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Do Reconstructed Wetlands Work?

Introduction:

Until recently it was thought the best thing to do with a marsh was to drain it and put it to use as dry land for farming or development. Now, wetlands are recognized for their value in flood reduction, water purification, and wildlife habitat. Since 1982 more than 400,000 hectares — almost one million acres — of fresh and saltwater wetlands have been restored in the U.S., and plans are to double that in the next ten years.

Professor Joy Zedler of the University of Wisconsin studied a reconstructed marsh near San Diego for more than ten years and found that while it does some good for wildlife, it does not fulfill its primary purpose, which was to provide habitat for the endangered light-footed clapper rail. We spoke with Professor Zedler about some of the finer points of rebuilding natural ecosystems.

ER: Professor Zedler, what is your background?

JZ: I got my Ph.D. at the University of Wisconsin in 1968. After one year teaching at the University of Missouri, I moved to San Diego State University, where I founded and directed the Pacific Estuarine

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Research Laboratory. Our lab became an internationally known research program in coastal wetland restoration. Work on estuaries and salt marshes continues, although I moved to Madison in January 1998. The University of Wisconsin offered me a terrific opportunity to broaden my interests and to create an interdisciplinary program in restoration ecology. Another major attraction was the university's Arboretum, a 1,200 acre reserve in the middle of the city, where we can conduct good science and ecosystem restoration.

ER: What is your niche in the academic landscape?

JZ: I'm a plant ecologist. My dissertation research was on habitat for the prairie chicken. In Wisconsin degraded, abandoned farmlands are managed for prairie chickens. In San Diego I studied salt marshes that were being restored for clapper rails. Despite their occurrence in very different ecosystems — terrestrial field versus tidal wetlands — these two birds are similar in that they have specific requirements for habitat structure and vegetation cover.

ER: When did the San Diego Bay restoration project start?

JZ: The Sweetwater Marsh project started just before 1984 with widening of a freeway, construction of a new freeway interchange and excavation of a new flood control channel. It was a combined project of the California Department of Transportation — Caltrans — and the U.S. Army Corps of Engineers, with review by the U.S. Fish and Wildlife Service.

There were legal requirements to make up for the construction damage to the existing marshes, compensatory mitigation. As they were building the freeway, Caltrans excavated about twelve acres of former fill, including sediments dredged from San Diego Bay's ship channel and refuse from an old urban dump. When they dug through this fill material, antique bottles were

