

## **New National Estuarine Research Reserve Opens**

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## New National Estuarine Research Reserve Opens

On 6 May, a group of local dignitaries celebrated the official designation of the Mission-Aransas National Estuarine Research Reserve as the 27th reserve in the National Estuarine Research Reserve System (NERRS), which the National Oceanic and Atmospheric Administration (NOAA) launched in 1972. The event capped an approximately seven-year process to designate a coastal area of Texas as one of NOAA's nonregulatory research reserves.

NERRS sites are located in coastal areas of the United States, from Maine to Florida (excluding Connecticut), west now to Texas (except for Louisiana), and from Oregon through California. There's also one reserve each in Alaska and Puerto Rico. An inland reserve is located on Lake Erie in Ohio, and another is proposed for the St. Lawrence River in northern New York. Unlike national parks or national wildlife refuges, NERRS sites are created in partnership with state and local authorities as research sites to aid in understanding the biological, hydrological, meteorological, and ecological factors affecting coastal ecosystems.

Paul Montagna, a benthic ecologist at the University of Texas Marine Science Institute, is manager of the Mission-Aransas reserve and was instrumental in its founding and development. He points out that the Mission-Aransas site, which covers more than 185,000 acres in the western Gulf of Mexico, is in the only hypersaline environment in the United States. But, he explains, when he began looking into establishing a reserve in Texas, he had no preconceptions of where that site would be located.

The process of designating a research reserve is complex and involves many levels of government, along with the local coastal population. Montagna notes that the first step is to persuade the gov-

ernor to ask NOAA to establish a reserve in his or her state. He began that quest in 1999. "It's something that people wanted," he explains, so they had to "enlist the governor's office to go ahead." The governor's office advised Montagna that a consensus was necessary before the governor could make the request. But in 2000, then governor of Texas George W. Bush was occupied with the presidential election, so the next governor, Rick Perry, made the request in 2001. Once NOAA responded favorably at the end of 2001, the next step was to select the site for the reserve and have the governor nominate the site. That, states Montagna, took another couple of years.

Selecting a site was not easy. "The way NOAA regulations work, you have to select a site that is representative of a biogeographical region; we had to pick something that was representative of the entire western Gulf of Mexico," says Montagna. "We had to figure out where in this huge region would be the best place to do it." "Best," he notes, translates to "most pristine, most approaching natural, less likely to change over time, because you're building a living laboratory."

The first meeting to begin the site selection process was in August 2002. Three hundred people attended and 65 potential sites for the reserve were nominated. Montagna set up a committee to evaluate the sites, along with criteria the sites should meet: remote enough so as not to have had a negative impact from the human population but accessible to people. The committee selected the Mission-Aransas site around the end of 2003, and the governor nominated it in March 2004; it was approved by NOAA in September 2004.

The final step was to produce an environmental impact statement (EIS) and draft management plan. "This was an

interesting EIS," explains Montagna. "We weren't proposing a project that would actually damage or hurt the environment; we were proposing a process that would help it. When we did an alternative analysis, the only alternative was not doing the project at all." The site was officially designated on 3 May 2006.

Montagna now awaits getting the reserve into the systemwide monitoring program, with four water quality monitoring sites reporting abiotic measurements every 30 minutes. These data will be reported to a laboratory in South Carolina and made available on a Web site. These sites will also have a weather station and be part of the Integrated Ocean Observing System, linking their weather and water statistics, in real time, to satellite telemetry, which will allow continuous monitoring of data from the cooperating sites. Montagna plans to do some biological monitoring of the habitat, too.

This is a living laboratory, as Montagna sees it, and climate change will be a very important factor in studies on the reserve. "We're right on that [line] between tropical and temperate" zones, and, he adds, one can see the tropical zone expanding. Within the past 20 years, mangrove has extended its range into this area. "What happens when mangrove replaces spartina marsh?" he asks. They already are noting declines in fiddler crab populations, and mangrove creates cover for predator species. "Consider we've got [endangered] whooping cranes on the northern edge" of the reserve, he advises. Climate change could also affect them.

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