CURRICULUM VITAE

University of Idaho

NAME: Brian P. Kennedy **DATE:** September, 2010

RANK OR TITLE: Associate Professor

DEPARTMENT: Fish and Wildlife Sciences, Biological Sciences (Adjunct), Water Resources (Adjunct)

OFFICE LOCATION AND CAMPUS ZIP: 103 C, CNR Bldg

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DATE OF FIRST EMPLOYMENT AT UI: August 2005 – Full time

DATE OF TENURE: May 2011

DATE OF PRESENT RANK OR TITLE: Associate Professor – May 2011 (Assistant Professor – January 2005)

EDUCATION BEYOND HIGH SCHOOL:

Degrees:

Ph.D. Dartmouth College, Hanover, NH, December 2000, Biological Sciences – Ecology & Evolutionary Biology

B.A., Colgate University, Hamilton, NY, May 1991, Biological Sciences

EXPERIENCE:

Teaching, Extension and Research Appointments:

2011 – Present Associate Professor, University of Idaho, College of Natural Resources, Dept. of Fish and Wildlife Sciences, Adjunct Associate Professor, Dept. of Biological Sciences and Water Resources Graduate Program

2005 – Present Visiting Assistant Professor, University of Michigan, Department of Geological Sciences

2006 – Present Affiliate Scientist, University of Montana, Flathead Lake Biological Station

2005 – 2011 Assistant Professor, University of Idaho, College of Natural Resources, Dept. of Fish and Wildlife Resources

2001 – 2005 Postdoctoral Fellow and visiting assistant professor – University of Michigan, Depts. of Geological Sciences and Biological Sciences,

2000 – 2001 Aquatic Ecology Consultant, Conservation International Foundation

1994 – 2000 Graduate Research and Teaching Assistant, Dartmouth College

1991 – 1994 Research Assistant, Michigan State University

TEACHING ACCOMPLISHMENTS:

Areas of Specialization:

Aquatic ecology with emphasis on rivers and streams
Community interactions and food webs in streams
Fish bioenergetics and population ecology
Life history and biodiversity of freshwater fish
Ecosystem controls on aquatic processes
Isotope biogeochemistry
Otolith microchemistry

Courses Developed and Taught:

Assistant/Associate Professor, University of Idaho

Fall 2005, 2006, 2007, 2008, 2009, 2010, 2011: Fish 314 & 315, Fish Ecology and Fish Ecology Laboratory – 4 credits.

Associate Professor, University of Idaho

Fall 2011: Fish 530, Advanced Stream Ecology – co-taught with Fremier – 3 credits.

Assistant Professor, University of Idaho

Fall 2009: Fish 504 & 505, The Ecology of Running Waters – co-taught with Fremier – 3 credits.

Assistant Professor, University of Idaho

Fall 2008: Water Resources 506, Interdisciplinary Methods in Water Resources – co-taught with Cosens and Fiedler – 3 credits.

Assistant Professor, University of Idaho

Spring 2008: Fish 504, A Field Approach to Advanced Fish Ecology – 3 credits

Assistant Professor, University of Idaho

Fall 2005, 2006, 2007: Natural Resources 101, Introduction to the Natural Resource Professions – 1 credit.

Assistant Professor, University of Idaho

Fall 2005, 2006, 2007: Fish 102, Introduction to the Fish and Wildlife Professions – co-taught with Rachlow – 1 credit.

Visiting Assistant/Associate Professor, University of Michigan, Camp Davis in Jackson, WY.

Summers 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011: Geol 341, Ecosystem Science of the Rocky Mountains – co-taught with Baumiller, Blum and Zak – 4 credits.

Assistant Professor, University of Idaho

Spring 2007: Fish 504, Advanced Ecology and Behavior of Fish – co-taught with Peery – 1 credit.

Assistant Professor, University of Idaho

Spring 2006: Fish 504, Hypothesis Development and Grant Proposal Writing – co-taught with Hampton – 3 credits.

Visiting Assistant Professor, University of Michigan
Fall 2002 and Winter 2003: Geol 201, Earth System Science

Other Courses Taught:

Assistant Professor, University of Idaho
Fall 2010: Wlf 541, Advanced Population Biology – co-instructor with Garton – 3 credits.

Major guest lectures:

Guest lecturer, University of Idaho
Fall 2007 - 2011: Wlf 440, Conservation Biology

Guest lecturer, University of Idaho
Fall 2009 – 2011: Water Resources 506, Interdisciplinary Methods in Water Resources

Guest lecturer, University of Idaho
Fall 2008: Fish 102, Introduction to the Fish and Wildlife Professions

Guest lecturer, University of Michigan, Museum of Paleontology
Fall 2003: Vertebrate Paleontology

Guest lecturer, Dartmouth College, Department of Biology
Winter 2000: Ecosystem Ecology

Students Advised (specific):

Graduate Students – Completed
Chris Lorion, Ph.D. (Fall 2007)
Elizabeth Rosenberger (Seminet-Reneau), M.S. (Summer 2007 – coadvised with Hampton)
Kara Cromwell, M.S. (Spring 2009)
Timothy Kiser, M.S. (Spring 2009)
Ellen Hamann, M.S. (Spring 2010)
Richard Hartson, M.S. (Summer 2010)
Brian McIlraith, M.S. (Fall 2010 – coadvised with Chris Caudill)
Jens Hegg, M.S. (Spring 2011)

Graduate Students – Current Ph.D.
Knut Marius Myrvold, Ph.D.
Jeffrey Reader, Ph.D.
Jens Hegg, Ph.D.

Graduate Students – Current M.S.
Chau Tran, M.S. (expected completion Fall 2012)
Sam Bourret, M.S.
Liza Mitchell, M.S.

Graduate Students – Committee Member

Dana Weigel, Ph.D.
Sharon Parkinson, Ph.D.
Sagar Neupane, M.S.
Karen Laitala, M.S. (completed 2008)
Chris Anderson, M.S. (completed 2007)

Undergraduate Theses and Research Advisor

Jeff Caisman – CRISSP REU– 2011 (*)
Alifia Merchant– CRISSP REU– 2011 (*)
Kevin Ramus – Engineering REU – 2010 (*)
Elise Otto – ENVS REU (with Fremier)– 2010 (* joint with Stauffer Norris)
William Stauffer-Norris – ENVS REU (with Fremier)– 2010 (* joint with Otto)
Timothy Kuzan – CRISSP REU– 2010
Kristen Pilcher, ECB thesis– 2009 (*)
Alex Filous, Fisheries Honor's thesis– 2009 (*)
Dean Holecek, Fisheries Honor's thesis– 2008 (*)
Tobyn Rhodes, ECB thesis – 2008
Greg Malone, ECB thesis – 2007
Bryan Stephens, Fisheries Honor's thesis – 2007
Rachel Kaminski, REU – 2006
Rufus Nicoll, REU – 2006
Jesse Davis, Fisheries research experience– 2005

(*) = expected to result in a published manuscript

Students Advised (general):

Have advised between 10 (in 2005) and 18 undergraduate students through undergraduate curricula in Fisheries Resources and Ecology and Conservation Biology per semester.

Honors and Awards while at University of Idaho:

Inspirational Mentor –Awards for Excellence	University of Idaho	2007
Inspirational Mentor –Awards for Excellence	University of Idaho	2006

SCHOLARSHIP ACCOMPLISHMENTS:

Peer Reviewed Publications:

Hegg, J., **Kennedy, B.P.**, Chittaro, P., and Zabel, R. In press. Spatial variation in the expression of juvenile salmon life history. Oecologia.

Hamann, E.J. and **Kennedy, B.P.** (2012). The effects of juvenile dispersal on straying in a migratory population. *Ecology*. **93**(4): 733-740

Laitala, K.L., Prather, T.S., Thill, D., **Kennedy, B.P.,** and Caudill, C.C. (2012) *In press*. Efficacy of benthic barriers as a control measure for Eurasian watermilfoil. *Invasive Plant Science and Management.*

Cosens, B., Fiedler, F., Boll, J., Higgins, L., Johnson, G., Kennedy, B., Laflin, M., Strand, E. and Wilson, P. (2012) Interdisciplinary Methods in Water Resources: Communication Across Disciplines, *Issues in Integrative Studies,* **29**:xx-xx.

Lorion, C.M., and **Kennedy, B.P.** and Braatne, J.H. (2011) Altitudinal gradients in stream fish diversity and the prevalence of diadromy in the Sixaola River basin, Costa Rica. *Environmental Biology of Fishes.* **91**:487-499.

Cromwell, K.J. and **Kennedy, B.P.** (2011) Diel distribution, behaviour, and consumption of juvenile Chinook salmon (*Oncorhynchus tshawytscha*) in a Wilderness stream. *Ecology of Freshwater Fish.* **20**:421-430.

Nislow, K.H., **Kennedy, B.P.,** Armstrong, J.D., Collen, P., Keay, J., and McKelvey, S. (2010) Nutrient restoration using Atlantic salmon carcasses as a component of habitat management in Scottish Highland streams. *Salmonid Fisheries: Freshwater Habitat Management.* Chapter 11, pp. 228 – 241. Edited by P. Kemp. Wiley-Blackwell Publishing, West Sussex, United Kingdom.

Kiser, T., Hanson, J., and **Kennedy, B.P**. (2010). Impacts and pathways of mine contaminants to bull trout (*Salvelinus confluentus*) in an Idaho watershed. Archives of Environmental Contamination and Toxicology **59**:301-311.

Lorion, C.M., and **Kennedy, B.P.** (2009) Riparian forest buffers mitigate the effects of deforestation on fish assemblages in tropical headwater streams. *Ecological Applications,* **19**: 468-479. (Enclosed in packet)

Lorion, C.M., and **Kennedy, B.P.** (2009) Relationships between deforestation, riparian forest buffers, and benthic macroinvertebrates in lowland neotropical streams. *Freshwater Biology,* **54**: 165-180.

Holecek, D.E., Cromwell, K.J., and **Kennedy, B.P**. (2009) Juvenile Chinook salmon summer habitat availability, use and selection in a Central Idaho Wilderness Stream. *Transactions of the American Fisheries Society.* **138**: 633-644.

Kennedy, B.P., Nislow, K.H., C.L. Folt. (2008). Habitat mediated foraging limitations drive survival bottlenecks for juvenile salmon. *Ecology*, **89**: 2529-2541. (Enclosed in packet)

Rosenberger, E.E., Hampton, S.E., Fradkin, S.C., and **Kennedy, B.P.** (2008) Effects of shoreline development on the nearshore environment in large deep oligotrophic lakes. *Freshwater Biology,* **53**: 1673-1691.

Kennedy, B.P., Chamberlain, C.P., Blum, J.D., Nislow, K.H., and Folt, C.L. (2005) Comparing naturally occurring stable isotopes of nitrogen, carbon, and strontium as markers for Atlantic salmon juvenile rearing locations. *Canadian Journal of Fisheries and Aquatic Sciences*. **62**: 48-57.

Kennedy, B.P., Klaue, B., Blum, J.D., and Folt, C.L. (2004) Integrative measures of consumption rates in fish: expansion and application of a trace element approach. *Journal of Applied Ecology,* **41**: 1009-1020.

Fuller, R.L., **Kennedy, B.P.,** and Nielsen, C. (2004) Macroinvertebrate responses to algal and bacterial manipulations in streams. *Hydrobiologia*, **523**: 113-126.

Kennedy, B.P., Klaue, A, Blum, J.D., Folt, C.L. and Nislow, K. (2002). Reconstructing the lives of salmon using Sr isotopes in otoliths. *Canadian Journal of Fisheries and Aquatic Sciences,* **59**: 925-929.

Nislow, K.H., Magilligan, F.J., Folt, C.L, and **Kennedy, B.P**. (2002) Within-basin variation in the short term effects of a major flood on stream fishes and invertebrates. *Journal of Freshwater Ecology*. **17**: 305-318.

Kennedy, B.P., Blum, J.D., Folt, C.L. and Nislow, K. (2000) Using natural strontium isotopic signatures as fish markers: methodology and application. *Canadian Journal of Fisheries and Aquatic Sciences,* **57**: 2280-2292.

Mack, A.L., Ickes, K., Jessen, J.H., **Kennedy, B.P.,** and Sinclair, J.R. (1999) Ecology of *Aglai mackiana* (Meliaceae) seedlings in a New Guinea rain forest. *Biotropica*. **31**: 111-120.

Harrington, R., **Kennedy, B.P.,** Chamberlain, C.P., Blum, J.D., and Folt, C.L. (1998) N^{15} enrichment in agricultural catchments: field patterns and applications to tracking Atlantic salmon (*Salmo salar*). *Chemical Geology*, **147**: 281-294.

Kennedy, B.P., Folt, C.L., Blum, J.D., and Chamberlain, C.P. (1997) Natural isotope markers in salmon. *Nature*. **387**: 766-767.

Hedin, L.O., von Fischer, J.C., Ostrom, N.E., **Kennedy, B.P.,** Brown, M.G., and Robertson, G.P. (1997) Thermodynamic constraints on nitrogen transformations and other biogeochemical processes at soil-stream interfaces. *Ecology*. **79**: 684-703.

Peer Reviewed Publications (in review or submission in Fall 2012):

Cromwell, K.J. and **Kennedy, B.P.** *In review*. Disparities in benthic and drift abundance and diversity in a Wilderness watershed and their relationship to juvenile salmon foraging. *Freshwater Biology*.

Hegg, J., **Kennedy, B.P.** and Fremier, *In review.* A. Prediction fish location using otoliths and bedrock geology: Understanding the effects of geologic heterogeneity. *River Research and Applications*.

Hartson, R.B., and **Kennedy, B.P.** *In review.* Competitive release modifies the impacts of hydrologic alteration for a partially migratory stream predator. Ecological Applications.

Hamann, E.J., **Kennedy, B.P**., Whited, D. and Stanford, J.A. *In review.* Identifying potential spawning habitat and assessing redd selection by Chinook salmon (*Oncorhynchus tshawytscha*) using remote sensing and ground measures in a wilderness basin. *River Research and Applications.*

Myrvold, K.M. and **Kennedy, B.P.** *In prep.* Effects of body mass, metabolic cost and altered flow on juvenile steelhead (Oncorhynchus mykiss) consumption and growth. Canadian Journal of Fisheries and Aquatic Sciences.

Kennedy, B.P., Gayeski, N., and Reader, J. *In prep.* The survival consequences for alternate life history strategies of Chinook salmon. Environmental Biology of Fishes.

Kennedy, B.P., Blum, J.D., Nislow, K and Coggins, L. *In prep.* Watershed-scale geochemical signatures and the identification of natal origins of humpback chub (*Gila cypha*) in the Colorado River Basin. Canadian Journal of Fisheries and Aquatic Sciences.

Refereed Major Project Reports (since 2005):

Gayeski, N., **Kennedy, B.P.** and Reader, J. 2011. Alternative life history strategies of Chinook salmon in the Cedar River: habitat selection and relative survival of strategies for Chinook salmon. Final Report to the Instream Flow Committee, Seattle Public Utilities.

Kennedy, B.P. and committee – Strategic Plan for Taylor Wilderness Research Center. Presented to NSF in fulfillment of funding obligation through NSF.

Gayeski, N., **Kennedy, B.P.** and Reader, J. 2010. Alternative life history strategies of Chinook salmon in the Cedar River: A 3 year proof of concept with otolith microchemistry. Final Report to the Instream Flow Committee, Seattle Public Utilities.

Kennedy, B.P. 2009. Exploring the utility of otolith microchemistry to describe life history variation and migrational strategies of Chinook salmon in the Middle Fork of the Salmon River. Completion Report to USDA – Forest Service, Rocky Mountain Research. Joint Venture Agreement 06-JV-11221659-220

Kennedy, B.P. 2009. Examination of the utility of otolith microchemistry to identify source habitats for trout within the Henry's Fork watershed. Completion Report to Henry's Fork Foundation and Idaho Fish and Game.

Professional Talks (invited Since 2000):

March 2011. Utah State University, Dept. of Watershed Sciences, Logan, UT. USA. Understanding the drivers and functional significance of life history diversity in a migratory population. B.P. Kennedy, Dept. of Fish and Wildlife Resources, University of Idaho.

September 2011. Annual meeting for the American Fisheries Society, Seattle, WA, US. Integrating migration and river landscapes: Linking watershed processes and salmon life history strategies. B.P. Kennedy.

February 2010. Washington State University, School of Earth and Environmental Sciences, Pullman, WA. USA. The creation and maintenance of salmon life history diversity. B.P. Kennedy, Dept. of Fish and Wildlife Resources, University of Idaho.

December 2009. University of Washington, School of Fisheries and Aquatic Sciences, Seattle, WA. USA.
Selection and survival pressures in rivers: experiments and observations on juvenile salmon. B.P. Kennedy, Dept. of Fish and Wildlife Resources, University of Idaho.

May 2008. University of Washington and National Marine Fisheries Service – Northwest Fisheries Science Center, Seattle, WA. USA. Integrating geochemistry, bioenergetics and life history to further understand fish population dynamics. B.P. Kennedy, Dept. of Fish and Wildlife Resources, University of Idaho.

May 2008. Western Division of the American Fisheries Society, Portland, OR. USA.
An overview of otolith techniques for addressing stream restoration objectives. B.P. Kennedy, Dept. of Fish and Wildlife Resources, University of Idaho.

February 2008. Center for Water Research, University of Western Australia, Perth, Australia.
Combining models of flow and environmental tracers to improve our understanding of fish bioenergetics. B.P. Kennedy, Dept. of Fish and Wildlife Resources, University of Idaho.

September 2007. Annual National AFS Meeting, San Francisco, CA, USA.
Linking variation in otolith and freshwater geochemistry: A meta-analysis of application potential. B.P. Kennedy, Dept. of Fish and Wildlife Resources, University of Idaho.

April 2007. Washington State University Geology Seminar series, Pullman, WA.
Integrating biologic and geologic processes in understanding the population ecology of fish. B.P. Kennedy, Dept. of Fish and Wildlife Resources, University of Idaho.

November 2005. University of Idaho Biology Seminar series, Moscow, ID.
Linking life cycle stages of fish: It's elementary. B.P. Kennedy, Dept. of Fish and Wildlife Resources, University of Idaho.

May 2004. Department of Fish and Wildlife Resources, University of Idaho.
Linking ecologically significant stages in the life cycle of fishes using geochemical tracers. Brian Kennedy, Dept. of Geological Sciences, University of Michigan.

April 2004. School of Marine and Atmospheric Sciences. SUNY – Stony Brook University.
Linking ecologically significant stages in the life cycle of fishes using geochemical tracers. Brian Kennedy, Dept. of Geological Sciences, University of Michigan.

March 2004. The Department of Natural Resources and Environmental Sciences, University of Nevada at Reno. Linking critical life cycle stages of fish using geochemical tracers. B.P. Kennedy, Dept. of Geological Sciences, University of Michigan.

March 2003. Norwegian Institute for Nature Research (NINA), Trondheim, Norway. Geochemical Records in otoliths and their application to Atlantic salmon restoration and conservation. B.P. Kennedy, Dept. of Geological Sciences, University of Michigan.

January 2002. Department of Geological Sciences, University of Michigan, Ann Arbor, MI. Reconstructing the lives of salmon through the use of Sr stable Isotopes. B.P. Kennedy, Dept. of Geological Sciences, University of Michigan.

October 2001. DIALOG Symposium– ASLO, Bermuda
Linking salmon habitat, foraging, and survival through the use of environmental tracers. B.P. Kennedy, Dept. of Geological Sciences, University of Michigan.

June 2001. North American Benthological Society Annual Meeting. Lacrosse, WI.
Using natural strontium signatures to track the movements and migrations of salmon. B.P. Kennedy, Dept. of Geological Sciences, University of Michigan.

April 2001. Great Lakes Environmental Research Laboratory, NOAA. Ann Arbor, MI.
Linking Atlantic salmon habitat, foraging, and survival through the use of environmental tracers. B.P. Kennedy, Dept. of Geological Sciences, University of Michigan.

January 2001. Department of Biology, University of Michigan, Ann Arbor, MI.
Linking Atlantic salmon habitat, foraging, and survival through the use of environmental tracers. B.P. Kennedy, Dept. of Geological Sciences, University of Michigan.

Professional Meeting Talks and Posters (* = graduate researcher, ** = undergraduate researcher):

March 2012. *Annual meeting for Idaho Chapter AFS, Boise, ID, US*.
Determining the maternal origin of juvenile steelhead in Lapwai Basin, Idaho. **A.Z. Merchant, E.R. Benson, J. Hegg and B.P. Kennedy.

March 2012. *Annual meeting for Idaho Chapter AFS, Boise, ID, US*.
A watershed scale test of optimal foraging in a variable environment. B.P. Kennedy and R.B. Hartson.

March 2012. *Annual meeting for Idaho Chapter AFS, Boise, ID, US*.
Effects of body mass, water temperature and consumption rates on juvenile steelhead (*Oncorhynchus mykiss*) in a hydrologically altered watershed. *K.M. Myrvold and B.P. Kennedy.

December 2011. *American Geophysical Union Annual Meeting, San Francisco, CA, US*. Using Predictions from Bedrock Lithology to Improve Geochemical Reconstruction of Migratory Movements in Salmon. *J. Hegg, A. Fremier, **B. Kennedy**, R Zabel.

September 2011. American Fisheries Society 141st Annual Meeting. Seattle, Washington, USA. Use of natural markers to describe Snake River Spring/Summer Chinook salmon life history characteristics and environmental correlates. *J.M. Reader, **B.P. Kennedy**, D.J. Isaak, and R.F. Thurow.

September 2011. *141st Annual Meeting of the American Fisheries Society, Seattle, WA, USA.* Characterizing Life History Variation in the Highly Altered Willamette Valley. *S.Bourret, **B.P. Kennedy,** C. Caudill, and L. Borgerson.

September 2011. *141st Annual Meeting of the American Fisheries Society, Seattle, WA, USA.* Drivers of juvenile steelhead demographics in a hydrologically altered watershed. *R.B. Hartson and **B.P. Kennedy.**

September 2011. *Annual meeting for the American Fisheries Society, Seattle, WA, US.*
Spatial and temporal variation in juvenile steelhead (*Oncorhynchus mykiss*) summer growth and consumption in a hydrologically altered watershed. K.M. Myrvold and **B.P. Kennedy**.

September 2011. American Fisheries Society National Meeting, Seattle, WA, US.
Extending Spatial Resolution In Migration Studies Using Otolith Microchemistry and GIS Prediction: Tracking Outmigration Strategy of Wild Fall Chinook Salmon (Oncorhynchus tshawytscha) At Three Life Stages. *J. Hegg, **B. Kennedy** and R. Zabel.

August 2011. The annual meeting of the Ecological Society of America. Austin, TX. USA.
The spatial scale and ecological drivers of straying in a migratory salmon population. B.P. Kennedy and E.J. Hamann

May 2011. *Interdisciplinary forum for collaborators in the Lapwai Basin, Moscow, ID, US.*
Spatial variation in juvenile steelhead (*Oncorhynchus mykiss*) population density and growth in the Lapwai Basin: Results from a bioenergetic approach. K.M. Myrvold and **B.P. Kennedy**.

May 2011. Regional Approaches to Climate Change in Pacific Northwest Agriculture Launch Meeting. Moscow, Idaho, USA.
Understanding the relationship between Chinook salmon life history and climate-driven environmental variables using otolith signatures. *J.M. Reader, **B.P. Kennedy**, D.J. Isaak, and R.F. Thurow.

April 2011. 3rd Annual EPSCoR Western Consortium Tri-State Meeting. Albuquerque, New Mexico, USA.
Understanding the relationship between Chinook salmon life history and climate-driven environmental variables using otolith signatures. *J.M. Reader, **B.P. Kennedy**, D.J. Isaak, and R.F. Thurow.

March 2011. Idaho Chapter of the American Fisheries Society Annual Meeting. Boise, Idaho, USA.
Use of natural markers to describe Snake River Spring/Summer Chinook salmon life history characteristics and environmental correlates. *J.M. Reader, **B.P. Kennedy**, D.J. Isaak, and R.F. Thurow.

March 2011. Annual meeting for Idaho Chapter AFS, Boise, ID, US.
Spatial variation in juvenile steelhead (*Oncorhynchus mykiss*) summer growth and consumption in a hydrologically altered watershed. K.M. Myrvold and **B.P. Kennedy**.

March 2011. Annual meeting for Idaho Chapter AFS, Boise, ID, US.
The spatial scale and ecological drivers of straying in a migratory salmon population. **B.P. Kennedy** and E.J. Hamann.

March 2011. Annual Idaho American Fisheries Society Meeting, Boise, ID, US.

Determining spatially distinct differences in juvenile migration strategies in wild Fall Chinook salmon (*Oncorhynchus tshawytscha*) in the Snake River, Idaho. *J. Hegg, **B. Kennedy** and R. Zabel.

January 2011. Willamette Fisheries Science Review. Grande Rhone, Oregon.
Feasibility of Using Otolith and Scale Analyses to Characterize Life History Variation in Spring Chinook Salmon in Three Willamette Valley Project Reservoirs and Tributaries. C. C. Caudill, S.L. Bourret, **B.P**. **Kennedy,** and L. Borgerson.

September 2010. Annual statewide Idaho EPSCoR collaborators meeting, Boise, ID, USA.
Rivernet: Installing a networked sensor array to monitor watershed temperatures in Big Creek, Salmon River, ID. **K. Ramus and **B.P. Kennedy**.

September 2010. Annual statewide Idaho EPSCoR collaborators meeting, Boise, ID, USA.
Reconstructing seasonal movement patterns and habitat selection of Chinook salmon *(Oncorhynchus tshawytscha*) using otolith microchemistry. *J. Reader, N. Gayeski and **B.P. Kennedy**.

May 2010. Advances in the Population Ecology of Stream Salmonids International Symposium, Luarca, Asturias, Spain.
The integration of microhabitat behaviors and migration decisions to aid our understanding of the causes and consequences of juvenile salmon life history diversity. **B.P. Kennedy.**

May 2010. Advances in the Population Ecology of Stream Salmonids International Symposium, Luarca, Asturias, Spain.
Quantifying straying rates of adult Chinook salmon (*Oncorhynchus tshawytscha*) based upon reconstructions of juvenile rearing habitats from otolith microchemistry fingerprints. *E.J. Hamann and **B.P. Kennedy.**

May 2010. Advances in the Population Ecology of Stream Salmonids International Symposium, Luarca, Asturias, Spain.
Effects of reduced instream flows on growth, survival, and outmigration patterns of juvenile steelhead (*Oncorhynchus mykiss*). *R.B. Hartson and **B.P. Kennedy.**

May 2010. Advances in the Population Ecology of Stream Salmonids International Symposium, Luarca, Asturias, Spain.
Spatial and temporal variation in rainbow trout (*Oncorhynchus mykiss*) consumption and lipid storage: Establishing baselines prior to passage restoration in Icicle Creek, WA, USA. *C. Tran, **B.P. Kennedy**, and N. Gayeski.

February, 2010. Idaho Chapter of the American Fisheries Society Annual Meeting, Pocatello, ID. USA.
Resolving life history strategies and outmigration timing of juvenile fall Chinook salmon. *J. Hegg, **B.P. Kennedy**, R. Zabel, and P. Chittaro

December 2009. American Geophysical Union Annual Meeting, San Francisco, CA, USA.
Forests, fire, floods and fish: nonlinear biophysical responses to changing climate. J. L. Pierce[1]; C. Baxter[2]; E. M. Yager[5]; A. K. Fremier[3]; B. T. Crosby[4]; A. M. Smith[8]; **B.P. Kennedy**[6]; J. A. Hicke[6]; K. Feris[9].

August 2009. 4th International Otolith symposium, Monterey, CA, USA.
Resolving natal origins and life history of wild fall Chinook salmon (*Oncorhynchus tshawytscha*) using otolith microchemistry and geospatial analysis. J. Hegg*, **B.P. Kennedy**, R. Zabel, P.

Chittaro, and K. Haught.

August 2009. 4th International Otolith symposium, Monterey, CA, USA.
Distinguishing juvenile Chinook salmon rearing habitat and life history in the Cedar River, WA, USA. **B.P. Kennedy** and N. Gayeski.

August 2009. 4th International Otolith symposium, Monterey, CA, USA.
Reconstructing juvenile somatic growth rates from returning adult Chinook that exhibit different life history strategies? P. Chittaro, R. Zabel, J. Hegg, and **B.P. Kennedy**.

August 2009. Ecological Society of America. Annual Meeting, Albuquerque, NM. USA.
Resolving natal origins and life history of wild fall Chinook salmon (*Oncorhynchus tshawytscha*) using otolith microchemistry. **B.P. Kennedy**, J. Hegg, R. Zabel, P. Chittaro, and K. Haught.

June 2009. Annual Meeting of the Society for the Study of Evolution, The society of Systemic Biologists and the American Society of Naturalists. Moscow, ID. USA.
Life history evolution of juvenile salmon in the Snake River. **B.P. Kennedy** and R. Zabel,

March 2009. Idaho Chapter of the American Fisheries Society Annual Meeting, Boise, ID. USA.
Resolving natal origins and life history of wild fall Chinook salmon (*Oncorhynchus tshawytscha*) using otolith microchemistry. **B.P. Kennedy**, J. Hegg, R. Zabel, P. Chittaro, and K. Haught.

March 2009. Idaho Chapter of the American Fisheries Society Annual Meeting, Boise, ID. USA.
Effects of an altered hydrologic regime on juvenile *Oncorhynchus mykiss* growth, survival, and emigration. *R. Hartson and **B.P. Kennedy**.

March 2009. Idaho Chapter of the American Fisheries Society Annual Meeting, Boise, ID. USA.
Use of remote sensing, satellite imagery, and on-the-ground field measures to classify salmon habitat and ecosystem structure in Big Creek, Idaho. *E.J. Hamann, **B.P. Kennedy**, and J.A. Stanford.

March 2009. Idaho Chapter of the American Fisheries Society Annual Meeting, Boise, ID. USA.
Migration and distribution of radio-tagged adult Pacific lamprey (*Lampetra tridentata*) in the Snake River, ID.*B. McIlraith, **B.P. Kennedy**, and C.A. Peery.

March 2009. Idaho Chapter of the American Fisheries Society Annual Meeting, Boise, ID. USA.
Variation in the individual performance of juvenile *Oncorhynchus mykiss*: a comparison of multiple metrics of growth and condition. *C. Tran, **B.P. Kennedy**, and N. Gayeski.

March 2009. Idaho Chapter of the American Fisheries Society Annual Meeting, Boise, ID. USA.
Relationships between benthic and drift production and the trophic transfer of energy to juvenile Chinook salmon (*Oncorhynchus tshawytscha*). *K.Cromwell and **B.P. Kennedy.**

November 2008. Society of Environmental Toxicology and Chemistry Annual Meeting, New Orleans, LA, USA.
Aquatic community response to elevated metal concentrations. *T. Kiser, J. Hansen and **B.P. Kennedy.**

February 2008. Idaho Chapter of the American Fisheries Society Annual Meeting, Post Falls, ID. USA.
An overview of otolith microchemistry: its application, utility and potential for addressing statewide issues in fish ecology and management. **B.P. Kennedy.**

February 2008. Idaho Chapter of the American Fisheries Society Annual Meeting, Post Falls, ID. USA.
The relative roles of biotic and abiotic factors in determining growth differences of juvenile Chinook in a Idaho wilderness stream. *K.J. Cromwell, D.E. Holecek, and **B.P. Kennedy.**

February 2008. Idaho Chapter of the American Fisheries Society Annual Meeting, Post Falls, ID. USA.
Juvenile Chinook Salmon Microhabitat Use, Availability, and Selection in a Central Idaho Wilderness Stream. **D.E. Holecek, K.J. Cromwell, and **B.P. Kennedy.**

February 2008. Idaho Chapter of the American Fisheries Society Annual Meeting, Post Falls, ID. USA.
Factors Influencing the Use of Side Channel Habitat by Westslope Cutthroat Trout. **B. Stevens, J. Dupont and **B.P. Kennedy.**

November 2007. NWFCS seminar, NOAA-NMFS, Seattle, WA. USA.
Using otolith microchemistry to distinguish natal origin and habitat use of spring/summer Chinook salmon in the Salmon River basin. R. Zabel, M. Scheuerell, and **B.P. Kennedy.**

November 2007. Fish and Wildlife Seminar Series, University of Idaho, Moscow, ID. USA.
Juvenile Chinook Salmon Habitat Use, Availability, and Selection in a Central Idaho Wilderness Stream., ** D.E. Holecek, K.J. Cromwell, and **B.P. Kennedy.**

October 2007. Wild Trout Symposium, West Yellowstone, MT. USA. (Poster session)
Relating density of juvenile Chinook salmon to microhabitat availability in a Wilderness Stream. *K.J. Cromwell, D.E. Holecek, and **B.P. Kennedy.**

June 2007. Annual Meeting of the North American Benthological Society. Columbia, SC. USA.
Influences of Deforestation and Riparian Forest Buffers on Macroinvertebrate Community Composition and Diversity in Lowland Neotropical Streams. *C.M. Lorion, B.P. **Kennedy,** and J.H. Braatne.

May 2007. Landscapes to Riverscapes Symposium. University of Idaho, Moscow, ID. USA.
Scaling Up from Individuals to Ecosystem Processes. **B.P. Kennedy.**

May 2007. Landscapes to Riverscapes Symposium. University of Idaho, Moscow, ID. USA.
Distribution and Ecology of Stream Fishes in a Tropical Riverscape: Conservation Challenges and Opportunities. *C.M. Lorion, **B.P. Kennedy,** and J.H. Braatne.

December 2006, Eos Trans. AGU San Francisco, CA. USA, 87(52), Abstract ED31A-1361.
University of Idaho Water of the West Initiative: Development of a sustainable, interdisciplinary water resources program. J. Boll, B. Cosens, F. Fiedler, T. Link, P. Wilson, C. Harris, M. Tuller, G. Johnson, and **B.P. Kennedy.**

April 2006. Big Creek Symposium. University of Idaho, Moscow, ID. USA.
A bioenergetics approach to understanding juvenile Chinook survival. **B.P. Kennedy,** and K.J. Cromwell.

October 2005. Colorado River Ecosystem Science Symposium, Tempe, AZ. USA.
A test of the utility of otolith chemistry for studying humpback chub movements. **B.P. Kennedy,** J.D. Blum, K.H. Nislow, and L.Coggins.

February 2005. ASLO All Scientist meeting, Salt Lake City, Utah, USA.
Linking events in the life cycle of an endangered species using geochemical tracers in the Colorado River. B.P. **Kennedy, J.D.** Blum, K.H. Nislow, and L.Coggins.

July 2002. Annual Hubbard Brook Cooperators Meeting. New Hampshire, USA.
Aerial Transport of elements and insects across watershed boundaries: Completing the wollastonite cycle. **B.P. Kennedy**, K. Macneale, J.D. Blum, and G. Likens.

July 2001. Annual Hubbard Brook Cooperators Meeting. New Hampshire, USA.
Manipulation of the Sr isotopic signature in Watershed 1: Why should a population biologist care? **B.P. Kennedy**, Kate Macneale, Joel Blum, and Gene Likens.

September 2000. Goldschmidt International Conference for Geochemistry. Oxford, UK.
Sr isotope markers in otolith growth increments of Atlantic Salmon. A. Klaue, B. P. Kennedy, J. D. Blum, C. L. Folt, and K. C. Lohmann.

August 2000. Ecological Society of America. Snowbird, UT.
The relationship between consumption rates and habitat in Vermont salmon streams: application of a trace metal mass balance approach. B. P. Kennedy, K. H. Nislow, C. L. Folt, and J. D. Blum

July 2000. International Conference on the Biology of Fish. Aberdeen, Scotland.
Testing the predictions from a spatially-explicit bioenergetic model for age-0 Atlantic salmon using fluxes of trace elements. B. P. Kennedy, C. L. Folt, and K. H. Nislow.

May 1999. North American Benthological Society Annual Meeting. Duluth, MN.
Within-basin variation in the effects of a major flood. K. H. Nislow, F. J. Magilligan, B. P. Kennedy, and C. L. Folt.

April 1997. Northeast Fisheries and Wildlife Conference. Amherst, MA.
Distinguishing salmon populations based upon their stable isotope chemistry. B. P. Kennedy, C. L. Folt, J. D. Blum, C. P. Chamberlain, and R. Harrington.

August 1996. Ecological Society of America. Providence, RI.
Tracing tributary origins of migratory salmon using stable isotopes. B. P. Kennedy, R. Harrington, C. L. Folt, J. D. Blum, and C. P. Chamberlain.

June 1994. North American Benthological Society. Orlando, Fl.
Controls on nitrogen transformations at hyporheic soil-stream interfaces: an experimental evaluation. B. P. Kennedy, L. O. Hedin, J. C. von Fischer, and M. G. Brown.

Major Grants and Contracts Awarded:

<u>New proposals submitted and funded in 2011-12</u>

MRI: Acquisition of a Thermal Ionization Mass Spectrometer (TIMS) to strengthen collaborative Inter-University programs in isotope geochemistry. $1.19M (includes University match of $330,000). PI – **Kennedy**, co-PI's Harpp, Geist, Nezat (EWU) and Vervoort (WSU)

The impact of hydrologic alteration on the bioenergetics of juvenile steelhead (*Oncorhynchus mykiss*). USBOR $171,000. Sole PI: **Kennedy** Funded.

USGS- YEAR 2: Comparative Survival of reservoir reared and reservoir bypassed spring Chinook salmon in the Willamette River Basin. $138,378, BPA – NWPC. Kennedy, Co-PI with C. Caudill. Funded.

Integrating landscape scale approaches to understand mechanistic drivers of Chinook salmon (*Oncorhynchus tshawytscha*) life history variation in the Salmon River, ID. DeVlieg Foundation $50,000. PI's Fremier and Kennedy

Building an Integrated Data Harvester and Analysis Software for the Methow Basin with Future Linkages to Columbia River Basin Data Management. USBOR $497,000. Fremier, PI, Co – PI's Kennedy, and C. Caudill.

Identifying overwinter location and natal origins for juvenile Snake River fall Chinook salmon $40,000 - NOAA – Sole PI: Kennedy

Other funding after arriving to the University of Idaho (2006 – 2010):

Collaborative Research: FSML – Enhanced Cooperative Research and Education at Flathead Lake Biological Station and Taylor Wilderness Research Station. National Science Foundation. $595,775. **2009 – 2013.** PI's Stanford (University of Montana) and Gosz (University of Idaho) with co-PIs Galindo, Hess, Kennedy, Ellis, and Hauer.

Estimating the relative abundance and production of Chinook salmon life history types in the Willamette River system. U.S. Army Corps of Engineers. $140,000. **2009 – 2011.** Co-PIs – Caudill and Kennedy.

Water Resources in a Changing Climate: Idaho EPSCoR RII. National Science Foundation, $15,000,000. **2008 – 2012.** PIs Shreeve, Walden and Bohach. Along with statewide leads (Current Director, Dr. Peter Goodwin), one of 12 junior faculty statewide developing the research and educational directions.

A planning proposal for expanding capacity at Taylor Ranch Wilderness Field Station in a strategic, sustainable and sensitive manner. National Science Foundation. $25,000. **2008 – 2010.** PI – Kennedy with co-PIs Gosz, Daley-Laursen and Scott.

Salmon River Observatory Network: Quantifying life history and genetic diversity of Oncorhynchus mykiss in the Skeena River. University of Montana – subcontract of award from Moore Foundation. $49,800. **2008 – 2010.** PI – Kennedy.

Mechanistic relationships between flow and *Oncorhynchus mykiss* foraging, energetics and population viability in a hydrologically disturbed ecosystem. US Bureau of Reclamation.

$640,000. **2007 – 2013.** PI – Kennedy.

Using otolith microchemistry and microstructure to assess the causes and consequences of alternate life history strategies for Snake River Fall Chinook. NOAA-NMFS, $260,000. **2007 – 2010.** PI – Kennedy.

A study of ecological recovery and recolonization in Icicle Creek, WA. Wild Fish Conservancy, $45,318, **2007 – 2009.** PI – Kennedy.

Onchorhyncus mykiss life history variability in the Middle Fork system: migratory decisions in a disturbed widerness environment. DeVlieg Foundation. $38,000. **2007 – 2009.** PI – Kennedy.

Water of the West: Towards a Sustainable, Interdisciplinary Water Resources Program. Office of the Vice President for Research, University of Idaho. $1,650,000. **2006 – 2012.** PIs Boll (Lead), Cosens, Fiedler, Harris, Kennedy, Johnson, Link, Tuller, and Wilson.

The development and test of a spatially explicit bioenergetics model to identify determinants of survival for juvenile chinook salmon in the Big Creek watershed. NOAA-NMFS. $80,000. **2006 – 2008.** PI – Kennedy.

Effect of Arsenic on Bull Trout: An Investigation of Mine Cleanup Practices in the Pacific Northwest. USFWS – Upper Columbia Fish and Wildlife Office, Spokane, WA. $51,000. **2006 – 2008.** PI – Kennedy with Co-PI with Jim Hansen

Using otolith microchemistry to distinguish natal origin and habitat usage of spring/summer Chinook salmon in the Snake River basin. NOAA-NMFS, Northwest Fisheries Science Center. $30,000. **2007.** PIs – Kennedy, Zabel and Schuerell.

Boise River Project: Reservoir Operations Flexibility Investigation, Phase I: Deadwood Project. US Bureau of Reclamation. $833,000. **2007 – 2012.** PIs – McGrath, Kennedy, Goodwin and Imberger

Developing Tools To Minimize Jurisdictional Barriers To Achievement Of Fishery and Water Resources Goals In Lapwai Creek, Idaho. USGS – 104B Fund. $20,000. **2008.** PIs – Kennedy and Cosens.

Exploring the utility of otolith microchemistry to describe life history variation and migrational strategies of Chinook salmon in the Middle Fork of the Salmon River. USDA – Forest Service, Rocky Mountain Research Station. $15,792. **2006 – 2008.** PI - Kennedy

Before arriving to the University of Idaho:

Dispersal of perch larvae: understanding source-sink dynamics in an altered ecosystem. University of Michigan, Office of the Vice President for Research (OVPR at Michigan), $75,000. **2003 – 2005.** PIs – Kennedy, Jude and Blum

Watershed – Great Lakes Interactions: Defining the Ecological Footprint of the Muskegon River Watershed on Fisheries in Nearshore Lake Michigan. University of Michigan, Office of the Vice President for Research. $100,000. **2003 – 2005.** PIs – Rutherford, Wiley, Kennedy, Blum, Eadie.

Using stable isotopes of strontium to identify the natal origins of native fishes in the Grand Canyon section of the Colorado River Basin. United States Geologic Survey. $25,000. **2003 – 2005.** PIs:

Kennedy, Nislow, Blum; USGS,

Links between mesohabitat classes, food consumption, growth and production of juvenile Atlantic salmon. Norges Forskningsråd (The Research Council of Norway). $300,000. **2000 – 2005.** PIs – Forseth, Ugedal, Borsanyi, Kennedy, and Letcher.

Identification of salmon by geochemical signatures; Classification of important stocks, and further development of methods. Norges Forskningsråd (The Research Council of Norway). $30,000. **2000 – 2005.** Kennedy – Sub-contract for consultation and analyses on grant to Fiske.

Using geochemical tracers in otoliths to identify the natal origins of Chinook salmon in the Middle Fork of the Salmon River, Idaho. USDA – Forest Service, Rocky Mountain Research Station. $2,000. **2003 - 2004.** PI – Kennedy.

Atlantic salmon restoration in New England: assessing habitat availability by combining stable isotope technology, genetic markers, and field evaluation. NOAA – NMFS. $400,000. **1999 – 2004.** PIs – Folt, Blum, Chamberlain, Nislow, and Kennedy.

Major Research Proposals Pending:

Identifying overwintering location and natal origin for Snake River fall Chinook salmon. U.S. Army Corps of Engineers. $137,090. 2010 – 2011. Co-PI's – Zabel, Kennedy and Connor

Estimating the relative abundance and production of Chinook salmon life history types in the Willamette River system – Year 2. U.S. Army Corps of Engineers. $140,000. 2010– 2011. Co-PI's – Caudill and Kennedy.

Significant Unfunded Research Proposals (2009 – 2010, with resubmission in 2011):

MRI: Acquisition of a Thermal Ionization Mass Spectrometer (TIMS) to strengthen collaborative Inter-University programs in isotope geochemistry. $785,861. PI – Kennedy, co-PI's Harpp, Geist, Nezat (EWU) and Vervoort (WSU)

IGERT: Resolving non-stationary controls of biodiversity in river ecosystems – Integrating physical, ecological, geochemical, and social effects to predict the impacts of climate change in watersheds.An international inter-University IGERT preproposal to NSF. Collaborative with University of Montana – Flathead Lake Biological Station. PI's Kennedy and Stanford (UM).

Integrating landscape scale approaches to understand mechanistic drivers of Chinook salmon (*Oncorhynchus tshawytscha*) life history variation in the Salmon River, ID. DeVlieg Foundation $80,000 with $80,000 matching from NOAA, USFS and IDFG. PI's Fremier and Kennedy

SERVICE:

Major Committee Assignments:

<u>*University of Idaho*</u>:

Taylor Wilderness Research Station Scientific Advisory Board (Chair, 2009 - present)
Graduate Curriculum Request for Innovation (2009)
Science and New Technologies Building Leadership Team (2007 – present)
Environmental Science Program (Annual 2005 – present)

Ecology and Conservation Biology Program (Annual 2005 – present)
Statistical Ecologist Position Search Committees (3 searches, 2006 – 2008)
New Science and Technology Building – Design and Architecture Team Selection Committee (Fall 2006)

Waters of the West:
Steering committee (2007 – present)
Lapwai Basin Integrated Analysis – co-coordinator with Cosens (2008 – present)
Representative for Environmental Science Position Search Committee (October 2006)

College of Natural Resources:
ECB awards committee chair. (Spring 2006)
Taylor Ranch Wilderness Research Station Advisory Committee. (2006 - 2008)
Space Committee Representative (2008 – 2010)

Department of Fish and Wildlife:
Awards Committee (2006 – 2008)
Limnologist Position Search Committee (2006 - 2007)
Braatne Tenure Review Committee (November 2006)
Wilhelm Tenure Review Committee (November 2009)
Riparian Position Search Committee (2007 - 2008)
Vierling Tenure Review Committee (November 2007)

Leadership positions:

Secretary and Treasurer – Idaho Chapter of the American Fisheries Society (2006 – 2008)

Committee Chairperson – Taylor Wilderness Research Station Scientific Advisory Board (Chair, 2009 - present)

University meetings organized:

Spring, 2006. Big Creek Symposium – University of Idaho. Featuring 25+ researchers and managers with interests related to the Middle Fork Salmon River ecosystem.

Spring, 2007. Landscapes to Riverscapes: Bridging the gaps between research and management of stream taxa and their ecosystems – University of Idaho – annual UI-ISU interdepartmental symposium. Co-organizer with Kerry Reese and Colden Baxter.

Spring, 2008. Taylor Ranch and Wilderness Research and Educational Research Opportunities strategic workshop. Co-coordinator with Mike Scott, Jim Gosz, and Steven Daley-Laursen.

Professional and Scholarly Organizations:

Ecological Society of America (1997 – Present)
North American Benthological Society (1997 – Present)
American Fisheries Society (2000 – Present)
Idaho Chapter of the American Fisheries Society (2005 – Present)
American Society of Naturalists (2009 – Present)
Sigma Xi (2005 – Present)

Manuscripts and proposals reviewed (approximately 4 per year since 2005):

Ecology
Ecological Applications
National Science Foundation
Marine Ecology Progress Series
Limnology and Oceanography
Idaho Academy of Sciences
Hudson River Foundation

Guest Editor:
Ecology – Ecological Society of America

University Advancement:
Major contributioin has been working on behalf of the College's teaching and research facilities with particular focus on establishing a strategic plan and a competitive vision for Taylor Wilderness Research Station (TWRS).

Major Roles and Responsibilities include:
1) Developing a master plan of sustainable growth and increased visibility of TWRS funded through the National Science Foundation's field stations program,
2) Organizing workshops and delivering information for invited individuals to provide input on appropriate directions and leadership for TWRS (Post Falls, April 2008; TWRS, October 2008),
3) Collaborating with regional partners, Flathead Lake Biological Station and Yellowstone Ecological Research Center on networking the respective field stations to increase respective strengths and develop collaborative opportunities.
4) Representing the College of Natural Resource's teaching and research facilities as chairperson on the University committee to seek sustained growth and increased visibility of TWRS.
5) Cultivating relationships with potential donors and supporters of the facility to ensure the sustainability and scientific viability of this University asset.