

Department of the Interior Departmental Manual

Effective Date: 09/30/2011

Series: Organization

Part 120: U.S. Geological Survey

Chapter 9: Office of the Associate Director for Natural Hazards

Originating Office: U.S. Geological Survey

120 DM 9

9.1 Office of the Associate Director for Natural Hazards. This office provides executive-level leadership for the research, monitoring, and prediction of natural hazards and for the assessment of areas at risk from natural hazards. Data are gathered on these activities and disseminated in the form of hazard alert products, scientific publications, maps and reports containing analyses and interpretations of natural hazards. The data are used by the U.S. Geological Survey (USGS) to communicate timely information about natural hazards to managers, planners, and the general public, so that the understanding, response to, and planning for natural hazards are improved and losses from natural hazards are reduced. Examples of these functions include: real-time earthquake and volcano monitoring; issuance of alerts for earthquakes, volcanoes and landslides; assessing erosion, wetland loss, and environmental changes to the Nation's coasts and bays; assessment of solid Earth, hydrological, and space weather hazards affecting human activities and the built environment; evaluation of the effects of sea-level changes and hurricanes on coastal wetlands; monitoring hazards-related landscape changes; and research into the causes and consequences of coastal erosion, earthquakes, floods, geomagnetic storms, landslides, tsunamis, volcanoes, and wildfires.

9.2 Associate Director for Natural Hazards. The Associate Director for Natural Hazards exercises the authority delegated by the USGS Director to provide leadership and nationwide guidance for the natural hazards monitoring, research, and assessment activities of the bureau and ensures integration of these activities with the strategic goals of the USGS and the Department. This includes scientific and technical leadership in the areas of earthquake hazards, volcano hazards, landslide hazards, geomagnetism, and coastal and marine geology. The Associate Director for Natural Hazards is assisted in the development and implementation of the natural hazard programs by the following:

A. Deputy Associate Director for Natural Hazards directs and coordinates the development and budgeting of natural hazards scientific programs and provides bureau leadership in the development of multi-disciplinary national program strategic plans and initiatives.

09/30/2011 #3921

Replaces 01/02/08 #3781

B. Natural Hazards Program Coordinators are responsible for providing policy makers and the public with a clear understanding of potential threats, societal vulnerability to these threats, and strategies for achieving resilience to earthquakes, volcanic eruptions, hurricanes, floods, wildfires, mud slides, and solar storms, as well as conducting activities that characterize and assess coastal and marine processes, conditions, change and vulnerability. 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 national objectives, meets the priorities of land and emergency managers, and is coordinated with other agencies. The Natural Hazards program includes the following:

(1) Earthquake Hazards Program (EHP) conducts monitoring, hazard assessments, and research towards the mitigation of earthquake risks, and supports the USGS Director's responsibilities under the Stafford Act to provide authoritative earthquake information and warnings. The EHP is the applied Earth science component of the four-agency National Earthquake Hazards Reduction Program. Through the EHP, the USGS contributes to earthquake hazard mitigation through assessments that underlie seismic provisions in building codes, and to earthquake response through a suite of rapid-information products providing situational awareness following damaging earthquakes. The EHP also supports partnerships in research and monitoring via grants and cooperative agreements, leveraging Federal dollars.

(2) Volcano Hazards Program conducts monitoring, hazard assessments, and research towards the mitigation of volcano risks, supports the USGS Director's responsibilities under the Stafford Act to provide warnings of volcanic eruptions, and forms the foundation of the proposed National Volcano Early Warning and Monitoring System. Research activities include field- and laboratory-based investigations of eruptive history, distribution, and composition of erupted products and emplacement mechanisms. Mitigation of volcano risks requires delineation of exhibited hazards, characterization of background activity levels, and identification of eruption precursors during periods of unrest such as changes in character, location, and frequency content of volcano seismicity, surface deformation, gas flux, and groundwater chemistry. Integration of research on pre-eruptive volatile concentrations, magmatic volatiles solubilities, crystallization, degassing and magma ascent rate quantification with seismic and geodetic studies comprise the foundation for developing volcano specific and process specific knowledge that will lead to improvements to eruption forecasting and effective volcano hazard mitigation.

(3) Landslide Hazards Program conducts monitoring, hazard assessments, and research towards the mitigation of landslide risks and supports the USGS Director's responsibilities under the Stafford Act to provide authoritative landslide information and landslide warnings.

(4) Global Seismographic Network Program monitors seismic activity worldwide in support of earthquake alerting, tsunami warning, nuclear treaty verification and research, and collects data for research on Earth structure and processes. The Program is an integral part of the National Earthquake Hazards Reduction Program.

(5) USGS Geomagnetism Program operates a network of ground-based magnetic observatories in the United States capable of accurately measuring the geomagnetic field across a wide range of timescales. The Program also disseminates magnetic data to various governmental, academic, and private institutions, and conducts research on the nature of geomagnetic variations for purposes of scientific understanding and hazard mitigation.

(6) Coastal and Marine Geology Program (CMGP) conducts activities that characterize and assess coastal and marine hazards; provide geologic framework for ocean and coastal habitats using seafloor mapping technologies, LiDAR, and remotely operated optical systems; forecast coastal vulnerabilities to rising sea level, increased storm frequency and intensity, and impacts from manmade changes to near shore and shoreline conditions; assess mineral and energy resources of the exclusive economic zone, and build a national framework for ocean and coastal information management and dissemination. The CMGP fosters collaboration on regional scales with Federal, tribal, State and local organizations engaged in the National Ocean Policy. High priority regional efforts include modeling sediment transport and coastal evolution, to understand beach health, changes in barrier islands, and beach nourishment.