

Annotated Agenda
MAFAC, Key West, Florida
May 24-26, 2011

1. Title of Discussion: **Climate Change, State of the Science, Implications for Marine Ecosystems, and Opportunities for Input**

2. Discussion Leader/Presenter: **Eileen Shea**, Chief, Climate Services & Monitoring Division
National Climate Data Center (NCDC)
NOAA National Environmental Satellite, Data, and Information Service (NESDIS)

3. Objective/Purpose: One of the nine National Ocean Policy priority objectives is a special emphasis on “Resiliency & Adaptation to Climate Change & Ocean Acidification.” MAFAC has previously been briefed and discussed ocean acidification. The primary purpose is to present MAFAC an overview of the state of knowledge about how and why the planet’s climate is changing including information about global temperature records, sea levels, climate variability and levels of atmospheric carbon dioxide and other greenhouse gases. The presentation will also provide brief overview on observed and projected impacts of climate change on coastal and marine ecosystems, and identify opportunities for input on safeguarding marine ecosystems and the communities that depend on them in a changing climate.

4. Background/Synopsis: The presentation will summarize what we know about how and why our climate is changing, and the observed and possible future impacts of climate change on the United States. Dr. Shea will present information from the latest assessment report from the U.S. Global Change Research Program (USGCRP) entitled¹, *Global Climate Change Impacts in the United States* as well as other sources. The report is an authoritative scientific report written in plain language to help inform public and private decision makers at all levels. The report identifies ten key findings including (1) global warming is unequivocal and primarily human-induced, (2) climate changes are underway in the United States and are projected to grow (3) and widespread climate-related impacts are occurring now and are expected to increase.

In addition to discussing the impacts of climate change in the U.S., *Global Climate Change Impacts in the United States* also highlights some of the issues and choices to be considered in a changing climate. For example, the report states that changing climate conditions are already having impacts in the United States and that these impacts are projected to increase in the future, particularly if the concentration of heat-trapping greenhouse gases in the atmosphere continues to rise with increasing human emissions of greenhouse gases. So the choices made by the U.S. and other nations about managing human greenhouse gas emissions will have far-reaching consequences for the pace and magnitude of climate change and its impacts on ecosystems and people. Similarly, there are choices to be made about adaptation strategies that can help to reduce or avoid some of the undesirable impacts of climate change. The report summarizes many of the scientific underpinnings for effective decision-making in a changing climate at national to regional levels.

The presentation will include a discussion of the importance of understanding large scale patterns of climate variability and their significant impacts in marine ecosystems (e.g. El Niño –Southern Oscillation, Pacific Decadal Oscillation, North Atlantic Oscillation), and discuss the types of assessments and models used, the skill and confidence of the models, and the ability to run models both with and without human-induced impacts to understand the impacts of human greenhouse gas emissions on climate parameters.

¹ The report draws from a large body of peer-reviewed scientific information, was extensively reviewed and revised based on comments from experts and the public, and meets all Federal requirements associated with the Information Quality Act, including those pertaining to public comment and transparency.

The presentation will also highlight some of the key efforts underway to better understand, prepare for and respond to impacts of climate change on U.S. marine ecosystems, and some key opportunities for MAFAC to engage in and contribute to these important discussions.

Resources:

Global Climate Change Impacts in the United States; document home page on the United States Global Change Research Program website.

Ten Key Findings of Global Climate Change Impacts in the United States.

National Fish Wildlife and Plant Climate Adaptation Strategy: The first National Fish Wildlife and Plant Climate Adaptation Strategy is being developed by an intergovernmental Steering Committee (Federal, State, Tribal governments) to provide a blueprint for coordinated government and nongovernmental efforts to safeguard the nation's valuable natural resources and the communities that depend on them in a changing climate. A fact sheet is attached.

NOAA Climate Portal provides access to data, information, products and services related to climate change and its impacts.

The **U.S. Global Change Research Program (USGCRP)** coordinates and integrates federal research on changes in the global environment and their implications for society. The USGCRP began as a presidential initiative in 1989 and was mandated by Congress in the **Global Change Research Act of 1990** (P.L. 101-606), which called for "*a comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change.*"

The **National Climate Assessment (NCA)** is being conducted under the auspices of the Global Change Research Act of 1990, which requires a report to the President and the Congress that evaluates, integrates and interprets the findings of the \$2.6 billion federal research program on global change (USGCRP) every four years.

5. Options listed from 1 to n:

1. Consider if and how to provide input into existing opportunities such as development of the National Fish Wildlife and Plant Climate Adaptation Strategy.
2. Consider what additional information would be most useful; identify opportunities to assist NMFS, NOAA and DOC in approaching climate change issues in its mission areas, including a means for MAFAC to continue engagement.

6. Preferred Recommendation: N/A

Record of Decision:

Decision, Next Step(s) and/or Action:

Assigned to:

Due Date: