

APPENDIX A

Wetland Delineator Qualifications

EDUCATION

MS Biological Sciences
University of Mississippi
Oxford, Mississippi
December 1999

BS Botany
Iowa State University
Ames, Iowa
December 1996

CERTIFICATIONS

- Professional Wetland Scientist (1609) – Society of Wetland Scientists
 - Minnesota Certified Wetland Delineator (1214)
 - DNR list of qualified surveyors for vascular plant surveys
 - DNR list of qualified surveyors for *Botrychium* and *Sceptridium*
 - DNR list of qualified surveyors for the western prairie fringed orchid (*Platanthera praeclara*)
 - DNR list of qualified surveyors for the dwarf trout lily (*Erythronium propullans*)
 - DNR list of qualified surveyors for the prairie bush clover (*Lespedeza leptostachya*)
 - DNR Special Permit (22798) to collect and voucher rare plants
-

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2005-Current)

RARE PLANT SURVEYS

- Line 3 Replacement Project – (2016-2019) – Minnesota
- Bull-Moose 115 kV Transmission Line (2018-2019) – Cass County, MN
- Temperance River State Park (2019) – Cook County, MN
- Cass County Highway Department Ram's head survey (2019) – Cass County, MN
- Waite Park (Martin Marietta) (2019) – Stearns County, MN
- Medicine Quarry (Martin Marietta) (2019) – Yellow Medicine County, MN
- Lake Vermillion State Park (2019) – St. Louis County, MN
- Cass County Ram's-head Surveys (2019) – Cass County, MN
- Catchers Creek (2019) – Anoka County, MN
- Balfany South (2019) – Anoka County, MN
- Andover 35 (2019) – Anoka County, MN
- Andover Blvd. 5 (2019) – Anoka County, MN
- JSN Properties (2019) – Anoka County, MN
- Wilkinson Villas and Anderson Woods (2019) – Anoka County, MN
- Highway 610 – Coon Rapids (2019) – Anoka County, MN
- Entsminger (2018) – Ham Lake, Anoka County, MN
- Arbuckle II Pipeline Project *Abronia macrocarpa* Surveys (2018) – Texas
- Arbuckle II Pipeline Project *Spiranthes parksii* Surveys (2018) – Texas

- Demicks Lake Pipeline Project (2018) – North Dakota
- United Properties (2018) – Centerville, Anoka County, MN
- Amaris – Park Storage (2018) – Lino Lake, Anoka County, MN
- Hidden Forest South (2018) – Ham Lake, Anoka County, MN
- Andover Turkey Farm (2018) – Andover, Anoka County, MN
- Harstad Property (2018) – Mounds View, Ramsey County, MN
- Crosstown 2 South (2018) – Ham Lake, Anoka County, MN
- Hilla Property (2018) – Lakeville, Dakota County, MN
- McDonough-Xylite Street Property (2018) – Blaine, Anoka County, MN
- Bull Moose 115kV Rare Plant Survey (2018) – Aitkin County, MN
- Cuyuna Trail – (2018) – Crow Wing County, MN
- Hawkes Company Peatland Expansion (2017) – Marshall County, MN
- De Soto National Forest (2017) – Harrison County, MS
- Oakwood Realty 131st Street Property (2017) – Blaine, Anoka County, MN
- Paxmar Alpine Drive Project (2017) – Ramsey, Ramsey County, MN
- Asphalt Concrete Solutions (2017) – Blaine, Anoka County, MN
- Seavey Bog (Peatland) Project (2017) – Aitkin County, MN
- Lutsen Ski Resort Expansion (2016) – Cook County, MN
- Hidden Forest East (2016) – Ham Lake, Anoka County, MN
- Sandpiper Pipeline Project (2013-2016) – Minnesota
- Chippewa National Forest (2007-2015, 2019) – Minnesota
- Superior National Forest (2006-2012, 2014-2015) – Minnesota
- Athens to Martin Lake (2012-2013) – Anoka/Isanti counties, MN
- Charcoal 6 (2012) – Stearns County, MN
- Red Lake Peatlands Survey (2011-2012, 2014) – Minnesota
- Border States Paving (2011) – Clay County, MN
- Lakewinds Windfarm Project (2011) – Clay County, MN
- Border Lakes (2009-2010) – BWCA – Cook County, MN
- UNIMIN Mine South (2009-2010) – Le Sueur County, MN
- Chequamegon National Forest (2007/2009) – Wisconsin
- Polymet Land Exchange (2008) – Lake County, MN
- Alberta Clipper/LSr Pipeline Project (2007-2009) – Minnesota/Wisconsin

NATIVE PLANT COMMUNITY CLASSIFICATION/MAPPING

- Iron Range OHV Project (2019) – St. Louis County, MN
- BitterRoot WindFarm Project – Calcareous Fen Survey (2016-2018) – Yellow Medicine County, MN
- Seavey Bog (Peatland) Project (2017) – NPC Mapping – Aitkin County, MN
- Sandpiper Pipeline Project – Calcareous Fen Surveys (2013-2015) - Minnesota
- Koochiching County Peatland Surveys (2014)
- MN River Regional Greenway – Calcareous Fen Surveys (2013-2014) – Dakota County, MN
- Polk and Norman Counties – Calcareous Fen Surveys (2012) – Minnesota
- Trail-Gully – Calcareous Fen Surveys (2010-2011) – Polk County, MN
- Yellow Birch/Cedar Community (MHN45b) Evaluation (2010) – Lake County, MN
- UNIMIN Mine South – Calcareous Fen Mapping (2009) – Le Sueur County, MN

FAUNA HABITAT SURVEYS

- Elk Creek Pipeline Project – Eastern Spotted Skunk Habitat Evaluation (2018) – Kansas
- Jayhawk Pipeline – Eastern Spotted Skunk Habitat Evaluation (2018) – Kansas

- Highland Partners – Dakota Skipper Habitat Mapping (2018) – North Dakota
- Demicks Lake Pipeline Project – Dakota Skipper Habitat Mapping (2018) – North Dakota
- Line 66 – Karner Blue Habitat Mapping (2014) – Wisconsin
- Flanagan South Pipeline – Indiana Bat Habitat Mapping (2012-2013) – Illinois
- Flanagan South Pipeline – Eastern Spotted Skunk Habitat Evaluation (2012) – Kansas

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Ashland and Iron counties, WI
- Temperance River State Park (2019) – Cook County, MN
- Arbuckle II Pipeline Project (2018-2019) – Texas
- Split Rock Wild Trails State Trail – Lake County, MN
- Liberty Pipeline Project (2019) - Kansas
- Lake County Bike Trail Project (2018) – Lake County, MN
- Elk Creek Pipeline Project (2018-2019) – Kansas/Montana
- Northern Natural Gas – various O&M projects – (2015-2019) – Iowa, Nebraska, North Dakota, South Dakota, Wisconsin
- Jayhawk Pipeline (2018) – Kansas
- Line 84 (2018) – North Dakota
- Highland Partners (2018) – North Dakota
- TransCanada – various O&M projects – (2013, 2017-2018) – Michigan, Missouri, Wisconsin
- Seavey Bog (Peatland) Project (2017) – Aitkin County, Minnesota
- Mountaineer Xpress Pipeline (2017) – West Virginia
- George Property (2017) – Mille Lacs County, Minnesota
- 280 Mississippi Blvd (2017) – St. Paul, Ramsey County, Minnesota
- Exelon Handsome Lake Lateral (2016) – Pennsylvania
- Gulf Xpress Pipeline (2015-2016) – Kentucky, Mississippi, Tennessee
- Line 66 (2014) – Illinois/Wisconsin
- Sandpiper Pipeline Project (2013-2015) – Minnesota
- Flanagan South Pipeline (2012) – Illinois, Missouri, Kansas, Oklahoma
- Bakken Pipeline Project (2012) – Montana
- Nashwauk Esser Steel Corridor Project (2010) – Itasca County, MN
- MinnCan Pipeline Project 2007-2008 – Minnesota

WETLAND DATA REVIEW/DESKTOP ANALYSIS/DATA MANAGEMENT

- Arbuckle II Pipeline Project (2018-2019) – Texas
- Elk Creek Pipeline Project (2018-2019) – Kansas, Montana
- Scenic Transmission Line (2018) – Aitkin County, MN
- Demicks Lake Pipeline Project (2018) – North Dakota
- Line 3 Replacement Project – (2016-2018) – Minnesota
- Seavey Bog (Peatland) Project (2017) – Aitkin County, MN
- Bay Area Pipeline Project (2016) – Michigan
- Mid-Michigan Pipeline Project (2016) – Michigan
- Dakota Access Pipeline (2014-2016) – North Dakota
- Sandpiper Pipeline Project (2013-2016) – Minnesota/Wisconsin

VEGETATION ASSESSMENT AND MONITORING

- Gully 30 Calcareous Fen Monitoring (2011-Current) – Polk County, MN
- DNR Prairie Monitoring (2008-2019) – Minnesota

- Alberta Clipper Post-Construction Wetland Monitoring (2011-2015) – Minnesota/Wisconsin
- *Botrychium* monitoring (2008-2014) – Cass County, MN

MANAGEMENT PLANS

- Pennington Bog Scientific and Natural Area (In-progress)
- Lake Bronson Scientific and Natural Area (In-progress)
- Split Rock Lighthouse State Park (2016-2017)
- Gooseberry Falls State Park (2016-2017)
- Gully Scientific and Natural Area (2015-2016)
- Sandpiper Prairie Scientific and Natural Area (2015-2016)
- Santee Prairie Scientific and Natural Area (2015-2016)

MANAGEMENT PLANS

- Pennington Bog Scientific and Natural Area (2018-2019)
- Lake Bronson Scientific and Natural Area (2018-2019)
- Split Rock Lighthouse State Park (2016-2017)
- Gooseberry Falls State Park (2016-2017)
- Gully Scientific and Natural Area (2015-2016)
- Sandpiper Prairie Scientific and Natural Area (2015-2016)
- Santee Prairie Scientific and Natural Area (2015-2016)

TECHNICAL DOCUMENTS

- Floristic Quality Assessment for Prairie Parkland and Tallgrass Aspen Parklands Provinces (2019) – Project Leader
 - Floristic Quality Assessment for Minnesota Wetlands (2017) – Primary Author
-

PROJECT RESULTS – RARE PLANT FINDS

- Line 3 Replacement Project – (2016-2019) – Minnesota
 - *Botrychium lanceolatum* (T)
 - *Carex sterilis* (T)
 - *Carex formosa* (E)
 - *Carex pallescens* (E)
 - *Cladium mariscoides* (SC)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Rhynchospora capillacea* (T)
 - *Scleria verticillata* (T)
- Temperance River State Park – Campground Expansion (2019) – Cook County, MN
 - *Carex flava* (SC)
 - *Carex media* (SC)
 - *Eleocharis nitida* (E)
 - *Euphrasia hudsoniana* var. *ramosior* (SC)
 - *Pinguicula vulgaris* (SC)
 - *Trisetum spicatum* (SC)
- JSN Properties (2019) – Anoka County, MN
 - *Rubus fulleri* (T)
 - *Viola lanceolata* (T)

- Medicine Quarry (Martin Marietta) (2019) – Yellow Medicine County, MN
 - *Oregon woodsia* (SC)
- Bull-Moose 115 kV Transmission Line (2019) – Cass County, MN
 - *Poa paludigena* (T)
- Swedish Immigrant Trail (2019) – Chisago County, MN
 - *Juglans cinerea* (E)
- Chippewa National Forest (2007-2015,2019) – Minnesota
 - *Botrychium lanceolatum* (T)
 - *Botrychium mormo* (T)
 - *Botrychium pallidum* (SC)
 - *Botrychium simplex* (SC)
 - *Calypso bulbosa* (RFSS)
 - *Cypripedium arietinum* (T)
 - *Dryopteris goldiana* (SC)
 - *Malaxis monophyllos* (SC)
 - *Malaxis paludosa* (E – First known population in the CNF)
 - *Ranunculus lapponicus* (SC)
 - *Sceptridium oneidense* (E)
 - *Sceptridium rugulosum* (T)
 - *Sparganium glomeratum* (RFSS)
 - *Utricularia geminiscapa* (T - First known population in the CNF)
- Demicks Lake Pipeline Project (2018) – North Dakota
 - *Escobaria missouriensis* (RFSS)
- Amaris – Park Storage (2018) – Lino Lake, Anoka County, MN
 - *Rubus semisetosus* (E)
- Cuyuna Trail – (2018) – Crow Wing County, MN
 - *Botrychium ascendens* (E)
 - *Botrychium campestre* var. *lineare* (E)
 - *Botrychium pallidum* (SC)
 - *Botrychium simplex* (SC)
 - *Botrychium spathulatum* (E)
- Hawkes Company Peatland Expansion (2017) – Marshall County, MN
 - *Androsace septentrionalis* (SC)
 - *Carex obtusata* (SC)
 - *Salix maccalliana* (SC)
 - *Salix pseudomonticola* (SC).
- De Soto National Forest (2017) – Harrison County, MS
 - *Cirsium lecontei* (MS State Tracked)
 - *Lachnocaulon digitum* (RFSS)
 - *Pinguicula planifolia* (RFSS)
 - *Platanthera nivea* (ST)
 - *Polygala douglasii* (RFSS)
 - *Rhynchospora capitellata* (ST)
 - *Rhynchospora macra* (RFSS)
 - *Scleria baldwinii* (ST)
 - *Utricularia purpurea* (ST)
 - *Xyris drummondii* (RFSS)
- Seavey Bog (Peatland) Project (2017) – Aitkin County, MN
 - *Botrychium lanceolatum* (T)
 - *Botrychium simplex* var. *tenebrosum* (SC)

- *Poa paludigena* (T)
- *Rubus stipulatus* (T)
- *Trichocolea tomentella* (T – State listed liverwort)
- Hidden Forest East (2016) – Ham Lake, Anoka County, MN
 - *Gaylussacia baccata* (T)
- Sandpiper Pipeline Project (2013-2016) – Minnesota
 - *Botrychium lanceolatum* (T)
 - *Botrychium simplex* var. *tenebrosum* (SC)
 - *Carex sterilis* (T)
 - *Carex formosa* (E)
 - *Cladium mariscoides* (SC)
 - *Drosera anglica* (SC)
 - *Eleocharis nitida* (WI E)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Juncus vaseyi* (WI SC)
 - *Petasites sagittatus* (WI T)
 - *Poa paludigena* (T)
 - *Ranunculus gmelinii* (WI E)
 - *Rhynchospora capillacea* (T)
 - *Salix planifolia* (WI T)
 - *Scleria verticillata* (T)
- Superior National Forest (2006-2012, 2014-2015) – Minnesota
 - *Asplenium trichomanes* (T)
 - *Botrychium mormo* (T)
 - *Botrychium pallidum* (SC)
 - *Botrychium simplex* (SC)
 - *Calypso bulbosa* (formerly RFSS)
 - *Carex flava* (SC)
 - *Carex michauxiana* (SC)
 - *Carex novae-angliae* (T)
 - *Claytonia caroliniana* (formerly SC)
 - *Eleocharis quinqueflora* (SC)
 - *Geocaulon lividum* (MN Watch-list)
 - *Platanthera clavellata* (SC)
 - *Pyrola minor* (SC)
 - *Ranunculus lapponicus* (SC)
 - *Rhynchospora fusca* (formerly SC)
 - *Rubus chamaemorus* (T)
- Athens to Martin Lake (2012-2013) – Anoka/Isanti counties, MN
 - *Gaylussacia baccata* (T)
 - *Juncus marginatus* (T)
 - *Rubus multiflorus* (SC)
 - *Viola lanceolata* (T)
- Charcoal 6 (2012) – Stearns County, MN
 - *Platanthera flava* var. *herbiola* (T)
- Red Lake Peatlands Survey (2011-2012, 2014) – Minnesota
 - *Carex exilis* (SC)
 - *Cladium mariscoides* (SC)
 - *Cypripedium arietinum* (T)

- *Drosera anglica* (SC)
- *Drosera linearis* (SC)
- *Eleocharis rostellata* (T)
- *Juncus stygius* (SC)
- *Rhynchospora capillacea* (T)
- *Xyris montana* (SC)
- Border States Paving (2011) – Clay County, MN
 - *Gaillardia aristata* (SC)
- Lakewinds Windfarm Project (2011) – Clay County, MN
 - *Cirsium hillii* (SC)
 - *Gaillardia aristata* (SC)
- Trail-Gully – Calcareous Fen Surveys (2010-2011) – Polk County, MN
 - *Carex sterilis* (T)
 - *Cladium mariscoides* (SC)
 - *Cypripedium arietinum* (T)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Rhynchospora capillacea* (T)
 - *Scleria verticillata* (T)
- Nashwalk Esser Steel Corridor Project (2010) – Itasca County, MN
 - *Carex pallescens* (E)
- Yellow Birch/Cedar Community (MHn45b) Evaluation (2010) – Lake County, MN
 - *Carex novae-angliae* (T)
- Border Lakes (2009-2010) – BWCA – Cook County, MN
 - *Botrychium simplex* (SC)
 - *Carex media* (SC)
 - *Carex michauxiana* (SC)
 - *Cladium mariscoides* (SC)
 - *Littorella uniflora* (SC)
 - *Muhlenbergia uniflora* (SC)
 - *Platanthera clavellata* (SC)
 - *Pyrola minor* (SC)
 - *Rhynchospora fusca* (formerly SC)
- UNIMIN Mine South (2009-2010) – Le Sueur County, MN
 - *Carex sterilis* (T)
- Polymet Land Exchange (2008) – Lake County, MN
 - *Juncus stygius* (SC)
 - *Platanthera clavellata* (SC)
 - *Pyrola minor* (SC)
- Alberta Clipper/LSr Pipeline Project (2007-2009) – Minnesota/Wisconsin
 - *Botrychium minganense* (SC)
 - *Botrychium simplex* (SC)
 - *Carex sterilis* (T)
 - *Cypripedium candidum* (SC)
 - *Cladium mariscoides* (SC)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Ranunculus lapponicus* (SC)
 - *Rhynchospora capillacea* (T)
 - *Salicornia rubra* (T)

- *Scleria verticillata* (T)
- *Utricularia geminiscapa* (T)
- *Waldsteinia fragarioides* (SC)

Status Reference

RFSS - Regional Forester Sensitive Species

E – Minnesota Threatened

SC – Minnesota Special Concern

T – Minnesota Threatened

Status of species for projects completed in other states is designated with state abbreviation.

PROFESSIONAL REFERENCES

Welby Smith

State Botanist, DNR Div. EWR
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025
651-259-5142

Jack Greenlee

Superior National Forest
318 Forestry Road
Aurora, MN 55705
218-229-8817

Mike Lee

Botanist
Minnesota Biological Survey, DNR Div. EWR
940 Industrial Drive S
Sauk Rapids, MN 56379
320-255-4279 ext. 231

Richard Baker

Minnesota Endangered Species Coordinator
DNR Div. of Ecological and Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155
651-259-5073

Steve Eggers

Sr. Ecologist, US Army Corps of Engineers
1114 S Oak St.
La Crescent, MN 55947
507-895-2170

John C. Almendinger, Ph.D.

Eco. Land Class. Coord., DNR Div. of Forestry
413 SE 13th Street
Grand Rapids, MN 55744
218-322-2503

Jeremy Cable

Chippewa National Forest
1037 Division St., Box 308
Deer River, MN 56636
218-246-2123

Erika Rowe

Plant Ecologist/Ecological Monitoring Coordinator
Minnesota Biological Survey, DNR Div. EWR
500 Lafayette Road, Box 25
St. Paul, MN 55155
651-259-5134

Robert H. Mohlenbrock, Ph.D.

Professor Emeritus Southern Illinois University
Author of the Flora of Illinois Series
112 Bird Song Drive
Carbondale, IL 62903
618-549-1884

EDUCATION

BS Fisheries, Wildlife, and Conservation Biology
Plant Biology Minor
Forest Ecosystem Management and Conservation Minor
Environmental Sciences, Policy, and Management Minor
University of Minnesota-Twin Cities
St. Paul, Minnesota, 2017

CERTIFICATIONS

- Minnesota DNR list of qualified surveyors for vascular plant surveys
-

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2018-Current)

RARE PLANT SURVEYS

- Line 3 Replacement Project (2018-2019) – Minnesota
- Split Rock Wilds Trail (2019) – Lake County, MN
- Medicine Quarry (Martin Marietta) (2019) – Yellow Medicine County, MN
- L4870 Bridge Replacement (2019) – Fillmore County, MN
- Temperance River State Park (2019) – Cook County, MN
- Swedish Immigrant Trail (2019) – Chisago County, MN
- Huntley Wilmarth 345kV Transmission Line (2019) – Blue Earth County, MN
- Waite Park (Martin Marietta) (2019) – Stearns County, MN
- Lake Vermillion State Park (2019) – St. Louis County, MN
- Chippewa National Forest (2019) – Minnesota
- Cass County Highway Department Ram's head survey (2019) – Cass County, MN
- Catchers Creek (2019) – Anoka County, MN
- Balfany South (2019) – Anoka County, MN
- Andover 35 (2019) – Anoka County, MN
- Andover Blvd. 5 (2019) – Anoka County, MN
- Wilkinson Villas and Anderson Woods (2019) – Anoka County, MN
- Highway 610 – Coon Rapids (2019) – Anoka County, MN
- Arbuckle II Pipeline *Spiranthes parksii* Surveys (2018) – Texas
- Demicks Lake Pipeline Project (2018) – North Dakota
- Lexington Meadows (2018) – Blaine, Anoka County, MN
- Furrer Property (2018) – Forest Lake, Washington County, MN
- BL Holdings Property (2018) – Coon Rapids, Anoka County, MN
- Accent Homes (2018) – Blaine, Anoka County, MN

NATIVE PLANT COMMUNITY CLASSIFICATION/MAPPING

- Iron Range OHV Project (2019) – St. Louis County, MN

FAUNA SURVEYS

- Demicks Lake Pipeline Project – Avian Nest Surveys (2019) – North Dakota
- Demicks Lake Pipeline Project – Dakota Skipper Surveys (2018) – North Dakota
- Lexington Meadows – Wilson’s Phalarope Survey (2018) – Blaine, Anoka County, MN

FAUNA HABITAT SURVEYS

- Northern Natural Gas – Western Massasauga Crayfish Burrow Surveys (2019) – Nebraska
- Northern Natural Gas – Bald Eagle Nest Surveys (2019) – MN, Iowa, Wisconsin
- Bear Creek Pipeline Project – Dakota Skipper Habitat Mapping (2019) – North Dakota
- Elk Creek Pipeline Project – Eastern Spotted Skunk Habitat Evaluation (2018) – Kansas
- Demicks Lake Pipeline Project – Dakota Skipper Habitat Mapping (2018) – North Dakota

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Ashland and Iron counties, WI
- Split Rock Wilds Trail (2019) – Lake County, MN
- Bear Creek Pipeline Project (2019) – North Dakota
- Tioga Lateral Pipeline Project (2019) – North Dakota
- Temperance River State Park (2019) – Cook County, MN
- Arbuckle II Pipeline (2018-2019) – Texas
- Elk Creek Pipeline Project (2018) – Kansas
- Northern Natural Gas – various O&M projects – (2018-2019) – Minnesota
- TransCanada – various O&M projects – (2018) – Missouri

VEGETATION ASSESSMENT AND MONITORING

- DNR Prairie Monitoring (2018-2019) – Minnesota
- Pelican River Habitat Management Plan (2019) – Otter Tail County, MN
- Caribou WMA Prairie Monitoring (2018) – Roseau County, MN
- Trail-Gully – Calcareous Fen Rare Species Counts (2018) – Polk County, MN

USFWS – Upper Mississippi River National Wildlife & Fish Refuge (2017)

RARE FAUNA SURVEYS

- Rusty Patched Bumble Bee Survey (2017) – Wabasha County, MN
- WI DNR Eastern Massasauga Survey (2017) – Wisconsin

USFWS – Minnesota Valley National Wildlife Refuge (2016)

RARE FAUNA SURVEYS

- Herpetofaunal Inventory/Rare Species Survey (2016) – Hennepin County, MN

PROJECT RESULTS – RARE VASCULAR PLANT FINDS

- Line 3 Replacement Project – (2018-2019) – Minnesota
 - *Botrychium lanceolatum* ssp. *angustisegmentum* (T)

- *Botrychium simplex* var. *simplex* (SC)
- *Botrychium simplex* var. *tenebrosum* (SC)
- *Botrychium rugulosum* (SC)
- *Carex obtusata* (SC)
- *Carex pallescens* (E)
- *Cirsium pumilum* var. *hillii* (SC)
- *Geum laciniatum* (MN Watch-list)
- *Torreyochloa pallida* (SC)
- *Trichophorum clintonii* (T)
- Iron Range OHV Project (2019) – St. Louis County, MN
 - *Botrychium lanceolatum* ssp. *angustisegmentum* (T)
 - *Platanthera clavellata* (SC)
- Split Rock Wilds Trail (2019) – Lake County, MN
 - *Carex ormostachya* (SC)
- Enbridge Line 5 Wetland Surveys (2019) – Ashland and Iron counties, WI
 - *Petasites frigidus* var. *sagittatus* (WI T)
- Medicine Quarry (Martin Marietta) (2019) – Yellow Medicine County, MN
 - *Woodsia oregana* (SC)
- L4870 Bridge Replacement (2019) – Fillmore County, MN
 - *Napaea dioica* (T)
- Temperance River State Park – Campground Expansion (2019) – Cook County, MN
 - *Carex flava* (SC)
 - *Carex media* (SC)
 - *Eleocharis nitida* (SC)
 - *Euphrasia hudsoniana* var. *ramosior* (SC)
 - *Pinguicula vulgaris* (SC)
 - *Trisetum spicatum* (SC)
- Swedish Immigrant Trail (2019) – Chisago County, MN
 - *Juglans cinerea* (E)
 - *Phemeranthus rugospermus* (T)
- Huntley Wilmarth 345kV Transmission Line (2019) – Blue Earth County, MN
 - *Agalinis auriculata* (E)
 - *Asclepias sullivantii* (T)
 - *Carex annectens* (SC)
 - *Cypripedium candidum* (SC)
 - *Eryngium yuccifolium* (SC)
- Chippewa National Forest (2019) – Minnesota
 - *Calypso bulbosa* (RFSS)
 - *Cypripedium arietinum* (T)
- Demicks Lake Pipeline Project (2018) – North Dakota
 - *Escobaria missouriensis* (RFSS)
 - *Townsendia exscapa* (RFSS)
 - *Townsendia hookeri* (RFSS)
- Lexington Meadows (2018) – Blaine, Anoka County, MN
 - *Viola lanceolata* (T)
- Furrer Property (2018) – Forest Lake, Washington County, MN
 - *Geum laciniatum* (MN Watch-list)

PROJECT RESULTS – RARE INSECT FINDS

- Demicks Lake Pipeline Project (2018) – North Dakota
 - *Hesperia dacotae* – Dakota skipper (Federally Threatened)
- Rusty Patched Bumble Bee Survey (2017) – Wabasha County, MN
 - *Bombus affinis* – Rusty Patched Bumble Bee (Federally Endangered)

PROJECT RESULTS – RARE VERTEBRATE FINDS

- Eastern Massasauga Survey – WI DNR (2017) – Wisconsin
 - *Sistrurus catenatus* – Eastern Massasauga (Federally Threatened)
- Herpetofaunal Inventory/Rare Species Survey (2016) – Hennepin County, MN
 - *Pituophis catenifer* – Gophersnake (SC)

Status Reference

RFSS - Regional Forester Sensitive Species

E – Minnesota Threatened

SC – Minnesota Special Concern

T – Minnesota Threatened

Status of species for projects completed in other states is designated with state abbreviation.

PROFESSIONAL REFERENCES

Vicki Sherry
Wildlife Biologist, USFWS
Minnesota Valley NWR
3815 American Blvd E
Bloomington, MN 55425
(952) 858-0723

Stephen Winter, Ph.D.
Wildlife Biologist, USFWS
Upper Mississippi River NWFR
51 East 4th St, Rm 203
Winona, Minnesota 55987
(507) 494-6214

EDUCATION

BS Biology
Chemistry Minor
University of Minnesota, Duluth
Duluth, Minnesota, 2006

CERTIFICATIONS

- Professional Wetland Scientist (2774) – Society of Wetland Scientists
 - Minnesota Certified Wetland Delineator (1274)
 - Minnesota DNR list of qualified surveyors for vascular plant surveys
 - Minnesota DNR list of qualified surveyors *Botrychium* and *Sceptridium*
 - Minnesota DNR list of qualified surveyors for avian surveys
 - Wisconsin DNR Karner blue butterfly certified surveyor
-

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2007-Current)

RARE PLANT SURVEYS

- Line 3 Replacement Project (2015-2018) – Minnesota
- De Soto National Forest (2017) – Mississippi
- Seavey Bog (Peatland) Project (2017) – Minnesota
- Sandpiper Pipeline Project (2013-2016) – Minnesota
- Chippewa National Forest (2007-2012, 2014-2016) – Minnesota
- Chequamegon National Forest (2007, 2009, 2016-2017) – Wisconsin
- Line 66 (2014) – Wisconsin
- Superior National Forest (2007-2012) – Minnesota
- Twin Metals Mining (2011-2012) – Minnesota
- Franconia Minerals (2008) – Minnesota
- Mesabi Nugget Mining (2008) – Minnesota
- Alberta Clipper/LSr Pipeline Project (2007-2009) – Minnesota/Wisconsin
- Great Lakes Gas – Chequamegon National Forest (2007) – Wisconsin

NATIVE PLANT COMMUNITY CLASSIFICATION/MAPPING

- Paul Bunyan State Trail (2012) – Minnesota
- Southern Rich Conifer Swamp (FPs63a) Evaluation (2010) – Minnesota

FAUNA HABITAT SURVEYS

- Little Missouri Loop Pipeline – Avian Nesting Surveys – (2019) – North Dakota
- Demicks Lake Pipeline Project – Avian Nesting Surveys – (2019) – Montana/North Dakota

- Lexington Meadows – Avian Surveys (2018) - Minnesota
- Sandpiper Pipeline Project – Avian Surveys (2013-2015) – Minnesota/Wisconsin
- Line 66 – Karner Blue Habitat Mapping/Avian Surveys (2014) – Wisconsin
- Midwestern Gas Transmission Line – Indiana Bat Habitat Mapping/Avian Surveys (2012) – Indiana
- Flanagan South Pipeline – Indiana Bat Habitat Mapping (2012-2013) – Illinois/Missouri
- CapX2020 Powerline – Fauna Surveys (2009-2010) – Minnesota
- Chippewa National Forest Nelson Property – Avian Surveys (2008) – Minnesota

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Wisconsin
- Liberty Pipeline Project (2019) – Colorado
- Northern Natural Gas – various O&M projects – (2015-2019) – Iowa/Minnesota/Nebraska/North Dakota/South Dakota/Wisconsin
- Demicks Lake Pipeline Project (2019) – Montana/North Dakota
- TransCanada – various O&M projects (2011-2013, 2016-2019) – Michigan/Missouri/Wisconsin
- Arbuckle II Pipeline (2018) – Texas
- Elk Creek Pipeline Project (2018) – Kansas/Montana
- Rochester Expansion (2018) – Minnesota
- Cottonwood County CSAH 7 (2018) – Minnesota
- Medford to Prentice (2017) – Wisconsin
- Seavey Bog (Peatland) Project (2017) – Minnesota
- Mountaineer Xpress Pipeline (2017) – West Virginia
- Magellan Pipeline Project (2017) – Minnesota
- Bay Area Pipeline Project (2016) – Michigan
- Sandpiper Pipeline Project (2013-2016) – Minnesota
- Line 66 (2014-2015) – Illinois/Wisconsin
- Line 3 Replacement Project (2013-2015) Minnesota
- Blair Lateral Pipeline (2015) – Wisconsin
- Dakota Access Pipeline (2015-2016) – North Dakota
- Flanagan South Pipeline (2012-2013) – Illinois/Missouri
- Bakken Pipeline Project (2011-2012) – Montana
- MinnCan Pipeline Project (2007-2008) – Minnesota

VEGETATION ASSESSMENT AND MONITORING

- MinnCan Pipeline (2009-2012) – Minnesota
- Little Missouri National Grasslands (2010) - North Dakota/South Dakota
- DNR Prairie Monitoring (2009-2010) – Minnesota
- Alberta Clipper Post-Construction Wetland Monitoring (2011, 2013, 2014-2015) – Minnesota/Wisconsin
- *Botrychium* monitoring (2008) – Minnesota

ENVIRONMENTAL INSPECTOR

- Floodwood Maintenance Digs (2017) – Minnesota

PROJECT RESULTS – RARE VASCULAR PLANT FINDS

- Lexington Meadows (2018) – Minnesota
 - *Viola lanceolata* (T)

- Line 3 Replacement Project – (2016-2018) – Minnesota
 - *Botrychium lanceolatum* (T)
 - *Botrychium mormo* (T)
 - *Carex pallescens* (E)
 - *Carex sterilis* (T)
 - *Carex formosa* (E)
 - *Cladium mariscoides* (SC)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Rhynchospora capillacea* (T)
 - *Scleria verticillata* (T)
- De Soto National Forest (2017) – Mississippi
 - *Chasmanthium ornithorhynchum* (MS State Tracked)
 - *Cirsium lecontei* (ST)
 - *Lachnocaulon digitum* (RFSS)
 - *Pinguicula planifolia* (RFSS)
 - *Platanthera nivea* (ST)
 - *Polygala douglasii* (RFSS)
 - *Rhynchospora capitellata* (ST)
 - *Rhynchospora macra* (RFSS)
 - *Scleria baldwinii* (ST)
 - *Utricularia olivacea* (ST)
 - *Utricularia purpurea* (ST)
 - *Xyris drummondii* (RFSS)
- Sandpiper Pipeline Project (2013-2016) – Minnesota
 - *Botrychium lanceolatum* (T)
 - *Botrychium pallidum* (SC)
 - *Botrychium simplex* var. *tenebrosum* (SC)
 - *Carex sterilis* (T)
 - *Carex formosa* (E)
 - *Cirsium pumilum* (SC)
 - *Cladium mariscoides* (SC)
 - *Eleocharis nitida* (WI E)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Juglans cinerea* (E)
 - *Juncus vaseyi* (WI SC)
 - *Petasites sagittatus* (WI T)
 - *Poa paludigena* (T)
 - *Ranunculus gmelinii* (WI E)
 - *Ranunculus lapponicus* (SC)
 - *Salix maccalliana* (SC)
 - *Salix planifolia* (WI T)
 - *Salix pseudomonticola* (SC)
 - *Sceptridium rugulosum* (SC)
 - *Torreyochloa pallida* (SC)
 - *Utricularia purpurea* (E)
- Chippewa National Forest (2007-2015) – Minnesota
 - *Botrychium lanceolatum* (T)
 - *Botrychium mormo* (T)

- *Botrychium pallidum* (SC)
- *Botrychium simplex* (SC)
- *Calypso bulbosa* (formerly RFSS)
- *Cypripedium arietinum* (T)
- *Malaxis monophyllos* (SC)
- *Sceptridium oneidense* (E)
- *Sceptridium rugulosum* (T)
- *Sparganium glomeratum* (RFSS)
- Chequamegon National Forest (2007, 2009, 2016-2017) – Wisconsin
 - *Panax quinquefolius* (WI SC)
- Superior National Forest (2007-2012) – Minnesota
 - *Botrychium mormo* (T)
 - *Botrychium pallidum* (SC)
 - *Botrychium simplex* (SC)
 - *Carex michauxiana* (SC)
 - *Carex novae-angliae* (T)
 - *Claytonia caroliniana* (formerly SC)
 - *Crataegus douglasii* (T)
 - *Eleocharis nitida* (SC)
 - *Geocaulon lividum* (MN Watch-list)
 - *Luzula parviflora* (T)
 - *Platanthera clavellata* (SC)
 - *Polystichum braunii* (T)
 - *Pyrola minor* (SC)
 - *Ranunculus lapponicus* (SC)
 - *Rhynchospora fusca* (formerly SC)
 - *Rubus chamaemorus* (T)
 - *Torreyochloa pallida* (SC)
 - *Utricularia geminiscapa* (T)
 - *Waldsteinia fragarioides* (SC)
 - *Woodsia alpina* (T)
 - *Woodsia glabella* (T)
 - *Woodsia scopulina* (T)
 - *Xyris montana* (SC)
- Twin Metals (2011-2012) – Minnesota
 - *Botrychium simplex* (SC)
 - *Phacelia franklinii* (T)
 - *Rhynchospora fusca* (formerly SC)
 - *Xyris montana* (SC)
- Polymet Land Exchange (2008) – Minnesota
 - *Juncus stygius* (SC)
 - *Platanthera clavellata* (SC)
 - *Pyrola minor* (SC)
- Alberta Clipper/LSr Pipeline Project (2007-2009) – Minnesota/Wisconsin
 - *Botrychium simplex* (SC)
 - *Cladium mariscoides* (SC)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Rhynchospora capillacea* (T)
 - *Salicornia rubra* (T)

PROJECT RESULTS – RARE LICHEN FINDS

- Superior National Forest (2007-2012) – Minnesota
 - *Frullania selwyniana* (SC)
 - *Lobaria quercizans* (formerly SC)
 - *Usnea longissima* (SC)

PROJECT RESULTS – RARE FAUNA FINDS

- CapX2020 Avian Surveys - BGR 230kV Transmission Line (2009) – Minnesota
 - *Coturnicops noveboracensis* – Yellow rail – (SC)
 - *Cygnus buccinators* – Trumpeter swan – (SC)

Status Reference

RFSS - Regional Forester Sensitive Species

E -- Minnesota Threatened

SC – Minnesota Special Concern

T – Minnesota Threatened

Status of species for projects completed in other states is designated with state abbreviation.

PROFESSIONAL REFERENCES

Robert H. Mohlenbrock, Ph.D.
Professor Emeritus Southern Illinois University
Author of the Flora of Illinois Series
112 Bird Song Drive
Carbondale, IL 62903
618-549-1884

Jeremy Cable
Chippewa National Forest
1037 Division St., Box 308
Deer River, MN 56636
218-246-2123

Jack Greenlee
Superior National Forest
318 Forestry Road
Aurora, MN 55705
218-229-8817

John Canne
Merjent, Inc.
54 Park Place, Suite 300
Appleton, WI 54914
920-224-3838

EDUCATION

BS Botany, Ecology & Vegetation Management
University of Minnesota – Twin Cities
St. Paul, Minnesota, 2007

CERTIFICATIONS

- DNR list of qualified surveyors for vascular plant surveys
-

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2016-Current)

RARE PLANT SURVEYS

- Line 3 Replacement Project (2016-2019) – Minnesota
- Gully Fen Plant Counts (2016-2018) – Polk County, MN
- De Soto National Forest (2017) – Harrison County, MS
- Seavey Bog (Peatland) Project (2017) – Aitkin County, MN
- Lutsen Ski Resort Expansion (2017) – Cook County, MN
- West Farm (2017) – Blaine, Anoka County, MN
- Stalberger Property (2017) – Ham Lake, Anoka County, MN
- Sandpiper Pipeline Project (2016) – Minnesota
- Chequamegon-Nicolet National Forest (2016) – Wisconsin
- Chippewa National Forest (2016) – Minnesota

NATIVE PLANT COMMUNITY CLASSIFICATION/MAPPING

- Seavey Bog (Peatland) Project (2017) – NPC Mapping – Aitkin County, MN

FAUNA HABITAT SURVEYS

- Demicks Lake Pipeline Project – Avian Nest Surveys (2019) – North Dakota
- Little Missouri Loop Pipeline – Avian Nesting Surveys – (2019) – North Dakota
- Blazing Star 2 Wind Farm Project – *Lepidoptera* Habitat Assessment (2019) – Lincoln County, MN
- Demicks Lake Pipeline Project – Dakota Skipper Habitat Mapping (2018) – North Dakota

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Ashland & Iron counties, WI
- Liberty Pipeline Project (2019) – Kansas
- Tioga Lateral Pipeline Project (2019) – North Dakota
- Arbuckle II Pipeline Project (2019) – Texas
- Demicks Lake Pipeline Project (2018-2019) – North Dakota/Montana
- Northern Natural Gas – various O&M projects – (2016-2019) – Iowa, Minnesota, Wisconsin, Nebraska

- Elk Creek Pipeline Mat Retrieval (2018) – Kansas
- Elk Creek Pipeline Project (2018) – Kansas/Montana
- TransCanada – various O&M projects – (2018) – Iowa, Missouri
- Fond du Lac Line 4 (2017) – Minnesota
- Fergus Falls - Great Plains Gas (2016) – Minnesota

VEGETATION ASSESSMENT AND MONITORING

- Blazing Star 2 Wind Farm Project – Grassland Habitat Sampling (2019) – Lincoln County, MN
- SAX Wetland Monitoring (2018-2019) – Illinois
- DNR Prairie Monitoring (2016-2019) – Minnesota
- Caribou WMA Prairie Monitoring (2018) – Roseau County, MN

NOXIOUS WEED SURVEYS

- Line 3 Replacement Project (2018-2019) – Minnesota
- Demicks Lake Pipeline Project (2018-2019) – North Dakota

TREE AND SHRUB SURVEYS

- Demicks Lake Pipeline Project (2018-2019) – North Dakota

MANAGEMENT PLANS

- DNR Prairie Stewardship Plans (2019) – Minnesota
- Cottonwood River Prairie Scientific and Natural Area (2017-2018) – Brown County, MN

PROFESSIONAL REFERENCES

Bill Carter
President, Prairie Moon Nursery
32115 Prairie Lane
Winona, MN 55987
866-417-8156 ext 210

Becky Klukas
Prairie Moon Nursery
32115 Prairie Lane
Winona, MN 55987
866-417-8156 ext 211

EDUCATION

BS Natural Sciences, Biology
University of Puget Sound
Tacoma, Washington, 2008

CERTIFICATIONS

- DNR list of qualified surveyors for vascular plant surveys
 - DNR list of qualified surveyors for *Botrychium* and *Sceptridium*
 - DNR list of qualified surveyors for the western prairie fringed orchid (*Platanthera praeclara*)
 - DNR list of qualified surveyors for the dwarf trout lily (*Erythronium propullans*)
 - DNR list of qualified surveyors for the prairie bush clover (*Lespedeza leptostachya*)
 - DNR list of qualified surveyors for bryophyte surveys
 - DNR list of qualified surveyors for avian surveys
 - DNR Special Permit (23226) to collect and voucher rare plants
 - USFWS Dakota Skipper Recovery Permit
 - WDNR Karner Blue Butterfly Certified Surveyor
-

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2006-Current)

RARE PLANT SURVEYS

- Line 3 Replacement Project (2016-2019) – Minnesota
- Minnesota Point (2019) – St. Louis County, MN
- Bull-Moose 115 kV Transmission Line (2019) – Cass County, MN
- Swedish Immigrant Trail (2019) – Chisago County, MN
- Minnesota Point (2019) – St. Louis County, MN
- Sagamore (Cuyuna Trail) (2019) – Crow Wing County, MN
- JSN Properties (2019) – Anoka County, MN
- Pheasant Ridge (2019) – Anoka County, MN
- Harpers Street (2019) – Anoka County, MN
- BL Holdings 20th Ave Property – Anoka County, MN
- Arbuckle II Pipeline *Spiranthes parksii* Surveys (2018) – Texas
- Demicks Lake Pipeline Project (2018) – North Dakota
- Amaris – Park Storage (2018) – Lino Lakes, Anoka County, MN
- Cuyuna Trail – (2018) – Crow Wing County, MN
- MJ Arndt Property (2018) – Blaine, Anoka County, MN
- Lexington Meadows (2018) – Blaine, Anoka County, MN
- Lorentz Bus Property (2018) – Blaine, Anoka County, MN

- Watermark Property (2018) – Blaine, Anoka County, MN
- BL Holdings Property (2018) – Coon Rapids, Anoka County, MN
- Crosstown 2 South (2018) – Ham Lake, Anoka County, MN
- Crosstown 2 North (2018) – Ham Lake, Anoka County, MN
- Anoka County Central Maint. Shop (2018) – Andover, Anoka County, MN
- Bunker Hills Regional Park (2018) – Andover, Anoka County, MN
- Park Construction (2017) – Blaine, Anoka County, MN
- Stalberger Property (2017) – Ham Lake, Anoka County, MN
- Asphalt Concrete Solutions (2017) – Blaine, Anoka County, MN
- Paxmar Alpine Drive Project (2017) – Ramsey, Ramsey County, Mn
- Hawkes Company Peatland Expansion (2017) – Marshall County, MN
- De Soto National Forest (2017) – Harrison County, MS
- Oakwood Realty 131st Street Property (2017) – Blaine, Anoka County, MN
- Seavey Bog (Peatland) Project (2017) – Aitkin County, MN
- West Farm (2016-2017) – Blaine, Anoka County, MN
- Lutsen Ski Resort Expansion (2016-2017) – Cook County, MN
- Banning State Park Lichen Surveys – Carlton County, MN
- Hidden Forest East (2016) – Ham Lake, Anoka County, MN
- Mortenson Lovell Road Property (2016) – Blaine, Anoka County, MN
- Sandpiper Pipeline Project (2013-2016) – Minnesota
- Chippewa National Forest (2007-2016) – Minnesota
- Superior National Forest (2006-2012, 2014-2015) – Minnesota
- Great River Energy - Athens to Martin Lake (2012) – Anoka/Isanti counties, MN
- Charcoal 6 (2012) – Stearns County, MN
- Red Lake Peatlands Survey (2012) – Minnesota
- Twin Metals (2011-2012) – Lake and St. Louis counties, MN
- Border States Paving (2011) – Clay County, MN
- Lakewinds Windfarm Project (2011) – Clay County, MN
- Border Lakes (2010) – BWCA – Cook County, MN
- UNIMIN Mine South (2009-2010) – Le Sueur County, MN
- Chequamegon National Forest (2007/2009) – Wisconsin
- Polymet Land Exchange (2008) – Lake County, MN
- Alberta Clipper/LSr Pipeline Project (2007-2009) – Minnesota/Wisconsin

NATIVE PLANT COMMUNITY CLASSIFICATION/MAPPING

- Iron Range OHV Project (2019) – St. Louis County, MN
- North Shore Relevé Project (2019) – Lake County, MN
- Seavey Bog (Peatland) Project (2017) – NPC Mapping – Aitkin County, MN
- BitterRoot Wind Farm Project – Calcareous Fen Survey (2016) – Yellow Medicine County, MN
- Sandpiper Pipeline Project – Calcareous Fen Surveys (2013-2015) - Minnesota
- Koochiching County Peatland Surveys (2014)
- MN River Regional Greenway – Calcareous Fen Surveys (2013) – Dakota County, MN
- Polk and Norman Counties – Calcareous Fen Surveys (2012) – Minnesota
- Trail-Gully – Calcareous Fen Surveys (2010-2011) – Polk County, MN
- Yellow Birch/Cedar Community (MHN45b) Evaluation (2010) – Lake County, MN
- UNIMIN Mine South – NPC Mapping (2009-2010) – Le Sueur County, MN

FAUNA HABITAT SURVEYS

- Demicks Lake Pipeline Project – Avian Nest Surveys (2019) – North Dakota
- Demicks Lake Pipeline Project – Raptor Nest Surveys (2019) – North Dakota
- Northern Natural Gas – Bald Eagle Nest Surveys (2019) – MN, Iowa, Wisconsin
- Chippewa River Red Shouldered Hawk Surveys (2019) – Wisconsin
- Demicks Lake Pipeline Project – Dakota Skipper Habitat Mapping (2018-2019) – North Dakota
- Elk Creek Pipeline Project – Eastern Spotted Skunk Habitat Evaluation (2018) – Kansas
- Highland Partners – Dakota Skipper Habitat Mapping (2018) – North Dakota
- Demicks Lake Pipeline Project – Dakota Skipper Presence/Absence Surveys (2018) – North Dakota
- Line 66 – Karner Blue Habitat Mapping/Avian Surveys (2014) – Wisconsin
- Flanagan South Pipeline – Indiana Bat Habitat Mapping (2012-2013) – Illinois
- Flanagan South Pipeline – Eastern Spotted Skunk Habitat Evaluation (2012) – Kansas
- CapX2020 Avian Surveys - BGR 230kV Transmission Line (2009) – Minnesota

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Ashland and Iron counties, WI
- Liberty Pipeline Project (2019) – Kansas
- Demicks Lake Pipeline Project (2018-2019) – North Dakota
- Arbuckle II Pipeline Project (2018-2019) – Texas
- Northern Natural Gas – various O&M projects – (2015-2019) – Iowa/Nebraska
- Lake County Bike Trail Project (2018) – Lake County, MN
- TransCanada – various O&M projects – (2018) – Michigan, Missouri
- Gulf Xpress Pipeline (2015-2016) – Kentucky, Mississippi, Tennessee
- Sandpiper Pipeline Project (2013-2015) – Minnesota
- Flanagan South Pipeline (2012) – Illinois, Missouri, Kansas, Oklahoma
- MinnCan Pipeline Project 2007-2008 – Minnesota

VEGETATION ASSESSMENT AND MONITORING

- Great Lakes Lichen Identification (2019)
- DNR Prairie Monitoring (2008-2019) – Minnesota
- Caribou WMA Prairie Monitoring (2015-2018) – Roseau County, MN
- Savage Fen Scientific and Natural Area (2016) – Scott County, MN
- Ram's-head lady's slipper (*Cypripedium arietinum*) Surveys (2012) – Minnesota
- Alberta Clipper Post-Construction Wetland Monitoring (2011) – Minnesota/Wisconsin
- *Botrychium* monitoring (2008-2014) – Cass County, MN

MANAGEMENT PLANS

- DNR Prairie Stewardship Plans (2019)
- Pennington Bog Scientific and Natural Area (2018-2019)
- Rushford Sand Barrens Scientific and Natural Area (2017-2018)
- Split Rock Lighthouse State Park (2016-2017)
- Gooseberry Falls State Park (2016-2017)

PROJECT RESULTS – RARE VASCULAR PLANT FINDS

- Minnesota Point (2019) – St. Louis County, MN
 - *Ammophila breviligulata* (T)

- *Hudsonia tomentosa* (T)
- *Botrychium michiganense* (MN Watch-list)
- *Botrychium pallidum* (SC)
- *Botrychium rugulosum* (SC)
- *Botrychium simplex* (SC)
- Line 3 Replacement Project (2016-2019) – Minnesota
 - *Botrychium lanceolatum* (T)
 - *Botrychium rugulosum* (SC)
 - *Carex formosa* (E)
 - *Carex lurida* (MN Watch-list)
 - *Carex obtusata* (SC)
 - *Carex sterilis* (T)
 - *Carex pallescens* (E)
 - *Cladium mariscoides* (SC)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Rhynchospora capillacea* (T)
 - *Scleria verticillata* (T)
 - *Trichophorum clintonii* (T)
- Bull-Moose 115 kV Transmission Line (2019) – Cass County, MN
 - *Poa paludigena* (T)
- Swedish Immigrant Trail (2019) – Chisago County, MN
 - *Juglans cinerea* (E)
- Cuyuna Trail – (2018-2019) – Crow Wing County, MN
 - *Botrychium ascendens* (E)
 - *Botrychium campestre* var. *lineare* (E)
 - *Botrychium oneidense* (T)
 - *Botrychium pallidum* (SC)
 - *Botrychium rugulosum* (SC)
 - *Botrychium simplex* (SC)
 - *Botrychium spathulatum* (E)
 - *Juglans cinerea* (E)
- Demicks Lake Pipeline Project (2018) – North Dakota
 - *Escobaria missouriensis* (RFSS)
 - *Townsendia exscapa* (RFSS)
 - *Townsendia hookeri* (RFSS)
- Amaris – Park Storage (2018) – Lino Lakes, Anoka County, MN
 - *Rubus semisetosus* (E)
- Lexington Meadows (2018) – Blaine, Anoka County, MN
 - *Viola lanceolata* (T)
- Hawkes Company Peatland Expansion (2017) – Marshall County, MN
 - *Androsace septentrionalis* (SC)
 - *Carex obtusata* (SC)
 - *Salix maccalliana* (SC)
 - *Salix pseudomonticola* (SC).
- De Soto National Forest (2017) – Harrison County, MS
 - *Chasmanthium ornithorhynchum* (MS State Tracked)
 - *Cirsium lecontei* (ST)
 - *Lachnocaulon digitum* (RFSS)
 - *Palhinhaea cernua* (ST)

- *Pinguicula planifolia* (RFSS)
- *Platanthera nivea* (ST)
- *Polygala douglasii* (RFSS)
- *Rhynchospora capitellata* (ST)
- *Rhynchospora macra* (RFSS)
- *Scleria baldwinii* (ST)
- *Utricularia olivacea* (ST)
- *Utricularia purpurea* (ST)
- *Xyris drummondii* (RFSS)
- Seavey Bog (Peatland) Project (2017) – Aitkin County, MN
 - *Botrychium lanceolatum* (T)
 - *Botrychium simplex* var. *tenebrosum* (SC)
 - *Poa paludigena* (T)
 - *Trichocolea tomentella* (T – State listed liverwort)
- Banning State Park Lichen Surveys – Carlton County, MN
 - *Persicaria careyi* (SC)
- Hidden Forest East (2016) – Ham Lake, Anoka County, MN
 - *Gaylussacia baccata* (T)
- Sandpiper Pipeline Project (2013-2016) – Minnesota
 - *Botrychium lanceolatum* (T)
 - *Botrychium pallidum* (SC)
 - *Botrychium simplex* var. *tenebrosum* (SC)
 - *Caltha natans* (WI E)
 - *Carex hallii* (SC)
 - *Carex sterilis* (T)
 - *Carex formosa* (E)
 - *Cirsium pumilum* (SC)
 - *Cladium mariscoides* (SC)
 - *Eleocharis nitida* (WI E)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Gailardia aristata* (SC)
 - *Juglans cinerea* (E)
 - *Juncus vaseyi* (WI SC)
 - *Najas gracillima* (SC)
 - *Petasites sagittatus* (WI T)
 - *Packera cana* (E)
 - *Poa paludigena* (T)
 - *Ranunculus gmelinii* (WI E)
 - *Ranunculus lapponicus* (SC)
 - *Rhynchospora capillacea* (T)
 - *Salix maccalliana* (SC)
 - *Salix planifolia* (WI T)
 - *Salix pseudomonticola* (SC)
 - *Scleria verticillata* (T)
 - *Sceptridium rugulosum* (SC)
 - *Torreyochloa pallida* (SC)
 - *Trichocolea tomentella* (T – State listed liverwort)
 - *Trichophorum clintonii* (T)
 - *Utricularia purpurea* (E)

- Bull-Moose 115 kV Transmission Line (2019) – Cass County, MN
 - *Poa paludigena* (T)
- Chippewa National Forest (2007-2015, 2019) – Minnesota
 - *Botrychium ascendens* (E- First known population in the CNF)
 - *B. crenulatum* (RFSS - First known population in the CNF)
 - *Botrychium lanceolatum* (T)
 - *Botrychium mormo* (T)
 - *Botrychium pallidum* (SC)
 - *Botrychium simplex* (SC)
 - *Calypso bulbosa* (formerly RFSS)
 - *Cypripedium arietinum* (T)
 - *Malaxis monophyllos* (SC)
 - *Potamogeton bicupulatus* (T - First known population in the CNF)
 - *Ranunculus lapponicus* (SC)
 - *Sceptridium oneidense* (E)
 - *Sceptridium rugulosum* (T)
 - *Sparganium glomeratum* (RFSS)
- Superior National Forest (2006-2012, 2014-2015) – Minnesota
 - *Asplenium trichomanes* (T)
 - *Botrychium mormo* (T)
 - *Botrychium pallidum* (SC)
 - *Botrychium simplex* (SC)
 - *Calypso bulbosa* (formerly RFSS)
 - *Carex flava* (SC)
 - *Carex michauxiana* (SC)
 - *Carex novae-angliae* (T)
 - *Claytonia caroliniana* (formerly SC)
 - *Crataegus douglasii* (T)
 - *Eleocharis flavescens* (T)
 - *Eleocharis nitida* (SC)
 - *Eleocharis quinqueflora* (SC)
 - *Geocaulon lividum* (MN Watch-list)
 - *Luzula parviflora* (T)
 - *Muhlenbergia uniflora* (SC)
 - *Osmorhiza depauperata* (SC)
 - *Platanthera clavellata* (SC)
 - *Polystichum braunii* (T)
 - *Pyrola minor* (SC)
 - *Ranunculus lapponicus* (SC)
 - *Rhynchospora fusca* (formerly SC)
 - *Rubus chamaemorus* (T)
 - *Torreyochloa pallida* (SC)
 - *Utricularia geminiscapa* (T)
 - *Waldsteinia fragarioides* (SC)
 - *Woodsia alpina* (T)
 - *Woodsia glabella* (T)
 - *Woodsia scopulina* (T)
 - *Xyris montana* (SC)
- Great River Energy - Athens to Martin Lake (2012-2013) – Anoka/Isanti counties, MN
 - *Gaylussacia baccata* (T)

- *Juncus marginatus* (T)
 - *Rubus multiflorus* (SC)
 - *Viola lanceolata* (T)
- Ram's-head lady's slipper (*Cypripedium arietinum*) Surveys (2012) – Minnesota
 - *Cypripedium arietinum* (T)
 - *Malaxis paludosa* (E)
- Charcoal 6 (2012) – Stearns County, MN
 - *Platanthera flava* var. *herbiola* (T)
- Red Lake Peatlands Survey (2012) – Minnesota
 - *Cladium mariscoides* (SC)
 - *Drosera anglica* (SC)
 - *Drosera linearis* (SC)
 - *Nymphaea leibergii* (T)
 - *Rhynchospora capillacea* (T)
- Twin Metals (2011-2012) – Lake and St. Louis counties, MN
 - *Botrychium simplex* (SC)
 - *Phacelia franklinii* (T)
 - *Rhynchospora fusca* (formerly SC)
 - *Xyris montana* (SC)
- Border States Paving (2011) – Clay County, MN
 - *Gaillardia aristata* (SC)
- Lakewinds Windfarm Project (2011) – Clay County, MN
 - *Cirsium hillii* (SC)
 - *Gaillardia aristata* (SC)
- Trail-Gully – Calcareous Fen Surveys (2010-2011) – Polk County, MN
 - *Carex sterilis* (T)
 - *Cladium mariscoides* (SC)
 - *Cypripedium arietinum* (T)
 - *Eleocharis quinqueflora* (SC)
 - *Eleocharis rostellata* (T)
 - *Rhynchospora capillacea* (T)
 - *Scleria verticillata* (T)
- Border Lakes (2011) – BWCA – Cook County, MN
 - *Asplenium trichomanes* (T)
 - *Eleocharis flavescens* var. *olivacea* (T)
 - *Muhlenbergia uniflora* (SC)
 - *Platanthera clavellata* (SC)
 - *Subularia aquatica* (E)
 - *Xyris montana* (SC)
- Yellow Birch/Cedar Community (MHn45b) Evaluation (2010) – Lake County, MN
 - *Carex novae-angliae* (T)
- UNIMIN Mine South (2009-2010) – Le Sueur County, MN
 - *Arnoglossum plantagineum* (T)
 - *Carex sterilis* (T)
 - *Cypripedium candidum* (SC)
- Polymet Land Exchange (2008) – Lake County, MN
 - *Juncus stygius* (SC)
 - *Platanthera clavellata* (SC)
 - *Pyrola minor* (SC)
- Alberta Clipper/LSr Pipeline Project (2007-2009) – Minnesota/Wisconsin

- *Botrychium minganense* (SC)
- *Botrychium simplex* (SC)
- *Carex sterilis* (T)
- *Cypripedium candidum* (SC)
- *Cladium mariscoides* (SC)
- *Eleocharis quinqueflora* (SC)
- *Eleocharis rostellata* (T)
- *Ranunculus lapponicus* (SC)
- *Rhynchospora capillacea* (T)
- *Salicornia rubra* (T)
- *Scleria verticillata* (T)

PROJECT RESULTS – RARE LICHEN/BRYOPHYTE FINDS

- Lake County Bike Trail Project (2018) – Lake County, MN
 - *Bryoria fuscescens* (SC)
- Banning State Park Lichen Surveys – Carlton County, MN
 - *Usnea mutabilis* (T)
 - *Usnea rubicunda* (SC)
- Superior National Forest (2006-2012, 2014-2015) – Minnesota
 - *Ahtiana aurescens* (SC)
 - *Allocetraria oakesiana* (T)
 - *Amygdalaria panaeola* (SC)
 - *Anaptychia crinalis* (SC)
 - *Arctoparmelia centrifuga* (SC)
 - *Arctoparmelia subcentrifuga* (SC)
 - *Bryoria fuscescens* (SC)
 - *Frullania selwyniana* (SC)
 - *Lobaria quercizans* (formerly SC)
 - *Lobaria scrobiculata* (E)
 - *Menegazzia terebrata* (SC)
 - *Peltigera venosa* (SC)
 - *Protopannaria pezizoides* (T)
 - *Pseudocyphellaria crocata* (E)
 - *Ramalina thrausta* (SC)
 - *Sticta fuliginosa* (SC)
 - *Thelocarpon epibolum* (SC)
 - *Trichocolea tomentella* (T)
 - *Usnea longissima* (SC)
- Chippewa National Forest (2007-2015) – Minnesota
 - *Sticta beauvoisii* (RFSS)
 - *Sticta fuliginosa* (SC)
 - *Usnea angulata* (RFSS)
- Border Lakes (2011) – BWCA – Cook County, MN
 - *Bryoria fuscescens* (SC)
- Yellow Birch/Cedar Community (MHn45b) Evaluation (2010) – Lake County, MN
 - *Allocetraria oakesiana* (T)
 - *Bryoria fuscescens* (SC)
 - *Lobaria scrobiculata* (E)
 - *Menegazzia terebrata* (SC)
 - *Pseudocyphellaria crocata* (E)

- *Ramalina thrausta* (SC)
- *Usnea longissima* (SC)
- UNIMIN Mine South (2009-2010) – Le Sueur County, MN
 - *Buellia nigra* (SC)

PROJECT RESULTS – RARE FAUNA FINDS

- Demicks Lake Pipeline (2018-2019) – North Dakota
 - *Aquila chrysaetos* – Golden eagle
 - *Hesperia dacotae* – Dakota skipper (Federally Threatened)
- Seavey Bog (Peatland) Project (2017) – Aitkin County, MN
 - *Somatochlora forcipata* – Forcinate emerald (SC)
- De Soto National Forest (2017) – Harrison County, MS
 - *Enallagma concisum* – Cherry bluet (MS State Tracked)
- Line 66 – (2014) – Wisconsin
 - *Glyptemys insculpta* – Wood turtle (T)
- Line 66 – Karner Blue Habitat Mapping (2014) – Wisconsin
 - *Plebejus melissa samuelis* – Karner blue (Federally Endangered)
- UNIMIN Mine South (2009-2010) – Le Sueur County, MN
 - *Bartramia longicauda* (Watch-list)
 - *Coluber constrictor* – Blue racer (SC)*
 - *Elaphe vulpine* - Western fox snake (Watch-list)
 - *Lanius ludovicianus* – Loggerhead shrike (E)
 - *Marpissa formosa* – species of jumping spider (SC)
 - *Schinia lucens* – Leadplant flower moth (SC)
 - *Speyeria idalia* – Regal fritillary (SC)
- *observed outside of the project area
- Lakewinds Windfarm Project (2011) – Clay County, MN
 - *Hesperia leonardus* – Leonard's skipper (SC)
 - *Speyeria idalia* – Regal fritillary (SC)
- CapX2020 Avian Surveys - BGR 230kV Transmission Line (2009) – Minnesota
 - *Coturnicops noveboracensis* – Yellow rail – (SC)
 - *Cygnus buccinator* – Trumpeter swan – (SC)

Status Reference

RFSS - Regional Forester Sensitive Species

E – Minnesota Threatened

SC – Minnesota Special Concern

T – Minnesota Threatened

Status of species for projects completed in other states is designated with state abbreviation.

PROFESSIONAL REFERENCES

Welby Smith
State Botanist
DNR Div. of Ecological and Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025
651-259-5142

John C. Almendinger, Ph.D.
Ecological Land Classification Program
Coordinator, DNR
413 SE 13th Street
Grand Rapids, Minnesota
218-322-2503

Mike Lee
Botanist
Minnesota Biological Survey
DNR Div. of Ecological and Water Resources
Sauk Rapids, MN 56379
320-255-4279 ext. 231

Jack Greenlee
Superior National Forest
318 Forestry Road
Aurora, MN 55705
218-229-8817

Erika Rowe
Plant Ecologist/Ecological Monitoring Coordinator
Minnesota Biological Survey
500 Lafayette Road, Box 25
St. Paul, MN 55155
651-259-5134

Jeremy Cable
Chippewa National Forest
1037 Division St., Box 308
Deer River, MN 56636
218-246-2123

EDUCATION

BS Natural Resources Management
North Dakota State University
Fargo, North Dakota, 2017

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2018-Current)

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Ashland and Iron counties, WI
- Liberty Pipeline Project (2019) – Kansas
- Tioga Lateral Pipeline Project (2019) – North Dakota
- Arbuckle II Pipeline Project (2018-2019) – Texas
- Northern Natural Gas – various O&M projects – (2018-2019) – Minnesota and Iowa
- Demicks Lake Pipeline Project (2018-2019) – North Dakota
- Elk Creek Pipeline Project (2018) – Montana
- Line 3 Replacement Project (2018) – Douglas County, Wisconsin
- Xcel Energy Powerline Replacement (2018) – Bayfield County, Wisconsin
- TransCanada (2018) – Minnesota

FAUNA SURVEYS

- Demicks Lake Pipeline Project – Avian Nesting Surveys – (2019) – North Dakota
- Little Missouri Loop Pipeline – Avian Nesting Surveys – (2019) – North Dakota
- Elk Creek Pipeline Project – Northern Long-Eared Bat Habitat Mapping (2018) – Montana
- Demicks Lake Pipeline Project – Dakota Skipper Habitat Mapping (2018) – North Dakota
- Northern Natural Gas – Northern Long-Eared Bat Habitat Mapping (2018) – Iowa

VEGETATION ASSESSMENT AND MONITORING

- Trail-Gully – Calcareous Fen Rare Species Counts (2018) – Polk County, MN

TREE INVENTORY/TAGGING

- Pioneer Engineering (2018-2019) – Blaine, Anoka County, MN

NOXIOUS WEED SURVEYS

- Demicks Lake Pipeline Project (2018-2019) – North Dakota
- Line 3 Replacement Project (2018) – Minnesota

RARE PLANT SURVEYS

- Line 3 Replacement Project (2018) – Minnesota

EDUCATION

BA Biology, Society, and Environment
Geographic Information Systems Minor
University of Minnesota – Twin Cities
Minneapolis, Minnesota, 2018

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2018-Current)

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Ashland and Iron counties, WI
- Split Rock Wilds Trail (2019) – Lake County, MN
- Bear Creek Pipeline Project (2019) – North Dakota
- Tioga Lateral Pipeline Project (2019) – North Dakota
- Demicks Lake Pipeline Project (2018-2019) – North Dakota
- Northern Natural Gas – various O&M projects – (2018-2019) – Iowa, Minnesota, Nebraska, Wisconsin
- Arbuckle II Pipeline Project (2019) – Texas
- TransCanada – various O&M projects – (2018) – Iowa, Missouri, Wisconsin

RARE PLANT SURVEYS

- Line 3 Replacement Project (2018-2019) – Minnesota

NOXIOUS WEED SURVEYS

- Bear Creek Pipeline Project (2019) – North Dakota
- Demicks Lake Pipeline Project (2018-2019) – North Dakota
- Line 3 Replacement Project (2018) – Minnesota

VEGETATION ASSESSMENT AND MONITORING

- DNR Prairie Monitoring (2018) – Minnesota
- Trail-Gully – Calcareous Fen Rare Species Counts (2018) – Polk County, MN

TREE INVENTORY/TAGGING

- Pioneer Engineering, P.A. (2019) – Anoka County, MN
- Charles Cudd Co. (2019) – Dakota County, MN

FAUNA HABITAT SURVEYS

- Demicks Lake Pipeline Project – Avian Nest Surveys (2019) – North Dakota
- Little Missouri Loop Pipeline – Avian Nest Surveys (2019) – North Dakota
- Bear Creek Pipeline Project – Dakota Skipper Habitat Mapping (2019) – North Dakota
- Northern Natural Gas – Indiana Bat and Northern Long-Eared Bat Habitat Evaluation (2019) – Iowa

Kirsten D. Frahm, MS
Biologist



EDUCATION

MS Conservation Biology
Central Michigan University
Mount Pleasant, Michigan, 2019

BS Biology
University of St. Thomas
St. Paul, Minnesota, 2015

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2019-Current)

FAUNA HABITAT SURVEYS

- Liberty Pipeline Project – Northern Long-Eared Bat Habitat Mapping (2019) – Kansas
- Northern Natural Gas – Northern Long-Eared Bat Habitat Mapping (2019) – Iowa

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Ashland and Iron counties, WI
- Liberty Pipeline Project (2019) – Kansas
- Northern Natural Gas – various O&M projects – (2019) – Minnesota, Wisconsin, Iowa, Nebraska

EDUCATION

BS Aquatic Biology
Geographic Information Systems Minor
Bemidji State University
Bemidji, Minnesota, 2011

CERTIFICATIONS

Minnesota Certified Wetland Delineator (1290)

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2014-2019)

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Wisconsin
- Liberty Pipeline Project (2019) – Colorado
- Arbuckle II Pipeline Project (2018-2019) – Texas
- Demicks Lake Pipeline Project (2018) – North Dakota
- Elk Creek Pipeline Project (2018) – Kansas/Montana
- Jayhawk Pipeline (2018) – Kansas
- Northern Natural Gas – various O&M projects – (2015-2018) – Minnesota, Iowa, South Dakota, Wisconsin
- TransCanada – various O&M projects – (2017-2018) – Iowa, Wisconsin, Missouri
- Rochester Expansion (2018) – Minnesota
- Magellan Ft. Snelling (2017) – Minnesota
- Xcel Energy – Medford to Prentice (2017) – Wisconsin
- Seavey Bog (Peatland) Project (2017) – Aitkin County, MN
- Driftwood Pipeline Project (2016) – Louisiana
- Bad River Easement Renewal (2016) – Ashland County, WI
- Mid-Michigan Pipeline (2016) – Michigan
- Saginaw Trail Pipeline (2016) – Michigan
- Sandpiper Pipeline (2014-2015) – Minnesota/Wisconsin
- Line 3 Replacement Project (2014-2015) Minnesota
- Blair Lateral Pipeline (2015) – Wisconsin
- Dakota Access Pipeline (2015-2016) – North Dakota

TREE & SHRUB SURVEYS

- Demicks Lake Pipeline Project (2018-2019) – North Dakota
- Dakota Access Pipeline (2015-2016) – North Dakota

NOXIOUS WEED SURVEYS

- Demicks Lake Pipeline Project (2018-2019) – North Dakota
- Magellan Ft. Snelling (2017) – Minnesota
- Line 3 Replacement Project (2014-2015, 2018) Minnesota
- Dakota Access Pipeline (2015-2016) – North Dakota

RARE PLANT SURVEYS

- Sandpiper Pipeline Project (2014-2018) – Minnesota
- Chequamegon-Armstrong Creek (2017) – Wisconsin
- Seavey Bog (Peatland) Project (2017) – Aitkin County, MN

FAUNA HABITAT SURVEYS

- Little Missouri Loop Pipeline – Avian Nesting Surveys – (2019) – North Dakota
- Demicks Lake Pipeline Project – Avian Nesting Surveys – (2019) – Montana/North Dakota
- Sandpiper Pipeline Project – Avian Surveys (2014) – Minnesota/Wisconsin

VEGETATION ASSESSMENT AND MONITORING

- DNR Prairie Monitoring (2017-2018) – Minnesota
- DNR Savage Fen Monitoring (2016) – Minnesota
- Alberta Clipper Post-Construction Wetland Monitoring (2015) – Minnesota/Wisconsin

Minnesota Department of Natural Resources (2013) – Seasonal Technician - Minnesota

Michael A. Lopez, MS
Field Technician



EDUCATION

MS Conservation Sciences
Ecological Restoration Minor
University of Minnesota- Twin Cities
Minneapolis, Minnesota
May 2019

BA Environmental Sciences
Geoscience Minor
University of Iowa
Iowa City, Iowa
May 2013

PROFESSIONAL EXPERIENCE

Midwest Natural Resources, Inc. (2019)

WETLAND SURVEYS/DELINEATIONS

- Line 5 Relocation Project (2019) – Ashland and Iron counties, WI

Green Iowa AmeriCorps (2015-2016) – Energy Efficiency Coordinator – Iowa

US Army Corps of Engineers (2014) – Park Ranger – Iowa

Caitlin Cyrus

Environmental Scientist



Education

MS, Biology, College of William & Mary, 2016

BA, Biology, St. Mary's College of Maryland, 2012

Registrations/Certifications

USFWS Approved Surveyor for small whorled pogonia (*Isotria medeoloides*)

Wetland Professional in Training

Affiliations/Memberships

Society of Wetland Scientists

Virginia Association of Wetland Professionals

Virginia Herpetological Society

Virginia Native Plant Society

VHB Office

Williamsburg, VA

Caitlin is an Environmental Scientist whose focus is on conducting natural resource assessment, biological inventory and monitoring, and other environmental fieldwork and reporting for both renewable and traditional energy projects. Caitlin's strength is in plant identification and associated fieldwork, including conducting floristic inventories, performing field endangered species habitat assessments, and carrying out surveys for RTE plant species. Her skillset also includes performing wetland and stream delineations, wetland functional assessments, mitigation monitoring, environmental permitting, rare, threatened, and endangered wildlife habitat assessment surveys, habitat restoration, field coordination, and environmental permitting. She also has knowledge in using geographic information systems (GIS) and global position system (GPS) technology for environmental field work. Caitlin has experience in providing environmental services for both public and private sector clients throughout the United States.

4 Years of professional experience

Dominion Energy, Atlantic Coast Pipeline and Supply Header Project Environmental Services, Pennsylvania, West Virginia, Virginia, and North Carolina

During the last four years, Caitlin has functioned as VHB project coordinator, team lead, and environmental scientist on the Atlantic Coast Pipeline (ACP) project responsible for providing the following environmental and engineering/geological services to date:

- Wetland delineation and stream determinations across entire ACP and SHP project length
- Botanical surveys for rare, threatened, and endangered (RTE) plant species for entire Virginia segment. Target species included federally listed, state listed, and state rare species.
- Botanical surveys for U.S. Forest Service-listed threatened, endangered, sensitive, and locally rare (TESLR) species, along with non-native invasive species (NNIS) surveys conducted throughout the George Washington National Forest (GWNF)
- RTE small mammal habitat assessment surveys in Virginia
- Hydrogeological studies in southeastern Virginia
- American ginseng relocation within the GWNF
- Bald and golden eagle winter biomonitoring and raptor stick nest surveys in Virginia
- Migratory Bird Treaty Act (MBTA) species biomonitoring surveys in North Carolina
- Pre-, during, and post- construction biomonitoring of small whorled pogonia populations in Virginia and West Virginia
- Bald eagle nest and heron rookery surveys in West Virginia, Virginia, and North Carolina

Caitlin Cyrus

Environmental Scientist

TransCanada, WB XPress Flying Squirrel Surveys, West Virginia

Functioned as environmental scientist on an approximately 11-mile segment of WB Xpress project corridor crossing through the Monongahela National Forest (MNF) in Randolph and Pendleton counties, WV. Work included:

- Detailed habitat assessments for West Virginia northern flying squirrel (*Glaucomys sabrinus fuscus*)
- Performing natural community mapping and generating vegetation species lists for each community

Enbridge, Inc., Wetland Delineation for Line 5, Ashland, WI

Acted as VHB project lead and environmental scientist for 30-mile Line 5 project in Ashland, Wisconsin. Work included:

- Performing wetland delineations and data collection throughout the entire project length
- Providing daily and weekly GIS, data deliverables, and associated reporting; conducting QA/QC of data entry and providing final GIS and data deliverable at end of project
- Coordinating with client and other subs to effectively complete fieldwork

Piedmont Natural Gas-Duke Energy, Line 439, Greenville, NC

Over the last two years, functioned as environmental scientist providing the following environmental services to the 20-mile Line 439 project in Greenville, NC:

- Performing wetland delineation, stream determinations, and data collection throughout entire project length. Assisted with data entry, mapping, and associated reporting
- Aided cultural resources management (CRM) crew with shovel tests across pipeline route
- Provided support and QAQC for environmental permitting graphics

Additional Energy-Related Projects

- Emera Line 86 Powerline Rebuild – Medway, ME – Wetland delineations
- GMP Lowell-Johnson Powerline Rebuild – Johnson, VT – RTE plant surveys
- Emera Line 1176 Powerline Rebuild – Presque Isle, ME – RTE plant surveys
- Virginia Pollinator-Smart Solar Industry – VA – Developing pollinator-smart program to DCR/DEQ
- SunTribe Cople Solar Site – Vegetation Management Plan – Hague, VA – Assisting with pollinator-smart planting on-site
- GaleHead Solar Projects – Multiple Locations, NY – Environmental surveys

Clay Robertson

Environmental Scientist



Education

BS, Environmental Studies,
Eckerd College, 2013

AS, Environmental Studies,
Manatee Community College,
2001

Registrations/Certifications

Mining Safety and Health
Administration Safety
Certification (Part 48 Surface
Mining - 2016), 2019

Affiliations/Memberships

Society of Wetland Scientists,
2013 - Present
Virginia Association of Wetland
Professionals, 2014 - Present

VHB Office

Williamsburg, VA

Clay is an Environmental Scientist in VHB's Williamsburg office with extensive experience in a variety of ecological, water quality and hydrographic field studies and data management projects. His skillsets range from implementation of ecological restoration plans, mitigation design and monitoring to detailed hydrologic and water quality data collection, and he has a working knowledge in applications of geographic information systems (GIS) and global position system (GPS) technology for wildlife and vegetative inventories, wetland delineation, and hydrologic monitoring. Clay has experience in mobilization and implementation of large-scale water quality monitoring, rare, threatened, and endangered species studies, and wetland delineations throughout the eastern United States from Florida to Vermont. Most of his work has been concentrated on consulting services throughout Florida, North Carolina, and Virginia for both public and private-sector clients, and he has knowledge of applicable regulations on the local, state, and federal level throughout these areas.

12 Years of professional experience

Dominion Energy, Atlantic Coast Pipeline Environmental Services, West Virginia, Virginia, and North Carolina

Clay served as team/task lead and environmental scientist for RTE species surveys across nearly 600 miles of proposed pipeline corridor. To date Clay has provided numerous environmental and geological related services associated with this project including;

- Small mammal surveys for this project included conducting habitat-level analysis for Allegheny woodrat (*Neotoma magister*), southern rock vole (*Microtus chrotorrhinus carolinensis*), and southern water shrew (*Sorex palustris punctulatus*).
- Plant surveys included performing detailed investigation of the project corridor for seven federally listed, three state listed, and nine state ranked species along with a host of species of concern that were identified by the George Washington National Forest. Botanical surveys for U.S. Forest Service-listed threatened, endangered, sensitive, and locally rare (TESLR) species, along with non-native invasive species (NNIS) surveys conducted throughout public lands.
- American ginseng (*Panax quinquefolius*) relocation within the GWNF.
- Biomonitoring of Federally listed small whorled pogonia (*Isotria medeoloides*) prior to, during, and post construction of pipeline.
- Hydrogeologic studies, including the installation of in-situ groundwater monitoring wells, in Southwestern Virginia.

Clay Robertson

Environmental Scientist

- Bald and golden eagle winter biomonitoring and raptor stick nest surveys in Virginia.
- Migratory Bird Treaty Act (MBTA) species biomonitoring and survey in Virginia and North Carolina.
- Wetland delineation and stream determinations across entire ACP and SHP project length.
- Responsibilities also included mapping of natural community types, generating comprehensive plant species lists, photo documentation of onsite conditions, and collecting applicable GIS/GPS data.

The size, scope, and complexity of this project required proactive coordination within the VHB team, our client, and applicable agencies.

TransCanada, WB Express Flying Squirrel Surveys, West Virginia

Clay served as Team Lead and Environmental Scientist, who performed detailed habitat assessments along 11.3-mile project corridor for West Virginia Northern Flying Squirrel (*Glaucomys sabrinus fuscus*). This assessment was within the Monongahela National Forest in Randolph and Pendleton counties, West Virginia. Surveys included detailed natural community mapping, determining habitat suitability for target species, and generating vegetative species lists for each community.

Enbridge, Inc., Wetland Delineation for Line 5, Ashland, WI

VHB team lead and environmental scientist for a 30-mile crude oil pipeline relocation project (Line 5 project) in Ashland, Wisconsin. Clays responsibilities included performing wetland delineations and data collection throughout assigned sections of project corridor. Clay was also responsible for coordinating land access, daily progress reporting, and weekly field data delivery. This is a complex project requiring clear and constant communication with Project representatives from Enbridge and their numerous sub-contractors to effectively complete fieldwork

Piedmont Natural Gas-Duke Energy, Line 439, Greenville, NC

Clay served as Wetland Scientist and Field Team Lead, who identified and delineated jurisdictional Waters of the United States within the approximate 255-acre, 20-mile long study area that partially circumscribes the City of Greenville, North Carolina. Clay was also involved in the documentation and report preparation needed to comply with Clean Water Act Section 404/401 regulations. Additionally, Clay participated in archeological field surveys and was team/task lead for project water quality testing for this project.

Clay Robertson

Environmental Scientist

Northern Flying Squirrel Habitat Assessments, WB Express Project, Columbia Gas, Monongahela National Forest, West Virginia

Clay served as Team Lead and Environmental Scientist, who performed detailed habitat assessments along 11.3-mile project corridor for West Virginia Northern Flying Squirrel (*Glaucomys sabrinus fuscus*). This assessment was within the Monongahela National Forest in Randolph and Pendleton counties, West Virginia. Surveys included detailed natural community mapping, determining habitat suitability for target species, and generating vegetative species lists for each community.

Central Hudson Gas and Electric, H&SB Electric Transmission Lines Rebuild Project, Kingston to Greenport, NY

Clay served as an Environmental Scientist and GIS Support Personnel for this project focused on obtaining a Certificate of Public Good for this existing overhead transmission line upgrade/maintenance from the North Catskill Substation, approximately 23.1 miles south to the Hurley Avenue Substation. The project area included the 150-foot wide Right-of-Way (ROW) with additional adjacent investigation areas outside the 150-foot corridor. Clay facilitated data collection and assisted wetland and stream delineations teams with the collection of field data. Additionally, Clay provided support to GPS data processing.

Vermont Transco, LLC, Structure Condition Improvement Project, K28 Transmission Line, St. Johnsbury - Lyndonville, VT

Clay served as Environmental Scientist and GIS Support Personnel for a comprehensive natural resources survey for the approximately 51-mile Vermont Transco, LLC (VELCO) transmission line, which runs through numerous towns in northern Vermont. Clay performed rare, threatened, and endangered (RTE) plant and habitat assessments, habitat classification, and wetland delineations in support of a project permit fillings with federal, state, and local agencies.

National Grid, Granite State Power Link Project, New Hampshire

Clay served as Environmental Scientist and Team Lead, who identified and delineated jurisdictional Waters of the United States along portions of the GSPL ROW that extended south from the Comerford Substation in Monroe, New Hampshire, to the Litchfield Substation in Litchfield, New Hampshire. Clay performed floristic inventories and provided habitat identification of rare communities along the Right-of-Way. Clay also supported the field GIS/mobile technology teams in their field data collection efforts required for federal, state, and local permitting efforts.

Chris Sheldon

Wetland Monitoring



Chris joined the South Burlington, Vermont office as an ecologist in 2016. He has held previous positions working primarily with invasive plant species management, and his primary work with the Vermont office's Ecology team is focused on wetland/waters assessments, floristic inventories, threatened species field surveys, mobile field data collection, processing and analyzing field data.

3 years of professional experience

Education

MS, Forestry, University of Arkansas at Monticello, 2016

BS, Environmental Science, University of Vermont, 2010

Professional Training

40-Hr Wetland Delineation (Institute for Wetland & Environmental Education & Research), 2017

Affiliations/Memberships

New England Wildflower Society Plant Conservation Volunteer (2017)

South Burlington City Center, South Burlington, VT

Chris researched many wetland functional assessments and concluded that the "Rapid Procedure for Assessing Wetland Function Capacity Based on Hydrogeomorphic (HGM) Classification" by Magee (1998) was the best functional assessment for the project. Chris completed the research to complete the assessment. This information was used to quantify the impacts on the functions of the surrounding wetlands. The assessment was then used to design a mitigation wetland to provide the best services possible to the environment.

GMP South Poultney Substation, South Poultney, VT

Chris organized and performed the field work to map and delineate wetlands and waters. He performed pre-construction environmental review of the project to determine any rare, threatened or endangered species that may be within the study area. Chris compiled a floristic species list of the study area. He also wrote the natural resource memo for the project.

Shelburne Transload Facility, Shelburne, VT

Chris manages the monthly and quarterly water quality monitoring schedule at the facility and the surrounding environment. Chris monitors for temperature, pH, conductivity, turbidity, chloride, total suspended solids. He complies and analyzes the data to create representations for the client.

The Nature Conservancy, Adirondacks, NY

Prior to joining VHB, Chris was an Invasive Plant Technician. He managed giant hogweed, common reed, garlic mustard, black swallow-wort, and purple loosestrife through mechanic, stem injection and foliar spray methods at many different stages of restoration. Used Roundup Pro, Arsenal, Accord XRTII, Garlon 3A in the Adirondacks, a 6-million-acre park.

- Traveled and worked as a team and as an individual at different sites
- Collected leaf samples of giant hogweed for a genetics study for Laval University
- Completed iMapinvasives training a website used statewide by New York for mapping invasives plants
- Measured weight, length, and scanned for tags of lake trout for a population study for McGill University
- Restored wetland habitat by brush cutting dead common reed stalks to allow for quicker decomposition
- Collected galerucella beetles a biologic control by siphoning them into bottles and transported them to new purple loosestrife sites

NPS, Fort Pulaski National Monument, Savannah, GA

Prior to joining VHB, Chris was an Invasive Plant Intern at Fort Pulaski National Monument where he treated invasive species such as Chinaberry, Japanese Honeysuckle, Chinese tallow, Chinese privet, Japanese privet, lantana at Fort Pulaski National Monument mainly at new sites found while surveying the island.

- Used hack and squirt, cut and stump, foliar spray methods to treat
- Created JHA's for hack and squirt, foliar spray, herbicide mixing, herbicide handling
- Assisted in creating an invasive plant program by ordering and organizing supplies for the program
- Organized an exotic plant BioBlitz with around 50 participants, made fliers, plant pamphlets, contacted potentially interested parties, and established the procedure and methods for the data collection
- Gave a presentation on exotic invasive plants for an AP Environmental Science high school class
- Acquired a Georgia State Pesticide Applicators licenses
- Trained five members of the park staff in identification and treatment methods of invasive plants, and the handling of herbicides

National Park Service, Hopkins, SC

Prior to joining VHB, Chris was a Southeast Coast Exotic Plant Management Team Member. He surveyed and treated invasive species at National Parks throughout the southeast United States. Traveled and worked at Ocmulgee National Monument, Horseshoe Bend National Military Park, Cumberland Island National Seashore, Fort Pulaski National Monument, Chattahoochee River National Recreation Area, Kennesaw Mountain National Battlefield Park, Cape Hatteras National Seashore, and Congaree National Park. Treated invasives with a chainsaw and herbicide.

- Managed Chinese tallow, Chinese privet, tungoil tree, lantana, garlic mustard, mullein, English ivy, callery pear, Japanese honeysuckle, Chinese wisteria, Japanese climbing fern, and common reed
- Manipulated and created GPS data that was on a Trimble unit using Terrasync, Patherfinder, and ArcGIS software. I created polygons, points, and lines on the Trimble and differentially correct shapefiles and then exported them to ArcGIS with the proper projection
- Performed revegetation such as planting black willows at work sites
- Safely traveled with truck and trailer on busy interstates, backed into tight parking spaces with the trailer, within the trailer I securely fasten all of the trunks with straps and routinely checked them during stops to ensure nothing had moved
- Maintained and repaired equipment such as chainsaws and backpack sprayers
- Interacted with happy and unhappy visitors at the parks in an engaged and friendly manner
- Restored longleaf pine habitat by removing sweetgum trees with brush cutters and foliar application of herbicide
- Sprayed many different herbicides such as Garlon 3A, Element 3A, Transline, Garlon 4U, Roundup Pro, Accord, and Rodeo

U.S. Fish and Wildlife Service, Charlestown, RI

Prior to joining VHB, as an Invasive Plant Intern, Chris identified and treated invasive plants of Rhode Island including: autumn olive, shrub honeysuckle, black swallowwort,

garlic mustard, oriental bittersweet, porcelain berry, Japanese barberry, Japanese knotweed, multiflora rose, crown vetch, spotted knapweed, tansy, phragmites, bird's foot trefoil, purple loosestrife, and Chinese silver grass.

- Drove a government vehicle and worked at all of the refuges in Rhode Island, John H Chafee National Wildlife Refuge, Truston Pond NWR, Ninigret NWR, Sachuest Point NWR, Kettle Pond NWR
- Adhered to safety protocols by wearing all the proper PPE
- Identified and planted native species, sweet pepper bush, shadbush, bayberry, sassafras, arrowwood, little blue stem, etc.
- Plotted invasive species with a Garmin GPS
- Surveyed for rare and invasive plant for example the *Platanthera ciliaris* (yellow-fringed orchid)
- Conservatively treated invasive plants by stump and cut, foliar spray, hand pulled and weed wrenched other invasive species
- Routinely monitored maintained bat microphones, transferred data from recording instruments to a computer for a Ph.D.'s project
- Restored native species at the refuges, personally planted at least 250 plants
- Dressed as the blue goose Puddles for the reopening of a refuge interacted with the public in a friendly manner
- Led 3-20 volunteers from many different age groups on how to properly plant for revegetation projects
- Recorded measurements and data at a bird banding station approximately 200 birds a day for a month. Extracted birds from mist nets
- Accurately counted berries from bayberry plants in multiple plots at Ninigret NWR for a multi-year study
- Updated a plant survey in Microsoft Access that was a database used by all the northeast Fish and Wildlife Service region
-



EDUCATION

M.S.
Purdue University
Fort Wayne, IN
2015
Biology

B.A.
Skidmore College
Saratoga Springs, NY
2010
Biology; Concentration: Ecology,
Evolution, and Animal Behavior

SCIENTIFIC ORGANIZATION MEMBERSHIPS

Hoosier Herpetological Society

CERTIFICATIONS & TRAINING

Wetland and Adjacent Upland
Plant Identification Workshop –
2018

Intermediate GIS Concepts – 2018

Rule 5 Individual Contractor
Training for Storm Water Pollution
Protection – 2017

Certified Wetland Delineator,
USACE Wetland Delineation
Training Program – 2016

INDOT National Environmental
Policy Act (NEPA) Training
Certification – 2016

INDOT NEPA CE Training
Certification – 2016

Sedge (Carex spp.) Identification
Workshop – 2016

Emily Stulik, Wildlife Biologist

PROFESSIONAL EXPERIENCE

2018-Present Wildlife Biologist, Western EcoSystems Technology, Inc., Bloomington,
Indiana
2016-2018 Wetland Ecologist, Green 3, LLC, Indianapolis, Indiana
2015-2016 Ecologist, ASC Group, Inc., Indianapolis, Indiana
2012-2015 Teaching and Research Assistant, Purdue University Fort Wayne, Indiana

SPECIALTY AREAS

Wildlife Research: Emily has worked as a research technician for a variety of research projects in the fields of animal behavior, community ecology, and herpetology. She has studied the effects of an invasive algae in New York and Vermont, recorded predator-prey interactions between California ground squirrels and pacific rattlesnakes in Northern California, tracked colubrid snakes with radio telemetry in prescribed burn and forested plots in Kentucky, and conducted amphibian monitoring along the Missouri River as part of a large scale, USACE-funded survey project. Emily's MS research used occupancy modeling to compare amphibian habitat use and reproductive success in a restored wetland system in northern Indiana, with a focus on management strategies for species of special concern.

Wetland Delineation and Permitting: Ms. Stulik is certified wetland delineator and has conducted dozens of wetland determinations and delineations in the Midwest for a variety of projects. She has worked on transportation projects for state and local governments, recreational trail and community projects, and conducted wetland mitigation and monitoring throughout Indiana. Ms. Stulik has authored and submitted numerous Waters of the US Reports and preliminary jurisdictional determinations to state and federal regulatory agencies. She is well versed in the jurisdictional classifications and protections of wetland types at the state and federal level. Emily has also aided many clients in developing and submitting permit applications for projects resulting in waterway impacts, floodplain impacts, and stormwater pollution to state and federal agencies. She has guided and advised clients on needed permits, key impact threshold levels, and regulatory approval to ensure schedules are followed and project goals are met.

SELECTED WATERS OF THE US REPORTS AND PERMIT APPLICATIONS

Waters Report for the SR 26 Road Widening Project, Clinton County, Indiana. 2018.

Waters Report for the Richmond Heritage Trail, City of Richmond, Wayne County, Indiana. 2018

Waters Report for the Columbus Riverfront Development Project, Columbus, Bartholomew County, Indiana. 2018.

Application for Construction in a Floodway IDNR Division of Water State Form 55238 for the Wabash River Trail, Lagro, Wabash Indiana. 2017.

Rule 5 Notice of Intent State Form 47487 IDEM for the Wabash River Trail Paradise Springs Connector, Wabash, Wabash County, Indiana. 2018.

Application for Section 404/401 Regional General Permit USACE/IDEM Form 51937 for the SR 68 Bridge Rehabilitation over Pokeberry Creek, Warrick County, Indiana. 2017.

Application for Section 404/401 Nationwide Permit USACE/IDEM Form 51937 for the SR 327 Bridge Rehabilitation over Diehl Ditch, DeKalb County, Indiana. 2016.

Stream Mitigation Plan for the SR 445 Bridge Replacement Project, Greene County, Indiana. 2015



EDUCATION

Graduate Certificate
University of Denver
Denver, Colorado
2015
Geographic Information Systems

B.S.
Indiana University
Bloomington, Indiana
2013
Biology; Minor: Animal Behavior

RECOVERY PERMITS

Indiana Bat (*Myotis sodalis*)

Gray Bat (*Myotis grisescens*)

Northern Long-eared Bat (*Myotis septentrionalis*)

SOFTWARES

ESRI ArcGIS 10.3

Wesley Conway, Wildlife Biologist/Field Supervisor

PROFESSIONAL EXPERIENCE

2018-Present *Wildlife Biologist/Field Supervisor*, Western EcoSystems Technology, Inc.,
Bloomington, Indiana
2017-2018 *Technician Biologist/Field Supervisor*, Western EcoSystems Technology,
Inc., Bloomington, Indiana
2013-2016 *Environmental Field Technician/Crew Leader*, Western EcoSystems
Technology, Inc. Bloomington, Indiana

SPECIALTY AREAS

Wesley Conway is a Wildlife Biologist and Field Supervisor with over 6 years of consulting experience. His expertise includes presence/absence bat surveys (acoustic monitoring, mist-netting, roost and foraging telemetry, and hibernacula), habitat assessments/mapping, wetland delineation, coordinating PCM, and avian-use surveys. Wesley introduced data collection software that eliminated paper data sheets and data entry from the summer bat surveys. Wesley also manages the equipment inventory and performs GIS tasks for the Bloomington office.



Pallavi Sirajuddin, *Wildlife Biologist/Field Coordinator*

PROFESSIONAL EXPERIENCE

- 2019-Present *Wildlife Biologist/Field Coordinator*, Western EcoSystems Technology, Inc., Lemoyne, Pennsylvania
- 2019 *Wildlife Conservation Technician*, Department of Natural Resources, Social Circle, Georgia
- 2016-2018 *Graduate Research Assistant*, Clemson University, Clemson, South Carolina
- 2015 *Bat Research Assistant*, University of Auckland, New Zealand & University of Brunei, Brunei Darussalam
- 2015 *Bat Conservation Technician*, University of Georgia – Department of Natural Resources, Athens, Georgia
- 2014 *Jaguar Camera Survey Crew Leader*, Virginia Tech University, Blacksburg, Virginia and Belize
- 2014 *Bat Field Technician*, Tennessee Wildlife Resource Agency – University of Tennessee, Knoxville, Tennessee
- 2013 *Carnivore Survey Field Technician*, Virginia Tech University, Blacksburg, Virginia and Belize
- 2013 *Carnivore Survey Research Assistant*, Virginia Tech University, Blacksburg, Virginia and Okavango Delta, Botswana
- 2013 *Undergraduate Teaching Assistant*, Virginia Tech University, Blacksburg, Virginia
- 2011 *Social Media Intern*, The Wildlife Society Headquarters, Bethesda, Maryland

EDUCATION

M.S.
Clemson University
Clemson, South Carolina
2018
Wildlife and Fisheries Biology

B.A.
Virginia Tech University
Blacksburg, Virginia
2013
Fisheries and Wildlife

SCIENTIFIC ORGANIZATION MEMBERSHIPS

Southeastern Bat Diversity Network

American Society of Mammologists

North American Society of Bat Research

SPECIALTY AREAS

Pallavi Sirajuddin is a Bat Biologist with over 5 years of experience in field ecology. Pallavi has extensive experience safely capturing and handling bats, radio telemetry, affixing transmitters on bats, studying hibernation physiology of bats, and identifying bat echolocation calls in AnalookW.

SELECTED PROFESSIONAL ORAL AND POSTER PRESENTATIONS

- Sirajuddin, P.,** S. Loeb, E. Britzke, and D. Jachowski. 2018. Comparing Torpor Patterns of Tri-Colored Bats in White-Nose Positive and White-Nose Negative Sites. Southeastern Bat Diversity Network. Jacksonville, FL.
- Sirajuddin, P.,** S. Loeb, E. Britzke, and D. Jachowski. 2017. Skin Temperatures and Torpor Patterns of Tri-Colored Bats in White-Nose Positive Sites. White-Nose Syndrome Workshop. Nashville, TN.
- Sirajuddin, P.,** S. Loeb, E. Britzke, and D. Jachowski. 2017. Seasonal Torpor Patterns of Tri-Colored Bats in Relation to Hibernacula Conditions in South Carolina. Southeastern Bat Diversity Network. Asheville, NC.
- Sirajuddin, P.,** S. Loeb, E. Britzke, and D. Jachowski. 2016. Understanding the Vulnerability of Southeastern Tri-Colored Bats to White-Nose Syndrome: Torpor Patterns and Hibernacula Conditions. North American Society for Bat Research. San Antonio, TX.



Aaron Suehring, *Field Coordinator*

PROFESSIONAL EXPERIENCE

- 2018-Present *Field Coordinator*, Western EcoSystems Technology, Inc., Golden Valley, Minnesota
- 2017-2018 *Biological Field Technician*, Western EcoSystems Technology, Inc., Brookings, South Dakota
- 2015-2017 *Graduate Research Assistant*, South Dakota State University, Brookings, South Dakota
- 2015 *Mosquito Management Technician*, Sarasota County Government, Sarasota, Florida
- 2014 *LTE Fisheries Technician*, Wisconsin Department of Natural Resources, Sturgeon Bay, Wisconsin
- 2012 *Sea Turtle Rehabilitation Intern*, Loggerhead Marinelife Center, Juno Beach, Florida
- 2011 *University Summer Field Program*, University of Wisconsin-Stevens Point, Tomahawk, Wisconsin

EDUCATION

M.S.
South Dakota State University
Brookings, South Dakota
2017
Biological Sciences

B.S.
University of Wisconsin – Stevens Point
Stevens Point, Wisconsin
2012
Wildlife Ecology Research and Management
Minor: Biology, Captive Wildlife Management

SCIENTIFIC ORGANIZATION MEMBERSHIPS

American Fisheries Society

The Wildlife Society

SPECIALTY AREAS

Aaron Suehring is a Wildlife Biologist with over 8 years' experience in field ecology. His experience includes conducting pre-and post-construction monitoring at wind energy facilities, fisheries management, and nuisance species management. He also has experience utilizing GIS software to address topics related to watershed management.

SELECTED PROFESSIONAL PRESENTATIONS

- Suehring, A., & N.H. Troelstrup Jr.**, 2017. Watershed vulnerability to forecasted land-use and land-cover change under multiple scenarios of future development. *Oral presentation*. Annual South Dakota Academy of Science Meeting, Mitchell, SD (**Best Student Oral Presentation**).
- Suehring, A., L. Kuehl, N.H. Troelstrup Jr., C. Kaiser, & K.N. Bertrand**. 2017. Watershed vulnerability to forecasted land-use and land-cover change under multiple scenarios of future development. *Poster presentation*. Annual South Dakota State Geography Convention, Brookings, SD.
- Suehring, A., L. Kuehl, C. Kaiser, K.N. Bertrand, N.H. Troelstrup Jr.** 2016. Comparison of watershed landscape characteristics using ATtILA within the Northwestern Great Plains level III ecoregion of western South Dakota. *Poster presentation*. Society of Freshwater Scientists Annual Meeting, Sacramento, CA.
- Suehring, A., L. Kuehl, C. Kaiser, K.N. Bertrand, N.H. Troelstrup Jr.** 2016. Comparison of remotely sensed watershed landscape characteristics using ATtILA in the Northwestern Great Plains level III ecoregion of western South Dakota. *Poster presentation*. South Dakota Academy of Science, Sioux Falls, SD.
- Suehring, A.** 2015. Wisconsin's green infrastructure assessment. *Poster presentation*. Earth Resource Observation and Science (EROS) – U.S. Geological Survey, Garretson, SD.