## PREFACE

In 2001, a network of five national park units in Southwest Alaska began the process of planning a long-term natural resources monitoring program. This report summarizes three years of progress in designing that program. Completion of a final monitoring plan for the network is anticipated to take five years and involve three-phases. Phase's I and II, described in chapters 1-3 of this report, involved defining goals and preliminary objectives; evaluating and synthesizing existing data; developing conceptual ecosystem models; identifying and ranking a draft list of vital signs. Phase III will address the final chapters and involve sampling design, protocols, and data management. Subsequent revisions to this monitoring plan will incorporate new information under chapter headings on pages ii-iii. Some of the material presented is preliminary and may be revised as additional background information is compiled or new concepts emerge.

In chapter 1 we define the purpose and scope of the monitoring program and use examples to describe how managers can use information gained from long-term monitoring to protect park resources. Next, we highlight natural resources and ecosystems of network parks that are of national and global significance and describe the process that the network followed to compile and summarize existing data and understanding of these resources. We define network objectives and questions for monitoring marine, freshwater, and terrestrial ecosystems and describe how they are nested within the national goals for Vital Signs Monitoring. Finally, we review some general principles of landscape ecology, such as space, time and scale concepts, and explain why they are the foundation of a holistic approach to long-term monitoring in large national parks.

In chapter 2 we use conceptual models to explain our understanding of how drivers of change and ecological interactions affect landscape patterns, ecological processes, and selected natural resource components of network parks. Our objectives in presenting the models are to: a) provide a conceptual characterization of geophysical setting; b) explain and illustrate how climate/landform, landscape-scale disturbance, biotic interactions, and human activities interactively affect the network landscape; and c) depict key linkages and functional relationships among marine, aquatic, and terrestrial ecosystems.

In chapter 3 we present the networks draft vital signs and describe the process by which they were selected and prioritized. We also describe how they relate to the conceptual ecosystem models and the networks goals and objectives for monitoring. The overall process that this network has followed in planning, designing, and implementing its vital signs monitoring program is described in more detail at the NPS Inventory and Monitoring website. We encourage readers of this plan to visit that site to obtain additional background information on the history and evolving stages of the National Park Service's Inventory and Monitoring Program (I&M). This report, along with all appendixes and other information is available on the Southwest Alaska Network website.