

EDUCATION

PhD Candidate in Earth and Environmental Sciences, *The University of British Columbia, Canada* 09/2023 -
Thesis Topic: *Hydrological Responses to Wildfire at the Watershed Scale in British Columbia, Canada*
Supervisor: Dr. Xiaohua (Adam) Wei

MSc in Soil and Water Conservation Engineering, *Beijing Forestry University, China* 09/2019 - 06/2022
Thesis: *Research on Non-point Source Pollution and Watershed Management in a Typical Agricultural Watershed in the Three Gorges Reservoir Region*
Supervisors: Dr. Yujie Wang and Dr. Yunqi Wang

BSc in Soil and Water Conservation Engineering, *Beijing Forestry University, China* 09/2015 - 06/2019
Thesis: *Research on the Runoff and Sediment Discharge Characteristics of the Yangtze River in the Three Gorges Reservoir Region*
Supervisors: Dr. Yujie Wang and Dr. Yunqi Wang

RESEARCH EXPERIENCE

Full-time Student Researcher / National Key R & D Program of China 11/2018 - 06/2022
Beijing Forestry University *Beijing, Chongqing and Hubei, China*

- **Developing cost-effective watershed management strategies to reduce non-point source pollution**
 - Conceived and crafted the research project, established the theoretical framework
 - Designed 60 Best Management Practice scenarios for watershed management
 - Established a simulation-based optimization framework to develop robust and cost-effective watershed management strategies
 - Optimized the framework through performance comparisons and sensitivity analysis of advanced evolutionary algorithms in a real-world multi-objective watershed management problem
 - Provided practical, optimized and cost-effective watershed management strategies to decision makers
 - Drafted, edited and first-authored the research article [\[DOI\]](#)
- **Assessing the influencing factors on non-point source pollution critical source areas in an agricultural watershed**
 - Conceptualized the research project and developed the theoretical framework
 - Established a comprehensive database for the study watershed (watershed properties, field management records, long-term climate data, etc.), and identified the critical source areas within the watershed with semi-distributed hydrological model (AnnAGNPS)
 - Quantified the contribution of each environmental & anthropogenic factor to critical source areas, explored the non-linear relationships and potential thresholds that could cause great changes in pollution losses with machine learning techniques
 - Drafted, edited and first-authored the research article [\[DOI\]](#)
- **Research on quantifying the effectiveness of vegetated buffer stripes on non-point source pollution**
 - Assembled experiment apparatus, cultivated vegetation buffer, collected water samples and measured water quality indicators (sediment, TN, TP) in the laboratory
 - Quantified the reduction rates of vegetated buffers on sediment, TN and TP, identified the optimal buffer width and vegetation type for the Three Gorges Reservoir Region
 - Co-authored the research article [\[DOI\]](#) and co-patented an innovative technique for constructing efficient vegetated buffer stripes in sloping areas [\[Link\]](#)
- **Analysis of Runoff and Sediment variations in the Three Gorges Reservoir Region**
 - Developed the research framework and methodology
 - Conducted statistical analysis of long-term (2002-2017) runoff and sediment load variations in the Three Gorges Reservoir Region using Mann-Kendall test, Double Cumulative Curve methods, Sen's slope, etc.
 - Quantified the impact of human activity and climate change on runoff and sediment
 - Drafted, edited and first-authored the research article [\[DOI\]](#)

TEACHING EXPERIENCE

Graduate Assistant/ Innovation and Entrepreneurship Training Program for College Student 06/2020 - 08/2021
Beijing Forestry University *Beijing and Chongqing, China*

- Supervised 6 undergraduate students on their research project. The study aims to develop an efficient software for filtering practical BMP to control non-point source pollution while calculating associated construction costs.
- Delivered presentations on the topics of remote sensing and hydrological & water quality modeling in watersheds
- Prepared and revised application materials for the program, and delivered the presentation for the final defense
- Developed, registered and licensed BMP database and BMP selection system software [\[Link\]](#)

LEADERSHIP EXPERIENCE

Team Leader / Innovation and Entrepreneurship Training Program for College Student 06/2017 - 10/2018
Beijing Forestry University *Beijing, China*

- Conceptualized the research and developed the theoretical framework
- Designed the research project. This study focuses on exploring the effectiveness of different vegetation patterns on reducing soil erosion in sloping areas
- Drafted and revised the application materials, delivered the presentation to raise funds (5,000 RMB) for the project
- Designed experiments, assembled experimental setups (cultivated grass patterns on soil-bed experimental flume), collected sediment samples and measured sediment loads
- Wrote the experimental reports, drafted a research manuscript, and made the final defense

PUBLICATION

Journal Articles

Wang S., Wang Y*, Wang Y., Wang Z., 2022. Comparison of multi-objective evolutionary algorithms applied to watershed management problem. *Journal of Environmental Management* 324, 116255 [\[DOI\]](#)

Wang S., Wang Y*, Wang Y., Wang Z., 2022. Assessment of influencing factors on non-point source pollution critical source areas in an agricultural watershed. *Ecological Indicators* 141, 109084 [\[DOI\]](#)

Wang S., Su B., Wang Y*, Wang Y., Zhu J., Fu J., 2021. Change analysis of runoff and sediment in the Three Gorges Reservoir Region in recent 16 years. *Science of Soil and Water Conservation* 19, 69-78 (in Chinese with English abstract) [\[DOI\]](#).

Wang Z., Wang Y*, Ding X., Wang Y., Yan Z., **Wang S.**, 2022. Evaluation of net anthropogenic nitrogen inputs in the Three Gorges Reservoir Area. *Ecological Indicators* 139, 108922 [\[DOI\]](#)

Fu J., Wang Y*, Wang Y., Wang C., **Wang S.**, Wang Z., 2020. Effect of herbal buffer on pollutant reduction under different inflow conditions. *Journal of Soil and Water Conservation* 34, 129-134 (in Chinese with English abstract) [\[DOI\]](#).

Patent and Software Copyright

Wang Y., Wang Z., **Wang S.**, Cui W., 2021. "Best Management Practices (BMPs) Selection System v1.0 For Non-point Source Pollution Control in the Three Gorges Reservoir Area." CN Software Copyright 2021SR215280 [\[Certification\]](#)

Fu J., Wang Y., Wang Z., **Wang S.**, 2020. "The Construction Method of Vegetated Buffer Stripes for Optimized Flow Routing." CN Patent 110731238 A [\[Link\]](#)

SKILLS

Languages and Tools

R, Python, \LaTeX , HTML

Data Visualization

ArcGIS, AutoCAD, Photoshop, Illustrator

Technical Models

SWAT, AnnAGNPS, RUSLE, WEPP, SPAW

Laboratory Skills

Experimental Design, Laboratory Techniques

Communication

English (Fluent), Mandarin (Native), Cantonese (Elementary)

Kelowna, Canada
+1 (236)-338-3034
shuhuiw@mail.ubc.ca
shuhuiwang1005@gmail.com

Shuhui Wang

The University of British Columbia (Okanagan)
3333 University Way, Kelowna, BC V1V 1V7

Academic Homepage
Google Scholar
ResearchGate
GitHub

AWARDS AND HONORS

International Four-Year Doctoral Partial Tuition Award, <i>The University of British Columbia</i>	2023
UBC Okanagan Graduate Research Scholarships, <i>The University of British Columbia</i>	2023
China Scholarship Council (CSC) Scholarship	2023
First Class Scholarships, <i>Beijing Forestry University</i>	2019 — 2022
Admission to the Graduate Program without Examination*, <i>Beijing Forestry University</i>	2018
Liang Xi Scholarships, <i>Beijing Forestry University</i>	2015 — 2018
Liang Xi Academic Class Student, <i>Beijing Forestry University</i>	2015

REFERENCES

Professor Xiaohua (Adam) Wei

Department of Earth, Environmental and Geographic Sciences
The University of British Columbia (Okanagan), Kelowna, Canada
+1 (250) 807-8750
adam.wei@ubc.ca

Professor Zhiqiang Zhang, Vice President

Beijing Forestry University, Beijing, China
+86 (010) 6233-8097
zhqzhang@bjfu.edu.cn

Professor Shouhong Zhang

School of Soil and Water Conservation
Beijing Forestry University, Beijing, China
zhangs@bjfu.edu.cn

Professor Yunqi Wang

School of Soil and Water Conservation
Beijing Forestry University, Beijing, China
+86 (010) 6233-6676
wangyunqi@bjfu.edu.cn

* Granted to students with exceptional academic performance