

## Curriculum Vitae Scott D. Tiegs

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### Current Position

Post-doctoral Research Associate, University of Notre Dame, Department of Biological Sciences,  
Research Project : Salmon-derived Nutrients in Managed Forests, advisor: Gary A. Lamberti

### Education

2006, Ph.D., Aquatic Ecology, Swiss Federal Institute of Environmental Sci. and Technology (Eawag)

Dissertation: Landscape-scale Controls of Litter Decomposition in Streams, advisor: Mark Gessner

2002, M.A., Geography, San Diego State University

Thesis: Flood Disturbance and Riparian Diversity on the Colorado River Delta: the Role of Planform Channel Dynamics, advisors: Molly Pohl and John O'Leary

1999, B.S. Geography, University of Oregon (Honors)

1996, B.A. Environmental Biology, University of Colorado at Boulder

### Publications (\*indicates student author)

**Tiegs, S.D.**, F. Peter\*, C.T. Robinson, U. Uehlinger and M.O. Gessner. (accepted). *Leaf Decomposition and Invertebrate Response to Manipulated Litter Quantity in Streams*. Journal of the North American Benthological Society

Langhans, S.D., **S.D. Tiegs**, M.O. Gessner, and K. Tockner. (accepted). *Leaf Decomposition Heterogeneity in a Riverine Floodplain Mosaic*. Aquatic Sciences

**Tiegs, S.D.**, D.T. Chaloner, P. Levi\*, J. Rueegg\*, J.L. Tank and G.A. Lamberti. 2008. *Timber Harvest Transforms Ecological Roles of Salmon in Southeast Alaska Rain Forest Streams*. Ecological Applications 18:4-11

**Tiegs, S.D.**, S.D. Langhans, K. Tockner and M.O. Gessner. 2007. *Cotton Strips as a Leaf Surrogate to Measure Decomposition in River Floodplain Habitats*. Journal of the North American Benthological Society 26:112-119

Woolsey, S., T. Gonser, M. Hostmann, B. Junker, A. Paetzold, C. Roulier, S. Schweizer, **S.D. Tiegs**, K. Tockner, C. Weber and A. Peter. 2007. *A Strategy to Assess River Restoration Success*. Freshwater Biology 52:752-769

Langhans, S.D., **S.D. Tiegs**, U. Uehlinger, and K. Tockner. 2006. *Linking Environmental Heterogeneity with Organic Matter Dynamics in River-Floodplain Ecosystems*. Polish Journal of Ecology 54:675-680 (Invited paper)

**Tiegs, S.D.** and M.M. Pohl. 2005. *Planform Channel Dynamics of the Lower Colorado River: 1976-1999*. Geomorphology 69:14-27

## Publications contd.

**Tiegs, S.D.**, J.F. O'Leary and M.M. Pohl. 2005. *Flood Disturbance and Riparian Species Diversity on the Colorado River Delta*. Biodiversity and Conservation 14:1175-94

**Tiegs, S.D.**, P. Akinwale\* and M.O. Gessner. (in review). *Litter Decomposition across Multiple Spatial Scales in Stream Networks*. Oikos

\*Janetski, D., D.T. Chaloner, **S.D. Tiegs**, and G.A. Lamberti (submitted). Pacific salmon in stream ecosystems: a quantitative synthesis. Ecology

## Book/ Book Chapters

Woolsey, S., C. Weber, T. Gonser, E. Hoehn, M. Hostmann, B. Junker, C. Roulier, S. Schweizer, **S. Tiegs**, K. Tockner and A. Peter. 2006. Handbook for the Assessment of River Revitalization. Publication of the Rhone-Thur Projects. Eawag, WSL, LCH-EPFL, VAWETHZ. 112 pp. (title translated from German - English version of book forthcoming)

**Tiegs, S.D.** 2006. *Quantifying Stream Channel Retentiveness*. in Woolsey, S., C. Weber, T. Gonser, E. Hoehn, M. Hostmann, B. Junker, C. Roulier, S. Schweizer, **S. Tiegs**, K. Tockner and A. Peter. 2006. Handbook for the Assessment of River Revitalization. Publication of the Rhone-Thur Projects. Eawag, WSL, LCH-EPFL, VAWETHZ. 112 pp. (titles translated from German - English version of book forthcoming)

\*Capelli, F. and **S.D. Tiegs**. 2006. *Quantifying the Volume of Large Wood in Streams*. in Woolsey, S., C. Weber, T. Gonser, E. Hoehn, M. Hostmann, B. Junker, C. Roulier, S. Schweizer, **S. Tiegs**, K. Tockner and A. Peter. 2006. Handbook for the Assessment of River Revitalization. Publication of the Rhone-Thur Projects. Eawag, WSL, LCH-EPFL, VAWETHZ. 112 pp. (titles translated from German - English version of book forthcoming)

## Manuscripts (\*indicates student author)

Hladyz, S., M.O. Gessner, P.S. Giller, E. Preda, G. Risnoveanu, M. Schindler, **S.D. Tiegs** and G. Woodward. (draft). *Maintenance of Ecosystem Functioning in Streams with Altered Resource Inputs: a European Perspective*. Target Journal: Functional Ecology

MacKenzie, R.A., A.M. Brasher, A.P. Covich, K.M.S. Fraiola, S.T. Larned, M.O. Gessner, V.H. Resh, A.R. Sherwood, M. Schindler, **S.D. Tiegs** and T.N. Wiegner. (draft). *Streams of Pacific Islands: a Synthesis of Ecological Research Conducted in Oceania*. Target Journal: Biological Reviews

**Tiegs, S.D.**, A. Lecerf and M.O. Gessner. (draft). *Vertical Hydrologic Exchange Affects Leaf-litter Decomposition and Decomposer Community Structure*. Target Journal: Freshwater Biology

**Tiegs, S.D.**, A. Wagenhoff\* and M.O. Gessner. (draft). *Decomposition of Alien vs. Native Poplar Leaves under Ambient and Elevated Nutrient Conditions*. Target Journal: Freshwater Biology

Woodward, G.,... **S.D. Tiegs**, and 25 others. (draft). *Continental-scale effects of nutrients on stream ecosystem functioning*. Target Journal: to be determined

## Book Review

**Tiegs, S.D.** 2006. *Riparian Ecology and Management*. Book review of Riparia (Naiman et al. 2005). Ecology 87(2):529

## Presentations (\*indicates student author)

**Tiegs, S.D.**, D.T. Chaloner, P. Levi\*, J. Rüegg\*, J. Tank and G.A. Lamberti. 2007. *Timber Harvest Influences the Ecological Roles of Salmon in Southeast Alaska Streams*. Pacific Salmonid Recovery Conference. Seattle, WA, USA. Oral Presentation.

**Tiegs, S.D.**, D.T. Chaloner, P. Levi\*, A. Reisinger\*, J. Rüegg\*, J. Tank and G.A. Lamberti. 2007. *Historical Timber Harvest and Its Lingering Influence on the Utilization of Salmon-derived Nutrients in Stream Ecosystems*. Alaska Chapter of the American Fisheries Society. Ketchikan, AK, USA. Oral Presentation.

**Tiegs, S.D.**, D.T. Chaloner, T.G. Creech\*, P. Levi\*, J. Rüegg\*, and G.A. Lamberti. 2007. *Timber Harvest Dampens the Influence of Salmon on Periphyton in Southeast Alaska Streams*. North American Benthological Society. Columbia, SC, USA. Oral Presentation.

\* Wagenhoff, A., **S.D. Tiegs**, M.O. Gessner. 2007. *Is Stream Ecosystem Functioning Affected When Alien Hybrid Plantations Replace Native Black Poplars?* New Zealand Freshwater Sciences Society. Queenstown, New Zealand. Oral Presentation.

\* Rüegg, J., D.T. Chaloner, **S.D. Tiegs**, and G.A. Lamberti. 2007. *Using GIS to Identify Hotspots of Salmon-derived Nutrient Influence in Managed Watersheds of Southeast Alaska*. North American Benthological Society. Columbia, SC, USA. Poster Presentation.

Chaloner, D.T., **S.D. Tiegs**, G.A. Lamberti, J. Rüegg\*, P. Levi\*, M.E. Benbow, S.D. Bridgham, D.V. D'Amore, R.T. Edwards, R.W. Merritt, and J.L. Tank. 2007. *Ecological Influence of Pacific Salmon in Managed Forested Watersheds*. North American Benthological Society. Columbia, SC, USA. Oral Presentation.

\*Levi, P., J.L. Tank, **S.D. Tiegs**, D.T. Chaloner, and G.A. Lamberti. 2007. *Influence of Forest Management on Salmon-Derived Nutrient Dynamics in Southeast Alaska Streams*. North American Benthological Society. Columbia, SC, USA. Poster Presentation.

\*Akinwole, P., **S.D. Tiegs**, and M.O. Gessner. 2007. *Spatial Variability of Leaf-Litter Decomposition in German Black Forest Streams*. Seminar, Department of Biological Sciences, University of Alabama, USA.

**Tiegs, S.D.**, A. Lecerf and M.O. Gessner. 2006. *Ground-/surface-water Exchange Affects In-stream Litter Decomposition*. Annual Aquatic Ecology Symposium, Dübendorf, Switzerland. Oral Presentation. Award, Best Presentation.

**Tiegs S.D.**, P. Akinwole\*, S.D. Langhans, K. Tockner, and M.O. Gessner. 2006. *How Spatially Variable are Decomposition Rates in Streams?* North American Benthological Society. Anchorage, AK, USA. Oral Presentation. Award, Runner Up, Best Oral Presentation for Applied Research.

\* Wagenhoff, A., **S.D. Tiegs**, and M.O. Gessner. 2006. *Decomposition of Alien vs. Native Poplar Leaves under Ambient and Elevated Nutrient Conditions*. North American Benthological Society. Anchorage, AK, USA. Oral Presentation.

G. Woodward, ...**S.D. Tiegs**, ...and 25 others. 2006. *Multiple-scale Effects of Nutrients on Ecosystem Functioning in European Streams - Implications for the E.U. Water Framework Directive*. North American Benthological Society. Anchorage, AK, USA. Oral Presentation.

**Tiegs, S.D.**, P.O. Akinwole\* and M.O. Gessner. 2005. *Spatial Variability of Leaf-litter Decomposition in Streams*. North American Benthological Society. New Orleans, LA, USA. Oral Presentation

## Presentations contd.

- Tiegs, S.D.**, and M.O. Gessner. 2005. *Accommodating Variability in Leaf Decomposition Rates to Assess Functional Stream Integrity*. Plant Litter Processing in Freshwaters IV. Toulouse, France. Oral Presentation
- Tiegs, S.D.**, C.T. Robinson, F. Peter\*, U. Uehlinger, and M.O. Gessner. 2005. *Does Organic-matter Standing Stock Influence In-stream Decomposition Rates?: Relevance for Stream Assessment*. Plant Litter Processing in Freshwaters IV. Toulouse, France. Poster Presentation
- Langhans, S.D., **S.D. Tiegs**, M.O. Gessner and K. Tockner. 2005. *Spatial Heterogeneity of Leaf Litter Decomposition Across a Complex Mosaic of Floodplain Habitats*. Symposium for European Freshwater Sciences. Krakow, Poland. Oral Presentation
- Schindler, M., **S.D. Tiegs** and M.O. Gessner. 2005. *Leaf-litter Breakdown to Assess Functional Stream Integrity*. Plant Litter Processing in Freshwaters IV. Toulouse, France. Oral Presentation
- Tiegs, S.D.**, C.T. Robinson, F. Peter\*, U. Uehlinger, and M.O. Gessner. 2005. *Influence of Organic Matter Standing Stock on Leaf-litter Decomposition in Streams*. Ecological Society of America. Montreal, Canada. Poster Presentation
- Tiegs, S.D.**, M.O. Gessner and M. Schindler. 2004. *Vertical Hydrologic Exchange Affects Leaf-litter Breakdown*. North American Benthological Society. Vancouver, B.C., Canada. Oral Presentation
- Schindler, M., M.O. Gessner and **S.D. Tiegs**. 2004. *The Importance of Tree Leaf Diversity for Litter Breakdown in Streams*. North American Benthological Society. Vancouver, B.C., Canada. Oral Presentation
- Tiegs, S.D.**, M.O. Gessner, B. Malmqvist, B. McKie, M. Nistorescu, G. Rîşnoveanu, M. Schindler. 2003. *Effects of Riparian Vegetation Clearing on Litter Breakdown to Assess Stream Ecosystem Functioning*. British Ecological Society. Manchester, UK. Oral Presentation
- Gessner, M.O., E. Chauvet, V. Gulis, M. Schindler and **S.D. Tiegs**. 2003. *Litter Breakdown to Assess Functional Stream Integrity*. North American Benthological Society. Athens, GA, USA. Oral Presentation
- O'Leary, J., Snap-Cook, J., Niphadkar, M. and **S.D. Tiegs**. 2003. *An Integrated Approach to Vegetation and Land Cover Mapping at Rancho Jamul Ecological Reserve*. Association of American Geographers. New Orleans, LA, USA. Poster Presentation
- Tiegs, S.D.** and M. Pohl. 2003. *Disturbance and Diversity Patterns in Riparian Ecosystems on the Colorado River Delta: The Role of Planform Stream Channel Dynamics*. Association of American Geographers. New Orleans, LA, USA. Oral Presentation
- Tucker, M. and **S.D. Tiegs**. 2001. *Human Impacts to Riparian Ecosystems: Hydrologic Change, Geomorphic Response, Ecological Implications*. California Society for Ecological Restoration. San Diego, CA, USA. Oral Presentation

## Invited Seminar

- Tiegs, S.D.** 2008. *Resource Linkages in Stream Ecosystems: the Importance of Environmental Heterogeneity*. School of Earth and Environmental Science, Washington State University, Pullman, WA, USA.

## Teaching/Advising Experience

2007-present, MS Thesis Committee Member for Emily Campbell, Michigan State University

2002-06, Teaching Assistant, Swiss Federal Institute of Technology at Zürich (Eawag/ETH)

- M.S. Thesis co-Supervisor. 2005-06, Annika Wagenhoff and 2003-04, Philips Akinwole
- Statistics Workshop. 2004-06 - Taught three, one-day applied-statistics workshops addressing ANOVA, ANCOVA and regression to undergraduate and M.S. students.
- Management of Aquatic Ecosystems. 2005 - Lecture on Environmental Flow Requirements
- Applied Ecosystem Study (Systempraktikum). 2002-06 - Engaged students in an ecological assessment of the Rhone River. Wrote protocols explaining field procedures, demonstrated and oversaw their implementation (e.g., piezometric measurements, leaf decomposition, channel retentiveness, stream discharge, macroinvertebrate sampling). Supervised subsequent statistical analysis/interpretation. Course culminated in oral and written presentations by the students.
- Ecological Field Excursion (Exkursionen in Ökologie). 2004 - Introduced students to a stream restoration site. Taught students common field techniques (pebble counts, stream discharge, habitat diversity, constructing cross-sectional profiles) with the aim of comparing a restoration site and a non-restored site. Demonstrated means of analyzing the resulting data such that the two sites could be evaluated and the restoration assessed.
- Applied Limnology. 2004 - Assisted with a field-based course, the goal of which was to assess the ecological status of the Thur River and engage students in applying common field methods. Students measured stream discharge and chemical parameters, and assessed invertebrate communities. Course culminated in oral and written presentations by the students.

2001-02, Teaching Assistant, San Diego State University, San Diego, USA

- Physical Geography Laboratory (GEOG 101L). Taught a laboratory course (2 semesters) complimenting the lecture "Introduction to Physical Geography". Prepared lectures and laboratory exercises, evaluated exams/student research papers. Topics of lectures and exercises included, for example: Geomorphology, Fluvial Geomorphology, Hydrology, and Topo. Map Interpretation.

## Relevant Work Experience

River Restoration Technician, 1996 - 97, 1999 - 2000, Pacific Watershed Institute, Winthrop, WA.

- Assisted with the design, implementation and monitoring of watershed restoration.
- Monitored stream channel geometry with optical land-surveying equipment.
- Designed/constructed streambank stabilization and in-stream LWD structures.
- Conducted anadromous fish snorkeling surveys (Hanken and Reeves).
- Supervised work crews.
- Surveyed riparian and upland vegetation.
- Developed/implemented stream-temperature monitoring program with U.S. Forest Service.

Riparian Assessment and Restoration Technician, 1997 - 98, Yakima Training Center, Yakima, WA.

- Assessed and restored riparian vegetation.
- Designed/implemented a riparian assessment protocol.
- Mapped stream channels with GPS and aerial photos.
- Determined stream channel geometry.
- Surveyed riparian, upland vegetation (Daubenmire, Greenline, Belt transects).

## Professional Affiliations

American Fisheries Society (AFS)  
Ecological Society of America (ESA)  
North American Benthological Society (NABS)

## Awards, Grants and Honors

2006 Best Presentation, Annual Aquatic Ecology Symposium, Eawag, Dübendorf  
2006 Best Oral Presentation, Runner Up, Applied Research, NABS, Anchorage, AK  
2006 International Conference Travel Grant, Swiss Fed. Institute of Technology, Zürich (\$1000)  
2004 NABS Petersen Award, Travel Grant based on extended abstract competition (\$1200)  
2003 International Conference Travel Grant, British Ecological Society (\$500)  
2002 Phi Beta Delta Society International Scholarship, San Diego State University (\$250)  
2000-02 San Diego State University Graduate Assistantship and Tuition Waiver  
2001 Clair A. Hill Memorial Scholarship, California Water Users Association (\$3000)  
1999 Highest GPA by a Graduating Senior, Dept. of Geog., Univ. of Oregon  
1995 Undergraduate Research Opportunity Grant, University of Colorado (\$800)

## Reviewing

Aquatic Sciences  
Archiv für Hydrobiologie  
Canadian Journal of Fisheries and Aquatic Sciences  
Earth Surface Processes and Landforms  
Ecological Applications  
Ecology  
Environmental Management  
Freshwater Biology  
Hydrobiologia  
Journal of Arid Environments  
Journal of the North American Benthological Society  
Limnology and Oceanography  
Oecologia  
Plant Ecology

## Personal

Fly-Fishing, Backpacking, Reading, Mountaineering, Travel

## Scott D. Tiegs Professional References

### **Mark Gessner (PhD advisor)**

Research Scientist/Adjunct Professor  
Department of Aquatic Ecology  
Eawag/ETH  
Ueberlandstrasse 133, 8600 Dübendorf, Switzerland  
+41-(0)41-823-5410  
<http://www.eawag.ch/~gessner/gessner@eawag.ch>

### **Gary Lamberti (current advisor)**

Professor and Assistant Chair  
Department of Biological Sciences  
University of Notre Dame  
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### **Chris Robinson (collaborator, PhD committee member)**

Research Scientist/Adjunct Professor  
Department of Aquatic Ecology  
Eawag/ETH  
Dübendorf, CH-8600, Switzerland  
+41-(0)44-823-5616  
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### **Klement Tockner (collaborator)**

Research Scientist/Adjunct Professor  
Department of Aquatic Ecology  
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