

**WRITTEN TESTIMONY OF  
JOHN W. MADDEN  
DIRECTOR  
DIVISION OF HOMELAND SECURITY AND EMERGENCY MANAGEMENT  
DEPARTMENT OF MILITARY AND VETERANS AFFAIRS  
STATE OF ALASKA**

**HEARING ON  
“THE STATE AND FEDERAL RESPONSE TO STORM DAMAGE AND EROSION IN  
ALASKA’S COASTAL VILLAGES”**

**BEFORE THE  
AD HOC SUBCOMMITTEE ON DISASTER RECOVERY  
*UNITED STATES SENATE*  
October 11, 2007**

**Introduction**

Thank you, Madam Chairman and Members of the Committee, for inviting me to present testimony on the state response to storm damage and erosion in Alaska’s coastal villages. I am the Director of the Alaska Division of Homeland Security and Emergency Management. Governor Palin appointed me to this position in January 2007 after serving as the Deputy Director since September of 2005. I also serve as her Homeland Security Advisor. As the Governor’s Authorized Representative and the State Administrative Agent for Alaska, I apply for, receive, distribute, administer, and manage several federal grant programs from the Department of Homeland Security. These include State Homeland Security Grants, Emergency Management Performance Grants, Hazard Mitigation Grants, and several others. In the event of a presidentially declared disaster, I am the State Coordinating Official and communicate the Governor’s priorities and the State’s needs to the Federal Coordinating Official named by FEMA (Federal Emergency Management Agency).

**Mission and Authority**

Under Alaska statutes, my division is responsible for emergency planning, preparedness, response, and recovery. Through the State Emergency Response Plan, we provide for the prevention and minimization of injury and damage caused by disasters; prompt and effective response to disasters, disaster assistance to communities and individuals, and, most relevant to this hearing, the identification of areas vulnerable to a disaster. As an event emerges my division assesses the need for state assistance and coordinates state actions and request federal assistance as needed.

**Alaskan Disasters**

In the past 30 years, Alaska has declared 226 state disasters. Of these, 20 were further declared federal disasters by the President. The disasters included floods, storm surges, extreme freezing, high winds, wildfires, structure fires, earthquakes, volcanoes, and other damage to public infrastructure. About \$436 million in state and federal funds have been spent to recover from these Alaskan disasters. More than half of these disasters and two thirds the funds were for recovery from floods, storm surges, and erosion disasters.

Since 1978, the State of Alaska has declared 23 disasters due to damage from sea storms that have hit every coastal area from Metlakatla, throughout Southeast, the Gulf of Alaska, the Aleutians, and the full extent of Alaska's western and northern coasts. In other words, the threat from sea storms extends along the entire Alaskan coast, a distance greater than the entire U.S. coast from Maine to Mexico and California to Canada. Many of these storms come in the fall but they can strike in any month. Of the 23 state disasters for sea storms, six were of sufficient damage to warrant a federal declaration, three within the past three years.

According to the National Weather Service, an average of five storms of hurricane force approach Alaska each year from the Pacific and Arctic Oceans, and the Bering and Chukchi Seas. Even when these storms do not make landfall, they significantly affect fishing and subsistence activities.

While there is no consensus that the frequency or intensity of storms are increasing, there is a growing body of scientific research showing that the nature of the sea ice is changing. In recent years, the ice advances southward from the Arctic later and slower. This is an extremely important factor in the effects on coastal communities. Shore fast ice greatly reduces, even eliminates, the wave action and erosion action of the storms.

As measured by the number of declared disasters, the coastal communities of western and northwestern Alaska have experienced a measurable increase in frequency and severity: Shishmaref in 2002; Kivalina, Kotzebue, and Shishmaref in 2002; Unalakleet, Diomedes, and Port Heiden in 2003; the entire northwest coast in 2004; and Kivalina in 2006.

## **Northwest Storm of September 2007**

In September 2007, a 960 millibar storm in the Bering Sea approached the northwest coast of Alaska. The timeline for the response to storm illustrates how the federal, state, and local governments and the private sector coordinate.

- September 11      National Weather issues its first coastal flood warning
- September 12      208 Kivalina residents evacuate to Red Dog Mine and Kotzebue.
- September 13      Initial reports of damage to the seawall. Another 22 residents evacuate to the Red Dog Mine.
- September 14      Two staff arrive in Kivalina to coordinate among local and borough leaders, support incident management, and conduct preliminary damage assessment.  
Telephone conference with community, borough, state, and federal agencies, and electrical cooperative for situational assessment, next actions, and most pressing issues.  
Governor's Disaster Policy Cabinet convened to coordinate activities among all state agencies.  
Telephone conference with borough, community, Coast Guard, state agencies, and electrical cooperative on improving status of fuel storage.  
Kivalina residences begin repatriation.
- September 15 – 25      Continual coordination to secure fuel storage for power generators
- September 25      Northwest Arctic Borough issues a disaster declaration and request for state assistance.

The evacuation was conducted under the Western Alaska Mainland Coast Communities Evacuation Plan written and distributed by the State in February 2005. Also, the community and borough used the Fall Sea Storm Preparedness Handbook prepared and distributed by my division each year. One important element is that the residents of Kivalina chose the known risks of evacuation over the unknown risks of the approaching storm. This likely will be the pattern for local decision making as future storms form.

## **Coastal Erosion and Disaster Authorities**

Both Alaskan and federal statutes enable and authorize immediate actions and immediate funding when disasters are imminent meaning "likely to occur at any moment". When there is a question of safety of life, there is no bureaucracy – only swift and hopefully effective action. Where a possibility exists for a future disaster, neither the Alaska Disaster Relief Act nor the federal Stafford Act authorizes funds to prevent the disasters, no matter how certain the odds. This applies equally to deferred maintenance on a bridge and to disappearing wetlands or coastline. No matter how certain or how inevitable, no disaster exists until it is imminent.

Until the disaster can be clearly seen, disaster relief funds – state or federal – cannot be expended. Improvements in weather forecasting has vastly extended the warning time for hurricanes, tornadoes, severe storms, and floods. This has greatly improved the mobilization and

prepositioning of needed disaster relief assets. This also has enabled a better, more realistic definition of imminent. This was clearly evident with the actions by the State of Texas and FEMA before Hurricane Dean just two months ago. More than \$40 million was spent to position buses; prepare evacuation shelters, and food for a hurricane that did not inflict the predicted damages. Had the hurricane followed the predicted, these actions may have saved thousands of lives.

Although the reliability of climatic and forecast models has improved and the timeliness extended, the statutes and authorities covering disaster relief funds have not changed. Only as the sea storms develop with the potential for wind, wave, and surge damages, can the disaster mechanisms be put into action.

Without damage inflicted or damage likely within hours, there is no disaster. Without a disaster, there is no use of disaster relief funds. Currently, there are two federal programs addressing mitigation of future disasters.

### **Pre-Disaster Mitigation Program**

Congress appropriated \$100 million for competitive grants, technical assistance, and program support for the FY 2007 Pre-Disaster Mitigation program. FEMA received 430 applications totaling \$292 million. While this program may seem the likely source to mitigate the erosion threats to coastal communities, this program specifically prohibits flood studies, mapping, or control projects as well as projects involving demolishing an existing structure and building a new structure. Further ineligible is any project for which another Federal agency has primary authority even if that agency has no funds appropriated for that purpose. The very program designed to prevent the damage of a future disaster cannot be used to protect these Alaskan coastal communities.

### **Hazard Mitigation Grant Program**

FEMA administers the Hazard Mitigation Grant Program for long-term projects following a major disaster declaration. The purpose is to reduce the loss of life and property in future disasters by funding mitigation measures during the recovery phase of a natural disaster. Allocations to the State are calculated as a percentage of the costs of recent disasters. Under this program, funds may be used for projects that will reduce or eliminate the losses from future disasters. Projects must provide a long-term solution to a problem, for example, elevation of a home to reduce the risk of flood damages as opposed to buying sandbags and pumps to fight the flood. In addition, a project's potential savings must be more than the cost of implementing the project. These funds are very limited and are the only means to address the full range of hazards facing the State – earthquakes, fires, ice flooding, and coastal storms. Since 1997, Alaska has received slightly more than \$16 million to mitigate the potential for damage from future disasters. The costs of fully mitigating a single community against the hazard of coastal erosion would exceed the total amount received by Alaska for all hazards in the last ten years.

### **Science and Climate**

The National Weather Service reports that the numerical models for Alaskan forecasts and warnings beyond six hours are of significantly less confidence than the rest of the nation because of the extremely low number of observations – particularly for conditions in the Bering Sea and

Arctic Ocean. Only frequent and consistent atmospheric and sea observations will improve the models. Improved models lead to improved and more confident services with greater lead time. Further, improved models provide the sound science on which to base public policy and action.

Last July I testified before the Senate Commerce, Science, and Transportation Committee and recommended that unmanned aerial systems based in Alaska would greatly improve the weather and climate predictions needed for development of sound public policy. I reiterate that recommendation and believe that the use of UAS will dramatically improve the quality and timeliness of forecasts for both weather and for climate. Unmanned aerial systems also could accurately, regularly, and safely document the status of all the Alaskan coastline.

## **Conclusion**

In conclusion, the problems of coastal erosion and flooding are and will continue to be significant dangers to many Alaskan communities. When added to the other natural and manmade threats, Alaska faces a spectrum of risks, threats, and hazards disproportionate to our population, a point not adequately measured in the federal grants processes. The solutions to these problems lay beyond the existing capabilities of the communities and the State. Existing authorities covering disaster response and recovery do not recognize changing conditions as imminent. The failure to find a solution to the coastal erosion and flooding problems will place a growing number of Alaskan residents at an increasing risk at an increasing pace.

This concludes my prepared remarks. I stand ready to answer any questions you may have.