

## Adam Crary, PWS, PWD

Senior Ecologist



### Education

BS, Natural Resources (conc. Natural History and Ecology), cum laude, University of Maine, 2000

### Registrations/Certifications

Professional Wetland Delineator (#3402 000067), VA Dept. of Occup. & Prof. Regulation, 2007

Professional Wetland Scientist (#1691), Society of Wetland Scientists Cert. Prog., Inc., 2006

USFWS Approved Plant Surveyor – *Isotria medeoloides*, *Helonias bullata*, *Ptilimnium nodosum*, *Aeschynomene virginica*, *Echinacea laevigata*, *Betula uber*, *Spiraea virginiana*, and Plants of Virginia, 2004

Chesterfield County, VA "Approved Wetland Professional", 2004

VT State Police Boating Certification, August 2011

OSHA 10-HR Construction Safety, 2008

Wilderness First Responder, CPR/Community First Aid

### Affiliations/Memberships (start year)

VHB Natural Sciences Group (Chair), 2016

Society of Wetland Scientists, 2001

Adam is a professional Ecologist/Project Manager who has worked as a federal park ranger, a research assistant, a stream ecologist, a wetland ecologist, a botanist, project manager, and team practice leader. He has performed ecological services in 13 states and one U.S. territory on both large- and small-scale public and private projects. Adam has worked on remote as well as urban sites, multi-state linear utility projects, as well as county-wide assessment initiatives. He is responsible for managing or providing oversight on projects focused on ecological resource inventory or involving federal or state environmental permitting, as well as managing wetland and ecological services and technical staff and providing expert natural resources testimony for energy and other projects primarily in Vermont and the northeast.

### 19 years of professional experience

### Technical/Professional Experience

- Wetland, waters, and stream delineation and jurisdictional determinations
- Wetland function and value assessments (qualitative and quantitative)
- Stream assessments (quality, flow, habitat, biological, and geomorphological)
- Compensatory wetland mitigation feasibility, design, and monitoring
- Stream restoration/enhancement feasibility, design, and monitoring
- Vascular plant identification and collection; floristic monitoring and surveys
- Rare, threatened and endangered species surveys (specializing in rare flora)
- Natural community and general wildlife habitat assessments
- Non-native invasive plant species assessments and management
- Benthic macroinvertebrate sampling and family-level identification
- Technical and scientific report and oral presentation development
- Federal, state, and local regulatory agency project liaison
- Environmental permit application support, preparation
- Chesapeake Bay Preservation Area assessments
- Vermont Act 250 and Section 248 natural resources assessments
- Natural resources expert witness testimony
- Vegetation management and monitoring plan development/assessment
- Project design/land-use planning
- Proposal development and management
- Project, task, and budget management
- Natural resource service program development
- Client marketing and company representation
- Staff management and training
- Regulation/policy development and stakeholder input

### Examples of Vermont Natural Resources and Permitting Projects

**Transportation Infrastructure** (VAST Lamoille Valley Rail Trail; VTrans bridge, culvert, and highway projects (ex. I-91 Bridge 9, Route 78), Bennington Rail to Trail, Hinesburg Multi-use Path, Colchester Double-Divergent Interchange)

**Utility Infrastructure** (VELCO transmission and substation projects, VELCO Statewide Radio, VELCO Structure Condition Improvement Project (2013, 2014), VELCO wetland

Southern Appalachian  
Botanical Society, 2004  
New England Wildflower  
Society, 2013  
Renewable Energy Vermont  
New England Wildflower  
Society Plant Conservation  
Volunteer, 2015  
Vermont Wetland Rules  
Stakeholder Group, 2016

mitigation monitoring projects, VEC NNIS monitoring projects, GMP Gorge Generating Station, GMP 3307 Line, CVPS Reconductoring projects, National Grid projects, Waitsfield Waterline, various VEC Substation Projects, VT Gas Addison Expansion project, TDI/NECPL ~150 mile new transmission line, National Grid 3315 Line Replacement Project, GMP White River Junction Substation/Transmission Line project, Waitsfield Water Line project, Canaan Water Line project, GMP Rutland Area Reliability Project, GMP Barnard Distribution Line)

**Renewable Energy** (Kingdom Community Wind, Deerfield Wind, Kidder Hill Wind, Stiles Brook Wind, Beaver Wood Energy Pownal and North Springfield Projects, St. Albans Solar, IBM RTC Solar, EGPNA Sheldon Solar, AER VBGS statewide solar projects, Encore Renewable Energy solar projects, VEC solar projects, Namaste solar projects, SunEdison Champlain Valley Solar Farm, Green Peak Solar projects, SolarCity 5MW solar projects, Great Bay Hydro solar, GMPSolar projects, +26 Bullrock solar projects)

**Commercial/Residential Development** (Chase/Green Mtn Plaza, Moran Plant, Hannaford Hinesburg, Commonwealth Dairy, Quechee Lakes, South Burlington Market Street and City Center Projects, Northfield Savings Bank Berlin, Halifax Quarry, South Burlington Trader Joes, Retreat Farm)

**Ski Resort Development** (Jay Peak, Killington, Mount Snow, Timber Creek at Okemo, Sugarbush)

### **Previous Work History**

#### **Golder Associates Inc. August 2007 – September 2009**

Richmond, VA

##### **Senior Project Ecologist, Project Manager**

###### *Duties/Responsibilities*

- As a project manager and the GAI senior ecologist on the east coast north of Atlanta, major project duties include client care and development, project regulatory agency liaison, proposal research and preparation, project schedule and budgeting, and contractual negotiation. Tasked with developing an ecological services program, a major focus is on client marketing, service recognition, internal education, and public company representation. Particular project attention is on managing, staffing, training, supervising, and performing ecological project tasks in the mid-Atlantic region, including wetland delineations, permitting, mitigation, and monitoring; stream evaluations, permitting, and mitigation; and other ecological assessments/surveys related to Clean Water Act Section 404 and 401 permitting, Endangered Species Act, Virginia Endangered Plant and Insect Species Act, National Environmental Policy Act, and Chesapeake Bay Preservation Act, among them. Particular project and research interest includes wetland and stream ecology, as well as botanical studies involving rare species and sensitive habitat.
- In addition to the Richmond office, ecological, regulatory, and marketing consulting services provided to clients of GAI offices in Philadelphia, Raleigh, Greensboro, Denver, and Atlanta.

#### **Williamsburg Environmental Group, Inc. May 2001 – August 2007**

Williamsburg/Richmond, VA

##### **Ecologist II, Project Manager**

###### *Duties/Responsibilities*

- Lead field crews under a labor intensive, independent environment in conduct of various ecological surveys with emphasis on botanical, wetland, and stream investigations.
- Supervise, train, and mentor staff according to multiple scientific methodologies and professional ethic.

- Author technical/scientific reports
- Manage and coordinate all tasks related to individual project needs with a focus on ecological services and environmental permitting.
- Maintain technical standards for Ecology staff company-wide.
- Foster and maintain positive federal/state agency personnel and client relations
- Experience/Accomplishments
- Ecological surveys conducted in all regions of Virginia including other regional states and the USVI.
- Hundreds of wetland delineations completed throughout Virginia (routine, comprehensive, atypical).
- Numerous stream assessments conducted across Virginia (mitigation, habitat, physical, or perennial origin) at both the county and project-specific level.
- Wetland functional assessments completed, according to various methodologies, for impact review, individual permits, and/or habitat assessment.
- CBPA limit determinations conducted throughout coastal Virginia.
- Completion of wetland/stream mitigation feasibility studies as well as vegetation analysis.
- Species specific and habitat surveys conducted across Virginia for several rare plant and animal species.
- Several natural community, forest stand, and floristic surveys completed.
- Office transfer with promotion from Williamsburg to Richmond, Virginia at age 25.

**HSI, Inc. December 2000 – May 2001**

Woodstock, VT

**Carpenter**

- Assisted with the construction of custom-built houses
- Similar duties as a Carpenter's Assistant during summers: 1992, 1993, 1994, 1995, 1996

**Kootenai-Shoshone SWCD June 2000 – October 2000**

Couer d'Alene, ID

**Stream Ecologist**

- Seasonal position tasked with inventory and assessment of TMDL-listed streams in northern Idaho, including data collection method development (first crew of the kind in Idaho).
- Member of 2-person effort using GPS technology to record measurements of stream physical character and geomorphology to model bank erosion.

**Univ. of Maine Dept. of Biol. Science September 1999 - May 2000**

Orono, ME

**Research Assistant – Step II**

- Work-Study position assisting with scientific data collection and management for a peatland ecology research project.

**U.S. Army Corps of Engineers May – August 1998, 1999**

N. Springfield, VT

**Park Ranger**

- Seasonal position tasked with the supervision of the project's recreational lands and facilities as well as creation and presentation of various nature programs and public interpretive tours.
- Supervised and trained seasonal Park Ranger staff in 1999.

**State of Vermont Forest Parks and Recreation, May 1997 – August 1997**

Springfield, VT

**Maintenance Technician**

- Seasonal position tasked with assisting full-time maintenance staff in facility repair and operation of five state parks in southern Vermont.

**Professional Training**

- Vermont Logging AMPs, VT FPR Presentation at VHB, February 2017
- Vermont Rare Sandplain and Lake Drawdown Flora, NEWFS PCV field trip, Burlington, VT September 2016
- Vermont Endangered Species Symposium, Burlington, VT, 2015
- Clean Water Rule, USACE (M. Abair) and Food Security Act Wetlands Conservation Compliance, NRCS (J. Eikenberry) presentations at VHB, September 2015
- Society of Wetland Scientists Annual Conference, Providence, RI, 2015
- NEWFS Plant Conservation Volunteer Training, Bethel, VT, 2015
- Renewable Energy Vermont, Annual Conference, Burlington, VT (2013-)
- New England Association of Environmental Biologists Conference, Lake Placid, NY, 2013
- Vermont Significant Natural Community Training, VT FWD (E. Sorenson) Presentation and Field Exercise for VHB, 2013
- Identification of Late-season Grasses, NEWFS, Framingham, MA, 2012
- NCNE Regional Wetland Delineation Supplement, USACE, Essex, VT, 2010
- Applied Fluvial Geomorphology, Wildland Hydrology, Shepherdstown, WV, April 2009
- Virginia Water Conference, Richmond, VA, 2009
- OSHA 10-HR Construction Safety, Richmond, VA, February 2008
- Emerg. Medical Response and Bloodborne Pathogen Training, Richmond, VA, March 2008
- American Soc. of Mining and Reclamation, Annual Conference, Richmond, VA, 2008
- Fire Safety and Extinguisher Use, Richmond, VA, March 2008
- Rare Seepage Flora Symposium, Caroline County, VA
- Wetland Delineation and Management (40-hr), RCET, Charlotte, NC, October 2005
- VA Assoc. of Wetland Professionals, Fall Conference, Richmond, VA, 2004
- Field Botany and Floristics, Humboldt Field Research Institute, Steuben, ME, June 2004
- Perennial Stream Origin Identification for Application of the CBPA Designation and Management Regulations in Virginia, NC State Dept. of Forestry, Richmond, VA, June 2004
- Advanced Hydric Soils, VIMS, Gloucester, VA, October 2003
- Fairfax County Perennial Stream Field Identification Protocol, Fairfax, VA, May 2003
- Prince William Co. and Fairfax Co., VA Physical Stream Assessments, Sept. & Oct. 2003
- Wetland Functional Assessment Methodology, Environmental Concern, September 2002
- Lentic Proper Functioning Condition Methods – NRCS/USFWS, Coeur d'Alene, ID, 2000
- USACE Highway Methodology Wetland Assessments, USACE, N. Springfield, VT, June 1999
- Interpretive Training Institute, AMC Pinkham Notch Visitor Center, Gorham, NH, June 1998-99

**Example Technical/Scientific Reports**

- Crary, A.R. 2004. Charter Colony Lakes (LTC-30 and LTC-20-25) WET II Functional Evaluation. Contracted Report under WEG #1472D. Williamsburg Environmental Group, Inc. (prepared for Chesterfield County, Virginia).

- DeBerry, D.A., A. R. Crary (contributing author). 2004. Integrated Natural Resources Management Plan: SMR Camp Pendleton. Contracted Report. Williamsburg Environmental Group, Inc. (prepared for Virginia Dept. of Military Affairs).
- Crary, A.R. 2004. Determination of Section 404 Jurisdictional Areas Using the Atypical Situations Procedure: Nunnally Property, Chesterfield County, Virginia. Contracted Report under WEG #2042. Williamsburg Environmental Group, Inc. (prepared for E.W. Nunnally, Jr.). 16pp. (plus appendices).
- Crary, A.R. 2005. Environmental Resource Inventory, Cabrita Point, St. Thomas, USVI. Contracted Report under WEG #2372. Williamsburg Environmental Group, Inc. (prepared for Springline Architects). 22pp.
- Crary, A.R. 2005. Barking Treefrog (*Hyla gratiosa*) in Virginia. Internal review. Williamsburg Environmental Group, Inc. DeBerry, D. and B. Helmandollar reviewers. 3pp.
- Crary, A.R. 2006. Baseline Vegetation Community Investigation. Contracted Report under WEG #1759. Williamsburg Environmental Group, Inc. (prepared for Greeley and Hansen).
- Crary, A.R. 2007. Rare and Sensitive Species Report – Wilton on the James. Contracted Report under WEG #2112. Williamsburg Environmental Group, Inc. (prepared for HHHunt)
- Crary, A.R. 2007. Swamp Pink Conservation and Management – Wilton on the James. Contracted Report under WEG #2112. Williamsburg Environmental Group, Inc. (prep. for HHHunt).
- Crary, A.R. 2007. Post-Construction Stream Relocation Baseline Monitoring Report – 623 Landfill. Contracted Plan under Golder #0436777. Golder Associates Inc. (prepared for Republic Services, Inc.)
- Crary, A.R. 2008. Rare and Sensitive Species Survey Report – Chesterfield Power Station. Contracted Report under Golder #0736607. Golder Associates Inc. (prep. for Dominion)
- Crary, A.R. 2008 draft. JPA and Permit Support Document – Chesterfield Power Station. Contracted Report under Golder #0736607. Golder Associates Inc. (prep. for Dominion)
- Crary, A.R. 2008 draft. Compensatory Wetland and Stream Mitigation Plan – Brunswick Solid Waste Facility. Contracted Report under Golder #0739607508. Golder Associates Inc. (prep. for BFI Waste)
- Crary, A.R. (principal author). 2010. Section 248 Natural Resources Report – Kingdom Community Wind. Contracted report under VHB #57346.01.
- Crary, A.R., J. Sky. 2011 Alternative Site Analysis in Support of an Application for a Individual Section 404 Permit. Technical memorandum. Contracted technical memorandum under VHB #57346.05.
- (VHB) Crary, A.R., P.B. Werts. 2013. Vegetation Management Plan-Transmission Main, Addison Natural Gas Project Phase I. Contracted plan under VHB #57563.00.
- (VHB) Martin, C.M., A.R. Crary. 2014. Natural Resources Report-Overland/Terrestrial, TDI New England Clean Power Link Project. Contracted Report under VHB #57666.
- (VHB) Werts, P.B., A.R. Crary. 2015. Section 248 Natural Resources Report, New England Power Company DBA National Grid, 3315 Transmission Line Asset Condition Refurbishment Project. Contracted Report under VHB #52317.
- (VHB) McEnroe, O.W, A.R. Crary. 2016. Section 248 Natural Resources Assessment. BDE Cabot Lazar Solar project. Contracted memorandum under VHB #57746.24

### **Presentations/Instruction**

- "Invasiveness of *Phragmites australis*." May 2000. Senior Research Paper Presentation. University of Maine – Natural Resources Program.
- "The Effects of Dam Removal." May 2000. Poster Presentation. University of Maine. Soil and Water Quality (PSE 344).

- "Hydric Soil: Using Field Indicators." 8 January 2004. Williamsburg Environmental Group Annual Ecology Seminar. Richmond, VA.
- "Wetland Delineation." October 2006. Toll Brothers, Inc. Loudoun County, VA.
- "Branch Creek Perennial Stream Determination." 6 March 2007. Chesterfield County Office of Water Quality. Chester, VA.
- "Buena Vista Wetland Functional Analysis." 25 April 2007. Virginia Mitigation Bank Review Team. Richmond, VA.
- "Small Whorled Pogonia in Virginia." 27 April 2007. 2007 Williamsburg Environmental Group Annual Ecology Seminar. Richmond, VA.
- "Compensatory Stream Mitigation." 17 March 2008. Golder Associates In-House Presentation. Richmond, VA.
- "Basic GPS Field Use – Trimble GeoXT." 12 June 2008. Golder Associates Training Presentation. Richmond, VA.
- "Wetlands and the VSWMR." June 2008. Golder Associates Presentation. Richmond, VA
- 2010 Ecology Seminar. April 2010. VHB Internal Training. (coordinator/presenter/field instructor)
- 2011 Ecology Seminar. April 2011. VHB Internal Training. (coordinator/presenter/field instructor)
- 2013 Ecology Seminar. May 2013. VHB Internal Training. (coordinator/presenter)
- "Solar Project Development in Vermont Wetlands: Initial Case Studies for Secondary Effects", Renewable Energy Vermont, Burlington, VT (2014)
- "Solar Project Development in Vermont Wetlands: Update Initial Case Studies for Secondary Effects", Renewable Energy Vermont, Burlington, VT 2015
- VEC Wetland Training, Vermont Electric Cooperative, Johnson, VT 2016
- Stiles Brook Wind Natural Resources Assessment, poster presentation, Grafton/Windham open house, 2016
- Solar Development in Vermont, VHB Energy Leaders Meeting, June 2016
- Wetland Assessment and Delineation, UVM Forestry NREA 105, guest lecturer and lab instructor, October 2016