

ABSTRACT

Marine recreational fishing is a popular outdoor leisure activity nationwide when measured by number of participants. The National Marine Fisheries Service estimates that 24.7 million saltwater anglers fished 127.2 million days in the coastal states of the U.S. in 2006. In this report, we quantify the level of fishing expenditures for these anglers within each coastal state and the U.S. as a whole. At the U.S. level, we estimate that saltwater anglers spent an estimated \$5.8 billion on trip-based expenditures (e.g., ice, bait, and fuel) and another \$25.6 billion on fishing equipment and durable goods (e.g., fishing rods, fishing tackle, and boats) in 2006. In the second exercise carried out for this study we conduct a regional input-output assessment to examine how those expenditures circulated through each state's economy as well as the economy of the entire U.S. We show that as angler expenditures filtered through the U.S. economy, they contributed an estimated \$82.3 billion in total sales, \$39.1 billion in value-added (i.e., contribution to gross domestic product), \$24.0 billion in income, and supported nearly 534 thousand jobs in the U.S.

INTRODUCTION

The National Marine Fisheries Service (NMFS) has been collecting marine recreational catch, effort, and participation data since 1979 in an effort to assess the influence of recreational fishing on fish stocks. With the passing of the Magnuson-Stevenson Fishery Conservation and Management Act (MSFCMA) in 1996, Congress additionally mandated the analysis of the economic impacts on fishing participants and coastal communities of management policies. In response, NMFS began to conduct a series of marine angler expenditure surveys in the coastal regions of the U.S. in 1998. The first surveys were administered in the Northeast Region in 1998, in the Southeast Region in 1999, and in the Pacific Region in 2000. The purpose of the survey efforts was to provide data to quantify recreational fishing expenditures and the economic impacts (i.e., effects) of the expenditures in each region and the U.S. as a whole. A separate publication for each region (Steinback and Gentner, 2001; Gentner, Price, and Steinback, 2001a; Gentner, Price, and Steinback, 2001b) summarized the survey results and provided state-level estimates of expenditures by marine recreational fishermen. In a fourth publication (Steinback, Gentner, and Castle, 2004), the data from the first three reports were used to assess the total economic impacts of anglers' saltwater expenditures within each of the regions and the U.S. overall.

The angler expenditure and impact estimates shown in those four reports provides policy analysts with information to assess the economic effects of recreational fishing activities to communities and fishery dependent and independent businesses. Angler expenditures and the economic impacts generated from the expenditures changes over time, however. As recreational fishing becomes increasingly regulated in the U.S. it essential that state and federal regulators have access to the most recent expenditure data available. In this report we show the results of the second endeavor by NMFS to collect and quantify marine recreational fishing expenditures and the economic impacts generated from angler expenditures. For this second round of marine angler expenditure surveys, data were collected from anglers fishing in all of the coastal states in the Nation in 2006. The results shown here provide updated estimates of angler expenditures and economic impacts for every coastal state in the Nation and the U.S. overall. At the U.S. level, we

estimate that saltwater anglers spent an estimated \$5.8 billion on trip-based expenditures (e.g., ice, bait, and fuel) and another \$25.6 billion on fishing equipment and durable goods (e.g., fishing rods, fishing tackle, and boats) in 2006. We also show that as these angler expenditures filtered through the U.S. economy, they generated an estimated \$82.3 billion in total sales, \$39.1 billion in value-added (i.e., contribution to gross domestic product), \$24.0 billion in income, and supported nearly 534 thousand jobs.

The report begins with a description of the survey sampling design and the completion statistics. The methods used to estimate mean angler expenditures, total angler expenditures, and economic impacts are shown next and then the expenditure and impact results are presented in four separate regional sections: the Northeast, Southeast, Pacific Coast, and Hawaii. Results for the entire U.S. are shown in a separate section. A number of statistical tests were conducted to examine the potential effects of non-response bias and survey mode differences and these findings are also discussed. The last section places the study results in context relative to the expenditure and impact estimates previously collected by NMFS and to angler expenditure estimates produced by the U.S. Fish and Wildlife Service (USFWS) in 2006. The last section also provides some concluding remarks regarding model assumptions and limitations.

DATA COLLECTION INSTRUMENTS

Across the U.S. there currently is no complete and consistent frame of saltwater anglers as some coastal states do not require a saltwater license. Therefore, this survey effort utilized a number of sampling frames. The Marine Recreational Information Program (MRIP) conducts an intercept creel survey in the state of Hawaii and in all of the states on the East and Gulf Coasts, excluding Texas. The MRIP survey platform represents the best, most consistent sample frame for saltwater anglers in states covered by the MRIP. Within the MRIP coverage area, an add-on to the intercept survey was used to collect expenditures resulting from the intercepted trip and to gather a frame for mailing a follow-up survey regarding annual durable expenditures. However, there are coverage gaps in the MRIP for collecting national level data as the entire West Coast, Texas, and Alaska are not covered. In those states, license frames were utilized to contact anglers via a mail survey regarding both trip and durable good purchases.

The MRIP

The MRIP consists of two independent and complementary surveys. These two surveys are stratified to provide independent estimates of catch, effort, and participation across states, fishing modes, and two month waves through each year. The fishing modes used for this stratification are: shore mode, private or rental boat mode, and party or charter boat mode. This method of stratification has proven useful for developing estimates annually or seasonally and it allows individual regions to easily add sample within strata to increase the precision of the estimates.

The first survey is an intercept survey of marine anglers at fishing access sites. This survey attempts to obtain a random sample of all marine recreational fishing trips. The MRIP maintains a list of over 6,000 sites in a master site list, which is continuously updated. Each of these sites is