

# Will Anderson

## Staff Biologist - Field Crew Leader

### Education

Bachelor of Science in General Science from the Pennsylvania State University

### Years of experience

7+

### Registrations/Certifications

2018 - PA DCNR Wild Plant Management Permit Holder

### Key skills

Wetland Delineation, Threatened and Endangered Species Surveying, Resource Restoration

### Summary

Mr. Anderson has over 7 years of experience as a staff biologist in environmental and natural resource related fields. Experience includes:

- Leading on wetland delineations and wetland presence/absence investigations; Prepare reports summarizing the findings of investigations for submittal to clients and the Pennsylvania Department of Environmental Protection (PADEP);
- Preparing Joint Permit Applications for water encroachment and obstruction activities for clients submittal to the PADEP;
- Performing scheduled assessments to monitor the success of established wetlands and stability of newly constructed beds, banks, and in-stream structures;
- Aquatic macroinvertebrate assessments to measure relative water quality;
- Managing construction of new stream beds, banks, and in-stream structures; Managing the installation of riparian vegetation

### Professional history

2008 – 2009 LandStudies, Inc.

2011 – Present URS/AECOM

### Selected project experience

#### **Biological and Aquatic Assessment, Specialty Granules Incorporated**

Assist in survey and assessment of potential impacts to high quality headwater tributaries related to the expansion of existing quarry operations. Collect water quality parameters, flow measurements, and benthic macroinvertebrates to determine water and habitat quality within the watersheds of high quality headwater tributaries. Sub-sort benthic macroinvertebrate samples for future identification following an adapted protocol set forth in the US Environmental Protection Agency 1999 Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers. Assist with report preparation and data analysis detailing the results of the aquatic biological survey. Central Area High Quality Monitoring, Blue Ridge Summit, PA, Specialty Granules Inc.

#### **T&E Species Potential Impact Review, Specialty Granules Incorporated**

Assist with desktop review of potential impacts to T&E species using the Pennsylvania Natural Diversity Inventory Environmental Review Tool (PNDI ER Tool) resulting from the expansion of existing quarry operations. Assist with drafting letters to State and Federal agencies requiring correspondence related to potential impacts to T&E species identified within specific project areas using the PNDI ER Tool. Central Area, Glatfelter King Tract, and West Flank Expansions, Blue Ridge Summit, PA, Specialty Granules Inc.

#### **Well Pad Aquatics Review, Chesapeake Energy Corporation**

Assist with report preparation and data analysis detailing the results of an aquatic biological survey following the unintended release of impounded brine water from an active well pad. Chesapeake At gas Well Pad, Leroy Township, PA, Chesapeake Energy Corporation

#### **Biological and Aquatic Assessment, Chesapeake Energy Corporation**

Conducted initial survey and assessment of three tributaries to Towanda Creek following a stray gas event related to the drilling of a natural gas well. Collected water quality parameters and benthic macroinvertebrates for analysis in determining any effects related to this event. Sub-sort benthic macroinvertebrate samples for future identification following an adapted protocol set forth in the US Environmental Protection Agency 1999 Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers. Chesapeake-Franklin Investigation, Leroy Township, PA, Chesapeake Energy Corporation.

#### **Natural Gas Pipeline Wetland and Watercourse Investigation, Angelina Gathering Company- Angelina Pipeline**

Conduct wetland presence/absence survey and wetland and watercourse delineations for approximately ten miles of proposed natural gas pipeline right of ways. Angelina Pipeline, Susquehanna and Bradford Counties, PA, Angelina Gathering Company.

#### **Natural Gas Well Pad Wetland and Watercourse Investigation, Cabot Oil and Gas**

Conduct wetland presence/absence survey and wetland and watercourse delineations for twenty five proposed natural gas well pad locations. Prepare post-field work wetland delineation reports detailing the findings of the performed wetland and watercourse investigations. Cabot Well Pads, Susquehanna and Bradford Counties, PA, Cabot Oil and Gas.

#### **Natural Gas Pipeline Wetland and Watercourse Investigation, Susquehanna Gathering, Bluestone**

Conduct wetland presence/absence survey and wetland and watercourse delineations for approximately fifteen miles of proposed natural gas pipeline right of ways. Bluestone Pipeline

Phase III, Susquehanna County, PA, Bluestone Gas Corporation of New York, Inc.

### **Impoundment/Water Line Wetland Investigation, Southwestern Energy Production Company**

Conduct wetland presence/absence survey and wetland and watercourse delineations for three proposed impoundment sites and approximately four miles of proposed freshwater gathering lines. SWN Impoundments, Susquehanna and Lycoming Counties, PA, Southwestern Energy Production Company (SEPCO).

### **Seismic Blast Line Survey, Seneca Resources**

Investigated proposed seismic transects for wetland and watercourse presence/absence for avoidance and transect adjustment for Seneca Owl's Nest, Warren, PA, Seneca Energy Production Company. Reviewed transect and seismic locations for T&E species conflicts and invasive presence/avoidance. Collected Global Position System (GPS) on habitat and transect criteria utilizing the Trimble Geo XH. Reviewed blast shot transect mapping for accuracy.

### **Natural Gas Pipeline Post-Construction Erosion and Sedimentation Pollution Control Inspection, Williams Midstream Services, LLC**

Assist with the physical inspection of Erosion and Sedimentation Pollution Control (E&SPC) implementation on post-construction natural gas pipeline corridors. Conduct global positioning system (GPS) survey of all E&SPC structures. Photograph and note any improper construction/implementation or failure of E&SPC structures within the pipeline corridor. Transfer survey data from GPS unit to desktop/laptop computer and forward to appropriate recipients. Williams Natural Gas Pipeline, Susquehanna County, PA, Williams Midstream Services, LLC.

### **Environmental Inspection for Natural Gas Pipeline Construction Project, Bluestone Pipeline Company of PA, LLC**

Conduct environmental inspection for construction activities along approximately 34 miles of pipeline. Work closely with foreman and labor crews to insure construction activities are performed in accordance with the permit regulations set forth by the PADEP. Monitor open cut and horizontal directional drill (HDD) crossings of streams and wetlands to insure permit compliance. Prepare reports detailing the findings of these inspections for submission to proper recipients. Perform follow-up inspections to insure proper maintenance and repair of erosion control devices. Bluestone Gathering Pipeline Construction Project, Susquehanna County, PA, Bluestone Pipeline Company of PA, LLC

### **Natural Gas Pipeline Post-Construction Impact Assessment of Wetlands and Watercourses, Williams Midstream, LLC**

Conduct post-construction wetland and watercourse impact assessment for non-permitted, regulated surface water resources for approximately eleven miles of natural gas pipeline. Evaluation and delineation of existing non-permitted wetlands and watercourses impacted by pipeline construction. Take field notes for all delineated features for the purpose of completing post-process paperwork including wetland data

sheets, daily progress reports, and review of mapping generated from field efforts. Conduct global positioning system (GPS) survey of all delineated features. Transfer survey data from GPS unit to desktop/laptop computer and forward to appropriate recipients. Transfer shape files/drawings from desktop/laptop to GPS unit for use during field work. Complete post-processing paperwork including wetland data sheets. CTA Zone 2008, Susquehanna County, PA, Williams Midstream, LLC

### **Bog Turtle Population Survey, Maryland Department of Natural Resources**

Assist with population survey using Phase II survey protocols established by the Maryland Department of Natural Resources for Bog Turtle (*Glyptemys muhlenbergii*) in areas with known bog turtle populations. Assist with the collection of data from each individual found during population survey. Annual Bog Turtle Population Survey, Baltimore Maryland, Maryland Department of Natural Resources.

### **T&E Bat Species Survey, Dominion Transmission**

Assist with mist netting surveys for T&E bat species for a proposed gas pipeline corridor. Assisted with mist net site set-up and site monitoring with a qualified surveyor. Atrium Bat Survey, Wheeling, WV, Dominion Transmission Inc.

### **Natural Gas Pipeline Post-Construction Resource Monitoring, Millennium Pipeline Co.**

Perform post-construction monitoring for wetlands and streams along the Millennium Pipeline right of way to determine if pre-construction conditions were restored. Complete wetland and stream data forms for each resource within the right of way as well as a reference resource outside the right of way in order to compare the current post-construction conditions. Prepare a report detailing the findings of each resource and determine whether or not pre-construction conditions were restored. Make suggestions for the restoration of resources not meeting pre-construction conditions. Millennium Pipeline, Millennium Pipeline Co. Steuben, Chemung, Tioga, Broome, Delaware, Sullivan, Orange, and Rockland County NY.

### **Environmental Inspection for Post-Construction Wetland and Stream Restoration, Millennium Pipeline Co.**

Oversee the post-construction restoration of wetlands and streams in order to restore pre-construction conditions. Work closely with a subcontracted construction crew to insure the proper planting of trees and shrubs and the application of wetland seed mix within the required wetlands. Observe the removal of invasive plant species from wetlands. Monitor minimal grading by large equipment to restore pre-construction grades within wetlands. Monitor the restoration and stabilization of eroded stream banks. Observe and insure the proper bank stabilization procedures were followed including the installation of coconut logs and live willow stakes. Insure all work was performed within the permit regulations and no additional resources were impacted during the restoration work. Prepare daily reports outlining the work completed and measures taken to insure the success of the restoration. Perform follow-up inspections of all resources and prepare a

report outlining the status of each resource. Millennium Pipeline, Millennium Pipeline Co. Steuben, Chemung, Tioga, Broome, Delaware, Sullivan, Orange, and Rockland County NY.

### **Phase I & II Bog Turtle Surveys, Pennsylvania Turnpike Commission**

Assist with habitat assessment and population survey using Phase I and Phase II survey protocols established by the U.S Fish and Wildlife Service and Pennsylvania Fish and Boat Commission for several proposed project areas located along the Pennsylvania Turnpike right-of-way. Assist in the data analysis and preparation of reports outlining the findings of the surveys. Pennsylvania Turnpike, Chester County, PA, Pennsylvania Turnpike Commission.

### **Natural Gas Pipeline Wetland and Watercourse Investigation, Williams Midstream Services, LLC**

Conduct wetland presence/absence survey and wetland and watercourse delineations for approximately twenty miles of proposed natural gas pipeline right-of-ways. Williams Gathering Pipeline, Susquehanna and Bradford Counties, PA, Williams Midstream Services, LLC.

### **Natural Gas Pipeline Wetland and Watercourse Investigation, PennEast Pipeline Company**

Conduct wetland presence/absence survey and wetland and watercourse delineations along an approximately 114-mile proposed natural gas pipeline right-of-way. Assist with the completion of the PADEP Rapid Assessment Protocol evaluation of all wetlands and watercourses proposed to be impacted during the construction of the pipeline. PennEast Pipeline, Luzerne, Carbon, and Northampton Counties, PA and Hunterdon and Mercer Counties, NJ, PennEast Pipeline Company.

### **T&E Plant Species Survey, Old Dominion Electric Cooperative (ODEC)**

Assist with field surveys for three Threatened/Endangered plant species for the ODEC Wildcat Point Generation Facility. Lancaster County, PA, Old Dominion Electric Cooperative.

### **Northern Harrier Presence/Absence Survey, HEP Pennsylvania Gathering, LLC**

Assist with field surveys for the determination of Northern harrier presence/absence, in accordance with Pennsylvania Game Commission protocols, along a proposed natural gas pipeline right-of-way. Tioga CPF#2 Discharge, Lycoming and Tioga Counties, PA, HEP Pennsylvania Gathering, LLC.

### **Natural Gas Pipeline Post-Construction Resource Monitoring, Howard Energy Partners**

Perform post-construction monitoring for wetlands and streams along approximately fifteen miles of pipeline right of way to determine if pre-construction conditions were restored. Complete wetland and stream data forms for each resource within the right of way to document post-construction conditions. Prepare a report detailing the findings of each resource and determine whether or not pre-construction conditions were restored. Make suggestions for the restoration of resources not meeting pre-construction

conditions. Howard Energy Gathering Pipelines, Howard Energy Partners, Bradford County, PA

### **Aquatic Resource Impact Assessment, Confidential Client, URS/AECOM.**

Assist with the post-construction wetland delineation and stream assessment field work of approximately 500 natural gas well pad and impoundment locations. Perform data analysis and QA/QC following field surveys and assist with the preparation of reports outlining the findings of each site investigation. Evaluate potential resource impacts via desktop review and on-site assessment. Bradford, Susquehanna, Sullivan, and Wyoming Counties, PA.

### **Northern Harrier and Short Eared Owl Presence/Absence Survey, Shell Appalachia**

Assist with field surveys for the determination of Northern harrier and Short eared owl presence/absence, in accordance with Pennsylvania Game Commission protocols, along a proposed ethane pipeline right-of-way. Falcon Ethane Pipeline, Allegheny County, PA, Shell Appalachia, LLC.

### **Natural Gas Pipeline Wetland and Watercourse Investigation, Shell Appalachia**

Conduct wetland presence/absence survey and wetland and watercourse delineations along a proposed ethane pipeline right-of-way. Falcon Ethane Pipeline, Washington, Beaver, and Allegheny Counties, PA, Shell Appalachia, LLC.

### **Wetland and Watercourse Investigation, Phase I Bog Turtle Habitat Surveys, Monitoring of Construction Activities in Potential Bog Turtle Wetlands during Anomaly Inspection and Repair, Confidential Client**

Perform wetland and watercourse delineations along an approximately 250 mile existing pipeline right-of-way for the permitting of pipeline anomaly investigation and repair work. Perform data analysis and QA/QC following field surveys and assist with the preparation of reports outlining the findings of the investigation. Perform Phase I Bog Turtle Habitat evaluations in accordance with survey protocols established by the U.S Fish and Wildlife Service and Pennsylvania Fish and Boat Commission for all wetlands delineated in counties with known bog turtle populations. Monitor investigation and repair construction activities adjacent to wetlands with potential bog turtle populations and apply avoidance measures specific to each construction location. Westmoreland, Indiana, Cambria, Blair, Perry, Lebanon, Berks, and Bucks Counties, PA.

### **State Route 24 Roadway Improvements Wetland and Watercourse Investigation, Delaware Department of Transportation**

Conduct wetland presence/absence survey and wetland and watercourse delineations along approximately 1.15 miles of SR 24 for proposed roadway improvement activities. Sussex County, DE, DelDOT.

### **State Route 714 Bridge Replacement/Roadway Improvements Wetland and Watercourse Investigation, Delaware Department of Transportation**



Conduct wetland presence/absence survey and wetland and watercourse delineations for the proposed SR 714 (Chapman Rd) bridge replacement and roadway improvement project. New Castle County, DE, DeIDOT.

**Interstate 80 Wetland and Watercourse Investigation, Pennsylvania Department of Transportation**

Conduct wetland presence/absence survey and wetland and watercourse delineations along approximately 11 miles of I-80 for proposed culvert replacement and roadway improvements. Luzerne County, PA, PennDOT.

**Route 1 Wetland and Watercourse Investigation and Phase I Bog Turtle Habitat Survey, Pennsylvania Department of Transportation**

Conduct wetland presence/absence survey and wetland and watercourse delineations as well as perform Phase I Bog Turtle Habitat evaluations in accordance with survey protocols established by the U.S Fish and Wildlife Service and Pennsylvania Fish and Boat Commission for all wetlands delineated along approximately 7.5 miles of Route 1. Chester County, PA, PennDOT.

**Invasive Species Control and Removal, Panther Swamp, Columbia Gas Corporation**

Support the ongoing control/removal of *Phragmites australis* from a wetland mitigation site associated with a Columbia Gas pipeline construction project in accordance with permit requirements established by the U.S. Army Corps of Engineers. Panther Swamp Wetland Mitigation Site, Pike County, PA, Columbia Gas Corporation.

**Natural Gas Well Pad Wetland and Watercourse Investigation, Shell Appalachia, LLC**

Accompany Shell employees and engineers during initial site visits to determine the viability of proposed natural gas well pads in regards to avoidance and minimization of impacts to natural resources. Conduct wetland presence/absence survey and wetland and watercourse delineations for seven proposed natural gas well pad locations. Prepare post-field work wetland delineation reports detailing the findings of the performed wetland and watercourse investigations. Shell Well Pads, Tioga County, PA, Shell Appalachia, LLC.

**Fresh Water Pipeline Wetland and Watercourse Investigation, Tioga Waterline Expansion Project, Howard Energy Partners, LLC**

Conduct wetland presence/absence survey and wetland and watercourse delineations for approximately nine and a half miles of proposed water pipeline right of ways. Complete the PADEP Rapid Assessment Protocol evaluation of all wetlands and watercourses proposed to be impacted during the construction of the pipeline. Prepare post-field work wetland delineation reports detailing the findings of the performed wetland and watercourse investigations. Assist with the Joint Permit Application preparation for the submission to the PADEP and USACOE. Tioga Waterline Expansion Project, Tioga and Lycoming Counties, PA, Howard Energy Partners, LLC

# Colleen B. Ashbaugh

## Biologist

### Education

MS, Environmental Sciences and Policy, Johns Hopkins University, 2009  
BS, Horticulture, The Pennsylvania State University, 2001

### Years of Experience

15

### Certifications

Pennsylvania Department of Conservation and Natural Resources Wild Plant Management Permit, No. 18-738

### Professional Associations

Marcellus Shale Coalition  
Women's Energy Network, Appalachia Chapter  
Society of Women Environmental Professionals, Three Rivers Chapter

### Training

38-hour Wetland Delineation and Regional Supplement Training, The Swamp School, 2012  
Ohio Rapid Assessment Method for Wetlands Training Course, Midwest Biodiversity Institute, 2016  
Maryland Biological Stream Survey Spring Sampling Techniques, MD Department of Natural Resources, 2010  
Wetland Plants of Pennsylvania Identification 16-hour Field Workshop, The Swamp School, 2012  
Identification of Grasses, Sedges, and Rushes Workshop, Pennsylvania Native Plant Society, 2015  
OSHA 40-hour Hazwoper Training (valid until 9/2018)  
Adult First Aid/CPR/AED Training, American Heart Association (valid until 03/2010)  
PEC Basic Safety Orientation and SafeLand USA Training  
Federal Energy Regulatory Commission (FERC)  
Environmental Review and Compliance for Natural Gas Facilities Seminar

### Summary

Ms. Ashbaugh is a biologist with 15 years professional experience. Her experience includes stream flow and groundwater monitoring, water quality assessment, benthic macroinvertebrate sampling, identification and delineation of wetlands and waterbodies including the identification of vegetative communities, soil characteristics and hydrologic indicators, and surveys for rare, threatened or endangered species. She has extensive experience in botany and plant identification.

Ms. Ashbaugh's experience includes data collection and management, and the preparation of technical reports

detailed the findings of field investigations, as well as preparation of Joint Permit and General Permit applications as required by Pennsylvania Department of Environmental Protection (PADEP) Chapter 105, and United States Army Corps of Engineers (USACE) Section 401/404, Section 401 Water Quality Certification for Ohio Environmental Protection Agency (OEPA), and Stream Activity Applications for West Virginia Office of Land and Streams (WVOLS). Ms. Ashbaugh also has experience with threatened and endangered species, including consultation with jurisdictional agencies to determine a proposed project's potential impacts to species of concern, and conducting botanical surveys, bat habitat assessments, bat mist-net surveys, and forest habitat surveys and delineation. She has assisted in environmental compliance inspections for erosion and sedimentation control as related to linear project construction.

Her project experience is primarily related to the oil and gas, and coal industries throughout Pennsylvania, West Virginia and Ohio. She has worked closely with landowners and agencies to coordinate field efforts.

### Project Experience

**Wetland and Stream Delineation, Rare Plant Survey, Bat Habitat Assessment, Bat Mist-Netting Survey, PADEP Chapter 105/USACE Section 404 Permit Applications – Shell Pipeline Company LP; Allegheny, Beaver, and Washington Counties, PA; Hancock County, WV; Carroll, Harrison, and Jefferson Counties, OH:** Ms. Ashbaugh acted as a field lead for wetland and stream identification and delineations on a 94-mile linear project in western PA and WV. She assisted in data collection and analysis in compliance with the USACE and coordinated the PADEP Rapid Assessment Protocol field effort. She assisted in botanical surveys for six PA species of special concern, including vase-vine leather-flower (*Clematis viorna*), harbinger-of-spring (*Eriogonum bulbosum*), white trout lily (*Erythronium albidum*), purple rocket (*Isotria medeoloides*), declined trillium (*Trillium flexipes*), and snow trillium (*T. nivale*), assisting with population documentation, habitat assessment, data collection, and report review. Additionally, she participated in bat habitat assessment field studies on a 7.5-mile long portion in WV to classify forest habitat types and identify potential roost trees for Indiana bat (*Myotis sodalis*), a federally endangered species, and assisted in the preparation of a report documenting the findings. Ms. Ashbaugh also assisted during bat mist-netting surveys in western PA. She assisted in the preparation of PADEP Chapter 105/USACE Section 404 Joint Permit Applications and the WVOLS Stream Activity Application.

**Wetland and Stream Delineation, Forest Habitat Survey, FERC Certificate Application and OEPA/USACE Section 401/404 Permit Applications – Spectra Energy; Athens, Meigs, Monroe, Noble, Perry, and Warren Counties, OH; Greene County, PA:** Ms. Ashbaugh assisted in wetland and stream identification and delineations on three pipeline looping segments totaling 15.8 miles, and other associated aboveground facilities in several counties in OH. She assisted in data collection and analysis in compliance with the USACE and the Ohio Rapid Assessment Methods (ORAM) for wetlands, and the Ohio Qualitative Habitat Evaluation Index (QHEI) and Ohio Primary Headwater Habitat Evaluation (HHEI) methods for streams. She was the field lead for a forest habitat survey to determine forest habitat types and the approximate age of the forest stands, and prepared a report of the findings to assist the USFWS in determining compensatory mitigation required for tree clearing. Additionally, Ms. Ashbaugh assisted in the preparation of an application for a Section 7(c) Certificate of Public Convenience and Necessity from FERC, including preparation of several resource reports and the Applicant Prepared Draft Environmental Assessment. She prepared permit applications for a OEPA Section 401 Water Quality Certification, and a USACE Section 404 Nationwide Permit. Ms. Ashbaugh assisted in federal and state agency consultations for threatened and endangered species for portion of the Projects, spanning 6 states.

**Wetland and Stream Delineation, Post-Construction Monitoring, PADEP Chapter 105/USACE Section 404 Permit Applications – Spectra Energy/Enbridge; various counties, PA:** Ms. Ashbaugh conducted desktop reviews and assisted in wetland and stream identification and delineations on a linear project throughout PA. She assisted in data collection and analysis in compliance with the USACE, preparation of technical documents and PADEP Chapter 105/USACE Section 404 General Permit Applications. Additionally, she assisted in post-construction monitoring following completion of the project.

**Wetland and Stream Delineation, USACE Section 404 Permit Application – Equitrans, LP; Harrison County, WV:** Ms. Ashbaugh conducted desktop reviews and assisted in wetland and stream identification and delineations on a 5-mile linear project in Harrison County, WV. She assisted in data collection and analysis in compliance with the USACE, and preparation of technical reports and USACE Section 404 Permit and WVOLS Stream Activity Permit Applications.

**FERC Certificate Application Preparation – UGI Energy Services, LLC; Lycoming, Montour, Northumberland, Snyder, and Union Counties, PA:** Ms. Ashbaugh assisted in the preparation of an application with the FERC for a Section 7(c) Certificate of Public Convenience and Necessity for the construction and operation of a 34-mile linear project. She prepared Resource Report 3: Fish, Wildlife, and Vegetation, and the Applicant Prepared Draft Environmental Assessment.

**Wetland and Stream Delineation, Bat Habitat Assessment – Angelina Gathering Company, LLC; various locations, PA and WV:** Ms. Ashbaugh conducted desktop reviews and field studies for wetland and watercourse identification and delineations for several linear projects in PA and WV. She assisted in data collection and analysis, and report preparation to document the findings of the survey. Additionally, she assisted in bat habitat assessments; field efforts included the identification and documentation of all potential roost trees as part of conservation efforts for Indiana bat (*Myotis sodalis*) and northern long-eared bat (*M. septentrionalis*).

**Entrainment Characterization and Impingement Collection Efficiency 316(b) Studies – NRG Energy, Allegheny County, PA:** Ms. Ashbaugh acted as a field lead for entrainment characterization and impingement collection efficiency studies at a coal-powered power plant in Allegheny County, PA. Entrainment characterization field efforts included the collection of biological and water quality samples from the cooling water intake within the screenhouse of the power plant.

**Impingement Collection Efficiency 316(b) Study – U.S. Steel, Allegheny County, PA:** Ms. Ashbaugh acted as a field lead for impingement collection efficiency studies at a steelmaking operation in Allegheny County, PA. Impingement collection efficiency field efforts included the collection of biological samples from the trash rack outside the screenhouse of the plant.

**Rare Plant Survey – Shell Energy; Cambria County, PA:** Ms. Ashbaugh assisted in surveys for the PA threatened and federally endangered species northeastern bulrush (*Scirpus ancistrochaetus*) on a linear project. She assisted in population documentation, habitat assessment, data collection, and report preparation.

**Botanical Habitat Survey – EQT Corporation; Washington and Greene Counties, PA:** Ms. Ashbaugh conducted a botanical habitat survey for a linear project at the request of PA DCNR to identify potential habitat for fringed bluets (*Houstonia canadensis*) and tall larkspur (*Delphinium exaltatum*), as well as yellow oak-redbud woodland - a community of special concern. She assisted in the completion of Botanical Field Survey Forms for Environmental Review, plant identification, population delineation, and report preparation. Additionally, she identified several populations of a species of concern, white trout lily (*Erythronium albidum*), and assisted in the documentation and reporting of the findings to PA DCNR.

**Wetland and Stream Delineation, Stream Flow Monitoring – EQT Production; Greene County, PA:** Ms. Ashbaugh assisted in the desktop review, and the wetland and stream identification and delineations for a water withdrawal and staging area for gas well drilling, and prepared a report of the

findings. In addition, she conducted stream flow monitoring and analysis of Ruff Creek to establish the stream flow depth associated with the predetermined passby flow as set by jurisdictional agencies.

**Stream Flow and Groundwater Monitoring, Water Quality Assessment – Consol Energy; Greene County, PA; Marshall County, WV:** Ms. Ashbaugh conducted daily, weekly, and monthly stream flow and groundwater monitoring for pre- and post-mining sites in southwestern PA and northern WV. The studies included the analysis of stream assessment data such as stream flow and water characteristics, and preparation of daily reports to be uploaded to the Environmental Data Management and Compliance Reporting (ERIMS) online database. Additionally, water quality samples were collected on a monthly basis, results were analyzed and reported via ERIMS.

**Wetland and Stream Delineation, Environmental Compliance Inspector – Anterro Resources; various locations, WV:** Ms. Ashbaugh was a field lead for wetland and stream identification and delineations on several linear projects throughout WV. She assisted in desktop review, landowner coordination, field investigations, and report and permit preparation. Additionally, she worked as an environmental compliance inspector during construction of the projects to ensure appropriate erosion and sedimentation control measures were in place and construction was in compliance with the permit conditions.

# Mark Benfer

## Environmental Scientist

### Education

BS/Environmental Resource Management/2008/ Penn State University

### Years of Experience

8.5

### Training

38 hour USACE Wetland Delineation Training Program  
Hydric Soil Indicators-Field Seminar

### Summary

Mr. Benfer's experience includes environmental conservation and wetlands consulting. His expertise in the Marcellus Shale develop includes natural resources and industry compliance. He has managed a field crew to successfully complete conservation projects. More recently, Mr. Benfer has worked in the environmental consulting field, leading watercourse and wetland delineations of resources located on proposed pipeline, well pads, and similar oil and gas improvement projects. His areas of expertise also includes stream and wetland delineation, infiltration testing, erosion and sedimentation inspection, prairie restoration, timber stand improvement, invasive species removal, and portage construction.

### Project Experience

#### **Field Lead- Natural Gas Well Pads, Shell Appalachia, Multiple Counties, PA**

Conducted wetland and watercourse delineations of proposed well sites to determine the best location for the well pad. Other responsibilities included evaluating the site for constructability, well pad staking, and preparing the wetland report for the ESCGP2 permit application.

#### **Field Lead- Natural Gas Pipeline Wetland and Watercourse Investigation, Howard Energy Partners**

Conducted a wetland and watercourse delineations for approximately 20 miles of proposed natural gas pipeline right-of-ways in Bradford and Tioga Counties, PA

#### **Field Lead- Infiltration Testing, Multiple Counties, PA, Shell Appalachia:**

Evaluated the rate of infiltration by conducting Falling Head infiltration tests located throughout the proposed natural gas well pad sites and other similar natural gas project sites. Duties also included completing a soil description and submitting an infiltration report in accordance with DEP regulations.

#### **Field Lead I-80 Culvert Replacement Project Drums, PA, PennDot**

Assessed approximately 12 miles of I-80 for wetlands and watercourses located within the project area.

#### **Field Lead- I-84 Bridge Replacement Project, Scranton, PA, PennDot**

Conducted a wetland and watercourse delineation for approximately 100 acres of proposed project area. Prepared wetland and watercourse data forms as well as Function and Values form for each wetland that was delineated.

#### **Field Lead-Wetland Mitigation Bank Project, Wayne County, PA, RES**

Conducted a wetland delineation and watercourse assessment of approximately 31 acres of a conservation easement to be used as a wetland mitigation site.

#### **Field Lead- Natural Gas Pipeline, Multiple Counties, PA, UGI Energy, LLC. Pennsylvania**

Conducted a wetland and watercourse delineation for approximately 40 miles of proposed natural gas pipeline right-of-ways.

#### **Field Lead- Project Confidential, Multiple Counties, PA**

Ongoing post construction investigation of wetlands and watercourses for post construction impact assessments.

#### **Field Lead- Natural Gas Well Pads, Cabot Oil and Gas, Susquehanna County, PA**

Staked out the well pad locations by evaluating the proposed well site for constructability and conducted a wetland and watercourse delineation of the site.

#### **Field Lead- Natural Gas Pipeline: Post-Construction Resource Monitoring, Susquehanna County, PA, Williams Midstream Services, LLC.**

Performed post-construction monitoring for wetlands and streams along Williams pipeline projects to determine if pre-construction conditions were restored. Monitoring was conducted at 30 days and one year after the pipeline construction was completed. Completed wetland and stream data forms for each resource within the right of way. Made suggestions for the restoration of resources not meeting pre-construction conditions

#### **T&E Species- Northern Harrier Survey, Tioga Discharge CPF#2, Tioga County, PA, Howard Energy Partners**

Assisted in completing a Presence/Absence survey to determine if there are Northern Harriers nesting near the proposed pipeline route. The project included surveying for the harriers twice a day for eight weeks.

#### **Field Lead- Natural Gas Pipeline Wetland and Watercourse Investigation, Angelina Gathering Company**

Conducted a wetland and watercourse delineations for approximately 35 miles of proposed natural gas pipeline right-of-ways in Bradford and Susquehanna Counties, PA and Marshall County, WV.





**Erosion and Sedimentation Inspections, Susquehanna County, PA, Cabot Oil and Gas:**

Conducted evaluations of reclaimed natural gas pipeline areas. Developed and implemented solutions to erosion problems that were detected. Inspection duties included walking each right-of-way and ensuring all the best management practices are in place and completed inspection reports in accordance with DEP regulations.

**Experience with a previous employer**

**Field Lead- National Parks, IA, MN, NE:** Projects involved removing invasive plant species from the parks by either treating with chemicals or physically removing the invasive to encourage native vegetation to grow. Over 100 acres of invasive plants were removed. Invasive species removal projects lead to an increase in native vegetation.

**Field Lead- Iowa DNR, Multiple Counties, IA:** Installed signage along Iowa's major dams warning paddlers of the danger ahead. Constructed take-outs and portages to allow paddlers an easy route around the dam. Managed a crew in the design and development of a campground for paddlers at Lake Red Rock. The campground has provided recreational opportunities for paddlers visiting the area. Created over 5 miles of new hand-carved trails within the state park system.

**Field Lead- County Conservation Boards, Multiple Counties, IA:** Restored over 200 acres of prairie and oak savanna land through the removal of invasive plant species and prescribed burns. These methods encouraged native plant species to recolonize the area. Used selective cutting methods to improve timber stands. The result of this project was improved habitat for wildlife and healthier trees.

**Field Lead- USFWS, Savanna, IL:** Protected a population of approximately 30 ornate box turtles by constructing a one square mile enclosure on a wildlife refuge. Removed invasive tree species to encourage the growth of native plant species on sand prairies. Painted and assembled deer blinds for handicapped youth hunt to control the deer population within the wildlife refuge.

**Chronology**

07/2011 to Present: AECOM, Williamsport, PA  
02/2009 to 12/2010: Conservation Corp Iowa, Ames, IA  
09/2007 to 05/2008: Weed Ecology Lab, University Park, PA  
09/2005 to 05/2007: Dr. Robert Shannon, University Park, PA

# Sarah Binckley

## Natural Resources Project Manager

### Education

MS, Biology – Wetland Biology, Old Dominion University, 2007

BS, Environmental Science – Plant Resources, Virginia Tech, 2000

### Years of Experience

12

### Summary

Ms. Binckley is a Professional Wetlands Scientist with 12 years of environmental consulting experience. She serves as a project manager and senior scientist for natural gas projects in Pennsylvania, Ohio, West Virginia, and Maryland. Ms. Binckley has extensive experience with federal and state permitting; she has obtained permits and other regulatory approvals for more than 50 natural gas projects ranging from large interstate transmission pipeline projects to small operations and maintenance projects. Ms. Binckley participates in project siting, develops regulatory strategies and schedules, directs environmental surveys, leads consultation and permitting/Certification efforts, and oversees construction and post-construction support services.

### Selected Project Experience

#### **Access South, Adair Southwest, and Lebanon Extension Projects; Texas Eastern Transmission, LP; Ohio, Pennsylvania, Tennessee, Kentucky, Alabama, and Mississippi**

Ms. Binckley serves as project manager for a 15.8-mile natural gas looping and compressor station modification project. She managed wetland and waterbody, cultural resource, and threatened and endangered species surveys and reporting. Ms. Binckley led preparation of a FERC 7(c) application, federal, and state permit applications including USACE Nationwide Permit 12, Ohio EPA Individual Water Quality Certification, state erosion and sediment control permits, and hydrostatic test water discharge permits. Ms. Binckley also led consultations with the US Fish and Wildlife Service and state agencies regarding impacts to threatened and endangered species and migratory birds.

**PennEast Pipeline Project; PennEast Pipeline Company, LLC; Pennsylvania and New Jersey** Ms. Binckley serves as assistant project manager for a 120-mile Greenfield natural gas pipeline project and compressor station in Pennsylvania and New Jersey. She leads the preparation of Pennsylvania and federal permit applications including a USACE Section 404 Individual Permit, USACE Section 408 Approvals, Delaware River Basin Commission Approval, Pennsylvania Water Obstruction and Encroachment Permits, Pennsylvania

401 Water Quality Certification, an Erosion and Sediment Control General Permit, hydrostatic test discharge permits, a Permit for Use of Explosives in Commonwealth Waters, and an Aid to Navigation Plan approval. Ms. Binckley also manages other aspects of the project including the FERC 7(c) application, cultural resource surveys and National Historic Preservation Act Section 106 clearance, and surveys and clearances for federal and state listed threatened and endangered species, which included a Biological Assessment for the project.

#### **Line 8002 Repair Project; Columbia Gas Transmission, LLC; Maryland**

Ms. Binckley serves as project manager for a pipeline exposure repair and streambank stabilization project in Maryland, which includes engineering and stream restoration design services, wetland and waterbody surveys, cultural resource clearance, threatened and endangered species consultations, a Maryland Department of the Environment Nontidal Wetland and Waterway Permit, and Erosion and Sediment Control Plan Development and county approval.

#### **Line 1804 Anode Project; Columbia Gas Transmission; Pennsylvania**

Ms. Binckley served as project manager for a cathodic protection project in Pennsylvania which include wetland and waterbody surveys, bog turtle surveys, rare plant surveys, cultural resource surveys and clearance, threatened and endangered species consultations, a Pennsylvania Chapter 105 General Permit, and Erosion and Sediment Control Plan Development.

#### **Verso Facilities Improvement Project; Columbia Gas**

**Transmission; West Virginia** Ms. Binckley served as project manager for a pipeline replacement and appurtenant facilities improvement Project in West Virginia, which included wetland and waterbody surveys, cultural resources surveys and clearance, and Erosion and Sediment Control Plan Development.

#### **Select Project Experience with a Previous Employer**

**Tookany Creek Pipeline Relocation Project; Texas Eastern Transmission, LP; Pennsylvania** Ms. Binckley served as project manager for a project involving the relocation of two approximately 1800-foot segments of natural gas pipelines in an urban environment. In addition to leading wetland and waterbody surveys and tree surveys, she managed cultural resource and bog turtle subcontractors, obtained permits and approvals including a stream crossing permit, stream bank stabilization permit, erosion and sediment control general permit, hydrostatic test discharge permit, clearance for the federally threatened bog turtle, and Cheltenham Township Shade Tree Advisory committee landscape plan approval. Ms. Binckley developed the approved landscape plan and managed implementation with oversight of a forestry subcontractor. She managed weekly environmental inspections during and after construction, and provided

permit compliance support including soil testing, Pennsylvania Clean Fill certification, hydrostatic test water testing, and reporting.

**Bernville 2014 DOT Project; Texas Eastern Transmission, LP; Pennsylvania** Ms. Binckley served as project manager for an operations and maintenance project involving the replacement of approximately 1,500 feet of natural gas transmission pipeline in Pennsylvania. She conducted field surveys, managed a subcontractor for federally threatened bog turtle surveys, coordinated USFWS approval, and led the permitting effort for state and federal wetlands and stream permits and county-issued erosion and sediment control general permit.

**TEAM 2014 Project; Texas Eastern Transmission, LP; Pennsylvania** Ms. Binckley provided field and permitting support for 33.6 miles of looping pipeline and compressor station upgrades in Pennsylvania. She led pre-construction invasive species surveys in Tuscarora State Forest.

**2013 Integrity; Texas Eastern Transmission, LP; Pennsylvania and New Jersey** Ms. Binckley served as project manager for the 2013 Integrity Projects that included two streambank stabilization/shallow cover sites in Pennsylvania and one cathodic protection site in New Jersey. The project required biological surveys, threatened and endangered species consultations, state and federal wetland and waterbody permits, and erosion and sediment control plan approval.

**2012 DOT Projects; Texas Eastern Transmission, LP; Pennsylvania** Ms. Binckley provided field and permitting support for five DOT sites in Pennsylvania, managing services provided at the Bechtelsville Site. The project required biological surveys, threatened and endangered species consultations, cultural resource surveys and consultation, state and federal wetland and waterbody permits, hydrostatic discharge permits, and erosion and sediment control plan permits and/or approvals.

**TEAM 2012 Project; Texas Eastern Transmission, LP; Pennsylvania** Ms. Binckley provided field, permitting, and FERC 7(c) application support for 17.9 miles of looping pipeline and compressor station upgrades in Pennsylvania.

**TEMAX/TIME III; Texas Eastern Transmission, LP; Pennsylvania** Ms. Binckley provided permitting and construction kick-off support for 29.3 miles of pickup-and-relay and looping pipeline and compressor station upgrades in Pennsylvania. She coordinated wetland mitigation with the USACE and PADEP, which resulted in substantial costs savings to the project. She also coordinated protected plant mitigation with the PADCNR.

**Century Mine Project; Texas Eastern Transmission, LP; Ohio** Ms. Binckley provided field and permitting support for a longwall mining project in Ohio. Permits and approvals included threatened and endangered species consultations, cultural clearance, USACE Section 404 permits, and a

hydrostatic test discharge permit. Ms. Binckley led habitat assessment surveys for the federally endangered Indiana bat.

**Auburn Line Extension and Manning Compressor Station Project; UGI Energy Services; Pennsylvania** Ms. Binckley served as project manager for a 27.4-mile Greenfield natural gas gathering pipeline and compressor station project. She led field teams and participated in wetland and waterbody delineations and surveys for state-protected species on more than 65 miles of study corridor. Ms. Binckley managed subcontractors for Indiana bat, Eastern-small footed bat, timber rattlesnake, and Phase I archeological and architectural surveys. She coordinated with the USACE and the PADEP to obtain wetland and waterbody permits, erosion and sediment control permits, hydrostatic test water discharge permits, and air quality permits for a new compressor station. Ms. Binckley prepared a site-specific reforestation plan, and coordinated offsite compensatory mitigation. She provided environmental training and permit compliance support.

**Union Dale Lateral Project; UGI Energy Services, Susquehanna County, Pennsylvania** Ms. Binckley served as technical lead and permitting manager for a Greenfield 6.4-mile natural gas pipeline in Pennsylvania. She prepared a critical issue analysis, conducted field surveys, provided siting guidance, managed a cultural resource subcontractor, coordinated threatened and endangered species approvals, coordinated offsite compensatory mitigation, and led the permitting effort for state and federal wetlands and stream permits and a hydrostatic test discharge permit.

**Various Capital Maintenance and Operations Pipeline and Meter Station Projects; Columbia Gas Transmission, LLC; Pennsylvania, Maryland, West Virginia, and Ohio** Ms. Binckley served as project manager for twelve capital maintenance and operations projects in Pennsylvania, Maryland, West Virginia, and Ohio. Specific projects tasks included wetland and waterbody delineations, threatened and endangered species consultations, cultural resource consultations, federal, state, and local permitting, construction compliance support, and environmental inspection services.



# David Brightbill

## Ecologist

### Education

B.S. Environmental Resource Management/ Wildlife and Fisheries Science; Watershed, Water Resources Management/ 2009/ Pennsylvania State University

### Years of Experience

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### Summary

Mr. Brightbill offers experience in aquatic delineations and various wetland delineation projects throughout the Northeast and Midwestern United States. Mr. Brightbill routinely utilizes the several Army Corps of Engineers Regional Supplements, including: Atlantic and Gulf Coast, Eastern Mountains and Piedmont, Great Plains, Midwest, and North-central and Northeast. Furthermore, Mr. Brightbill has performed a variety of sampling associated with soil, sediment, surface water, and pore water.

### Project Experience

#### Delineations

**DUPONT, Delineator; Tecumseh, Kansas:** Delineated wetlands along at an active industrial site. Captured data specific for the Midwest ACOE Regional Supplement. This involved delineating wetland and waterways onsite. Identified plant species, soils, and hydrological factors associated with the various types of wetlands, and agricultural wetlands. Plotted wetland and waterway boundaries using a GPS device.

**PXP, Delineator, Georgia:** Performed delineation along a 300 mile pipeline. This included ACOE Regional Supplement Atlantic and Gulf Coastal Plains. This included delineating rivers, streams, and wetlands (PEM, PSS, and PFO). Identified plant species, soils, and hydrological indicators associated within this region.

**PPL, Delineator, Northampton, PA:** Performed delineation for substation siting and compiled wetland delineation report for field survey.

**Chesapeake, Delineator, Wilkesbarre, PA:** Performed wetland delineation for siting potential well pads. This included using Geo-XH GPS to map

**PECO, Delineator, Downingtown, PA:** Performed wetland delineation for Pennsylvania DOT, highway expansion project.

**PPL, Delineator, Montgomeryville, PA:** Performed wetland delineation for reconstruction of an existing lattice tower rebuilds.

**Chesapeake, Delineator, NE Pennsylvania:** Performed impact assessments for well pads associated with natural gas exploration. This included ACOE Regional Supplement Eastern Mountains and Piedmont, and Northcentral and Northeast.

**PEPCO HOLDINGS, Delineator; Central New Jersey:** Delineated wetlands along a proposed pipeline. This included ACOE Regional Supplement Atlantic and Gulf Coastal Plains. This included delineating rivers, streams, and wetlands (PEM, PSS, and PFO). Identified plant species, soils, and hydrological indicators associated with the various types of wetlands in this region. Also, wetland and waterway boundaries using a GPS device.

**ENBRIDGE, Delineator; Oklahoma, Kansas, Missouri, and Illinois:** Delineated wetlands along a 600 mile long proposed pipeline and a 400 mile long proposed pipeline. This included ACOE Regional Supplements: Great Plains and Midwest. This involved delineating isolated upland wetlands, agricultural features, streams, and wetlands (PEM, PSS, PFO). Identified plant species, soils, and hydrological factors associated with the various types of wetlands, and agricultural wetlands. Plotted wetland boundaries and other hydrology features (rivers and streams) using a GPS device.

**Atlantic City Electric, Delineator; Southern New Jersey:** Delineated wetlands along proposed transmission lines. This included ACOE Regional Supplements Atlantic and Gulf Coastal Plains. This included delineating rivers, streams, and wetlands (PEM, PSS, and PFO). Identified plant species, soils, and hydrological factors associated with the various types of wetlands in this region. Plotted wetland boundaries and other features using a GPS device. Written various sections for reports used in general permit applications.

**PPL, Delineator; Blakeslee, Pennsylvania:** Delineated wetlands along a proposed transmission line. This included ACOE Supplement Region Eastern Mountains and Piedmont. This involved delineating rivers, streams, and wetlands (PEM, PSS, PFO). Identified plant species, soils, and hydrological factors associated with the various types of wetlands in this region. Plotted wetland boundaries and other hydrology features (rivers, streams, and seeps) using the GPS device. Assisted in vegetation T&E species survey along the proposed transmission corridor.

**DUPONT, Delineator; Pompton Lakes, NJ:** Delineated wetlands on a floodplain adjacent to a river. This included late season plant identification along a forested floodplain. Identified plant species, soils, and hydrological factors associated with wetlands. Plotted wetland boundaries and other hydrological features using a GPS device. Performed a Phase 1 Environmental Impact Assessment. Mapped

sediment depositions, and characterized substrate in approximately 7 river miles using GPS device.

**PECO, Delineator; Stroudsburg, PA:** Delineated wetlands along an existing transmission line. This involved delineating springs, vernal pools, streams, and wetlands. Identified plant species, soils, and hydrological factors associated with wetlands. Plotted wetland boundaries and other hydrological features using a GPS device.

**DUPONT, Delineator; Waynesboro, VA:** Identified and delineated submerged aquatic vegetation (SAV) including: stargrass, milfoil, curly leaf pond weed, niad, elodea, hydrilla, leafy pond weed. Also, characterized the substrate of the river for approximately 20 river miles.

**EXELON, Delineator; Darlington, MD:** Performed submerged aquatic vegetation (SAV) and emergent aquatic vegetation (EAV) study in the Susquehanna River. Identified such species as: stargrass, milfoil, curly leaf pond weed, niad, elodea, hydrilla, and leafy pond weed.

**DUPONT, Delineator; Wilmington, DE:** Mapped wetland boundaries using RINO device for isolated wetland features.

## Aquatic Studies

**KINDER MORGAN, Field Tech., Norfolk, VA:** Performed an environmental Phase 1 assessment and wetland delineation for an industrialized river delta.

## Soil, Sediment, Water Sampling

**EXELON, Field Tech., Darlington, MD:** Collected suspended sediment samples in various tributaries along the Susquehanna River. This includes devices such as a dip sampler and a crane-sampler, and a programmable ISCO sampler. Collected sediment samples in the Susquehanna River using a Ponar device. Gathered flow data for tributaries by collecting velocity measurements in-channel, during low-flow and storm events.

**ARMY NATIONAL GUARD, Field Tech., Delaware City, DE:** Collected sediment samples using a Ponar dredge sampler for characterization and contamination analysis.

**DUPONT, Field Tech., Clinton, IA:** Collected surface water samples and sediment samples in a lentic system. Samples were collected using a Ponar dredge sampler and a peristaltic pump. Packed and shipped samples to lab protocols.

**DUPONT, Field Tech, Waynesboro, VA:** Collected sediment samples in both lentic and lotic system using a Ponar device. Collected stream bank and floodplain samples along South River for an erosion study. Also, collected surface water samples using 'clean hands-dirty hands' technique and pore water samples using a PushPoint sampler.

**DUPONT, Field Tech, Pompton Lakes, NJ:** Collected sediment samples in a lotic and lentic systems using a Ponar device. Collected stream bank and floodplain samples along the Wanaque River. Also, collected surface water using 'clean hands-dirty hands' technique and pore water using a PushPoint sampler.

**BARTRAM GARDENS, Field Tech, Philadelphia, PA:** Collected sediment samples along a tidal influenced system using a hand auger and an AMS sampling device.

**ATLANTIC CITY ELECTRIC, Field Tech, Deepwater, NJ:** Collected sediment samples along a tidal influenced lotic system using a Ponar device.

**Field Tech, Gibbstown, NJ:** Collected sediment samples in a wetland system using an Auger and AMS core sampling device.

**Field Tech, Gales Ferry, CT:** Collected sediment samples in a freshwater lentic system using a Ponar device and Terra Cores. Also, collected surface water at varying depths using a peristaltic pump.

**Field Tech, Lordship, CT:** Collected sediment samples in a tidal influenced lotic system along the Long Island Sound using an AMS corer and surficial Ponar device. Mapped locations using a GPS unit.

**Field Tech, Coatesville, PA:** Performed a bathymetry survey and characterized the substrate in a cooling basin for sediment removal. Mapped depths and locations using GPS unit.

## **Equipment:**

Knowledgeable in operating: 21' Stryker 120 HP, 18' Sea-ark equipped with a 70 HP motor, 14' Lowe boat equipped with a 25 HP motor and electrofishing unit, 12' Jon boat equipped with a Mercury 9.9 motor or electric trolling motor and Skiff boat.

## **Programs:**

GPS units: Rhino, Geo-XH, Geo-XT, Lowrance, YUMA, and SX-Blue Receiver  
Pathfinder: View, correct, exporting GPS shapefile data  
Terra-Sync: GPS program used for navigation, collection of the data points  
Microsoft Office Suite

## **Reports:**

Creating Work Plans, QAPPs, Safe Work Plans/Health and Safety Plans  
Wetland delineation reports and memos  
General permit applications  
T&E Reports  
Phase I Environmental Assessments



**Specialized Training**

40 Hour HAZWOPER/2010; Refresher/Current  
Site Safety Supervisor/2012  
Rutgers Wetland Delineation Certification/2011  
Boating Safety Education Certification/2011  
Dan 02 Certified/2015  
Respirator Fit-tested/2011



# Brian Cooper

## Environmental Scientist

### Education

BS/Biology/Bucknell University/2011

### Years of Experience

8

### Registration/Certification

USFWS Certified/Approved Bat Surveyor  
Certified Wetland Delineator

### Professional Societies/Affiliates

NEBWG-North Eastern Bat Working Group  
Bat Conservation International  
Pennsylvania Association of Environmental Professionals

### Specialized Training

SonoBat Acoustic Field Techniques Workshop – Bat Conservation International  
Acoustic Field Techniques and Call Analysis – Sanders Environmental  
Wetland Training – Richard Chinn Environmental Training, Inc.

### Summary

Mr. Cooper is a U.S. Fish and Wildlife Service (USFWS) approved bat surveyor with a federal recovery permit for the scientific collection of Indiana bats (*Myotis sodalis*), gray bats (*M. grisescens*), and northern long-eared bats (*M. septentrionalis*). He is a Pennsylvania QBS (Qualified Bat Surveyor), and is listed as an Approved Bat Surveyor by the West Virginia Department of Natural Resources. He has experience working in a wide variety of environmental service markets, including wind farm development, the oil/gas industry, mineral extraction projects, transmission line permitting, and land development projects.

Mr. Cooper specializes in presence/absence surveys for state- and federally-listed species of bats. He has conducted and managed mist netting, acoustic, and spring and fall portal surveys throughout the Northeast, Mid-Atlantic, Midwest, and Southeast. He has successfully handled and identified over 3,500 Vespertilionidae including the Indiana bat, gray bat, northern long-eared bat and Virginia Big-eared bat (*Corynorhinus townsendii virginianus*). Mr. Cooper has handled and identified bats in ten states, including New York, Pennsylvania, New Jersey, Maryland, West Virginia, Virginia, Ohio, Michigan, Illinois, and Kentucky.

Mr. Cooper is also a wetland scientist and certified wetland delineator with extensive experience conducting and managing aquatic resource surveys. He has performed wetland and stream identifications, benthic surveys, jurisdictional determinations, and impact permitting for a variety of clients including private individuals, corporations,

and government agencies. His work experience also includes the monitoring of constructed wetlands. These efforts have taken place in West Virginia, Pennsylvania, Indiana, Delaware, Connecticut, and Ohio, and included both US Army Corps of Engineers (USACE) and Environmental Protection Agency (EPA) required data collection and report writing.

Since joining AECOM in 2017, a few of Mr. Cooper's responsibilities have included endangered species consultations and surveys, preparation of Biological Assessments, and developing mitigation and monitoring plans for federally listed bat species. Some recent projects have included formal USFWS consultations on pipelines (natural gas and waterlines) and compressor facilities, as well as the preparation of general permits for wetland impacts associated with electric transmission lines and pipeline operation and maintenance activities.

### Project Experience

#### Private Client – Wind Farm – IL

##### *Project Lead/Field Lead – Bat Surveys*

Responsible for leading mist netting surveys and telemetry studies on a proposed 2,241 acre wind farm, which was to include: 26 wind turbines, associated access roads, a substation, and a transmission line. Surveys resulted in the capture of five species of bats, including 13 Indiana bats. Seven Indiana bats were fitted with transmitters, resulting in the identification of day and night roost locations as well as regular foraging and travel areas.

#### Private Client – Natural Gas Pipeline – PA & NJ

##### *Threatened and Endangered Species Biologist*

Responsible for coordinating and tracking rare species surveys for a 100+ mile interstate natural gas pipeline. Specific work assignments include managing subcontractors, tracking survey progress, coordinating with clients and agency personnel, managing ESA Section 7 consultation with the USFWS, and coordinating with state regulatory bodies regarding state-protected species. Mr. Cooper has also been involved with field efforts, including wetland delineations and fall portal surveys to identify potential new bat hibernacula. This project is ongoing.

#### Private Client – Underground Water Pipeline Projects – WV

##### *Threatened and Endangered Species Lead*

Responsible for ESA Section 7 consultation with the USFWS regarding a series of interconnected underground water pipelines. Specific work assignments have included subcontractor management, habitat assessments, and the preparation of an Indiana Bat Conservation Plan (IBCP), a BA, and an Indiana Bat Monitoring Plan. This project is ongoing.

#### Private Client – Surface Mine – WV

##### *Project Lead/Field Lead – Bat Surveys*

Responsible for leading bat mist netting surveys to determine presence/probable absence of Indiana bats on a proposed



1,000 acre surface mine in southern West Virginia. Seven species of bats were captured, including the northern long-eared bat (prior to listing as threatened). Based upon survey results, the client received concurrence from the USFWS that the project was “not likely to adversely affect” listed bat species.

#### **Private Client – Transmission Line – WV**

##### *Field Lead – Bat Surveys*

Responsible for leading bat surveys on a 38-mile transmission line project in southern West Virginia. Specific tasks included mist netting surveys, telemetry studies, habitat assessments, fall portal surveys, and preparation of an IBCP. Five species of bats were captured, including the federally threatened northern long-eared bat and the endangered Indiana bat. Radio telemetry identified the day roost of a small bachelor colony of Indiana bats. Based on avoidance and minimization measures, the USFWS determined that the project was “not likely to adversely affect” listed bat species.

#### **Private Client – Transmission Line – VA**

##### *Project Lead/Field Lead – Bat Surveys*

Responsible for presence/absence surveys for a proposed transmission line in southwestern Virginia. Based on agency consultation, the proposed project was located within areas that had potential presence of gray bats, Virginia big-eared bats, Indiana bats, and northern long-eared bats. Mist net surveys resulted in the capture of the federally endangered gray bat. Based on the client’s avoidance and minimization measures, the USFWS determined that the project was “not likely to adversely affect” listed bat species.

#### **Private Client – Highway Slide Repair – OH**

##### *Environmental Project Leader*

Responsible for completion and oversight of the environmental tasks. Specific work assignments included the delineation of jurisdictional waters, ORAM and HHEI assessments, Indiana and northern long-eared bat habitat assessments, and a Jurisdictional Determination and field verification with Ohio EPA and the United States Army Corps of Engineers (USACE). The final product of these surveys was a Level 1 Ecological Survey Report, submitted to the Ohio Department of Transportation (ODOT).

#### **Private Client – Stone Quarry – PA**

##### *Endangered Species Survey Leader*

Responsible for leading field survey teams in multiple efforts for a variety of rare mammal species. Specific work assignments included habitat and presence/absence surveys for Allegheny woodrats (*Neotoma magister*), winter bat hibernacula surveys, and mist netting surveys for a proposed 250 acre stone quarry. Multiple occupied bat hibernacula were identified, as well as confirmed presence of the Allegheny woodrat. Core habitat and activity centers for the Allegheny woodrat were delineated. This project is ongoing.



# Shannon Haight

## Lead

### Education

MS, Earth and Environmental Science, Lehigh University  
BS, Environmental Science, Juniata College

### Years of Experience

11

### Training

- U.S. Army Corps of Engineers, three-day Wetland Delineation Training
- Stream Identification Training Course
- Vegetation Identification for Wetland Delineation
- Regional Supplement: Wetland Delineation Manual
- Field Indicators of Hydric Soils

### Summary

Ms. Haight is a Senior Biologist with 11 years of environmental consulting experience specializing in natural resource survey and permitting services including data collection, data analysis and calculations, report preparation, agency coordination, watershed assessments, wetland delineation, and the use of GPS, and GIS. She is also highly experienced in the application of GIS and remote sensing for mapping and analysis. Ms. Haight has extensive experience with federal and state permitting in the Appalachian Basin. This experience includes obtaining permits and other regulatory approvals for natural gas projects ranging from large transmission pipeline projects, to operations and maintenance projects. Ms. Haight has been involved in all aspects of the environmental permitting process, including project siting, directing environmental surveys, collecting field data, data analysis, report preparation, regulatory analysis, agency coordination, permit submittal and follow up coordination and monitoring.

### Project Experience

#### **Enbridge, PennJersey Integrity Program, Pennsylvania.**

Ms. Haight has managed the field delineation and environmental reporting aspect of this program since it began in 2016. The project has included wetland delineation and reporting for approximately 2,300 acres of existing right-of-way and access roads.

#### **UGI Energy Services, Auburn Loop Project, Pennsylvania.**

Ms. Haight supported the wetland delineation and stream assessment field work and the Pennsylvania Chapter 105/USACE Section 404 Permits.

**UGI Energy Services, Sunbury Pipeline Project, Pennsylvania.** Ms. Haight was the Assistant Project Manager for this project. Her responsibilities included assisting with the day to day coordination to keep the project on schedule and within budget, managing the permitting and environmental teams for approximately 35

miles of natural gas pipeline in central PA including: wetland delineations threatened and endangered species, cultural surveys and land services. Tasks also included agency consultations and assistance in the preparation of Resource Reports and the Environmental Assessment document.

**UGI Energy Services, PennEast Pipeline Project, Pennsylvania and New Jersey.** Ms. Haight supported the FERC 7(c) application process, in particular the preparation of resource reports for the 118-mile Greenfield natural gas pipeline project and Compressor Station in Pennsylvania and New Jersey.

**Howard Energy Partners, Pennsylvania.** Conducted wetland delineation and stream assessment field work, Threatened and Endangered Species surveys and performed quality control on Pennsylvania Chapter 105/USACE Section 404 Permits and reporting for numerous pipeline projects.

**National Fuel Gas Supply Corporation, Pennsylvania.** Conducted wetland delineation and stream assessment field work and handled post-processing of field data. Prepared Pennsylvania Chapter 105/USACE Section 404 Permits, and managed reporting for numerous pipeline projects.

**Williams Field Services, LLC, Pennsylvania.** Conducted wetland delineation and stream assessment field work and handled post-processing of field data. Prepared Pennsylvania Chapter 105/USACE Section 404 Permits, and managed reporting for numerous pipeline projects.

**Shell, SWEPI, LP, Pennsylvania.** Developed and administered a project GIS database, coordinated wetland and stream field investigations, coordinated with agencies, managed field data, reporting, and prepared Pennsylvania Chapter 105/USACE Section 404 permits for over one-hundred natural gas well pad locations.

**Cabot Oil & Gas Corporation, Pennsylvania.** Conducted wetland delineation and stream assessment field work and handled post-processing of field data and reporting.

**Confidential Client, Pennsylvania.** Field delineated wetlands and watercourses and assisted with the preparation of GIS efforts associated with the analysis of well pads for an Environmental Audit.

**Confidential Client, Pennsylvania.** Services include creating maps for gas well sites, adjoining pipelines, and environmentally sensitive resources. Also includes the utilization and manipulation of PAMAP LiDAR Elevation points.

**Resource Environmental Solutions, LLC, Pennsylvania.** Field delineated wetlands and watercourses and assisted with the

preparation of GIS efforts associated with several wetland and stream mitigation projects.

**Angelina Gathering Company, LLC, Pennsylvania.**

Administered field mapping, managed GIS data, handled post-processing of field data and collected field data during wetland delineations. Prepared Pennsylvania Chapter 105/USACE Section 404 permits for numerous pipeline projects.

**Pennsylvania Department of Transportation, I-70 Yukon Interchange Project, Pennsylvania.** Assisted in an aquatic resource assessment for this proposed project, which consists of highway improvements including realignment of interchange on and off-ramps, grading, stormwater management improvements and culvert improvements.

**Pennsylvania Department of Transportation, Dixonville No.1 Bridge Replacement over Dixon Run, Pennsylvania.** Assisted in a wetland and watercourse assessment for this proposed project, which consists of the construction of a new bridge over Dixon Run approximately 300 feet upstream of the existing bridge location.

**Pennsylvania Department of Transportation, Reconstruction Project, Pennsylvania.** Assisted in a wetland and watercourse assessment for this proposed project, which consists of a full-depth reconstruction including road widening into the median, the widening of bridges, and the widening of acceleration/deceleration lanes at interchanges.

**Pennsylvania Department of Transportation, Reconstruction Project, Pennsylvania.** Assisted in a wetland and watercourse assessment for this proposed project, which consists of the reconstruction of an eight mile section of the interstate.

**Pennsylvania Department of Transportation, Bridge Replacement and Rehabilitation, Pennsylvania.** Assisted in a wetland and watercourse assessment for this proposed project, which consists of a bridge replacement and rehabilitation project.

**Pennsylvania Department of Transportation, Reconstruction Project, Pennsylvania.** Assisted in a wetland and watercourse assessment and habitat assessment for this proposed project, which consists of a 12.5 mile long highway rehabilitation project.

**Project Experience with a previous employer  
Confidential Natural Gas Client, Tioga and Bradford counties,  
Pennsylvania**

Within various development areas, assists landmen in pipeline placement to avoid potential environmental issues and for avoidance of environmentally sensitive areas. Completes wetland delineations, reporting, and provides permit assistance for various pipelines and access roads.

**Confidential Natural Gas Energy Client, McKean County,  
Pennsylvania** Completed scouting for well pads and access

roads within a future natural gas development area in McKean County, Pennsylvania. During scouting, wetlands and streams were identified for avoidance.

**Emergency Spares Warehouse – PPL Corporation, Washingtonville, Pennsylvania.** Completed wetland delineations on approximately 30 acres on their existing site for the construction of an emergency spares warehouse.

**Old Lycoming Township Sewer Authority, Sanitary Sewer GIS Database, Pennsylvania.** Services included the compilation of all available information pertaining to their sanitary sewer system into a series of maps that were used to inspect and remap their system. A new interactive sanitary sewer system map was created from the collected field data regarding the location and condition of the sanitary sewer system.

**Arcadia Timber End Commercial Park, Lycoming County, Pennsylvania.** Services included completing a wetland delineation and agency coordination for a 268-acre tract of land to provide a location for and access to the proposed future development.

**PA Lumber Museum, Potter County, Pennsylvania.** Completed a wetland delineation for a building expansion and a sewer line connection to Denton Hill Ski Area Pump Station.

**DCNR Structure Replacement Projects, Pennsylvania.** Completed wetland delineations for multiple projects prior to the construction of a bridge replacement project.

**Snyder County Act 167 Study, Pennsylvania.** Services included the creation of maps for each municipality and report figures. Landuse/landcover analysis was conducted to determine percent cover in each of the watersheds within the County.

# Matthew Kline

## Environmental Scientist

### Education

AS / Wildlife Technology / Penn State University  
BS / Wildlife and Fisheries / Penn State University

### Years of Experience

With AECOM / URS: 10 years  
With other firms: 3 years

### Specialized Training

Wetland delineation certified  
Ohio Rapid Assessment Method (ORAM) certified  
OSHA 40 Hour Hazardous Waste Operations and  
Emergency Response  
OSHA 8 Hour Annual Refresher  
Safeland certified  
8 Hour Confined Space certified  
8 Hour Supervisor certified  
Smith Defensive Driving training  
Respirator Fit Tested

### Summary

With fourteen years of field work and consulting experience, Mr. Kline is responsible for implementing operations in the field, wetland delineation, biological studies, report preparation, erosion and sediment control inspection, Enhanced Fluid Recovery events (EFR), sampling of vapor and liquid, pump maintenance, remedial treatment system installation and upgrades, and treatment system maintenance at various sites.

Mr. Kline has been involved in wetland delineation on various construction projects including proposed pipelines, power transmission lines, and natural gas well pads.

Responsibilities have included identification of wetland communities, plant identification, hydric soil identification, stream classification, data collection, GPS mapping, and report preparation. He also has experience with mist netting for bat population studies, presence/absence surveys for birds of prey, and timber rattlesnake habitat surveys on various projects.

Mr. Kline has experience with erosion and sediment control inspection on recently constructed oil and gas related well pads and pipelines. His inspection duties include monitoring site erosion controls for proper function, construction, and potential damage caused by equipment or weather.

Mr. Kline has been responsible for performing remedial treatment system operation and maintenance as well as providing recommendations for system upgrades and improvements to optimize performance and function. Included in these duties are maintenance of system plumbing, pump maintenance, and the monitoring and upkeep of recovery wells. He has experience with the maintenance of oil/water separators, air strippers, iron removal tanks, liquid phase carbon vessels, vapor activated carbon vessels, and air compressors.

Another area Mr. Kline has experience in is the recovery of hydrocarbons through several different means. These include hand bailing of wells, use of portable pumps, and the use of Enhanced Fluid Recovery systems (EFR). He is knowledgeable of operating and maintaining of EFR systems. These systems include those housed in mobile recovery units. He has also assisted with the planning and planting of trees used for phyto remediation at remediation sites.

Mr. Kline is also experienced in the area of water, soil, and vapor sampling. He has experience using sampling equipment including Photo Ionization Detectors (PID), Flame Ionization Detectors (FID), hand bailers, peristaltic pumps, terra cores, suma canisters, and various other sample collecting equipment.

Mr. Kline is experienced in working with subcontractors and supervising tasks to completion. He has experience in delegating tasks so that they are performed in the safest, most productive manner. Completing team based tasks are time efficient and retain a level of high quality.

Mr. Kline also has experience in a number of other areas of work related to the above qualifications. He has experience testing water and soil samples in a laboratory. This included extracting and testing for many different compounds including hydrocarbons. He also has a good background in water quality and biology from working under a fisheries biologist, which included the setup and implementation of field surveys, data collection, and report preparation.

### Project Experience

**Wetland Delineation, Biologist, Delineation for pipeline construction project Southwest, PA, Shell:** Wetland delineation for proposed pipeline and included facilities. Work includes wetland and stream identification, plant identification, GPS mapping, team coordination, and report preparation.

**Wetland Delineation, Biologist, Delineation for well pad construction projects Statewide, PA:** Wetland delineation for proposed well pads. Work includes wetland identification, plant identification, GPS mapping, and report preparation.

**Wetland Delineation, Biologist, Delineation for pipeline construction project Northeast, PA, UGI:** Wetland delineation for proposed pipeline and included facilities. Work includes wetland identification, plant identification, GPS mapping, and report preparation.

**Erosion and Sediment Control Inspection, Technician, Erosion control inspection on natural gas well pads, Northwest, PA, Shell:** Erosion and sediment control inspection for constructed gas well pads. Work includes monitoring of controls for proper function and integrity.

**Wetland Delineation, Biologist, Delineation for pipeline construction project Northwest, PA, First Energy:** Wetland delineation for proposed power transmission line upgrade. Work includes wetland identification, plant identification, GPS mapping, and report preparation.

**Wetland Delineation, Biologist, Delineation for pipeline construction project Northern, WV, Dominion:** Wetland delineation for proposed pipeline and included facilities. Work includes wetland identification, plant identification, GPS mapping, and report preparation.

**Wetland Delineation, Biologist, Delineation for pipeline construction project Northeast, PA, Southwest Energy:** Wetland delineation for proposed pipeline exceeding 100 miles in length and included facilities. Work includes wetland identification, plant identification, GPS mapping, and report preparation.

**Wetland Delineation, Biologist, Delineation for pipeline construction project Northern, WV, EQT:** Wetland delineation for proposed pipeline exceeding 100 miles in length and included facilities. Work includes wetland identification, plant identification, GPS mapping, and report preparation.

**Groundwater Remediation, Technician, Remediation system installation and operation, Former Refinery Sites Northwest, PA, Shell:** Installation, operation, and maintenance of treatment system at former Shell refineries. This work includes implementing remedial treatment system maintenance, recovery well maintenance, system fluid sampling, and system upgrades.

**Groundwater Remediation, Technician, Remediation system installation, Exxon Jacksonville, MD:** Installation and maintenance of water treatment system at former Exxon retail site. Also included work with Flame Ox burners.

**Phyto Remediation, Technician, Plant identification, former Shell refineries Oil City, PA:** Identification of tree and shrub species to determine best species to be planted for soil remediation. Included work planting trees of various sizes and species in a predetermined pattern.

**Treatment System Installation, Technician, Remediation system installation, Active Shell refinery Shreveport, LA:** Treatment system installation and expansion of existing system. Work included well tie in to remediation system, pipe work, and concrete work.

**Enhanced Fluid Recovery (EFR), Technician, vacuum assisted SPL recovery, former and active refinery sites Northwest, PA:** Operation and maintenance of EFR equipment used for SPL recovery.

# Bridger Thompson

## Senior Biologist, Senior Technical Lead

### Education

B.S. Wildlife and Fisheries  
Science/Forestry  
Penn State University 1997

### Continuing Education

Basic Erosion and Sediment  
Controls, VA-DCR, Division of Soil  
and Water Conservation. August  
1999  
Maryland Biological Stream Survey  
(MBSS) Spring training 2012-2013  
MSHA 2012  
40 Hour HAZWOPER  
PennDOT-Threatened and  
Endangered Species Desk Reference  
training  
PennDOT- Bog Turtle Phase 1  
habitat Assessment Training

### Professional Background Summary

Throughout his professional career, Mr. Thompson has been involved in a variety of wildlife and natural resource projects, including Threatened and Endangered Species Surveys and research, research and data collection to identify and monitor the potential introduction and spread of Avian Influenza (AI) in wild birds, research and data collection to identify and monitor for Chronic Wasting Disease (CWD) in whitetail deer, research and data collection to identify and monitor the potential spread of rabies in raccoons, and research and monitoring of nesting and dispersal of spotted owls. He has extensive experience conducting wildlife surveys and wildlife habitat assessments, including bird call surveys for migratory and forest interior birds, Threatened and endangered bird species surveys, Indiana bat mist netting surveys, and bog turtle surveys. He has performed wildlife damage control operations relating to cessation or alleviation of problems caused by mammals and birds in urban and rural environments and airports. Mr. Thompson also has experience utilizing GPS and VHF telemetry to track and collect data on avian, reptile, and mammal species and performed data analysis as it relates to this technology. In addition, he has broad wildlife handling experience, including but not limited to bird banding, cloacal and tracheal sampling, rabies sampling and wildlife chemical immobilization, avian, reptile, and mammal trapping, mist netting for birds and bats, blood sampling and investigative field necropsy, and other appropriate biological data collection.

### Recognized Qualified Bog Turtle Surveyor-

Mr. Thompson is currently listed as a U.S. Fish and Wildlife Service Recognized Qualified Bog Turtle Surveyor in Maryland, Delaware, Pennsylvania, and New Jersey. He is also listed a Recognized Qualified Bog Turtle Surveyor in Hudson River/Housatonic Recovery Unit which includes New York, Massachusetts, and Connecticut. Mr. Thompson routinely conducts Phase 1 Bog Turtle Habitat Evaluations, Phase 2 Presence/Probable Absence Surveys, and Phase 3 Trapping Surveys for the bog turtle (*Glyptemys muhlenbergii*) in these states. These surveys include characterization of the existing vegetative community, hydrologic regime, evaluation of the soils composition, metapopulation analysis, and hydrologic connectivity assessments. Mr. Thompson is also qualified to perform pre-construction surveys and construction monitoring for impacts at potential bog turtle sites. In addition to this experience he has also had training in radio telemetry research for the species in Pennsylvania, and Maryland. Mr. Thompson has maintained an exceptional working

### Wetland Scientist-

Throughout his 12 year career as an environmental consultant, Mr. Thompson has been involved with the identification and delineation of wetlands, including the identification of vegetative communities, soil characteristics, and hydrologic indicators as outlined in the Regional Supplement Manual to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, and Northeast and North Central Region. Mr. Thompson is a Senior Biologist with AECOM and is a primary field and technical task lead on multiple projects. He is routinely involved in agency coordination and field views for difficult wetland delineation scenarios and changing regulatory procedures.

### Areas of Expertise

Wetland Delineation  
Threatened and Endangered  
Species  
Aquatic Surveys  
Construction Management  
Watershed Management  
Environmental Permitting  
Wildlife Population Monitoring and  
Management

### Employment History

AECOM Senior Biologist, 2015-  
Present  
URS Corporation, Senior Biologist, 2010-2015  
Skelly and Loy Inc, Biologist, 2007 - 2010

A.D. Marble and Company, Biologist, 2004 – 2006  
USDA, Wildlife Biologist, 2000 – 2004  
USFW, Wildlife Biologist, 2000  
NPS, Wildlife Handler, 1999

## Professional Experience

### **Senior Biologist - Senior Field Crew Leader, Wetland Delineator/ Threatened and Endangered Species Task Lead - AECOM**

Mr. Thompson is currently employed as a Senior Biologist/Senior Technical Lead at AECOM. In his position at AECOM he is responsible for field operations and technical task oversight of multiple projects. Task managements typically include over sight of wetlands delineations, threatened and endangered species surveys, macroinvertebrate and stream surveys, constructability surveys, and construction oversight. He is routinely involved in project planning and agency coordination.

### **Senior Biologist/Field Crew Leader, Marcellus Shale and Natural Gas - URS Corporation:**

Mr. Thompson has coordinated and conducted wetland delineations, threatened and endangered species surveys and assessments of surface water resources associated with the proposed natural gas transmission lines and well pad locations. He has actively participated in the well staking process and pipeline routing and assisted clients in positioning well locations and planning pipeline construction to avoid natural resource impacts and additional permitting requirements.

### **Wildlife Biologist, Wildlife Specialist - USDA APHIS Wildlife Services, Pennsylvania, New York and Maryland-**

As a Wildlife Biologist for the USDA Wildlife Services Mr. Thompson implemented and developed wildlife damage management strategies to reduce human wildlife conflicts and protect human health and safety, natural resources, agricultural resources and property by using Integrated Wildlife Damage Management Techniques (IWDMP). These programs included; Supervising and implementing an integrated wildlife damage management program designed to reduce cormorant use of specific lakes in the Central New York watershed. Development and implementation of wildlife management programs designed to protect tidal salt water marsh habitat on the Chesapeake Bay. Development and implementation of IWDMP designed to monitor population dynamics of nutria an invasive aquatic rodent and development of methods to eradicate the invasive species while limiting impacts to native species. He performed monitoring and management of wildlife on airports to reduce the potential for avian and mammalian aircraft strikes. Monitoring and management of deer populations on federal lands including National Parks, and Department of Defense property including Naval and Air Force bases in Pennsylvania, New York, and Virginia. Monitoring and management of wildlife damages and potential wildlife disease spread.

**Wildlife Biologist - U.S. Forest Service (USFS) - Arcata,**

**California-** Mr. Thompson worked as a Field Wildlife Biologist conducting research on nesting and dispersal habits of the federally listed northern spotted owl in several national forests located in Northern California. He designed and implemented data collection protocol on owl feeding, roosting, and nesting activities, and formed cooperative relationships between Forest Service staff and private landowners in three national forest areas.

## Project Experience

**Senior Biologist, Threatened and Endangered Species Surveys PennEast Pipeline - AECOM.** – Mr. Thompson served as a senior biologist and technical lead, and recognized qualified surveyor and performed Phase 1 and Phase 2 bog turtle surveys and wetland delineations in Pennsylvania and New Jersey, for the PennEast pipeline.

**Senior Biologist, Threatened and Endangered Species Surveys Construction Monitoring Spectra Integrity Project - AECOM.** – Mr. Thompson served as a senior biologist and technical lead, and recognized qualified surveyor and performed Phase 1 and Phase 2 bog turtle surveys and wetland delineations in Pennsylvania for the Spectra Integrity Project.

**Senior Biologist, Threatened and Endangered Species Surveys Pennsylvania Turnpike Commission (PTC) - AECOM** – Mr. Thompson served as a senior biologist and recognized qualified surveyor for Phase 2 and Phase 3 bog turtle surveys performed for Pennsylvania Turnpike Commission (PTC) on the Milepost 33A to 44A rebuild project.

**Senior Biologist, Threatened and Endangered Species Surveys NJNG Southern Reliability Link - AECOM** - Mr. Thompson served as a senior biologist and recognized qualified surveyor, and performed wetland delineations and bog turtle surveys for New Jersey Natural Gas (NJNG) on the Southern Reliability Link project.

**Senior Biologist, Threatened and Endangered Species Surveys RES Swatara Creek Restoration Site Project - AECOM.** - Mr. Thompson served as a senior biologist and qualified surveyor for bog turtle surveys performed for Resource Environmental Solutions (RES) on the Swatara Creek restoration Project.

**Senior Biologist, Threatened and Endangered Species Surveys Spectra M2M Project - AECOM.** - Mr. Thompson served as a senior biologist and qualified surveyor for bog turtle surveys performed for Pennsylvania Turnpike Commission (PTC) on 312-319 rebuild project.

**Senior Biologist, Threatened and Endangered Species Surveys PTC, Phase 1 and Phase 2 Bog Turtle surveys- URS Corporation.** - Mr. Thompson served as a senior biologist and qualified surveyor for bog turtle surveys performed for

Pennsylvania Turnpike Commission (PTC) on 312-319 rebuild project.

**Senior Biologist, Threatened and Endangered Species Surveys, PPL- Hosensack-Quarry Line, Phase 1 and Phase 2**  
Bog Turtle surveys- URS Corporation. - Mr. Thompson served as a senior biologist and qualified surveyor for bog turtle surveys performed for PPL on the Hosensack-Quarry Line reconstruction project.

**Senior Biologist, Wetland Delineation Field Crew Leader, Threatened and Endangered Species Surveys ACE - URS Corporation.** - Mr. Thompson served as a senior biologist and qualified surveyor for bog turtle surveys performed and wetland delineation for Atlantic City Electric (ACE) on multiple transmission line rebuild projects.

**Senior Biologist, Threatened and Endangered Species Surveys SGI Inc. Northeast bulrush and nodding trillium surveys- URS Corporation.**- Mr. Thompson served as a project biologist and performed threatened and endangered species surveys for Northeast bulrush and nodding trillium for the SGI Inc West Flank expansion project.

**Project Biologist, Threatened and Endangered Species Surveys SWN Susquehanna Waterline, marsh bedstraw, soft-leaved sedge surveys- URS Corporation-** Mr. Thompson served as a project biologist and performed surveys for marsh bedstraw and soft-leaved sedge for the SWN Susquehanna Waterline project.

**Project Biologist, Threatened and Endangered Species Surveys Central Susquehanna Valley Thruway Project-Skrelly and Loy Inc.** - Mr. Thompson served as a project biologist and performed annual Bald eagle nesting surveys for the CSVT project.

**Project Biologist, Threatened and Endangered Species SR 80, Pocono Interchange- A.D. Marble-** Mr. Thompson served as a project biologist and performed nesting surveys for the S.R. 80 Pocono Interchange project.

**Wetland Delineator - PENNDOT Improvement Projects and Bridge/Culvert Replacement Projects-** Mr. Thompson was responsible for the identification and delineation of wetlands within the project areas for numerous PENNDOT projects located in: PENNDOT District 5-0 (Monroe, and Northampton Counties); PENNDOT District 2-0 (McKean County); PENNDOT District 3-0 (Bradford, Tioga and Northumberland Counties [including a four mile corridor on S.R. 4014, and a two mile corridor on S.R. 220]); and PENNDOT District 4-0 (Pike County [ including a nine mile corridor on S.R. 84]).

**Field Crew Leader, Threatened and Endangered Species Surveyor, Biotic Communities Evaluator, Water Quality/Aquatic Resources Evaluator - Philadelphia International Airport Capacity Enhancement Project (PHL-**

**CEP) Philadelphia County, Pennsylvania.** – Mr. Thompson worked with multiple consulting firms, the Federal Aviation Administration (FAA) the U.S. Fish and Wildlife Service (USFWS), the Pennsylvania Game Commission (PGC), and the Pennsylvania Fish and Boat Commission (PFBC) on the Philadelphia Airport Capacity Enhancement Project (PHL-CEP). Mr. Thompson served as the lead Wildlife Biologist and coordinated threatened and endangered species nesting surveys for osprey, bald eagle, and marsh wren. He performed land cover and land use evaluations, and biotic communities assessments. Biotic communities assessments included benthic macroinvertebrate surveys, seine netting and electro fishing surveys for fishes, and wildlife habitat and wildlife use surveys. Mr. Thompson also completed documentation and reporting for the threatened and endangered species, biotic communities, and land use and land cover portions of the PHL-CEP Environmental Report.

**Wildlife Biologist - U.S. Forest Service (USFS) - Arcata, California-** Mr. Thompson worked as a Field Wildlife Biologist conducting research on nesting and dispersal habits of the federally listed northern spotted owl in several national forests located in Northern California. He designed and implemented data collection protocol on owl feeding, roosting, and nesting activities, and formed cooperative relationships between Forest Service staff and private landowners in three national forest areas.