

# Fixing the Future

As the Gulf coast of the USA recovers, and preparation to rebuild progresses in the aftermath of Hurricane Katrina, the nexus between science and management will be crucial to informed coastal decision-making.

The massive rebuilding enterprise along the Gulf coast in the wake of Hurricane Katrina provides an opportunity to redevelop in such a way to reduce the long-term vulnerability of coastal communities to natural hazards. As near-term recovery along the devastated portions of the northern Gulf coast transitions to long-term redevelopment, geospatial information and decision support tools will be essential in guiding the rebuilding effort toward safer, more secure coastal development for this and future generations.

Ensuring coastal decision-makers have appropriate information to support informed plans and policies and to guide management actions will be essential

to the rebuilding effort. In the June issue of Hydro international, Kristen Tronvig gave readers a sense of the value of geospatial technologies in supporting coastal management projects. Coastal ecosystems, and the communities within and surrounding them, are subject to dynamic changes resulting from natural and human-induced perturbations. The potential for these changes, such as loss of habitat, often present coastal managers with decisions that must be made with limited knowledge about the cumulative effect on the ecosystem. The use by coastal managers of remotely sensed imagery, including aerial photography, to account for land cover and shoreline change is growing, but its full potential as a tool in coastal management has yet to be realised.

In a 2002 survey of the science and technical needs of coastal managers in the USA initiated by the Coastal States Organization, land use and habitat change were identified as top priority issues in need of greater support. In the northern Gulf region, improved science to support wetland restoration is a top need, not only to ameliorate habitat but also for coastal hazard mitigation. Integrated geospatial products such as seamless bathy-topo maps, described in the Tronvig article, will be invaluable in the design and monitoring of restoration projects, and in planning safer communities as the rebuilding proceeds. However, the value of such products in assessing areas vulnerable to flooding, storm surge, erosion and other hazards must be understood by managers in order to make sound rebuilding decisions. This will depend on sustained interaction between scientists and management authorities at the state and local level, where most coastal decisions are made.

Building resilience to natural hazards is vital to the health and long-term sustainability of coastal ecosystems and the communities they support. Ensuring that coastal managers are aware of and have ready access to geospatial technologies and related applications to make more informed decisions in a timely manner and at the appropriate level of government has never been more important.

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