

**Statement of Tom Iseman, Western Governors' Association
Senate Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard
Weathering Change: Need for Continued Innovation in Forecasting and Prediction
November 16, 2011**

Thank you, Mr. Chairman, Senators, Ladies and Gentlemen.

Good Morning. I am Tom Iseman, Program Director for Water and Climate Adaptation issues at the Western Governors' Association. I am pleased to participate this morning on behalf of the Western Governors' Association. WGA is a bipartisan, consensus-based organization that represents the governors of 19 Western states and 3 U.S. Flag Pacific Islands. The Governors work through the WGA to identify and address key policy and governance issues, which include natural resources, the environment, human services, and economic development.

Western Governors have long recognized the significant impacts that severe weather events and long-term climate trends can have on life in the West. Whether it is drought, heat waves, severe storms, too little snowpack or too much river runoff – they all affect the environment, infrastructure, economies and communities throughout the Western states. That is why WGA has such a strong interest in the weather and climate forecasting services of the National Oceanic and Atmospheric Administration, and we appreciate the opportunity to testify here today.

Drought, in particular, has been a high priority for the Western Governors, and it has been a catalyst for WGA's working relationship with NOAA. We have worked on drought issues for several decades, with many administrations and across party lines. You can find many of WGA's reports and resolutions on this topic on our website, and we have provided a brief bibliography in our formal submission.

When the National Drought Policy Commission was convened in 1998, no sitting Western governors were included. Gov. Brian Schweitzer, prior to being elected governor of Montana, was one of 15 members of the commission, listed simply as "Montana farmer, rancher and soil scientist." Of course, he later became the Governor of Montana and Chair of the WGA, during which he carried with him a strong commitment to address drought issues.

The National Integrated Drought Information System, or NIDIS, is one of the success stories of our work on drought. The NIDIS Act was passed by Congress in 2006. It established a 'drought portal' where information is integrated across agencies, providing a single entry point for users of drought information online at www.drought.gov. NIDIS is also building an emerging network of drought early warning systems, working with local managers to address key regional drought planning needs. Importantly, NIDIS demonstrates a partnership among the federal agencies and between the federal agencies and states and other stakeholders. WGA has worked directly with NOAA and the federal agencies to 'co-develop' this system, making NIDIS a model for the delivery

of integrated drought and climate information in partnership between federal agencies and states.

While drought has been a focal interest, the Governors recognize that a variety of climate and weather events affect the Western economy, public health, and the environment. Building on our work on drought, the Governors adopted a policy resolution (09-2) in 2009 addressing climate adaptation science in the West. This policy calls for improved predictive capabilities at a regional scale; increased coordination among federal agencies and with state agencies; and the establishment of a “National Climate Service” to undertake and communicate research and modeling of climate and its impacts.

The resolution also established a Climate Adaptation Work Group comprising Western state resource managers across a range of sectors that includes water, wildlife, air quality, and forests. The Work Group partnered with a number of entities, including NOAA and other federal agencies, to prepare a Scoping Report on climate adaptation priorities for the Western States. This report elaborates on the Western States’ priorities for climate science, including both observational data and predictive models, as well as enhanced communication between scientists and decision makers.

Recent events in the West have only underscored the importance of coordination, data, and predictive models on climate and weather events. For example, the states of the Upper Missouri River Basin have just endured prolonged and widespread flooding, affecting hundreds of homes and communities throughout the basin. A group of Governors from Nebraska, South Dakota, North Dakota, and Montana has called for improved forecasting of snowpack and runoff in order to reduce flood risk. In recent testimony on the Missouri River Annual Operating Plan, Governor Jack Dalrymple of North Dakota called for “significant improvements in predicting snowpack accumulation and annual runoff¹,” and he urged consideration of NOAA’s forecast for another La Nina climate pattern in planning reservoir management for 2012. As North Dakota’s State Water Engineer put it: “this (2011) was an unprecedented year; we need to know if we’re likely to see these kinds of events again – and potentially more often – in the future.”

Similarly, the American Southwest is in the midst of a severe drought; agricultural losses alone in Texas have been estimated to exceed \$5 billion². Information on current and projected conditions, as is being provided by NIDIS, is essential to states and local communities that are affected by drought events. The same is true of fire management and response, species conservation, coastal protection, infrastructure investment, and a variety of other decisions that states and local communities are making every day: they are affected by short-term weather events and long-term climate trends, and NOAA provides essential information for states to prepare and respond.

¹ Governor Jack Dalrymple, North Dakota, Testimony for the U.S. Army Corps of Engineers Public Scoping Meeting on the Missouri River Annual Operating Plan, Bismark, ND, November 1, 2011.

² Travis Miller, et al, Texas A&M AgriLife Extension Service, August 2011.

This is why the Governors and NOAA entered into a Memorandum of Understanding this summer at the Annual Meeting of WGA. The MOU focuses on sharing weather and climate information³, with a particular focus on disaster risk reduction in the Western states. As Governor Gregoire, WGA's Chair, said on signing the agreement, "a good working relationship with NOAA in providing science and information services states need will help us all build healthy and resilient communities and economies." Under the MOU, WGA and NOAA intend to target the most pressing weather and climate issues in specific sub-regions of the Western states, for example water management in the Pacific Northwest, snowpack and river runoff in the Upper Missouri, coastal erosion on the West Coast and Pacific Islands and drought in the Southwest.

Over the course of our work with NOAA, several key and consistent themes have emerged:

- State Partnerships: NOAA must work directly with states. It is not enough to post forecasts. By working directly with states (and other partners), NOAA can ensure that its climate and weather services are available to decision makers and resource managers, and they can tailor future products to respond to user needs
- Private Sector Engagement: Governors recognize the important role of the private sector, both as providers and users of climate information. When the MOU was signed, Governor Gregoire and Administrator Lubchenco co-hosted a 'business roundtable' with select industries with a clear nexus to climate and weather. We are pleased to see a private sector panelist today and look forward to continued work with the private sector in this effort.
- Regional Programs: Weather and climate events, and our vulnerabilities to them, vary by region. NOAA must respond to regional variability and priorities by tailoring information services to the appropriate climatic and management scale. In NIDIS, we have called these 'Regional Early Warning Systems.' A national map may tell a good story, but users need more tailored information in order to make investment and management decisions.
- Predictive Capability: WGA (and an array of other resource managers) consistently call for better forecasts, from seasonal to multi-decadal time scales. That said, we recognize the challenges and inherent uncertainties regarding projections of future climate. Resource managers can make decisions under climate uncertainty, and have done so for decades in the American West; but they need clear acknowledgment and quantification of uncertainty associated with weather and climate forecasts.
- Basic Data: Western States continually emphasize the importance of basic data to sound resource management. In addition to temperature and precipitation and other data provided by NOAA, this includes USGS streamgaging and NRCS snowpack monitoring. These basic data may be overlooked in the discussion of global climate models and orbiting satellites, but they are a fundamental tool of day-to-day resource management in the West.

³ See *WGA Inventory of Existing NOAA Climate Services and how they are Currently Used*, prepared by WGA for Governor Otter, March 2011.

- Coordination of Federal Agencies: While NOAA is the undisputed expert in atmospheric sciences, many federal agencies contribute weather and climate information or, like the states, have management responsibilities that are affected by weather and climate. We urge greater coordination across the federal enterprise and clearer points of contact for the states, which are often confused and overburdened by the array of federal initiatives around climate.

In conclusion, Western governors are taking a pragmatic approach to weather and climate. They recognize the impacts of weather events and climate trends, and they seek information to make sound management decisions. NOAA plays an essential role in this effort, and the governors are pleased to work to strengthen delivery of this critical information and make it more responsive to state needs. We thank you for the opportunity to be here today.

Thank you, Mr. Chairman, Senators, Ladies and Gentlemen.