



Application for Virginia Scientific Collection/Research/Survey Permit

(Under Authority of § 29.1-412, § 29.1-417, 4 VAC 15-30-10, 4 VAC 15-290-20, § 29.1-418, § 29.1-521, § 29.1-568 of the Code of Virginia)

Fee: \$40 (Two Year Permit)

Completed materials must be submitted electronically 3-4 weeks prior to the collection period to: collectionpermits@dgif.virginia.gov.

If renewal, give current permit number: _____

Full Name of Principal Applicant: _____

Affiliation: _____

Address: _____

Address2: _____

City: _____ State: _____ Zip: _____

Email: _____ Daytime Phone: _____

Cell Phone or Alternate Contact Phone: _____

If Contracted/Cooperating, by/with whom: _____

A FORMAL PROPOSAL/STUDY PLAN MUST BE SUBMITTED WITH THIS APPLICATION.

Purpose of Collection (Check all that apply):

- ☐ Agency Species Management
- ☐ Biomonitoring
- ☐ Contract Environmental Impact
- ☐ Contract Species Survey
- ☐ Instructional
- ☐ Research
- ☐ Volunteer Species Survey
- ☐ Other (Specify): _____

Taxa Group: YOU MUST CHECK ALL TAXA GROUPS WHICH APPLY. YOU MUST SPECIFY SPECIES AND NUMBERS TO BE COLLECTED FOR ANY ACTIVITY OTHER THAN CAPTURE AND IMMEDIATE RELEASE SUCH AS DNA SAMPLES, TAGGING, VOUCHER SPECIMENS OR ANIMALS RETAINED FOR CAPTIVE STUDIES.

- ☐ Amphibians: _____
- ☐ Aquatic Crustaceans: _____
- ☐ Aquatic Insects: _____

- ☐ Aquatic Mollusks: _____
 USFWS/DGIF Approved Surveyor Yes: ☐ No: ☐
- ☐ Birds: _____
- ☐ Fish: _____
- ☐ Freshwater Mussels: _____
 USFWS/DGIF Approved Surveyor Yes: ☐ No: ☐
- ☐ Macroinvertebrate Water Quality Sampling (NO ID for genus/species):

- ☐ Mammals:
☐ Furbearer: _____
☐ Small Mammals: _____
☐ Game: _____
☐ Marine: _____
- ☐ Other Aquatic Invertebrates: _____
- ☐ Other Terrestrial Invertebrates: _____
- ☐ Reptiles: _____

Collection Method(s) (Check all that apply):

Aquatic:

- ☐ Collection by Hand ☐ Dip Net ☐ Electrofishing
☐ (Gill Nets/Trawl Nets) ☐ Aquatic Kick Samples ☐ Nets-Trap (Fyke/Hoop/D-Frame)
☐ Hook and Line ☐ HOOKA (Third Lung)
☐ Scuba (proof of certification must be provided)
☐ Seine Nets ☐ Snorkel ☐ View Scope
☐ Traps (Minnow/Pot/Bell) ☐ SubstrateGrab Sampler (Vacuums/Dredge)
☐ Other (Specify): _____

Terrestrial:

- ☐ Audio (Anurans/Birds) ☐ Launched Nets (i.e. rocket, cannon, whoosh)
☐ Collection by Hand ☐ Foot-Hold Traps (Snare/Jawed/Tangle)
☐ Hand Nets (Butterfly/Reptile) ☐ Live-Traps (Box/Pitfall/Funnel/Bell/Pot/etc.)
☐ Lures (Baits/Light/Cover Boards) ☐ Terrestrial Mist Nets (Bats/Birds)
☐ Visual Encounter (turning over rocks/logs) ☐ Nocturnal (i.e. shining w/high-power spot light)
☐ Kill Traps (Pitfall/Snap Traps)
☐ Other (Specify): _____

Disposition: (released or preserved or retained in lab; if preserved or retained, indicate museum or university or other location specimens will be housed): _____

County Name(s):

_____	_____
_____	_____
_____	_____

Waterbody(s):

_____	_____
_____	_____
_____	_____

Location Description: _____

Sub-Permittees/Field Collectors:

(A resume MUST accompany this application for ALL persons listed (whether Principal Permittee (Applicant) or Sub-Permittees/Field Collectors, first time students are exempt).

Name: _____	Affiliation: _____
Name: _____	Affiliation: _____
Name: _____	Affiliation: _____
Name: _____	Affiliation: _____
Name: _____	Affiliation: _____

(If you have more than five subpermittees, please provide a separate sheet)

Have you ever been convicted of violating any federal or state wildlife laws or wildlife-related regulations?
Yes ___ No ___ If "yes," Year and nature of offense: _____

"I CERTIFY UNDER PENALTY OF LAW THAT THE INFORMATION SUBMITTED IN THIS APPLICATION IS, TO THE BEST OF MY KNOWLEDGE, TRUE, ACCURATE, AND COMPLETE. I ALSO AGREE TO THE PERMIT CONDITIONS PROVIDED WITH THIS APPLICATION AND TO ANY SPECIAL CONDITIONS PLACED ON MY PERMIT. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT."

Applicant Name _____	Date _____
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TYPED SIGNATURE IS AUTHORIZED AND BINDING PER CODE OF VIRGINIA 1-13.32 AND 2.1-7.4

Payment must accompany application. Receipt of payment does not imply approval of permit request.

*****FOR DEPARTMENT USE ONLY*****

- ☐ Approved, with standard conditions
- ☐ Approved, with standard & special conditions
(see permit and/or separate sheet for special conditions)
- ☐ Denied (explanation): _____



Virginia Department of Game and Inland Fisheries
4010 West Broad Street, P.O. Box 11104, Richmond, VA 23230-1104
(804) 367-1000 (V/TDD) FAX (804) 367-9147



Under Authority of § 29.1-412, § 29.1-417, & § 29.1-418 of the Code of Virginia

Scientific Collection Permit -- Standard Conditions

- **This permit, or a copy, must be carried by the above named individuals during collection activities.**
- **The permittee is required to submit to this Department a report of all specimens collected under this permit by the report due date. Report form may be found at <http://www.dgif.virginia.gov/permits/guide.asp>. FAILURE TO RETURN THIS REPORT WILL RESULT IN NON-ISSUANCE OF FUTURE PERMITS. If no activity occurs under this permit, an email should be sent to collectionpermits@dgif.virginia.gov containing the following statement: No activity occurred under Permit #insert permitID during insert year (i.e. 2006). Permit reports are due by January 31.**
- Permittee MUST notify VDGIIF within the seven (7) day period prior to EACH sampling event. Notification must be made via email to: collectionpermits@dgif.virginia.gov.)
- This permit does not support any activities outside of those associated with the application and proposal submitted to and approved by DGIIF.
- No species currently listed by the U.S. Fish and Wildlife Service or the Virginia Department of Game and Inland Fisheries as threatened or endangered may be intentionally collected under this permit. If incidental *death or injury* of threatened or endangered species does occur, the permittee is required to notify this Department at collectionpermits@dgif.virginia.gov within twenty-four (24) hours of occurrence. The following information must be reported: collector, date, species, location (county, quad, waterbody, and latitude and longitude to nearest second), and number collected.
- If incidental *observation or collection and live release* of threatened or endangered species occurs, the permittee is required to notify this Department at collectionpermits@dgif.virginia.gov within seven (7) days, providing the same information as the above condition.
- If incidental *mortality or injury of specimens intended to be taken live* occurs, the permittee is required to notify this Department at collectionpermits@dgif.virginia.gov within 48 hours, providing the same information as the above conditions. In addition, the permittee must provide the cause of mortality or injury and steps that are being taken to address the problem.
- No species may be retained unless specifically authorized by this permit.
- Game birds/game mammals/game fish protected by State and/or Federal laws must be taken during authorized hunting and trapping seasons and under applicable daily and seasonal bag/number limits by properly licensed persons unless otherwise specifically authorized. A valid Virginia fishing license is required for each person collecting samples by hook-and-line.
- All traps must be marked with the name and address of the trapper or an identification number issued by the Department (Code of Virginia §29.1-521.7). Steel foothold traps, Conibear-style body gripping traps, and snares must be marked with a nonferrous metal tag bearing this information (Virginia Administrative Code 4 VAC 15-40-170).
- All traps must be checked at least once a day and all captured animals removed, except completely submerged body-gripping traps which must be checked at least once every 72 hours (Code of Virginia §29.1-521.9).
- The permittee is required to report any incidences of wildlife deaths or diseases observed during the course of collection activities. Reports should be made to: collectionpermits@dgif.virginia.gov within seven (7) days.
- This permit satisfies only the Department's requirement for collection permits and is issued with the understanding that no collections will be made on federal, state, or private property without the prior approval and necessary permits from the landowners involved. The permittee is responsible for obtaining any additional permits required for collection.
- Sampling gear, boats, or trailers which have been used in states harboring zebra mussels must be cleaned and prepared following accepted guidelines for removal of zebra mussels, prior to being used in Virginia.
- For safety reasons, it is recommended that all permittees display at least 100 square inches of solid blaze orange material at shoulder level within body reach and visible from 360 degrees, especially during hunting season.

Study Plan for VA Department of Game and Inland Fisheries Scientific Collection/Research/Survey Permit
Kenneth Fortino; Longwood University
17 January 2013

This document describes the relevant components of a proposed Longwood University research project in the for the purpose of obtaining a collection permit.

Purpose of the Project:

The purpose of the research is to investigate the relationship between sediment biodiversity the processing of sediment organic matter.

Collection Methods:

Benthic macroinvertebrates will be collected from the soft sediments of several small ponds in the vicinity of Farmville, VA using an Ekman dredge. The exact ponds that will be sampled have not been determined yet.

Data to be Collected:

The project aims to collect two forms of data. The first is an estimate of the macroinvertebrate community composition, abundance, and functional diversity in the sediments of small ponds. Samples collected for this purpose will be preserved in 70% ethanol for the sorting, identification, and enumeration of the invertebrates (mainly chironomid larvae). The second type of data that we will collect is on the effect of benthic invertebrate diversity on the processing of organic carbon in the lake sediments. In this case, the collected invertebrates will be sorted live and used in short-term sediment incubations before being preserved and counted.

Proposed Quantity to be Collected:

It is difficult to estimate the number of organisms that will need to be collected to complete the goals of this study, as this will depend on the density and diversity of the sediment macroinvertebrates. We plan to sample each lake with sufficient effort to get good coverage of the spatial and temporal variation in the sediment community.

Disposition Method:

All preserved samples will be stored in 70% ethanol in the Fortino Lab at Longwood University.

Department of Biological and Environmental Sciences, Longwood University
Farmville, VA 23909
(434) 395 — 2223
fortinok@longwood.edu

Education

- BA, Biology – May 1994
Greensboro College, Greensboro, NC
- MS, Biology, May 2000
Appalachian State University, Boone, NC
Thesis Title: Does a predator transition determine the distribution of crayfish species in the New River, NC?
Advisor: Robert P. Creed Jr.
- PhD, Environmental Science and Engineering, August 2010
University of North Carolina Chapel Hill, Chapel Hill, NC
Dissertation Title: Organic matter processing in arctic lake sediments.
Advisor: Steve Whalen

Teaching Experience

- Assistant Professor, Longwood University, Farmville, VA
August 2012 - present
- Part-Time Assistant Professor of Biology, DePauw University, Greencastle, IN
August 2009 - July 2012
 - Organismal Biology
 - Ecology and Evolution
 - Independent Research for Undergraduates
 - Human Anatomy

- Math and Science Tutor, Carteret Community College, Morehead City NC
August 2008 - May 2009
 - Algebra, Precalculus, Biology, Anatomy & Physiology
- Teaching Assistant, University of North Carolina Chapel Hill, Institute of Marine Sciences, Morehead City, NC
August 2008 - December 2008
 - Coastal Community Ecology, Human Impacts on Estuarine Processes
- Teaching Assistant, University of North Carolina Chapel Hill, Chapel Hill, NC
August 2004 - May 2005
 - Estuarine Processes
- Adjunct Instructor, University of North Carolina Greensboro, Greensboro, NC
August 2001 - May 2003
 - Introduction to biology for non-majors
- Adjunct Instructor, Appalachian State University, Boone, NC
August 2000 - May 2001
 - Introduction to biology for non-majors
- Teaching Assistant, Appalachian State University, Boone, NC
August 1997 - May 2000
 - Ecology laboratories, Biology laboratories for non majors

Publications

- Fortino, K.**, A. E. Hershey, M. D. Keyse. 2009. Summer sedimentation in six shallow lakes. *Hydrobiologia*. 621:75-84.
- Tranvik, L. J., J. Downing, and 26 others. 2009. Lakes and impoundments as regulators of carbon cycling and climate. *Limnology and Oceanography*. 54:2298-2314. (This is a summary paper from a working group at the Chapman Conf. on Lakes as Sentinels, Integrators, and Regulators of Climate Change.)
- Fortino, K.** and Creed, R. P., 2007. Abiotic factors, competition, or predation: what determines the distribution of young crayfish in a watershed? *Hydrobiologia*. 575:301-314.

- Keyse M.D., **Fortino K.**, Hershey A.E., O'Brien W.J., Lienesch P.W., Luecke C., McDonald M.E. 2007. Effects of large lake trout (*Salvelinus namaycush*) on the dietary habits of small lake trout: a comparison of stable isotopes ($\delta^{15}\text{N}$ and $\delta^{13}\text{C}$) and stomach content analyses. *Hydrobiologia*. 579:175-185.
- Beaty, S. R., **Fortino, K.**, Hershey, A. E. 2006. Distribution and growth of benthic macroinvertebrates among different patch types of the littoral zone of two arctic lakes. *Freshwater Biology*. 51:2347-2361.
- Fortino, K.** 2006. Effect of season on the impact of ecosystem engineers in the New River, NC. 2006. *Hydrobiologia*. 559: 463 - 466.
- Goodman, K. J., Hershey, A. E., **Fortino, K.** 2006. The effect of forest type on benthic macroinvertebrate structure and ecological function in a pine plantation in the North Carolina Piedmont. *Hydrobiologia*. 559: 305 - 318.
- Hershey, A. E., Beaty, S., **Fortino, K.**, Kelly, S., Keyse, M., Luecke, C., O'Brien, W. J., Whalen, S. C. 2006. Stable isotope signatures of benthic invertebrates in arctic lakes indicate limited coupling to pelagic production. *Limnology and Oceanography*. 51: 177 - 188.
- Hershey, A. E., S. C. Whalen, W. J. O'Brien, M. D. Keyse, and **K. Fortino**. 2006. The effect of landscape surface age on linking terrestrial productivity to higher trophic levels in lake ecosystems through methanotrophic bacteria. Pages 225-233 in Water and the Landscape: The Landscape Ecology of Freshwater Ecosystems, B. Davies and S. Thomson Eds. Colin Cross Printers, Ltd., Garstang, UK. (Proceedings of the International Association for Landscape Ecology (UK)).
- Hershey, A. E., Beaty, S., **Fortino, K.**, Keyse, M., Mou, P. P., O'Brien, W. J., Ulseth, A. J., Gettel, G. A., Lienesch, P. W., Luecke, C., McDonald, M. E., Mayer, C. H., Miller, M. C., Richards, C., Schuldt, J. A., Whalen, S. C. 2006. Effect of landscape factors on fish distribution in arctic Alaskan lakes. *Freshwater Biology*. 51: 39 - 55.
- Hershey, A. E., **Fortino K.**, Peterson, B. J., Ulseth, A. J. 2006. Stream Food Webs. in Hauer, F. R. and Lamberti, G. A. (Eds.) Methods in Stream Ecology Academic Press. Burlington, MA.
- Whalen, S. C., Chalfant, B. B., Fischer, E. N., **Fortino, K.**, Hershey, A. E. 2006. Comparative influence of resuspended glacial sediment on physicochemical characteristics and primary production in two arctic lakes. *Aquatic Sciences*. 68: 65 - 77.
- Hershey, A. E., S. Beaty, **K. Fortino**, S. Kelly, M. Keyse, C. Luecke, and

W. J. O'Brien. 2005. $\delta^{13}\text{C}$ signatures of chironomids in arctic lakes: role and direction of benthic-pelagic coupling. *Verh. Internat. Verein. Limnol.* 29(1):92-96.

Fortino, K., Hershey, A. E., Goodman, K. J. 2004. Utility of biological monitoring for detection of timber harvest effects on streams and evaluation of Best Management Practices: a review. *Journal of the North American Benthological Society*. 23: 634 - 646.

Manuscripts Submitted

Fortino, K., Whalen, S. C., Smoak, J. Patterns in the sediment organic matter content of arctic lakes. submitted to *Fundamental and Applied Limnology*

Manuscripts in Preparation

Fortino, K., Whalen, S. C., Johnson, C. The effect of climate change on sediment organic processing in lakes: The role of changing transparency. in prep. for *Biogeochemistry*

Leech, D. M., Bedard, L. and **Fortino, K.** Factors affecting the distribution of and diversity of aquatic microbes in small ponds. in prep. for *ISME*

Contributed Presentations and Posters

K. Fortino and S. C. Whalen. 2008. Organic Matter Burial in Arctic Lake Sediments: The Effect of Temperature, Oxygen Availability, and Organic Matter Source. Poster at Chapman Conference: Lakes as Sentinels, Integrators, and Regulators of Climate Change. Lake Tahoe, CA.

K. Fortino and S. C. Whalen. 2008. Burial efficiency in three shallow oligotrophic lakes in the Alaskan Arctic: The effect of temperature, oxygen availability, and organic matter quality. American Society of Limnology and Oceanography Annual Meeting, Saint Johns, Newfoundland

K. Fortino, M. Keyse, A. E. Hershey, and S. R. Beaty. 2006. The utilization of lake-derived nitrogen by the outlet stream communities of two fertilized lakes in the Alaskan arctic. North American Benthological Society Annual Meeting, Anchorage, AK.

K. Fortino, A. E. Hershey, and S. C. Whalen. 2005. Possible landscape-scale explanations for sedimentation rate variability in Alaskan arctic lakes. Poster. American Society of Limnology and Oceanography

Aquatic Sciences Meeting, Salt Lake City, UT.

K. Fortino, A. E. Hershey, S. C. Whalen, and C. Luecke. 2004. The effect of landscape position on the resuspension of benthic material: implications for lake trophic dynamics. North American Benthological Society Annual Meeting, Vancouver, BC.

K. Fortino, A. E. Hershey, W. J. O'Brien, P. W. Lienesch, and C. M. Mayer. 2003. The effect of fish on benthic community structure in arctic lakes. North American Benthological Society Annual Meeting, Athens, GA.

K. Fortino and R. P. Creed Jr. 2000. Does a predator transition maintain the crayfish distribution in the South Fork of the New River, NC. Annual Meeting of the Ecological Society of America, Snowbird, UT.

K. Fortino and R. P. Creed. 2000. The possible role of a predator transition in the maintenance of the crayfish distributions on the South Fork of the New River (Watauga Co., NC). North American Benthological Society Annual Meeting, Keystone CO.

K. Fortino and R.P. Creed. 1999. What determines the distribution and abundance of stream-dwelling crayfish in the New River, NC? North American Benthological Society Annual Meeting, Duluth MN.

Recent Participation in Campus Programs

2010 – Participated in drafting campus sustainability statement

2010 – Led a panel discussion on fisheries for a symposium on sustainable food production

2011 – Panelist for a discussion of the effects of Tar Sand exploitation on ecosystems

2011 – Member of the advisory committee for student run campus farm

Professional Societies

American Society of Limnology and Oceanography

North American Benthological Society

Grants

1998 – Theodore Roosevelt Grant

1998 – Graduate School Thesis/Dissertation Grant

Scholarships & Fellowships

1999 – Daniel Boone Native Gardens Grant - in - Aide Scholarship

Awards

2000 – Eugene P. Odum Award. for the best paper presented in ecology. 61st Annual Meeting of the Association of Southeastern Biologists, Chattanooga, TN.

Carly Ruth Martin

3553 Kidder Lane, Salem VA 24153

(540) 580-8733

Carly.martin@live.longwood.edu

Objective

To obtain a high school teaching position in the field of science.

Education

Longwood University, Farmville, VA

December 2013

Bachelor of Science in Biology, Concentration in Secondary Education

Collegiate Professional License, Grades 6 -12

Skills and Certifications

- Proficient in Internet usage and research
- Talented with Microsoft Word, Excel, PowerPoint, Outlook, Publisher, and Adobe
- First Aid Certified
- USTA Quickstart Tennis

Teaching Experience

STUDENT TEACHING

September – December 2013

Cumberland High School, Cumberland, VA

September – December 2012

Education 473, Grades 10-11

- Assisted teacher with instruction for over 50 hours
- Observed five blocks of Biology classes
- Observed one block of Anatomy classes
- Taught BIO 3
- Evaluated student work

Matoaca High School, Chesterfield, VA

May – June 2012

Practicum 2, Grades 10 – 12

- Assisted teacher with instruction for three weeks
- Observed five blocks of lower level Biology classes
- Facilitated SOL review
- Taught a lesson on the cell theory and parts of the cell
- Observed the administration of SOLs
- Evaluated Student Work
- Tutored small groups

Lee Davis High School, Hanover, VA

May – June 2010

Practicum 1, Grades 9-12

- Assisted teacher with instruction for three weeks
- Observed Earth Science and Anatomy classes

- Taught a lesson in anatomy on the muscles on a mink
- Evaluated student work

Glenvar Elementary School, Salem, VA
Teacher's Assistant, Grades 4 and 5

August 2008 – June 2009

- Observed classroom instruction
- Evaluated student work
- Tutored small groups
- Created lesson plans to help students with long division

Other Experience

Kroger, Salem, VA
Front End Clerk

April 2009 to present

- Greeted and assisted costumers
- Calculated till
- Supervised the front end
- Solved problems
- Operated and ran U-SCAN
- Aided in the grocery department
- Aided in the drug-gm department

Soccer Referee, Salem and Farmville, VA

October 2010 - 2011

Longwood Center for Visual Arts, Farmville, VA

October 2012

- Aided in the displaying of student work
- Prepared for Youth Art Month

Activities and Honors

Job Search for Teachers Club

February 2012

Alpha Chi Sigma

February 2011

- Professional Chemistry Fraternity
- Aided in the requirement of new members
- Assisted with initiation

Sigma Sigma Sigma

January 2010

- National Social Sorority
- Ritual Chair
- Assisted Vice President
- Educated new members

Dean's List

- Spring 2012

Leanna R. Tacik

Permanent Address:

1088 WillowBrooke Court

Virginia Beach, VA 23464

(757) 472-1028

leanna.tacik@live.longwood.edu

Current Address:

205 Healy Street Apt L

Farmville, VA 23901

(757) 472-1028

Education

Longwood University

Farmville, VA

Bachelor of Sciences in Biology, in progress

Minor in Geography and Earth Science

Experience

Summer 2011 **Virginia Aquarium and Marine Science Center**
VA

Virginia Beach,

Summer Intern

- Animal handling and training
- Marine Rescue specialization
- Environmental conservation educating of the public
- Carbon cycling calculations of various bodies of water, and the impact that is cause from the carbon amounts.

Fall 2012 **Advance Research in Plant and Animal Interaction – Longwood**

Farmville, VA

University, Department of Biology

Undergraduate Research Student

- The interaction between the White Cabbage Butterfly and feeder plants
- Chemical alteration of these plants led to a difference in reproduction cycles of the butterflies

Present **Advance Research in Lake Biochemistry- Longwood University**

Farmville, VA

Department of Biology

Undergraduate Research Student

- Data collection of carbon cycles in various fresh water bodies
- The viewing of species impacting the carbon cycle