



Title: Assessment of Contamination in Land To Be Reclaimed as Surface Water, Wetland, or Riparian Habitat

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Organization: MACTEC Engineering & Consulting, Inc.

State: FL **Region:** Southern

Year of Funding:

Theme: Environmental Restoration

Situation: An emerging concern for Florida's Water Management Districts, FDEP, and local governments who are acquiring former agricultural land for water quality restoration, preservation and recreational uses is residual pesticide contamination due to past land practices.

Objectives: Development, testing, and application of cost-effective methods to characterize surface water effects of contamination on large tracts of agricultural land planned for submergence, wetland restoration, or floodplain improvements.

Methods: Assessed contamination due to agricultural use and agricultural research at 28 University of Florida Institute for Food and Agricultural Sciences (IFAS) research facilities throughout Florida. Developed and applied cost-effective site characterization procedures. Identified and applied rigorous statistical procedures for data evaluation. Participated in the development and testing of procedures to assess water quality effects of land submergence. Assessed ecological risk associated with pesticides in surface water sediments (including soils planned to be submerged).

Partnerships: Supported partnerships between Florida Department of Environmental Protection (FDEP), Florida's Water Management Districts (WMDs), University of Florida's Institute for Food and Agricultural Sciences (IFAS), and county governments. MACTEC Engineering & Consulting, Inc. (MACTEC) has modified and extensively tested field analytical methods developed by IFAS scientists and demonstrated the utility of these procedures to FDEP.

Research: The project emphasizes innovative use of ecological risk assessment methods to land and water management issues. MACTEC Engineering & Consulting, Inc. (MACTEC) has modified and extensively tested field analytical methods developed by IFAS scientists and introduced these procedures to FDEP. MACTEC has consulted with academic researchers and provided FDEP access to this expertise via consulting agreements. MACTEC has presented seminars to the South Florida Water Management District regarding lessons learned at a site in St. Johns District.

Resources: MACTEC has invested in development of procedures and transfer of technologies across agencies while supported in part by FDEP; IFAS; US Army Corps of Engineers, Jacksonville District; SJRWMD; and SFWMD.

Results: Outputs include refined methods of ecological risk assessment for surface water and sediments; more cost-effective methods for site and water body characterization; and the development of cost-effective impact mitigation plans in the public interest



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