



Sustainable **UD** water

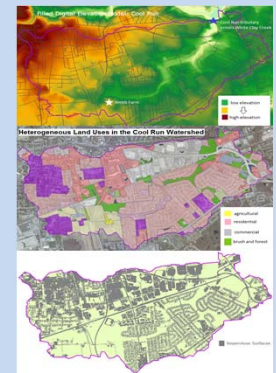
WATERSHED ACTION TEAM FOR ECOLOGICAL RESTORATION



UD WATER Intern Team (2010-2011)

Watershed Management Planning: Funding and Education
 Rina Binder-Macleod, Kim Teoli, and Dakota Laidman
 (Faculty Advisor: Jerry Kauffman, Water Resources Agency)

Hydrologic Forecast Modeling of Heterogeneous Land Uses in the Cool Run Watershed
 Melissa Luxemberg
 (Faculty Advisor: Dr. John Mackenzie, Food & Resource Economics)

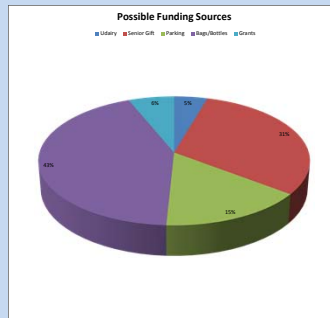


UD WATER - 2008 Project Goals and Findings

- 1) Identify major nonpoint sources of pollution in the Cool Run Sub-watershed of the White Clay Creek (a wild and scenic river with tributaries on the UD campus)
- 2) Estimate, using USEPA standard methods and average pollutant concentrations in runoff, the annual pollutant loads to the Cool Run tributary from different land uses
- 3) Make recommendations to improve stormwater management, reduce flooding and enhance water quality in the White Clay creek watershed

Findings and Recommendations

- 1) The estimated loads of sediment (TSS, TDS), nutrients (N, P), and metals (Cu, Zn) were determined by UD-WATER interns and are shown below the entire watershed. Primary sources of nonpoint pollution by stormwater runoff appear to be commercial lands, streets, and parking lots.
- 2) The 2008 UD-WATER team recommended wider use of the following "best management practices" to reduce stormwater runoff and pollution of the White Clay Creek:
 - ✓ Increase use of wetlands, bio-retention ponds and swales
 - ✓ Use more vegetated swales and filter strips along roads
 - ✓ Plant more winter cover crops on agricultural cropland



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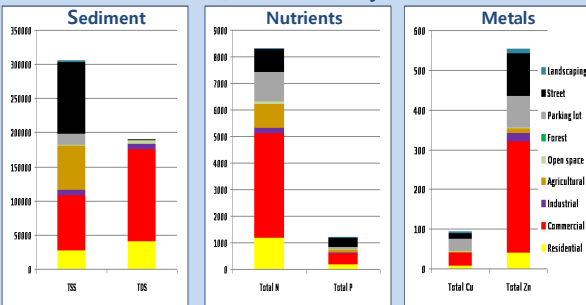
What is UD WATER?
 UD WATER is a university-wide project, conducted in collaboration with the City of Newark, which seeks to develop and implement management scenarios to mitigate the environmental problems facing UD and the City.

What you can do to help:
 -Don't pollute!
 Pollution often flows into storm drains -then it rains, which flows directly into the creek, harming wildlife and the environment.
 -Carwash Water
 The amount of water we have here in NJ is all we will ever get. It's important to save water by limiting washing your face, being leaky pipes, and turning off faucets when you're not using them.

Monitoring Aquatic Biodiversity in the Cool Run Tributary
 Melanie Allen
 (Faculty Advisor: Dr. Judith Hough-Goldstein, Entomology & Wildlife Ecology)



Watershed Totals for Estimated Annual Pollutant Loads (Lbs/watershed/yr)



What is "UD WATER"?

The UD WATER Project (Watershed Action Team for Ecological Restoration) formed in early 2008 as a UD-wide initiative with the long-term goal of minimizing the environmental impacts of storm water runoff from our campus. UD WATER brings together faculty, staff, and students from many departments and disciplines across campus to work on creative and innovative storm water management techniques that will reduce the quantity and increase the quality of storm runoff from the campus, thus protecting downstream waters, such as the White Clay Creek Wild and Scenic River. UD WATER team members include faculty and staff from the Delaware Water Resources Center, the UD Water Resources Agency, the Delaware Geological Survey, the Departments of Bioreources Engineering, Civil and Environmental Engineering, Entomology and Wildlife Ecology, Food and Resource Economics, and Plant & Soil Sciences and stormwater management experts from UD and the City of Newark. UD WATER has funded 11 undergraduate interns to work with UD faculty and staff to develop a watershed management plan for the UD campus. For more information, please visit our website: <http://www.udel.edu/water/>