

Directed Research Program Objectives 1 and 2:**The Economics of Wildlife-based Alternative Enterprises: Consumer Demand and Costs of Production**

Investigators: Ian Munn, Steve Grado, Forestry

Objectives:

1. Evaluate the marketability of the various types of wildlife and fisheries based enterprises.
2. Assess the economic potential for an industry comprised of private owners managing wildlife and/or fisheries enterprises for commercial purposes.

Research Activities:

A graduate student gathered basic data on hunting packages offered in the Delta areas of Mississippi, Louisiana, and Arkansas. These data have been used to analyze marginal impacts of hunting amenities on the value of hunting packages. A second graduate student completed work relating to the use of existing conservation programs such as the Wetlands Reserve Program (WRP) to meet both environmental goals and maximize producer income from hunting enterprises. A hedonic model of hunting leases on 16th section lands has been estimated for Mississippi. A Masters thesis reporting the study results has been completed. Two draft manuscripts have been prepared and, pending final revisions, will be submitted to refereed journals in 2008.

Summary of Major Findings to Date:

- Key factors affecting hunting lease values are species, length

- of hunting package in days, provision of lodging, and access to additional activities (e.g., birdwatching, fishing).
- Hunting activities have a significant impact on county sales tax revenues, and out-of-state hunters contribute more to tax revenues, on average, than in-state hunters.
- Existing conservation programs are not effective in maximizing producer income through hunting lease development unless the needs for environmental remediation (e.g., nitrate removal) are substantial.
- The average annual lease price for 16th section land was \$2,959.73 or \$8.73 per acre; the average lease size was 348.73 acres.
- A 1% increase in the percent share of land in pines and regenerated areas with a corresponding decrease in the share in hardwoods caused lease prices to decrease by 0.10% and 0.04%, respectively on 16th section lands.
- Hunting leases on 16th section land in the northwestern and southwestern region generated approximately 17.24% and 5.72% higher revenue per acre than hunting leases in the eastern portion of the state.
- A 1% increase in the projected average Boone and Crocket score increased the average lease price by 0.36% on 16th section land.
- A 1% increase in distance to urban areas caused the lease



price to increase by 0.03% on 16th section lands.

- Per acre bid prices for hunting leases on Mississippi 16th section lands sold by sealed-bid auction were positively related to the amount of desirable habitat, (e.g., bottomland hardwoods), total acreage, and game quality (e.g., average Boone and Crockett score). Location also impacts bid prices.

Project Success Relative to Original Objectives:

While significant progress has been made in identifying key supply and demand factors affecting lease values, much work remains. Hurricane Katrina and the departure of one of the lead principal investigators significantly impacted the study. The timing was disrupted for effective survey work in affected areas and progress was slowed when working with state agencies to secure the necessary data to complete modeling on watershed management for provision of fee-access activities. As a result,

several key procedures had to be abandoned.

List post-docs and graduate students with title of thesis or dissertation, if completed, and estimated graduation date:

Buller, V. 2006. The impacts of alternative institutions on distributional and environmental efficiency in environmental programs. Thesis, Mississippi State University.

Rhyne, J. 2007. Factors affecting hunting lease prices on Mississippi Sixteenth Section Lands. Thesis, Department of Forestry, Mississippi State University.

Whittington, A. 2006. Wetland restoration: The tradeoffs between landowner and regulator. Thesis, Department of Forestry, Mississippi State University.