

CURRICULUM VITAE

DAVID CHARLES KAZYAK

University of Maryland Center for Environmental Science, Appalachian Laboratory
301 Braddock Road
Frostburg, MD 21532
301-689-7157 (office) 410-259-8241 (cell)
dkazyak@gmail.com

EDUCATION

Ph.D. in Marine, Estuarine, and Environmental Science (Fisheries concentration). University of Maryland. Expected completion 2014. GPA: 4.00. Dissertation: Management and conservation of brook trout in western Maryland.

M.S. in Wildlife Ecology (Fisheries concentration). University of Maine. 2011. GPA: 3.85.
Thesis: Growth and movement of brook trout (*Salvelinus fontinalis*) in coastal Maine.

B.S. in Wildlife and Fisheries (Fisheries concentration). Frostburg State University. 2008. GPA: 3.92.

CURRENT EMPLOYMENT

Graduate Research Assistant. *UMCES, Appalachian Laboratory.* 2011-Present

- Worked closely with Maryland Department of Natural Resources Fisheries Service to address key management needs and evaluate current strategies.
- Designed and coordinated a large scale, multi-agency PIT-tagging study investigating the life history and population ecology of brook trout in western Maryland.
- Analyzed field data using quantitative models (including population genetics, Cormack-Jolly-Seber, matrix, multi-state and linear mixed models).
- Developed a standard operating procedures manual for the PIT-tagging study.
- Designed and implemented microsatellite DNA studies to identify cryptic populations.
- Mentored 4 students on independent research projects.

Guest Lecturer. *Johns Hopkins University.* 2011-Present

Courses: Freshwater Ecology and Applied Sustainability.

- Provided classroom and field instruction to graduate students in the Johns Hopkins University Environmental Science and Policy program.

EMPLOYMENT BACKGROUND**Graduate Teaching Assistant.** *UMCES, Appalachian Laboratory.*

2011-2013

Courses: Biometry and Land Margin Interactions.

- Taught Biometry lectures (e.g. ANCOVA) and developed course content.
- Graded Biometry coursework and exams.
- Led field instruction on the use of backpack electrofishing equipment, fish taxonomy, and freshwater ecology.

Graduate Research Assistant. *University of Maine, Department of Wildlife Ecology.*

2008-2010

- Coordinated research on the movement, growth, and survival of brook trout in coastal Maine using a combination of passive integrated transponder (PIT) tags and radio telemetry to track individuals through time and space. Led a team of >20 volunteers and supervised 4 technicians.
- Developed population model for brook trout in STELLA.
- Designed and constructed an innovative instream PIT array to detect brook trout movement.
- Led Atlantic salmon monitoring in a DPS stream for the Maine Department of Marine Resources.
- Interacted with and developed technical reports for local, state, and federal agencies.
- Provided technical and logistical support for a variety of other wildlife and fisheries projects including work with federally endangered species (Atlantic salmon and shortnose sturgeon).

Graduate Teaching Assistant. *University of Maine, Department of Wildlife Ecology.*

2008

Courses: Wildlife Ecology Laboratory (two concurrent sections; writing intensive).

- Instructed students on ecological principles and the proper use of field equipment. Graded laboratory reports.

Research Technician. *University of Maryland Center for Environmental Science.*

2004-2008

- Collected and filtered water samples, measured stream discharge, surveyed fish and herpetofauna, cleaned glassware, and conducted laboratory analysis of water chemistry.

Amphibian Monitoring Technician. *Greater Yellowstone Ecosystem Amphibian Survey.*

2006-2007

- Conducted backcountry amphibian monitoring in Yellowstone and Grand Teton National Parks.

Research Assistant. *Frostburg State University.*

2006-2007

- Conducted literature searches and created figures showing habitat preferences for a book to be titled 'Fishes of Maryland'.

Laboratory Technician. *Enviro-Chem Laboratories Inc.*

2005-2006

Seasonal Field Technician. *Maryland Biological Stream Survey.*

2002-2005

- Duties included stream electrofishing, herpetofauna surveys, digital photography, site navigation, data entry, water quality and physical habitat assessment.

PEER-REVIEWED PUBLICATIONS

Wilberg M, Sylvia A, **Kazyak DC**, Rains S, Simpson C. *In prep.* When is it better to use sex-specific stock assessment models?

Kazyak DC, Hilderbrand RH, King TL. *In prep.* Do Brook Trout within a stream network represent a single population? A case for cryptic metapopulations.

Hilderbrand RH, **Kazyak DC**. *In prep.* Spatial stability of Brook Trout density in a western Maryland stream.

Sell MT, **Kazyak DC**, Cooper R, Hilderbrand RH. *In prep.* Hooking mortality in Brook Trout: a comparison of terminal tackle types.

Sell MT, **Kazyak DC**, Cooper R, Hilderbrand RH. *In prep.* An evaluation of actively and passively fished circle hooks for rainbow trout.

Kazyak DC, Hilderbrand RH, Keller SK, Colaw M, Holloway AE, Morgan RP, King TL. *In review.* Spatial structure of morphological and neutral genetic variation in Brook Trout *Salvelinus fontinalis*. Submitted to Transactions of the American Fisheries Society.

Holloway AE, **Kazyak DC**, Hilderbrand RH. *In review.* Sexual dimorphism in Brook Trout. Submitted to Canadian Journal of Fisheries and Aquatic Sciences.

Kazyak DC, Hilderbrand RH, Sell MT. *Accepted.* Growth variation in a Mid-Atlantic Brook Trout population. Proceedings of Wild Trout XI.

Sell MT, Heft AA, **Kazyak DC**, Hilderbrand RH, Morgan RP. *Accepted.* Short-term and seasonal movements of eastern Brook Trout (*Salvelinus fontinalis*) in the upper Savage River watershed, Garrett County, Maryland. Proceedings of Wild Trout XI.

Stranko SA, Ashton MJ, Hilderbrand RH, Weglein SL, **Kazyak DC**, Kilian JV. 2014. Fish and benthic macroinvertebrate densities in small streams with and without American Eels. Transactions of the American Fisheries Society 143:700-708.

Kazyak DC, Letcher BH, Zydlewski J, O'Donnell MJ. 2013. Growth variability of brook charr (*Salvelinus fontinalis*) in coastal Maine. Ecology of Freshwater Fish. doi: 10.1111/eff.12105

Kazyak DC, Hilderbrand RH, Holloway AE. 2013. Rapid visual assessment to determine sex in Brook Trout. North American Journal of Fisheries Management 33:665-668.

Kazyak DC, Zydlewski J. 2012. High-density polyethylene: a new material for pass-over PIT antennas. North American Journal of Fisheries Management 32:49-52.

Strain, GF, **Kazyak DC**, Raesly R. 2012. Headwaters and headlamps: a comparison of nocturnal and diurnal surveys to estimate richness, abundance, and detection of streamside salamanders. Herpetological Review 43:26-30.

LEADERSHIP EXPERIENCE

<u>Student Representative.</u> <i>UMCES Competitive Fellowships Committee.</i>	2013-2014
<u>Student Representative.</u> <i>MEES Graduate Student Council.</i>	2011-2014
<u>Student Representative.</u> <i>UMCES Accreditation Working Group 5: Educational Offerings.</i>	2014
<u>Student Representative.</u> <i>UMCES Appalachian Laboratory Faculty Council.</i>	2011-2012
<u>President.</u> <i>University of Maine Student Chapter of the American Fisheries Society.</i>	2009-2010
<u>Executive Committee.</u> <i>American Fisheries Society, Atlantic International Chapter.</i>	2009-2010
<u>Secretary/Treasurer.</u> <i>University of Maine Wildlife Ecology Graduate Student Group.</i>	2009-2010
<u>Graduate Advisor.</u> <i>University of Maine Student Chapter of The Wildlife Society.</i>	2008-2011
<u>Assistant Scoutmaster.</u> <i>Boy Scout Troop #478.</i>	2008-2010
<u>Vice President.</u> <i>University of Maine Student Chapter of the American Fisheries Society.</i>	2008-2009
<u>Adult Leader.</u> <i>Boy Scouts of America, Venturing Crew #202.</i>	2007-2008
<u>President.</u> <i>Frostburg State University Student Chapter of The Wildlife Society.</i>	2006-2007
<u>Eagle Scout.</u> <i>Boy Scouts of America.</i>	2003
<u>Team Captain.</u> <i>Canon Envirothon.</i>	2001-2003
<u>President.</u> <i>Boy Scouts of America, Venturing Crew #202.</i>	2003

SKILLS

Population dynamics and modeling	Statistical analysis of field data
Experimental design	Manuscript preparation, publication, and review
Individual-based growth and survival models	Database development and management
Fish telemetry	PIT antenna design and construction
Fish anesthesia and surgery	Temperature and CTD logger use
Electrofishing (16 years experience)	Endangered Species Act permit compliance
Fish taxonomy	Morphometrics
Habitat assessment	Environmental chemical analyses
Population genetics	Biological stream surveys
Boat operation	Field sampling logistics
<i>Selected software packages:</i>	
R	HOBOWare Pro
ArcGIS 10	Microsoft Office (including Access)
Mark 7.0	Adobe Creative Suite 6
Structure, Genalex, GeneClass2, Genepop	PuTTY,
Migrate, Arlequin	Stella

VOLUNTEER SERVICE

<u>Technical Consultant.</u> <i>Frostburg Grows.</i>	>40 hours
<u>Wildlife Field Technician/Environmental Educator.</u> <i>The Wildlife Society.</i>	>40 hours
<u>Habitat Restoration/Environmental Educator.</u> <i>Venturing Crew #202.</i>	>300 hours
<u>Education Staff.</u> <i>EPA Highlands Environmental Leadership Program.</i>	>50 hours
<u>Merit Badge Counselor.</u> <i>Venturing Crew #202.</i>	>110 hours
<u>Aquatic Field Technician.</u> <i>Maryland Department of Natural Resources.</i>	>700 hours

AWARDS AND HONORS

1 st Place Eileen Setzler-Hamilton Memorial Scholarship Award	2014
American Fisheries Society Skinner Memorial Award, Honorable Mention	2014
Marty Seldon Student Travel Fellowship, Wild Trout Inc.	2013
2 nd Place Best Student Presentation, Tidewater Chapter of the American Fisheries Society	2013
New England Outdoor Writers Association Scholarship nominee	2010
Summa cum laude, Frostburg State University	2008
Departmental Honors, Frostburg State University	2008
Graduation speaker nominee for the FSU College of Liberal Arts and Sciences	2008
Frostburg State University Dean's List	2004-2008
Scholarship for Academic Excellence, Frostburg State University	2004-2008
Rocky Mountain Elk Foundation Wildlife Leadership Award	2007
Fransecesca Borrelli Johnson Environmental Scholarship	2007
Nemacolin Trout Unlimited Scholarship	2006-2007
SeaWorld/Busch Gardens/Fujifilm Environmental Excellence Unit Award, Venturing Crew #202	2007
Hornaday Unit Award, Venturing Crew #202	2007
Margaret Rosch Jones Group Award (Maryland Environmental Trust), Venturing Crew #202	2007
2 nd Place Team Field Events, Southeastern Conclave of The Wildlife Society	2005
President's Environmental Youth Award	2005
1 st Place Carroll County Envirothon	2002-2004
Stream ReLeaf Award, Maryland Department of Natural Resources	2004
Tawes Environmental Achievement Award, MD Dept. of the Environment/ American Petroleum Institute, Venturing Crew #202.	2004
2 nd Overall, Maryland Envirothon	2004
1 st Place Wildlife, Maryland Envirothon	2004
1 st Place Aquatics, Maryland Envirothon	2003

GRANT WRITING

Jacob K. Goldhaber Travel Grant (\$400)	2014
International Conference Student Support Award (\$120)	2014
American Fisheries Society Skinner Memorial Award (\$120)	2014
Eileen Setzler-Hamilton Scholarship Award (\$500)	2014
Appalachian Laboratory Graduate Student Travel Awards (>\$2000; 5 total awards)	2011-2014
Marty Seldon Student Travel Fellowship (\$500)	2013
EPA STAR Fellowship Program (Rated 'Very Good'; unfunded)	2011
Frostburg Student Government Association (\$3,500; 3 total awards)	2006-2008
Rocky Mountain Elk Foundation Wildlife Leadership Award (\$2000)	2007
Fransecesca Borrelli Johnson Environmental Scholarship (\$1000)	2007
Nemacolin Trout Unlimited Scholarship (\$1000)	2006-2007
Chesapeake Bay Trust (\$1,200)	2003

CERTIFICATION AND LICENSES

Associate Fisheries Professional (FP-A), American Fisheries Society
NCTC/USFWS Electrofishing Team Leader Certification
Certificate of Boating Safety Education. Maryland Department of Natural Resources
PADI Open Water Diver Certification
Wilderness First Aid. SOLO Wilderness Emergency Medicine
American Heart Association Heartsaver CPR
Maryland and Pennsylvania Hunting and Fishing Licenses
Maryland Collector's Permit
Maryland Department of Natural Resources Firearms and Hunter Safety Training
International Bowhunter Education Program Graduate

PROFESSIONAL AFFILIATIONS

American Fisheries Society
North American Native Fish Association
Society for Conservation Biology

ORAL PRESENTATIONS AND POSTERS

Kazyak DC, Hilderbrand RH, King TL. 2014. Do Brook Trout within a stream network represent a single population? *Oral presentation*. 144th Annual Meeting of the American Fisheries Society. Quebec City, Quebec.

Kazyak DC. 2014. Sex, growth, and survival: insights from a large-scale Brook Trout tagging project. *Invited seminar*. Maryland Department of Natural Resources MANTA Noon-time Seminar Series, Annapolis, Maryland.

Kazyak DC, Hilderbrand RH, King TL. 2014. Do Brook Trout within a stream network represent a single population? *Oral presentation*. 2014 Annual Meeting of the Tidewater Chapter of the American Fisheries Society. Newport News, Virginia.

Kazyak DC, Hilderbrand RH. 2013. Growth variation in a Mid-Atlantic Brook Trout population. *Oral presentation*. 26th International Congress for Conservation Biology. Baltimore, Maryland.

Kazyak DC, Hilderbrand RH. 2013. Growth variation in a Mid-Atlantic Brook Trout population. *Oral presentation*. 2013 Annual Meeting of the Tidewater Chapter of the American Fisheries Society. Solomons, Maryland.

Kazyak DC, Hilderbrand RH. 2012. Life History and Population Dynamics of Brook Trout in Western Maryland. *Poster*. Maryland Department of Natural Resources Brook Trout Open House. Frostburg, Maryland.

Kazyak DC, Hilderbrand RH. 2012. Life-history studies to inform brook trout management in the Savage River watershed, MD. *Oral presentation*. East Coast Trout and Management Meeting. Frostburg, Maryland.

Kazyak DC, Holloway AE, Hilderbrand RH. 2012. Sexual dimorphism in brook trout: can it be used to effectively distinguish the sexes? *Oral presentation*. East Coast Trout and Management Meeting. Frostburg, Maryland.

AE Holloway, **Kazyak DC**, Hilderbrand RH. 2012. Nonlethal sex determination in brook trout. *Oral presentation*. 142nd Annual Meeting of the American Fisheries Society. St. Paul, Minnesota.

Kazyak DC, Hilderbrand RH. 2012. Life-history studies to inform brook trout management in the Savage River watershed, MD. *Oral presentation*. 142nd Annual Meeting of the American Fisheries Society. St. Paul, Minnesota.

Kazyak DC. 2011. Savage River PIT Tagging Project. *Invited seminar*. Savage River Watershed Association, Frostburg, Maryland.

Kazyak DC. 2011. Savage River PIT Tagging Project. *Invited seminar*. Nemacolin Chapter of Trout Unlimited Annual Meeting, Big Run State Park, Maryland.

Kazyak DC. 2011. Life History of Brook Trout in Western Maryland. *Invited seminar*. Maryland Streams Symposium, Westminster, Maryland.

Kazyak DC. 2011. Growth and Movement of Brook Trout in Coastal Maine. *Thesis defense*. University of Maine Department of Wildlife Ecology, Orono, Maine.

Kazyak DC, Zydlewski J, Letcher BH. 2010. Growth and movement of brook trout (*Salvelinus fontinalis*) in coastal Maine. *Oral presentation*. 140th Annual Meeting of the American Fisheries Society, Pittsburgh, Pennsylvania.

Kazyak DC, Zydlewski J, Letcher BH. 2009. Movement and habitat use of brook charr (*Salvelinus fontinalis*) in coastal Maine. *Poster*. 139th Annual Meeting of the American Fisheries Society, Nashville, Tennessee.

Kazyak DC. 2008. Brook Trout in Coastal Maine: life history, physiology, and movement. *Invited seminar*. Cove Brook Watershed Council, Winterport, Maine.

Kazyak DC. 2008. A Comparison of Diurnal and Nocturnal Visual Encounter Surveys for Streamside Salamanders. *Undergraduate research seminar*. Frostburg State University, Department of Biology, Frostburg, Maryland.

Kazyak DC. 2008. Review of Eastern Herpetofauna. *Invited seminar*. 2008. Frostburg State University Student Chapter of The Wildlife Society, Frostburg, Maryland.

Kazyak DC. 2007. Movement of California blackworms (*Lumbriculus variegatus*) in response to caffeine. *Undergraduate research seminar*. Frostburg State University Biology Department Research Symposium, Frostburg, Maryland.

Kazyak DC. 2006. Herpin' in the Hills. *Invited seminar*. Venturing Crew #202, Westminster, Maryland.

Kazyak DC. 2006. Herpin' in the Hills. *Invited seminar*. Frostburg State University Student Chapter of The Wildlife Society, Frostburg, Maryland.

Kazyak DC. 2006. Herpin' in the Hills. *Invited seminar*. Maryland Department of Natural Resources MANTA Noon-time Seminar Series, Annapolis, Maryland.

HOSTED WORKSHOPS, LECTURES AND FIELD TRIPS

Kazyak DC. 2014. Addressing climate change using systems thinking. *Group exercise*. Johns Hopkins University Applied Sustainability class. Frostburg, Maryland.

Kazyak DC. 2014. Biodiversity and ecosystem services. *Lecture*. Johns Hopkins University Applied Sustainability class. Frostburg, Maryland.

Kazyak DC. 2014. Connectivity. *Lecture*. Johns Hopkins University Applied Sustainability class. Frostburg, Maryland.

Kazyak DC. 2013. Addressing climate change using systems thinking. *Group exercise*. Johns Hopkins University Applied Sustainability class. Frostburg, Maryland.

Kazyak DC. 2013. Biodiversity and ecosystem services. *Lecture*. Johns Hopkins University Applied Sustainability class. Frostburg, Maryland.

Kazyak DC. 2013. Connectivity. *Lecture*. Johns Hopkins University Applied Sustainability class. Frostburg, Maryland.

Kazyak DC. 2013. Wind power: the good, the bad, the ugly. *Field trip*. Johns Hopkins University Applied Sustainability class. Frostburg, Maryland.

Kazyak DC, Weitzel R. 2013. Landscape Influences on the Aquatic Ecology of Allegany County. *Field trip*. Leadership Allegany Program. Frostburg, Maryland.

Kazyak DC, Hilderbrand RH. 2013. ANCOVA. *Lecture*. University of Maryland Biometry class. Frostburg, Maryland.

Kazyak DC, Kline M, Deck E. 2012. Aquatic Ecology of Allegany County. *Field trip*. Allegany County Summer Teachers Program. Cumberland, Maryland.

Kazyak PF, **Kazyak DC.** 2012. Streams of Western Maryland. *Field trip*. Johns Hopkins University Freshwater Ecology class. Garrett and Allegany counties, Maryland.

Kazyak DC, Raesly R. 2012. Respiration and Circulation in Fishes. *Lecture*. Frostburg State University Ichthyology class. Frostburg, Maryland.

Kazyak DC, Weitzel R. 2012. Aquatic Ecology of Allegany County. *Field trip*. Leadership Allegany Program. Frostburg, Maryland.

Kazyak DC, Fiscus D, Kazyak PF. 2012. Highland Environmental Leadership Program. Garrett County, Maryland.

Castro MS, **Kazyak DC.** Boyton WR, Fisher TR. Swerida R. 2011. Streams of Western Maryland. *Field trip*. University of Maryland Land Margins Interactions class. Garrett and Allegany counties, Maryland.

Kazyak DC. 2011. PIT Tagging in Fisheries Research. *Workshop*. Maryland Streams Symposium. Westminster, Maryland.

Kazyak DC, Weitzel R. 2011. Aquatic Ecology of Allegany County. *Field trip*. Leadership Allegany Program. Frostburg, Maryland.

Kazyak DC. 2011. Taxonomy of Fish and Aquatic Invertebrates in Maryland. *Field trip*. Johns Hopkins University Freshwater Ecology class. Westminster, Maryland.

Kazyak PF. **Kazyak DC**. 2011. Streams of Western Maryland. *Field trip*. Johns Hopkins University Freshwater Ecology class. Garrett and Allegany counties, Maryland.

Kazyak DC. Guyette M. Shearin A. Drahovzal S. 2010. Field Skills. *Workshop*. University of Maine Wildlife Ecology Department. Orono, Maine.

Kazyak DC. Zydlewski J. 2009. Fish Telemetry Field Experience. 2009. *Workshop*. 2009 Northeast Conclave of The Wildlife Society. Acadia National Park, Maine.

Kazyak DC. Zydlewski J. 2009. Fish Telemetry and Marking. 2009. *Workshop*. 2009 Northeast Conclave of The Wildlife Society. Acadia National Park, Maine.

Kazyak DC. 2009. Seeking Employment in the Natural Resources Field. *Workshop*. University of Maine Department of Wildlife Ecology. Orono, Maine.

Kazyak DC. 2009. Brook Trout Research in Coastal Maine. *Field trip*. College of the Atlantic fisheries class. Acadia National Park, Maine.