

Water-Environment Management Laboratory

Assistant Professor Hsiao-Wen Wang

1. Research interests

> Ecohydraulics

- Geomorphic responses to restoration application
- Field Investigations and Habitat Modeling
- Physical Modeling Experiment

> Applied Fluvial Geomorphology

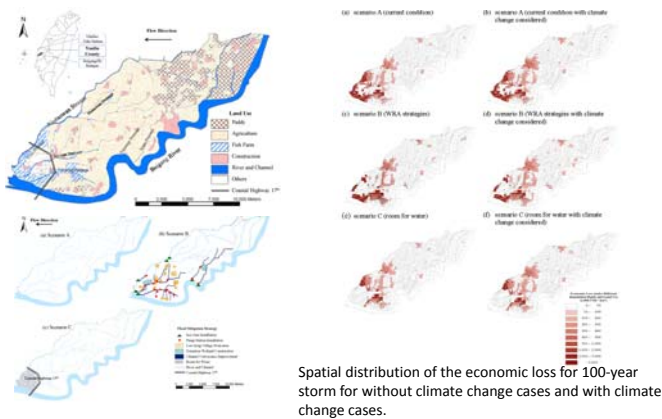
- Sediment Transport and Sediment Budget
- Assessment on Removal and Improvement of Dams and Diversions

> Watershed Management and Planning

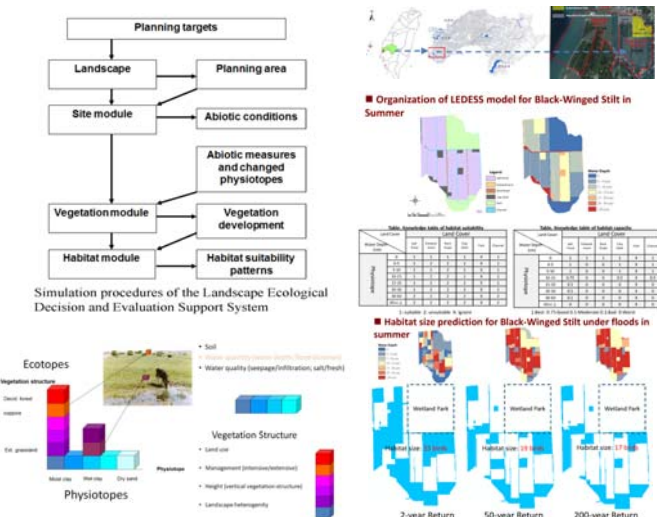
- Documenting and developing practices and strategies
- Evaluation of environmental indicators of river systems
- Decision and Evaluation Support System

2. Recent Research Results

(1) Lowland Management



(2) Evaluation and Decision Support System



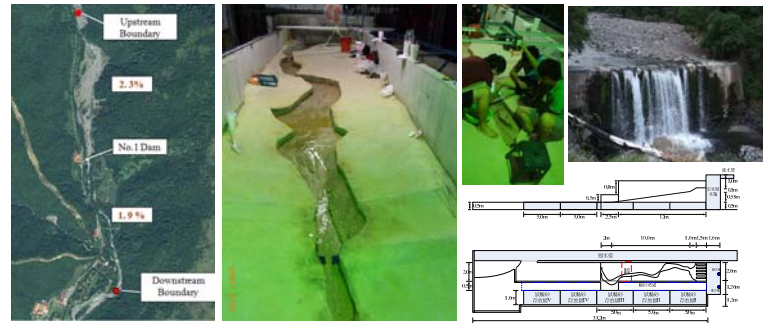
(3) River Restoration and Post-Projects Appraisals

Post-Project Appraisals (PPAs)

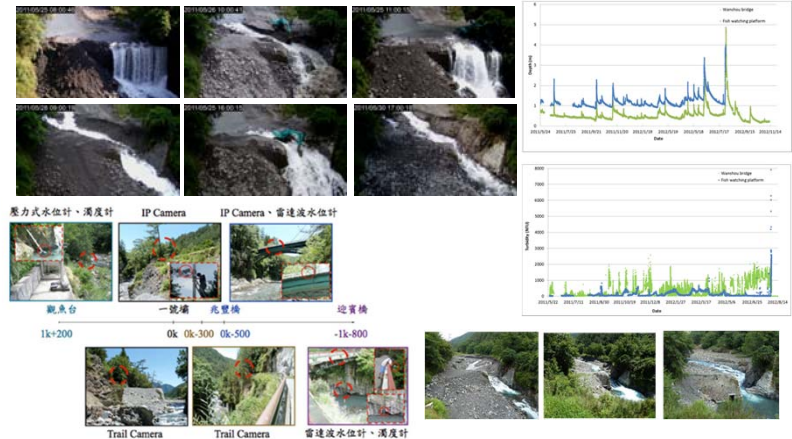
- > Success Criteria
- > Baseline Survey
- > Design Rationale
- > Design Drawings
- > As-built Surveys
- > Monitoring Program
- Secondary Analysis



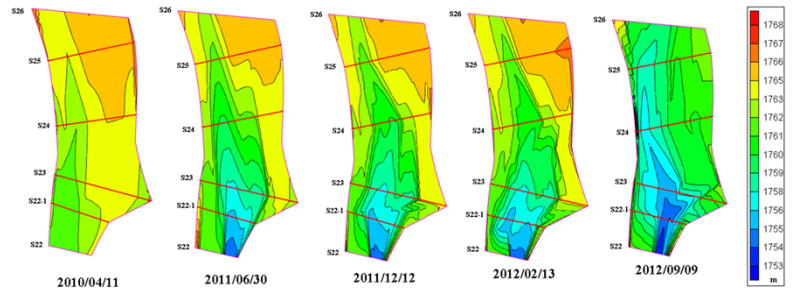
(4) Physical modeling and Experiments



(5) Monitoring of Chijiawan No.1 Dam Removal



(6) Channel Responses to Dam Removal



3. Funded Research Projects & Published Papers

- Environmental Improvement and Sustainable Development in Taiwan Yunlin Flood Tendency Area, Yunlin County Government, 2013 ~ 2014.
- Haomeiliao Wetland and Budai Salt Pond Wetland Restoration Project-Rehabilitating the Hydrologic and Ecological Environment, Construction and Planning Agency, Taiwan, 2011 ~ 2013.
- Wuling area long-term ecosystem monitoring and research, Shei-Pa National Park, 2011~2013.
- Numerical Simulations and Physical Modeling of Potential Sediment Impact Assessment and Dam Removal Strategies for the No.1 Check Dam on Chijiawan Creek, Shei-Pa National Park, 2010.
- Post-project Appraisals and Adaptive Management on River Restoration in Taiwan, National Science Council, 2009~2013.
- H. W. Wang, P. H. Kuo and J. T. Shiau, 2013, Assessment of climate change impacts on flooding vulnerability for lowland management in southwestern Taiwan, *Natural Hazards* (Published online).
- Tullos, D. H. W. Wang, 2013, Morphological Responses and Sediment Processes following a Typhoon-induced Dam failure, Dahan River, Taiwan. *Earth Surface Processes and Landforms* (Published online).
- C. Y. Yang, H. W. Wang and P. H. Kuo, 2011, Applications of Landscape Ecological Decision and Evaluation Support System on Flood Mitigation Strategies, *Irrigation and Drainage*, vol. 60 (suppl.1), pp.71-76.

4. Students' Involvement

- Lab meeting: twice a week
- Group discussion: every other week.