

Western Ecological Research Center

Publication Brief for Resource Managers

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Wildlife Values of North American Ricelands

Rice seeds remaining in fields after harvest, together with weed seeds and invertebrates, provide food for several bird groups during fall, winter, and early spring. USGS research biologists Michael R. Miller and Dr. Kenneth J. Reinecke collaborated with Dr. John M. Eadie of the University of California at Davis and Dr. Chris S. Elphick of the University of Connecticut to write the first chapter of the newly published book, "Conservation in Ricelands of North America." Their chapter deals with the use of ricelands by wildlife, resource benefits to wildlife, effects of rice field management on wildlife, rice harvest management to benefit waterbirds, the equivalence of ricelands to natural wetlands, trade-offs of providing habitat for wildlife, and future challenges and research needs.

The authors show that ricelands provide a critical component of waterbird habitat and exemplify the integration of agricultural and natural resource management in the Central Valley of California, Mississippi Alluvial Valley (Arkansas, Louisiana, Mississippi), and the Texas Gulf Coast.

The authors provide considerable information on the use of rice fields by wintering waterbirds, especially waterfowl, as well as their value for breeding birds and the effects of organic chemicals. Their chapter presents recent research on the influence of field management practices, such as winter flooding and post-harvest straw manipulations, on the suitability of rice fields for wildlife. They conclude that waterbirds may benefit rice producers by enhancing straw decomposition, reducing weed and pest pressure, and providing additional income through hunting and wildlife viewing opportunities.

Management Implications:

- Rice fields are critical habitats for migratory and nesting waterfowl, wading birds, shorebirds, and other wetland and agricultural land wildlife.
- The value of rice fields as wetland habitats faces increasing pressures from urbanization, competition for water, and changing harvest and water management techniques that will likely reduce the amount of food available for wildlife.
- Properly managed rice fields will benefit producers by enhancing straw management, reducing weeds, and providing increased income from hunting leases.

Changes in agricultural markets, pressures of increased urban development, conflicting needs for limited resources such as water, endangered species constraints, and concerns over water quality are discussed within a framework of developing a sustainable, mutually beneficial partnership among the rice industry, wildlife, and environmental interests.

The chapter also discusses the need for research, such as evaluating potential reductions in the wildlife carrying capacity of ricelands resulting from new harvest and field management techniques, crop conversion, or loss of rice acreage. Key issues remain unresolved that should be addressed by continuing research, including: 1) evaluating changes in waste grain abundance and availability resulting from various harvest and post-harvest management practices; 2) evaluating food (waste grain, weed seed, invertebrates) depletion by birds feeding in rice fields and determining threshold food

levels below which bird use will fall; 3) quantifying use of rice fields by nonwaterfowl species throughout the year; and 4) determining the amount and distribution of rice habitat needed to meet objectives of the North American Waterfowl Management Plan and the United States Shorebird Conservation Plan.

Eadie, J. M., C. S. Elphick, K. J. Reinecke, and M. R. Miller. 2008. Section 1: Wildlife Values of North American Rice-lands, pages 7–90. In Manley, S. W., ed. Conservation in Ricelands of North America. The Rice Foundation, Stuttgart, Arkansas.