

Department of the Interior Departmental Manual

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Chapter 1: Assessing Climate Impacts

Originating Office: Water and Science

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- 1.1 **Purpose.** This chapter establishes Departmental policy and provides guidance to bureaus and offices for assessing climate impacts.
- 1.2 **Scope.** This chapter applies to all bureaus and offices that conduct assessments of climate impacts.
- 1.3 **Authorities.** This Chapter is issued under the authority of Section 2 of Reorganization Plan No. 3 of 1950 (64 Stat 1262); OMB (Office of Management and Budget) (2002) Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, 67 FR 8451; OMB (2013) Memorandum for the Heads of Executive Departments and Agencies: Open Data Policy—Managing Information as an Asset, M-13-13.
- 1.4 **Policy.** It is the policy of the Department to model potential future climate impacts across all Representative Concentration Pathways (RCP's) or under all subsequent scenarios as revised by the US Global Change Research Program (USGCRP). The USGS will regularly assess and provide to the Department RCPs or subsequent scenarios.
- 1.5 **Background.** Addressing uncertainty in future environmental conditions is critical to being able to anticipate and adapt to changes that may occur in the earth systems processes that govern the planetary ecosystem. For the Department, this will be reflected in how the Department and its Bureaus and Offices manage access to and development of natural resources, protect and conserve our natural heritage, and provide for the conservation of the environment for future generations, while avoiding undue restrictions on the current generation.

As outlined in Section 6 of USGS Open File Report 2020-1058: "Using Information from Global Climate Models to Inform Policymaking-The Role of the U.S. Geological Survey," there are important principles that should be followed in building and using model output:

- 1) where feasible, do not rely on any one single model outcome or trend;

- 2) continue to work with the national and international research community to improve practices and techniques so USGS can better characterize uncertainty as the Department moves into the future;
- 3) recognize there is often no single best or worst climate model (each model has strengths and weaknesses, where some models might be ‘right’ for the wrong reasons); and
- 4) apply regular assessments of models against actual performance, or a “feedback loop” comparing actual results against modeled trajectories to assess accuracy of estimation and a revision of the profiles or trajectories, so that the best available estimates are continuously reviewed and revised to deliver as guidance on potential climate change effects important to DOI bureaus and other external customers.

1.6 Responsibilities

A) USGS Director must:

- 1) regularly conduct and make available to the Department assessments of the current state of the climate science body of knowledge and technical reviews of the modeled climate change profiles or ensembles (currently RCP’s 2.6, 4.5, 6.0, and 8.5 as described in IPCC AR5/CMIP5) and all subsequent scenarios or ensembles, consistent with the principles and instructions of USGS Instructional Memorandum IM-DO-2020-01 and Survey Manual Chapter 503.1, and DOI Secretarial Order 3369, “Promoting Open Science;”
- 2) expand the availability for the full range of all downscaled climate scenarios (currently RCP’s 2.6, 4.5, 6.0, and 8.5 as described in IPCC AR5/CMIP5) and models available through NASA’s NEX-DCP30 in its National Climate Change Viewer (NCCV) using the same methodology as was used for the data made available through the NCCV prior to the adoption of this chapter;
- 3) develop, pursuant to the best management practices and principles outlined above, additional tools and resources to make available the information required in application of these principles, to the Department, its Bureaus and Offices, stakeholders, and the American public.

B) Bureau and Office Heads, when modeling potential future impacts, must:

- 1) conduct climate change impact analysis using the full range of potential future impacts across all Representative Concentration Pathways (currently RCP 2.6, 4.5, 6.0, and 8.5 in IPCC AR5/CMIP5/NCA4) and then all subsequent scenarios as described in 1.4;
- 2) include the full range of conditions associated with all model pathways or ensembles in all analyses, decision documents, and work products when the Department or its Bureaus or Offices determines that climate change analysis is required or necessary;

- 3) include assessment of uncertainties inherent in the climate modeling used, and substantiate assigned risk tolerance keeping with the transparency and objectivity requirements applicable to the Department under the Information Quality Act, including OMB's Final Information Quality Bulletin for Peer Review; Secretary's Order 3369, *Promoting Open Science*; and the Foundations of Evidenced-Based Policymaking Act.