

Marine recreational activities generated \$47 billion in 2003.



SEPTEMBER 2010

## Global Benefits and Impacts of Marine Recreational Activities

### A Summary of a New Scientific Analysis

Cisneros-Montemayor, A.M. and U.R. Sumaila. 2010. A global estimate of benefits from ecosystem-based marine recreation: Potential impacts and implications for management. *Journal of Bioeconomics*. DOI: 10.1007/s10818-010-9092-7

Marine recreational activities (MRAs), such as recreational fishing and whale watching, are being enjoyed by more people than ever and can have significant economic benefits. However, they have historically been overlooked in ocean resource management efforts even though these activities depend upon healthy marine ecosystems. To incorporate MRAs effectively into marine resource management plans, managers need to be able to quantify a full range of the benefits and impacts of MRAs.

Andrés Cisneros-Montemayor and his co-author, Rashid Sumaila from the University of British Columbia, examined three MRAs: recreational fishing, diving and whale watching. They estimated the level of participation in these activities worldwide,

how much people spent to participate and how many jobs were supported. This is the first study to assess the socioeconomic value of MRAs on a global scale. The authors found that MRAs were enjoyed by roughly 121 million people worldwide, generated \$47 billion\* in expenditures annually and supported more than 1 million jobs. They also pointed out that the growth of these activities could exacerbate their potential ecological impacts, such as whale watching that disturbs breeding or feeding animals. Therefore, the effect of MRAs should be considered like any other activity with ecosystem impacts, such as commercial fishing, and included in a comprehensive resource management plan. This *Pew Ocean Science Series* report is a summary of the scientists' findings.

\*Amounts throughout are in U.S. dollars.



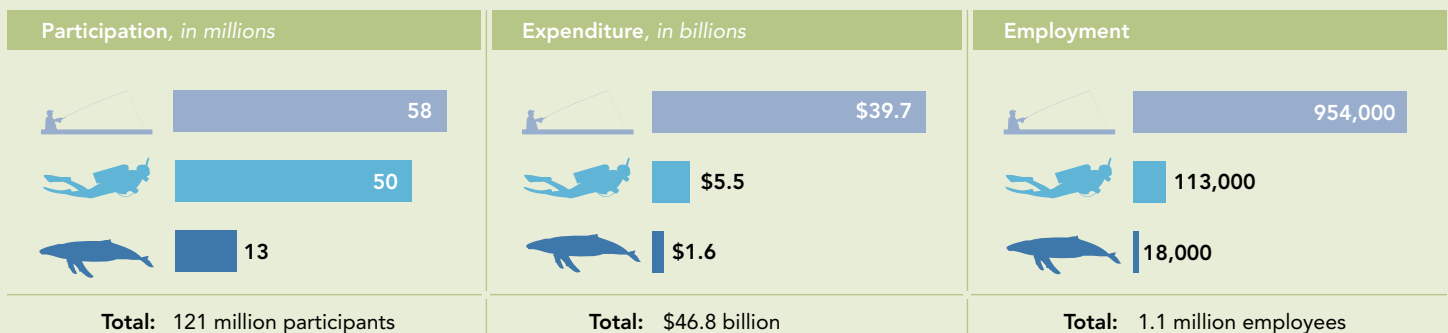
## Study Methods

The authors collected 2003 MRA participation, expenditure and employment data from 144 maritime countries. These data were used to measure the socioeconomic benefits of recreational fishing, whale watching and diving. Recreational fishing was defined as fishing where the main motivation is recreation and not to sell the catch or consume it for subsistence. Whale watching also included watching other animals such as sea lions and dolphins from above the water. Diving included both snorkeling and scuba. Expenditures were costs associated with participating in one of these activities, including equipment, accommodations, tickets or licenses, and other travel expenses specifically related to each MRA.

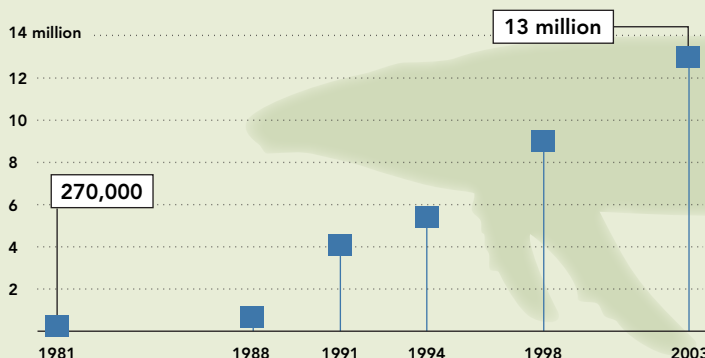
**FIGURE 1: GLOBAL PARTICIPATION, EXPENDITURE AND JOBS for recreational fishing, diving and whale watching**

Marine recreational activities such as fishing, diving and whale watching are economically vital to many countries, generating nearly \$47 billion a year in expenditures. Recreational fishing is the most popular of these growing activities, but the whale-watching industry, in particular, has surged significantly in the last three decades.

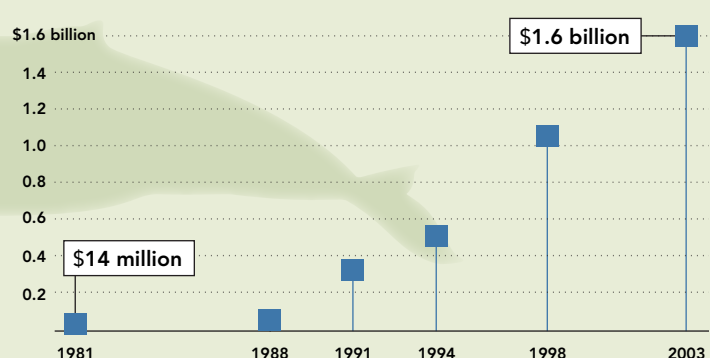
### BREAKDOWN OF GLOBAL MARINE RECREATION 2003 estimates for fishing, diving and whale watching\*



### WHALE-WATCHING POPULARITY By number of participants



### WHALE-WATCHING EXPENDITURES In US\$



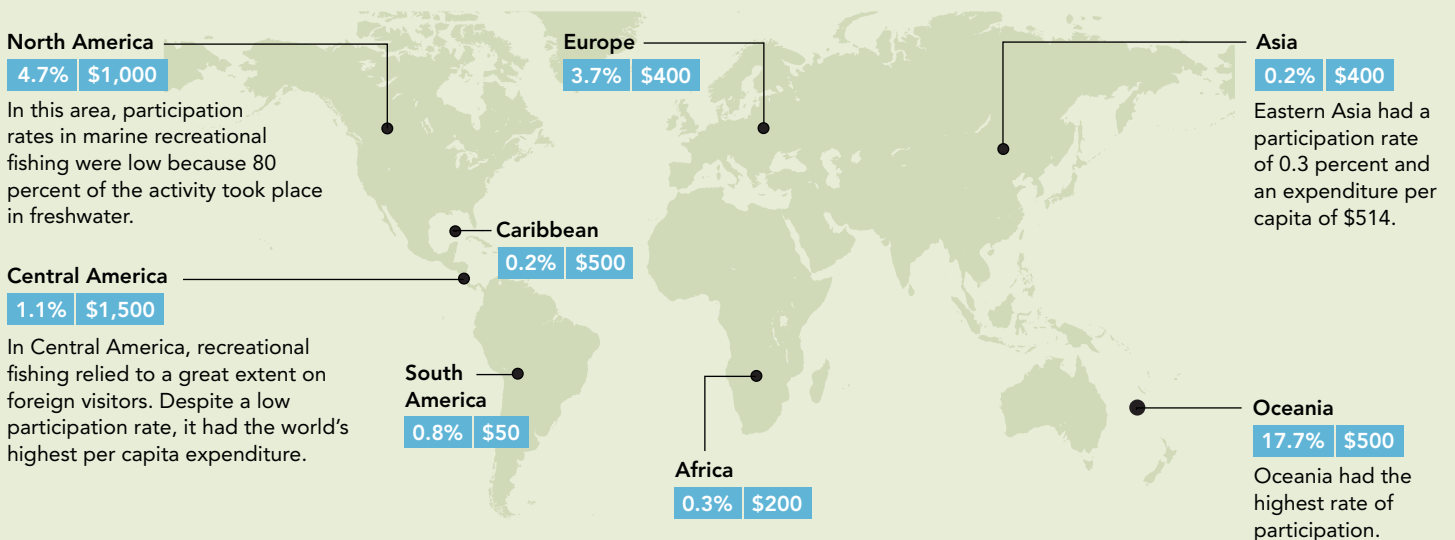
\* Silhouette is of a humpback whale. Other popular whales for watching are grays, blues, orcas and pilots.

FIGURE 2. PARTICIPATION RATE, EXPENDITURE AND JOBS by region for recreational fishing

## RECREATIONAL FISHING, AT A GLANCE

Participation rate | Expenditure per capita

The authors studied data for 38 of 118 maritime countries where recreational fishing occurs. In 2003, an estimated 58 million recreational anglers around the world generated \$40 billion. Percentages refer to the proportion of the population that participated in recreational fishing.



## Findings

The authors found varying levels of participation in the three MRAs, with the greatest number of people involved in recreational fishing (58 million), followed by diving and snorkeling (50 million, combined) and whale watching (13 million) (Figure 1). Recreational fishing generated more than five times as much money (\$40 billion) as the other two MRAs combined. Similarly, the vast majority of the MRA-related jobs were in the recreational fishing sector.

## Recreational Fishing

- Of the 58 million recreational anglers worldwide, Oceania had the highest participation rate (17.7 percent), followed by North America (4.7 percent) and Europe (3.7 percent) (Figure 2).
- Of the nearly \$40 billion spent on recreational fishing globally, the highest per capita expenditures were in Central America (\$1,500) and North America (\$1,000).
- Worldwide, 954,000 jobs were supported by recreational fishing.
- Asia and Africa had the lowest participation, expenditures and jobs related to marine recreational fishing.

Overall, subregions where income and well-being indicators, such as health or educational level, were higher also tended to have more participants who spent money on recreational fishing.

## Whale Watching and Diving

- More than 13 million people participated in whale watching worldwide in 2003, spending more than \$16 billion.
- Ten million recreational divers and 40 million snorkelers generated more than \$5.5 billion in expenditures globally.
- Whale watching supported approximately 18,000 jobs annually, while diving supported 113,000 jobs.

The authors noted that whale watching and diving could have minimal impacts on marine ecosystems if well-managed. They could even result in financing for education or marine parks and protected areas to increase tourism associated with MRAs. Often, however, an “ecotourism” label is used simply to draw more tourists without conducting the activities under guidelines to protect vulnerable marine ecosystems.





## Implications

Despite the large economic benefits of MRAs, the authors pointed out such activities can also impact ecosystems in a variety of ways, such as habitat destruction, when large numbers of divers crowd reefs, overfishing from recreational fishing or shifts in marine mammal behavior to avoid boats or divers. Yet, MRAs clearly rely on healthy marine ecosystems. Assessing their magnitude, economic value and ecological impacts should help marine resource managers recognize the importance of MRAs and find ways to integrate them effectively into comprehensive management plans.

## About the Authors

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