

Implications of climate change for coastal and marine resources

One product of the National Assessment of Potential Consequences of Climate Variability and Change, which was used in preparing the Overview of the Assessment, focused solely on the implications of climate change on U.S.

coastal and marine resources (Boesch, D. F., J. C. Field, and D. Scavia, editors. 2000. *The Potential Consequences of Climate Variability and Change on Coastal Areas and Marine Resources:*



Report of the Coastal and Marine Resources Sector Team, U.S. National Assessment of the Potential Consequences of Climate Variability and Change, U.S. Global Change Research Program. NOAA Coastal Ocean Program Decision Analysis Series No.21. Silver Spring, MD. 163 pages). Prepared by a team of scientists, and subjected to peer review and public comment, this report compiles scientific studies by the government, private sector, and academia. The report examines changes in climate forces, including ocean temperatures, currents, hurricanes and storms, precipitation and freshwater runoff, and sea levels. Potential impacts of current climate variability and future climate change on shorelines and coastal developed areas, wetlands, estuaries, coral reefs, and ocean fisheries and other marine species are identified. Case studies are provided on several topics, including impacts on the South Florida regional ecosystems and mid-Atlantic estuaries. The report also outlines strategies for adapting to and coping with the consequences of climate change, and identifies areas of needed research.

This report has many implications for coastal parks. Among its findings:

- The rise of sea level is projected to accelerate during the 21st century, with dramatic consequences in low-lying regions. Coastal erosion, already a widespread problem, will be exacerbated by the sea-level rise. The Atlantic and Gulf coastlines are especially vulnerable to a rise in sea level, as well as an increase in the frequency of storm surges or hurricanes.
- As a result of changes in ocean conditions, the distribution and abundance of major fish stocks will probably change substantially.
- Unprecedented declines have occurred in the condition of coral reefs. Increasing atmospheric carbon dioxide is likely to further threaten coral, resulting in weaker skeletons, reduced growth rates, and increased vulnerability to erosion.

The report is available on the Web in PDF format at <http://www.cop.noaa.gov/pubs/das/das21.html>.