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3. Aquatic vegetation management and fisheries management are inseparable; however, conflicts are often perceived between the two. For many pond owners in Texas, aquatic vegetation communities become established and eventually reach problematic levels. Aquatic vegetation can increase water loss via plant transpiration, hinder navigation, increase siltation, and negatively impact recreational activities such as swimming and fishing. Impacts such as these prompt landowners to take action and reclaim their ponds. Vegetation not only affects the pond owner, but it also has impacts on the ecology of the impoundment. Excessive plant growth can lead to reduced prey capture, limited plankton growth, stunted fish growth, and poor condition in piscivorous fish.

There have been numerous studies testing the efficacy of a variety of chemicals and biological agents on various aquatic plants. Traditionally, aquatic vegetation management research has focused on how a certain chemical or biological agent impacts one or two plant species. However, there has been limited research concerning the ecological effects of aquatic vegetation management. To my knowledge, there have been no studies conducted and published in the peer-reviewed literature that compare the effects of different methods of aquatic vegetation management on pond ecology. The objective of my research is to determine and compare the effects of biological control, chemical control, and the absence of aquatic vegetation control on the ecology of private impoundments stocked with largemouth bass and bluegill sunfish.

Nine 1/4 acre ponds at the Texas A&M University Aquaculture Research and Teaching Facility are being used in this two-year study. Each pond received one of the three aquatic vegetation treatments and each treatment has been replicated three times. In the early fall of 2005 each pond was planted with bushy pondweed/southern naiad *(Najas guadalupensis}* at one ton per surface acre. Mature plants were transplanted to each pond.

In the spring of 2006, fathead minnows, largemouth bass and bluegill sunfish were stocked into each pond at recommended rates for unfertilized ponds. The treatments applied to the ponds included one of the following: no treatment (control), herbicide treatment using Reward (up to two treatments), or triploid grass carp treatment at 12 per surface acre. Treatments were applied at the end of May 2006. Subsequent treatments with Reward will be applied as needed.

Prior to treatment, sampling of each pond occurred for fish, plankton, invertebrates, and water quality. Similar post-treatment sampling will be done on the Reward treatment and the control at day 2, day 7, day 14, day 28, and monthly for 18 months. Post-treatment sampling on the triploid grass carp treatment will be done at day 14,

day 28, and monthly for 18 months. At the end of the experiment all ponds will be drained and all fish and plant biomass analyzed.

This research will provide insight into the affects of various vegetation management practices on the aquatic ecology of small impoundments. It will help landowners make the best decision regarding aquatic vegetation management within their ponds so that they may enjoy the resource while having minimal ecological effects. This will lead to improved management of water resources in Texas as well as other parts of the country.

4. The proposed use of funds from the Mills Scholarship would be used for research costs. In particular, the funds could be used to pay for lab testing fees for phytoplankton and zooplankton analysis of samples collected from the study sites. If we decide to do all of the analysis in house, then the scholarship funds could be used to pay for tuition and other education related expenses such as books. In either case, the funding would be put to good use and would be most appreciated.

5. After graduate school, I plan to become a fisheries biologist for the state or federal government. My preference is to work in freshwater systems with gamefish or aquatic vegetation management. I have always had a keen interest in freshwater fisheries issues and hope to become part of the solution to the problems this discipline is facing. As an undergraduate, I participated in the Delaware Water Resources internship program. As part of my internship, I assessed the feasibility of using fish assemblages as indicators of water quality in Delaware streams. The internship was funded through the Delaware Water Resource Center. I enjoyed working with that research program and hope to continue my involvement in water resource related research now and into the future as I follow my goal to become a fisheries biologist.