

David Tavernini

Stream and Riparian Research Laboratory
Forest and Conservation Sciences
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Research and Teaching Interests

Currently studying the physical processes linking riparian and fluvial ecosystems. The objective is to develop a broad conceptual model explaining the degree to which terrestrial organic matter is entering and being used in a prairie riverine ecosystem. Interests include fluvial geomorphology, hydrology, stream mechanics, and their applications in ecology. Ultimately, my goal is to further understand these systems in graduate studies so I can pass this knowledge on to others through teaching in a post-secondary context.

Education

2016-2018 MSc. Forestry

University of British Columbia, Vancouver, BC, Canada

- Thesis (in progress): How does the physical structure of tributaries affect the invertebrate communities and ecosystem processing in stream confluences?
- Related coursework: Advanced biometrics, Exploratory data analysis

2011-2016 BSc. Environmental Science (Hons. with Great Distinction)

University of Lethbridge, Lethbridge, Alberta, Canada

- Honors thesis: *"Cross-ecosystem resource subsidies in large grassland rivers: do physical processes control terrestrial-aquatic coupling?"*
- Related Coursework: Geomorphology, Fluvial Geomorphology, Hydrology I, Integrated Watershed Management, Field Techniques in Earth Sciences, GIS, Environmental Applications of Active and Thermal Imaging, Principles of Ecology.

Work Experience

April 2016 – August 2016 Wildland Firefighter – Unit Crew Subleader

Alberta Agriculture + Forestry, Whitecourt, AB

- Type I Firefighter on Unit Crew
- Led a 4-person sub-unit on a 20-person unit crew
- Developed strong decision making, planning, and resource management skills
- Planned and coordinated training exercises to develop skills of subunit
- Maintained effective communication between overhead staff and subunit members

2014-2015 (Summers) Wildland Firefighter – Unit Crew Member

Alberta Agriculture + Forestry, Whitecourt, AB

- Type I Firefighter on Unit Crew

- Undertook educational roles by mentoring new crew members in fireline skills
- Developed strong communication skills in person and through radio in high stress situations
- Leadership experience working in a teamwork environment
- Worked extensively with others in unfavorable environments

2015 Research Assistant (spring semester)

University of Lethbridge, Lethbridge, AB

- Supervisor: Dr. Christopher Hopkinson
- Using airborne LiDAR derived altimetry data for snowpack mapping in mountainous watersheds to analyze spatial variability of snow distribution
- Bentley Microstation, Surfer, and ArcGIS for LiDAR data processing and statistical analysis using SPSS and Excel
- Effective data management and organization was a requirement for final deliverables of project

2012-2013 Research Assistant (summers)

Agriculture and Agri-food Canada, Lethbridge, AB

- Supervisor: Dr. Jim Miller
- Development of Best Management Practices (BMPs) for cattle producers to minimize impact on nearby streams
- Comparisons between high cattle pressure and no cattle pressure areas to analyze cattle impacts on soil compaction, fecal runoff, stream morphology, riparian health, and water quality
- Extensive soil and water sampling, processing, and experimental setup to quantify various management practices

Research Experience

Non-refereed Publications

Hopkinson, C*. H. Ali, M. Derksen, D. McCaffery, J. Montgomery, R. Parsons, and D. Tavernini (2015). *A remote sensing-based operational approach for integrating RS technologies for mapping surface water extent and snowpack depth*. Contract no. 15OPP844 for Alberta Environment and Sustainable Resource Development.

Ongoing Projects

Continuation of Honor's thesis work: *"Cross-ecosystem resource subsidies in large grassland rivers: do physical processes control terrestrial-aquatic coupling?"*

- Supervised by: Dr. Trent Hoover
- Modeling leaf transport, accumulation, entrapment, and breakdown in a riparian-riverine environment of a medium- to large-size grassland river.

Independent Studies:

ENVS4990 – Snowpack Monitoring Procedures and Methods Review and Analysis

- Using laser derived altimetry data, high resolution snow accumulation patterns were analyzed to determine driving variables in snow accumulation in forested environments

ENVS4990 – Classification of Hurricanes for Storm Warnings and Risk

- Using historical storm data from the IBTrACS Database, hurricane power was determined using established formulae for evaluating hurricane intensity in an GIS environment
- PCA Analysis was applied to attempt to determine main contributing variables for hurricane intensification and steering mechanisms

Presentations and Conferences

November 2016 – UBC Forestry Departmental Seminar Series – Vancouver, BC

- 30 -minute seminar: *“Cross-ecosystem resource subsidies in large grassland rivers: do physical processes control terrestrial-aquatic coupling?”*

November 2016 – Ecology and Evolution Retreat - Brackendale, BC

- 12-minute presentation: *“Cross-ecosystem resource subsidies in large grassland rivers: do physical processes control terrestrial-aquatic coupling?”*

February 2016 – Pacific Ecology and Evolution Conference - Bamfield, BC

- 12-minute presentation: *“Cross-ecosystem resource subsidies in large grassland rivers: do physical processes control terrestrial-aquatic coupling?”*

Awards and Scholarships

2016 – NSERC CGS-M Scholarship – Provides financial support for high-caliber scholars who demonstrated a high standard of achievement in undergraduate and early graduate studies

2016 – UBC Faculty of Forestry Student Recruitment Fellowship – Financial support to attract and recruit excellent students to graduate studies in the Faculty of Forestry

2015 – Jason Lang Scholarship– Awards outstanding academic achievement for Alberta post-secondary undergraduate students

2015 - Canadian Association of Petroleum Producers Scholarship - Awarded to four students who have demonstrated academic achievement

2014 - David B. Carpenter Award - Awarded to students who demonstrated academic achievement and have shown interest in water resource issues

2014 - Ricoh Environmental Science Scholarship - Awarded to 3rd/4th year students in Environmental Science who have demonstrated academic achievement

2013 – Jason Lang Scholarship – Awards outstanding academic achievement for Alberta post-secondary undergraduate students

2013 - Ricoh Environmental Science Scholarship - Awarded to 3rd/4th year students in Environmental Science who have demonstrated academic achievement

2011 – Jason Lang Scholarship– Awards outstanding academic achievement for Alberta post-secondary undergraduate students

2011 - Simpson-Markinch Award - Awarded to applicants with a grade of 70% or higher upon admission or 3.00/4.00 GPA for transferring or continuing students

2011 - Alexander Rutherford Scholarship – Awarded to students showing academic excellence through high school.

2011 - Board of Governors Admission Scholarship - Awarded to the highest achieving applicants based on student admission average

Certifications

- Wilderness First Aid (40hr) + Level C CPR
- Restricted Operator – Certificate of Proficiency in Radio
- Avalanche Skills Training I
- Level 3 Chainsaw Safety (Intermediate – felling)
- Green Defensive Driving
- Wildfire Crew Leader Training

Volunteer Experience

2014-2016 Treasurer – University of Lethbridge Climbing Club

- Managed finances
- Involved with planning and managing various events involving climbers in the student and public body
- Club grant proposals

2010 Volunteer librarian – Our Lady of the Assumption School

- Managed books and student accounts
- Various odds and ends tasks