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Nature of the Problem

Throughout my life, the importance of conserving, managing, and preserving natural resources, specifically water, has been ingrained in me. During my years in junior high and high school, I actively pursued gaining knowledge about environmental issues. My father, who is a manager of natural resources for a water district, primarily handles water resource issues and has influenced my educational path. As an undergraduate, after much indecision about what to major in, I discovered that I could major in Renewable Natural Resources. In December of 2002, I graduated with a B.S. in Renewable Natural Resources. Following graduation, I was accepted in the Masters of Urban Planning Program and have currently completed my first semester.

During this semester, my curriculum included a class on environmental planning in which I designed a watershed management plan for the Upper Colorado River in west Texas. I also researched the topic of restoration ecology (ecological restoration) and wrote a paper on the history of restoration ecology and the valuation of nature. During the composition of this paper, I found myself quite intrigued by the blooming field of restoration ecology. To receive my Master of Urban Planning, I have chosen the option of writing a professional paper focusing on restoration ecology.

Considered a relatively new field in the realm of science, restoration ecology holds the key to the future of sustaining our natural resources. The Society for Ecological Restoration describes restoration ecology as "the process of assisting the recovery and management of ecological integrity. Ecological integrity includes a critical range of variability in biodiversity, ecological processes and structures, regional and historical context and sustainable cultural practices" (Diggelen et al. 115).

Contemporary restoration projects are believed to be composed of 4 primary elements. First, an ecosystem must be judged to be in such a state that it will not be able to repair itself within a period of at least 50 years and therefore further degradation of the system may continue (Jackson et al. 71). The next element within restoration ecology involves the use of an ecological approach to restoring the system. This view includes humans as a part of nature and works to create sustainable relationships between nature and culture. Restoration ecology also requires that goals be set to accomplish restoration and evaluation be completed to determine the success of the project. The final element deals with the limitation of restoration ecology, which includes 4 interrelated social and biological conditions: "how nature is valued by society, the extent of social commitment to ecological restoration, the ecological circumstances under which restoration is attempted, and the quality of restorationists' judgments about how to accomplish restoration" (Jackson et al. 73).

Wetland restoration in particular has become extremely important to reestablishing the

ecological integrity of degraded aquatic ecosystems (US EPA 4). Over the past 200 years, at least 50% of wetlands in the conterminous U.S. have been destroyed and those still remaining exist in degraded states. Beginning in the 1970s wetlands were drained to support agricultural uses, filled in for urban development, diked to diminish flooding, and dredged for marinas and ports. These ecosystems are vital and provide a number of benefits:

- Healthy fisheries
- Support for wildlife
- High biological productivity
- Biodiversity protection
- Erosion control
- Reduction of flood damage
- Provide good water quality (capture sediments, filter pollutants)
- Aesthetics and recreation

Restoration ecology presents a way to reestablish these wetlands and all the benefits they offer.

Research Objectives

For my professional paper I intend to investigate the current role and future potential of restoration ecology within urban areas. Specific attention will be addressed toward restoration of wetlands in urban settings. Having been in graduate school for only one semester, this is simply my general topic that will become more precise as I conduct my research.

References

Diggelen, R. van, Crootjans, A.P., and Harris, J.A. (2001). "Ecological Restoration: State of the Art or State of the Science?" *Restoration Ecology*, 9(2): 115-118.

US EPA. (2000). Principles for the Ecological Restoration of Aquatic Resources. EPA841-F-00-003. Office of Water (4501F), Agency, Washington, D.C.: 4.

Jackson, L.L., Lopoukhine, N., and Hillyard, D. (1995). "Commentary Ecological Restoration: A Definition and Comments." *Restoration Ecology*, 3(2): 71-75.

Academic Qualifications

As a part of my undergraduate curriculum, I was required to complete a 3-credit hour internship. In the summer of 2002 I worked as a Water Quality Specialist Intern at the Colorado River Municipal Water District. The main focus of my job dealt with the administration of sampling, testing, and analysis of water on the Upper Colorado River as specified by the Texas Commission on Environmental Quality Clean Rivers Program. I gained technical knowledge and experience about watershed management and water

quality.

Intended Career Path Statement

In the Masters of Urban Planning (MUP) program I have selected the sustainable development option. Within this option I intend to focus primarily on environmental planning, including watershed/wetland restoration and management. After receiving my MUP, I plan to attend law school, specializing in either environmental or water law.