Preface

Professionals who are responsible for coastal environmental and natural resource planning and management have a need to become conversant with new concepts designed to provide quantitative measures of the environmental benefits of natural resources. These amenities range from beaches to wetlands to clean water and other assets that normally are not bought and sold in everyday markets.

At all levels of government — from federal agencies to townships and counties — decision-makers are being asked to account for the costs and benefits of proposed actions. To non-specialists, the tools of professional economists are often poorly understood and sometimes inappropriate for the problem at hand. This handbook is intended to bridge this gap.

The most widely used organizing tool for dealing with natural and environmental resource choices is benefit-cost analysis — it offers a convenient way to carefully identify and array, quantitatively if possible, the major costs, benefits, and consequences of a proposed policy or regulation. The major strength of benefit-cost analysis is not necessarily the predicted outcome, which depends upon assumptions and techniques, but the process itself, which forces an approach to decision-making that is based largely on rigorous and quantitative reasoning.

However, a major shortfall of benefit-cost analysis has been the difficulty of quantifying both benefits and costs of actions that impact environmental assets not normally, nor even regularly, bought and sold in markets. Failure to account for these assets, to omit them from the benefit-cost equation, could seriously bias decisionmaking, often to the detriment of the environment. Economists and other social scientists have put a great deal of effort into addressing this shortcoming by developing techniques to quantify these non-market benefits.

The major focus of this handbook is on introducing and illustrating concepts of environmental valuation, among them Travel Cost models and Contingent Valuation. These concepts, combined with advances in natural sciences that allow us to better understand how changes in the natural environment influence human behavior, aim to address some of the more serious shortcomings in the application of economic analysis to natural resource and environmental management and policy analysis.

Because the handbook is intended for non-economists, it addresses basic concepts of economic value such as willingness-to-pay and other tools often used in decision making such as cost-effectiveness analysis, economic impact analysis, and sustainable development. A number of regionally oriented case studies are included to illustrate the practical application of these concepts and techniques.

The National Oceanographic and Atmospheric Administration's Coastal Ocean Program and its Economics Group participated in the development of this handbook and a series of regional workshops for state and local coastal planners and managers in an effort to apply advances in physical sciences to modern environmental economic, management, and policy problems.