano	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240617_044503_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Mylu	Myso
PAS_TIOGAP_T30A_RANG-20240617_044747_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Nyhu	Mylu
PAS_TIOGAP_T30A_RANG-20240613_035645_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Nyhu	Mylu
PAS_TIOGAP_T30A_RANG-20240616_212828_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240616_214141_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240617_045115_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Myso	Myle
PAS_TIOGAP_T30A_RANG-20240614_215855_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_214714_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240612_212519_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240617_045023_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Myle	Myso
PAS_TIOGAP_T30A_RANG-20240617_044342_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Mylu	Cora
PAS_TIOGAP_T30A_RANG-20240613_213907_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_220022_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu		
PAS_TIOGAP_T30A_RANG-20240612_213143_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240615_212943_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso		
PAS_TIOGAP_T30A_RANG-20240617_044523_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240617_045212_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240614_230916_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu	Myso	Myle
PAS_TIOGAP_T30A_RANG-20240614_212405_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_222728_000-HIFRAG.wav	T30A	HIFRAG	MYOSEP	Myse		Myse			
PAS_TIOGAP_T30A_RANG-20240612_215401_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240614_231516_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle		
PAS_TIOGAP_T30A_RANG-20240612_214328_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	
PAS_TIOGAP_T30A_RANG-20240617_044237_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240616_211306_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240614_015711_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Mylu	
PAS_TIOGAP_T30A_RANG-20240615_213646_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240613_220030_000-40KMYO.wav	T30A	40KMYO	MYOSEP	Myse		Myse	Mylu	Luso	
PAS_TIOGAP_T30A_RANG-20240614_213416_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240614_212436_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240616_211514_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu		
PAS_TIOGAP_T30A_RANG-20240614_213805_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Mylu		
PAS_TIOGAP_T30A_RANG-20240615_213310_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Nyhu	
PAS_TIOGAP_T30A_RANG-20240612_212828_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso		
PAS_TIOGAP_T30A_RANG-20240613_214124_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	
PAS_TIOGAP_T30A_RANG-20240614_213720_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Mylu	
PAS_TIOGAP_T30A_RANG-20240612_212837_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240613_033517_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso	Myle	
PAS_TIOGAP_T30A_RANG-20240614_212414_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso		
PAS_TIOGAP_T30A_RANG-20240614_213528_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle	Mylu	
PAS_TIOGAP_T30A_RANG-20240614_212335_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myle		
PAS_TIOGAP_T30A_RANG-20240612_212820_000-MYSE.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso		
PAS_TIOGAP_T30A_RANG-20240613_215914_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myse		Myse	Myso		
PAS_TIOGAP_T30A_RANG-20240616_032117_000-MYSE$.wav	T30A	MYSE	MYOSEP	Myso		Myso	Myse	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_224950_000-MYSE.wav	T30A	MYSE	MYOSEP	Myso		Myso	Myse	Mylu	
PAS_TIOGAP_T30A_RANG-20240616_032127_000-MYSE.wav	T30A	MYSE	MYOSEP	Myso		Myso	Myse	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_220243_000-MYSE.wav	T30A	MYSE	MYOSEP	Myso		Myso	Myle	Mylu	
PAS_TIOGAP_T30A_RANG-20240614_213357_000-MYSE.wav	T30A	MYSE	MYOSEP	Myso		Myso	Myse		
PAS_TIOGAP_T30A_RANG-20240613_213629_000-MYSE.wav	T30A	MYSE	MYOSEP	Myso		Myso	Mylu		
PAS_TIOGAP_T30A_RANG-20240613_213728_000-HIF.wav	T30A	HIF	MYOSEP	Nyhu		Nyhu	Myse	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240613_040558_000-HIF.wav	T30A	HIF	MYOSEP		Myso	Myso	Myse	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_222628_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Mylu	Myle

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T30A_RANG-20240612_220439_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Mylu	Nyhu	Myso
PAS_TIOGAP_T30A_RANG-20240613_040217_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_040227_000-MYSE.wav	T30A	MYSE	MYOSEP		Myso/Myse/Mylu	Myso	Myse	Mylu	Luso
PAS_TIOGAP_T30A_RANG-20240613_213922_000-MYSE.wav	T30A	MYSE	MYOSEP		Mylu/Nyhu/Myse/Myso	Mylu	Nyhu	Myse	Myso
PAS_TIOGAP_T30A_RANG-20240613_213932_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Nyhu	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_214228_000-HIF.wav	T30A	HIF	MYOSEP		Myse	Myse	Myso	Luso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_040302_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240613_214821_000-MYSE.wav	T30A	MYSE	MYOSEP		Myso	Myso	Myse	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240613_220018_000-HIF.wav	T30A	HIF	MYOSEP		Mylu/Myse/Myso	Mylu	Myse	Myso	
PAS_TIOGAP_T30A_RANG-20240614_214439_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Myle	Nyhu
PAS_TIOGAP_T30A_RANG-20240616_032202_000-HIF.wav	T30A	HIF	MYOSEP		Myse	Myse	Myso	Mylu	Myle
PAS_TIOGAP_T30A_RANG-20240613_215312_000-HIF.wav	T30A	HIF	MYOSEP		Myse	Myse	Myso	Nyhu	Myle
PAS_TIOGAP_T30A_RANG-20240614_015752_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse/Myle/Myso/Mylu	Myle	Myse	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_040247_000-HIF.wav	T30A	HIF	MYOSEP		Myse	Myse	Myso	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240613_214001_000-HIF.wav	T30A	HIF	MYOSEP		Nyhu	Mylu	Nyhu	Myse	Myso
PAS_TIOGAP_T30A_RANG-20240616_032106_000-HIF.wav	T30A	HIF	MYOSEP		Myse	Myse	Mylu	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240613_214852_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Mylu	Myle
PAS_TIOGAP_T30A_RANG-20240614_212234_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Mylu	Myso	Myle
PAS_TIOGAP_T30A_RANG-20240613_214957_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240613_215956_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Mylu	Mylu	Myse	Nyhu	Myso
PAS_TIOGAP_T30A_RANG-20240617_045546_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240617_022845_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Mylu	Myso	Myle
PAS_TIOGAP_T30A_RANG-20240617_045707_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myse	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240617_044225_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240612_215341_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myso	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240613_213738_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Nyhu	Nyhu	Myse	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240612_215532_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240613_214007_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Mylu	Mylu	Myse	Nyhu	Luso
PAS_TIOGAP_T30A_RANG-20240616_211333_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso/Myse/Mylu/Nyhu	Myso	Myse	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240613_033503_000-MYSE$.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240613_215122_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso/Myse/Myle/Mylu	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240616_211004_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Mylu/Myse/Nyhu/Myle	Myse	Mylu	Nyhu	Myle
PAS_TIOGAP_T30A_RANG-20240617_045611_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_215248_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle		
PAS_TIOGAP_T30A_RANG-20240612_213213_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse/Myle/Myso/Mylu	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_214741_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Nyhu	Myle
PAS_TIOGAP_T30A_RANG-20240613_010702_000-MYSE.wav	T30A	MYSE	MYOSEP		Myle/Myso/Myse	Myle	Myso	Myse	
PAS_TIOGAP_T30A_RANG-20240616_214359_000-MYSE.wav	T30A	MYSE	MYOSEP		Mylu/Myse/Nyhu/Myle	Mylu	Myse	Nyhu	Myle
PAS_TIOGAP_T30A_RANG-20240613_213700_000-MYSE.wav	T30A	MYSE	MYOSEP		Myso/Myle/Myse/Mylu	Myso	Myle	Myse	Mylu
PAS_TIOGAP_T30A_RANG-20240612_225123_000-MYSE.wav	T30A	MYSE	MYOSEP		Myso	Myso	Myse	Myle	
PAS_TIOGAP_T30A_RANG-20240612_214354_000-MYSE.wav	T30A	MYSE	MYOSEP		Myso	Myso	Myse	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240614_214619_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Myle	Nyhu
PAS_TIOGAP_T30A_RANG-20240617_044450_000-MYSE.wav	T30A	MYSE	MYOSEP		Myle	Myle	Myso	Mylu	Myse
PAS_TIOGAP_T30A_RANG-20240617_045141_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Mylu	Myso
PAS_TIOGAP_T30A_RANG-20240613_215050_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240615_213051_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240614_214453_000-MYSE.wav	T30A	MYSE	MYOSEP		Myle	Myle	Myso	Myse	Mylu
PAS_TIOGAP_T30A_RANG-20240615_213704_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myse	Myso	
PAS_TIOGAP_T30A_RANG-20240613_214905_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240614_213455_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Nyhu	Myso
PAS_TIOGAP_T30A_RANG-20240612_212530_000-MYSE.wav	T30A	MYSE	MYOSEP		Myle	Myle	Mylu	Myse	Myso
PAS_TIOGAP_T30A_RANG-20240612_213010_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_214009_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Mylu	Mylu	Myse	Nyhu	
PAS_TIOGAP_T30A_RANG-20240612_220054_000-MYSE.wav	T30A	MYSE	MYOSEP		Myso/Myse/Myle/Mylu	Myso	Myse	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240614_212359_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_040200_000-MYSE.wav	T30A	MYSE	MYOSEP		Mylu	Mylu	Myle	Myse	Myso
PAS_TIOGAP_T30A_RANG-20240613_214105_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240616_211219_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240617_045655_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse/Myle/Myso/Mylu	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240617_045503_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myso	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240613_040541_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240614_015726_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240614_212257_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240612_213003_000-MYLE.wav	T30A	MYLE	MYOSEP		Myle	Myle	Myse	Nyhu	Myso
PAS_TIOGAP_T30A_RANG-20240614_230854_000-NYHU.wav	T30A	NYHU	MYOSEP		Myse	Myse	Myso	Myle	Nyhu
PAS_TIOGAP_T30A_RANG-20240616_213852_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240615_035808_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Mylu	Myso	Myle
PAS_TIOGAP_T30A_RANG-20240617_045516_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Mylu	Myso
PAS_TIOGAP_T30A_RANG-20240613_035704_000-MYSE.wav	T30A	MYSE	MYOSEP		Myso/Myse/Mylu/Myle	Myso	Myse	Mylu	Myle
PAS_TIOGAP_T30A_RANG-20240614_045612_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse/Myle/Mylu/Myso	Myle	Myse	Mylu	Myso
PAS_TIOGAP_T30A_RANG-20240616_211121_000-MYSE.wav	T30A	MYSE	MYOSEP		Myle/Myso/Mylu/Myse	Myle	Myso	Mylu	Myse
PAS_TIOGAP_T30A_RANG-20240616_213350_000-MYSE.wav	T30A	MYSE	MYOSEP		Nyhu/Myle/Myse/Myso	Myle	Nyhu	Myse	Myso

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T30A_RANG-20240613_213839_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Mylu	
PAS_TIOGAP_T30A_RANG-20240613_214528_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240614_045451_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Mylu	Mylu	Myse	Myle	Myso
PAS_TIOGAP_T30A_RANG-20240614_212343_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso	Myso	Myse	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240617_045528_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle/Myse	Myle	Myse		
PAS_TIOGAP_T30A_RANG-20240612_214024_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso/Myse/Myle	Myse	Myso	Myle	
PAS_TIOGAP_T30A_RANG-20240613_031858_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso/Myse/Myle/Nyhu	Myso	Myse	Myle	Nyhu
PAS_TIOGAP_T30A_RANG-20240613_214302_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_212351_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myso	Nyhu	Myle
PAS_TIOGAP_T30A_RANG-20240612_212930_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myle	Myse	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240613_040608_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso/Myse/Mylu/Myle	Myse	Myso	Mylu	Myle
PAS_TIOGAP_T30A_RANG-20240614_045601_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse/Myso/Mylu/Myle	Myse	Myso	Mylu	Myle
PAS_TIOGAP_T30A_RANG-20240617_044326_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso/Myse/Nyhu/Myle	Myse	Myso	Nyhu	Myle
PAS_TIOGAP_T30A_RANG-20240617_044439_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Mylu	Myso	Myle
PAS_TIOGAP_T30A_RANG-20240614_212027_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myso	Myse	
PAS_TIOGAP_T30A_RANG-20240612_212147_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Nyhu	Myle
PAS_TIOGAP_T30A_RANG-20240612_212248_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle/Nyhu/Myse	Myle	Nyhu	Myse	
PAS_TIOGAP_T30A_RANG-20240612_215828_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso	Myso	Myse	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240614_213641_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle	Mylu	Myso
PAS_TIOGAP_T30A_RANG-20240614_212319_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240616_211105_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myso	Nyhu	Myle
PAS_TIOGAP_T30A_RANG-20240617_045043_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myso	Mylu	Myle
PAS_TIOGAP_T30A_RANG-20240613_214353_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Nyhu/Myle/Myso/Myse	Myle	Nyhu	Myso	Myse
PAS_TIOGAP_T30A_RANG-20240612_220158_000-MYSE.wav	T30A	MYSE	MYOSEP		Myso	Myso	Myle	Myse	
PAS_TIOGAP_T30A_RANG-20240613_214250_000-MYSE.wav	T30A	MYSE	MYOSEP		Myle	Myle	Myse	Nyhu	
PAS_TIOGAP_T30A_RANG-20240614_211753_000-MYSE.wav	T30A	MYSE	MYOSEP		Myle	Myle	Myse	Myso	
PAS_TIOGAP_T30A_RANG-20240614_213543_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240615_213020_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Nyhu	
PAS_TIOGAP_T30A_RANG-20240617_022447_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240617_044809_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myso	Myle	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_212211_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso/Myse/Myle	Myse	Myso	Myle	
PAS_TIOGAP_T30A_RANG-20240613_214507_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myse	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240614_212755_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240615_222827_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle/Myse/Mylu/Nyhu	Myle	Myse	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240616_213904_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse/Myle/Nyhu	Myle	Myse	Nyhu	
PAS_TIOGAP_T30A_RANG-20240617_044213_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240617_045130_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Mylu	Myle	Myso
PAS_TIOGAP_T30A_RANG-20240615_221141_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myse	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240614_045430_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Mylu	Myle	
PAS_TIOGAP_T30A_RANG-20240615_212959_000-MYSE.wav	T30A	MYSE	MYOSEP		Myle	Myle	Myso	Myse	
PAS_TIOGAP_T30A_RANG-20240617_023542_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Mylu	Nyhu
PAS_TIOGAP_T30A_RANG-20240612_212315_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Mylu	Myle	Myso
PAS_TIOGAP_T30A_RANG-20240612_214005_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso	Myso	Myle	Myse	
PAS_TIOGAP_T30A_RANG-20240613_213754_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myso	Myso	Myse	Myle	
PAS_TIOGAP_T30A_RANG-20240614_213633_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle	Mylu	
PAS_TIOGAP_T30A_RANG-20240615_213125_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myso	Myle	Mylu
PAS_TIOGAP_T30A_RANG-20240612_212223_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240612_215612_000-MYSE.wav	T30A	MYSE	MYOSEP		Myse	Myse	Myle	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240614_213700_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle		
PAS_TIOGAP_T30A_RANG-20240617_022849_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle	Mylu	
PAS_TIOGAP_T30A_RANG-20240616_212737_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myse	Myso	
PAS_TIOGAP_T30A_RANG-20240613_214754_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myse		
PAS_TIOGAP_T30A_RANG-20240613_214845_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Mylu	Nyhu	
PAS_TIOGAP_T30A_RANG-20240614_011850_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle		
PAS_TIOGAP_T30A_RANG-20240614_212049_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myse		
PAS_TIOGAP_T30A_RANG-20240614_212718_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myle		
PAS_TIOGAP_T30A_RANG-20240614_213514_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myse	Nyhu	
PAS_TIOGAP_T30A_RANG-20240612_212339_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Nyhu	Nyhu	Myse	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240615_213043_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse	Myse	Myso	Myle	
PAS_TIOGAP_T30A_RANG-20240616_211155_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myse	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240616_211202_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle	Myle	Myso	Myse	
PAS_TIOGAP_T30A_RANG-20240617_045011_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle/Myse/Myso	Myle	Myse	Myso	
PAS_TIOGAP_T30A_RANG-20240613_035638_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse/Myle/Myso	Myle	Myse	Myso	
PAS_TIOGAP_T30A_RANG-20240614_232319_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myse/Myso	Myse	Myso		
PAS_TIOGAP_T30A_RANG-20240616_210947_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Mylu/Myse	Myse	Mylu		
PAS_TIOGAP_T30A_RANG-20240614_211906_000-40KMYO.wav	T30A	40KMYO	MYOSEP		Myle/Myse	Myle	Myse		
PAS_TIOGAP_T32A_RANG-20240612_221343_000-40KMYO.wav	T32A	40KMYO	MYOSEP		Myse/Labo/Myso/Mylu	Myse	Labo	Myso	Mylu
PAS_TIOGAP_T33A_D500-20240611_214425_000-MYSE.wav	T33A	MYSE	MYOSEP		Myle	Myle	Myse	Myso	Mylu
PAS_TIOGAP_T33A_RANG-20240620_013608_000-HIF.wav	T33A	HIF	MYOSEP		HiF	Cora	Myse		
PAS_TIOGAP_T34A_RANG-20240618_050147_000-EPFU.wav	T34A	EPFU	MYOSEP	Epfu		Epfu			
PAS_TIOGAP_T34A_RANG-20240615_212705_000-MYSE.wav	T34A	MYSE	MYOSEP	Myse		Myse	Epfu		
PAS_TIOGAP_T34A_RANG-20240615_025500_000-40KMYO.wav	T34A	40KMYO	MYOSEP		Myso/Myse/Myle	Myse	Myso	Myle	

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T34A_RANG-20240619_045608_000-HIF.wav	T34A	HIF	MYOSEP		Myse	Myse	Nyhu	Epfu	
PAS_TIOGAP_T34A_RANG-20240619_011319_000-HIF.wav	T34A	HIF	MYOSEP		Nyhu	Nyhu	Myse	Myso	Mylu
PAS_TIOGAP_T37A_D500-20240614_234449_000-HIF.wav	T37A	HIF	MYOSEP		Mylu	Mylu	Nyhu	Cora	
PAS_TIOGAP_T01A_RANG-20240614_212212_000-LABO.wav	T01A	LABO	MYOSOD		Myle	Myle	Pesu	Labo	Nyhu
PAS_TIOGAP_T03A_RANG-20240615_225612_000-LABO.wav	T03A	LABO	MYOSOD		Labo	Labo	Pesu		
PAS_TIOGAP_T05A_RANG-20240619_021737_000-LABO.wav	T05A	LABO	MYOSOD	Labo		Labo	Myse		
PAS_TIOGAP_T05A_RANG-20240614_015410_000-LABO.wav	T05A	LABO	MYOSOD		Labo	Labo	Mylu	Nyhu	
PAS_TIOGAP_T05A_RANG-20240620_030732_000-HIF.wav	T05A	HIF	MYOSOD		Pesu	Pesu	Myse	Labo	Cora
PAS_TIOGAP_T06A_RANG-20240619_022425_000-LABO.wav	T06A	LABO	MYOSOD		Labo	Labo	Nyhu	Mylu	
PAS_TIOGAP_T20A_D500-20240618_213247_000-LABO.wav	T20A	LABO	MYOSOD	Labo		Labo	Nyhu		
PAS_TIOGAP_T20A_D500-20240619_231248_000-LABO.wav	T20A	LABO	MYOSOD		Nyhu	Nyhu			
PAS_TIOGAP_T28A_RANG-20240615_211922_000-LABO.wav	T28A	LABO	MYOSOD	Labo		Labo	Myle	Pesu	
PAS_TIOGAP_T28A_RANG-20240616_042445_000-LABO.wav	T28A	LABO	MYOSOD	Myle		Myle	Pesu		
PAS_TIOGAP_T28A_RANG-20240615_044251_000-LABO.wav	T28A	LABO	MYOSOD		Mylu/Labo/Myse/Myso	Mylu	Labo	Myse	Myso
PAS_TIOGAP_T29A_RANG-20240618_224537_000-40KMYO.wav	T29A	40KMYO	MYOSOD	Luso		Mylu	Myso	Myse	
PAS_TIOGAP_T30A_RANG-20240615_222231_000-40KMYO.wav	T30A	40KMYO	MYOSOD	Myle		Myle	Myse	Myso	Nyhu
PAS_TIOGAP_T30A_RANG-20240614_214724_000-40KMYO.wav	T30A	40KMYO	MYOSOD	Myle		Myle	Myso	Myse	Mylu
PAS_TIOGAP_T30A_RANG-20240612_212515_000-40KMYO.wav	T30A	40KMYO	MYOSOD		Myle	Myle	Myse	Myso	Mylu
PAS_TIOGAP_T30A_RANG-20240614_214346_000-40KMYO.wav	T30A	40KMYO	MYOSOD		Myle	Myle	Mylu	Nyhu	
PAS_TIOGAP_T32A_RANG-20240617_011642_000-LABO.wav	T32A	LABO	MYOSOD		Myle	Myle			
PAS_TIOGAP_T33A_RANG-20240617_214513_000-40KMYO.wav	T33A	40KMYO	MYOSOD		Mylu	Mylu	Myle	Myse	Nyhu
PAS_TIOGAP_T37A_D500-20240614_235403_000-LABO.wav	T37A	LABO	MYOSOD		Nyhu/Mylu	Mylu	Nyhu		
PAS_TIOGAP_T01A_RANG-20240617_015922_000-LABO.wav	T01A	LABO	PERSUB		Labo/Pesu	Pesu	Labo		
PAS_TIOGAP_T01A_RANG-20240617_015928_000-LABO.wav	T01A	LABO	PERSUB						
PAS_TIOGAP_T02A_RANG-20240614_042638_000-LABO.wav	T02A	LABO	PERSUB	Labo		Labo	Pesu		
PAS_TIOGAP_T03A_RANG-20240613_214338_000-LABO.wav	T03A	LABO	PERSUB	Labo		Labo	Mylu		
PAS_TIOGAP_T03A_RANG-20240616_012612_000-LABO.wav	T03A	LABO	PERSUB		Labo	Labo	Mylu		
PAS_TIOGAP_T04A_RANG-20240613_213054_000-LABO.wav	T04A	LABO	PERSUB	Labo		Labo	Pesu		
PAS_TIOGAP_T04A_RANG-20240615_030130_000-LABO.wav	T04A	LABO	PERSUB	Labo		Labo	Mylu		
PAS_TIOGAP_T04A_RANG-20240617_045212_000-LABO.wav	T04A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T04A_RANG-20240617_035210_000-LABO.wav	T04A	LABO	PERSUB	Labo		Labo	Mylu		
PAS_TIOGAP_T04A_RANG-20240614_024423_000-LABO.wav	T04A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T04A_RANG-20240614_211440_000-LABO.wav	T04A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T04A_RANG-20240617_000932_000-LABO.wav	T04A	LABO	PERSUB	Labo		Labo	Nyhu		
PAS_TIOGAP_T04A_RANG-20240614_013552_000-LABO.wav	T04A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T04A_RANG-20240617_045204_000-LABO.wav	T04A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T04A_RANG-20240614_015534_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo	Mylu	Pesu	
PAS_TIOGAP_T04A_RANG-20240614_035329_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo	Mylu	Pesu	
PAS_TIOGAP_T04A_RANG-20240617_012028_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo	Mylu	Nyhu	
PAS_TIOGAP_T04A_RANG-20240616_015341_000-LABO.wav	T04A	LABO	PERSUB		Labo/Pesu	Pesu	Labo		
PAS_TIOGAP_T04A_RANG-20240614_015335_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo	Pesu		
PAS_TIOGAP_T04A_RANG-20240615_215026_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo	Myso		
PAS_TIOGAP_T04A_RANG-20240615_215852_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_041855_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo	Pesu		
PAS_TIOGAP_T04A_RANG-20240615_025411_000-LABO.wav	T04A	LABO	PERSUB		Pesu	Pesu	Labo	Nyhu	
PAS_TIOGAP_T04A_RANG-20240615_030325_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo	Pesu	Nyhu	
PAS_TIOGAP_T04A_RANG-20240616_011434_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo	Laci		
PAS_TIOGAP_T04A_RANG-20240613_232641_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240614_021707_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240614_223103_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240615_030925_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_004714_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_030934_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_034532_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_041501_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_050002_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240618_005046_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240613_225611_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240615_025947_000-LABO.wav	T04A	LABO	PERSUB		Pesu/Labo	Pesu	Labo		
PAS_TIOGAP_T04A_RANG-20240615_231617_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240616_004001_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo	Nyhu		
PAS_TIOGAP_T04A_RANG-20240617_023055_000-LABO.wav	T04A	LABO	PERSUB		Mylu/Labo	Mylu	Labo		
PAS_TIOGAP_T04A_RANG-20240617_030022_000-LABO.wav	T04A	LABO	PERSUB		Mylu/Labo	Mylu	Labo		
PAS_TIOGAP_T04A_RANG-20240617_042640_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_020100_000-LABO.wav	T04A	LABO	PERSUB		Nyhu/Labo	Labo	Nyhu		
PAS_TIOGAP_T04A_RANG-20240614_003521_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240614_033516_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240615_010155_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240615_221826_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240616_044456_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_003510_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_043148_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T04A_RANG-20240614_002617_000-LABO.wav	T04A	LABO	PERSUB		Labo/Pesu	Pesu	Labo		
PAS_TIOGAP_T04A_RANG-20240614_041120_000-LABO.wav	T04A	LABO	PERSUB		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T04A_RANG-20240614_234309_000-LABO.wav	T04A	LABO	PERSUB		Labo/Pesu	Pesu	Labo		
PAS_TIOGAP_T04A_RANG-20240615_003722_000-LABO.wav	T04A	LABO	PERSUB		Labo/	Labo			
PAS_TIOGAP_T04A_RANG-20240615_015030_000-LABO.wav	T04A	LABO	PERSUB		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T04A_RANG-20240615_215301_000-LABO.wav	T04A	LABO	PERSUB		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T04A_RANG-20240616_042526_000-LABO.wav	T04A	LABO	PERSUB		Labo/	Labo			
PAS_TIOGAP_T04A_RANG-20240616_044042_000-LABO.wav	T04A	LABO	PERSUB		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T04A_RANG-20240617_020551_000-LABO.wav	T04A	LABO	PERSUB		Nyhu/	Nyhu			
PAS_TIOGAP_T04A_RANG-20240617_022209_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_050410_000-LABO.wav	T04A	LABO	PERSUB		Nyhu/Pesu	Pesu	Nyhu		
PAS_TIOGAP_T04A_RANG-20240617_234155_000-LABO.wav	T04A	LABO	PERSUB		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T04A_RANG-20240614_020312_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240615_002243_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240616_234844_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_005621_000-LABO.wav	T04A	LABO	PERSUB		Pesu	Pesu			
PAS_TIOGAP_T04A_RANG-20240617_005810_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_030902_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_041102_000-LABO.wav	T04A	LABO	PERSUB		Labo/	Labo			
PAS_TIOGAP_T04A_RANG-20240617_043217_000-LABO.wav	T04A	LABO	PERSUB		Laci	Laci			
PAS_TIOGAP_T04A_RANG-20240617_043346_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240617_044843_000-LABO.wav	T04A	LABO	PERSUB		Mylu	Mylu			
PAS_TIOGAP_T04A_RANG-20240618_002050_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240618_022816_000-LABO.wav	T04A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T04A_RANG-20240615_015420_000-LABO.wav	T04A	LABO	PERSUB						
PAS_TIOGAP_T04A_RANG-20240615_015806_000-LABO.wav	T04A	LABO	PERSUB						
PAS_TIOGAP_T04A_RANG-20240617_030014_000-LABO.wav	T04A	LABO	PERSUB						
PAS_TIOGAP_T04A_RANG-20240618_022637_000-LABO.wav	T04A	LABO	PERSUB						
PAS_TIOGAP_T04A_RANG-20240617_025915_000-LABO.wav	T04A	LABO	PERSUB						
PAS_TIOGAP_T04A_RANG-20240617_213425_000-LABO.wav	T04A	LABO	PERSUB						
PAS_TIOGAP_T05A_RANG-20240614_235545_000-LABO.wav	T05A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T05A_RANG-20240620_000632_000-LABO.wav	T05A	LABO	PERSUB		Nyhu/Labo/Myso/Mylu	Nyhu	Labo	Myso	Mylu
PAS_TIOGAP_T05A_RANG-20240615_001641_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo	Pesu	Nyhu	
PAS_TIOGAP_T05A_RANG-20240620_024340_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo	Pesu		
PAS_TIOGAP_T05A_RANG-20240614_034723_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo	Myso	Nyhu	
PAS_TIOGAP_T05A_RANG-20240620_032552_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo	Pesu		
PAS_TIOGAP_T05A_RANG-20240620_031010_000-HIF-social.wav	T05A	HIF	PERSUB		Mylu/Myse/Pesu	Myse	Mylu	Pesu	
PAS_TIOGAP_T05A_RANG-20240615_021413_000-LABO.wav	T05A	LABO	PERSUB		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T05A_RANG-20240614_034452_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T05A_RANG-20240620_024030_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T05A_RANG-20240615_003556_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo	Myse		
PAS_TIOGAP_T05A_RANG-20240619_033013_000-LABO.wav	T05A	LABO	PERSUB		Mylu/Labo	Mylu	Labo		
PAS_TIOGAP_T05A_RANG-20240620_043744_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T05A_RANG-20240614_230418_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T05A_RANG-20240614_235649_000-LABO.wav	T05A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T05A_RANG-20240613_233553_000-LABO.wav	T05A	LABO	PERSUB		Nyhu/	Nyhu			
PAS_TIOGAP_T05A_RANG-20240614_235013_000-LABO.wav	T05A	LABO	PERSUB		Nyhu/Mylu	Mylu	Nyhu		
PAS_TIOGAP_T05A_RANG-20240615_004252_000-LABO.wav	T05A	LABO	PERSUB		Myle	Myle			
PAS_TIOGAP_T05A_RANG-20240614_234943_000-LABO.wav	T05A	LABO	PERSUB						
PAS_TIOGAP_T05A_RANG-20240615_043418_000-LABO.wav	T05A	LABO	PERSUB						
PAS_TIOGAP_T05A_RANG-20240614_022118_000-LABO.wav	T05A	LABO	PERSUB						
PAS_TIOGAP_T06A_RANG-20240618_210751_000-LABO.wav	T06A	LABO	PERSUB	Labo		Labo	Nyhu		
PAS_TIOGAP_T06A_RANG-20240618_212020_000-LABO.wav	T06A	LABO	PERSUB	Labo		Labo	Pesu		
PAS_TIOGAP_T06A_RANG-20240621_020752_000-LABO.wav	T06A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T06A_RANG-20240619_044538_000-LABO.wav	T06A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T06A_RANG-20240620_224046_000-LABO.wav	T06A	LABO	PERSUB		Labo	Labo	Mylu	Nyhu	Pesu
PAS_TIOGAP_T06A_RANG-20240619_221723_000-LABO.wav	T06A	LABO	PERSUB		Labo	Labo	Pesu	Mylu	Nyhu
PAS_TIOGAP_T06A_RANG-20240621_024547_000-LABO.wav	T06A	LABO	PERSUB		Mylu	Mylu	Labo		
PAS_TIOGAP_T06A_RANG-20240621_041046_000-LABO.wav	T06A	LABO	PERSUB		Labo/Mylu	Labo	Mylu		
PAS_TIOGAP_T06A_RANG-20240623_041049_000-LABO.wav	T06A	LABO	PERSUB		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T06A_RANG-20240618_212949_000-LABO.wav	T06A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T06A_RANG-20240621_011242_000-LABO.wav	T06A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T06A_RANG-20240623_042117_000-LABO.wav	T06A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T06A_RANG-20240622_210627_000-HIFRAG.wav	T06A	HIFRAG	PERSUB		Labo	Labo			
PAS_TIOGAP_T10A_D500-20240620_031050_000-LABO.wav	T10A	LABO	PERSUB		Labo	Labo	Mylu		
PAS_TIOGAP_T10A_D500-20240615_232853_000-LABO.wav	T10A	LABO	PERSUB						
PAS_TIOGAP_T11A_D500-20240620_043253_000-LABO.wav	T11A	LABO	PERSUB	Labo		Labo	Pesu		
PAS_TIOGAP_T15A_D500-20240617_004326_000-LABO.wav	T15A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T24A_D500-20240615_221449_000-LABO.wav	T24A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T28A_RANG-20240613_210611_000-LABO.wav	T28A	LABO	PERSUB	Labo		Labo	Nyhu		
PAS_TIOGAP_T28A_RANG-20240617_044325_000-LABO.wav	T28A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T28A_RANG-20240615_211443_000-LABO.wav	T28A	LABO	PERSUB		Nyhu/Labo	Nyhu	Labo		

Filename	Site Code	Species BCM Manual ID	Kaleidoscope	SonoBat SppAccp	SonoBat ~Spp	SB| 1st	SB| 2nd	SB| 3rd	SB| 4th
PAS_TIOGAP_T28A_RANG-20240615_211348_000-LABO.wav	T28A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T29A_RANG-20240617_232731_000-LABO.wav	T29A	LABO	PERSUB	Labo		Labo	Nyhu		
PAS_TIOGAP_T29A_RANG-20240617_024540_000-LABO.wav	T29A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T29A_RANG-20240615_215107_000-LABO.wav	T29A	LABO	PERSUB		Labo	Labo	Mylu	Pesu	Nyhu
PAS_TIOGAP_T29A_RANG-20240612_213427_000-LABO.wav	T29A	LABO	PERSUB		Labo/Pesu	Labo	Pesu		
PAS_TIOGAP_T29A_RANG-20240613_022515_000-LABO.wav	T29A	LABO	PERSUB		Labo	Labo	Myso		
PAS_TIOGAP_T29A_RANG-20240614_233342_000-LABO.wav	T29A	LABO	PERSUB		Labo/	Labo			
PAS_TIOGAP_T30A_RANG-20240616_213158_000-40KMYO.wav	T30A	40KMYO	PERSUB		Myse	Myse	Myle	Myso	
PAS_TIOGAP_T30A_RANG-20240614_215934_000-40KMYO.wav	T30A	40KMYO	PERSUB		Myso	Myso	Myse		
PAS_TIOGAP_T32A_RANG-20240616_005042_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo	Nyhu		
PAS_TIOGAP_T32A_RANG-20240617_013203_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240617_022304_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T32A_RANG-20240617_012623_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo	Pesu		
PAS_TIOGAP_T32A_RANG-20240617_023536_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo	Pesu		
PAS_TIOGAP_T32A_RANG-20240617_024037_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo	Mylu	Nyhu	
PAS_TIOGAP_T32A_RANG-20240615_224459_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240616_231411_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240615_023214_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo	Nyhu		
PAS_TIOGAP_T32A_RANG-20240617_021953_000-LABO.wav	T32A	LABO	PERSUB	Labo		Labo	Pesu		
PAS_TIOGAP_T32A_RANG-20240617_011926_000-LABO.wav	T32A	LABO	PERSUB		Mylu	Mylu	Pesu	Labo	
PAS_TIOGAP_T32A_RANG-20240617_034130_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo	Mylu	Pesu	
PAS_TIOGAP_T32A_RANG-20240613_025912_000-LABO.wav	T32A	LABO	PERSUB		Mylu/Labo/Myso	Mylu	Labo	Myso	
PAS_TIOGAP_T32A_RANG-20240617_025555_000-LABO.wav	T32A	LABO	PERSUB		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240614_235734_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240615_220319_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240617_013026_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo	Pesu		
PAS_TIOGAP_T32A_RANG-20240617_020440_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo	Mylu		
PAS_TIOGAP_T32A_RANG-20240613_025442_000-LABO.wav	T32A	LABO	PERSUB		Labo/Mylu	Mylu	Labo		
PAS_TIOGAP_T32A_RANG-20240612_215033_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_013636_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_022310_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_022645_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240615_005525_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240612_232900_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240613_000359_000-LABO.wav	T32A	LABO	PERSUB		Mylu	Mylu			
PAS_TIOGAP_T32A_RANG-20240613_222323_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240613_233037_000-LABO.wav	T32A	LABO	PERSUB		Mylu	Mylu			
PAS_TIOGAP_T32A_RANG-20240614_002135_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_014515_000-LABO.wav	T32A	LABO	PERSUB		Mylu	Mylu			
PAS_TIOGAP_T32A_RANG-20240617_022041_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_023126_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240613_015713_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240614_013323_000-LABO.wav	T32A	LABO	PERSUB		Labo/	Labo			
PAS_TIOGAP_T32A_RANG-20240614_013347_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240616_045405_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_014523_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_030258_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_031244_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240617_040210_000-LABO.wav	T32A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T32A_RANG-20240615_012441_000-LABO.wav	T32A	LABO	PERSUB						
PAS_TIOGAP_T32A_RANG-20240617_030157_000-LABO.wav	T32A	LABO	PERSUB						
PAS_TIOGAP_T33A_RANG-20240619_212321_000-LABO.wav	T33A	LABO	PERSUB	Labo		Labo	Myle	Nyhu	
PAS_TIOGAP_T33A_RANG-20240620_015649_000-LABO.wav	T33A	LABO	PERSUB	Labo		Labo	Mylu	Nyhu	
PAS_TIOGAP_T33A_D500-20240614_044352_000-LABO.wav	T33A	LABO	PERSUB	Labo		Labo	Mylu		
PAS_TIOGAP_T33A_D500-20240614_040459_000-LABO.wav	T33A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T33A_RANG-20240619_213713_000-LABO.wav	T33A	LABO	PERSUB	Labo		Labo			
PAS_TIOGAP_T33A_D500-20240614_221539_000-LABO.wav	T33A	LABO	PERSUB		Labo	Labo	Mylu		
PAS_TIOGAP_T33A_D500-20240614_041026_000-LABO.wav	T33A	LABO	PERSUB		Labo	Labo	Mylu		
PAS_TIOGAP_T33A_RANG-20240618_042149_000-LABO.wav	T33A	LABO	PERSUB		Mylu	Mylu	Labo		
PAS_TIOGAP_T33A_D500-20240614_031640_000-LABO.wav	T33A	LABO	PERSUB		Mylu	Mylu	Labo		
PAS_TIOGAP_T33A_RANG-20240618_025935_000-LABO.wav	T33A	LABO	PERSUB		Pesu	Pesu			
PAS_TIOGAP_T33A_RANG-20240620_012833_000-LABO.wav	T33A	LABO	PERSUB		Labo/Mylu/Nyhu	Mylu	Labo	Nyhu	
PAS_TIOGAP_T33A_RANG-20240620_024739_000-LABO.wav	T33A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T33A_RANG-20240620_020352_000-LABO.wav	T33A	LABO	PERSUB		Labo/Pesu	Pesu	Labo		
PAS_TIOGAP_T33B_D500-20240619_005708_000-LABO.wav	T33B	LABO	PERSUB	Labo		Labo	Pesu		
PAS_TIOGAP_T33B_D500-20240620_043040_000-LABO.wav	T33B	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T33B_D500-20240618_213516_000-LABO.wav	T33B	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T33B_D500-20240620_043128_000-LABO.wav	T33B	LABO	PERSUB		Labo/	Labo			
PAS_TIOGAP_T37A_D500-20240613_022836_000-LABO.wav	T37A	LABO	PERSUB		Labo/Pesu	Labo	Pesu		
PAS_TIOGAP_T37A_D500-20240613_022756_000-LABO.wav	T37A	LABO	PERSUB		Labo	Labo			
PAS_TIOGAP_T37A_D500-20240612_025108_000-LABO.wav	T37A	LABO	PERSUB		Labo	Labo			

Species Key:
MYOLUC/MYLU = *Myotis lucifugus* (little brown bat)
MYOSEP/MYSE = Myotis septentrionalis (Northern long-eared bat)
MYOSOD/MYSO = *Myotis sodalis* (Indiana bat)
LASBOR/LABO = *Lasiurus borealis* (Eastern red bat)
EPTFUS/EPFU = Eptesicus fuscus (big brown bat)
NYCHUM/NYHU = *Nycticeius humeralis* (evening bat)
PERSUB/PESU = *Perimyotis subflavus* (tricolored bat)
40KMYO= a myotis call over 40khz that cannot be classified to a discrete species
HIFRAG- high frequency bat call fragments
HIF-ambiguous high frequency bat
LOFRAG- low frequency bat call fragments
LOF- ambiguous low frequency bat
LUSO- ambiguous call sequence from either MYSO or MYLU

APPENDIX A

Acoustic Monitoring Data Records

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T01A		**Total Valid:** 4 **of** 5
Lat: 41.967218°		**Lon:** -77.716022°		**Photo:** T01A-IMG_7428		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 772662 / v3.0.4.24054		
Elevation: 1945 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 50°	**Clutter:** med	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 20ft AGL in low shrub at edge of small stream, pointed up pipeline ROW on forest edge						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	n/a	n/a	20:17	06:04	6.0	n/a	n/a	n/a	n/a	Deployed
6/18/24	low	n/a	n/a	20:19	06:05	5.6	28	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T02A		**Total Valid:** 4 **of** 5
Lat: 41.969154°		**Lon:** -77.704351°		**Photo:** T02A-IMG_7432		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 772663 / v3.0.4.24054		
Elevation: 2025 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 45°	**Clutter:** low	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 20ft AGL along treeline edge of pipeline ROW and hay field, small stream nearby						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	n/a	n/a	20:17	06:04	6.1	n/a	n/a	n/a	n/a	Deployed
6/18/24	low	n/a	n/a	20:19	06:05	5.5	26	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T03A		**Total Valid:** 4 **of** 5
Lat: 41.972158°		**Lon:** -77.691338°		**Photo:** T03A-IMG_7441		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 111239 / v3.0.9.24137		
Elevation: 2245 ft.	**Mic AGL:** 16 ft.	**Mic Az.:** 300°	**Clutter:** med	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 16ft AGL at intersection of dirt road with power line corridor, at edge of field and fragmented forest						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	n/a	n/a	20:17	06:04	5.6	n/a	n/a	n/a	n/a	Deployed
6/18/24	low	n/a	n/a	20:19	06:05	5.2	353	5	0	1	Removed detector

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Project: Tioga Pathways		**State/County:** Tioga		**Site:** T04A		**Total Valid:** 4 **of** 5
Lat: 41.973943°		**Lon:** -77.684585°		**Photo:** T04A-IMG_7446		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 111233 / v3.0.9.24137		
Elevation: 2050 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 180°	**Clutter:** med	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 20ft AGL pointed up tall deciduous corridor of pipeline ROW on hillside						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	n/a	n/a	20:17	06:04	6.4	n/a	n/a	n/a	n/a	Deployed
6/18/24	low	n/a	n/a	20:19	06:05	5.7	3362	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T05A		**Total Valid:** 4 **of** 7
Lat: 41.975908°		**Lon:** -77.678569°		**Photo:** T05A-IMG_7451		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 111213 / v3.0.9.24137		
Elevation: 1925 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 30°	**Clutter:** med	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 20ft AGL at intersection of jeep road and small gas ROW, near field and shrubby trees, marshy						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	n/a	n/a	20:17	06:04	6.1	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	n/a	n/a	20:19	06:05	5.6	252	7	2	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T07A		**Total Valid:** 4 **of** 5
Lat: 41.979204°		**Lon:** -77.658977°		**Photo:** T07A-IMG_2729		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 53/V2.4.5		
Elevation: 2024 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 230°	**Clutter:** med	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20' AGL overlooking pond with shrubs and mixed forest nearby						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	60	160	20:49	05:37	9.1	n/a	n/a	n/a	n/a	Deployed
6/18/24	low	60	160	20:51	5:37	7.7	255	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T08A		**Total Valid:** 4 **of** 5
Lat: 41.980331°		**Lon:** -77.657232°		**Photo:** 20240226_174602		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50164/V2.4.5		
Elevation: 2031 ft.	**Mic AGL:** 15 ft.	**Mic Az.:** 45°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 15' AGL along a relatively cluttered 15' pipeline ROW in mixed forest						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	70	160	2049	537	5.9	n/a	n/a	n/a	n/a	Deployed
6/18/24	low	70	160	2049	537	5.0	27	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T09A		**Total Valid:** 4 **of** 5
Lat: 41.973384°		**Lon:** -77.630990°		**Photo:** T09A-IMG_7509		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50263 / V2.4.5		
Elevation: 2130 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 200°	**Clutter:** med	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Along treeline in an open orchard setting adjacent to open farmland						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/15/24	low	60	160	20:50	05:37	6.0	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	60	160	20:50	05:37	4.8	606	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T10A		**Total Valid:** 4 **of** 5
Lat: 41.969650°		**Lon:** -77.623388°		**Photo:** T10A-IMG_7507		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50242 / V2.4.5		
Elevation: 1870 ft.	**Mic AGL:** 15 ft.	**Mic Az.:** 180°	**Clutter:** low	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Along treeline at hilltop corner of wide-open ag field, outlet of closed-canopy ATV trails						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/15/24	low	60	160	20:50	05:37	5.9	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	60	160	20:50	05:37	5.0	1048	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T11A		**Total Valid:** 4 **of** 5	
Lat: 41.963520°		**Lon:** -77.614669°		**Photo:** T11A-IMG_7501			
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50118 / V2.4.5			
Elevation: 1670 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 290°	**Clutter:** low	**Frq:** 300	**Int:** 0	**Length:** 4s	
Station Description: In low trees pointed over an open pond, treeline separating it from wide open ag field							

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/15/24	low	60	160	20:50	05:37	6.2	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	60	160	20:50	05:37	5.2	1375	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T12A		**Total Valid:** 4 **of** 5
Lat: 41.959649°		**Lon:** -77.596677°		**Photo:** T12A-IMG_7465		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50253 / V2.4.5		
Elevation: 1740 ft.	**Mic AGL:** 12 ft.	**Mic Az.:** 90°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 12ft AGL pointed down small dry ravine in island of closed canopy immature forest, surrounded by large open ag fields						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/14/24	low	60	160	20:50	05:37	7.9	n/a	n/a	n/a	n/a	Deployed
6/19/24	low	60	160	20:50	05:37	7.8	0	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T13A		**Total Valid:** 4 **of** 5
Lat: 41.962280°		**Lon:** -77.586526°		**Photo:** T13A-IMG_2735		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50048/V2.4.5		
Elevation: 1768 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 240°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20' AGL along a small intermittent riparian stream dividing two hayfields. Stream had very low flow and a few pools nearby.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	70	160	2049	537	5.9	n/a	n/a	n/a	n/a	Deployed
6/18/24	low	70	160	2049	537	5.1	50	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T14A		**Total Valid:** 4 **of** 5
Lat: 41.962707°		**Lon:** -77.581437°		**Photo:** T14A-IMG_2737		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50162/V2.4.5		
Elevation: 1885 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 110°	**Clutter:** med	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20'AGL on edge of scrub meadow backed against mixed forest in a wet meadow. Pond and hayfields nearby.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	70	160	2049	537	5.8	n/a	n/a	n/a	n/a	Deployed
6/18/24	low	70	160	2049	537	5.1	166	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T15A		**Total Valid:** 4 **of** 5
Lat: 41.962429°		**Lon:** -77.577962°		**Photo:** T15A-IMG_2739		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50157/V2.4.5		
Elevation: 1966 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 190°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20' AGL in mixture of old meadow, shrub, and mixed forest nearby.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	low	70	160	2049	537	5.9	n/a	n/a	n/a	n/a	Deployed
6/18/24	low	70	160	2049	537	5.0	155	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T16A		**Total Valid:** 4 **of** 5
Lat: 41.961816°		**Lon:** -77.571723°		**Photo:** T16A-IMG_2741		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 772681/ v3.0.9.24137		
Elevation: 2137 ft.	**Mic AGL:** 12 ft.	**Mic Az.:** 0°	**Clutter:** high	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 12' AGL on jeep trail						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	x	x	15	2017	604	5.9	n/a	n/a	n/a	n/a	Deployed
6/18/24	x	x	15	2017	604	5.7	19	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T17A		**Total Valid:** 4 **of** 5
Lat: 41.963935°		**Lon:** -77.571733°		**Photo:** T17A-IMG_2743		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 772725/v3.0.4.24054		
Elevation: 2122 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 179°	**Clutter:** high	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 20' AGL at junction of two jeep trails						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/13/24	n/a	n/a	15	2017	604	6.0	n/a	n/a	n/a	n/a	Deployed
6/18/24	n/a	n/a	15	2017	604	5.6	97	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T18A		**Total Valid:** 4 **of** 5
Lat: 26.627617°		**Lon:** -80.265007°		**Photo:** T18A-MG_2775.jpg		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 865/V2.4.5		
Elevation: 1800 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 0°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Site located near edge of forest patch and agriculture fields, on defined, partially tree canopied understory travel corridor.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/15/24	low	70	160	20:44	05:31	7.8	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	70	160	20:50	05:37	7.7	171	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T19A		**Total Valid:** 4 **of** 5
Lat: 26.627617°		**Lon:** -80.265007°		**Photo:** T19A-IMG_2777.jpg		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 5022/V2.4.5		
Elevation: 1800 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 350°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Site located in forest patch on defined, partially tree canopied understory travel corridor. Site giving way to farm fields and larger patches of mature forest.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/15/24	low	70	160	20:50	05:37	7.8	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	70	160	20:51	5:38	7.6	1	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T20A		**Total Valid:** 4 **of** 5
Lat: 26.627617°		**Lon:** -80.265007°		**Photo:** T20A-IMG_2781.jpg		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50:50/V2.4.5		
Elevation: 1800 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 45°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Site located in forest patch on defined, partially tree canopied understory travel corridor. Site giving way to farm fields and larger patches of mature forest.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/15/24	low	70	160	20:50	05:37	7.3	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	70	160	20:51	5:38	7.1	129	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T21A		**Total Valid:** 4 **of** 5
Lat: 26.627617°		**Lon:** -80.265007°		**Photo:** T21A-IMG_2783		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50223/V2.4.5		
Elevation: 1800 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 0°	**Clutter:** High	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Site located in forest clearing with nearby open meadow with widely spaced trees. Glving way to larger patch of mature forest and agriculture fields.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/15/24	low	70	160	20:50	05:37	5.1	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	70	160	20:51	5:37	4.9	192	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T22A		**Total Valid:** 4 **of** 5
Lat: 41.961800°		**Lon:** -77.542605°		**Photo:** T22A-IMG_2706		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50201/V2.4.5		
Elevation: 2149 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 15°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20' AGL on jeep trail thru mixed forest looking into a small meadow.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	low	70	160	2049	537	5.9	n/a	n/a	n/a	n/a	Deployed
6/17/24	low	70	160	2049	537	5.1	62	5	0	1	Ranger temp did not go below 50F at T27A until 5:20am 6/15. Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T23A		**Total Valid:** 4 **of** 5
Lat: 41.958532°		**Lon:** -77.539103°		**Photo:** T23A-IMG_2704		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50241/V2.4.5		
Elevation: 2208 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 340°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20' AGL on a rigdgetop jeep trail thru mixed forest, with occasional small open meadows						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	low	70	160	2037	537	5.8	n/a	n/a	n/a	n/a	Deployed
6/17/24	low	70	160	2037	537	5.0	12	5	0	1	Ranger temp did not go below 50F at T27F until 5:20am 6/15. Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T24A		**Total Valid:** 4 **of** 5
Lat: 41.958653°		**Lon:** -77.534632°		**Photo:** T24A-IMG_2701		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 52/V2.4.5		
Elevation: 2116 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 290°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20' AGL on a jeep trail starting to ascend to a ridge top. Located in a widened meadow surrounded by mixed forest.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	low	70	160	2049	537	7.1	n/a	n/a	n/a	n/a	Deployed
6/17/24	low	70	160	2049	537	6.7	1095	5	0	1	Ranger temp did not go below 50F at T27F until 5:20am 6/15. Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T25A		**Total Valid:** 4 **of** 5
Lat: 41.953123°		**Lon:** -77.538783°		**Photo:** T25A-IMG_2708		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50236/V2.4.5		
Elevation: 2159 ft.	**Mic AGL:** 15 ft.	**Mic Az.:** 130°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 15' AGL at intersection of two jeep trails on mixed forest ridge top.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	low	70	160	2049	537	5.8	n/a	n/a	n/a	n/a	Deployed
6/17/24	low	70	160	2049	537	5.1	2	5	0	1	Ranger temp did not go below 50F at T27F until 5:20am 6/15. Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T26A		**Total Valid:** 4 **of** 5
Lat: 41.946560°		**Lon:** -77.538665°		**Photo:** T26A-IMG_2710		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50024/V2.4.5		
Elevation: 2072 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 190°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20' AGL in mixed forest ridge top in an area where the more dense understory gives way to more open woods.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	low	70	160	2049	537	5.8	n/a	n/a	n/a	n/a	Deployed
6/17/24	low	70	160	2050	537	5.1	3	5	0	1	Ranger temp did not go below 50F at T27F until 5:20am 6/15. Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T27A		**Total Valid:** 4 **of** 5
Lat: 41.941175°		**Lon:** -77.533505°		**Photo:** T27A-IMG_2712		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 111228/v3.0.9.24137		
Elevation: 1931 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 330°	**Clutter:**high	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: 20' AGL on a ridge top jeep trail thru mixed forest						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	n/a	n/a	160	2016	604	6.5	n/a	n/a	n/a	n/a	Deployed
6/17/24	n/a	n/a	160	2016	604	5.9	14	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T28A		**Total Valid:** 4 **of** 5
Lat: 41.936666°		**Lon:** -77.526051°		**Photo:** T28A-IMG_2716		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 111232/v3.0.9.24137		
Elevation: 1813 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 340°	**Clutter:** high	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: 20' AGL in open woods on a mixed forest ridge top, with a meadow nearby.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	n/a	n/a	160	2016	604	6.5	n/a	n/a	n/a	n/a	Deployed
6/17/24	n/a	n/a	160	2016	604	5.9	704	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T29A		**Total Valid:** 7 **of** 8
Lat: 41.923671°		**Lon:** -77.515661°		**Photo:** T29A-IMG_7403		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 111234 / v3.0.9.24137		
Elevation: 1340 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 0°	**Clutter:** low	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 20ft AGL at edge of dirt road and broad river riparian corridor in low trees						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	low	n/a	n/a	20:16	06:04	6.0	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	n/a	n/a	20:18	06:04	5.5	957	8	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T29B		**Total Valid:** 3 **of** 3
Lat: 41.924155°		**Lon:** -77.517099°		**Photo:** T29B-IMG_7612		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50241 / V2.4.5		
Elevation: 1340 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 330°	**Clutter:** med	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20ft AGL at edge of dirt road and broad river riparian corridor in low trees, over boggy pond						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/17/24	low	70	160	20:39	05:37	5.2	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	70	160	20:39	05:37	4.8	331	3	0	0	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T30A		**Total Valid:** 4 **of** 5
Lat: 41.919424°		**Lon:** -77.505085°		**Photo:** T30A-IMG_7417		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 111231 / v3.0.9.24137		
Elevation: 2025 ft.	**Mic AGL:** 12 ft.	**Mic Az.:** 315°	**Clutter:** high	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 12ft AGL pointed down faint logging road in deep closed canopy mixed forest on ridgeline						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	low	60	160	20:16	06:04	6.0	n/a	n/a	n/a	n/a	Deployed
6/17/24	low	60	160	20:17	06:04	5.6	436	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T31A		**Total Valid:** 4 **of** 5
Lat: 41.917020°		**Lon:** -77.500845°		**Photo:** T31A-IMG_7412		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 111230 / v3.0.9.24137		
Elevation: 2075 ft.	**Mic AGL:** 18 ft.	**Mic Az.:** 115°	**Clutter:** med	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 18ft AGL at intersection of two logging roads in dense mixed forest, near ridgeline						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	low	n/a	n/a	20:16	06:04	6.0	n/a	n/a	n/a	n/a	Deployed
6/17/24	low	n/a	n/a	20:17	06:04	5.7	3	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T32A		**Total Valid:** 4 **of** 5
Lat: 41.913847°		**Lon:** -77.489796°		**Photo:** T32A-IMG_7407		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 111236 / v3.0.9.24137		
Elevation: 1715 ft.	**Mic AGL:** 14 ft.	**Mic Az.:** 0°	**Clutter:** med	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 14ft AGL pointed into intersection of two dirt roads in forest corridor between pastures						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/12/24	low	n/a	n/a	20:16	06:04	6.0	n/a	n/a	n/a	n/a	Deployed
6/17/24	low	n/a	n/a	20:17	06:04	5.7	758	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T33A		**Total Valid:** 7 **of** 7
Lat: 41.913925°		**Lon:** -77.481064°		**Photo:** T33A-IMG_7370		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50242 / V2.4.5, 111231/ v3.0.9.24137		
Elevation: 1370 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 170°	**Clutter:** med	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20ft AGL on gravel bank of a rocky stream, parallel to mature riparian corridor.						

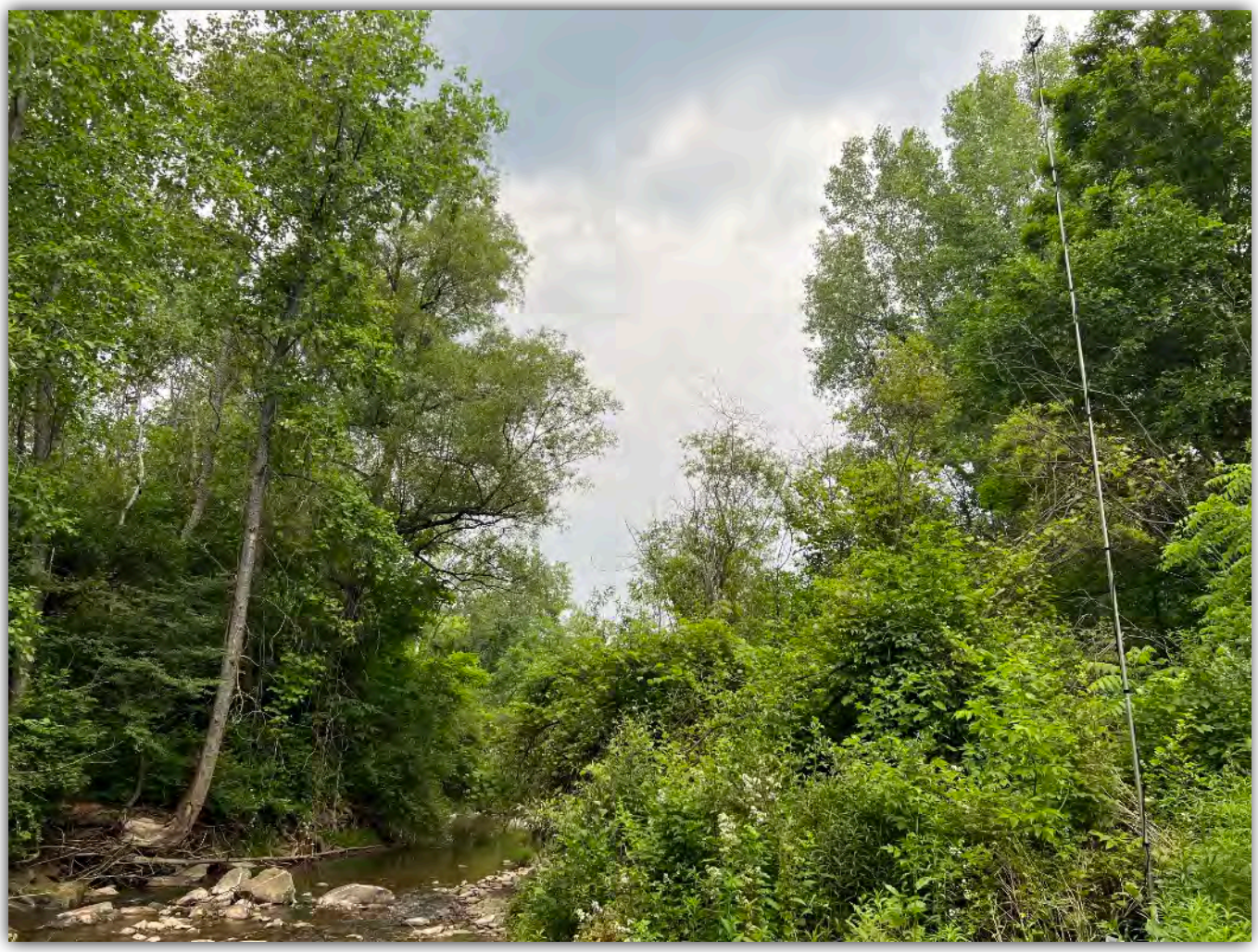
SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/11/24	low	60	160	20:48	05:37	6.0	n/a	n/a	n/a	n/a	Deployed
6/15/24	low	60	160	20:48	05:37	5.2	182	4	0	0	Removed detector
6/17/24	low	n/a	n/a	20:48	05:37	5.7	n/a	n/a	n/a	n/a	Re-deployed with Ranger detector
6/20/24	low	n/a	n/a	20:49	05:37	5.3	460	3	0	0	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T33B		**Total Valid:** 3 **of** 3
Lat: 41.913925°		**Lon:** -77.481064°		**Photo:** T33B-IMG_7619		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50236 / V2.4.5		
Elevation: 1370 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 170°	**Clutter:** med	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20ft AGL on gravel bank of a rocky stream, parallel to mature riparian corridor.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/17/24	low	70	160	20:51	05:37	5.1	n/a	n/a	n/a	n/a	Deployed to supplement T33A
6/20/24	low	70	160	20:51	05:37	4.8	100	3	0	0	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.



Project: Tioga Pathways		**State/County:** Tioga		**Site:** T34A		**Total Valid:** 4 **of** 5
Lat: 41.914852°		**Lon:** -77.474184°		**Photo:** T34A-IMG_2745		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 772676/v3.0.4.24054		
Elevation: 1730 ft.	**Mic AGL:** 15 ft.	**Mic Az.:** 200°	**Clutter:** high	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: Mic 15' AGL on a jeep trail on a mixed forest ridge top, on edge of a small meadow.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/14/24	low	60	160	20:44	05:31	5.5	n/a	n/a	n/a	n/a	Deployed
6/19/24	low	60	160	20:45	05:32	5.3	XXX	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T35A		**Total Valid:** 5 **of** 6
Lat: 41.915224°		**Lon:** -77.468301°		**Photo:** T35A-IMG_2747		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 772608/v3.0.4.24054		
Elevation: 1938 ft.	**Mic AGL:** 15 ft.	**Mic Az.:** 0°	**Clutter:** high	**Frq:** 384	**Int:** 0	**Length:** 2-10s
Station Description: On jeep trail on the edge of mature deciduous forest.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/14/24	low	60	160	20:16	06:04	4.9	n/a	n/a	n/a	n/a	Deployed
6/20/24	low	60	160	20:18	06:04	3.7	XXX	6	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T36A		**Total Valid:** 4 **of** 4
Lat: 41.914157°		**Lon:** -77.461644°		**Photo:** T36A-IMG_7368		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** D500X 50118/V2.4.5		
Elevation: 1925 ft.	**Mic AGL:** 14 ft.	**Mic Az.:** 0°	**Clutter:** low	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 14ft AGL pointed into wide open overgrown meadow corridor walled by mature deciduous trees						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/11/24	low	60	160	20:48	05:37	6.8	n/a	n/a	n/a	n/a	Deployed
6/15/24	low	60	160	20:48	05:37	6.1	1147	4	0	0	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T37A		**Total Valid:** 4 **of** 4
Lat: 41.910223°		**Lon:** -77.452892°		**Photo:** T37A-IMG_7364		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50263/V2.4.5		
Elevation: 1905 ft.	**Mic AGL:** 12 ft.	**Mic Az.:** 115°	**Clutter:** low	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 12ft AGL pointed into active cow pasture along deciduous tree line at top of hill						

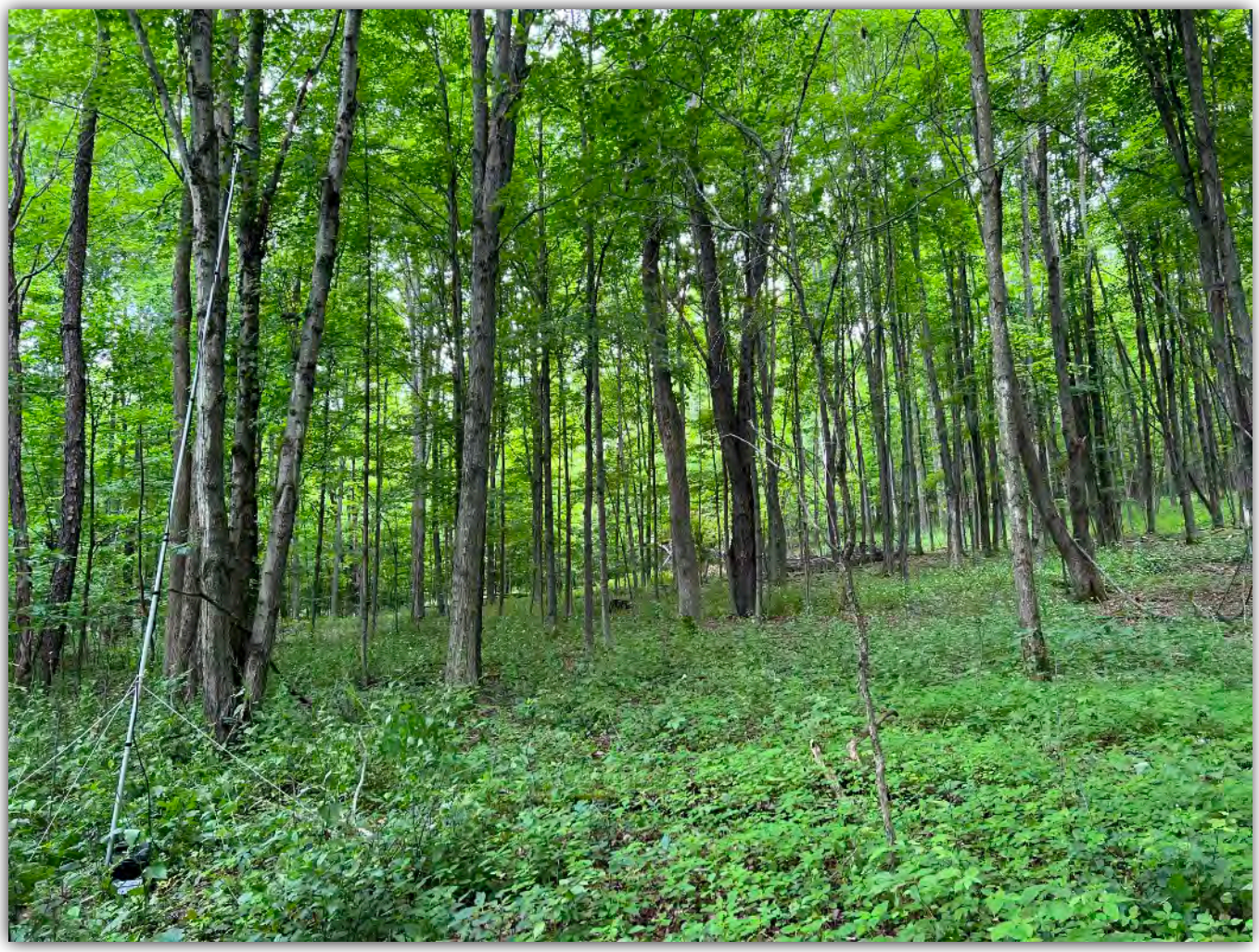
SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/11/24	low	60	160	20:48	05:37	6.0	n/a	n/a	n/a	n/a	Deployed
6/15/24	low	60	160	20:48	05:37	4.8	1595	4	0	0	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T38A		**Total Valid:** 4 **of** 9
Lat: 41.914108°		**Lon:** -77.439030°		**Photo:** T38A-IMG_7358		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50054 / V2.4.5		
Elevation: 1730 ft.	**Mic AGL:** 16 ft.	**Mic Az.:** 250°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 16ft AGL in closed canopy forest opening						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/11/24	low	60	160	20:36	05:37	8.2	n/a	n/a	n/a	n/a	Deployed
6/15/24	low	60	160	20:36	05:37	7.6	3	4	4	0	Detector serviced and redeployed.
6/20/24	low	60	160	20:36	05:37	7.6	5	5	0	1	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.



Project: Tioga Pathways		**State/County:** Tioga		**Site:** T39A		**Total Valid:** 4 **of** 4
Lat: 41.913054°		**Lon:** -77.428511°		**Photo:** T39A-IMG_2667		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50223/V2.4.5		
Elevation: 1880 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 60°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20' AGL in a small overground shrub meadow surrounded by mixed forest and hayfields						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/11/24	low	70	160	20:48	05:37	5.9	n/a	n/a	n/a	n/a	Deployed
6/15/24	low	70	160	20:48	05:37	5.1	59	4	0	0	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T40A		**Total Valid:** 4 **of** 4
Lat: 41.909042°		**Lon:** -77.411558°		**Photo:** T40A-IMG_2672		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50222/V2.4.5		
Elevation: 1945 ft.	**Mic AGL:** 15 ft.	**Mic Az.:** 200°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 15' AGL on jeep trail thru deciduous forest connecting hayfields						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/11/24	low	70	160	20:48	05:37	8.3	n/a	n/a	n/a	n/a	Deployed
6/15/24	low	70	160	20:48	05:37	7.9	10	4	0	0	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T41A		**Total Valid:** 4 **of** 4
Lat: 41.903939°		**Lon:** -77.398154°		**Photo:** T41A-IMG_2673		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 865/V2.4.5		
Elevation: 1812 ft.	**Mic AGL:** 20 ft.	**Mic Az.:** 280°	**Clutter:** edge	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 20' AGL on edge of large hayfield backed to deciduous forest						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/11/24	low	70	160	20:48	05:37	8.3	n/a	n/a	n/a	n/a	Deployed
6/15/24	low	70	160	20:48	05:37	7.8	438	4	0	0	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

Project: Tioga Pathways		**State/County:** Tioga		**Site:** T42A		**Total Valid:** 4 **of** 4
Lat: 41.900562°		**Lon:** -77.380027°		**Photo:** T42A-IMG_2676		
Biologist: David Riggs, John Chenger				**Detector+Firmware:** 50104/V2.4.5		
Elevation: 1665 ft.	**Mic AGL:** 12 ft.	**Mic Az.:** 90°	**Clutter:** high	**Frq:** 300	**Int:** 0	**Length:** 4s
Station Description: Mic 12' AGL on edge of pipeline ROW, overlooking a 8' wide stream.						

SERVICE	TS	GAIN	TL	START	STOP	BAT	FILES	TOTAL NIGHTS	INVALID TECH	INVALID WEATHER	COMMENTS
6/11/24	low	70	160	20:48	05:37	8.0	n/a	n/a	n/a	n/a	Deployed
6/15/24	low	70	160	20:49	05:37	7.3	9	4	0	0	Removed detector

CLUTTER: NO = stadium-sized open meadow without vegetation or topography interfering with the airspace, LOW = large fields or other open areas bordered by hedgerows or tree lines, EDGE = significant vegetation, topography, or anthropogenic structures bordering a NO or LOW clutter open area, MED = large area with widely spaced trees and other topographic or anthropogenic structures, HIGH = understory travel corridors either along tree-covered roads or within a forested clearing or stream corridor.

APPENDIX B

Acoustic Data: Attached Electronic Document

AppendixB-TiogaPathwaysMasterID20240821.xlsx

This is the excel spreadsheet from which the final tables were created from and contains file level information on all recordings.

APPENDIX C

Biologist Qualifications

John Chenger

Carlisle, Pennsylvania

jchenger@batmanagement.com
(814) 442-4246

Englewood, Florida

Capture Surveys *PGC/USFWS Compliance*	*Florida bonneted bat, Indiana bat,* *Northern long eared bat, Eastern small-footed bat*	*Bat Acoustic Analysis* *Bat Survey Training*

Bat Conservation and Management, Inc. 1999 to Present

John is President of Bat Conservation and Management, Inc. (BCM), a company he formed in 1998 to provide specialized bat-related consulting services nationwide, remarkably successful artificial bat roosts, and field gear for bat research. John's experience includes thousands of hours underground, mapping, photographing, and winter inventorying caves and mines. Above ground experience includes summer and fall bat capture surveys, abandoned mine and cave assessments, and rocky habitat assessments. John is an expert in bat echolocation call analysis throughout North America. His first experience with radio tracking spring migrating Indiana bats was in 2000, and in 2019 he led a massive fall project coordinating up to 15 ground and air trackers. Since 2004 he has been a recurring instructor at nationwide training workshops offered by Bat Conservation International and Bat Survey Solutions, a curriculum designed to train serious students, consultants, agency biologists, and land managers in current research and management techniques for the study and conservation of bats. Other work included the Pennsylvania Game Commission, professional photographer & videographer, and Director of Interpretation at a commercial cave.

- Designed, supervise and completed projects to meet USFWS section 7 and 10 Florida bonneted bat, Indiana bat, and Northern long ear bat consultation needs.
- Has supervised 20 employees, sampling over 2,200 summer mist net sites and fall & spring mine surveys in 18 states across more than 200 projects. Federally permitted (TE212440-7) nationwide.
- Conducts acoustic monitoring studies in 8 states and provides expert manual analysis of recordings. Teaches SonoBat, Kaleidoscope, Echoclass, Transect, and BCID software, and Binary Acoustics, Pettersson, Titley, BatBox, Elekon, and Wildlife Acoustics bat acoustic hardware.
- Supervised radio tracking of over 260 bats of 6 species since 2000, including Myso, Myse, Myle, Mylu, Labo, and Laci. Ground and air tracking included migration, summer foraging, and locating roosts. Partnered with the PA Game Commission, NYDEC, VT F&W, and the National Park Service on significant tracking projects.
- Supervise surveys that meet needs of developers, agencies, and consultant partners including Florida bonneted bat habitat and acoustic surveys, mist net surveys, Allegheny woodrat surveys, cave and mine project area evaluations, small-footed bat rocky habitat evaluations, and artificial roost design, construction, and siting.
- Proficient with macro, near infrared, thermal, multi-flash photography, studio photography, CCTV systems, camera traps, video production, multi-camera live event production, and high speed video and still photography. John has a video, photo, and editing studio to support education outreach projects with partners such as Merlin Tuttle's Bat Conservation and Bat Survey Solutions.
- Instructed or co-led over 80 training workshops nationwide for federal & state biologists, land managers, and consultants for proper use of acoustic monitoring equipment, data management, and bat capture techniques.
- Former President of the Northeast Bat Working Group & Sub-Region Coordinator for the National Cave Rescue Commission. Visited over 1,000 caves, mines, tunnels and has published cave maps, descriptions, and photographs in various newsletters and books.
- Since 2001, routinely presents on relevant topics at professional conferences such as Florida Bonneted Bat Working Group, Florida Bat Working Group, Northeast Bat Working Group, Southeast Bat Diversity Network, Western Bat Working Group, North American Symposium on Bat Research, as well as public outreach representing conservancy groups and National Park Service.

Partial List of Select Acoustic-Monitoring Projects

2021 - Florida bonneted bat acoustic survey within the Abiaki Prairie Restoration Project in Hendry County, Florida. Six paired acoustic bat monitoring stations were deployed for a total of 63 successful detector nights. Over 4,300 recordings were analyzed: Client: South Florida Water Management, Holly Andreotta handreot@sfwmd.gov

2021 - Bobby Jones Golf Course in Sarasota County, Florida. A full acoustic survey was conducted to determine the presence or probable absence of the federally endangered Florida bonneted bat (*Eumops floridanus*). Nineteen acoustic bat monitoring stations were deployed for a total of 306 successful detector nights. Over 83,400 recordings were analyzed in order to determine if Florida bonneted bats were present. Client: Sue Martin susan.Martin@sarasotaFL.gov

2021 - Doral, Florida. Two acoustic bat monitoring stations were deployed along the west and southern perimeter of the property where the only trees are present. Over 4,000 recordings were analyzed over 24 successful recording nights in order to determine if Florida bonneted bats were present within the Project Area. Client: Mike Nichols mike@mjnicholsllc.com

2021 - JRE Canal, Jupiter, Palm Beach County, Florida. The Project Area was surveyed using five passive acoustic monitoring stations for 32 successful detector nights and over 15,500 recordings were analyzed in order to determine if Florida bonneted bats were present within the Project Area. Client: Ed Weinberg eweinberg@ewconsultants.com

2021 - Naples, Florida. A full acoustic survey to determine the presence or probable absence of the federally endangered Florida bonneted bat. Four acoustic bat monitoring stations were deployed for a total of 61 successful detector nights and over 460 recordings were analyzed. Client: Kimley-Horn, Rick Browne rick.Browne@kimley-horn.com

2021 - TriBoro Industrial Park, Scranton, Pennsylvania. BCM reanalyzed acoustic data from previous work and guided the client thru interpreting results of mine surveys for the USFWS and PA Game Commission. 30+ abandoned mines and hundreds of acres of rocky habitat were reassessed and monitored. Client: Triboro Industrial Park, LLC, Richard Evans rwegreenhouse@gmail.com

2021 - Paterson Great Falls National Historic Park, New Jersey. Four acoustic bat monitoring stations were deployed for a total of 28 successful detector nights. Approximately 2200 recordings were analyzed manually. Client: National Park Service, Shelia Cowell Sheila_Colwell@nps.gov

2021 - Four Naval Research Laboratory (NRL) installations in Washington, D.C., Virginia, and Maryland. Surveys consisted of a summer and fall season using 12 monitoring stations and over 13,000 recordings was analyzed in order to determine species present at the time of the survey. Contact Alisha Sutton alisha.sutton@nrl.navy.mil

2021 - Camp Smith Army National Guard. Twenty-four acoustic bat monitoring stations were deployed throughout the property near potential foraging and roosting habitat for a total of 607 successful detector nights. Over 24,000 recordings were analyzed in order to determine bat species present at the time of the survey. Contact Cristy Boyd CBoyd@firstenvironment.com

2020 - Flash, Miami-Dade County, Florida. A full acoustic survey for the federally endangered Florida bonneted bat (Eumops floridanus). Seven acoustic bat detectors were set for a total of 126 successful detector nights and over 59,000 recordings were analyzed. Client: Mike Nichols mike@mjnicholsllc.com

2020 - Minto West, Palm Beach County, Florida. A full acoustic survey on a 1000+ acre property was conducted for the Florida bonneted bat (Eumops floridanus). Twenty-nine acoustic bat monitoring stations were established for a total of 430 nights and over 28,000 sound recordings were analyzed. Client: Ed Weinberg eweinberg@ewconsultants.com

2020 - Okeechobee County, Florida. A full acoustic survey was conducted for the Florida bonneted bat (Eumops floridanus), surveyed using eight acoustic bat detectors for a total of 122 successful detector nights, with over 11,500 recordings assessed. Client: Chris Sapotnick sopotnick@ecf-llc.com

2020- Mitigation Site, Palm Beach County, Florida. A full acoustic survey for Florida bonneted bats (Eumops floridanus) using six acoustic bat detectors for a total of 105 successful detector nights requiring over 9,200 recordings to be analyzed. Client Jerry Renick ecotoneservices@gmail.com

2012 - Capture and Acoustic Field Survey for the US Army Corps of Engineers (Illinois/Missouri), involving site selection for capture and acoustic inventories designed to assess management needs for T&E bats, data collection, and reviewing, vetting and reporting results for over 120 bats captured and 12,000 echolocation call recordings collected. Client: Benjamin.M.Mcguire@usace.army.mil

2014 - Acoustic Field survey for URS Corporation to assess Myotis leibii habitat along a proposed PA Power and Light, ROW near Wilkes-Barre PA: Over 190 bat-detectors, collecting and analyzing over 90,000 recordings from nearly 6,000 hours of monitoring. Client: david.yezuita@aecom.com

2016 - Allegheny Mountain Bat Study near Somerset, PA. Nineteen simultaneous acoustic monitoring stations were maintained continuously for four months collecting over 40,000 files containing bat calls with over 14,000 hours of monitoring. Myotis-class files were compared between three different project areas to determine relatively activity. Client contact: Tammy Sherwin, Tammy.Sherwin@cdicorp.com

2016 - Acoustic Field Survey for the Natick Soldier Systems Center near Boston, MA. Four (4) acoustic sites were established near locations suggested by the NSSC within the installation for a combined total of 248 monitoring nights, yielding a total of 28,416 confirmed bat passes. Utilizing an acoustic software program with auto classification followed by manual analysis by an expert acoustic bat analyst, a total of six bat species were confirmed. Contact Judi Johnson Judith.L.Johnson@usace.army.mil

2016 - Capture and Acoustic Field Survey for the Sky Island Alliance and USDA Forest Service to survey bat occurrence at man-made wetlands designed for the recovery of the Chiricahua Leopard frog in Rucker Canyon (Chiricahua Mountains) AZ; site selection for capture and acoustic inventories over a 3-site, 5- night period; over 230 acoustic monitoring hours, 20 capture survey hours, over 170 bats captured and 7,700 echolocation call recordings analyzed and manually vetted. Contact: Carianne Campbell carianne@skyislandalliance.org

2017 - Florida Bonneted Bat Acoustic Surveys, Punta Gorda, FL. 2017. BCM biologists conducted presence/absence acoustic surveys and provided expert call analysis reporting for the endangered Florida bonneted bat in central and southern Florida. 13 detectors recorded for several weeks generating over 20,000 files containing bat calls. Client: Florida Power and Light, contact Brady.Walker@fpl.com

2017 - Florida Bonneted Bat Acoustic Surveys, Punta Gorda, FL. 2017. BCM biologists conducted presence/absence acoustic surveys and provided expert call analysis reporting for the endangered Florida bonneted bat in central and southern Florida. 16 detectors recorded for several weeks generating over 25,000 files containing bat calls. Client: Southwest Engineering and Design, contact Gary Bayne gbayne@sedfl.com

2017 - Florida Bonneted Bat Acoustic Surveys, Westin, FL. 2017. BCM biologists conducted presence/absence acoustic surveys and provided expert call analysis reporting for the endangered Florida bonneted bat in southern Florida. Two detectors recorded for several weeks generating over 5,000 files containing bat calls. Client: Lotis Engineering Group, contact Miles Walz-Salvador walz-salvador@thelotisgroup.com

2018 - Florida Bonneted Bat Acoustic Surveys, Hialeah, FL. 2018. BCM biologists conducted presence/absence acoustic surveys and provided expert call analysis reporting for the endangered Florida bonneted bat in southern Florida. Three detectors recorded for several weeks generating over 5,000 files containing bat calls. Client: Kimberly-Horn and Associates, contact Meredith Aiken Meredith.Aiken@kimley-horn.com

2019 - Florida Bonneted Bat Acoustic Data Analysis. Analysis of bat species presence for 8 sites spanning multiple nights consisting of thousands of recordings. Client: ESA, contact Robert Mrykalo RMrykalo@esassoc.com

2018 - Florida Bonneted Bat Acoustic Data Analysis. Analysis of bat species presence for 1600 recordings. Client: South Florida Water Management District, contact Holly Andreotta handreot@sfwmd.gov

2017 - Capture and Acoustic Field Survey for the Sky Island Alliance and Audubon-Whitell Research Ranch to survey bat occurrence at managed wetlands designed for mitigation to aid recovery of the Chiricahua Leopard Frog (Santa Cruz County, Arizona); site selection for capture and acoustic inventories of a 4-site; 7-night period with over 12 capture survey hours and 272 acoustic survey hours, where 12 individual bats of three species were captured and nearly 4,000 individual bat passes were recorded and almost 2,800 were confidently identified to 14 different species. Contact: Carianne Campbell carianne@skyislandalliance.org

2018 - Acoustic Field Survey at the Audubon-Whitell Research Ranch to study the effect of low power acoustic deterrents on bat activity. Four detectors were recording for nearly a month generating thousands of recording manually reviewed to species. Client Electric Power Research Institute, contact Christian Newman cnewman@epri.com

2016 - Acoustic Analysis of nearly 600 full-spectrum echolocation call recordings from 17 passive monitoring deployments and 2 mobile transects for the Environmental Research Group, LLC of Bainbridge GA. The analysis included auto-classification outputs from SonoBat4 (NE) and KaliedoscopePRO with manual vetting of both results to document six common eastern bat species.

2017 - Manual Vetting of nearly 400 full-spectrum echolocation call recordings, representing almost 500 individual bat passes, from select monitoring locations during the years of 2014 thru 2016 for the Canadian Wildlife Service, Northern Conservation Division, Whitehorse YT. Analysis included auto-classification outputs from SonoBat4 (WY) with manual vetting to confirm the presence of four (4) bat species including three (3) common northwestern Myotis species.
Contact debbie.vandewetering@ec.gc.ca

US Route 219 AMLF Trapping in Pennsylvania, Fall 2017 MYSE/MYLE/PESU

US Route 219 AMLF Trapping in Pennsylvania, Fall 2016 MYSE/MYLE/PESU

US Route 219 AMLF Trapping in Pennsylvania, Fall 2015 MYSE/MYLE/PESU

US Route 219 AMLF Trapping in Pennsylvania, Fall 2014 MYSE/MYLE/PESU

I-80 WB Rockfall Mitigation Project, New Jersey 2017

2015 Bat Survey Efforts for U.S. Naval District, Washington, Indian Head Proving Ground, King George County, Maryland, MYSE/MYLE/PESU was analyzed in 2016

2015 Bat Survey Efforts for U.S. Naval District, Washington, Naval Support Facility, Dahlgren Division, Virginia, MYSE/MYLE/PESU was analyzed in 2016

Acoustic Bat Surveys NSF Dahlgren, July 2016, MYSE/MYLE/PESU was analyzed

Acoustic Bat Surveys NSF Annapolis, July 2016, MYSE/MYLE/PESU was analyzed

Acoustic Bat Surveys NSF Carderock, July 2016, MYSE/MYLE/PESU was analyzed

Northern Access National Fuels Acoustic Monitoring Project, NY 2016, 110 sites (220+ nights) analyzed including those with MYSE/MYLE/PESU

Raven Rock Mountain Complex, PA, 2016, data with MYSE/MYLE/PESU was analyzed

PPL Electric Utilities Corporation Northeast-Pocono Reliability Project; Eastern Small-footed Myotis Emergence Survey, 2014, PA, 100+ site data with MYSE/MYLE/PESU was analyzed

2016 Allegheny Tunnel Acoustic Project, PA 2016, 19 sites deployed for multiple months MYSE/MYLE/PESU was analyzed

2017 Seneca Army Depot Energy Project, NY, MYSE/MYLE/PESU was analyzed

Mount Hope Mine Fall Trapping & Acoustic, 2015 MYSE/MYLE/PESU was analyzed

Mount Hope Mine Fall Trapping & Acoustic, 2016 MYSE/MYLE/PESU was analyzed

Rt. 11 Bat Acoustic Survey, CT, 2012 MYSE/MYLE/PESU was analyzed

Partial List of Custom Training Classes Developed and Presentations

- 1995-2012 “Bat Conservation and Management” workshops, “Educator” workshops and “Decision Makers” workshops for Bat Conservation International, Inc. (BCI, Austin TX) conducted in Pennsylvania
- 2001-2012 “Acoustic Monitoring for Bats” workshops for BCI at venues in Arizona, California, Kentucky and Pennsylvania.
- 2008-present “Bat Study and Survey Techniques” workshops for Bat Conservation and Management, Inc. (BCM, Carlisle PA) at venues in Arizona, California, Indiana, Kentucky, Maryland, New Jersey, New York, Ontario, Pennsylvania, Tennessee, Texas and West Virginia.
- 2008 “Forest Bat Conservation and Inventory Techniques” workshop for the United States Forest Service, Coronado National Forest in Tucson, AZ, 18-19 September.
- 2009 “Acoustic Monitoring as a Non-contact Bat Survey Method” workshop for Cleveland Metroparks in Akron, OH, 25 August.
- 2013 “SonoBat Acoustic Analysis Techniques” class for the Pima County Parks Department, in Tucson, AZ, 22 April.
- 2013 “Acoustic Survey Field Techniques for Bat Studies” workshop for the United States Fish and Wildlife Service, in State College, PA, 20-21 October
- 2014 “Bat Detectors and Acoustic Survey Protocols” workshop for the United States Fish and Wildlife Service, in Dixon, IA, 3-5 June.
- 2015 “Acoustic Data Management” training workshops in Alton, IL; Holidaysburg, PA; Harrisburg, PA; and Fairfield, ME.
- 2015 “Combined Field Survey Techniques” training workshops in Portal, AZ; Tulelake, CA; and Mammoth Cave, KY.
- 2015 “Field Survey Techniques” training workshop for National Park Service Employees, Mammoth Cave, KY.
- 2016 “Acoustic Data Management” training workshops in Duluth, MN; Wells, ME; and Harrisburg, PA.
- 2016 “Acoustic Survey Methods” training workshop in Punta Gorda, FL
- 2016 “Combined Field Survey Techniques for Bats” training workshops in Portal, AZ; Tulelake, CA; and Mammoth Cave, KY.
- 2016 “Field Survey Techniques for Bats” training workshop for California Department of Fish and Game, Tulelake, CA.
- 2017 “Acoustic Survey Methods” training workshops in Punta Gorda, FL and Tucson, AZ
- 2017 “Acoustic Data Management” training workshop in Harrisburg, PA
- 2017 “Combined Field Survey Techniques” training workshops in Portal, AZ; Tulelake, CA; and Mammoth Cave, KY.
- 2017 “Field Survey Techniques” training workshop for National Park Service staff in Tulelake, CA.
- 2018 “Acoustic Survey Methods” training workshop in Punta Gorda, FL
- 2018 “Acoustic Data Management” training workshop in Harrisburg, PA
- 2018 “Combined Field Survey Techniques for Bats” training workshop in Portal, AZ; Co-Lead Instructor
- 2018 “Combined Field Survey Techniques for Bats” training workshop in Tulelake, CA; Co-Lead Instructor
- 2018 “Combined Field Survey Techniques for Bats” training workshop Cave City, KY.; Co-Lead Instructor
- 2019 “Acoustic Data Management” training workshop in Tulsa, OK; Co-Lead Instructor
- 2019 “Acoustic Survey Methods” training workshop in Tucson, AZ; Co-Lead Instructor
- 2019 “Cave Management Workshop” training workshop in San Marcos, TX; Co-Lead Instructor
- 2019 “Experience Texas Bats With Merlin Tuttle’s Bat Conservation”, Big Bend National Park, TX; Instructor

- 2022 Combined Bat Field Techniques Course, Portal, AZ, Co-Lead Instructor
- 2022 National Bat Gate Workshop, Wilkes-Barre, PA; Co-Lead Instructor
- 2022 Bat Survey Techniques Workshop, Cave City, KY; Lead Instructor capturing MYSO, MYLU, MYLE, PESU, MYGR, LASE, LABO, and LACI
- 2022 Acoustic Monitoring Workshop, Punta Gorda, FL: Lead instructor
- Presented the Acoustic Data Management Course in Wells, Maine at the Wells National Estuarine Research Reserve April 2016, data with MYSE/MYLE/PESU was analyzed
- Presented the Acoustic Data Management Course in Duluth, MN at the University of MN-Duluth, Natural Resources Research Institute March 2016, data with MYSE/MYLE/PESU was analyzed
- Presented the Acoustic Data Management Course in Harrisburg, PA October 2017, data with MYSE/MYLE/PESU was analyzed
- Presented the Acoustic Data Management Course in Harrisburg, PA October 2016, data with MYSE/MYLE/PESU was analyzed
- Presented the Acoustic Data Management Course in Harrisburg, PA October 2015, data with MYSE/MYLE/PESU was analyzed
- Presented “Bat Detectors and Acoustic Survey Protocols” workshop for the United States Fish and Wildlife Service, in Dixon IA, June 2015, data with MYSE/MYLE/PESU was analyzed
- Presented “Bat Survey Protocols: A Field Training Workshop for National Parks Service Staff” in Park City KY, September 2015, data with MYSE/MYLE/PESU was analyzed