NEWS FLASH:

The Sound of the Storm

By Kathy A. Svitil

Could microphones at sea beat high-tech satellites and weather planes for tracking the risks of an incoming hurricane? Satellites are great for big-picture coverage, but they do a poor job tracking wind speeds around hurricane's small eye, which is what determines its destructive potential. Planes that fly into the eye can collect high-quality data but they are expensive and put the crew at high risk. Nicholas Makris, an ocean engineer at MIT, claims he can do a better job merely by listening to the storm's raging.

Makris says the noise of crashing waves beneath a hurricane intensifies in direct proportion to the cube of the wind speed.The resulting commotion creates sounds that can be detected hundreds of feet below the surface. "In theory we could measure a hurricane's destructive power with a simple hydrophone connected by a cable to shore," he says. An array of linked hydrophones would provide broader coverage: "You could place the array in a strategic location and use it to track storms from a distance." Makris thinks his acoustic storm-tracker could be especially helpful to developing countries such as Bangladesh, which gets hit hard by hurricanes but has little money for environmental monitoring.

To test the concept, he has attached a hydrophone to the leg of an oil platform in the Gulf of Mexico-"hurricane breeding ground"-and started collecting readings. He is now putting a hydrophone aboard an autonomous underwater vehicle; then he will park the AUV on the seafloor in the path of an on-coming storm. "By Christmas, we may have some data," Makris says.

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RELATED WEB SITES:

The National Weather Service news link:
http://www.nws.noaa.gov/om/awarenow.htm

"Acoustic Sensing Methods May Improve Hurricane Prediction," from Seagrant News:
http://www.seagrantnews.org/news/tips/tip_2002_july.html

Makris's website:
http://acoustics.mit.edu/faculty/makris/makris.html