

Department of the Interior Departmental Manual

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Chapter 5: Office of the Associate Director for Climate and Land Use Change

Originating Office: U.S. Geological Survey

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5.1 Office of the Associate Director for Climate and Land Use Change. The Office of the Associate Director for Climate and Land Use Change provides executive-level leadership for climate and land use change monitoring, research, modeling and analysis to help the Nation understand and prepare for climate and land use change and their effects. Results of the research and investigations are utilized by the Department of the Interior (DOI) bureaus, other Federal, State, and local government policymakers, and land and resource managers to anticipate and prepare for changes resulting from climate and land use change. The office also manages the Nation's land imagery in support of a broad range of national and international purposes.

5.2 Associate Director for Climate and Land Use Change. The Associate Director exercises the authority delegated by the Director, U.S. Geological Survey (USGS) to provide leadership and nationwide guidance for the climate and land use change research activities of the bureau and ensures integration of these activities with the strategic goals of the USGS, the Department, and the U.S. Global Change Research Program. This includes scientific and technical leadership in the areas of climate change, land use monitoring and analysis, remote sensing science, and planning and development of expanding Earth observation programs. Responsibilities for these functions are shared with a Deputy Associate Director for Climate and Land Use Change. The Associate Director and Deputy Associate Director are assisted in the development and implementation of the national climate and land use change programs by the following senior management team:

A. Director, Earth Resources Observation and Science Center (EROS) manages all activities at the Science Center. The EROS holds the world's largest collection of civilian remotely sensed data covering the Earth's land surface, archiving millions of satellite images and aerial photographs. The Center's functions include: managing the operation of land imaging satellites and supporting ground systems, and the development of new systems; managing the archiving of geospatial data and information gathered primarily from satellites and aerial systems, including the distribution and interpretation of that information; and managing research

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with a particular emphasis on the use of land imaging, including research of architecture issues for future land imaging. Terrestrial monitoring and research associated with climate and land use change is a critical element in the EROS mission.

B. Director, National Climate Change and Wildlife Science Center (NCCWSC) provides science and technical support regarding the impacts of climate change on fish and wildlife and the ecological process for responding to the research and management needs of partners. The NCCWSC science agenda focuses on the linkage of global climate information with fundamental ecological knowledge, and the application of this understanding to the particular species, habitats, and ecosystems present in each U.S. region. The NCCWSC serves as the lead for establishing the Department's climate science centers which provide scientific information, tools, and techniques that land, water, wildlife, cultural resource managers, and other interested parties can apply to anticipate, monitor and adapt to climate and ecologically-driven responses at area-to-local scales. The Director of the NCCWSC also manages funding for Science Support for DOI bureaus. The main mission of this program is to provide direct science support within the DOI landscape conservation cooperatives for priority research areas.

C. Coordinators, Climate and Land Use Program. Coordinators are responsible for climate and land-use change program planning, budget development, and program evaluation. The Program Coordinators develop strategic program plans; coordinate programmatic activities within and outside the USGS to ensure broad participation in interdisciplinary studies, and conduct program reviews of current scientific projects to assure that science is relevant to the national objectives, meets the priorities of land managers, and is coordinated with other science and natural resource agencies. The Climate and Land Use programs include the:

(1) Carbon Sequestration program supports the Energy Independence and Security Act of 2007 (EISA), Section 711 and Section 712 that authorized DOI through the USGS, to conduct biologic and geologic carbon sequestration assessments of the Nation. Carbon Sequestration program objectives include improving the understanding of carbon sequestration in subsurface geologic rock formation and ecological systems as well as greenhouse gas fluxes related to land use using research capabilities from the USGS and other organizations.

(2) Geographic Analysis and Monitoring Program conducts research on the patterns, processes, and consequences of changes in land use, land condition, and land cover at multiple spatial and temporal scales, resulting from the interactions between human activities and natural systems.

(3) Land Remote Sensing (LRS) Program supports the Department of the Interior and USGS missions by providing high-quality remotely sensed data for understanding global changes of the Earth's landscape and by ensuring a comprehensive record of land surface data are available for environmental and economic decision making. The LRS Program does this by collecting, processing, archiving, and distributing operationally and scientifically relevant global land and coastal observations acquired from aircraft or satellite; ensuring that these data are permanently maintained and easily accessible to USGS partners, cooperators, stakeholders,

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and other customers; investigating future remote sensing missions, sensors, and data relevant to the mission of the Department; and developing a comprehensive and integrated land-change monitoring and assessment capability that provides essential climate variable measurements needed to quantify and understand natural- and human-induced patterns of land change, provide inputs to land-change models, and inform scientific assessments and decision makers of the consequences of land change.

(4) Climate Research and Development Program (R&D) supports fundamental scientific research to understand and model the processes controlling Earth system responses to climate and land-use change. R&D research includes observations of ecosystem responses to climate and land-cover change over local-to-global spatial scales and daily-to-millennial timescales. The range of research topics is used to document the response of the Earth system to both natural climate variability and anthropogenic change. Modeling efforts within R&D produce climate model results over area-to-global scales to develop model simulations on the scales relevant to USGS partners, cooperators, and stakeholders and the mission of the Department. Focused, multi-disciplinary research on processes and impacts of climate and land-use change provides the data needed to evaluate hazards associated with future climate and land-use change and informed decisions on consequences of a range of climate and land-use changes.