INTRODUCTION

In recent years, fishermen and hunters have spent increasing amounts of money in pursuit of fish and game. The agencies responsible for the management of the fish and game resources are concerned with the increased levels of fishing and hunting demand. Their revenues come largely from fishing and hunting license sales augmented by some research funding from federal trust funds. Because the revenues are not directly proportional to the volume of fishing and hunting, the agencies may well be squeezed in attempting to meet the demand pressures out of their limited resources. Thus, they must use care in allocating their limited funds if they are to meet as much of the recreational demand of sportsmen as they possibly can.

Not only should fish and game management agencies strive for economic efficiency with regard to meeting sportsmen demand, but they should also be aware of the economic importance of these sports at the state and local level. Information on the amount of sportsmen expenditures is useful in showing the relative importance of fish and game among the various resources of the state. In addition, sportsmen expenditure information can also point out which types of sportsmen are economically more important to the state and/or local community. This information shows only the primary economic effect of these sports, however.

Primary expenditures generate additional secondary economic effects which considerably increase the economic impact of sportsmen expenditures. Any changes in their amount will be of concern to businessmen due to the effect on their livelihood.

1This study was funded by Federal Aid Project FW-9-R, Colorado Game, Fish and Parks Division. This paper is published with the approval of the Director of the Colorado State University Experiment Station as Scientific Series Paper No. 1611. The authors appreciate the review of this paper by L. S. Fan, K. C. Nobe, S. L. Gray, and J. R. Grieb, but remain solely responsible for its contents.

2Assistant Professor (Affiliate), School of Forestry, University of Montana, Missoula, Montana.

3Professor, Department of Economics, Colorado State University, Fort Collins, Colorado.

A number of factors may affect the demand for fishing and hunting and, consequently, the amount of sportsmen expenditures. These factors include income levels, probability of satisfaction while fishing or hunting, cost of participation, and particularly fish and game management policy. All but the first of these factors may be directly affected by the decision-making body of a fish and game management agency. Because of the extent to which this body can affect sportsmen demand and expenditures, their policy decisions should not be made without regard for the economic consequences. A decision by this body could unintentionally cause considerable economic effect on a local economy that is relatively dependent on sportsmen expenditures for their economic activity.

Knowledge of the economic importance of fishing and hunting activities may also enhance the public's opinion of fish and game management policy, especially at the local level, if the economic impact on a small geographic area can be presented. All too often, management objectives of the policy are thwarted when local opinion is against a change in present management practice. If the local economic impact of the proposed change can be shown to the area residents, their opinion may be altered in favor of the project if it will benefit them, especially if their economic dependence on the pursuit of these sports is very great.

EMPIRICAL ANALYSIS AND RESULTS

Grand County, Colorado, is a rural mountain county located about ninety miles northwest of Denver. Its population is 3600 and the primary economic activities are recreation services and agriculture, mostly cattle raising. Most recreational activity occurs in the eastern half of the county while agriculture is dominant in the western half.

In order to determine the economic impact of fishing and hunting on this county, a three phase research methodology was used. These were (a) construction of an interindustry model of Grand County for 1968, (b) estimation of sportsmen expenditures made in connection with the pursuit of their sport(s), and (c) combination of the economic model with the primary expenditures from (b) to estimate the total economic impact.

The ten sector interindustry model was constructed from primary data obtained from a sample of firms in the county. Table 1 shows the estimated economic transactions that occurred during 1968. The information in Table 1 was obtained using a modified rows only format, and each row shows the amount of sales by the selling sector to the respective purchasing sectors.

The row entitled Depreciation minus Capital Investment is the arithmetic

5Considerable detail regarding the methodology used in this study and expansion of many of the ideas contained herein may be found in "The Economic Impact of Fishing and Hunting on a Local Colorado Economy" by R. E. Lovegrove, Unpublished Ph.D. Dissertation, Department of Economics, Colorado State University, Fort Collins, Colorado, September, 1971.