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Science in the Spotlight

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Science in the Spotlight

The fearful truth about the hurricane that wrecked the Gulf Coast in late August is that one of similar intensity will sometime wreak havoc on another shoreline in the hemisphere, and probably sooner than most people expect. Meteorologists are in agreement that a period of reduced activity from 1971 to 1994 has ended, and that in coming decades three or more major hurricanes (Category 3 or higher) can be expected each year in the Atlantic, the Caribbean, and the Gulf of Mexico. This year, with low surface air pressure and exceptionally warm tropical sea surface temperatures, the number is predicted to be higher. Furthermore, analyses by Kerry Emanuel, of the Massachusetts Institute of Technology, and others suggest that global warming could have contributed, through its effect on sea surface temperature, to a separate, marked increase in hurricane intensities over the past 30 years. If so, Katrina-scale events might become even more common.

Biologists and coastal scientists have an important role to play in countering the lack of preparedness that led to a national calamity. Political neglect of many sorts became apparent, not least the official downplaying of scientists' well-founded warnings about the rapid loss of protective coastal wetlands.

There is an obvious and urgent need to understand how the affected coast has been physically altered by the maelstrom. There is an equally important need to document the long-term consequences of the huge increases in sediment and nutrient deposition in coastal waters, not to mention the unknown quantities of pollutants now cascading seaward. The Gulf has been ecologically deteriorating for decades: the increase in biological oxygen demand from Katrina-related influxes may now accelerate the spread of the infamous "dead zone." In light of the large area affected, there could also be impacts on migratory bird populations. Such findings could provide lessons for other storm-prone coastlines.

That said, hurricane impacts and ways to mitigate them are already well understood in general terms, and perhaps researchers need to think hardest about how to be ignored less. They might, for example, take care to frame conclusions in ways that highlight the benefits of expensive coastal remediation. Detailing the losses of wildlife resulting from the destruction of wetlands carries weight with biologists. Politicians, however, are more likely to be impressed by the hope of lower storm surges from future hurricanes and a healthier seafood industry. With efforts to pin the blame for the lack of preparedness on 29 August in high gear, researchers have an unusual opportunity to inject some rationality into the process. By striving to connect research findings to the bigger human picture, including the economic consequences of neglect, biologists could gain a better hearing than they have had in the past—and boost their standing with politicians and the public.

TIMOTHY M. BEARDSLEY
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