

From Information to Action: The Global Earth Observation System of Systems

Observations for the sake of observations are of immense importance to those of us in the scientific community. To society as a whole, though, observations alone are often meaningless without the actions that provide economic and societal benefit.

The Earth is an integrated system. All the processes that influence conditions on the Earth, whether ecological, biological, climatological, or geological, are linked and impact one another. Therefore, Earth observing systems are strengthened when data collection and analysis are achieved in an integrated manner. Monitoring our water resources and ocean resources are two of the nine societal benefits in both the U.S. and international plans.

Harnessing the power of a global Earth observation system could lead to dramatic improvements in science. Significant droughts, which have a \$6-8 billion annual impact, could be more accurately predicted. The Western U.S. is facing the worst drought in 70 years. The socio-economic toll has prompted the Western Governors Association to call on President Bush to create the National Integrated Drought Information System (NIDIS). NIDIS will coordinate and integrate a variety of observations, analysis techniques, and forecasting methods in a system that will support drought assessment and decision-making at the lowest geopolitical level possible. The tools will allow users to access, transform and display basic data and forecasts across a range of spatial and temporal scales most suited to their individual needs. Such a system will result in more informed management decisions, which will reduce the economic impacts of future droughts.

With millions of people living near the coast, changes in sea level will be a concern to life and property, especially for barrier islands, coastal cities, river deltas, and islands. The storm surge generated by hurricanes, typhoons, and cyclones would exacerbate the effects of potential sea level rise. Improved data on global sea level rise is a high priority requiring strengthened international cooperation in the sustained collection of high-quality observations as the basis for sound decision-making. Currently there is no integrated operational ocean altimetry system.

Linking the various observational systems throughout the United States and the entire Earth for the benefit of society and the economies of the world will be a major challenge; nevertheless, NOAA is committed to leading this important scientific effort.